

THE MONOPOLIES
AND RESTRICTIVE PRACTICES
COMMISSION

Report on the Supply
of Electric Lamps

*Presented to Parliament in pursuance of
Section 9 of the Monopolies and Restrictive Practices
(Inquiry and Control) Act, 1948*

*Ordered by The House of Commons to be Printed
4th October 1951*

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HER MAJESTY'S STATIONERY OFFICE

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PRINCIPAL ABBREVIATIONS IN THE REPORT

A.E.I.	Associated Electrical Industries, Ltd.
The A.E.I. Group	...	...	B.T.H., Ediswan and Metrovick.
The American G.E.C.	...	...	General Electric Company of New York.
Aurora	...	...	Aurora Lamps, Ltd.
B.E.A.	...	...	British Electricity Authority and the Area Electricity Boards.
B.E.L.L.	...	...	British Electric Lamps, Ltd.
Britannia	...	...	Britannia Electric Lamp Works Ltd.
British Luma	...	...	British Luma Co-operative Electric Lamp Society Ltd.
The British Philips Company.	...	...	Philips Electrical Ltd.
B.S.I.	...	...	British Standards Institution.
B.S.S.	...	...	British Standard Specification.
B.T.H.	...	...	British Thomson-Houston Co., Ltd.
Crompton	...	...	Crompton Parkinson, Ltd.
Cryselco	...	...	Cryselco, Ltd.
C.W.S.	...	...	Co-operative Wholesale Society Ltd.
E.C.A.S.	...	...	Electrical Contractors' Association of Scotland.
Ediswan	...	...	Edison Swan Electric Co., Ltd.
Ekco-Ensign	...	...	Ekco-Ensign Electric Ltd.
E.L.M.A.	...	...	Electric Lamp Manufacturers' Association.
Evenlite	...	...	Evenlite Tube Lamp Developments Ltd.
E.W.F.	...	...	Electrical Wholesalers Federation.
G.E.C.	...	...	General Electric Co., Ltd.
Gnome	...	...	Gnome Electric Lamp Works Ltd.
The Hungarian Company.	...	...	Vereinigte Glühlampen und Elektrizitäts A.G., of Ujpest, Hungary.
I.G.E.C.	...	...	International General Electric Company Inc. of New York.
Ismay	...	...	Ismay Lamps Ltd.
M.A.A.	...	...	Motor Agents' Association, Ltd.
Metrovick	...	...	Metropolitan-Vickers Electrical Co., Ltd.
M.F.A.	...	...	Motor Factors' Association.
N.E.C.T.A.	...	...	The N.E.C.T.A. Ltd. (The National Electrical Contractors Trading Association).
N.F.I.	...	...	National Federation of Ironmongers.
O.K.	...	...	Osram G.m.b.H. Kommanditgesellschaft of Berlin.
Philips (Holland)	...	...	N.V. Philips Gloeilampenfabrieken of Eindhoven.
R.T.R.A.	...	...	Radio & Television Retailers' Association (R.T.R.A.) Ltd.
S.C.W.S.	...	...	Scottish Co-operative Wholesale Society Ltd.
Siemens	...	...	Siemens Electric Lamps and Supplies Ltd.
Splendor	...	...	Splendor Lamp Co. Ltd.
Stella	...	...	Stella Lamp Co., Ltd.
Thorn	...	...	Thorn Electrical Industries Ltd.

THE SUPPLY OF ELECTRIC LAMPS

INTRODUCTION

I. Terms of Reference and Procedure

(i) On 1st March, 1949, the Board of Trade sent to us the following reference:—

“Whereas it appears to the Board of Trade that it is or may be the fact that conditions to which the Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948, applies prevail as respects the supply of—

(a) electrical filament lamps, for illumination or otherwise;

and

(b) discharge lamps and fluorescent lamps, for illumination.

Now, therefore, the Board in pursuance of Section 2 (1) of the Act hereby refer to the Monopolies and Restrictive Practices Commission for investigation and report the matter of such supply.

The Commission shall as respects such supply investigate and report on—

(1) whether conditions to which the Act applies in fact prevail, and if so in what manner and to what extent,

(2) the things which are done by the parties concerned as a result of, or for the purpose of preserving, those conditions,

and

(3) whether the conditions in question or all or any of the things done as aforesaid operate or may be expected to operate against the public interest.”

(ii) In addition to the factual part of our inquiry (items (1) and (2) of our terms of reference) and to our consideration of the bearing of the facts upon the public interest (item (3) of our terms of reference) a further duty devolves upon us under Section 7 (1) of the Act which requires the Commission to include in their report “such a survey of the general position in respect of the subject matter of the investigation, and of the developments which have led to that position as (is) in their opinion expedient for facilitating a proper understanding of the matter.” The only earlier reports on this industry of which we have had the benefit are (a) the Findings and Decisions of a Subcommittee appointed by the Standing Committee on Trusts to enquire into the existence of any trust or trade combination in the Electric Lamp Industry,* published in 1920 and (b) Survey of Metal Industries, being Part IV of a Survey of Industries by the Committee on Industry and Trade,† published in 1928. As the industry has progressed and developed greatly since these reports were made we have thought it our duty to make a new and thorough investigation of its structure and history.

(iii) After a preliminary informal talk, we issued a questionnaire in April, 1949, to the main trade association representing manufacturers, namely the Electric Lamp Manufacturers' Association (E.L.M.A.). In answer to our questions E.L.M.A. submitted a statement and copies of a large number of agreements to which the members were parties. We took a considerable amount of oral evidence and further written evidence from E.L.M.A. about these matters. Members of our staff made an examination of the minutes of E.L.M.A. for the period from June, 1936, to May, 1949, and of the minutes of all the meetings of the successive international organisations of lamp manufacturers to which most of the members of E.L.M.A. have also belonged since

* Cmd. 622: 1920.

† The Balfour Report. The section on “Electric Lamp Manufacture” forms part of Chapter III.

1925. Summaries of and extracts from these minutes were given to E.L.M.A. for examination and comment, the Association having agreed to answer on behalf of the individual members as well as for itself: a note of some provisional inferences which we felt might be drawn from these records was also sent to E.L.M.A. for comment at a later date, and further oral evidence was taken from E.L.M.A., which was represented by Counsel for this purpose, about matters of fact in relation to them.

(iv) In June, 1949, we invited E.L.M.A. to submit evidence on behalf of each of its members in respect of prices, costs and profits in their lamp businesses, and in particular detailed information for the years 1937, 1938, 1947 and 1948. This evidence was submitted jointly through an independent accountant acting on behalf of E.L.M.A. and its members, who was later examined orally. In the course of these inquiries E.L.M.A. was given every opportunity to submit any information about those matters which it considered relevant. In October, 1949, we also invited a number of lamp manufacturers who are not members of E.L.M.A., including some which are controlled by certain members of E.L.M.A. (referred to in this report as "the Controlled Companies"), to submit similar information. Our accountant examined the information supplied and obtained any necessary explanations either by correspondence or in the course of visits to individual concerns.

(v) In March, 1949, we had advertised our readiness to receive in writing the views of anyone interested. We also sent questionnaires to the Independent Lamp Manufacturers' Export Group* and to the principal lamp manufacturers who are not members of E.L.M.A. (including the Controlled Companies); to manufacturers of lamp components; to the main trade associations to which wholesalers and retailers of lamps belong and to the Co-operative Union and the Co-operative Wholesale Societies of England and Scotland; to certain individual concerns distributing lamps, including the British Electricity Authority and a number of chain stores; and to many users of lamps, including Government Departments, Local Authorities, nationalised industries and a number of large commercial and industrial concerns. In some cases oral evidence was taken after we had considered the written evidence provided. Evidence has also been taken from, among others, the Ministry of Supply (as the department with general responsibility for the production of lamps), the British Standards Institution, the Electrical Fair Trading Council, and (in co-operation with the Trades Union Congress) the National Union of General and Municipal Workers and the Union of Shop Distributive and Allied Workers. A more detailed list of those who gave evidence is given in Appendix 1. From all these sources we have collected a very substantial body of information. Members of the Commission and of the staff have also visited a number of lamp factories.

(vi) In November, 1950, when we had reached provisional conclusions on the factual part of our inquiry (items (1) and (2) of our terms of reference), we informed E.L.M.A. that in our view the conditions of the Act appeared to prevail as respects the supply in the United Kingdom of filament lamps and of discharge lamps taken separately. We listed the practices restrictive of competition to which E.L.M.A. or some or all of its members appeared to be parties, and the rules, agreements or other documents revealing the practices, and we indicated some possible lines of criticism in order to assist E.L.M.A. and its members to focus their observations on the effect of these practices on the public interest; we asked for the written comment of E.L.M.A. and its members and invited them to attend a formal hearing, so that we could fulfil

* The functions of the Group are normally limited to "matters of mutual interest appertaining to the export" of lamps, but some of the evidence submitted by its members was co-ordinated through its Secretary.

our further duty of determining whether the conditions or any of the things done operated against the public interest (item (3) of our terms of reference). Hearings were held in March and April, 1951, when E.L.M.A. and its members were represented by Counsel.

(vii) Much of the information obtained in the course of our inquiry has necessarily related to the intimate business affairs of those concerned. In preparing our report we have been careful not to disclose information of this kind unless we considered it essential for the proper understanding of the issues, and in such cases we have refrained wherever possible from mentioning names.

(viii) Some of the organisations concerned have had to undergo a prolonged and detailed examination of their present and past activities. We wish to record our appreciation of the assistance given to us by all concerned.

II. The conditions and practices which have been found to exist

(ix) We estimate that in the United Kingdom the members of E.L.M.A. produce about 60 per cent. of the total output of filament lamps, and a similar proportion of the total output of discharge lamps.

(x) We describe in detail in Chapters 3-12 the conditions and restrictive practices which we have found to prevail in the industry. The practices are extremely complex, and it is sufficient to explain here that the members of E.L.M.A. are bound together in three ways, namely by their membership of E.L.M.A., by their participation in a form of patent pool and by their adherence to the 1948 Lamp Agreement; the first of these is the principal means by which common prices and the E.L.M.A. selling system are established, while the second and third are used to establish and enforce patent policy and sales quotas respectively. A summary description of the system is given in paragraphs 256-259, 285 and 286.

III. Note on Use of Terms

(xi) Many of the international agreements among lamp manufacturers which we have examined relate to territory described generally as "the British Empire" but not corresponding exactly with any political grouping and differing slightly as between agreements. The precise extent of the territories affected is of no significance to our report, and we have found it convenient to use the term "the British Empire" as a loose descriptive term when the territory concerned includes the present British Commonwealth and Empire (less mandated territories), although it may in the context of some of the agreements described also cover the Irish Republic and Burma.

(xii) It has been necessary in this report to use a number of technical terms. These are explained in Appendix 2.

IV. White Paper on Resale Price Maintenance

(xiii) At a very late stage of our inquiry the Government published a White Paper* announcing its views on the practice of resale price maintenance generally, as pursued by individual manufacturers or by trade associations, and its intention to introduce legislation on the subject. Having regard to our terms of reference we have not taken this White Paper into account in reaching our conclusions.

* Cmd. 8274: 1951.

PART I
GENERAL SURVEY OF THE ELECTRIC LAMP
INDUSTRY

CHAPTER 1: THE GENERAL BACKGROUND

(i). Description of the Goods

1. The goods to which our terms of reference apply cover virtually all types of filament and discharge lamps. In a filament lamp, light is derived from a filament which is made incandescent in a sealed container by passing an electric current through it. In a discharge lamp, light is produced by the excitation of a gas or vapour in a sealed container by a discharge of electricity through it: in some discharge lamps the container is coated internally with a fluorescent powder which converts into light the ultra-violet radiation generated by the discharge, and this type includes the ordinary fluorescent lamp. The lamps with which we are concerned may be described as follows:—

(a) filament lamps of the kinds generally used for domestic lighting (referred to in this report as general service filament lamps),* including some types (such as candle lamps and some tubular filament lamps) which are in less frequent general use ;

(b) filament lamps for special purposes, including train, tram, traction, trolley-bus and rough service lamps, filament lamps specially designed for street lighting, Christmas tree lamps, architectural lamps, projector and photo-flood lamps and switchboard indicator lamps, and other types of filament lamps with very individual and limited uses ;

(c) low voltage filament lamps operated by battery or dynamo, including motor lamps, flash lamps and miners' lamps ;

(d) discharge lamps for lighting, including fluorescent lamps of the kinds used for domestic, commercial and industrial lighting, and mercury vapour and sodium vapour lamps of the kinds used for street and industrial lighting.

In accordance with practice in the lamp industry we have throughout this report made use of the term "lamps" to describe all goods covered by the definition above, although in certain related industries and notably the motor trade this term is used to describe the complete lantern including the lamp-holder, the goods with which we are concerned being classed as "bulbs" We use the term "bulb" to describe the glass envelope.

(ii) The Manufacturers

2. The manufacturers of lamps vary widely in their size and range of production. The largest producers are big electrical engineering concerns which are engaged in the manufacture of many different types of electrical goods. Such concerns normally market the full range of goods described in paragraph 1 above, and in certain cases are themselves the manufacturers of the materials and components from which the lamps are assembled: most of them also make lamp fittings and auxiliary gear. At the other end of the scale there are small specialist companies which produce a narrow range of lamps from components purchased in a semi-finished condition; the output of such companies may, for instance, be confined to general service filament lamps or to lamps with a very limited use, such as switchboard indicator lamps; in other cases the manufacture of lamps may be incidental to the manufacture by the same company of allied equipment such as complete miners' hand lamps (i.e. lanterns) or electric torches. Below we

*The term "general service" (or "general lighting service") is in common use in the trade although there is no precise agreement about the types of lamps it covers.

group the principal lamp manufacturers of the United Kingdom in three classes:—

(a) *Members of the Electric Lamp Manufacturers' Association (E.L.M.A.):—*

Name of Member	Abbreviation used in this Report	Trade Marks (a)	Approximate Percentage of Total Lamp Trade of E.L.M.A. Members in United Kingdom (b)	Financial Inter-connections (c)
British Thomson-Houston Co. Ltd. Edison Swan Electric Co. Ltd. Metropolitan-Vickers Electrical Co. Ltd.	B.T.H. ... Ediswan ... Metrovick	Mazda ... Royal "Ediswan" Cosmos Metrovick	33	Subsidiaries of Associated Electrical Industries Ltd. (A.E.I.). In this report called jointly "the A.E.I. Group".
General Electric Co. Ltd. (d).	G.E.C. ...	Osram ...	30	(See Cryselco)
Philips Electrical Ltd. Stella Lamp Co. Ltd.	The British Philips Company. Stella ...	Philips ... Stella ...	10	Subsidiaries of N.V. Philips Gloeilampenfabrieken of Eindhoven (Philips (Holland)). (See also Cryselco.)
Cryselco Ltd. ...	Cryselco ...	Cryselco ...	4	Jointly owned by G.E.C. and Philips (Holland).
Siemens Electric Lamps & Supplies Ltd.	Siemens ...	Siemens Sieray	10	
Crompton Parkinson Ltd.	Crompton	Crompton Kye	12	
British Electric Lamps Ltd. Aurora Lamps Ltd.	B.E.L.L. ... Aurora ...	Bell ... Aurora ...	1	

(a) We have mentioned only the marks in commonest use for lamps.

(b) These percentages represent roughly the quotas to which the members are entitled (see Chapter 6). Sales would not necessarily fall precisely into these proportions in any year, either in quantity or value.

(c) For further information about the financial connections of the members, see Appendix 7.

(d) G.E.C. has a subsidiary company, Pope's Electric Lamp Co. Ltd., whose lamps, branded "Elasta", are produced in G.E.C.'s factories. The company is not a member of E.L.M.A. but its products are distributed in the same way as those of the members.

Some of these Companies are concerned solely with lamp-making, while for others lamp-making may represent not more than 10 per cent. of their manufacturing interests; the latter class are the largest producers of lamps.

(b) *Manufacturers of lamps who, while not themselves members of E.L.M.A., are controlled by members of E.L.M.A. (referred to in this report as "the Controlled Companies"):*—

Name of Manufacturer	Abbreviation used in this Report
Britannia Electric Lamp Works Ltd. ...	Britannia
Evenlite Tube Lamp Developments Ltd. ...	Evenlite
Gnome Electric Lamp Works Ltd. ...	Gnome
Ismay Lamps Ltd. ...	Ismay
Splendor Lamp Co. Ltd. ...	Splendor

We describe the relationship of these companies to the members of E.L.M.A. in Chapter 8. They do not make discharge lamps, and their output is equal to rather less than a quarter, by quantity, of the total output of filament lamps by the members of E.L.M.A.

(c) *Manufacturers of lamps who are not members of E.L.M.A. and are neither financially linked to nor controlled by members* (referred to in this report as "the Independent Manufacturers") :—

Some of the manufacturers in this class belong to the Independent Lamp Manufacturers' Export Group, a body set up during the 1939-45 war to implement the Government's export target scheme on behalf of its members. Two of the Independent Manufacturers, namely Thorn Electrical Industries Ltd. (referred to in this report as "Thorn") and Ekco-Ensign Electric Ltd. (referred to in this report as "Ekco-Ensign"), are similar in size, as far as lamp business is concerned, to the medium-sized members of E.L.M.A. Others are small or have a limited interest in the lamps industry although they are of greater importance in other fields. There is one company, namely the British Luma Co-operative Electric Lamp Society Ltd. (referred to in this report as "British Luma") which, although classed as an Independent Manufacturer, has had a special relationship with E.L.M.A. through a patent licence agreement between the company and some of the members of E.L.M.A. (see Chapters 5 and 7).^{*} British Luma's output of lamps is larger than that of the two small members of E.L.M.A., but is not large by comparison with other members. We describe the Independent Manufacturers in Chapter 7.

(iii) United Kingdom Output, Imports and Exports

3. The following table, based on official production returns,[†] shows the output, by quantities, in 1950 of the three classes of manufacturers referred to in paragraph 2. The table is given to show the relative importance of the three classes. It should be borne in mind that it does not show their shares in the United Kingdom market because imports, exports and stock variations are not taken into account here ; in particular, the proportion of output exported varies from class to class (see Chapter 13).

Class of Lamps	E.L.M.A. Members	Controlled Companies	Independent Manufacturers	Total
	'000	'000	'000	'000
<i>Filament Lamps</i>				
Flashlamps	26,586 (53%)	—	23,686 (47%)	50,272
Motor	25,983 (57%)	8,919 (19%)	11,078 (24%)	45,980
Other Filament Lamps:				
up to 24 volts	9,937 (69%)	—	4,514 (31%)	14,451
over 24 volts(a)	85,651 (63%)	23,747 (17%)	27,035 (20%)	136,433
TOTAL (Filament Lamps) ...	148,157 (60%)	32,666 (13%)	66,313 (27%)	247,136
<i>Discharge Lamps</i>				
Fluorescent	2,843 (59%)	—	2,014 (41%)	4,857
Other Discharge Lamps ...	389 (100%)	—	—	389
TOTAL (Discharge Lamps) ...	3,232 (62%)	—	2,014 (38%)	5,246

(a) This class includes all general service filament lamps (see (a) of paragraph 1) as well as many special types of filament lamps.

^{*} Several other Independent Manufacturers are licensed to make one particular kind of motor head-lamp under patents belonging to E.L.M.A. members (see paragraph 81), but the patented product is only a small part of their output.

[†] i.e., the Ministry of Supply's production figures compiled from returns made to the Ministry by the manufacturers.

The total value of this output of filament and discharge lamps at manufacturers' selling prices was approximately £13½ million. The table in Appendix 15 (Table 1) enables output in the United Kingdom to be compared with that in the other principal producing countries in various years.

4. Tables of United Kingdom imports and exports from the year 1920 to the present time, based on official returns, will be found in Appendix 15 (Tables 2 and 3 respectively). It will be noted that in 1950 36 million lamps, valued at rather more than £1½ million, were exported and some 40½ million lamps, valued at £¼ million, were imported. The greater part of the imports consisted of flashlamps, whereas two-thirds of the value of the exports related to filament lamps other than flashlamps, and a quarter to discharge lamps. It appears that the average price of imported lamps has always been markedly lower than that of exported lamps, principally because of the preponderance of flashlamps in imports. We have noted that since import restrictions were relaxed at the beginning of 1950, lamps have been imported on a scale comparable with that in the years immediately before the war: exports, however, are markedly higher than in those years in quantity as well as in value.

(iv) Employment in the Industry

5. According to figures submitted to us by the manufacturers, approximately 17,500 persons were employed by them in the production and distribution of lamps in 1949; the figures include administrative and clerical as well as factory staff. This labour force was distributed among the various classes of manufacturer approximately in the following proportions:—

E.L.M.A. Members		Controlled Companies	Independent Manufacturers	
G.E.C. and the A.E.I. Group	The Rest		The Largest Manufacturer	The Others
53%	22%	5%	4%	16%

The workpeople concerned belong to no one special trade union but are members of various unions representing large sections of industry.

(v) Materials, Components and Machinery

6. The ultimate raw materials of lamp manufacture comprise a wide variety of minerals, metals and gases, many of which are imported from all over the world. The principal immediate components required for the manufacture of filament lamps are, however, the following:—glass bulbs, glass tubing, glass rod, tungsten wire, molybdenum wire, copper wire, copper-clad nickel-iron wire and nickel wire, argon and other gases, and caps. Brief technical notes about these components are given in Appendix 2. For fluorescent lamp-making all these components are required except glass bulbs, instead of which glass tubing is required for the envelope. In addition, fluorescent powders and various chemicals are used.

7. There is considerable diversity of practice among the lamp manufacturers as to the components they make for themselves or buy elsewhere. At one extreme there are two members of E.L.M.A., namely G.E.C. and B.T.H., who, either immediately or through subsidiary companies, make bulbs, tubing and rod in their own glass factories, have their own cap factory and make tungsten and molybdenum wire from the ores: at the other are the small manufacturers (including some members of E.L.M.A.) who are virtually

assemblers of ready-made parts bought from other lamp manufacturers or, in the case of some Independent Manufacturers, from abroad. Many manufacturers, however, coil their own filaments, though they may buy the drawn wire, and one manufacturer not a member of E.L.M.A., also has a subsidiary company owning a cap factory. Several manufacturers produce small quantities of mouth-blown bulbs and have machines for making miniature bulbs from tubing. No manufacturers now make their own gases, although this has not always been so. There are one or two manufacturers of components who are not manufacturers of lamps.

8. The production of most lamp components on a commercial scale requires heavy installations and plant. In the glass factories, apart from furnace-equipment, there are the bulb-blowing machines and plant for the drawing of tubing and rod as well as lighter equipment for cooling, testing, and cutting into lengths. The bulb-blowing machines at present in use are being added to by two Corning "Ribbon" machines with an output sufficient to meet all demands in the United Kingdom. Some special types and sizes of bulb are still mouth-blown. Cap production requires heavy metal-stamping machinery and other heavy equipment. The manufacture of tungsten and molybdenum wire from the ores requires in the first place grinding, mixing, filtering and drying plant and in the later stages an elaborate succession of hydraulic presses and other heavy plant, and wire-drawing and winding plant and annealing furnaces. Filament-coiling requires precision machines and equipment for acid treatment.

9. The assembly of lamps for domestic lighting is generally mechanised, although there is wide variety in the capacity and speed of machines and in devices to reduce labour in loading and unloading and conducting from one machine to another, while the most delicate process, the mounting of the filament, is still done by hand in some factories, both E.L.M.A. and non-E.L.M.A. In the case of motor lamps, there appears to be less mechanisation of the assembly line than there is in the production of general service filament lamps. Practice in the production of lamps of special types varies but, in general, a greater degree of manual labour is used. The fluorescent lamp as it is now known was developed by British manufacturers just before the war; the development of production methods in this country was, however, to a great extent held up during the war years and British methods are in consequence, so we are informed, less advanced than those of American manufacturers. After the war large-scale developments were planned but (partly because demand did not come up to expectations) full development of these plans was not carried out until recently, although individual machines of the most advanced types were installed. In only one of the factories we visited in 1949, that of an Independent Manufacturer, did we see completely mechanised units for both assembly and automatic testing of fluorescent lamps.

10. In the past machinery for lamp assembly has been acquired from abroad, particularly from the United States, to a greater extent than at present. The larger manufacturers are now making an increasing quantity of lamp-assembly machinery in their own workshops from their own improved designs. The bulb-blowing machines in use in the United Kingdom, however, including the "Ribbon" machine now coming into production, are all of American origin.

(vi) Research

11. Six of the members of E.L.M.A. have some research facilities, two of them (B.T.H. and G.E.C.) on a large scale. A wide field is covered: materials, glass technology, lamp design, new kinds of lamps, and application

of lighting in special cases such as the lighting of coal mines, street lighting, vehicle lighting, photographic reproduction and cinematography are all studied. Research into these problems has yielded many results of great value in other fields of technology. Under the international arrangements, which we describe in Chapter 4, the bigger companies obtain the benefit of much research done overseas, and it was in this way that most improvements in lamps reached this country. The biggest recent advance, however, the development of the fluorescent lamp for general lighting, was the result of an E.L.M.A. member's research. Some but not all of the Independent Manufacturers undertake research, and two have the benefit of the research of an important American lamp manufacturer, particularly in the field of fluorescent lamps.

(vii) **The Distributors and Users of Lamps**

12. The distribution of those lamps which are bought by the general public is not a specialised trade. The large lamp manufacturers maintain a number of distributive depots for the lamps and other electrical goods which they make; thereafter motor lamps are generally handled as accessories by the wholesale and retail distributors of the motor trade while other types of lamps pass through the hands of wholesalers of general electrical goods, or are sold either direct to the user or to a wide variety of retailers, including electrical contractors, radio dealers, departmental stores, chain stores, the Area Electricity Boards (referred to in this report, together with the British Electricity Authority, as "B.E.A."), retail co-operative societies, ironmongers and general shops. There are no statistics about the distribution of lamps. Substantial quantities are sold to large users. Of the general service filament lamps sold by retail our impression is that about three-quarters are sold by electrical contractors, radio dealers and chain stores in approximately equal proportions: ironmongers and B.E.A. appear to account for a large part of the remaining quarter.

13. Many distributors are members of trade associations. Many, but by no means all, of the wholesalers of lamps (other than motor lamps) belong to the Electrical Wholesalers' Federation (E.W.F.). The N.E.C.T.A., Ltd. (referred to in this report as N.E.C.T.A.), the Electrical Contractors' Association of Scotland (E.C.A.S.), the National Federation of Ironmongers (N.F.I.) and the Radio and Television Retailers' Association (R.T.R.A.) Ltd. (referred to in this report as R.T.R.A.) are the principal associations to which retailers of such lamps belong. Distributors of motor lamps, if they are members of an association, generally belong to one primarily concerned with the motor trade. E.W.F., N.E.C.T.A. and E.C.A.S. are members of the Electrical Fair Trading Council, E.L.M.A. being a fellow-member.

14. We have indicated above the channels of distribution of lamps purchased by the general public. Many kinds of lamps, however, e.g. radio panel and switchboard indicator lamps, projector lamps, mercury and sodium vapour and neon lamps and lamps for interior lighting of buses and trains, are not normally retailed to the public at all, while general service filament lamps, motor lamps, flash lamps and fluorescent lamps are often sold to large buyers either by the manufacturers direct or through wholesalers or contractors. Such large buyers include manufacturers of equipment incorporating lamps (e.g. for motor cars) as well as industrial and commercial concerns, government departments and local authorities who buy in quantities for their own use.

CHAPTER 2: HISTORY OF THE ELECTRIC LAMP INDUSTRY IN THE UNITED KINGDOM

15. The electric lamp industry in the United Kingdom has been the subject of two earlier reports, in 1920 and 1928.* Some of their findings are mentioned below, but we have felt it desirable ourselves to describe briefly the historical background of the industry from early times to the present day. Certain aspects of the history are dealt with in greater detail in Chapters 4, 5 and 6.

16. The commercial development of the electric lamp dates from 1878-9, when Swan in the United Kingdom and Edison in the United States simultaneously invented the carbon filament lamp. United Kingdom patents were granted on both inventions and were subsequently upheld, although the corresponding patents were declared invalid in every other European country.† Patent disputes between the parties in the United Kingdom led to the formation in 1883 of Ediswan,‡ which for some years enjoyed a monopoly of manufacture.

17. When the patents expired in 1893-4 other British manufacturers started to produce, but found difficulty in competing with imported continental and particularly German lamps. In 1905, to meet this foreign competition, the British Carbon Lamp Association was formed; its membership included B.T.H., Ediswan, G.E.C., Siemens,§ Cryselco, Pope's Electric Lamp Co. Ltd. and the Stearn Electric Lamp Co. Ltd. Sales under this organisation were on a contract basis between individual manufacturers and individual distributors, the manufacturers maintaining minimum prices up to the wholesaler-to-retailer stage, but not beyond.

18. Between 1906 and 1909 metal filaments were developed in Europe and in the United States and the tungsten filament lamp soon replaced the carbon filament lamp for most purposes. No other technical development of such widespread application occurred until the introduction in 1930-35 of sodium and high pressure mercury vapour lamps and the invention by British manufacturers about 1935-6 of the modern fluorescent lamp. Important modifications of the tungsten filament lamp were however introduced, including the invention of the gas-filled (or so-called "half watt") lamp, the inside-frosted bulb and the coiled-coil filament (see Appendix 2).

19. Although not themselves responsible for any major development between 1878 and 1935, the leading British manufacturers have from very early times acquired the United Kingdom patent rights under a series of comprehensive agreements with the principal American and German companies. These agreements provide for cross-licensing or assignment of patents and for the exchange of technical and manufacturing experience, against payment of a one-way royalty or fee by the British parties. They are also designed to secure to each side the sole rights of manufacture and sale in their respective home territories. More recently the leading British manufacturers have made

* See Introduction, paragraph (ii).

† Report of the Committee on Industry and Trade (Balfour Committee), Part IV—Survey of Metal Industries, H.M.S.O., London, 1928.

‡ The company's original name was Edison and Swan United Electric Light Co. Ltd.; it changed its name in 1916 to the Edison Swan Electric Co., Ltd., see (a) of paragraph 2.

§ The company manufacturing lamps at that time was the Siemens Brothers Dynamo Works Ltd.; it has since changed its name to Caxton Electric Developments Ltd. and is a wholly-owned subsidiary of Siemens Brothers & Co. Ltd. Siemens Electric Lamps & Supplies Ltd., which at present manufactures lamps (see (a) of paragraph 2), is also a subsidiary of Siemens Brothers & Co. Ltd. Having regard to the continuity of the lamp-making business, we use the abbreviation "Siemens" to describe the company which formerly carried it on, as well as the one that does so now, according to the historical context.

an agreement with the principal Dutch lamp manufacturer which is similar in character, except that there is no provision for exclusive rights in the respective home territories, and no royalty. It is relevant to add that, of the present principal British manufacturers, two were originally subsidiaries respectively of an American and a German concern, a third was, before 1914, closely associated with one of the leading German lamp-makers in the production of lamps in this country and acquired its trade mark through that association, and a fourth is still the subsidiary of a Dutch company. Of the patents acquired through these international agreements those on both the squirted tungsten filament lamp and drawn tungsten wire, and on the inside-frosted bulb were subsequently held invalid in legal proceedings for infringement; the gas-filled lamp patent was upheld.

20. In 1912 B.T.H., G.E.C. and Siemens, in order to improve their technique while avoiding litigation among themselves, entered into an agreement to pool their metal filament lamp patents, and jointly issued licences to some other British lamp manufacturers. The same year these three companies, with Ediswan (all of whom were already members of the British Carbon Lamp Association—see paragraph 17), formed the Tungsten Lamp Association, an association founded primarily on patent pooling, the declared objects of which were to promote and protect the interests of manufacturers of and dealers in electric lamps in the United Kingdom, to conduct and assist in making experiments and research for the improvement of electric lamps, and to enter into agreements with members and wholesale and retail dealers relating to the manufacture, supply and sale of electric lamps.

21. In 1919 the members of the British Carbon Lamp Association and the Tungsten Lamp Association joined together to form the Electric Lamp Manufacturers' Association of Great Britain Ltd.* This should not be confused with E.L.M.A. which in 1933 took over most of the functions of the Electric Lamp Manufacturers' Association of Great Britain Ltd., although the latter is still in being—see paragraphs 26 and 37. The Objects of the 1919 Association were "to formulate, regulate and secure uniformity of practice in the manufacture, sale and purchase of electric incandescent lamps in the United Kingdom in such a manner as to benefit both the trade and public by the adoption of standard conditions of sale and of product". Under these provisions the Association in practice fixed common retail prices and trade terms based on the annual quantities purchased, and maintained a system of exclusive agreements, exclusivity and price maintenance being supported by a register (called the "List Prices Nett Register", but known in the trade as the "Black List") of persons who were only to be supplied at full retail prices.

22. In reporting the existence of these conditions, the 1920 Sub-Committee on Trusts found that the Association controlled between 90 per cent. and 95 per cent. of the output of the industry and that while the Association might not necessarily pursue a policy of inflated prices and inordinate profits as a result of its position, there would be no effective check in the shape of competition should it decide to do so. The Sub-Committee found also that

* In 1920 membership of the Electric Lamp Manufacturers' Association of Great Britain Ltd. consisted of G.E.C., B.T.H., Ediswan and Siemens with Metrovick (who had acquired a former German lamp factory in 1916), the Foster Engineering Co., the Stearn Electric Lamp Co. Ltd., "Z" Electric Lamp Manufacturing Co., Pope's Electric Lamp Co. Ltd. and Dick Kerr & Co. Ltd. Cryselco became a member in 1922 and B.E.L.L. at about the same time. (The company which was called Metropolitan-Vickers Electrical Co. Ltd. in 1920 has since changed its name to Associated Electrical Industries Ltd. and transferred its manufacturing business to a subsidiary company, the existing Metropolitan-Vickers Electrical Co. Ltd. (see (a) of paragraph 2). We use the abbreviation "Metrovick" to describe either company according to the historical context).

"immoderate profits" were being made on the manufacture of lamps before 1914 and the discounts allowed to distributors ought to be reduced. It drew the inference that non-association manufacturers, while still making a satisfactory profit and despite their smaller output, were able to sell at a lower price than Association members. Since, however, Association retail prices were universally adopted the effect of these lower prices was reflected in terms to the reseller rather than in any benefit to the public. The Sub-Committee further drew attention to the close connections between patent rights and the formation of the Electric Lamp Manufacturers' Association of Great Britain Ltd., to the grant of licences by the patent-owning members of the Association to other members against payment of royalty, to the continued acceptance by members so licensed of patents held invalid in the High Court and to the restriction (normally to a 10 per cent. per annum increase) imposed on the output of lamps manufactured for the home market under licence. The Sub-Committee regarded this method of limiting expansion as more harmful than a simple percentage quota would have been, though they were aware that there were objections to such a system also. The Sub-Committee also drew attention to the danger that the interests of the British industry would be subordinated to American interests, and that an international combination might "control supplies and dominate prices over a considerable part of the world"; and it recommended that "the operations of an Association which so effectively controls an important industry should be subjected to public supervision and control". Many of the features criticised by the Sub-Committee continued.

23. The production and distribution of lamps in the United Kingdom were thus already regulated to a considerable extent in the years immediately following the 1914-1918 war, the home market being partly protected against competitive imports until 1931 by the gas-filled lamp patent and both before and after that date by the territorial provisions of licensing agreements between the principal British and foreign manufacturers. Although these same agreements had the effect of prohibiting the export of British-made lamps to certain markets, the division of export markets was not a function of the Association, nor did the quota restrictions imposed on licensees of the principal members apply to exports. In other countries war-time expansion of the lamp industry led in the years following 1918 to fierce competition, particularly in Europe where we have been told much business was done at production cost or less.

24. It was to meet this situation that the leading lamp manufacturers of the world in 1925 negotiated the General Patent and Business Development Agreement (referred to in this report by its usual name of the "Phoebus Agreement" and so called after the administrative office—S.A. Phoebus—set up in Geneva), itself the successor of several European price agreements and the outcome of earlier patent licensing arrangements between individual manufacturers and groups and of preliminary consultations over a number of years. All the members of the Electric Lamp Manufacturers' Association of Great Britain Ltd. adhered directly or indirectly to this agreement. The Phoebus Agreement divided world markets, excluding only the United States and Canada, into territorial zones and gave each party to the agreement in each territory the right year by year to the same proportion of the total business done by the parties in that territory as he had in 1924. It also laid down a common policy on sales and contemplated cross-licensing of inventions, and standardisation. The agreement did not apply in the United States or Canada because the parties, by a series of complementary agreements, recognised the exclusive interests of the General Electric Company of New York (referred to in this report as "the American G.E.C.") and its licensees in those territories.

The American G.E.C.'s interests in territories outside the United States and Canada were protected and regulated by the same complementary agreements and also by the adherence of certain of its subsidiary companies to the Phoebus Agreement. The Phoebus Agreement was expressed to expire in 1955 but its term was curtailed by the 1939-45 war; new agreements between a smaller number of producers and affecting fewer territories were made in 1941 and in 1948. All these agreements are described more fully in Chapter 4.

25. The Phoebus Agreement contained a provision that outside lamp-manufacturing businesses could be acquired only for the joint account of the parties (see Appendix 8, Article 14). A number of lamp factories were so acquired, and the Phoebus parties sought to meet the competition of manufacturers who were not parties by producing lamps in jointly-owned factories to sell at prices lower than those fixed for their own products: these lamps did not bear any of the parties' usual brand names. We describe the operation of the jointly-owned Phoebus factories more fully in Chapter 8. Before the introduction of the general tariff in 1932 a substantial proportion of the output of these factories was imported into the United Kingdom; thereafter the Phoebus parties' factory in the United Kingdom, Splendor, fulfilled the same function.

26. In 1933 the members of the Electric Lamp Manufacturers' Association of Great Britain Ltd. formed themselves into the Electric Lamp Manufacturers' Association (E.L.M.A.) and were joined by the British Philips Company and Stella, subsidiaries of Philips (Holland). E.L.M.A. is an unincorporated body and a registered trade union,* membership of it being confined to manufacturers. E.L.M.A.'s present membership is shown in (a) of paragraph 2 above, and its objects, organisation and functions and the history of its membership are described in Chapter 3. E.L.M.A. took over and maintained the system of common prices at all stages and of exclusive agreements formerly operated by the Electric Lamp Manufacturers' Association of Great Britain Ltd., and in the years since its formation has laid increasing emphasis on standards and quality of production and entered into a series of arrangements with distributors' associations designed to encourage them to co-operate in its arrangements for regulating distribution (see Chapters 11 and 12). In all these developments the lead has been taken by G.E.C. and the A.E.I. Group, acting in very close co-operation.

27. The members of E.L.M.A. thus sought to meet by higher quality and by exclusive agreements with distributors the price competition of imported—particularly Japanese—lamps and of lamps made by independent British manufacturers. These lower-priced lamps, mostly general service filament lamps, were distributed chiefly through the chain stores, retail prices varying from sixpence to a shilling at a time when the corresponding E.L.M.A. price was 1s. 7d. or 1s. 9d. With such a wide range of prices, the appeal to quality could hardly be expected to deter an increasing proportion of the public from buying the cheaper lamps. The E.L.M.A. members themselves, in response to complaints about their high prices, arranged in 1935 to produce limited quantities of a "Type B" lamp designed to have a lower quality than their normal products and to be retailed at a shilling (see Chapter 9). In 1937 one of the principal independent manufacturers of a one shilling lamp, Crompton, became a member of E.L.M.A., and in 1938 the members jointly acquired the lamp-making interests of Ismay Industries Ltd., including Britannia which had been particularly successful in capturing the chain store trade from the Japanese by producing lamps to sell at sixpence (see

* The Electric Lamp Manufacturers' Association of Great Britain Ltd. remains in existence as the holder of property leases and to fulfil certain educational functions.

Chapter 8). By the beginning of the 1939-45 war, therefore, although there were two (or possibly three) distinct price markets for lamps, they were all supplied by the E.L.M.A. members or by companies controlled by the members, and outside competition in any of those markets was on a very small scale. During and since the war the range of prices has been very greatly diminished by increases at the bottom of the scale and reductions at the top (see Chapter 14), and outside competition has grown substantially in volume.

28. Of the seven non-Association lamp manufacturers mentioned in the report by the 1920 Sub-Committee on Trusts only one, Maxim Lamp Works, remains to-day as an Independent Manufacturer; two, Cryselco and Stella, are now members of E.L.M.A.; one is now a distributor of lamps; the subsequent history of the other three has not been traced. The Independent Manufacturers since that time have generally been small concerns producing a limited range of lamps,* although there have been some notable exceptions. One such company, Crompton, built up a successful trade in lamps at E.L.M.A. prices and also in lamps retailing at 1s. 0d., but became a member of E.L.M.A. in 1937 as part of the settlement of litigation for infringement of patents. The lamp businesses of Ismay Industries Ltd., which made cheap lamps sold in the chain stores, now belong to two of the Controlled Companies, Britannia and Ismay, having been jointly acquired by members of E.L.M.A. in 1938. During and since the 1939-45 war Thorn and Ekco-Ensign have expanded rapidly, and their present position as competitors with E.L.M.A. is similar to that of Crompton before 1937.

29. In the years between 1918 and 1939 the members of E.L.M.A. developed the production of lamp components, and in particular of machine-made glass bulbs and tubing, caps and tungsten and molybdenum wire. Two members, G.E.C. and B.T.H., own the only factories in the United Kingdom producing machine-made bulbs and one of the two cap factories. The other cap factory, set up during the war, is owned by the largest Independent Manufacturer, Thorn, but in general the Independent Manufacturers have continued to rely on the supply of components from outside sources, mainly from imports or, during and since the war, from E.L.M.A. members.

30. During the war the Ministry of Aircraft Production and later the Ministry of Supply assumed control of lamp production, allocating basic materials and available labour between all manufacturers and setting production targets. Control was removed in August, 1945, but a system of voluntary allocation of glass bulbs was reintroduced in 1947 and has not yet been formally wound up. The prices of filament lamps also came under control during the war. From 1940 to 1948 they were subject to the Prices of Goods Act, 1939, by which a trader's net cash profit on the sale of a given type of lamp was restricted to the amount of profit obtained in August, 1939. From 1948 to July, 1949, there was a Maximum Prices Order which imposed a standstill of prices on certain types of filament lamps including general service filament lamps but not motor lamps. Discharge lamps have not at any time been subject to price control and since July, 1949, there has been no statutory control of the prices of filament lamps.

* Usually general service filament lamps or lamps of very limited use.

PART II
THE MANUFACTURING SIDE
CHAPTER 3: THE ELECTRIC LAMP MANUFACTURERS'
ASSOCIATION

(i) Objects, Organisation and Functions of E.L.M.A.

31. E.L.M.A. fixes common prices at all stages for each type of lamp made by members, decides which types shall be made, settles the scales of discounts and quantity rebates to be allowed to purchasers, classifies purchasers into various categories and enters into individual agreements with exclusive wholesalers and retailers and with some users. E.L.M.A. as such does not fix or administer the quotas and is not directly concerned with patent policy, but new members since 1933 have only been admitted under arrangements which establish quotas for them and we are informed that it would now be a necessary condition for membership that an applicant should become a party to the 1948 Lamp Agreement (which establishes quotas for the parties) and should be acceptable as a licensee under the members' patents.

32. We now consider the nature of E.L.M.A.'s current Objects, Regulations, Bye-laws and Rules (see Appendices 3, 4, 5 and 6 respectively) and the structure and functions of the organisation operating under these provisions. In brief the Regulations lay down the constitution and rules of conduct of business of E.L.M.A., the Bye-laws contain disciplinary provisions for distributors, and the Rules contain disciplinary and other provisions for the members (not published) and published prices, terms and conditions of sale for distributors.

33. The principal declared Object of E.L.M.A. is to promote and protect in the United Kingdom market "the interests of the public, the trade and the Manufacturers of Electric Lamps" and to impose such conditions on the conduct of the trade as, in E.L.M.A.'s opinion, may be conducive to those ends (Object 1). Subsidiary aims include:—

(a) the making of agreements between lamp manufacturers for securing "more advantageous utilization of their manufacturing facilities", high quality, "more economical arrangements" for distribution, more efficient methods of illumination and economical production "with advantage to the public" (Object 2);

(b) the making of agreements between the members, individually or jointly, and the distributors and users of lamps, particularly for the maintenance of the manufacturers' prices and terms and conditions of sale (Object 3);

(c) the making of Regulations, Bye-laws and Rules and their enforcement, and the enforcement of agreements, by penalties (Objects 1 and 4);

(d) the prevention, as far as legally possible, of the sale of lamps of low quality (Object 5);

(e) the provision to the members of information about the industry and generally the promotion of their interests (Object 6).

34. The Regulations lay down the constitution and procedure of E.L.M.A. They set out the names of the first members* (Regulation 3) and cover *inter alia* the terms of membership (Regulations 2 and 4 to 12), the procedure for General Meetings (Regulations 13 to 31) and the constitution, powers and

* These were identical with the members of the so-called "British Group" for the purposes of the Phoebus Agreement—see Chapter 6.

procedure of the Council of Management (Regulations 38 to 53). Expenses are shared by members in proportion to their voting power (Regulations 7 and 8): the voting power of the original members had to be determined by the Council (on which they were all initially represented), but subsequent adjustments due to changes in membership are determined by the General Meeting (Regulations 32 and 39). In practice the original voting powers were based on the "local participating percentages", i.e. the quota percentages, for the United Kingdom as determined for the purposes of the Phoebus Agreement: the voting powers of the present members, as determined by the General Meeting, still correspond with the quotas, except that Aurora has no vote. G.E.C. and the A.E.I. Group together have slightly less than two-thirds of the voting power. Voting powers in the Council are in the same proportions as for General Meetings, decisions being by two-thirds majority except in the case of decisions on prices, terms and conditions of sale where a three-quarters majority is required* (Regulation 45).

35. In practice, the business of E.L.M.A. is managed by the Council, the proceedings of the General Meeting being almost entirely formal. At the present time all members of E.L.M.A. are represented on the Council except the two smallest (B.E.L.L. and Aurora) and Stella, which is indirectly represented through the British Philips Company. Besides the Council there are six principal Committees and many sub-committees and joint negotiating committees with other trade organisations and technical and official bodies.

36. The Bye-laws provide for the setting up of the "N/T" List (referred to in this report by its common name of the "Stop List") (Bye-laws 2 to 6) and the submission of returns by the members for the purposes of E.L.M.A.'s system of rebates (Bye-law 7): we deal with both these matters in Chapter 11. The Rules lay down in detail the terms and conditions of sale of the members' lamps by the members themselves and by the distributors: they also prescribe for the members a code of conduct in such matters as standardisation, packing, advertising, and the employment of agents. They provide in the greatest detail for a system of strict maintenance, at all stages of distribution and to each of several defined classes of purchaser, of an appropriate common price for each type of lamp manufactured to common minimum standards, and the rules of conduct applied to members of E.L.M.A. in effect prevent any form of competition between members which could, by any stretch of the imagination, be regarded as competition in price whether or not price-cutting is its main effect or purpose. The control of claims in advertisements is described in paragraph 133. We describe the E.L.M.A. selling system, including the standard agreements in which distributors of the members' lamps bind themselves to observe the Rules, in Chapter 11.

37. A large proportion of the work of E.L.M.A. is connected with the administration of the selling system, including the determination of the prices and terms applicable to the various classes of buyer,† the appointment of individual distributors, the classification and listing of users, adjudication on complaints or breach of the Regulations, Bye-laws or Rules and the allocation among members of their share of the cost of the rebates paid by E.L.M.A. to distributors and users. E.L.M.A.'s functions cover also problems of lamp design and standardisation, technical and production problems arising from the requirements of large buyers, the exchange of technical and marketing experience between members, and relations with other industries, particularly with associations of distributors and fittings makers.

* This is in accordance with the procedure for the "Local Meetings" set up by the Phoebus organisation to control prices and terms of sale in particular territories—see Chapter 4.

† See also Chapters 11 and 14 where the method of fixing prices is more fully described.

and with government departments, scientific and technical bodies and the electrical industry generally. Public relations on an even wider scale are maintained through the Lighting Service Bureau, an organisation operated by the Electric Lamp Manufacturers' Association of Great Britain Ltd. with the advice of E.L.M.A., whose principal function, we are told, is education in the proper use of lighting.

38. E.L.M.A. employs a full-time Director and a permanent staff of thirty, while the Lighting Service Bureau has a staff of twenty-five. The expenditure of E.L.M.A. in 1948, excluding the payment of rebates to distributors and users, was nearly £50,000, more than twice that in pre-war years, the principal item being £22,000 for publicity as compared with less than £1,000 before the war; in addition the Electric Lamp Manufacturers' Association of Great Britain Ltd., spent £25,000, practically the whole of which was presumably devoted to the Lighting Service Bureau. These figures do not, however, represent the total cost of E.L.M.A.'s activities since they do not include the cost of the work regularly carried out by the directors and employees of the individual members who constitute the Council and the various Committees and sub-committees of E.L.M.A. Furthermore E.L.M.A. does not concern itself with the division of the total business among the members, which is arranged by other means and involves additional expenditure (see Chapter 6).

(ii) Membership of the Association

39. Since the expenses of E.L.M.A. are borne by members in proportion to their voting powers there is no annual subscription or entrance fee.

40. The basic qualification is that members "must be persons manufacturing electric lamps" (Regulation 2). The Council has the power "to elect new members of the Association and from time to time to determine the eligibility of and the conditions under which any applicant for membership shall be elected, and the Council may in their discretion refuse any application for election without giving any reason for such refusal" (Regulation 41). We are told that the Council considers each application on its merits and that there is no right of entry; an acceptable applicant must have achieved the high technical standard set by E.L.M.A., be capable of carrying out the common obligations of membership, be acceptable as a licensee under members' patents and adhere to the 1948 Lamp Agreement* (which has replaced the Phoebus Agreement so far as the members are concerned—see paragraph 24); in addition the Council would consider whether the applicants were "the type of people we want or not" and indeed whether any increase at all in membership was desirable.

41. Members of E.L.M.A. cannot resign voluntarily until 1955† (Regulation 9), except in cases where they no longer qualify for membership because they have stopped making lamps; they may, however, be excluded or called upon to resign on committing any act considered by the Council detrimental or contrary to the interests of E.L.M.A. (Regulation 10). In no case has any member been excluded under this provision. We have noted, moreover, that one of the present members, Metrovick, although no longer making lamps, has not been called upon to withdraw: lamps bearing this company's brands are made by members who are financially associated.

42. In 1920 the Electric Lamp Manufacturers' Association of Great Britain Ltd. had ten members, including five—G.E.C., B.T.H., Ediswan, Metrovick and Siemens—who are still members of E.L.M.A. By 1933, four of the

* This agreement involves, among other things, acceptance of a quota—see Chapter 6.

† A date which coincides with the expressed date of the termination of the Phoebus Agreement and of the successor agreement of 1948.

other five members had stopped making lamps—three of them under agreements with the principal members—and had dropped out of the Association: the fifth, Pope's Electric Lamp Co. Ltd., was for all practical purposes absorbed by G.E.C. and had also ceased to be a member (see footnote (d) in paragraph 2); and the only new members were Cryselco and B.E.L.L. On the formation of E.L.M.A. in 1933 the seven* members of the former Association were joined by the British Philips Company, Stella and A.C. Cossor Ltd., all of whom had in the meantime become parties, directly or indirectly, to the Phoebus Agreement. Since that date two members have been admitted, Aurora in 1936 and Crompton in 1937, and we describe in Chapter 5 the circumstances of these admissions. A.C. Cossor Ltd. has in the meantime stopped making lamps and withdrawn, so that there are now eleven members, as set out in (a) of paragraph 2.

43. We are told that during the past ten years only two formal applications for membership have been received and that, since neither applicant was making a wide range of lamps, both were refused; on the other hand offers of membership by E.L.M.A. to British Luma have been consistently refused because British Luma objects to some of the principles and methods by which E.L.M.A. operates.

(iii) Financial Links of E.L.M.A. Members

44. We reproduce at Appendix 7 a chart showing the known financial links between the members of E.L.M.A. It will be seen that there are five main companies or groups, namely G.E.C., the British Philips Company (with Stella), the A.E.I. Group, Siemens and Crompton; in relation to these the two independently-owned members, Aurora and B.E.L.L. are very small, while Cryselco, which is jointly-owned by G.E.C. and Philips, is managed commercially by the former and technically by the latter.

45. The only financial link known at present† between any of the five main companies or groups—apart from their common ownership of certain companies—is the American G.E.C. through its wholly-owned subsidiary, the International General Electric Company Inc. (referred to in this report as "I.G.E.C."), which was formed to deal with the interests of the parent corporation outside the United States. I.G.E.C. owns a little more than one-quarter of the ordinary and about 10 per cent. of the preference capital of A.E.I. and it also has, indirectly through Philips (Holland), a small interest in the British Philips Company and Stella. We have seen nothing to indicate that the policy of E.L.M.A. is influenced by these American connections of some of its members.

CHAPTER 4: INTERNATIONAL AGREEMENTS

46. The activities of E.L.M.A. are confined to the United Kingdom market but we find that they have been co-ordinated with and to some extent conditioned by the international agreements of its members, which in effect have created a complementary system. The collective international agreements indeed have set up a succession of virtual international associations of lamp manufacturers which in particular fields have exercised just as close a control as E.L.M.A. over the trade of their members; it is these international associations which have arranged the division between the members of the total business in the markets with which they were concerned.

* B.E.L.L. is not named in the Regulations as one of the first members of E.L.M.A. (see Appendix 4 and footnote to paragraph 34) but was admitted immediately afterwards.

† On the 30th July, 1951, the Board of Trade announced that A.E.I.'s offer to purchase the minority holding of stock in Siemens Brothers & Co. Ltd., now vested in the Custodian of Enemy Property, had been accepted.

including the United Kingdom market. Until 1939 nearly all the big lamp manufacturers of the world were parties to these arrangements, which applied to all markets except the United States and Canada* ; now they are confined to the principal members of E.L.M.A. with Philips (Holland) and to certain areas which include the United Kingdom (see Appendix 9, Annex A).

The Period before the Phoebus Agreement

47. By the early 1920's there were, outside the United Kingdom, four major lamp manufacturers in the world, namely, the American G.E.C., Osram G.m.b.H. Kommanditgesellschaft, of Berlin (referred to in this report as "O.K. "), Philips (Holland), and Vereinigte Glühlampen und Elektrizitäts A.G., of Ujpest, Hungary (referred to in this report as "the Hungarian Company"). The relations between individual British manufacturers and the American G.E.C. and O.K. were already close, but Philips (Holland) and the Hungarian Company, who were later in the field and do not appear to have controlled any fundamental inventions, were commercial competitors with whom there were no arrangements.

48. The present B.T.H. was formed in 1896 with exclusive rights to make and sell in the United Kingdom machinery and apparatus made under the patents of a predecessor of the American G.E.C. By 1905 the American G.E.C. held a controlling interest in B.T.H. and the two companies made an agreement for inter-change of patents. Under this agreement, B.T.H. retained exclusive rights under the American G.E.C.'s lamp patents in the United Kingdom, thus keeping the American G.E.C.'s lamps out of the United Kingdom market: only subsequently and gradually was it given certain non-exclusive rights to export, but not to the exclusive markets of the American G.E.C. In 1919 the American G.E.C. transferred its interests outside the United States to its wholly-owned subsidiary, I.G.E.C. Under an agreement between B.T.H. and I.G.E.C. the former's rights to export were further extended, there was to be exchange of manufacturing information as well as patents and a fee became payable by B.T.H. calculated as a percentage of its output. It was accordingly through B.T.H. that the American inventions in the field of tungsten lamps, and particularly the drawn tungsten filament and the gas-filled lamp, were exploited in this country.

49. G.E.C. on the other hand was a British-owned company which made a similar series of agreements with the German manufacturers, the most important of whom merged their lamp interests after the 1914-18 war to form O.K. G.E.C. and O.K. recognised one another's exclusive rights, as to the former in the United Kingdom and the rest of the British Empire† except Canada, and as to the latter in the rest of the world except North America: patents and manufacturing information were exchanged and a royalty was payable by G.E.C.

50. G.E.C. also made an agreement with I.G.E.C. in 1922 under which G.E.C. was excluded from the American market, I.G.E.C. having exclusive use of G.E.C.'s patents there. There was non-exclusive cross-licensing in the British Empire, except the United Kingdom and Canada, and exchange of manufacturing information. G.E.C. was to pay a royalty on all its sales in the non-exclusive territory.

51. In 1921 B.T.H. and G.E.C. had concluded an agreement providing for non-exclusive cross-licensing in the United Kingdom of all patents owned or controlled by each party and for exchange of information. It follows

* But certain parties to the Phoebus Agreement, including the British parties, refrained from exporting to the United States or Canada under separate agreements—see paragraph 24.

† The use of the term "British Empire" is explained in the Introduction.

that G.E.C. had the benefit of the I.G.E.C. information and patents in the United Kingdom through B.T.H. Thus from an early date B.T.H. and G.E.C. had the benefit of the inventions of the principal American and German manufacturers respectively and a guarantee against competition from them in their own home market: in return each of the British manufacturers undertook to keep out of the much larger exclusive market of its foreign partner and imparted its own inventions and paid a royalty to that partner.

52. Similar individual cross-licensing arrangements between lamp manufacturers are understood to have existed in Europe as far back as the early 1900's, and were supplemented there by agreements of a more general nature, including joint selling arrangements with fixed prices and terms. The various sales syndicates, however, broke down successively because there were always outside manufacturers to undercut them. By 1918 the pre-1914 pattern had greatly altered and the market had expanded and was continuing to expand. New productive capacity had been developed in neutral countries, and Philips (Holland) in particular had been able to create a world wide market. Elsewhere, new frontiers, soon to be protected by tariff walls, had separated manufacturers from their normal markets. There was probably, in any case, a considerable surplus of productive capacity in Europe and we are informed that as a result dumping at prices representing cost or less was a common occurrence. By 1924 the United Kingdom was open to imports from all sources, except the American G.E.C. and O.K. under the agreements described above; but the valuable patent rights held by the E.L.M.A. members afforded considerable protection.

The Period of the Phoebus Agreement

53. The American G.E.C. was particularly concerned to retain its hold on its incomparable home market. It had also invested widely through I.G.E.C. in lamp-manufacturing concerns in Europe and elsewhere and had agreements with them which were similar in nature to the agreement between I.G.E.C. and B.T.H. The American G.E.C. was accordingly as much interested as the European manufacturers themselves in putting a stop to what all regarded as the menace of cut-throat competition.

54. Negotiations, primarily between I.G.E.C., O.K., Philips (Holland) and the Hungarian Company, led in 1924 to the signature of the Phoebus Agreement. I.G.E.C. did not ratify its representative's signature, but was effectively represented by the "Overseas Group" of I.G.E.C.-controlled companies located outside the United States who jointly became a party to the agreement. The British companies were not brought in until the arrangements were virtually completed: the American representatives appear to have assumed their compliance during the negotiations with O.K.*

55. The Phoebus Agreement is substantially reproduced in Appendix 8 and its effects may be summarised briefly as follows:—

(a) The principal lamp manufacturers of the world† agreed to regulate their trade outside North America by preserving the existing pattern in any given territory by means of percentage quotas.

* See *United States of America v. General Electric Company et al.*, Civil Action No. 1364, 82 F. Supp. 753, page 833, letter of April, 1924, from the European representative to the Chairman of I.G.E.C.: "The intention is to leave the business of any important country in the hands of the organization of that country if it is in position to hold a substantial portion of it. This . . . will be a matter of considerable importance to us if we undertake to bring the English group in". At one point the European representative of I.G.E.C. appears to have considered the possibility of diverting Philips (Holland) from the American markets by offering the British market as "bait".

† The number of initial signatories is not known, but see Appendix 8 for a full list of those who had signed the agreement by 1937. The list also shows the composition of the "Overseas Group".

(b) No party could oppose another party's patents and any party was entitled to be licensed under another's patents on normal commercial terms if these patents would otherwise prevent it reaping the benefits of the agreement.

(c) A permanent central organisation was set up at Geneva to administer the agreement generally, including the highly complex provisions dealing with quotas as well as standardisation and other technical matters and arbitration in disputes between the parties: there were also provisions in the agreement prohibiting the giving of aid to non-party lamp manufacturers and providing for the joint acquisition of outside lamp businesses, provisions which, among other things, enabled a joint attack to be made on so-called "outsider" manufacturers.

(d) Sales committees ("Local Meetings"), representing the parties trading there, were set up in each country to fix obligatory prices and terms of sale.

(e) A party was not to try to gain any undue advantage, immediate or ultimate, over other parties, by actions not in accordance with the letter or spirit of the agreement.

56. Although neither the American G.E.C. nor I.G.E.C. was formally a party to the Phoebus Agreement it was said in the judgment in the recent action* against the American G.E.C. and others under the anti-trust laws of the United States that the American G.E.C. was the hub of "a gigantic world cartel", having regard to the prominent part played by I.G.E.C. in the negotiations, the complementary agreements made by I.G.E.C. with various parties to the Phoebus Agreement and the actual adherence to that agreement of the "Overseas Group". After the conclusion of the Phoebus Agreement I.G.E.C. made new agreements with most of the principal Phoebus parties providing for exchange of patents and technical information, the recognition of the United States and Canada as the exclusive territory of I.G.E.C., the grant of exclusive rights to the other parties in their own territories so far as I.G.E.C. was concerned and the mutual grant of non-exclusive rights in common markets.

57. One such agreement was that between I.G.E.C. and A.E.I. and its subsidiaries, including B.T.H., Ediswan and Metrovick. This agreement made in 1930 superseded the agreement between I.G.E.C. and B.T.H. to which we have referred in paragraph 48; it was in turn replaced by a new agreement in 1939. The main effects of this, so far as this report is concerned, are that (a) I.G.E.C. may not manufacture or sell in the United Kingdom market, (b) A.E.I. and its subsidiaries may not manufacture or sell in North America, (c) the parties license one another exclusively in their respective exclusive territories and non-exclusively elsewhere, except in so far as I.G.E.C. has already granted exclusive rights to other manufacturers, (d) there is complete exchange of manufacturing information and (e) A.E.I. and its subsidiaries pay I.G.E.C. a fee based on the factory cost of the lamps they make in the United Kingdom.

58. Thus at the outbreak of the 1939-45 war all the principal lamp manufacturers of the world except the independent Japanese manufacturers, whose output and exports increased greatly between the wars, were associated by a network of agreements. The American G.E.C. was protected in its home market by the individual agreements between I.G.E.C. and the other manufacturers, who were protected in their own home markets from the competi-

* United States of America v. General Electric Company et al., Civil Action No. 1364. The action is not completed and the judgment referred to is the "opinion" of the judge in the District Court.

tion of American G.E.C. and its subsidiaries. Some of these other manufacturers, e.g., G.E.C. and O.K., had similar agreements with one another. The effect of the Phoebus Agreement, superimposed on the individual agreements, was to extend universal mutual recognition to the reservation of home markets to home manufacturers and to regulate competition in common markets by stabilizing the pattern of trade there: this latter effect applied equally to the American G.E.C. whose interests in non-American territories were represented by the participation of the Overseas Group in the Phoebus Agreement.

59. In the United Kingdom those members of E.L.M.A. who were parties to the Phoebus Agreement, namely G.E.C., B.T.H., Ediswan, Metrovick, Siemens and Cryslerco, formed the "British Group" which enjoyed a block quota based on the aggregate sales of the six members.* The sharing of that quota between the six members was a matter for private settlement and we deal with it in some detail in Chapter 6. These companies by acting as a group under the joint leadership of G.E.C. and B.T.H. were able to deal on more or less equal terms with the other principal Phoebus members.

60. In the United Kingdom market accordingly the British Group retained under the quota arrangements its dominant position, including control of prices and terms of sale, and the interest of Philips (Holland) was limited and stabilized; the rights of other foreign manufacturers in the market, including O.K., were very small. The adherence of Crompton to the Phoebus Agreement in 1937 did not substantially alter this position, although it amounted to a recognition of Crompton's right to retain the share of the trade it had built up in opposition to the Phoebus parties. The American G.E.C. was prevented from competing in the United Kingdom by individual agreements. The members of the British Group also had the benefit of the patents and manufacturing experience of the American G.E.C. and O.K., but in exchange not only imparted their own knowledge and inventions to those companies but also paid them fees or royalties. With Philips (Holland), however, they made no such agreements until 1938, when they made a very limited agreement providing for cross-licensing without royalty on either side under United Kingdom patents for filament lamps only, and setting up a committee for joint litigation under such patents.

The Period after the Phoebus Agreement

61. The outbreak of the war in 1939 made the Phoebus Agreement ineffective and terminated the agreement between G.E.C. and O.K. By 1941 the British Group with A.C. Cossor Ltd., Crompton, Philips (Holland),† Stella and the (American) Overseas Group had entered into another agreement, called the "New General Agreement", which substantially maintained the Phoebus arrangements except in enemy-occupied and certain neutral territories. In 1945 the (American) Overseas Group withdrew from that agreement,‡ and a new agreement has since been made and is now in operation. The agreement, called the "1948 Lamp Agreement",§ is substantially reproduced in Appendix 9. The parties to it are the members of the British

* A. C. Cossor Ltd. did not become a member of E.L.M.A. until after it became a party to the Phoebus Agreement. It was never a member of the British Group, but its small quota was in effect transferred to the British Group. The British Philips Company had not been formed in 1924 and that company and Stella were not admitted to E.L.M.A. until 1933. They continued thereafter to enjoy individual Phoebus quotas as did Crompton when it joined E.L.M.A. and became a party to the Phoebus Agreement in 1937.

† Then located in the Dutch West Indies and the United States.

‡ We have not seen any document stating specifically the reason for withdrawal but the decision is assumed to have been connected with the action against the American G.E.C. under the anti-trust laws in the United States.

§ It was signed in June, 1950 but was deemed to have come into force in 1948 (Article 15).

Group, Crompton, Philips (Holland) and Stella, and it applies only to their trading in the United Kingdom and the rest of the British Empire excluding Canada. The relationship between participation in this agreement and membership of E.L.M.A. is as follows:—

Companies in both E.L.M.A. and the 1948 Lamp Agreement

G.E.C.	Metrovick	Crompton
B.T.H.	Siemens	Stella
Ediswan	Cryselco	

Companies in E.L.M.A. but not in the 1948 Lamp Agreement

The British Philips Company—(but see Philips (Holland) below).
 B.E.L.L. } —(but see paragraph 103).
 Aurora }

Companies not in E.L.M.A. but in the 1948 Lamp Agreement

Philips (Holland)—(but see the British Philips Company above).

62. The agreement maintains the quota arrangements for those territories to which it applies as between the signatory parties and most of the other provisions of the Phoebus Agreement in so far as they are applicable. It establishes separate quotas for the United Kingdom market. Representatives of the parties to the agreement assemble from time to time in General Meetings and in meetings of the Executive Committee and of standing committees appointed to give advice on matters of accountancy and statistics, the “unit” valuation of the various classes of lamps (see paragraph 91), legal matters, standardisation and technical development. The parties also control the Electric Lamps Statistical Office Ltd., referred to in the agreement as the “Administrative Office”, which assembles statistics particularly but not exclusively for the purpose of calculating quotas, penalties and compensation (see Chapter 6). The organisation created in London by the parties to this agreement is in fact similar to that formerly set up in Geneva under the Phoebus Agreement, subject to the diminished scope of the present agreement. As is explained in later chapters, however, many of the practices of the parties under the Phoebus organisation have been modified or dropped. “Local Meetings” continue to control prices and terms in all the countries covered by the agreement: the functions of the Local Meeting for the United Kingdom market accordingly overlap those of E.L.M.A., although in practice the largely common membership prevents the possibility of conflict.

63. Under existing agreements accordingly the British manufacturers are still precluded from trading in North America and are protected from the competition of the American G.E.C. in the United Kingdom. In June 1951, however, new agreements were made with I.G.E.C. which provide for the termination of the existing agreements when the current United States action against the American G.E.C. and I.G.E.C. under the anti-trust laws is concluded. They leave the United Kingdom market open to the American G.E.C., and the North American market to the British manufacturers. In the United Kingdom and the rest of the British Empire, except Canada, competition with Philips (Holland) is regulated and limited by percentage quotas. We are told that there are no agreements or understandings which limit or regulate competition with the British manufacturers by the American G.E.C. or its subsidiaries elsewhere than in the United Kingdom, North America and Japan or by Philips (Holland) outside the United Kingdom and British Empire. There are no arrangements with the German, Hungarian

and Japanese manufacturers, who have not so far recovered their pre-war importance in world markets.

64. The British manufacturers continue to exchange patents, research and manufacturing information with, and to pay royalties or fees to, the American G.E.C. but the complementary agreement between G.E.C. and O.K. terminated in 1939. When the existing agreements with I.G.E.C. are terminated, however (see paragraph 63), these exchanges will cease, but non-exclusive licences under existing patents will be exchanged. We note that the British manufacturers receive a monetary payment as part consideration for the termination of the existing agreements. G.E.C. and B.T.H. have also recently concluded an agreement with Philips (Holland) for exchange of manufacturing information and research and non-exclusive cross-licensing in the United Kingdom and elsewhere: no royalty is payable on either side. The agreement appears to envisage a more intimate relationship of the British parties with Philips (Holland) than has hitherto existed. Unlike any members of the British Group, Crompton made an agreement with Philips (Holland) before the war under which Crompton paid a royalty in return for non-exclusive licences under the Philips patents for all types of lamps in the United Kingdom and elsewhere. This agreement is still in operation.

CHAPTER 5 : PATENTS AND INVENTIONS

(i) Introductory Note

65. Patents, and the use made of them, have played a large part in the development of the lamp industry and bear a close relation to the matters into which we are inquiring. Before we describe the arrangements in the industry we give a very brief introduction in order that our description may be better understood by those not familiar with the subject of patent law.

66. A United Kingdom patent gives the patentee the sole right in law to "make use exercise and vend" an invention for a term of sixteen years. Maintenance of the patents beyond an initial period of four years is dependent only on the payment of annual renewal fees but in practice only a small proportion of the patents granted each year are renewed by the patentee so as to extend for the full period of sixteen years. When the patent expires the invention is public property. The right applies in the United Kingdom only but applies to manufacture in the United Kingdom even for export. Patents for the same invention may, however, be taken out in other countries simultaneously, in accordance with the laws of those countries. There is an International Convention facilitating this. The validity of a patent can be contested in the Courts at any time and the Courts can declare a patent invalid on various grounds such as that there is no real invention. A patentee may assign his rights, or may license another person to use the invention exclusively, or may give non-exclusive licences to as many people as he likes. He may attach conditions to a licence, and it is common to fix the price at which the patented article is to be sold. He may retain his patent rights in one country and dispose of them in another. He has no rights in countries in which he has not taken out a patent, though he may be able to prevent that market from being supplied by a manufacturer located in another country where he holds a patent. Under United Kingdom law, he is under no obligation to give a licence to anyone, but a compulsory licence may be granted by the Comptroller-General on application by an interested person who can show that the patentee has not adequately used the invention. In essence, therefore, a patent is a limited form of monopoly protected by law. The

Swan Committee in its Second Interim Report (1946)* considered the relation of patent law to the general problem of monopolies and restrictive practices in industry. It made certain recommendations for changes in the law relating to compulsory licensing which were embodied in the Patents Act, 1949, and expressed the view that it was wrong that practices should be pursued in relation to patents which gave a monopoly wider in scope or longer in duration than that afforded by a patent in itself.

(ii) History of Patents in Relation to Restrictive Practices

67. From very early days the main British lamp manufacturers have "pooled" their patents, granting each other permission to use each other's patents and as a general rule denying their use to manufacturers who are not members of E.L.M.A. (The exceptional cases are described in paragraphs 79 to 81 below). The policy pursued has been closely bound up with the practices which are the business of E.L.M.A. and those which were given expression in the Phoebus Agreement and its successors. Although it is convenient to speak of a patent "pool" and of "members" and "non-members" of the pool, there is no single comprehensive agreement among the E.L.M.A. members about patents nor does E.L.M.A. itself deal with patent policy. The highly complex network of agreements† is described in paragraphs 76 to 78 below, but in brief it can be said that the principal patent-owning members of E.L.M.A. have made all their United Kingdom patents available to one another and to the other members (except Aurora and B.E.L.L. for discharge lamps) and to only one other manufacturer, namely, British Luma. Although lamp patents in recent years have been—and still are—important mainly in the field of discharge lamps,‡ it is necessary in considering this situation to review the past history of patents relating to both filament and discharge lamps.

68. In 1920 the Sub-Committee appointed under the Profiteering Act, 1919, to enquire into the Electric Lamp Industry, reported that the principal British lamp manufacturers had cross-licensed one another so that they might co-operate while avoiding litigation on overlapping patents, and that they licensed other members of the then-existing association on the payment of royalties and the observance of conditions which prohibited the licensees from increasing their output by more than a fixed percentage per annum. It was represented to the Sub-Committee that some of the patents were of doubtful validity but went undisputed "because of the great financial resources at the command of the Association": although the Sub-Committee did not feel competent to pass an opinion on this subject, it took note of the fact that in some cases what had long been regarded as master patents of the Association had later been held invalid in the Courts at great expense to the defendants. The Sub-Committee was of the opinion that it ought to be pos-

* Cmd. 6789: 1946.

† We have examined some 130 agreements to which some or all of the members of E.L.M.A. are parties, or have been parties during about the last 12 years. Most of these agreements are still operative. About 45 of them are purely inter-member agreements, mostly relating in one way or another to patents although they cover many other subjects as well. Many of the other agreements—e.g., those between members and foreign manufacturers—also relate to patents. The numbers mentioned do not, of course, take account of the many thousands of standard agreements between E.L.M.A. and individual distributors and users of lamps which are discussed in Chapter 11.

‡ Patents were very important in the field of filament lamps for many years but have been of little importance for the past ten years except for one type of motor head lamp (the "prefocus" lamp) and certain types of fuse which may be used in, but are not essential to, the manufacture of coiled-coil lamps: the recently introduced inside-sprayed silica lamp is also the subject of a patent.

sible to challenge the validity of an oppressive master patent without incurring heavy expenditure, that it would be preferable to limit the output of a licensee to a proportion of the aggregate output of the Association members and that it was "undesirable that patent rights should be made an instrument for enforcing a monopoly wider than that afforded under the patents themselves."

69. We have found in the minutes of the Phoebus organisation evidence that its members regarded their aggregate ownership of a number of patents as a useful instrument for persuading hitherto independent manufacturers to enter into contracts involving sales quota restrictions and observance of agreed prices and for attacking those who would not make such contracts. The intention to use patents for these purposes was repeatedly expressed between 1924 and 1939. In effect, the organisation was able to offer, in consideration of the "outside" manufacturer's compliance with quota and price conditions, what was virtually a guarantee against litigation on the part of the principal patent-owning lamp manufacturers of the world. Many independent manufacturers availed themselves of this form of insurance and became either full parties to the Phoebus Agreement or subordinate licensees and contract-holders: in the United Kingdom Crompton is an instance of the former while British Luma and Aurora became licensees. As regards the use of patents for attacking the less compliant independent manufacturers, the clearest indication of policy is contained in a minute of a meeting in January, 1934, of the Executive Committee of the Phoebus organisation which agreed "to instruct their representatives on the Patent Committee and on the Juridical Committee to elaborate all possible means for suing outsiders in all countries not only through patent actions, but with all other means which are possible, especially in the field of unfair competition, misuse of trademarks, etc. and to set up an organisation for collaboration between the parties so that these actions be brought simultaneously in the various countries". It is clear from this and other minutes that the Phoebus organisation intended to pool the litigious resources of the parties with the aim not only of defending the parties' actual patent rights, but also of maintaining the parties' share of the trade generally and of damaging the trade of the independent manufacturers generally.

70. The evidence which we have seen does not throw any light on the detailed carrying out of this policy and it does not follow that the practice of the organisation, whose energies appear to have fluctuated from time to time, was necessarily consistent with, or as ruthless as, the terms of its resolutions. The British parties were represented on all the main committees of the organisation and we have noted that, according to the Committee on Industry and Trade (Balfour Committee) which reported in 1928, licences covering about 100 patents and rights on resulting improvements were at their disposal. Whether or not their policy in the United Kingdom in regard to patents conformed precisely with the resolutions of the international organisation, we are of the opinion that their actions were to some extent governed by those resolutions and by the collective behaviour of the organisation. As already noted, G.E.C., B.T.H. and Philips (Holland) set up a British Patent Committee in 1938 to deal jointly with matters of litigation, although there is evidence that the two British companies, who had long been consulting one another about litigation and the pooling of expenses and proceeds, had no intention of allowing decisions to pass out of their own hands.

71. Aurora and Crompton joined E.L.M.A. in 1936 and 1937 respectively, Crompton simultaneously becoming a party to the Phoebus Agreement and Aurora being given a sales quota along with its patent licence. In both cases the arrangements were part of the terms of settlement of patent actions brought by members of E.L.M.A.

72. Crompton first entered the lamp trade about 1930 and by 1935 was one of the only two independent lamp manufacturers of any size in the United Kingdom. In 1933 a writ was issued by B.T.H. against Crompton for infringement of a patent covering the inside-frosted bulb (see Appendix 2), while in 1934 G.E.C. issued a writ for infringement of patents covering the use of coiled-coil filaments (see Appendix 2) in lamps. B.T.H. also took simultaneous action against three other companies. All these actions and a pending action by Philips (Holland) against Crompton were settled early in 1937, the main terms of settlement being:

- (a) Crompton to pay nominal damages;
- (b) Crompton to become a member of E.L.M.A. and a party to the Phoebus Agreement;
- (c) Crompton therefore to sell at E.L.M.A. prices and terms, a number of the wholesalers and factors of its lamps being admitted as E.L.M.A. wholesalers and factors;
- (d) Crompton's quota to be determined in relation to its performance up to 30th June, 1935, provision being made for the company to continue to supply its cheap "Kye" lamp;
- (e) Crompton to be licensed by G.E.C., B.T.H. and Philips (Holland) under all their lamp patents on the terms described in Appendix 10.

73. Aurora was, and still is, a relatively small manufacturer of filament lamps in Scotland. Action against Aurora was started by G.E.C. in 1934 for infringement of patents covering the use of coiled-coil filaments in lamps. The terms of settlement included payment of G.E.C.'s taxed costs by Aurora, admission of Aurora to E.L.M.A. without a vote or seat on the Council and, if it so wished, admission to the Phoebus organisation; they also covered the terms, described in Appendix 10, on which Aurora was licensed under all patents of G.E.C., B.T.H. and Siemens relating to filament lamps, but not discharge lamps. The agreement is extremely elaborate and imposes on Aurora all the E.L.M.A. prices, terms and conditions.

74. In an agreement between G.E.C., B.T.H. and Siemens made in 1935, it was provided that Siemens should be relieved of the obligation to pay royalty if that company should become possessed of or control "a patent or patents covering any fundamentally new or radical invention" relating to lamps. A letter of the same date addressed jointly by G.E.C. and B.T.H. to Siemens says:—

"Supplementary to the royalty agreement between us of even date relating to electric lamps, we agree that the said agreement shall be operated as if you had become the owners of a fundamentally new or radical invention in the event of your becoming the patentees of more than one invention not individually fundamentally new or radical, but together of such importance in the electric lamp field that we are satisfied that you, by virtue of these inventions, are playing a substantial part in the development of the electric lamp art or in the assurance of a control over the market. One factor we should regard as good evidence of your playing a substantial part would be if by means of one or more of your patents competition was hindered or brought under control, to the substantial advantage of our joint sales."

75. In the light of the evidence described in the preceding paragraphs, we are of the opinion that up to 1939 the principal patent-owning members of E.L.M.A. regarded their patents not only as valuable in themselves but also as a collective means of defence and offence against competition from independent manufacturers and an instrument for establishing, in the words of the

Swan Committee's report, " a monopoly wider in scope and longer in duration than that conferred by a patent in itself ". We think it should be recorded in this connection that in the course of an infringement action against an Independent Manufacturer the patent in respect of the inside-frosted bulb, which was granted in 1924 and under which B.T.H. had brought the action against Crompton, was in 1940 (the last year of its life) held by the High Court to be invalid because of anticipation by a prior patent and for want of "inventive step". We have no means of assessing the intrinsic worth of other patents owned by members of E.L.M.A. at that time.

(iii) The Patent Pool

76. Under the arrangements summarised in paragraph 67 (and described in detail in Appendix 10), the control of patent policy rests in the hands of certain companies. On the one hand there are G.E.C., B.T.H. and Siemens, who are very closely associated and control the members' patents originating in the United Kingdom together with those coming from the American G.E.C. and (before the war) from O.K. On the other hand is Philips (Holland), which retains control of its own patents, though it now gives or exchanges non-exclusive licences with all members of E.L.M.A. who are not its own subsidiaries, except Siemens, B.E.L.L. and Aurora; in addition each member of E.L.M.A. except B.E.L.L. and Aurora is bound directly or indirectly by the general patent obligations in the 1948 Lamp Agreement (see next paragraph).

77. So far as G.E.C., B.T.H. and Siemens are concerned, the nucleus is the agreement between G.E.C. and B.T.H., dated 16th December, 1921, which provides for non-exclusive cross-licensing in the United Kingdom of all patents owned or controlled by each party, and for exchange of information and research relating to lamps and their manufacture and lamp-making processes and machines. United Kingdom patents for inventions originated by the American G.E.C. are brought into this exchange by the agreement between A.E.I. and I.G.E.C. referred to in paragraphs 57, 63 and 64. The pre-war agreement under which German inventions were similarly acquired from O.K. is described in paragraph 49. Ediswan and Metrovick are bound by the agreements made by B.T.H., being subsidiaries, jointly with it, of A.E.I. G.E.C. and B.T.H. have also made a series of agreements with Siemens under which the latter is a third, but in some respects junior, member of the patent partnership (see (e) of Appendix 10). Non-exclusive licences under United Kingdom patents for inventions originated by Philips (Holland) are available to G.E.C., B.T.H. and Crompton, but not Siemens; Philips (Holland) and its subsidiaries, the British Philips Company and Stella, have in exchange licences from G.E.C. and B.T.H. and a royalty from Crompton; these agreements are described in paragraph 64. Further, the 1948 Lamp Agreement between Philips (Holland), Stella, the companies forming the British Group,* and Crompton, contains provisions that each party shall (i) refrain from opposing the other parties' patents in the United Kingdom and the British Empire (except Canada) and (ii) be entitled to a licence under another party's patents on ordinary commercial terms if he cannot otherwise fully enjoy the benefits of the agreement (which provides inter alia for quotas and price arrangements). Crompton, B.E.L.L. and Aurora, are patent licensees of G.E.C., B.T.H. and Siemens, but in the cases of B.E.L.L. and Aurora for filament lamps only. B.E.L.L. and Aurora, unlike Crompton, are not licensees of any of the Philips companies.

78. The patent pool includes all patents to be taken out in the future as well as those held at the time the various agreements were signed (subject

* i.e., G.E.C., Crayseco, B.T.H., Ediswan, Metrovick and Siemens.

to any special conditions which may attach to patents acquired from other persons). In some cases royalties are payable on sales of all lamps in the relevant field, whether made under patents or not (see (g) of Appendix 10).

(iv) Patent Licensing of Non-members of E.L.M.A.

79. Until 1948 British Luma* was the only non-E.L.M.A. lamp manufacturer in the United Kingdom to have a patent licence affecting lamps from members of E.L.M.A. The agreement with British Luma, which was made in 1937 when that company had no experience of lamp manufacture, was part of a bargain between the Phoebus parties and the Swedish Kooperativa Förbund which controlled a factory making lamps and had an interest in British Luma. Under this agreement with E.L.M.A. members (substantially reproduced in Appendix 11) British Luma was licensed under the patents of G.E.C., B.T.H. and Siemens to make all types of lamps in Scotland for sale in the United Kingdom, undertaking not to oppose the licensors' patents, to impart to the licensors any inventions it might control whether patented or not, to pay a royalty of 3 per cent. on the proceeds of all its sales of lamps (whether covered by the patents or not), not to supply lamp parts to manufacturers except those approved by the licensors, to observe E.L.M.A.'s prices and terms (except on sales to co-operative societies, who, however, must maintain the end prices but might pay dividend on sales) and to observe standards prescribed by the licensors. As in the cases of Aurora and B.E.L.L., the agreement also prescribed a sales quota for British Luma (see Chapter 6). The licensors subsequently agreed to pay 25 per cent. of the royalty received from British Luma to Philips (Holland) which in return authorised British Luma to use its United Kingdom patents. The agreement with British Luma was approved before signature by the Phoebus organisation which laid down that no Phoebus party should give any technical information or manufacturing experience to British Luma, but their representatives were allowed to see a demonstration of the manufacturing processes which were the subject of patents.

80. The agreement with British Luma was expressed to expire in 1947 but was afterwards maintained on a day-to-day basis by exchange of letters, and British Luma therefore continued to pay a royalty on all the lamps it sold whether made under patents or not. It was provided in the agreement that after expiry each side could use the other's patents against payment of royalty on sales of lamps made under those patents. Nevertheless, and in spite of the fact that all important patents covering filament lamps have expired, British Luma preferred until recently to maintain the agreement; its reasons for doing so were that it might otherwise be subject not only to litigation but also to pressure from E.L.M.A. members through their control of the supply of materials and parts for lamp-making. The agreement was formally terminated by British Luma on 30th June, 1951. We understand that negotiations are now in hand for licences under certain existing patents, with price maintenance conditions on patented lamps but no quota restriction.

81. The only other patent licences granted in the field of lamps by members of E.L.M.A. to non-members have related to the "prefocus" type of motor car head lamp (see Appendix 2). Since 1948 G.E.C. has granted licences under its patent to three Independent Manufacturers and one of the Controlled Companies. In each case, the royalty is 5 per cent. on the net selling price of lamps made under the patent. E.L.M.A. prices and terms

* Other information about British Luma will be found in paragraphs 104 and 108.

must be observed and sales of those lamps were originally limited to 30,000 per annum except in the case of the Controlled Company which can sell in unlimited quantities to a specified motor manufacturer as well as 30,000 per annum to other purchasers. One of the licensees was allowed to sell an additional quantity of 50,000 lamps in 1950: none of the others has yet sold as many as the 30,000 permitted. B.T.H. also licensed an Independent Manufacturer under its own separate patent for a prefocus head lamp: no quantity limit was imposed in the licence, but the licensee never made use of it. The patent was allowed to lapse shortly afterwards.

(v) Alleged Use of Patents to Hamper Competitors

82. The E.L.M.A. members between them own at present about 100 United Kingdom patents relating to fluorescent materials and processes of manufacture of fluorescent materials and fluorescent lamps. Nearly one half of these patents originated in the United States, Germany and Holland. It has been represented to us by some Independent Manufacturers that the great majority of these patents have little or no intrinsic worth but that in the aggregate they tend to intimidate the smaller Independent Manufacturers who "hesitate to enter a field surrounded by a confusing multitude of patents" and may even be unable to afford to discover what is their own legal strength in relation to them.

83. The intrinsic worth of a particular patent is difficult to assess. So also the fact that patents are held which are not used might indicate either that they are held simply to hamper competitors, or, as often happens, that the patentee has made a series of discoveries in the execution of a programme of research; some of those discoveries may be alternative solutions of the same problem of which only the best one is put into operation, while others may not be immediately useful but might become important later. In the first type of case, which occurs more commonly in the field of fluorescent lamps than in some other fields, if the patentee abandons the unused patents he gives the benefit of his research to his competitors to produce what may be an article little inferior to the one he is himself producing. The second type of case reasonably accounts for a fair number of unused patents, particularly patents of recent date. We understand, on the other hand, the anxieties of the Independent Manufacturer faced with a large number of patents in the hands of his big competitors; it is not surprising that he feels himself at a disadvantage, particularly when he finds that he can only get a licence, if at all, under all the patents in the pool and not only under those he wishes to use.

84. On receiving the representations referred to above, which we are satisfied were made in good faith, we decided to examine the fluorescent patent files of G.E.C. and B.T.H., the main patentees domiciled in this country, to see whether there was evidence of intention to hold patents simply to hinder competitors, or to take out or maintain patents known to be worthless. The examination revealed no such evidence. It was found that, as might be expected, the estimate of the value of a particular patent varied from time to time, but that a fresh review was made whenever a patent came up for renewal and that the proportion of patents renewed for the maximum period permitted was not abnormal. Out of a total of 96 patents in force, no less than 52 have not yet been used commercially, but many of these are of recent date, and we do not regard the proportion as unreasonable. The provisions of the Patents Acts whereby compulsory licences may be obtained on certain grounds, which were widened by the 1949 Act, do not appear to have been used in this field. We believe that the enunciation of

the current policy of E.L.M.A. members as regards patent licences (which we describe in paragraph 88), coupled with a continued careful scrutiny before patents are renewed, should dispel these suspicions.

(vi) **Recent Negotiations with some Independent Manufacturers**

85. The two leading Independent Manufacturers of fluorescent lamps, Thorn and Ekco-Ensign, have each conducted negotiations with G.E.C. and B.T.H. during the past three years with a view to obtaining licences under certain patents.* The vital materials for the manufacture of these lamps are the luminescent powders. Until three or four years ago most manufacturers were using powders containing compounds of beryllium. The E.L.M.A. members have patents covering such powders but Ekco-Ensign had also developed and patented its own powder containing beryllium oxide. About 1947, however, beryllium was reported to have toxic properties and there was a general tendency to look for substitutes. Members of E.L.M.A. had in the meantime developed certain halophosphate powders which they claim are in any case more efficient than the zinc beryllium powders they had been using previously.

86. Ekco-Ensign, while advised that it was not itself infringing any of the E.L.M.A. members' patents, wished to have the use of the halophosphate powder patents and was in negotiation with G.E.C. and B.T.H. for a licence intermittently from 1947 until March, 1949. The two E.L.M.A. companies would not grant licences under individual patents and informed Ekco-Ensign that, according to their advice, that company was infringing G.E.C.'s patent covering zinc beryllium powder. In July, 1948, however, they offered jointly with Siemens to license Ekco-Ensign under all their patents in the fluorescent field on the following terms:—

(a) Ekco-Ensign to pay a royalty of $3\frac{1}{2}$ per cent. on the net selling price of fluorescent lamps sold up to a quantity of 200,000 lamps per annum and $7\frac{1}{2}$ per cent. on all sales in excess of that quantity

(b) The licensors to have the use of Ekco-Ensign's patents in the fluorescent field, paying a royalty only if any of them were of a fundamental nature.

(c) Ekco-Ensign to charge the same prices, and allow the same distributors' margins, as E.L.M.A. for fluorescent lamps.

(d) Ekco-Ensign to charge E.L.M.A. prices to the public for filament lamps (which were not covered by the proposed patent licence), but to be free to settle what margins they liked for distributors.

(e) G.E.C. and B.T.H. to supply halophosphate powders to Ekco-Ensign at market prices.

It is recorded in the minutes of E.L.M.A. that the Chairman was influenced by the climate of post-war opinion on these matters in recommending that Ekco-Ensign's approach should not be rebuffed. Ekco-Ensign did not accept the terms offered, objecting in particular to the scale of the royalty, and to the requirement to observe E.L.M.A.'s prices and margins for distributors.

87. Thorn, against whom writs had been issued by G.E.C. in 1945 and 1948 for infringement of a patent covering zinc beryllium powder, was in negotiation with G.E.C. and B.T.H. in 1949. Although Thorn sought only the use of the halophosphate powders, licensing on a wider basis was discussed. The terms originally offered by the E.L.M.A. companies were

* The negotiations took place before Thorn obtained a controlling interest in Ekco-Ensign and were conducted separately.

substantially similar to those offered to Ecko-Ensign but were modified during the negotiations to the extent that a royalty at half rate was offered on exported lamps, a sales quota was to be fixed related to the growth of the total home market, and there was to be no control of prices of filament lamps. G.E.C. and B.T.H. eventually refused to grant a licence for the use of the halophosphate powders only, while Thorn would not consider a block licence under all the patents on the terms offered. No settlement has so far been reached of the actions by G.E.C. against Thorn or of similar actions against other Independent Manufacturers under the same patent.

(vii) **Proposed New Patent Policy of E.L.M.A. Members**

88. We have described these negotiations as showing the patent policy of E.L.M.A. members as recently as 1948 and 1949. It will be seen that it indicates some change from the policy pursued in earlier years. We have been assured by the representatives of the members concerned, however, that the policy has since been revised further in the light of the legislative changes made by the Patents Act, 1949 and the Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948. The revised policy may be summarised as follows:—

(a) The pooling of patents by comprehensive agreements among certain companies is retained as being in the public interest.

(b) E.L.M.A. members have decided to grant licences at reasonable royalties to "all competent lamp manufacturers" subject only to the condition of price maintenance of the patented article. By "price maintenance" is meant that the price to the public of the patented article should be the same as the licensor's price; the licensee will also be obliged "to maintain substantially the same prices to distributors by allowing substantially the same discounts to distributors as are allowed by the licensor". No limitation of quantity and no restrictions affecting other non-patented articles will be imposed. The licensor will, however, prescribe the type and specifications of lamps to be made under the patent.

(c) In principle there is no objection to granting licences under an individual patent, or under all the licensor's lamp patents or all those in a particular field, according to the wishes of the licensee; such licences may cover existing patents only, or future patents as well, as the licensee desires.

(d) Royalty will vary according to what patent rights the licensee offers in return; it might be calculated on the sale of patented lamps only or on the sale of all lamps of a particular kind, as might be mutually agreed; but it will not be increased in relation to the number of lamps made or sold by the licensee.

(e) Licences will not provide for any limitation of exports except in so far as a licensor may be limited by agreements into which he himself has entered.

(f) The licensee will normally be required to grant a cross-licence to the licensor covering any invention he has himself made or acquired which falls in the licensed field.

(g) Materials and parts supplied to the licensee by the licensor or manufactured under the licence will "normally be restricted to being used by the licensee for the manufacture of lamps under the licence".

89. We are assured that this new policy is to be pursued by the patent-owning members of E.L.M.A. The British Philips Company and Stella own no patents; Philips (Holland), which does, is not a member of E.L.M.A. and the arrangements made between that company and certain members for

licensing under their United Kingdom patents (see paragraph 77) continue unchanged. Under the 1948 Lamp Agreement the approval of the General Meeting of the parties to that agreement is required before any party may license a non-party. This needs 90 per cent. of the votes, and Philips (Holland), with Stella, has about 18 per cent. of the voting rights (Appendix 9, Article 10 and Annex B, Part II). We are informed that the General Meeting has in fact passed a resolution approving the new policy.

CHAPTER 6: QUOTAS

90. The various quota arrangements to which members of E.L.M.A. have been parties since 1925 are formally outside the scope of E.L.M.A. itself, but we have been told that a new member of E.L.M.A. would be expected to adhere to the agreement which governs the quotas. The principal agreements governing quotas have been international and are briefly described in Chapter 4. In addition there are some subsidiary agreements between certain British manufacturers relating to quotas in the United Kingdom market.

91. Under the terms of the Phoebus Agreement (see Appendix 8), which was in operation from 1925 to 1939, each party or group of parties* was allotted a "Local Participating Percentage" in each territory in which it had sold lamps during a basic period preceding signature of the agreement. "Territories" consisted of 12 (later 13) Home Countries, where one or several parties were already predominant, and four Common Territories.† A party's Local Participating Percentage in any territory was the ratio between his sales and the sales of all the parties in that territory in the basic period, all parties' sales being measured in quantity in terms of a statistical "unit" lamp defined specially for the purpose. At the end of each "Fiscal Period" of 12 months the total sales of all the parties were calculated in units for each territory: each party's quota, in units, for each territory for that period was determined by applying his Local Participating Percentage to that total. Each party's quota was then compared with his actual sales, in units, to determine excesses and deficits. Penalties were paid by those in excess and compensation was received by those in deficit. The "unit" value of any given lamp was determined afresh for each Fiscal Period. A party could transfer quota in any territory to another party, but could not offset an excess in one territory against a deficit in another. Common selling prices in a Home Country were determined by a "Local Meeting" of the interested parties, their voting rights being proportionate to their Local Participating Percentages: there was a similar system in the Common Territories, except that there was a separate Local Meeting for each country (or in some cases for a group of countries) in each of these Territories.

92. The elaborate penalty provisions were on a scale rising with the size of the excess. They may be summarised as follows:—

- (i) *Up to 7½ per cent. excess.* A party in excess paid a proportion of the "average realised price per unit" for each unit by which he was in excess.

* Including the British Group—see paragraph 93.

† The 12 Home Countries were: Austria, Belgium, Brazil, China, France (including colonies), Germany, Great Britain, Holland, Hungary, Italy (including colonies), Japan and Spain. Manchuria and the rest of China later became separate Home Countries. The 4 Common Territories were the "British Overseas Empire A" (Australia and New Zealand), the "British Overseas Empire B" (roughly the British Commonwealth excluding the United Kingdom, Canada, Australia and New Zealand), "Common Territory Europe" (Europe, excluding the Home Countries), and "Common Territory Overseas" (the rest of the world, other than territories described above and excluding the United States and Canada).

This proportion was related to the level of the average realised price in the territory concerned and varied from 10 per cent. to 40 per cent. The proceeds were distributed among the parties in deficit.

(ii) *7½ per cent.–15 per cent. excess.* The penalties were stiffer here. They ranged from 30 per cent. to 50 per cent. of the “average realised price per unit” and the proceeds were distributed among the parties in deficit.

(iii) *15 per cent.–25 per cent. excess.* Penalties were paid to the parties in deficit on the same scale as in (ii) but in addition a party in excess had to pay into a common fund half the difference between this penalty and the full average realised price.

(iv) *Over 25 per cent. excess.* Penalties were paid to the parties in deficit on the same scale as in (ii): in addition the whole of the difference between this penalty and the full average realised price had to be paid into the common fund.

We are informed that the penalty rate varied with the average realised price per unit in order that the penalty should bear some rough relationship to profit. The parties agreed in 1926 that the penalty rates ought to be prohibitive beyond a certain reasonable margin, and we are told that the first 15 per cent. was taken to represent that reasonable margin. In practice, excess beyond the first 7½ per cent. appears to have been rare: the penalties under (ii) have been described as not prohibitive though not leaving much profit to the company incurring them.

93. The British manufacturers who adhered to this system (all of them members of E.L.M.A.) did so in two different ways. The original signatories of the Phoebus Agreement—G.E.C., Cryslerco, B.T.H., Ediswan, Metrovick and Siemens—known under the agreement as “the British Group”, had a single joint quota in the United Kingdom and were responsible under the agreement for controlling prices and terms there. This joint quota amounted originally to about 84 per cent. of the Phoebus parties’ total sales in the United Kingdom. Philips (Holland) with Stella had about 10 per cent. and the remaining quotas belonged to various foreign manufacturers. In practice, the British Group’s quota was increased to about 88 per cent. by transfers of quota; annual payments were still being made for these when the war broke out. The British Group had its own separate internal arrangements for sharing the joint quota among its members and for penalising and compensating those in excess and deficit respectively. When other British manufacturers became members of E.L.M.A. and parties to the Phoebus Agreement they were not admitted to the British Group but each was allotted a separate quota under that agreement. Thus A.C. Cossor Ltd. had a very small quota and by 1939 had ceased to make lamps but continued to receive compensation from the other parties in the United Kingdom. The British Philips Company was not a party and had no quota of its own, but as a subsidiary of Philips (Holland) enjoyed in practice nearly the whole of the quota belonging to that company. Stella, another subsidiary of Philips (Holland), had a separate small quota as a party to Phoebus. When Crompton became a party in 1937 it was allotted a separate quota of about 11 per cent. in the United Kingdom, based on the size of its sales when it had been in competition with the Phoebus parties, the other parties’ quotas being reduced accordingly.

94. The British Group had to make an internal settlement of its own for each Fiscal Period. It could make its own rules for this purpose, and the sharing out of the Group’s quota was the subject of a number of rather

complicated agreements. Siemens' quota was fixed at about 13 per cent. of the Group's entitlement, the remainder, after a dispute which lasted several years, being shared equally between G.E.C. and Cryslerco on the one hand, and the three companies of the A.E.I. Group on the other, each receiving about 43½ per cent.; there was a further consequential settlement between G.E.C. and Cryslerco by a formula under which the former's share of the British Group's quota was rather more than 38½ per cent. There were arrangements of a special nature with Siemens whereby part of that company's deficit was met by the sale of lamps to G.E.C. and B.T.H. Apart from this the penalty provisions for the internal settlement of the British Group were similar to those in the Phoebus Agreement itself, except that the two lower rates of penalty applied to excesses up to 20 per cent. (instead of 15 per cent.).

95. We have examined the Phoebus settlement papers for the United Kingdom market for the Fiscal Period of twelve months ended 30th June, 1938 and find that the British Group paid a collective penalty of about £55,000, having exceeded its sales quota by about 5 per cent. G.E.C. and the A.E.I. Group contributed the greater part of this penalty; among non-members of the British Group Crompton was the principal beneficiary,* but Philips (Holland) also received compensation. In the internal settlement among members of the British Group G.E.C. paid out about £50,000 to the other members. We are informed that the British Group was normally in excess in the Phoebus settlements, and that G.E.C. was normally in excess in the subsequent internal settlements of the British Group. We have noted that the compensation received by Crompton in 1938 under the Phoebus settlement was sufficient to turn an estimated net loss of 6 per cent. on its sales of lamps into a profit of 8 per cent.

96. Elaborate machinery was set up to administer the quota system. The calculation of the size† of each party's trade in each territory in the basic period was the crucial initial task: it caused many disputes and we have noted that fees of more than one million Swiss francs were authorised for a firm of United Kingdom accountants for "controlling" the basic period figures during the first eighteen months of the agreement. Eventually S. A. Phoebus‡ itself took over this task as well as the annual calculation of each party's current sales, for which purpose copies of every invoice and credit note relating to sales of lamps (however small the transaction) were sent to Geneva. The scale for converting lamps into "units" had to be revised each year and for the purpose of conversion the parties' sales in each territory were analysed into some forty classes of lamps. All parties received copies of the full annual settlement showing the complete calculation for each party in each territory.§ Penalties and compensation were calculated in gold dollars after the departure of many national currencies from the gold standard in the 1930's. We have noted that Local Participating Percentages were expressed to five places of decimals of 1 per cent.

97. The Phoebus Agreement and the consequential agreements between the members of the British Group had the ostensible effect in the United

* The settlement, as far as Crompton only was concerned, covered a period of fifteen months, the company having become a party to the agreement on 1st April, 1937.

† Expressed in terms of "units".

‡ See paragraph 24.

§ The "preliminary" settlement papers for the twelve months ended 30th June, 1938, which we have examined consist of a circular letter of 43 pages with some 46 pages of annexes, as well as several supplementary letters and tables; many of the pages are elaborate tables (running to about 40 columns) showing the successive stages of the calculation of the settlement.

Kingdom of preserving the 1924 pattern of trade as between the parties, with the exception that Crompton's competition, which grew during the 1930's, was eventually stabilised by absorbing the company's sales into the system. Foreign interests in the lamp trade of the United Kingdom, except for the Japanese, were stabilised or even, by paying compensation or buying quota, slightly reduced. We cannot judge to what extent other influences, such as the introduction of the general tariff in 1932, contributed to these effects. We are informed that the lamp trade of the Phoebus parties was almost doubled between 1926 and 1939 and that the increase for the United Kingdom was greater than the average, but the extension of electrical generating capacity must have contributed largely to this result. We have noted that the trade of the British parties to the agreement, more than that of any other major parties, was confined to their home market.* E.L.M.A. has told us that quotas originated under Phoebus as a method of preventing the uneconomic competition which was ruining the industry.

98. We have noticed that in a particular instance the quota arrangements influenced the attitude of the E.L.M.A. members in their negotiations with an important customer, namely, Joseph Lucas Ltd. That company made an agreement with E.L.M.A. and its members in 1939, under which it was to buy all its requirements of lamps in the United Kingdom from the members and to have a 5 per cent. price advantage over any other purchaser of motor lamps,† except members of E.L.M.A. themselves or Government Departments. The negotiations were reported to Geneva as they proceeded and the final agreement included provisions that Joseph Lucas Ltd. would not export lamps except those incorporated in car lighting sets and that E.L.M.A. would apportion the company's orders among its members. The former condition was inserted at the instance of the Phoebus parties, while the E.L.M.A. members explained at Geneva that the latter condition would enable them to apportion the orders according to their Local Participating Percentages. Joseph Lucas Ltd. disliked but accepted both conditions. The present relations between Joseph Lucas Ltd. and E.L.M.A. members are described in paragraph 180.

99. The Phoebus Agreement was originally expressed to terminate in 1934 but its duration was later extended to 1955. In fact, it was made ineffective by the outbreak of war in 1939. In 1941 the British parties with Philips (Holland) and the (American) Overseas Group signed the New General Agreement (see paragraph 61) which effectively maintained the quota provisions of the Phoebus Agreement as between the signatories in the territories in which they were then able to trade, although the penalties were modified by dropping the two severer scales described in paragraph 92. The Administrative Office was transferred to London, and the British parties naturally played a more important part in the running of the new organisation than they had in the Phoebus organisation. The agreement lasted until 1948 but the (American) Overseas Group withdrew in 1945.

100. The present quota arrangements are governed by the 1948 Lamp Agreement (see Appendix 9) to which only British manufacturers and Philips (Holland) are signatories. Separate quota arrangements apply to each of six territories, (i) the United Kingdom market, (ii) Australia, (iii) New Zealand, (iv) India, Pakistan and Burma, (v) South Africa and (vi) Ceylon and British

* According to the 1938 Settlement 87 per cent. of their sales were in the United Kingdom. At the other extreme less than 10 per cent. of the sales of Philips (Holland) were in Holland.

† Our use of the term is explained in paragraph 1.

colonial possessions.* As with the Phoebus Agreement, the aim is to make "provision for securing to each of the individual parties its proper share of the increased business resulting from [the] co-operative effort". The arrangements are generally similar to those of the Phoebus Agreement, but the area covered and the number of parties are much smaller. The Local Participating Percentages (see paragraph 91) are based on those used under the Phoebus Agreement and excesses and deficits are calculated in a similar manner but the penalty provisions have been considerably modified in an important respect. A party in excess pays 30 per cent. of the "Net Profit per Unit" (see paragraph 102) to the parties in deficit in respect of any excess up to $7\frac{1}{2}$ per cent. of his quota: and he pays $52\frac{1}{2}$ per cent. of this Net Profit in respect of any further excess. This Net Profit is of necessity calculated according to a general formula and is therefore somewhat arbitrary, but it is near enough for it to be clear that some profit remains to a manufacturer however great his excess. (Under the Phoebus Agreement a manufacturer substantially in excess would have incurred very heavy losses on his excess sales.) A party cannot, moreover, receive compensation for any deficit in excess of 15 per cent. of his quota in the United Kingdom, and the actual penalties payable by the parties in excess are subject to reduction accordingly. It is intended that this provision shall eventually be applied to the other territories. In the first year of working the penalties were about one-third what they would have been under the Phoebus Agreement.

101. In the United Kingdom the British Group continues to hold a joint quota and makes its own internal settlement according to its pre-war agreements. The quota of Philips (Holland) is largely taken up by the British Philips Company. Stella and Crompton have their own quotas. The two remaining E.L.M.A. members, B.E.L.L. and Aurora, are not parties and their position is described in paragraph 103. The quotas for the United Kingdom market are, approximately, as follows:—

	<i>Per cent.</i>	<i>Per cent.</i>
British Group:		
G.E.C.	30	
Cryselco	$3\frac{1}{2}$	
A.E.I. Group	$33\frac{1}{2}$	
Siemens	$10\frac{1}{2}$	
	—	$77\frac{1}{2}$
Crompton		$12\frac{1}{2}$
Philips (Holland) (including the British Philips Company)		9
Stella		1
		—
		100

The actual payments and receipts due as the net result of all the arrangements in the United Kingdom for the twelve months ended 30th June, 1949, were as follows:—

	<i>To Pay</i>	<i>To Receive</i>
	£	£
G.E.C.	30,773	
Cryselco	24,745	
A.E.I. Group		13,714
Siemens		16,141
Crompton		17,667
Philips (Holland) (including the British Philips Company) and Stella		7,996

* Each of these territories is meticulously defined; we note that sales of lamps in "Australian Antarctic Territory (South of 60° South and between 160° East and 45° East, except Adelle Land)" would count against the parties' quotas in "Australia"; quota percentages are still expressed to five places of decimals of 1 per cent.

The effect of these payments and receipts on the profits of the individual companies is discussed in paragraph 210; it is appreciable in the cases of Crompton and Cryslerco.

102. The administration of these quota arrangements appears to be quite as elaborate as before the war, having regard to the reduced scope of the current agreement. The parties account to the Administrative Office for all their sales whether within the relevant territories or not, and they continue to submit a copy of each individual invoice of sales within these territories. In addition, the Administrative Office now has the task of calculating each year the "Weighted Average Manufacturing Cost per Unit" in order to arrive at the "Net Profit per Unit" which forms the basis for penalties. For this purpose each party submits an annual return showing the number of lamps of each of some 55 classes produced during the year and the total manufacturing cost of all those lamps calculated on a uniform basis in accordance with the detailed costing schedule in paragraph 7 of Annex C of the 1948 Lamp Agreement (Appendix 9). The Administrative Office assembles all this statistical matter, analysing about 8,000* invoices a day by mechanical means.

103. The two members of E.L.M.A. (B.E.L.L. and Aurora) who have not been directly parties to the Phoebus Agreement and its successors have been subject to quotas laid down for them in agreements with the major members of E.L.M.A. made concurrently with patent licensing agreements. These agreements, so far as quotas are concerned, are expressed in terms similar to the Phoebus Agreement, and the two companies have been allotted basic quotas in the United Kingdom with provision for increase in proportion to the increase in the Phoebus parties' trade there. B.E.L.L. was not allowed to export until 1947, when export was permitted so long as it was at the expense of potential home sales, the total quota remaining unchanged: Aurora was allowed a small fixed annual export quota in the British Empire, excluding Canada. The penalty for excess of quota in the United Kingdom on the part of either of the companies by more than 25 per cent. was prohibitive. B.E.L.L. was not allowed compensation for deficits but Aurora could receive compensation for deficits not exceeding 25 per cent. of quota. Both of these agreements have formally expired, but we are informed that new agreements are being negotiated which will provide for larger quotas than before.

104. Under its licence agreement made in 1937, British Luma was similarly bound by a quota limitation. In this case, since the E.L.M.A. members do not wish to disclose changes in their turnover to a non-member, the rate of increase in sales permitted was fixed in advance by a scale which allowed sales to double in ten years from 1937 when British Luma started to produce. The penalty was prohibitive for any excess greater than 2 per cent. of the quota and no compensation was allowed for deficits. In fact British Luma has never traded to the extent of its quota, principally, so we are informed, because of the shortage of materials and other abnormal conditions during and after the war. British Luma was originally allowed to export only to the extent that the Swedish Kooperativa Förbund, which partly owns it (see paragraph 79), would allocate to the company part of its own quota as a licensee of Phoebus: since the Swedish Kooperativa Förbund is not associated with the agreements which have succeeded the Phoebus Agreement, British Luma has had no formal export rights since 1939 but in practice has

* This is equal to about 200,000 a month. We note for comparison that according to the report of the Commissioners of H.M. Customs and Excise for the year ended 31st March, 1950, the number of Customs documents handled for producing the Trade and Navigation Accounts for the United Kingdom is about 500,000 a month.

been allowed to export to most countries except Australia, North America and Japan. Since 1947 British Luma does not appear to have been formally bound by any quota provisions, although negotiations for renewal of the licence have been in progress. The E.L.M.A. members at first offered terms whose effect would have been to allow sales to increase by fixed annual increments to double the 1947 level in eight years with an extra allowance for fluorescent lamps: but a later offer made no mention of quota limitation. In the meantime British Luma has formally terminated the old agreement (see paragraph 80) and no question of quota arises in the current negotiations for a patent licence.

105. There is one aspect of the more recent development of the system of quotas to which attention should be drawn. The quotas fixed in 1924 were derived entirely from trading in filament lamps, but the development of discharge lamps has had to take place, so far as the E.L.M.A. members are concerned, within the limits of that quota pattern. Thus a manufacturer who has gained a bigger share of the market for fluorescent lamps must have either exceeded his total quota or taken an unduly small share of the market for filament lamps. To some extent fluorescent lamps have simply replaced filament lamps in use, but their introduction has, we are informed, expanded the total market for lamps substantially, and the system of quotas has given each member the right to a share in the expanded market whether or not he has contributed to its expansion.

CHAPTER 7 : THE INDEPENDENT MANUFACTURERS

106. Independent Manufacturers in most cases make either general service filament lamps or motor lamps or specialize in a limited range of types, such as flashlamps, miniature medical lamps and telephone switchboard indicator lamps, for incorporation in instruments or apparatus. They do not produce any kinds of discharge lamps other than fluorescent lamps and neon tubes, and none of them produces a range of types of filament lamps comparable with that made by the two principal members of E.L.M.A. Many are small companies. The competition offered to the E.L.M.A. members has in the past been most marked in the field of general service filament lamps, but since the war has extended to fluorescent lamps and has increased in some other types of filament lamps. The output of the Independent Manufacturers has been given earlier, in paragraph 3.

107. Two Independent Manufacturers, Thorn and Ekco-Ensign, have expanded rapidly in the war and post-war periods until their lamp businesses are similar in size to those of medium-sized E.L.M.A. members: their output, particularly of general service filament lamps and of fluorescent lamps, is substantial and production is highly mechanised. These two companies are now closely associated, Thorn having acquired a controlling interest in Ekco-Ensign: each is also associated with interests extending beyond the lamp-making field. Thorn has installed modern and highly mechanised plant for making fluorescent lamps and claims to have the largest output of these lamps in the United Kingdom. At present the greater part of this output is exported and there appears to have been no attempt so far on the part of the company to undercut the retail prices charged by E.L.M.A. in the home market, though it claims in its recent advertisements to have doubled the life of its lamps, which sell at the same prices as before. Ekco-Ensign is a substantial manufacturer of filament lamps and markets fluorescent lamps on a smaller scale than Thorn.

108. British Luma, whose relations with members of E.L.M.A. have been described in paragraphs 79, 80 and 104, operates on a much smaller scale than

Thorn and Ekco-Ensign. The company is jointly owned by the Co-operative Wholesale Society (C.W.S.), the Scottish Co-operative Wholesale Society (S.C.W.S.) and the Swedish Kooperativa Förbund. It entered into a patent licensing agreement with members of E.L.M.A. in 1937 but did not start commercial production of lamps until 1939. The Phoebus organisation decided that it should receive no help from E.L.M.A. members; until the end of the war it was deprived of much of the technical assistance it would otherwise have expected to receive from its Swedish associate: The company makes general service filament lamps and fluorescent lamps; practically the whole of its output is distributed through the wholesale and retail co-operative societies.

109. Since there is considerable disparity in type of product and in size between the various Independent Manufacturers, and since, except in the cases we have mentioned, each operates independently of any other lamp manufacturer, they should not be regarded as a group having common practices and trading methods. Such generalisations as we make about them in this and later chapters apply in varying degrees to individual manufacturers.

110. Most Independent Manufacturers have informed us that where appropriate British Standard Specifications exist they conform to them. We describe the views of some of them about these specifications in Chapter 9. In other cases they may work to their own internal specifications or to the special requirements of large customers, including Government Departments. Lamps for ultimate sale to the general public are in some cases supplied unbranded or marked with distributors' brand names:* for such lamps net terms are usually quoted and the manufacturer exercises no influence on the subsequent reselling price. In most cases, however, lamps are marked with the manufacturer's brand name and are retailed at prices fixed by him, such prices being at present the same as those fixed by E.L.M.A.: margins are, however, bigger than those allowed by E.L.M.A. We are informed that the Independent Manufacturers expect distributors to maintain the prices and discount rates which they fix and indeed that distributors press for a price-maintained article; in no case, however, is there machinery for enforcement, nor has the need for any been felt. We consider the effect of E.L.M.A.'s selling arrangements on those of the Independent Manufacturers in Chapter 11.

111. The patent policy of the E.L.M.A. members, as described in Chapter 5, has been a factor which independent competitors have had to take into account in the past; we have shown how two of the present members joined E.L.M.A. in accordance with the terms of settlement of actions for infringement of patents brought by other members. Those Independent Manufacturers who make only filament lamps can now operate freely without fear of infringing other manufacturers' patents, but the position of those who make discharge lamps remains uncertain. Some of them claim that they are hampered by this very uncertainty; and Thorn (against whom an action for infringement remains unsettled) and Ekco-Ensign have considered it worthwhile to negotiate with the E.L.M.A. members for patent licences in the field of fluorescent lamps, as described in paragraphs 85 to 87. Nevertheless these two manufacturers have not so far been prevented from developing their fluorescent lamp businesses, and we see no reason why the current patent licensing policy of the E.L.M.A. members (see paragraph 88) should place them in a worse position than before.

* The practice of marking lamps with customers' brand names appears in the case of the Independent Manufacturers to have been more common formerly than it is at the present time, probably because the Controlled Companies have captured much of this trade. Such lamps are generally supplied to wholesalers or to chain stores.

112. The supply of lamp components is dealt with in all its aspects in Chapter 10. Briefly, most Independent Manufacturers rely principally on E.L.M.A. members for the supply of components, and none of them makes its own components to the same extent as the two principal members of E.L.M.A. One Independent Manufacturer, Thorn, has a subsidiary company which produces sufficient lamp caps to meet the needs not only of the parent company but also of some other Independent Manufacturers and some E.L.M.A. members: certain other components, including tungsten and molybdenum wire and glass tubing for fluorescent lamps, are produced by independent manufacturers who are not themselves manufacturers of lamps: one Independent Manufacturer of lamps draws its own tungsten wire but only for its own use. There is at present in the United Kingdom no independent supply of machine-blown glass bulbs for general service filament lamps or the glass tubing and rod used in the production of filament lamps. Independent Manufacturers have told us that in view of the productive capacity already existing in the United Kingdom they do not feel justified in incurring the considerable capital expenditure necessary to instal plant for the manufacture of glass components on a large scale.

CHAPTER 8: THE CONTROLLED COMPANIES

113. Members of E.L.M.A. own the following lamp-manufacturing companies in the United Kingdom, none of which is a member of E.L.M.A.:—

Splendor Lamp Co. Ltd. (Splendor)
Britannia Electric Lamp Works Ltd. (Britannia)
Ismay Lamps Ltd. (Ismay)
Gnome Electric Lamp Works Ltd. (Gnome)
Evenlite Tube Lamp Developments Ltd. (Evenlite).

Practically the whole of the share capital of Britannia, Ismay, Splendor and Evenlite is owned jointly by the E.L.M.A. members (except Stella, B.E.L.L. and Aurora): Gnome is a wholly-owned subsidiary of Britannia. Splendor was until recently a wholly-owned subsidiary of N.V. Splendor of Nijmegen, Holland: nearly 40 per cent. of the share capital of N.V. Splendor of Nijmegen was owned jointly by certain E.L.M.A. members and an ex-member, A. C. Cossor Ltd., the remaining, majority, interest belonging to Philips (Holland). An arrangement has recently been made by which these holdings in N.V. Splendor of Nijmegen have been sold to Philips (Holland), while the share capital of Splendor has been acquired by those E.L.M.A. members who already owned the other Controlled Companies. The present financial relationships are shown in the diagram in Appendix 7.

114. The circumstances in which Splendor, Britannia, Ismay and Gnome came under the control of E.L.M.A. members are explained later in this chapter. The fifth company, Evenlite, is in a special position. It manufactures architectural and other tubular filament lamps. It applied to join E.L.M.A. in 1946 but after negotiation was acquired by E.L.M.A. members. The production of this type of lamp by E.L.M.A. members has since been largely concentrated in Evenlite; similar lamps are, however, also produced by B.E.L.L. Evenlite's plant and machinery has been modernised and extended, and the whole of the company's output is supplied to the owner-companies under their brand names.

115. The other four Controlled Companies produce, under their own brand names, lamps which used to be cheaper than E.L.M.A. brands but which are now sold at the same retail prices. They also produce lamps marked with customers' brand names, the customers being mainly chain

stores; nearly the whole of Britannia's output and much of Ismay's is supplied to F. W. Woolworth & Co. Ltd. under a brand which is peculiar to that store. Some unbranded lamps are also made. Gnome specialises in motor lamps, Britannia and Ismay make general service filament lamps, and Splendor makes both kinds. None of the companies makes discharge lamps, and in the field of filament lamps they concentrate on the kinds in most general use.

116. We estimate that the Controlled Companies supply from one-quarter to one-third of the United Kingdom market for general service filament lamps, but the evidence shows clearly that the proportion was considerably higher before the war.* Prices, before the war and since, are discussed in Chapter 14: the following comparison between the retail prices (exclusive of Purchase Tax) for 60 watt general service filament lamps fixed by E.L.M.A. and by a large chain store indicates the extent by which the pre-war difference in price between lamps made by the Controlled Companies and by the E.L.M.A. members has been reduced:—

	1939 Price	1950 Price (<i>ex-tax</i>)
E.L.M.A.	{ 1s. 9d. (Clear) 1s. 7d. (Pearl) }	1s. 1d.
Chain Store	6d.	{ 8·8d. (Clear) 9·2d. (Pearl) }

117. It is the policy of the Controlled Companies to fix the retail prices and trade terms for lamps sold under their own brand names, but they have no arrangements for collective enforcement of these prices and terms. Lamps marked with the customers' brand names and unbranded lamps are sold at negotiated prices, and prices and terms of resale are thereafter the responsibility of the customers. The Controlled Companies also sell lamps to large users including, in the case of Ismay, Government Departments.

118. This policy of taking over lamp-manufacturing businesses started as a consequence of the regulation of the market by the Phoebus organisation. From the outset the Phoebus organisation experienced considerable competition from cheaper lamps made by outside companies in Europe (and later in Japan), and it became its policy to meet this competition by acquiring some of these factories on the continent to make and sell cheap lamps bearing special brands in the territories affected. Special committees of the Phoebus organisation were set up to direct these fighting companies,† first the "Meteor" Committee and after 1932 the appropriately-named "Hydra" Committee, on which two of the six members represented the British parties. We have examined the minutes of the Hydra Committee for 1935 to 1939. Until the introduction of the tariff in 1932 the United Kingdom was a market for these fighting companies, one of which was N.V. Splendor of Nijmegen, whose subsidiary, Splendor, was then a selling company only. Under the rules of the Hydra Committee any Local Meeting of the Phoebus parties could decide when Hydra lamps should be sold in their territory at a loss. The extent to which sales were made at a loss is

* In a letter to the Board of Trade in 1945 (which we found recorded in E.L.M.A.'s minutes) E.L.M.A. estimated that at that time about 30 million lamps per annum were being sold to domestic users, of which the members were responsible for only one-third, the remainder being non-E.L.M.A. lamps sold through the chain stores. This situation was abnormal, since the chain store trade appears to have remained relatively stable, during the war, while the E.L.M.A. members' supplies to domestic consumers were curtailed.

† See footnote to paragraph 264.

not clear; on the one hand the policy was to fight competitors but on the other the parties wished to see a return for the substantial investment they had made in the businesses, and the conflict between these two aims was never satisfactorily resolved.

119. In 1935 Splendor built a factory in the United Kingdom. This was the first Hydra factory in the United Kingdom. The development was financed by N.V. Splendor: the British Group preferred this arrangement which, according to the minutes, "would give it a neutral character", but technical management was placed in the hands of the British Group who guaranteed a minimum sale in the United Kingdom. Commercial control was to be in the hands of the Hydra Committee in consultation with the British Group. The British Group could authorise sales below cost provided it refunded the loss, but does not appear to have acted in this way. Apart from the first year of operation of the new factory the company has always made a profit on its total business.

120. It was hoped that Splendor would be able to compete successfully with the Japanese who were then supplying the lamps retailed by F. W. Woolworth & Co. Ltd. at sixpence. In 1935, however, Britannia, then an independent company, obtained this business, and by 1938 was the largest independent lamp manufacturer in the United Kingdom. It was for a short time in the ownership of Ismay Industries, Ltd., who also owned another lamp manufacturing company, John Ismay & Sons Ltd. All the lamp interests of Ismay Industries Ltd. (consisting in effect of the present businesses of Britannia, Ismay and Gnome) were acquired by E.L.M.A. members in 1938 when they came on the market. The purchase was substantially in the form laid down by the Phoebus Agreement (see Appendix 8, Article 14) and was made only after the approval of the Phoebus organisation had been obtained. A Management Committee of three, on which both G.E.C. and B.T.H. have always been represented, was set up. Splendor is now managed in a similar way.

121. The purchase was approved by the Phoebus organisation "to avoid the businesses of these companies falling into the hands of non-members". The British Group explained to the Phoebus organisation at the time that it was proposed "to continue these businesses as independent concerns entirely outside the E.L.M.A. organisation and to use them to supply that section of the lamp market in Great Britain and the British Overseas Empire which is not prepared to accept the high quality Phoebus lamp at the Phoebus price". It was hoped that "in addition to retaining the business they now hold these two companies in co-operation with the British Splendor Company will succeed in taking business away from the remaining outsiders and thus controlling this section of the market with the least possible injurious effect on the regular Phoebus business". The companies were expected to yield "a fair return on the capital invested". Sales were not to be reckoned against the quotas of E.L.M.A. members, nor are they so reckoned under the 1948 Lamp Agreement.

122. In general, these aims appear to have been adhered to. We are informed by E.L.M.A. and by the representatives of the Controlled Companies themselves that, notwithstanding the existence of management committees, control is in practice left entirely in the hands of the managements of the individual companies. On the other hand, we have also been told by a representative of E.L.M.A. that their policy is as far as possible "definitely not to compete with E.L.M.A.". The companies have made profits regularly. It is true that the E.L.M.A. members who manufacture

tungsten and molybdenum wire and glass bulbs and tubing (see Chapter 10) charge the Controlled Companies prices below those charged to other E.L.M.A. members and to Independent Manufacturers, but they would still have made profits without this assistance. It has been suggested to us by Independent Manufacturers that the companies are primarily fighting companies whose purpose is to do as much damage as possible to the Independent Manufacturers, a purpose which would be in accordance with the old Phoebus policy. E.L.M.A. has told us that the companies were not, and are not, intended to sell at a loss, but to make a profit. It is an inevitable consequence of E.L.M.A.'s policy of exclusive dealing (see Chapter 11) that the lamp market is largely split in two, and that the lamps of the Controlled Companies (not being E.L.M.A. lamps) are sold mainly in the same markets as those of the Independent Manufacturers. The Controlled Companies offer similar discounts on their own branded lamps to those offered by the Independent Manufacturers (who offer bigger discounts than does E.L.M.A.—see Chapters 11 and 14) but we have received no evidence to support the allegation that these discounts are varied in order to detach customers from the Independent Manufacturers. The selling prices of lamps bearing customers' brands and of unbranded lamps are more variable, and there is some evidence that the Controlled Companies have in the last ten years become increasingly predominant in this market at the expense of such Independent Manufacturers as formerly catered for it. Since the Controlled Companies make lamps which are retailed at prices below E.L.M.A.'s, their products clearly compete with the E.L.M.A. members' for the custom of the general public. So far as sales to distributors are concerned these companies compete mainly with the Independent Manufacturers, and not with E.L.M.A. members, but the evidence does not support the view that they compete by quoting artificially low prices or selling at a loss.

CHAPTER 9 : QUALITY AND STANDARDS

123. The subject of quality and standards of filament lamps is relevant to our enquiry in respect of three matters, namely the proceedings of the Phoebus organisation, the proceedings of E.L.M.A. in relation to the British Standards Institution (B.S.I.) specifications for filament lamps, and the division of the lamp market into E.L.M.A. lamps on the one hand and lamps made by the Independent Manufacturers and the Controlled Companies on the other.

124. B.S.I.'s organisation and constitution and the way in which its standard specifications are prepared are fully described in the Report of the Cunliffe Committee (1950)* which explains that the standards are produced by representatives of all interests concerned, whether as producers or users or both. It has not been the practice in B.S.I. for the staff to initiate projects for standardisation, and in the committees which prepare and consider draft standard specifications the principle of consent broadly applies. Once a standard specification is published, as is the case for many types of lamps, it is open to all manufacturers to comply with it if they wish and to describe their products as complying with it. There are in addition for certain goods, including general service filament lamps, schemes under which B.S.I. owns and administers certain certification trade marks which can be used in conjunction with a specification as evidence that the product complies with the specification, and manufacturers can obtain licences to apply the mark to their products, provided they apply certain tests and keep records of them open for inspection; B.S.I. requires to be satisfied that the factories are so

* Report of the Committee on the Organisation and Constitution of the British Standards Institution (H.M.S.O.: 1950).

organised that the necessary control of the manufacturing process is possible and reserves the right to make purchases in the open market, at the expense of the manufacturer, for testing. Even where there is such a marking scheme it is still open to manufacturers to manufacture to B.S.I. specification without applying for a licence; the licence is an authority to apply the certification trade mark to the product, not an authority to manufacture to the specification.

125. The main factors in the design of a filament lamp are its life on the one hand and its luminous efficiency, i.e. the amount of light per unit of power (watt), on the other. A lamp designed to give high luminous efficiency has a shorter life than one designed to give a lower luminous efficiency and a long life; in other words, an increase in the life of a lamp can only be obtained at the expense of efficiency. The cost of production of the lamp would be much the same whatever the life. For ordinary lighting, therefore, the relative importance of luminous efficiency and of long life (from the consumer's point of view) depends on the relative costs of replacing lamps and of power. Where power is relatively expensive it is more economical to use high efficiency lamps and *vice versa*. In practice a single standard only of life has been adopted both here and in many other countries. The current B.S.I. specification for ordinary lamps, No. 161, lays down a minimum life of 1,000 hours and minimum values of luminous efficiency. The life of 1,000 hours is adopted as a standard in many countries though the United States adopts a lower figure for some ratings; it has been used in the United Kingdom since 1921, during which period the luminous efficiency has been substantially increased. Any figure chosen must be a compromise as the cost of power to different classes of consumer varies considerably and there is, therefore, no single optimum.* Some commercial users, however, have told us that they obtain longer life by "under-running" lamps (i.e. using lamps designed for, say, a 240 volt system on a 230 volt supply), particularly in positions where the cost of replacing lamps is considerable.†

126. One of the first actions of the Phoebus organisation when it was created in 1925 was to lay down a standard life of 1,000 hours—then already in common use in the United Kingdom and elsewhere—for general service filament lamps; it was provided that no mention of "long life" should be made in any advertisement for lamps. A scheme for penalising excessive life or short life was worked out and after 1929 there were fines for a life in excess of 1,500 hours and fines on a lower scale for a life shorter than 800 hours unless the manufacturer had given notice that he had economic justification for making the life shorter. The Phoebus organisation did not at that time prescribe any minimum (or maximum) luminous efficiency, but if all manufacturers employed the best techniques of design and manufacture known at the time this system would indirectly ensure lamps of reasonable luminous efficiency, and we have obtained no evidence that it injured consumers. No doubt the prescription of a maximum life without a minimum luminous efficiency had potential dangers. In the United Kingdom, however, a B.S.I. specification, including a minimum luminous efficiency, existed before the Phoebus Agreement was made and was from time to time improved. No United Kingdom manufacturer incurred fines under the Phoebus system for either short or excessive life. At the present time, except for the "Type B" lamps described in the next paragraph, there are no fines for long life lamps and the specifications to

* For a fuller discussion of this problem see "The Electric Lamp Industry" by Arthur A. Bright, Junior (Macmillan, New York, 1949—pages 330 to 335).

† See also the views of the Railway Executive and the Ministry of Works, recorded in paragraph 226.

which all E.L.M.A. members work contain minima, but in no case maxima, for life and luminous efficiency.

127. In 1935, under pressure from the Incorporated Municipal Electric Association for a cheaper lamp, E.L.M.A. decided to introduce a lamp, to be known as "Type B", not designed to comply with the B.S.I. specification and made to an agreed maximum luminous efficiency and life. It was not intended to compete with E.L.M.A.'s higher-priced lamps, but with imported lamps and the products of independent manufacturers, which it was to equal or better in efficiency. The life aimed at was 900 hours, with a maximum of 1,000 hours, there were to be fines for excess life which were increased if at the same time the limit on luminous efficiency was exceeded, and a member's sales of Type B lamps were not to exceed 25 per cent. by quantity* of his sales of higher-priced lamps of corresponding ratings. Early in 1940 a decision was taken to withdraw Type B lamps other than "Kye" brand† as from September, but when the time came this was postponed as E.L.M.A. thought that the Government might allow imports (presumably of cheap lamps) as a result. Withdrawal was again postponed in 1945 when the Board of Trade were in correspondence with E.L.M.A. about the price of lamps. The system of fines for excessive life is still nominally in force, but we are informed that no fines have been imposed and that the lamps are now practically non-existent except for "Kye" brand.

128. All E.L.M.A. members make lamps to B.S.I. specifications where these exist, and they have played a considerable part in the modification and improvement of these specifications. The specifications for general service filament lamps have been revised frequently, and it has been suggested to us that one effect of these frequent revisions, which are said to have been made at the instance of E.L.M.A. members, has been to harass competitors. The E.L.M.A. minutes show that the members were very much aware of the possible effects of the steady improvement of the minimum standard on their competitors. We must record, however, that we have found no evidence that the effect of the revisions has been to raise the cost of lamps or that competitors have been unable to keep pace.

129. Some Independent Manufacturers have suggested to us that a simpler and, in some respects, less exacting specification would provide adequate protection for the consumer. In particular, it is argued that very small tolerances may lead to higher costs and embarrass manufacturers with less accurate machinery without giving a corresponding benefit to the consumer, since there is by statute a relatively wider tolerance on the supply voltage. It is also pointed out that the widespread use of fittings which may reduce luminous efficiency by as much as 25 per cent. indicates that many consumers are not primarily concerned with maximum luminous efficiency. We regard these matters as proper for the consideration of B.S.I., on the technical committee of which sit representatives of the Independent Manufacturers and of users as well as of E.L.M.A.

130. In 1933 E.L.M.A. was concerned about the claims made by some non-E.L.M.A. manufacturers that their lamps complied with the B.S.I. specification when E.L.M.A. believed they did not. E.L.M.A. decided to ask for the introduction of a B.S.I. marking scheme for general service filament lamps (see paragraph 124) and, when a scheme was introduced, most of the members made provisional application for such licences. Doubts were, however, expressed in E.L.M.A. whether the scheme was wise, since the

* Calculated in Phoebus units—see paragraph 91.

† Made by Crompton before joining E.L.M.A. and continued thereafter.

technical committee felt that "the levels of efficiency in the present B.S.S. 161-1934 [i.e. the B.S.I. specification] may not prevent the outside manufacturer from obtaining a licence". At this time Phoebus policy was "to try to prevent by any means the introduction of a quality mark in all countries. If Phoebus agrees that this introduction seems unavoidable, and in this case only, the negotiations should be handled towards the adoption of the highest standard possible." Discussions in E.L.M.A. continued over a long period. On the one hand, it was thought that "the fact that E.L.M.A. members have got a licence will give [outsiders] a greater urge to improve their quality, and if outsiders did obtain a licence, Members of E.L.M.A. will be unable to say that the outsiders are supplying inferior lamps". On the other hand, the London County Council had decided to buy lamps from licence-holders only. By October, 1936, all members except Cryselco, Aurora and B.E.L.L. had obtained licences.* Fears expressed in 1936 that some of the newer members of E.L.M.A. might not be able to get licences, which would make it appear that some E.L.M.A. lamps were better than others, did not materialise. Members had, however, agreed not to use in any way the fact that they held the licences unless a non-member got one, and this agreement has been renewed periodically up to the present time. We understand that at the present time one Independent Manufacturer holds a licence and another has applied. The certification mark does not appear to be used, except for London County Council contracts, by any licence-holder.

131. There is, as we have said, nothing to stop anyone from manufacturing general service filament lamps to B.S.I. specification without applying for a licence, the purpose of the licence being to allow the holder to apply the certification mark to the lamp. Many of the Independent Manufacturers supply lamps as conforming to the specification, but have told us that they regard the testing procedure for licence-holders as a useless expense.

132. E.L.M.A. has told us that the Controlled Companies make a lower quality lamp than do E.L.M.A. members. We have no means of checking whether this is so. We note, however, that they comply with the B.S.I. specification when fulfilling orders from Government Departments, the Railway Executive and other public bodies, and further that one of them (which supplies the bulk of its output to a chain store under the store's brand name) describes in its price list lamps sold under its own brand name as "manufactured in accordance with the B.S.I. specification". Most of their customers appear to be under the impression that lamps supplied by Splendor and Ismay, whether branded or not, comply with the specification: some say that they have had oral assurances to this effect and one has supplied us with a written assurance from Splendor dated 1st September, 1950. These companies say that in their ordinary business they do not carry out the full tests prescribed in the specification after manufacture, though generally speaking the materials and methods are the same as when they are fulfilling orders to the specification. It is clear from the evidence that the Controlled Companies supply substantial quantities of lamps as complying with the B.S.I. specification and that their lamps are of satisfactory quality.

133. The E.L.M.A. Rules provide that "Lamps must be made to comply with specifications agreed to by E.L.M.A. and not to any other specifications. All current B.S.I. specifications for lamps are agreed to by E.L.M.A." (Appendix 6, Section II, paragraph (6)). Further, "Members must not sell lamps deviating in any respect from the recognised E.L.M.A. standard except in such cases where deviations are taken care of in the Rule Book" or in

* Cryselco and Aurora have since obtained licences. B.E.L.L. does not make lamps of the types to which the B.S.I. standard No. 161 and the certification mark are applicable.

experimental quantities not exceeding one dozen (Appendix 6, Section II, paragraph (7)). A similar provision governed British Luma under its patent licence (Appendix 11). The effect of these provisions is that members of E.L.M.A. may not compete with each other by the production of different kinds of lamps without the consent of E.L.M.A. In addition, "Advertisements must not indicate that any individual make of Association lamp possesses any advantage over or is better than another" (Appendix 6, Section II, paragraph (9)), but numerous advertisements implying the superiority of particular brands are in fact widely used by E.L.M.A. members.

CHAPTER 10 : LAMP COMPONENTS

134. The principal semi-manufactured components used in the making of lamps are listed in paragraph 6 and more fully described in Appendix 2. Before the 1914-18 war British manufacturers were largely dependent for their supplies of components on imports or, in the case of glass bulbs, on mouth-blown production. Between 1918 and 1939 members of E.L.M.A. developed the manufacture of components on a considerable scale. The British patent rights for the Westlake bulb-blowing machine, which originated in the United States, were acquired by a company sponsored by some of the members; and in 1919 G.E.C. and B.T.H. began to produce machine-blown bulbs in their respective glassworks under licence from that company.* In 1925 the same two E.L.M.A. members jointly promoted a company, Lamp Caps Ltd., to undertake the manufacture of caps. G.E.C. and B.T.H. also produced tubing and rod in their glass works, and they and other E.L.M.A. members greatly developed their wire-drawing capacity. The non-E.L.M.A. manufacturers did not develop the manufacture of components to any extent.

135. By 1939 the E.L.M.A. members were jointly almost self-sufficient. The producing companies sold very little to non-members, and Independent Manufacturers relied on imports, mainly from Europe. Primarily as the result of war conditions, the position has since radically changed. When in 1939 it became necessary to reduce imports, E.L.M.A. told the Board of Trade that as regards lamp components its members were "probably in a position to meet the whole requirements of the country from British sources". In 1940 imports from Europe ceased entirely, and during the war years, according to the Independent Manufacturers became almost completely dependent on the E.L.M.A. members for their supplies of lamp components. From 1942 to 1945 the supply of lamp components and in particular glass bulbs and tungsten and molybdenum wire was controlled by the Government and there was an allocation system among all lamp manufacturers.† Although restrictions on imports have now been greatly relaxed, we are told that the prices of such components as are available from abroad are in some cases higher than E.L.M.A.'s prices and that the quality is not always satisfactory: there are some independent sources of certain components in the United Kingdom (see paragraph 142) but the Independent Manufacturers continue to depend very largely on E.L.M.A. members. One independent component manufacturer has suggested that this may be because E.L.M.A. members make the supply of one component conditional upon the purchase of another. We have found no evidence to support this view and consider that the sales of the component manufacturer concerned have been affected rather by the change in ownership of two former customers who, as Controlled Companies, can now buy their components from E.L.M.A. members at preferential terms (see paragraph 139).

* We are told by E.L.M.A. that all patents on the Westlake machine had expired by 1932.

† The allocation of tungsten wire and glass bulbs was subsequently resumed. Allocation of tungsten finally ended in 1948: the scheme for bulb allocation is nominally still in existence.

136. Many components of filament lamps were formerly covered by patents. In the patent agreement, made in 1921, between the two principal component-manufacturing members of E.L.M.A., G.E.C. and B.T.H., it was provided that the two companies should not sell patented components, other than glass, except to licensees: there was to be an agreed price for the sale of tungsten wire to licensees.

137. The Phoebus Agreement, which came into effect in 1925, contained a provision prohibiting the parties from giving "aid" directly or indirectly to manufacturers who did not share "the burdens and obligations" of the agreement (see Appendix 8, Article 12 (B)). The application of this provision to the supply of components was the subject of much discussion. The Phoebus organisation regarded the control of lamp components generally as one means of joint attack on the so-called "outsider"; the parties therefore sought, first, to gain control of independent sources of supply of components by acquiring them or making agreements with the owners and, secondly, to prohibit or limit the supply of components by the parties to non-parties. The first part of this policy, although pursued from time to time over a number of years, appears not to have been particularly successful: we have no evidence that it was applied within the United Kingdom itself, but agreements made by the Phoebus organisation with some continental suppliers of components may have had some small effect on British independent manufacturers who relied on imported components. As regards the second part of the policy, at one time the British Group submitted a draft resolution declaring that the supply of lamp parts to independent manufacturers was totally prohibited by the Phoebus Agreement. The draft resolution was not adopted but in 1937 a resolution was adopted placing an embargo on the sale of certain components except to the parties and their licensees; in general these were components for which no competitive source of supply was thought to exist, including electrodes, certain kinds of bulbs (particularly inside-frosted bulbs*), certain gases and tungsten wire. Components which were not prohibited could be sold to any independent manufacturer, provided a price was agreed by the parties who were trading in the territory where the independent manufacturer made lamps.

138. This policy of the Phoebus organisation was reflected in the patent licences granted by G.E.C., B.T.H. and Siemens before the war. Aurora, B.E.L.L. and British Luma, as licensees, undertook not to supply any lamp parts, whether patented or not, to manufacturers not approved by the licensors†: in the patent licence to Crompton the undertaking not to supply was confined to filaments and tungsten wire but was afterwards extended to cover fluorescent powders. B.E.L.L. moreover, undertook not to make filaments.

139. This exclusive policy was not continued during the war, although the Phoebus resolution of 1937 was maintained and renewed annually, with modifications, by the parties to the New General Agreement of 1941 until 1946 when it was allowed to expire.‡ We are informed that the E.L.M.A. members consider the supply of lamp components to non-members to be governed by Article 12 of the 1948 Lamp Agreement, which is substantially similar to the provision in the Phoebus Agreement prohibiting aid to non-parties (see Appendix 9, Article 12). There is no formal resolution on the subject, but we are

* Inside-frosting is the method normally used for making pearl bulbs and at that time was protected by patents—see paragraph 75.

† For the provision in British Luma's licence, see Appendix 11.

‡ The prohibition on supply of inside-frosted bulbs had been withdrawn for some countries (but not the United Kingdom) in 1938. During the war it was provided that any party who was required by the British Government to deliver tungsten wire to a non-party should report to the Wire Committee of the parties which would decide the price.

told that the accepted interpretation is that bulbs, glass tubing and rod, caps, wire (on reels) and electrodes may be supplied without infringing that article ; on the other hand members will not supply filaments except to fellow-members and licensees, and the same is true of fluorescent powders, the supply of which is still covered by the patent agreements between the members. The members continue the Phoebus policy of fixing common prices for the sale of such components as may be sold to any lamp manufacturer, but there are for most components different common prices for sale to (i) fellow-members, (ii) the Controlled Companies, (iii) British Luma and (iv) other Independent Manufacturers. In Appendix 15 (Table 4) we compare the prices for the main components on sale to these various groups of manufacturers, as submitted to us by E.L.M.A. in March, 1950. It will be seen that the Controlled Companies and British Luma normally enjoy a price advantage over the members, who in turn get rather better terms than the Independent Manufacturers (other than British Luma).

140. In justification of past and present policy, in so far as it has been and is exclusive, E.L.M.A. has said that "materials and components necessarily involved, particularly in the early days, 'know-how' and technique of lamp manufacture"; and the members see no reason why they should be expected, as a matter of course, to supply their competitors with pre-fabricated components. They contend, accordingly, that they have now gone far beyond what might be expected of them, in that they withhold only those components which embody vital techniques to a very substantial degree. They say, as regards the price differentials, that the additional cost for the Independent Manufacturer is only about one tenth of a penny per lamp.

141. It has been said to us by some Independent Manufacturers that it has been the policy of the E.L.M.A. members to hamper the trade of their independent competitors either by withholding supplies of essential components, particularly bulbs and caps, or by delivering the wrong types, particularly the wrong size of bulbs. Many, although not all, of these complaints relate to the period during and immediately after the war when the supply of materials was generally difficult* ; the documentary evidence submitted to us confirmed that deliveries were in arrears or in some cases that the supplies delivered were not of the type ordered ; it failed to support the contention that these conditions resulted from any deliberate policy on the part of the E.L.M.A. members concerned. It may be mentioned that a similar comment regarding the delivery of the wrong types of bulbs under the Ministry of Supply's bulb allocation scheme has been made by one of the Controlled Companies, while in 1941 the representative of one E.L.M.A. member complained that materials were being supplied to Independent Manufacturers to the detriment of E.L.M.A. members.† Although most of the complaints relate to the past rather than the present, Independent Manufacturers have repeatedly expressed to us uneasiness at their dependence on E.L.M.A. members for supplies of components, and particularly of glass.

142. There is some independent production of tungsten and molybdenum in the United Kingdom and a subsidiary of Thorn makes lamp caps, while presumably there is potential competition with E.L.M.A. members in the production of tubing and rod from the general glass industry (see paragraph 144). The production of machine-made glass bulbs (other than miniature bulbs) on the other hand is virtually a monopoly of G.E.C. and B.T.H. who, working in close co-operation, have been producing about 200 million

* There has been some renewal of these complaints recently, coinciding with the renewed scarcity of raw materials.

† It was explained to him by the Chairman of E.L.M.A. that this was largely due to meeting Government wishes.

machine-made bulbs a year. This quantity has not always been sufficient to meet all demands, and G.E.C. and B.T.H. have now jointly promoted a company, Glass Bulbs Ltd., to operate two Corning Ribbon machines of a kind which has for some time been in general use in the United States. The output of these two machines when in full operation* is estimated at 450 million bulbs a year. The potential output of these machines, together with such Westlake and Ohio machines as may be retained for making special types of bulbs, is thus far in excess of the present requirements of the United Kingdom lamp industry and should be fully adequate for some time to come.† A possible saving of the order of 15 per cent. to 20 per cent. in the cost of production of bulbs has been mentioned by E.L.M.A., subject to uncertainties about the cost of installing the new factory and plant and to full capacity working.

143. As will be seen from Appendix 15 (Table 4), E.L.M.A. members at present sell clear bulbs to Independent Manufacturers at the same price as to members but they charge a higher price for pearl bulbs. The proprietors of Glass Bulbs Ltd., G.E.C. and B.T.H., recognise that their monopoly control of the production of machine-made glass bulbs involves special responsibilities. In 1947, they gave undertakings to the Ministry of Supply to supply bulbs produced by the new plant to all lamp manufacturers "without discrimination". At our suggestion Glass Bulbs Ltd. has recently written to the Ministry to clarify its intentions as to selling prices. We reproduce the letter at Appendix 12; it will be seen that the company proposes to sell bulbs made on the new machines at preferential prices to its proprietors and to the Controlled Companies, but that there is to be no difference in the prices charged to other manufacturers, that is to say the remaining members of E.L.M.A. and the Independent Manufacturers, including British Luma.

144. In addition to the complaints concerning the supply of components which we have considered above, it was alleged during the debates on the Monopolies and Restrictive Practices (Inquiry and Control) Bill that E.L.M.A. had "persuaded the glass industry to keep out of the manufacture of electric lamp bulbs and glass tubing for other manufacturers".‡ Both E.L.M.A. and those of its members who make glass have denied that this allegation has any truth and say that on the contrary they have given technical assistance and advice to members of the glass industry wishing to manufacture cathode ray tubes and tubes for fluorescent lamps. They point out that in fact two independent concerns, including one of those to whom they have given technical assistance, are at present making tubes for fluorescent lamps. We have ourselves seen no evidence to support the allegation: we note only that an approach was made by G.E.C. and B.T.H. to dissuade C.W.S. from laying down plant for the production of tubing for fluorescent lamps on the ground that existing capacity in the United Kingdom for the manufacture of tubing was sufficient to meet all demands: the E.L.M.A. members offered instead to meet the requirements of C.W.S. from their own production on very favourable terms. The special circumstances which have left the machine production of glass bulbs entirely in the hands of E.L.M.A. members have already been described. As regards the tubing and rod which are used to make some of the internal parts of both filament and discharge lamps we have not seen evidence that any approach has been made to any general glass-maker by any Independent Manufacturer of lamps.

* It is understood that at the present time (June, 1951) only one machine is installed and in production.

† Both the old machines and the new Ribbon machines can be used for making other articles, including bulbs for radio valves. The figure of 200 million mentioned above is a rough estimate of production in recent years of bulbs for lamps: it is understood that about 50 million other articles have been produced with the concurrence of the Government. The figure of 450 million on the other hand is a rough estimate of the potential annual output of all articles by the two Ribbon machines.

‡ Official Report, Vol. 449, No. 105, Col. 2058.

PART III

THE DISTRIBUTIVE SIDE

CHAPTER 11 : THE E.L.M.A. SELLING SYSTEM*

145. The E.L.M.A. selling system regulates the sale in the United Kingdom of all E.L.M.A. lamps of the kinds with which we are concerned except flashlamps† and cold cathode discharge lamps. By "E.L.M.A. lamps" we mean the lamps sold by the members under their own brand names‡ ; there is no E.L.M.A. brand as such. The system, which is elaborate, rests on E.L.M.A.'s agreements with individual distributors and on the Rules, which contain two principal sections which are substantially reproduced in Appendix 6. The first section applies to wholesalers and retailers ; it tells them what discounts to allow in any transaction, requires them to maintain prices and not to give certain inducements to buyers, and lays down rules in connection with invoicing, tendering, advertising and other matters. The second section is circulated among members of E.L.M.A. only, and contains in addition to similar information about the selling arrangements certain other obligations binding on the members. Subsequent sections of the Rules give E.L.M.A.'s price schedules for all types of lamp, together with a schedule of lamp lives.§ The provisions of the Rules and agreements are very closely inter-connected and the description of the system given in the following paragraphs is based on their combined effect.

146. The Council of E.L.M.A. fixes a price, common to all members, for each type of lamp sold ; a new or special type of lamp can be made only with the approval of E.L.M.A. and a price must be fixed before the lamp is offered for sale. These prices, which are at the same time both maxima and minima, represent the "list", or retail selling, prices of lamps to the general public. Discounts, which also are both maxima and minima, are allowed to other classes of purchasers ; many purchasers are allowed, in addition, annual rebates on a fixed scale according to the value of their purchases of certain kinds of E.L.M.A. lamps during the year. Thus the net price to be charged to any given purchaser for a given type of lamp is laid down and is the same no matter which member made the lamp or who is the immediate seller ; and there is an obligation on the seller at each stage to observe the price fixed. The only exception to the rule of common prices is that Aurora and its wholesalers are allowed to give an extra discount of 10 per cent. on Aurora lamps, other than coiled-coil lamps.

147. Parallel provisions for price-fixing by the Local Meeting for the United Kingdom were made by the Phoebus organisation ; and under the 1948 Lamp Agreement the prices in the United Kingdom are formally fixed by the Local Meeting of the parties to that agreement who have quota rights here|| (see Chapter 6). This dual authority for price-fixing by the E.L.M.A. Council and by the Local Meeting does not, we understand, give rise to any difficulty in practice : it has indeed been explained to us that the way prices are fixed by the E.L.M.A. Council in practice is that they are first discussed between

* Some aspects of the system were described in the Report of the Lloyd Jacob Committee on Resale Price Maintenance (Cmd. 7696: 1949) pp. 86-91.

† The E.L.M.A. Rules lay down common manufacturers' selling prices for flashlamps.

‡ Members are prohibited by the Rules from selling unbranded lamps.

§ This schedule is not intended for publication and the figures are only to be quoted by sellers in response to specific requests from customers ; it gives average lives, but there is no guarantee.

|| i.e., the British Group (G.E.C., B.T.H., Ediswan, Metrovick, Siemens and Cryslerco), Crompton, Stella and Philips (Holland) ; the last-named covers the British Philips Company, and all E.L.M.A. members who are represented on the Council are, therefore, also effectively represented in the Local Meeting.

the two largest producers, G.E.C. and B.T.H., and when proposals have been agreed between these two companies, and at a later stage Siemens, their representatives table a resolution in the Council.*

148. The discount terms authorised by E.L.M.A. vary in the first place according to type of lamp. For this purpose lamps are defined and grouped under nine† headings (see Appendix 6, Section I (3)): of the eight groups of filament lamps the largest and most widely used are those covering "general lighting service lamps" (Groups I and VIII‡) and motor lamps (Group II); other groups cover cycle dynamo lamps, lamps for miners' safety lamps, Christmas tree decoration lamps, telephone switchboard lamps and radio panel lamps. Discharge lamps of all types, including fluorescent lamps, are covered by Group IX. For discount and for distribution purposes generally, lamps in Groups I, VIII and IX are treated the same.

149. The buying terms applicable to lamps in each of these groups vary according to E.L.M.A.'s classification of the purchaser. E.L.M.A. recognises two main categories of buyer, "Re-sellers" (i.e., wholesalers and retailers) and "Users"§ of lamps, each class being sub-divided. The sub-division of the Re-seller class into wholesalers and retailers is self-explanatory and the definitions with which these distributors must conform to qualify for terms are shown in the Rules (see Appendix 6, Section I (5)). E.L.M.A. distinguishes two further sub-classes—the "Trader" or large retailer, a part of whose business lies in supplying smaller retailers, and as regards motor lamps the "Factor", distinguished from the wholesaler by lesser volume of purchases. The basic discounts allowed to wholesalers and retailers are:—

	<i>Groups I, VIII and IX (including all general service filament lamps and discharge lamps)</i>	<i>Group II (Motor lamps)</i>
	Per cent.	Per cent.
Wholesaler	33½	47½
Retailer with exclusive agreement (see paragraph 154)	25	38
Retailer without exclusive agreement (see paragraph 154)	20	30

Wholesalers and retailers of lamps of Groups I, VIII and IX receive quantity rebates in addition: there is no similar system for motor lamps, but the discounts in that case are more varied, the smaller wholesalers (or "factors") being allowed only 42½ per cent. (instead of 47½ per cent. as above) and the smaller retailers with exclusive agreements 35 per cent. (instead of 38 per cent.).

150. The "User" class, as defined in the Rules (see Appendix 6, Section I (4)), contains four sub-divisions, namely:—

(i) Classified Users, to whom terms are automatically granted by virtue of the trade or occupation which they carry on and who are allowed 12½ per cent. discount on lamps in Groups I, VIII and IX as well as quantity rebates, and 25 per cent. discount on motor lamps: this sub-division includes transport companies over a certain size, shipping companies, cinemas, and manufacturers of electrical apparatus.

* For further discussion of the question of fixing common prices see Chapter 14.

† The group numbers run from I to X but Group III has been discontinued.

‡ Group VIII covers E.L.M.A.'s "Type B" lamps only. Group I includes general service filament lamps as described in (a) of paragraph 1 of this report but also includes some of the types described in (b) of that paragraph.

§ Consisting of "private and trading individuals, firms and companies, and public bodies purchasing lamps for own use only".

(ii) Public Bodies,* for whom a similar system operates but with more favourable terms.

(iii) Listed Users, classed according to whether their annual purchases amount to not less than £27, £100, or £5,000, and entitled to discounts on lamps in Groups I, VIII and IX of 12½ per cent., 17½ per cent., or 22½ per cent. respectively† as well as quantity rebates, and to a discount of 25 per cent on motor lamps.

(iv) Ordinary Users, including the general public, who are not covered in any of the preceding classes or elsewhere specified by E.L.M.A., and who normally buy lamps at list price without discounts or rebates.

In practice there is, outside these sub-divisions, a very small number of users who virtually negotiate their own terms with E.L.M.A. An example of an agreement‡ made with some of these users has been submitted to us, in which the signatory undertakes that 80 per cent. of his requirements of lamps will be bought from E.L.M.A. members or their authorised suppliers, and is allowed discount of 32½ per cent. on lamps of Groups I, VIII and IX and 30 per cent. on motor lamps but no quantity rebate in either case. Some of these agreements specify a higher minimum proportion than 80 per cent. and some allow a lower discount than 32½ per cent. but give a quantity rebate in addition. Apart from these concerns Government Departments and some of the nationalised industries have negotiated special prices and terms without giving any undertaking to buy exclusively, either wholly or as to a minimum proportion, from E.L.M.A. members; B.E.A., for instance, which is also an important distributor of lamps and has refused to enter into any exclusive agreement with E.L.M.A., buys considerable quantities of lamps for its own use on the same terms as those on which it buys for re-sale (see paragraph 176).

151. The manufacturers of certain types of equipment incorporating lamps§ occupy an intermediate position between the two main categories of purchaser referred to in paragraph 149, since, although they are not "Re-sellers" as defined by E.L.M.A., most of the lamps they buy are not for their own use. Some can receive terms as Classified Users; other have negotiated special agreements with E.L.M.A.

152. Besides discount, rebate is allowed to some buyers on the aggregate value of annual purchases of all E.L.M.A. lamps in Groups I, VIII and IX. The amount of rebate earned by a purchaser is calculated on annual sales returns made to E.L.M.A. by members and distributors, the sum due being usually paid to the purchaser by E.L.M.A. and subsequently recovered by E.L.M.A. from the individual members concerned. Wholesalers contribute a proportion of the rebate earned by those retailer customers who earn rebate of 5 per cent. or over: in such cases E.L.M.A. pays the rebate to the retailer and receives the wholesaler's contribution by deduction. Rebates vary according to class of purchaser, and range from 1 per cent. to 12½ per cent.

153. A table showing the gross allowances applicable to all classes of purchaser for the main groups of lamps is given at Appendix 15 (Table 5).

* i.e., those bodies who have power to administer money raised by rates in pursuance of any Public General Act.

† The qualifications of Listed Users and method of listing are defined in Section I (7) and Section II (Discounts) of the Rules (See Appendix 6). E.L.M.A.'s lists contain nearly 9,000 names.

‡ There were 15 such agreements in 1947 and we are informed that there are 8 at present.

§ Including the manufacturers of lamp fittings, cinema projectors, car and cycle lighting sets and telephone switchboards.

154. All wholesalers of E.L.M.A. lamps must bind themselves to confine their sales of lamps to E.L.M.A. brands.* Retailers on the other hand are not bound to do so in order to get lamps at trade prices but are allowed an additional discount of 5 per cent. off list price if they do. (These arrangements with wholesalers and retailers are referred to hereafter in this report as "exclusive dealing".) Exclusive dealers must enter into individual agreements with E.L.M.A. Retailers who do not wish to bind themselves in this way enter into no agreement, but obtain E.L.M.A. lamps at trade terms (i.e., without the additional discount) from E.L.M.A. members or from wholesalers, on condition that they observe the fixed resale prices. The exception to this is B.E.A. which is a substantial retailer of lamps. Before nationalisation many but not all the electricity supply undertakings were exclusive retailers of E.L.M.A. lamps. As a matter of policy B.E.A. does not deal exclusively, but under a special arrangement obtains E.L.M.A. lamps at the same discount as the "exclusive" retailer without accepting any exclusive dealing obligation. B.E.A. observes the maintained list prices when selling lamps.

155. E.L.M.A. has eighteen forms of standard agreement covering the various classes of distributors and users in the United Kingdom according to the groups of lamp which they purchase. We list these agreements and summarise their provisions in Appendix 13, and we reproduce at Appendix 14 the standard form of agreement with an exclusive retailer of lamps of Groups I, VIII and IX.† E.L.M.A. prints lists of all agreement-holders and Listed Users for the use of its members and distributors. These lists run to over 1,300 printed pages and contain the names of more than 25,000 holders of agreements of all types, and of nearly 9,000 Listed Users. About 19,000 retailers of lamps of Groups I, VIII and IX hold exclusive dealing agreements with E.L.M.A. We are told by E.L.M.A. that there are believed to be about 35,000 retail outlets for these kinds of lamps; the remaining 16,000 may deal in E.L.M.A. lamps without an agreement or in non-E.L.M.A. lamps or in both, but there are no figures available sub-dividing them in this way; they no doubt include many whose interest in lamps is small. Of the 276 wholesalers of E.L.M.A. lamps of Groups I, VIII and IX (all of whom must sell E.L.M.A. lamps only) 166 belong to the only association of wholesale distributors of general electrical goods which has given evidence to us, namely E.W.F., only 18 of whose members handle non-E.L.M.A. lamps. There are also some 5,500 retailers and 231 wholesalers (including "factors"—see paragraph 149) of motor lamps who have exclusive dealing agreements with E.L.M.A.: we have been informed that there are some 15,000 distributors and repairers of motor vehicles in the United Kingdom, practically all of whom might be expected to retail motor lamps for replacement, but again there are no figures showing what kinds of lamps the remaining 9,500 sell. Of the 231 exclusive wholesalers of E.L.M.A. motor lamps about 100 belong to the Motor Factors' Association (M.F.A.), whose membership, however, includes a considerable minority without such agreements.

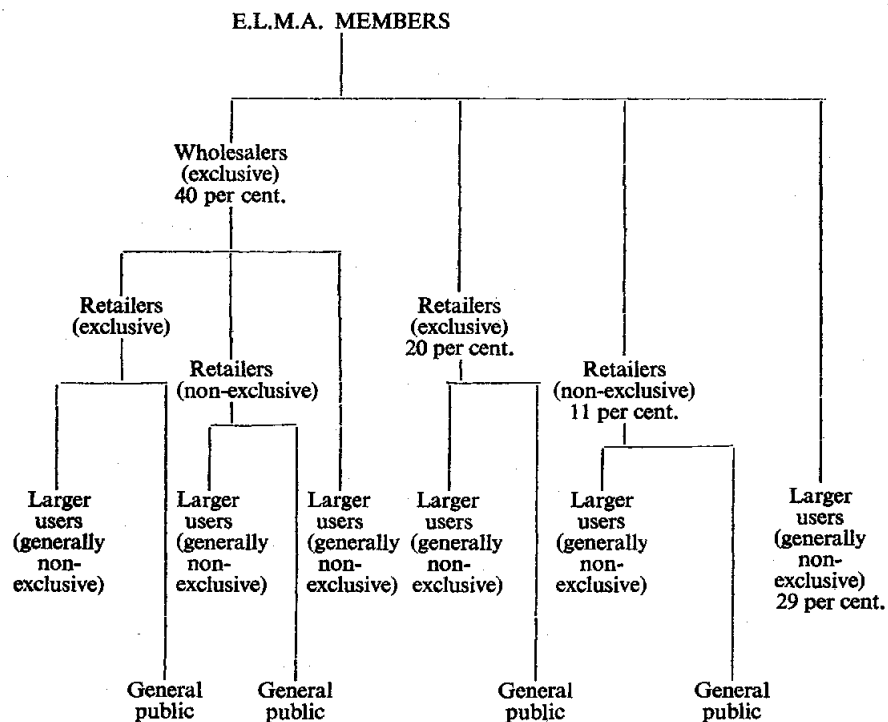
156. Classified, Listed and Ordinary Users do not sign agreements with E.L.M.A. or enter into any sort of undertaking to buy E.L.M.A. lamps only, but the amount of rebate earned, and in the case of Listed Users the

* They were formerly bound to confine their stocks and purchases to E.L.M.A. brands also.

† The rebate scale in Clause (2) of this standard form of agreement does not go beyond 5 per cent. (for net purchases of £2,500 per annum). We are informed that for the few retailers whose purchases exceed this amount the same form is used but with a scale of rebates extended up to 10 per cent. (for net purchases of £10,000 per annum)—see Appendix 15 (Table 5).

rate of discount allowed, would be affected by extensive purchase of non-E.L.M.A. lamps. A few very large users have entered into an obligation to buy E.L.M.A. lamps either exclusively or for a high proportion of their requirements (see paragraph 150): the terms they get are more favourable than those for which they would otherwise qualify. The evidence shows that one at least of them exerts bargaining power as regards both the terms offered and the proportion to be purchased from E.L.M.A. members. In other cases contracts are placed at "net prices" fixed by E.L.M.A., the prices quoted by all members being identical; this is the case, for instance, with Government contracts. The Electricity and Transport Departments of Local Authorities also formerly received quantity rebates which were higher for exclusive than for non-exclusive dealing, the higher rate being obtained by signature of a declaration at the end of the year that purchases of lamps had been confined to E.L.M.A. brands. This arrangement was dropped in 1949, after the Electricity Departments had been absorbed by B.E.A.

157. E.L.M.A. has told us that in 1946-47, 40 per cent. of members' sales of lamps of Groups I and VIII (which include all general service filament lamps) passed through the hands of wholesalers, the balance going direct to retailers or to users. The channels of distribution of these lamps are illustrated in the following diagram:—



As will be noted, we have no information to show how the sales of direct customers of E.L.M.A. members were apportioned among the various subclasses of purchasers shown in the diagram.

158. The standard terms allowed to users, apart from the few special cases described in paragraphs 150 and 156, range from list price when the user is a member of the general public (except that 5 per cent. is allowed on single

orders for Group I lamps of over £2 list value or 25 lamps) to list price less a discount of 22½ per cent. and rebate of 7 per cent. for a large Listed User. Any user receives the same terms whether he buys from manufacturers or distributors, or both. While, therefore, by fixing the terms applicable at all stages of distribution E.L.M.A. fixes every distributor's margin on any given transaction or type of transaction, the margin yielded by the sale of a given type of lamp by a particular distributor varies according to the class of customer. The margins afforded by this system at all stages of distribution are considered in greater detail in Chapter 14.

159. The Rules for distributors lay down that "in all purchase or resale transactions . . . the established prices . . . , Rules, terms and discounts of E.L.M.A. must be maintained". They further lay down that "no payment or allowance, direct or indirect, shall be given at any time which would either reduce the selling prices of lamps as fixed by E.L.M.A. . . . or form an inducement to purchase from one seller [i.e. distributor] rather than another. . . ." A list of practices regarded by E.L.M.A. as constituting inducement is given and E.L.M.A. guards against indirect price-cutting on the part of either members or distributors by a series of detailed provisions regulating the scope of advertising, the form of the quotations, invoices, contracts and tenders to be used, the charging of purchase tax, the supply of free samples and supply on a sale or return basis, delivery and packing charges and extra charges for "specified variations from standard practice"*. Thus under this system anything which could remotely be regarded as price variation is prohibited and the distributor is regulated by E.L.M.A. in the smallest matters which might constitute competition with another distributor in sales of lamps.

160. Distributors with individual agreements (i.e. all wholesalers of E.L.M.A. lamps and all exclusive retailers—in other words all exclusive dealers) are bound by their provisions to observe these Rules. Wholesalers are also bound by their agreements to insert in all invoices to retailers the following clause:—

"The discounts shown in this invoice are allowed you upon the conditions that these lamps are sold at Maker's list prices and no cash or other discounts whatsoever are allowed on resale except as authorized by the Electric Lamp Manufacturers' Association. In addition, the full amount of Purchase Tax as authorized by the Electric Lamp Manufacturers' Association must be charged. Acceptance of the lamps will constitute an acceptance of the above conditions and creates a binding agreement."†

This provision has the effect of binding retailers not holding individual agreements with E.L.M.A. to maintain E.L.M.A.'s prices and terms. Further, the Bye-laws and Rules are drafted to apply to all distributors, whether or not they have signed agreements. Members of E.L.M.A. for their part are responsible for seeing that their agents, representatives and branches maintain E.L.M.A.'s prices and discounts and observe the Rules.

161. The penalties which may be imposed in cases of breach of E.L.M.A.'s provisions are laid down in the Rules, agreements and Bye-laws; distributors may be fined‡ or may suffer any other penalty, monetary or otherwise, inflicted by the Fines Committee, or may have their names included in the

* A schedule defining permitted variations (e.g., special kinds of caps) and specifying charges is contained in Section III of the Rules (which is not reproduced in Appendix 6).

† In the agreements in operation before June, 1950, the closing words were ". . . becomes a binding agreement accordingly with the patentees and you".

‡ A Group I wholesaler failing to observe the exclusive dealing provision of his agreement is liable to maximum damages of £500 for each breach.

Stop List: members are liable to a maximum fine of £1,000.* The Bye-laws (see Appendix 5), which govern the application of penalties to distributors and particularly the operation of the Stop List, provide that penalties may be imposed not only in cases where lamps are sold at prices or on terms other than those fixed by E.L.M.A., but also in cases of indirect breach where the sale of lamps at E.L.M.A.'s fixed prices is coupled with other forms of inducement. Members and agreement-holders are prohibited from supplying lamps to concerns named in the Stop List, and from having any trade relations in respect of lamps with them; failure to observe this provision may in turn lead to the inclusion of the offender's name in the Stop List; and the names of affiliates or associates of an offender may be added to the list.

162. Complaints alleging breach may reach E.L.M.A. either from members, who by the Rules are obliged to report any cases which come to their notice, or from distributors. Members and distributors with agreements must furnish to E.L.M.A. on request any information necessary for the proper working of the system; and the latter may be required to permit inspection of their books and accounts, a right which we are told has seldom been exercised during the twelve years covered by our review. Very minor cases of alleged breach are dealt with by the Director of E.L.M.A. and no penalty is imposed; the more serious cases are investigated by the Fines Committee.

163. We have examined a summary prepared by E.L.M.A. of cases considered by this Committee between the years 1937 and 1949. One hundred and fifty-eight of the cases concerned E.L.M.A. members, but 139 of them related to minor technical breaches of the Rules for which a fine of 2 guineas was imposed in each case; of the remaining 19 cases 10 were dismissed. The heaviest penalty in a member's case was a fine of £750 imposed on G.E.C. in 1939 for paying an unauthorized commission to an exclusive retailer on business with a large user; the same member was in 1945 fined £50 for supplying to a large user a 2-foot fluorescent tube of a very special type not authorized for sale by members. Other fines imposed on members in cases not regarded as "minor technical breaches" ranged from 35 guineas downwards and were all in respect of breaches of price maintenance; Metrovick and B.T.H. were each fined two guineas for allowing discounts larger than those authorised by E.L.M.A.

164. During the same period the Fines Committee investigated a number of minor technical breaches by distributors, all of which (including 75 cases concerning wholesalers) were dealt with by fines of 2 guineas each: in addition there were 67 cases concerning 325 distributors which were not regarded as minor. With a few unimportant exceptions all of these 67 cases related to breach of price maintenance or of the exclusive dealing provisions of agreements. Of the 325 distributors concerned, 33 were wholesalers and 292 retailers. One case related to complaints of breach of exclusive dealing by about 250 retailers early in 1944, when lamps were rather scarce: 150 of these complaints were substantiated and the agreements of 33 of the retailers were terminated: the rest gave undertakings that no further breach would occur and were not fined. Breaches of exclusive buying were throughout mainly confined to retailers, 5 being fined sums ranging from £5 to £50 and 45 (including the 33 mentioned above) having their agreements terminated. For alleged breach of price maintenance 21 retailers were investigated: 10 had their names placed on the Stop List, 4 had their agreements terminated and 1 was fined £10. We think it relevant to mention that in two cases considered in 1946, when production of fluorescent lamps was insufficient

* There is no parallel system of penalties on members under the 1948 Lamp Agreement: there is only a general provision in Article 7 (see Appendix 9).

to meet demand, retailers sold fluorescent lamps at prices higher than those fixed by E.L.M.A., one retailer also refusing to supply the lamps without fittings ; on undertakings being given by the retailers concerned that the fixed retail prices would be observed in future, the threat to add their names to the Stop List was withdrawn and no action was taken.

165. In 15 out of 25 cases of alleged breach of price maintenance relating to wholesalers fines were imposed, the sums ranging from 2 guineas to £500. In addition one agreement was terminated and two names were placed on the Stop List. One wholesaler had his agreement terminated for dealing extensively in non-E.L.M.A. lamps.

166. We are informed that the total fines imposed for breaches of the Rules and of distributors' agreements during the 12 years in question were as follows:—

					£
E.L.M.A. members	...	...	...	...	1,352
Wholesalers	...	...	...	...	1,118
Retailers	...	...	...	...	97
					<hr/> £2,567 <hr/>

All fines, we are told, are made over to benevolent funds connected with the electrical industry.

167. The Stop List in its present form was set up in 1933: it is a printed document circulated by E.L.M.A. to members and to all wholesalers and "exclusive" retailers of E.L.M.A. lamps informing them that "until further notice . . . the following firms or persons are not to be supplied directly, or indirectly, with electric lamps of brands marketed by Members of this Association". Before names are added, the distributors concerned are informed of E.L.M.A.'s intention and are given a chance to state their case. The list is now reviewed at regular intervals, but before a name is removed E.L.M.A. must be satisfied that its prices, terms and conditions will be observed. From 1938 to 1946 the Stop List contained an average of 23 names; in 1947 the number fell to 3. The current list, published in June, 1949, contains only one name, that of a distributor first listed in 1939, whose name was retained when the case was reviewed in 1943.

168. It has been explained to us by E.L.M.A. that although the agreement of a distributor who does not fulfil his obligations may be terminated he is usually prepared to accept a fine as a preferable alternative. When a distributor has failed to maintain prices and terms, E.L.M.A. tries to make the penalty approximate to the profit earned as a result of the breach. The Stop List is reserved principally for cases of breach of price maintenance by those retailers who have no exclusive agreement with E.L.M.A. During and immediately after the 1939-45 war, if a wholesaler or retailer with an agreement was unable to obtain supplies of E.L.M.A. lamps E.L.M.A. was prepared to assist him either by seeing that he got the lamps required or by agreeing to a temporary relaxation of the exclusive dealing obligation; the wholesaler or retailer was, however, expected not to deal in non-E.L.M.A. lamps without reference to E.L.M.A., and as explained in paragraph 164 a number of retailers who did so in 1944 had their agreements terminated.

169. The number of cases brought before the Fines Committee is very small in relation to the number of retailers of lamps; this may be because it is generally known that E.L.M.A. keeps a close watch on prices, terms

and conditions of sale, though we are informed that it does not employ a special staff for this purpose. We do not suggest that E.L.M.A.'s methods of enforcement leave no loophole but it is clear that the discipline imposed is strict. As regards the few individual agreements with large users which contain obligations to buy E.L.M.A. lamps exclusively or for a large proportion of requirements, we have found no evidence to suggest that E.L.M.A. makes any attempt at enforcement.

170. We consider in Chapter 12 the relation to E.L.M.A.'s system of distribution of the distributors themselves. It is, however, relevant to mention here that some of the associations of distributors assist E.L.M.A. in checking the qualifications of applicants for distributors' agreements and in establishing the facts concerning allegations of breach of price maintenance or exclusive dealing: where a breach has been committed by a distributor who is a member of an association, the association may also be consulted by E.L.M.A. about the penalties to be imposed. The retailers' associations are consulted about the inclusion of smaller concerns in the class of Listed Users.

The E.L.M.A. Selling System and the Independent Manufacturers

171. Independent Manufacturers are in competition with E.L.M.A. members, but the E.L.M.A. arrangements for exclusive dealing described above present them with some difficulties since all wholesalers of E.L.M.A. lamps and many retailers have signed agreements to sell E.L.M.A. lamps only. To sell directly or indirectly to retailers already dealing in E.L.M.A. lamps, the Independent Manufacturer has to offer a larger discount to induce them to forego the extra 5 per cent. discount allowed by E.L.M.A. to those who deal exclusively in E.L.M.A. lamps and to accept a reduction in the aggregated quantity rebate paid by E.L.M.A.; the inducement is less likely to be effective if the Independent Manufacturers cannot supply the full range the retailers require. Other retailers, for instance hardware shops, may be willing to add the ordinary types of lamps to the range of goods they sell. The chain stores have for some years dealt mainly with the Controlled Companies; the Independent Manufacturers are not kept out of this market by any action of E.L.M.A. If an Independent Manufacturer wishes to sell lamps to wholesalers, however, he must find wholesalers not handling E.L.M.A. lamps, and these have been found outside the electrical trade and mainly in the general hardware trade. As explained in paragraph 156, only a very few large users have agreed to buy all or a fixed high proportion of their lamps in E.L.M.A. brands; most users who buy Independent Manufacturers' lamps as well merely suffer a corresponding reduction in the aggregated quantity rebate they receive from E.L.M.A. Some new Independent Manufacturers have therefore started by doing a high proportion of business direct with users.

172. It is claimed by the Independent Manufacturers that the duplication of channels and the higher discounts that consequently have to be paid impose a financial strain on them, and that the resulting increase in the costs of distribution must be ultimately reflected in the price of lamps to the consumer. Many distributors are members of associations receiving overriding commissions from E.L.M.A. based on the value of their members' purchases of E.L.M.A. lamps; where the association concerned distributes this commission to its members, there is an added inducement to the members to deal only or mainly in E.L.M.A. lamps. We describe these overriding commissions more fully in Chapter 12.

173. The Independent Manufacturers almost invariably offer higher discount and rebate terms than E.L.M.A.'s to distributors and large users. An

unknown manufacturer might have to do so in any event to meet the distributor's argument that the goods would be more difficult to sell, but there is no doubt that the general adoption of this practice by Independent Manufacturers on its present scale is due to the need to overcome the exclusive features of the E.L.M.A. system. At the same time it has been emphasised to us that it is useless for the Independent Manufacturer to fix retail prices below those fixed by E.L.M.A., since higher rates of discount and rebate based on lower end prices offer no net inducement to the distributor to transfer his custom, particularly as public demand is said not to be responsive to small differences in price.

174. We consider it relevant to compare conditions today as described above with those existing in 1920, when the Sub-Committee on Trusts reported that "the Association, for good or for ill, can exclude the non-Association manufacturer from all but the fringes of the distributing trade". The situation is different in this respect today since the chain stores, not committed to dealing in E.L.M.A. lamps exclusively, have become large retailers of lamps, and more recently B.E.A. has refused to sign an exclusive agreement. The Sub-Committee also reported, however, that "whilst non-Association manufacturers allow greater discounts to the middleman, their lamps are bought by the general public at the same prices as Association lamps". In the period between the wars some Independent Manufacturers did fix retail prices for general service filament lamps lower than E.L.M.A.'s, but the gap between the prices has been closed since 1939 by reductions in E.L.M.A.'s prices.

CHAPTER 12: THE DISTRIBUTORS

175. The distribution of lamps generally requires no special knowledge or technical service. We are told by E.L.M.A. that there are approximately 35,000 retail outlets for general service filament lamps. These distributors vary greatly in size and character. The smaller retail shops naturally tend to buy through the wholesalers, but this manufacturer-wholesaler-retailer pattern of trade is not by any means universal, since on the one hand the larger manufacturers deal directly even with small retailers through their wholesaling branches,* and on the other certain large retailing concerns, such as B.E.A. and the chain stores, dispense with the services of the wholesaler, or, as in the case of the co-operative societies, have their own wholesaling affiliates. Moreover, large users may buy direct from manufacturers or from wholesalers or from retailers.

Large Distributors

176. We estimate that purchases by B.E.A. represent between 4 per cent. and 5 per cent. of all manufacturers' sales of lamps,† over two-thirds of all lamps purchased being for resale. Before B.E.A. took them over in 1948 there were between 500 and 600 electricity supply undertakings buying lamps both for their own use and for resale by retail, over 90 per cent. of them buying E.L.M.A. lamps on exclusive terms.‡ Since vesting day the

* The addresses of nearly 200 branches of the members are listed in E.L.M.A.'s Rules.

† B.E.A. covers a considerably higher proportion than this of the retail trade in general service filament lamps.

‡ In 1947 the discount rate allowed by E.L.M.A. to all electricity undertakings was the same, the rate of 27 per cent. on general service filament lamps being that then generally allowed to retailers with exclusive agreements: supply undertakings which confined their purchases to E.L.M.A. lamps, however, received a more favourable scale of rebates than either those without agreement or the ordinary exclusive retailer (the rebate for supply undertakings which were exclusive purchasers in fact started at 5 per cent. for annual purchases under £50).

lamp retailing interests of these undertakings have been absorbed in the 14 autonomous Area Electricity Boards with their numerous district offices and showrooms. B.E.A. has refused to sign an exclusive agreement,* but is nevertheless allowed the same discounts on E.L.M.A. lamps as retailers with exclusive agreements: in addition, rebate on the aggregate value of purchases of general service filament and discharge lamps (Groups I, VIII and IX) by each Area Electricity Board and by the Central Authority taken separately is calculated since 1st June, 1950 on a scale the top limits of which are higher than those allowed to ordinary retailers according to their agreements† (see Appendix 15 (Table 5)). In practice purchases are made almost entirely from E.L.M.A. members and from the two largest Independent Manufacturers, the proportion of E.L.M.A. lamps being lower in the case of lamps bought for use than in the case of those for resale, though the proportions vary widely from one section of B.E.A. to another. B.E.A. observes on resale the prices fixed by E.L.M.A. and the Independent Manufacturers. Since the retail prices are identical there is no price inducement to the public to demand one lamp rather than another; and B.E.A.'s refusal to enter into exclusive agreements has not so far greatly altered the proportions in which it sells E.L.M.A. and other lamps.

177. The conditions under which the Co-operative Wholesale Societies trade in lamps have been governed by agreements with E.L.M.A.; S.C.W.S. still has such an agreement but the agreement of C.W.S., which was on similar lines, was brought to an end in 1949. S.C.W.S. is bound by its current agreement with E.L.M.A. to buy only lamps made by E.L.M.A. members and by British Luma (in which it is a large shareholder), to observe the E.L.M.A. Rules, to confine its sales to associated co-operative societies, and to insert the standard E.L.M.A. price maintenance clause in all invoices to retailers. The terms of the agreement, which was renewed in 1949, are otherwise generally the same as those of the standard E.L.M.A. wholesaler's agreement then in force. C.W.S. and S.C.W.S. between them account for all but a very small proportion of British Luma's sales in the home market. About two-thirds of the lamp purchases of S.C.W.S. are from British Luma. C.W.S., while it had an agreement with E.L.M.A., bought E.L.M.A. lamps and British Luma's lamps roughly in equal proportions. The agreement of C.W.S. came to an end in 1949 because it had acquired an interest in an Independent Manufacturer of fluorescent lamps and wished to buy and sell those lamps: although there were negotiations, it proved impossible to arrive at terms mutually satisfactory to E.L.M.A., C.W.S. and the Independent Manufacturer. This Independent Manufacturer has since gone out of business and C.W.S. now buys some lamps from other Independent Manufacturers.

178. Over 1,000 shops of the retail co-operative societies sell lamps. They do not necessarily buy through C.W.S. or S.C.W.S., and we have been unable to obtain reliable estimates of their total trade in lamps though we think it is probably much smaller than that of B.E.A. Many retail co-operative societies have signed exclusive agreements with E.L.M.A. under which they get the same terms as the ordinary exclusive retailer on condition that they sell only E.L.M.A. lamps and British Luma's lamps. The Co-operative Union is opposed in principle to resale price maintenance "because this prevents the efficient retailer passing on the results of that efficiency to the consumer", but in practice the retail societies have accepted

* B.E.A. has said that at early meetings the E.L.M.A. representatives tentatively suggested terms involving 85 per cent. exclusive purchase, but that B.E.A. refused any discussion on this basis.

† We are informed that rebates would be allowed to other retailers on the same scale if their turnover were large enough to warrant it.

the obligation to maintain the prices of E.L.M.A. lamps and also of British Luma's lamps, the latter obligation being imposed on them by British Luma in pursuance of the terms of the licence agreement between British Luma and E.L.M.A. members (see Chapter 5). E.L.M.A., as an exception to its general rule, allows the retail co-operative societies to pay "dividends" to their members in respect of sales of lamps.

179. Although some chain stores sell E.L.M.A. or other price-maintained lamps, the bulk of their trade is in lamps marked with brands peculiar to the particular store. These lamps are sold at prices fixed by the chain store, prices which are usually lower than E.L.M.A.'s. The chain stores are responsible for the distribution of most of these lower-priced lamps. E.L.M.A. members do not directly compete for their custom which is at the present time enjoyed almost entirely by the Controlled Companies. The price gap which existed before the war is now much reduced, as a result of price reductions by E.L.M.A. and increases by the chain stores. Before the war lamps were sold by the chain stores at various prices, the chief levels being 6d. and 1s. The share of the lamp market held by the chain stores is now less than pre-war. Representatives of one chain store have told us that in their view the former difference in price did not reflect a corresponding difference in the quality of the lamps and that the price gap between the two markets was largely artificial. On the other hand E.L.M.A. has stressed to us the superior quality of its members' lamps.

180. In the field of motor lamps,* Joseph Lucas Ltd. has an extensive distribution system for its own products. In 1948 Joseph Lucas Ltd. bought over 40 per cent. of the total United Kingdom production of motor lamps; approximately three-quarters of them were for incorporation in lighting set equipment for sale to vehicle and aircraft manufacturers; the balance was sold for replacement purposes in the home market and overseas through wholesalers and the company's agents, and ultimately through motor and cycle retailers. Under an agreement with E.L.M.A. and its members (referred to in paragraph 98) the company formerly bought at preferential prices and undertook to buy exclusively from E.L.M.A. members. This agreement expired in 1948, since when purchases have been made from both Independent Manufacturers and E.L.M.A. members, orders being in all cases placed against individual quotations by manufacturers, though a common price is quoted by E.L.M.A. for all its members.

The Distributors' Associations and their relations with E.L.M.A.

181. Apart from the large distributors described above there are many distributors who belong to various associations of wholesalers or retailers, of which E.W.F., M.F.A., N.E.C.T.A., E.C.A.S. and N.F.I. negotiate individually with E.L.M.A. Many other retailers of lamps are members of R.T.R.A. or, in the case of motor lamps, of the Motor Agents' Association (M.A.A.), but these bodies carry on no negotiations with manufacturers affecting the supply of lamps.†

182. The relations between some of these associations and E.L.M.A. are influenced by their common membership of the Electrical Fair Trading Council, to which E.W.F., N.E.C.T.A. and E.C.A.S., with E.L.M.A., all belong. The Council's Fair Trading Policy, first issued in 1936, aims at securing "the regulation of business between all sections of the electrical industry, so as to ensure that the function of each is defined and understood, and that each receives the fair reward of his labour, to the end that equity and fair dealing prevail throughout the industry, that the public be well

* Our use of the term is explained in paragraph 1.

† According to recent reports in the electrical trade press R.T.R.A. is proposing to form a new section for electrical retailers, while N.F.I. has suggested the setting up of a joint council or committee representing all existing associations of electrical retailers.

served, and the cause of electricity advanced." Supporters of the Policy undertake:

"(i) To maintain list prices nett when selling to any purchaser not entitled to a discount under this Policy, and the discounts defined in the various schedules when selling to any purchaser entitled to such discounts."

(We are informed that E.L.M.A.'s Rules and agreements with distributors and others are accepted by the Council as embodying its principles, and the Policy accordingly contains no schedule for lamps.)

"(ii) To use every endeavour to prevent supplies, except at the list prices nett, reaching any purchaser known to be violating the provisions of this Policy."

"(iii) To trade, so far as is reasonably practicable, with fellow supporters of this Policy and to assist them in maintaining the conditions of this Policy."

We are told that the Policy represents a code of ethics rather than a binding system and that in practice the comprehensive boycott which the wording of these clauses suggests has never been carried out.*

183. E.L.M.A. maintains closer relations with the three associations of distributors who are fellow members of the Electrical Fair Trading Council than with any others. We note that approximately 90 per cent. of the members of E.W.F., 80 per cent. of the members of N.E.C.T.A., and 95 per cent. of the members of E.C.A.S. have exclusive agreements with E.L.M.A. For two other associations which, as explained in paragraphs 184 and 185 below, have a special relationship with E.L.M.A., namely N.F.I. and M.F.A., the proportions are respectively 37 per cent. and 75 per cent. The other main association to which retailers of general service filament lamps belong, R.T.R.A., informs us that although it has no relations whatever with E.L.M.A. 74 per cent. of its members have exclusive agreements. M.A.A. which includes many retailers of motor lamps was unable to form any corresponding estimate.

184. E.L.M.A. pays to certain associations of distributors, as shown in the table below, over-riding commissions calculated as percentages of the net value of the members' annual purchases of E.L.M.A. lamps.†

Association	Rate of Commission (a)	Amount of Commission for 12 months ended 31st May, 1950 £
E.W.F.	Per cent. $\frac{3}{2}$	12,580
N.E.C.T.A.	$1\frac{1}{2}$	11,730
E.C.A.S.	$1\frac{1}{2}$	1,928
N.F.I.	1	1,500
M.F.A.	$2\frac{1}{2}$ (on purchases by factors) (b)	4,775
	$4\frac{1}{2}$ (on purchases by wholesalers) (b)	

(a) The commissions are paid on purchases of certain types of lamps, as follows:—

E.W.F. } general service filament and discharge lamps and motor lamps
 N.E.C.T.A. } (Groups I, II, VIII and IX).
 E.C.A.S. }
 N.F.I. } general service filament lamps (Groups I and VIII).
 M.F.A. } motor lamps (Group II).

(b) The smaller wholesalers of motor lamps have factors' agreements with E.L.M.A.—see paragraph 149 and Appendix 15 (Table 5).

Small lump sums have been paid in addition to some of these associations from time to time.

* More details about the Electrical Fair Trading Council and its Policy will be found in the Lloyd Jacob Committee's Report on Resale Price Maintenance (Cmd. 7696: 1949, pp. 81 to 86).

† Until June, 1949 E.W.F., N.E.C.T.A. and E.C.A.S. enjoyed rather higher rates of commission but they did not cover purchases of discharge lamps (Group IX).

185. The agreements under which these commissions are paid date from the 1930's. Their terms and conditions are not identical. In the case of E.W.F. no consideration is stated but we have noted that E.W.F. simultaneously withdrew its opposition to the grant by E.L.M.A. of wholesalers' terms to a limited number of traders not recognised by E.W.F. as electrical wholesalers. N.E.C.T.A., E.C.A.S. and N.F.I. each agrees to form a joint negotiating committee with E.L.M.A. to deal with breaches of E.L.M.A. agreements and matters of joint policy, and N.E.C.T.A. and E.C.A.S. specifically agree to assist in the classification of trade users for purposes of discount and the approval of new retail agreement holders, while N.F.I., but not the others, agrees to recommend its members to sign exclusive agreements with E.L.M.A. We are informed that no special steps have been taken by N.F.I. to carry out this last commitment. N.E.C.T.A. has, on occasions, circulated such a recommendation to its members of its own volition, the last occasion being in 1947. E.L.M.A. makes no conditions about the purpose to which the commissions are put by the distributors' associations: in practice, they are passed on to the individual members in proportion to their purchases of E.L.M.A. lamps, usually after a small deduction to meet expenses. E.L.M.A. has said that, in general, it intends by paying these commissions to secure the co-operation of the distributors' associations and to make E.L.M.A. "more popular with their members."

Views of Distributors on the E.L.M.A. System

186. With certain exceptions and qualifications,* the associations of distributors named above see no objection to common manufacturers' prices and support resale price maintenance by the manufacturers: they also see no objection to exclusive agreements provided that they are freely entered into and that those distributors who do not enter into them can obtain adequate supplies. Some but not all of the associations have rules which formally require their members to observe the terms fixed by the manufacturers and make provision for enforcing them; but we are told that in practice enforcement so far as lamps are concerned is left to E.L.M.A., although the distributors' association may be consulted if a member's actions are in question (see paragraph 170).

187. The large distributors which are outside these associations have somewhat different views on these subjects. Strong opposition has been expressed by the co-operative societies to common prices, resale price maintenance and exclusive agreements, on the grounds that these restrict competition among manufacturers and distributors and tend to result in the fixing of prices in relation to the costs of the least efficient traders. B.E.A. has acquiesced in common prices and resale price maintenance but will not make exclusive agreements. The chain stores which sell their own brands of lamps naturally tend to take a more detached view of these subjects: one of them has expressed views similar to those of the co-operative societies about common prices: another considers that E.L.M.A.'s maintained prices and exclusive agreements have helped to create the cheap market which it serves.

188. There is undoubtedly a large number, probably a majority, of distributors of lamps who neither belong to one of these associations nor form part of a large multiple concern. We have not obtained any information about such distributors but it appears to us probable that their sales of lamps

* N.E.C.T.A. and N.F.I. see no objection to common prices provided the prices are fair to all and related to the costs of production and distribution. M.A.A. is the only one of these associations which objects to the fixing of common prices. R.T.R.A. can express no views on any of these subjects.

are small in proportion to their numbers. It is clear that in the lamp industry distribution can never be specialised, and the Independent Manufacturers are not, and could not be, totally excluded from the channels of distribution. On the other hand, the main associations of distributors include many of the more important outlets and on the whole they are sympathetic to the E.L.M.A. system.

Certain Wholesalers in a Special Relationship with E.L.M.A.

189. In a special position as wholesalers are three former lamp manufacturers—"Z" Electric Lamp & Supplies Co., Ltd., The Stearn Electric Co., Ltd., and Foster Engineering Co., Ltd. They were formerly members of the Electric Lamp Manufacturers' Association of Great Britain Ltd., and two of them are at present members of E.W.F. Under the terms of agreements with B.T.H., G.E.C., and Siemens due to expire in 1955 these companies are allowed discount terms more favourable than those normally allowed to wholesalers, undertaking for their part not to become directly or indirectly interested in lamp manufacture for the term of the agreement and to confine their purchases to E.L.M.A. members.* The current agreements are successors of agreements originally made in 1920 or earlier.

* The agreements, made when the Phoebus agreement was still in force, permitted purchases from the selling companies of foreign manufacturers with quotas in the United Kingdom as well as from E.L.M.A. members.

PART IV

THE PUBLIC INTEREST

CHAPTER 13: CONCLUSIONS AS TO THE CONDITIONS DEFINED IN THE ACT

190. We are required by our terms of reference to report whether conditions to which the Act applies in fact prevail. For reasons which are apparent from the preceding chapters and are summarised below we conclude that the conditions prevail as regards supply by manufacturers of both filament lamps and discharge lamps.

Filament Lamps

191. During the four years up to the end of 1950 the proportions of the total output of filament lamps in the United Kingdom produced by the E.L.M.A. members, the Controlled Companies and the Independent Manufacturers respectively were as follows:—

	1947	1948	1949	1950
	Per cent.	Per cent.	Per cent.	Per cent.
E.L.M.A. members... ..	62	62	61	60
Controlled Companies	16	14	12	13
Independent Manufacturers	22	24	27	27
	100	100	100	100

The percentages relate to numbers of lamps produced, irrespective of the size or value of the lamp. It will be seen, however, from the table in paragraph 3 that in 1950 the E.L.M.A. members produced more than 50 per cent. of each of the four classes of filament lamps into which the production figures are divided, and that their share was lowest (53 per cent.) in the least valuable class, namely flashlamps.

192. The proportions we quote are of production in the United Kingdom, whatever the destination of the product, while our concern for the present purpose is with supplies of filament lamps in the United Kingdom market. After taking into account, however, the possible effects of imports and exports and of variations in stocks, we are satisfied that the E.L.M.A. members supplied at least 60 per cent. of the total supplies of filament lamps in the United Kingdom market in 1950 and we have no reason to suppose that there has been any substantial change in the position this year.

193. We find that the members of E.L.M.A. restrict competition in the supply of filament lamps in a number of ways* which we have described in detail in Chapters 3 to 12. All the members of E.L.M.A. are parties to these practices, except that B.E.L.L. and Aurora are not parties to the policy on patents, which in any case is of small importance at present in the field of filament lamps. We find, accordingly, that the members of E.L.M.A. so conduct their respective affairs as to restrict competition in the supply of filament lamps.

* The restrictions on competition are less extensive in the case of flashlamps—see paragraph 145.

Discharge Lamps

194. We show below the proportions of total output of discharge lamps in the United Kingdom produced by the E.L.M.A. members and the Independent Manufacturers in each of the four years up to end of 1950 :

	1947	1948	1949	1950
	Per cent.	Per cent.	Per cent.	Per cent.
E.L.M.A. members... ..	88	83	56	62
Independent Manufacturers ...	12	17	44	38
	100	100	100	100

The percentages again relate to numbers of lamps produced. The Controlled Companies do not make discharge lamps.

195. The value of sales of discharge lamps in the United Kingdom in 1947 and 1948 by all the E.L.M.A. members and by three Independent Manufacturers, who between them produced all but a negligible proportion of the total output, was disclosed to us during the inquiries about costs and profits which we describe in Chapter 14. E.L.M.A.'s proportion, by value, of supplies of discharge lamps in the United Kingdom was, in those years, approximately the same as its proportion of output shown in paragraph 194. The situation has altered considerably since 1948 partly by reason of the rapid increase in the output of certain Independent Manufacturers and partly by reason of a fall in the production of E.L.M.A. members, but we are satisfied that in 1950 E.L.M.A. members supplied more than 60 per cent. of the total supplies of discharge lamps in the United Kingdom. We note that a future radical change in this respect appears more possible in the case of discharge lamps than of filament lamps, but we have no reason to suppose that there has been so large a change this year as to reduce E.L.M.A.'s share of supplies in the United Kingdom market below one-third.

196. The supply of discharge lamps is affected by the restrictions on competition which we have described in Chapters 3 to 12, although it should be noted that the Controlled Companies do not make discharge lamps. We find accordingly that the members of E.L.M.A., except B.E.L.L. and Aurora who do not make discharge lamps, so conduct their respective affairs as to restrict competition in the supply of discharge lamps.

The Situation as regards individual suppliers

197. We are satisfied that no individual manufacturer or group of "inter-connected bodies corporate"* supplies more than one-third of the supplies of filament lamps in the United Kingdom. In the case of discharge lamps, there are fewer manufacturers concerned and the situation is more changeable, but we again conclude that no individual or group supplied more than one-third of the lamps in 1950 or the years immediately preceding. It is conceivable, however, that in the near future one-third or more of the United Kingdom market for discharge lamps may be supplied by an individual or group, by reason of the share of the market enjoyed by an E.L.M.A. member, namely G.E.C., or by a group of "inter-connected bodies corporate" which are members of E.L.M.A., namely the A.E.I. Group, or by a group of "inter-connected bodies corporate" which are Independent Manufacturers, namely Thorn and Ekco-Ensign. It is possible

* See Sections 3 (1) (a) and 20 (2) of the Act.

that one, or even two, of these three concerns may at the present time each enjoy such a share. In view, however, of the uncertain and rapidly changing position we have not felt it necessary to make any special and additional inquiry into the affairs of any of these concerns on the ground that one or other of them may now supply one-third or more of the discharge lamps supplied in the United Kingdom.

Other Parties to the Practices

198. It is clear to us that the initiative for all the restrictive practices we have described comes from E.L.M.A., but there are other persons who must be formally regarded as parties to some of them, including British Luma and every distributor or user who has a written agreement with E.L.M.A., and indeed every distributor who maintains the selling prices prescribed by E.L.M.A. As regards the distributors, we find that, while some of their associations are no doubt very willing to co-operate with E.L.M.A., from whom they receive over-riding commissions, they are not, as associations, parties to the restrictive practices. The distribution of lamps, as we have said, is not a specialised function, and it appears to us extremely improbable that a price ring could be maintained by the distributors without the backing of the manufacturers, since new distributive outlets could always be found.

CHAPTER 14 : PRICES, COSTS AND PROFITS

199. The only earlier published information about costs and profits in the United Kingdom lamp industry of which we are aware is that contained in the report made in 1920 by the Sub-Committee on Trusts to which we have previously referred. It appears that the prices of general service filament lamps were drastically reduced in 1922, though we are not aware whether there was any connection between this action and the findings of the Sub-Committee. There is little information about the relation between prices and costs in the years that followed up to 1938 but, according to information submitted by E.L.M.A., retail prices were further reduced as shown by the following index figures:—

<i>Year</i>	<i>Retail Prices*</i>
1924	100
1931	69
1938	58
1945	42
1949	36

The index is based on the prices of 60 watt, 230 volt, clear, single coil general service filament lamps, which became increasingly popular, as compared with lamps of lower wattage, during the period covered. E.L.M.A. also submitted some index figures of manufacturing costs for the same period which show a more gradual fall pre-war and a rise between 1938 and 1945; the increased manufacturing costs after 1938 were partially offset, however, by a reduction of administrative and selling costs (see paragraphs 211 and 212).

200. The retail prices of all lamps fell steadily up to 1938. Since the war the prices of general service filament lamps have been reduced twice, in

* Retail prices are given exclusive of Purchase Tax in this chapter and elsewhere in the report.

1945 and 1949 respectively, but the prices of most other types are higher than they were before the war. In Appendix 15 (Table 6) we show E.L.M.A.'s retail prices for some representative types of general service filament lamps and motor lamps from 1930 up to the present. It will be seen that the retail prices of 40 watt and 60 watt general service filament lamps had fallen by about 15 per cent. by 1939 and by about 45 per cent. by 1949, in both cases as compared with prices in 1930; the prices of general service filament lamps of higher wattages fell even more steeply before the war and again but less steeply afterwards, so that they are now about half what they were in 1930. The retail prices of most motor lamps followed much the same trend before the war but rose steeply in 1946, roughly to the 1930 level; some of them have since been reduced but there is still a sharp contrast with general service filament lamps when current prices are compared with pre-war prices. The retail prices of other types of filament lamps have, on the whole, followed the trend of prices of motor lamps rather than of the general service lamps; on the other hand the prices of fluorescent lamps are less than one-half what they were in 1940, when the lamps were first put on the market. The retail prices of the Controlled Companies' general service filament lamps sold by the chain stores ranged from 6d. upwards before the war; the post-war prices are higher and range from 9d. upwards. The retail prices of Independent Manufacturers' general service filament lamps were generally below E.L.M.A.'s pre-war; those of the larger producers are now the same as E.L.M.A.'s.

201. We also show in Appendix 15 (Table 7) a table of comparative retail selling prices of a number of types of general service filament lamps in various countries in 1939 and 1951; this was submitted by E.L.M.A. According to this table, the British prices were among the highest in the world in 1939 (except in the case of the 100 watt lamp), but by 1951 were the lowest outside the United States. The pre-war position is further and strikingly illustrated by figures we have extracted from the Phoebus settlement for the twelve months ended 30th June, 1938 (see Appendix 15 (Table 8)) which show that the average realised price per Phoebus unit in 1938 was higher in the principal producing countries, including the United Kingdom, than elsewhere;* the trade of the British parties was to an exceptional extent in their own home market (see paragraph 97 and footnote) and their sales in the very low price markets were negligible.

202. In 1935 E.L.M.A. introduced the Type B second quality lamp (see paragraph 127) in response to demands for a cheaper lamp. During and since the war the E.L.M.A. members have been influenced by pressure from the Government and public criticism of the E.L.M.A. system to reduce the prices of general service filament lamps. As will be seen from Appendix 15 (Table 6), the retail prices of the most popular types of E.L.M.A.'s general service filament lamps remained unchanged throughout the war but were reduced in July, 1945 from 1s. 9d. (for clear lamps)† or 1s. 7d. (for pearl lamps) to 1s. 3d. E.L.M.A. has said that a reduction was being considered just before the outbreak of the war and that, although it was then postponed, the members always intended to reconsider it as soon as the war ended;

* Since the Phoebus organisation did not establish a system of uniform quality (see paragraph 126) the different price levels may to some extent have reflected different levels of quality.

† Pearl bulbs are slightly more expensive to make than clear bulbs, but until 1945 pearl lamps were cheaper than clear lamps. Manufacture of the "inside frosted" pearl bulb was thought to be covered by a patent owned by B.T.H. until it was held invalid in 1940. In the meantime several actions for infringement were started (see paragraphs 72 and 75).

but the reduction was in fact made in 1945 as the result of negotiations initiated by the Board of Trade in the previous year after a Government Department had made an investigation of the costs of four members of E.L.M.A. and secured lower prices in its own purchase contracts for lamps. The retail price was again reduced in June, 1949 from 1s. 3d. to 1s. 1d. E.L.M.A. has said that the motive for this reduction was "political", in the sense that it was intended to meet public opinion which was felt to be hostile at that time because of criticism—in E.L.M.A.'s opinion unfair criticism—publicly directed against E.L.M.A. and its methods. We have no hesitation in accepting that E.L.M.A.'s action on this occasion was influenced very largely by "political" considerations such as the continuing interest of Government Departments in the members' costs, speeches critical of E.L.M.A. made during the Parliamentary debates in 1948 on the Monopolies and Restrictive Practices (Inquiry and Control) Bill, the fact that the lamps industry was one of the first industries referred to us for investigation and, more generally, the increased public interest in the economic significance of trade combinations of which the setting up of this Commission was, in part, a consequence.

203. We are informed that either G.E.C. or the A.E.I. Group usually takes the initiative in proposing a change in the retail prices of E.L.M.A. lamps. The first step either takes is to consult the other ; information about lamp factory costs is exchanged between them ; they then bring Siemens into the discussion and the three concerns agree on a proposal to be put before the council of E.L.M.A., which would generally be adopted. E.L.M.A. has said to us that, accordingly, "the selling price for all is fixed by reference to the yardsticks established by the two largest and most experienced companies". We have noted, however, that the costing systems of these two companies did not enable them to ascertain or compare selling and administrative costs for individual types of lamps and that the two companies have never had in mind any fixed relationship between costs and prices. Before the war price changes were, in fact, determined on the basis of "what the traffic will bear", that is to say, the prices were those which, in the judgment primarily of G.E.C. and the A.E.I. Group, would yield the highest profit, regard being had to the profitability of their lamp businesses at existing prices, to the volume and quality of independent competition and to the estimated effect on demand of a change in the level of prices.

204. The retail prices of lamps made by the Controlled Companies are not uniform ; their own brands are sold at the same prices as E.L.M.A. lamps, but the greater part of their output is sold under other brand names at prices below E.L.M.A.'s. The historical reasons for this division of the market have been explained in paragraph 27 and Chapter 8. The Independent Manufacturers' products are now generally retailed at the same prices as E.L.M.A.'s although this was not always so in the past. Their own selling prices are, however, lower than those of the E.L.M.A. members since they allow higher discounts to distributors and to those large users who buy direct from them.

205. We have obtained evidence from the E.L.M.A. members, the Controlled Companies (except Evenlite) and a number of Independent Manufacturers about their costs and profits in 1948 and 1947, and (from some of them) in 1938 and 1937.* In the table below we show the profits earned by

* Since the accounting years of the various companies do not coincide, we have taken the results for the twelve months approximating as nearly as possible with each of the calendar years mentioned.

these concerns in their home lamp trade expressed as percentages of net sales:—

NET PROFIT(a) PERCENTAGES ON SALES

Year	Number of Manufacturers	Weighted Average Percentages			Percentages for Individual Concerns(e)
		E.L.M.A. Concerns(b)	Controlled Companies(c)	Independent Manufacturers(d)	
1937	7 2 4	30.7	14.4	17.2	-6, 11, 18, 32, 36 14, 16 4, 7, 21, 24
1938	7 3 5	28.2	14.8	21.2	0, 11, 15, 28, 34 -13, 13, 21 2, 8, 20, 22, 39
1947	11 4 8	16.0	11.5	6.0	1, 3, 11, 12, 13, 14, 21, 23 6, 10, 13, 19 -2, 0, 4, 4, 7, 11, 13, 28
1948	11 4 7	7.9	6.9	1.8	-11, 3, 7, 8, 9, 9, 10, 14 3, 3, 12, 13 -19, -10, 2, 3, 6, 12, 15

(a) Excess of net sales over cost of production and general operating expenses, which include depreciation at income tax wear and tear rates (but not initial allowance), net Schedule A annual values for owner-occupiers (in lieu of rent), royalties paid, development and research, directors' emoluments, management and selling expenses of branch distribution centres, provision for stock obsolescence and other specific purposes, but not any taxation on profits (E.P.T., N.D.C., profits tax or income tax) or interest on borrowed money (e.g., debenture or bank loan interest): royalties received, income from trade investments or subsidiary companies and quota penalties received or paid (see paragraph 210) are not included. In cases where the concerns carry on other businesses besides lamp-making, the apportionment of the expenses common to all the businesses has been estimated on what we believe to be a reasonable basis.

(b) Figures for 4 companies are not available for the pre-war years. The value of sales by the 11 companies in the post-war years was roughly double that of sales by the 7 companies in the pre-war years. The 7 companies were responsible for about 80 per cent. of the total sales of lamps by all the members (i.e. the 11 companies) in the post-war years, and we think the proportion would have been substantially the same pre-war.

(c) Figures for 1 company are not available for the pre-war years: those for another are not available for 1937.

(d) The Independent Manufacturers are not a homogeneous group and those selected for investigation as to costs and profits are not necessarily representative of the whole group. Some of these manufacturers were unable to produce figures for all of the relevant years: figures for the present largest Independent Manufacturer are included for the post-war but not the pre-war years.

(e) In this column, but not in the second column, the three companies in the A.E.I. Group are treated as a single entity and so are the British Philips Company and Stella. The figures in heavy type are those for G.E.C. and the A.E.I. Group.

206. In the case of the E.L.M.A. members as a whole and of three Independent Manufacturers who make discharge lamps as well as filament lamps we have obtained the following estimates of the profits earned in

1947 and 1948 on home sales of each of the two kinds of lamps taken separately:—

NET PROFIT PERCENTAGES ON SALES OF FILAMENT LAMPS AND DISCHARGE LAMPS COMPARED

Year	E.L.M.A. Concerns (Weighted Averages)		Independent Manufacturer A		Independent Manufacturer B		Independent Manufacturer C	
	Filament Lamps(a)	Dis- charge Lamps	Filament Lamps	Dis- charge Lamps	Filament Lamps	Dis- charge Lamps	Filament Lamps	Dis- charge Lamps
1947	14.0	22.4	4.8	1.5	-3.5	13.4	-11.8	39.0
1948	9.5	0.6	6.3	-8.2	-0.7	8.8	-5.8	-62.9

(a) These figures cover all the E.L.M.A. concerns, including those which made only filament lamps. If the latter are omitted, the weighted averages, in respect of filament lamps, for those E.L.M.A. concerns which made both filament and discharge lamps are:—1947, 14.5 per cent.; 1948, 11.0 per cent.

The value of the E.L.M.A. members' sales of filament lamps in 1948 was approximately the same as in 1947, but their sales of discharge lamps were about 30 per cent. lower in 1948 than in 1947. Sales of filament lamps by the three Independent Manufacturers were, in aggregate, rather lower in 1948 than in 1947, and their sales of discharge lamps were some 13 per cent. lower: their sales did not, however, show a uniform trend (see, in particular, (b) of paragraph 209 with regard to Independent Manufacturer C).

207. We have in some cases obtained estimates of the capital employed in the home lamp-making businesses of the manufacturers concerned in the relevant years, and we show in the following tables the profits earned in those cases expressed as percentages of the capital employed:—

NET PROFIT PERCENTAGES ON CAPITAL EMPLOYED(a)

Year	Number of Manu- facturers	Weighted Average Percentages			Percentages for Individual Concerns(e)
		E.L.M.A. Concerns(b)	Controlled Companies (c)	Independent Manufac- turers (d)	
1938	7 3 3	28.6	21.2	23.7	0, 8, 23, 31, 32 -2, 13, 30 8, 10, 30
1948	11 4 7	7.7	9.1	4.3	-10, 2, 5, 10, 10, 11, 20, 23 4, 7, 15, 23 -8, 2, 5, 14, 25, 57, 156

(a) The capital employed has been computed at the terminal accounting dates in the relevant years, and it is the amount of net assets, comprising the cost of fixed assets less, in appropriate cases, wear and tear allowances (as allowed for income tax but excluding the initial allowances), and current assets used in the business less current liabilities and provisions. The method of computation was disputed by the E.L.M.A. members on the grounds that—

(i) it took no account of the necessity to provide for replacement of fixed assets at current prices estimated to be approximately 2½ times original cost;

(ii) the allowance for wear and tear does not allow sufficient measure of depreciation. They have not, however, put forward an alternative computation.

(b) }
(c) } See, respectively, Notes (b), (c), (d) and (e) to the table in paragraph 205.
(d) }
(e) }

208. As explained in (a) of paragraph 2, lamp-making forms only a small part of the businesses of the larger E.L.M.A. members. We have had submitted to us figures of the aggregate capital employed in the whole of the businesses of the members of E.L.M.A. and of the aggregate distributed profits of those businesses, and from this and other information have compiled the following table:—

**E.L.M.A. MEMBERS: RELATION BETWEEN PROFITS ON
LAMP BUSINESS AND DISTRIBUTED PROFITS**

	1938	1948
	£	£
(i) Capital employed in all businesses(a) ...	37,067,458	82,083,478
(ii) Distributed profits on all businesses(b) ...	2,405,497	2,834,678
(iii) Capital employed in home lamp businesses(a) ...	3,413,260(c)	7,457,711
(iv) Profits earned in home lamp businesses(b) ...	976,435(c)	570,540
(v) Distributed profits attributable to home lamp businesses(b)	703,033(c)	152,905
	per cent.	per cent.
(vi) (ii) as a percentage of (i)	6·5	3·5
(vii) (v) as a percentage of (iii)	20·6	2·0
(viii) (v) as a percentage of (iv)	72·0	26·8

(a) "Capital employed" has been computed by different methods in (i) and (iii), but the differences do not materially affect the calculation.

(b) The figures in (ii) represent actual net amounts paid to shareholders grossed up at the rate of tax in force at the time: those in (iv) represent the net profits in the home lamp businesses, calculated as described in Note (a) to the table in paragraph 205: those in (v) represent the portion of the net profits in the home lamp businesses distributed to shareholders, as estimated by an independent accountant on behalf of E.L.M.A.

(c) These figures relate to the businesses of 7 members only—see Note (b) to the table in paragraph 205.

209. We draw the following conclusions from the information summarised in the four tables above:—

(a) The E.L.M.A. members taken as a whole were enjoying high profits in their lamp businesses in relation to the capital employed in the years immediately before the war, but the level had been very materially reduced by 1948: profits of the Controlled Companies were lower than the E.L.M.A. members' before the war, but although reduced by 1948 yielded a higher return than the E.L.M.A. members' on capital employed in that year by reason of their higher ratio of turnover to capital: the average profits of those Independent Manufacturers whose figures are included in the tables were, and are, as high as the profits of some E.L.M.A. members.

(b) The E.L.M.A. members' profits on filament lamps declined in 1948 as compared with 1947, but there was a much sharper fall, due partly to lower turnover, in their profits on discharge lamps. The profits on discharge lamps of Independent Manufacturers A and B fell similarly, although their results for filament lamps on the whole showed an improvement: in the case of Independent Manufacturer C, sales of discharge lamps fell so sharply in 1948 as to affect the profit percentage quite abnormally. A sharp fall in profits on filament lamps also occurred in the case of the Controlled Companies, who do not make discharge lamps or any but the more popular kinds of filament lamps.

(c) There was a wide range of profits among the E.L.M.A. members in each of the years examined; but whereas G.E.C. and the A.E.I. Group enjoyed by far the highest rates of profit in the years immediately before the war, this was no longer true in the post-war years.*

* It should not be inferred that the manufacturer showing the highest profit necessarily produces at the lowest cost lamps of the kinds made by all the members. G.E.C. and the A.E.I. Group make a wider range of lamps than most of the members; moreover they maintain more wholesaling branches of their own than other members, a circumstance which, it might be expected, would tend to increase both their selling costs and their average selling prices, but not necessarily to an equal degree.

(d) The capital employed in the home lamp businesses of the E.L.M.A. members yielded a disproportionate share of the distributed profits on the whole of their businesses in the years immediately before the war, but it appears to have yielded rather less than its arithmetical proportion in 1948: since a high proportion (72 per cent.) of the profits earned in the home lamp businesses was distributed in 1938, the high rate of those profits cannot be justified on the grounds that they were needed to provide for research and development in the rest of the electrical field.

210. In arriving at the profits of the E.L.M.A. members as shown in the tables above the amounts receivable or payable as compensation under the sales quota system have not been taken into account: apart from payments made to foreign manufacturers the amounts payable and receivable should balance, so that the aggregate profits of the E.L.M.A. members taken as a whole are not greatly affected. We have already drawn attention in paragraph 95 to the effect on the profits of an individual member, namely Crompton, before the war. We have not obtained sufficient information to enable us to show the effects on the profits of each of the members in a pre-war year; but we estimate that the compensation receivable and payable in respect of quotas for the twelve months ended 30th June, 1949 would have affected the percentage figures of profits of the individual concerns, as shown in the table in paragraph 205, to the extent of about 1 per cent. on sales, except in two extreme cases (including Crompton) where the difference would be 4 per cent. It is not surprising to note in relation to the failure of Crompton to sell to the full extent of its quota, that the value of its lamp plant and machinery (at cost, less depreciation at income tax rates) was lower by almost a quarter in 1948 than in 1938: the corresponding values for other E.L.M.A. concerns whose figures are available (including G.E.C. and the A.E.I. Group) taken together show, on the other hand, an increase of more than 100 per cent.

211. We have been able to obtain in certain cases an analysis of the total costs of some lamp-manufacturing businesses, and we show in the following table the relative weighting of the various elements in the costs in a pre-war and a post-war year. Changes in absolute costs are not, of course, shown by this table.

MAKE-UP OF MANUFACTURERS' COSTS

	1938		
	<i>E.L.M.A. Members</i> (7 Companies) per cent.	<i>Controlled Companies</i> (3 Companies) per cent.	<i>Independent Manufacturers</i> (4 Companies) per cent.
Materials	24·2	48·8	35·8
Labour	8·5	20·2	21·6
Factory Overheads	18·5	11·6	10·4
Selling and Administrative Costs ...	48·8	19·4	32·2
Total Cost	100·0	100·0	100·0
	1948		
	<i>E.L.M.A. Members</i> (11 Companies) per cent.	<i>Controlled Companies</i> (4 Companies) per cent.	<i>Independent Manufacturers</i> (6 Companies) per cent.
Material	39·5	58·4	41·0
Labour	14·3	20·5	23·5
Factory Overheads	22·0	11·9	16·9
Selling and Administrative Costs ...	24·2	9·2	18·6
Total Cost	100·0	100·0	100·0

212. It must be borne in mind that the manufacturers concerned had no uniform system of allocating their costs among these items, but we think it may fairly be taken that selling and administrative expenses were a relatively larger element in the costs before the war than after. This is further illustrated as far as the E.L.M.A. members are concerned by figures produced on their behalf after the Board of Trade invited them in 1944 to consider reducing their retail prices (see paragraph 202); they show that in the six months ended 31st December, 1944 the E.L.M.A. members enjoyed practically the same rate of profit on sales as immediately before the war, increased manufacturing costs being offset, without increase in the selling price, by reduced selling and administrative costs.

213. We note that both before and after the war selling and administrative costs are a larger element in the costs of the E.L.M.A. members than of the other manufacturers. Most of the E.L.M.A. members perform the functions of a wholesaler by selling direct to small as well as large retailers and users, but this is also true of some Independent Manufacturers. Generally speaking, salaries and wages comprise more than half the selling and administrative expenses of the manufacturers whose costs were examined. The part played by expenditure on advertising and publicity is illustrated by the following table:—

EXPENDITURE ON ADVERTISING AND PUBLICITY AS PERCENTAGES OF THE TOTAL COST OF SALES			
1938			
E.L.M.A. Concerns (4)	...	...	2, 3, 9, 15
Controlled Companies (2)	...	...	1, 2
Independent Manufacturers (2)	...	...	1, 6
1948			
E.L.M.A. Concerns (8)	...	...	nil, nil, 1, 3, 3, 4, 4, 4
Controlled Companies (4)	...	...	(nil or negligible)
Independent Manufacturers (4)	...	...	negligible, 1, 3, 5

These figures show that such expenditure formed a smaller proportion of the total costs of the E.L.M.A. members and the Controlled Companies in 1948 than immediately before the war. We note also that expenditure on "research and development" comprised about 5 per cent. of the total cost of sales of all the E.L.M.A. members taken together in 1947 and 1948, but that in each year 90 per cent. of such expenditure by the members was attributable to G.E.C. and the A.E.I. Group. It is pointed out that the benefits of expenditure on research are shared with other members, but the sums included under "development" cover considerable expenditure on such items as "redrafting and redesigning jigs, dies, etc., and making, testing and trying out new gadgets": the companies have been unable to separate research from development in terms of expenditure.

214. It will be seen from the table in paragraph 211 that for E.L.M.A. members the labour element was about 17 per cent. of factory cost in 1938 and about 19 per cent. in 1948. Average figures of the factory cost of particular lamps in 1938 are not available, but we are informed that factory costs of general service filament lamps in one company rose by 65 per cent. and that the factory cost of the ordinary 60 watt lamp made by another company rose by 61 per cent. Increases in actual earnings, however, have been much greater: in the case of the second company, hourly earnings by women rose by about 150 per cent. and by men by about 120 per cent. These figures indicate that there has been a notable rise in output per man-hour, at any rate in the case of general service filament lamps.

215. In Appendix 15 (Table 9) we show the estimated factory cost for various manufacturers of some individual types of lamps during 1948-49. These figures appear to show that the factory cost of general service filament lamps does not vary very widely either within E.L.M.A. or within the industry generally, although on the whole the Controlled Companies produce more cheaply, and such Independent Manufacturers as are represented more expensively, than the E.L.M.A. members. (The quality of the lamps produced by these different sections of the industry is discussed in Chapters 7, 8 and 9.) The E.L.M.A. members were unable to estimate the selling and administrative costs of particular types of lamps, but in the light of the table in paragraph 211 there are probably greater differences in total costs than in factory costs between the three groups of manufacturers: in particular, the administrative and selling costs of the Controlled Companies are considerably lower than those of other manufacturers, a circumstance which is partly explained by their concentration on certain types and bulk sales to chain stores. The factory costs of motor lamps and fluorescent lamps show wide variations. As far as the E.L.M.A. members are concerned, G.E.C. and the A.E.I. Group appear, on average for all the types studied, to be in the middle of the range.

216. As we have explained in Chapter 11, an E.L.M.A. member's net selling price for a particular type of lamp varies according to the classification of his customer: this is equally true of the Independent Manufacturers, while the Controlled Companies sell most of their lamps at individually negotiated prices. We have therefore no accurate figures of the average selling prices of particular manufacturers, or groups of manufacturers, for particular types of lamps. In the table below, however, we show the range of selling prices compared with the estimated total cost for two types* of lamps in 1948-49.

**MANUFACTURERS' TOTAL COSTS AND SELLING PRICES
FOR 1948-49 COMPARED**

(i) **General Service Filament Lamp—60 watt, 230 volt, single coil, pearl**

	<i>Cost pence</i>	<i>Range of Net Selling Prices(a) pence</i>
E.L.M.A. Members (estimated weighted average)	8	7·2 to 10·7
A Controlled Company	6·7	6·3 to 9·1
An Independent Manufacturer	7·9	7·1 to 10·7

(ii) **Motor head lamp—36 watt, 12 volt**

	<i>Cost pence</i>	<i>Range of Net Selling Prices(a) pence</i>
E.L.M.A. Members (weighted average)	11·1	12·2 to 22·5
A Controlled Company	7·4	10·5 to 15·0
An Independent Manufacturer	7·3	12·8 to 20·0

(a) The net selling prices take account of trade discounts, quantity rebates, and overriding commissions paid to associations of distributors, but not of cash discounts.

217. It should be noted that the material dealt with in this chapter has been collected over a period of two years, during which costs have been increasing. It has been represented to us by E.L.M.A. that the yield to the manufacturers at present prices may prove insufficient to give a reasonable profit on the capital employed. The latest estimated total costs known to us for individual types of general service filament lamps, when compared with

* This information was collected at an early stage of our inquiry, when these lamps were regarded as representative types. We are informed that the motor head lamp is now rapidly being superseded by the new British prefocus head lamp and will become obsolete.

the range of manufacturers' selling prices (see paragraph 216), lend some support to these fears; but the profit earned on sales of such lamps has probably been lower, since the price reductions of June 1949, than on many other types. Moreover, the table in paragraph 206 shows that the E.L.M.A. members' results in 1948 were affected by a substantial falling off in the profitability of their discharge lamp business in that year, a circumstance which might well be temporary since the large-scale production of fluorescent lamps was at an experimental stage. Without reliable information about the latest trading results of the whole lamp businesses, we are unable to form any opinion about this matter.

218. We conclude that while the prices charged for lamps by E.L.M.A. members were unduly high in relation to costs before the war, the general level of their prices in 1948-49, and almost certainly in 1950, was moderate; the profit on general service filament lamps was small, that on discharge lamps very small, and that on motor and other lamps substantial.

Distributors

219. In Appendix 15 (Table 10) we show the range of manufacturers' selling prices and distributors' gross margins in a number of typical transactions, in value and as percentages of the list (or retail) price of the particular lamp. We have no means of estimating the average costs of wholesalers or retailers of lamps, and it will be seen that there is a very wide range of possible margins. The range of margins theoretically possible (expressed as percentages of the wholesaler's or retailer's selling price) on E.L.M.A. general service filament lamps is as follows:—

		<i>Range</i>
Wholesalers	... ..	6 per cent. to 25 per cent.
Retailers	... ..	8 per cent. to 34 per cent.

The average margin for the exclusive retailer would generally be rather more than 25 per cent. and for the non-exclusive retailer about 20 per cent. In the case of the wholesaler, buying and selling prices are equally variable; it has been suggested by representatives of E.W.F. that the average wholesaler's margin on E.L.M.A. lamps might be about 15 per cent. on the value of his purchases (or 13 per cent. on sales). In the case of motor lamps the margins are considerably higher. The non-exclusive retailer's margin on E.L.M.A. motor lamps would normally be 30 per cent. on sales while that of the exclusive retailer can be as high as 38 per cent. The wholesaler with a "factor's" agreement who sells to a non-exclusive retailer has a margin of 18 per cent. on sales, but if he has a "wholesale dealer's" agreement and also obtains a special commission as a member of M.F.A. his margin will be 29 per cent.

220. We have asked a number of distributors and associations whether the terms offered to them or their members for distributing lamps are considered reasonable. The replies are summarised below:—

Lamps other than motor lamps

Wholesalers. E.W.F. considers E.L.M.A.'s terms were reasonable until they were amended in June 1949, but without more experience of the actual results of current terms cannot say whether these are satisfactory.*
C.W.S. considers that a wholesale margin of 12½ per cent. to 15 per cent.

* In June 1949 the wholesaler's discount on general service filament lamps was reduced from 35 per cent. to 33½ per cent. and the scale of rebates reduced, but these terms were extended to cover discharge lamps, for which the former terms were considerably less advantageous to the wholesaler.

on sales is adequate, while S.C.W.S. mentions 15 per cent. The two co-operative societies estimate that their costs are between 11 per cent. and 12 per cent. on sales.

Retailers. N.E.C.T.A. considers that a retailer's minimum discount should be 25 per cent. without an exclusive agreement, but in that case would not expect as large a differentiation as at present between the exclusive and the non-exclusive retailer.* N.F.I. considers that the discounts offered by non-E.L.M.A. manufacturers, which are higher than E.L.M.A.'s, are more closely in accord with present distributive costs. Several of the retailers' associations think the discounts which retailers have to allow to trade users are too high. The Co-operative Union considers a retail margin of 20 per cent. to 22½ per cent. would be reasonable and mentions that costs of distribution are estimated at 15 per cent. of sales. B.E.A. has no objection to E.L.M.A.'s terms. Chain stores have mentioned figures varying from 25 per cent. to 33½ per cent. as a reasonable margin on sales.

Motor Lamps

Wholesalers. M.F.A. regards E.L.M.A.'s terms as fair.

Retailers. M.A.A. considers that E.L.M.A.'s terms are no more than reasonable: the wider margins offered on non-E.L.M.A. lamps are thought to be justified by reason of the greater effort required to sell them and the greater risk of faulty lamps. A chain store which sells both motor and other lamps and is satisfied with a margin of 25 per cent. on the latter, considers a margin of 33½ per cent. reasonable on motor lamps.

221. As far as we have been able to ascertain, distributors' margins for lamps have been determined by custom, modified within limits through negotiation, rather than on the basis of an objective estimation of costs. Whether such an estimation is possible is very doubtful since lamps are invariably a sideline to other distributive activities. We have no reason to suppose that the margins offered by E.L.M.A. on lamps other than motor lamps are out of line with those given on other electrical goods; we have no means of judging whether there is scope for any reduction. No real justification for the much higher level of margins offered on motor lamps has been given to us. The margins offered by the Independent Manufacturers for all kinds of lamps are higher than those offered by E.L.M.A. As we have explained in Chapter 11, this method of competing has its roots in E.L.M.A.'s system of exclusive agreements, and it appears to us possible that, as a result, all parties are maintaining higher margins than the distributors' own bargaining powers would obtain for them.

CHAPTER 15 : VIEWS OF USERS AND COMPLAINANTS

222. The general public are probably the largest users of lamps. To obtain representative views from ordinary consumers, or even from the many thousands of small commercial and industrial users, would have been an exceedingly arduous task of doubtful value and we have made no attempt to do so, but we have obtained evidence from a number of large users by circulating questionnaires to them. We have received more than eighty replies from Government Departments, Local Authorities, nationalised industries, cinemas and theatres, shipping companies and various other industrial and commercial concerns, including certain manufacturers of equipment incorporating lamps:

* The exclusive retailer's discount on general service filament lamps is 25 per cent., the non-exclusive retailer's 20 per cent.

the aggregate value of the annual purchases of lamps by all these witnesses amounts to more than £1,000,000.*

223. As we have explained in Chapter 11, a few very large users negotiate individually with E.L.M.A. and obtain terms on a non-exclusive basis: these include Government Departments and such nationalised industries as we have approached.† Some other users have had at one time or another agreements to buy E.L.M.A. lamps exclusively or as to a high proportion of their purchases, but the majority are not contractually bound to E.L.M.A. Rather less than half the users we have approached buy some non-E.L.M.A. lamps, principally, as far as general service filament lamps and fluorescent lamps are concerned, from Thorn and Ekco-Ensign. We have found very few large users buying most of their lamps from Independent Manufacturers, however, and only two or three—one of them a Government Department—buying any lamps from the Controlled Companies.

224. Views favourable to the products and service of E.L.M.A. members predominate on the whole, but it is apparent that in some cases the users have very little knowledge of any lamps other than E.L.M.A. lamps, and that users with experience of non-E.L.M.A. lamps generally agree that there is little difference of quality to be detected between the products of E.L.M.A. members and those of the best Independent Manufacturers. Moreover, the net prices of the latter to large users are lower by reason of the higher discounts allowed; it is notable, for instance, that lamps made by Independent Manufacturers form a higher proportion of the purchases of B.E.A. for its own use than of its purchases for re-sale, which are partly determined by the demands of the general public to whom the price is the same.

225. The prices of motor lamps are criticised by manufacturers of motor lighting equipment: the criticism is directed against all manufacturers of these lamps, although it is agreed that higher discounts are allowed by non-E.L.M.A. than by E.L.M.A. manufacturers. One equipment manufacturer submitted in support of his opinion a table comparing the retail prices of different types of motor lamps in the United Kingdom and the United States before the devaluation of sterling: after allowing for devaluation, the American prices for the least expensive types are little more than half the British prices: for other types, the prices are not so far apart although the American is in most cases appreciably the lower.‡ Users have also drawn comparisons with the American prices of fluorescent lamps and photographic lamps which are unfavourable to the British manufacturers.

226. A number of important users have suggested that they ought to be able to obtain filament lamps of longer life than the standard 1,000 hours, because of the cost of physical replacement of lamps in large establishments or where access is difficult. Such views have generally been advanced somewhat cautiously. The Railway Executive, for instance, told us that "there has for a long time been a feeling that the overall economy would be better if life were increased even at the expense of some loss of efficiency. A steady rise in the cost of labour for re-lamping lends weight to this argument, but on the other hand the effect of increase in cost of current closely corresponds". Similar views have been expressed by two important local authorities and a very large

* See paragraph 3 for the value of total production of lamps in the United Kingdom at manufacturers' selling prices.

† B.E.A., the National Coal Board, the Railway Executive and London Transport Executive.

‡ The equipment manufacturer admits that American and British methods of rating differ but says that the types compared are used for similar purposes. E.L.M.A. on the other hand has told us that American and British motor lamps are not comparable.

industrial concern among others. Users such as these, who employ competent electrical engineering staffs, are aware that "under-running" of lamps (see paragraph 125) is a theoretical solution of their problem, but not all of these witnesses are convinced that it is a satisfactory one in practice, given the existing ratings of lamps. The Ministry of Works has told us that "in the past there was considerable divergence of view between the makers and users represented on the Lamp Standardisation Committee [i.e., the appropriate Committee of B.S.I.]; the makers being desirous to increase efficiency at the expense of life, with consequent larger sales of lamps; some of the users, particularly ourselves, were more concerned with longer life, of at least 1,000 hours and, if possible, up to 1,500 hours or over. The main reason for this was the disproportionate costs of replacing burnt-out lamps in difficult situations. Certain manufacturers were willing to supply lamps of a longer life and slightly reduced efficiency, but ran the risk of heavy fines imposed by the Central Lamp Control, known as Phoebus. It is not known how far this practice operates today but it would appear that the 1,000-hour standard life is now accepted by all parties". This statement is not entirely in accord with the provisions made by the Phoebus organisation or the practice of the E.L.M.A. members: a minimum average life of 1,000 hours has been observed in the United Kingdom at least since 1921, and the Phoebus organisation did not penalise lamps with a life between 800 and 1,500 hours. We quote the Ministry's observations as reflecting the uneasiness of users who without full knowledge are aware that manufacturers observe certain restrictions and are not convinced that the consumers' wishes are sufficiently taken into account. E.L.M.A. has told us that the makers' advocacy of certain standards of life and efficiency has been based on technical considerations. We discuss this problem in Chapters 9 and 17.

227. The General Post Office has described to us how in order to stimulate competition it gave experimental orders to an Independent Manufacturer for a type of filament lamp which was formerly made only by two members of E.L.M.A. Orders were first placed with the Independent Manufacturer in 1947: by 1949 it was quoting a lower price than the E.L.M.A. members and was allotted the largest individual share of orders for that type of lamp. The production of all three manufacturers meets the minimum standards laid down by the General Post Office, the quality of the Independent Manufacturer's product being, in the opinion of the Department, about equal to that of one of the E.L.M.A. members and better than that of the other.

228. In addition to the views summarised in the foregoing paragraphs we have had complaints from a variety of sources. Some of these complaints have already been referred to, as for instance those about the patent practices of the E.L.M.A. members (in Chapter 5), about the effect on Independent Manufacturers of E.L.M.A.'s arrangements for exclusive dealing (in Chapter 11), about the trading methods of the Controlled Companies (in Chapter 8), about the tightening of B.S.I. specifications (in Chapter 9), and about the control by E.L.M.A. members of supplies of lamp components (in Chapters 7 and 10); while the views of distributors—some of them adverse—about the E.L.M.A. system and the margins offered by lamp manufacturers have been summarised in Chapters 12 and 14. Most of these complaints have not been made spontaneously but have reached us in reply to our questionnaires. The main witnesses among those who have taken the initiative in laying complaints before us are various Independent Manufacturers and the co-operative societies. The latter object

in principle to nearly all the features of the E.L.M.A. system but they do not allege any discrimination against co-operative societies, as such, in this industry.

229. We have received a number of complaints alleging, in various forms, some connection between E.L.M.A.'s system of exclusive dealing and (a) membership of certain associations of distributors and (b) systems of exclusive dealing in other sections of the electrical industry. As regards the first part of the allegation, the complaint has generally come from newcomers to the industry—for instance, an Independent Manufacturer trying to find outlets for his product and a number of would-be wholesalers of electrical goods. The complaint of these wholesalers is usually that certain associations refuse to admit them, while E.L.M.A. refuses to enter into a wholesaler's agreement with them, and they believe that the one is a consequence of the other. We have described the relations of E.L.M.A. with distributors' associations in Chapter 12, and we are satisfied that E.L.M.A. does in fact grant wholesalers' agreements to many traders who, for instance, would not qualify for membership of E.W.F. We believe accordingly that complaints of this nature are based on a misconception, though perhaps a very natural one in view of the known relationship between E.L.M.A. and other associations as fellow members of the Electrical Fair Trading Council. We note that the wholesalers in question do not object in principle to a system of exclusive agreements.

230. The suggestion that the system of exclusive dealing for lamps is in some way connected with similar systems for other electrical goods has been more widely made, and especially in relation to fittings for all all kinds of lamps and auxiliary gear for discharge lamps (see Appendix 2). Most of the members of E.L.M.A. are also members of the two main associations of manufacturers of these products, and these two associations are in turn members of the Electrical Fair Trading Council to which E.L.M.A. also belongs. It has been suggested to us that the three associations have systems of exclusive dealing which tend to be complementary: the allegations about this matter are, however, extremely vague and were not supported by any evidence. We have felt that to seek detailed evidence about the methods of sale of electrical goods other than lamps would have taken us far outside our terms of reference. We can only record, however, E.L.M.A.'s assurance that there are no agreements between E.L.M.A. and the associations representing manufacturers of lighting fittings and auxiliary gear and that "the sale of lamps is carried on quite independently by E.L.M.A. members". It appears to us that the Fair Trading Policy of the Electrical Fair Trading Council (see paragraph 182), if strictly applied, would require the member associations to introduce a system of comprehensive boycott, but we are assured that it is not so applied and have seen no evidence to the contrary.

231. We have received no complaints of restrictions on the supply of machinery for the assembly of lamps, but a number of Independent Manufacturers have said that rights in Westlake machines for the manufacture of glass bulbs were before the war controlled by E.L.M.A. members and that the machines were "not available to the Independent Manufacturers": they suggest furthermore that Independent Manufacturers should have been given the opportunity after the war of bidding for the additional machines which had been imported under lend-lease and installed in the factories of E.L.M.A. members. E.L.M.A. has informed us, however, that patents on the Westlake machine expired in 1932 (see paragraph 134 and footnote), and as far as we have been able to discover no Independent Manufacturer

attempted to set up plant for the manufacture of bulbs until the war, when there was, no doubt, very good reason for allocating such machines as could be obtained to those who were experienced in the use of them.

232. The National Union of General and Municipal Workers has stated in evidence that certain of the machinery used in the factories of E.L.M.A. members is obsolete, and in particular that (a) single-mounting machines* are used whereas the use of twin-mounting machines of a type similar to those used in the United States would enable operators to employ both hands in manufacturing processes and so increase their productivity, (b) out-of-date machines are used in the production of tungsten elements and coils for certain special kinds of filament lamps, and (c) more modern machines for wire-cutting would make the process less dirty for the operative. We are informed by E.L.M.A. that machines comparable in design to those used in the United States are used on all ranges of lamps where continuous demand is known, although in a rapidly changing industry it is natural that less up-to-date machines should continue to be used where there is no mass production. As regards wire-cutting, E.L.M.A. contends that its members use the only known process which does not cause serious wastage.

CHAPTER 16 : THE CASE FOR E.L.M.A.

The System as a Whole

233. E.L.M.A. submits on behalf of itself and its members that each of the existing practices described in earlier chapters is individually in the public interest. It asks that the system which the practices support should be judged as a whole. Further, this system should be considered in its present rather than in its past application and regard should be paid to its relation to "the whole of the monopoly policy of Parliament", to the terms of the Patents Act, 1949, and to the existence of increasing competition from Independent Manufacturers.

234. It is the basis of E.L.M.A.'s submission that the common price, the quota system and E.L.M.A.'s trading methods generally together form the basis of "a system of regulated competition" the first result of which is to create stability in the industry. We are told that common manufacturing prices are an essential and fundamental feature of the whole E.L.M.A. organisation without which "the component members of E.L.M.A. would not in fact be prepared to co-operate in the way that they do". Thus, common manufacturers' prices make it possible for E.L.M.A. members to share the results of research and development, which have led also to valuable contributions in other fields. The stability achieved makes possible, it is said, a long-term policy which ensures "a steady production to minimise the danger of gluts and scarcity" and has in practice enabled the members both to build up a skilled labour force and to prevent the subsequent dispersal of this skill through mass migrations of labour.

235. The exchange of technical information among E.L.M.A. members has in turn, we are told, resulted in improved efficiency which, coupled with the development of new undertakings, including the development of common sources of supply of materials and components, has "resulted in a steady consistent and progressive fall in real costs of production . . . which has been reflected in a steady reduction of price"; the quality of the lamps has at the same time been improved and their efficiency increased. As a further result

* This relates to the process of mounting the filament on the filament supports (see Appendix 2).

of stability and mutual co-operation E.L.M.A. says that its members have been able to follow a policy on standardisation calculated to meet all genuine needs, while avoiding the uneconomic multiplication of types of lamps which would result from "all-out" competition where manufacturers strive to meet the demands, as opposed to the genuine needs, of the purchasers. We are told by E.L.M.A. that "the problem of standardisation can only be solved by a flexible system which provides a resistance to multiplication of types yet so functions that the necessary changes can take place. A number of firms working in co-operative competition can, and do provide this system."

236. On the distribution side, E.L.M.A. submits that its system provides reasonable but not excessive margins to the distributors, thus ensuring efficient distribution while meeting "the wish of the private consumer for a standard price for a standard branded article". While individual E.L.M.A. members can draw upon the technical knowledge of the whole group, the members are said to compete with one another for new business, so that existing and new markets are fully exploited.

237. E.L.M.A. submits accordingly, that its system as a whole operates in the public interest when judged by each of the tests which are specifically mentioned in Section 14 of the Act and in relation to "the general economic position of the United Kingdom". In the following paragraphs we summarise the submissions in justification of individual practices.

Distribution and Prices

238. With a branded article such as an electric lamp, a uniform retail price is, we are told, essential; any variation from district to district or between different suppliers "would undermine the confidence of the public" and price cutting "would damage the manufacturer's reputation with both the trade and the public." E.L.M.A. maintains that while full price competition between its members might well lead to general price-cutting and uneconomically low prices, such a "price war" would in the long run be very harmful to the stability of the industry: it would tend to depress the standard of living of employees and would not be ultimately in the users' interest, since periods of uneconomic prices drive competitors from the field and are necessarily followed by increased prices. In addition, "cut-throat" price competition is said to result inevitably in deterioration of quality, which is particularly serious in an industry where the user is not in most cases in a position to judge the quality of the product. The fact that uniform prices are agreed by a majority of the producers concerned, coupled with the existence of competition from the minority and, in the case of patented goods, with the safeguards provided by the Patents Act, ensures, it is claimed, that the levels fixed shall not be excessive, since the most efficient manufacturers will argue for a lower price to obtain more business and so exert pressure on the less efficient. As regards pre-war prices, it is pointed out that most E.L.M.A. members make other electrical goods and "some temporary spread of profits between different lines is occasionally unavoidable".

239. It has been explained to us that the fixing of uniform resale prices (including specified uniform discount terms) was intended primarily to enforce "fair trading" between distributors. E.L.M.A. believes "that the smaller distributor should be protected against unbridled competition from the larger distributor who, by virtue of volume, could possibly sell at a lower figure. The result would be that the smaller distributor would find the profit, when cut by such competition, inadequate and would, in all probability, have to discontinue the distribution of electric lamps, to the disadvantage of the public." E.L.M.A. agrees that by fixing the discounts allowed it restricts

competition between its members, but contends that where distributors' margins are concerned the interests of manufacturers and consumers are the same, since it is to the manufacturers' advantage to keep the end price down and increase their turnover: "the greater the competition between manufacturers for the favour of the dealer the greater the pressure to increase dealers' margins and either cut quality or raise end prices". It is submitted that the present E.L.M.A. discounts are reasonable and that this implies an even balance of bargaining power between E.L.M.A. and the distributors. Were E.L.M.A.'s bargaining power reduced, for example by the prohibition of common discounts or of exclusive dealing, the probable result in E.L.M.A.'s view would be to tip the balance in favour of the distributor, whose margin would be increased at the expense of the user.

240. It is pointed out that exclusive dealing agreements are entered into voluntarily by a buyer in a competitive market. To forbid exclusive dealing in the case of wholesalers would, in E.L.M.A.'s view, be unfair both to the wholesalers themselves and to the manufacturers who rely upon them to distribute their goods. E.L.M.A. submits that those manufacturers who carry out their own wholesaling have the benefit of a service exclusive to themselves, and argues that, if it is conceded that a single manufacturer can properly appoint exclusive wholesalers in the form of agents, then there can be no objection to a collective system of the E.L.M.A. type, which is more liberal than a system where each member has his own exclusive wholesale agents. It is claimed that in practice less than 50 per cent. of all wholesalers in the United Kingdom hold exclusive E.L.M.A. agreements, and that therefore the existence of these agreements places no practical difficulties in the way of Independent Manufacturers seeking wholesale distribution outlets. At retail level, the distributor can get trade terms without giving any undertaking to deal exclusively, and E.L.M.A. submits that the grant of preferential discounts to retailers who do give such undertakings is an aid to sales promotion and a legitimate weapon of competition for a manufacturer offering a comprehensive range of types. Where lamps are concerned, the preferential discount is said to constitute a reasonable compensation to the retailer who meets all demands with E.L.M.A. lamps instead of accepting the higher discount offered by Independent Manufacturers on "easy selling lines" while relying on E.L.M.A. members for his more specialised requirements.

241. E.L.M.A. submits that the sanctions used to enforce price maintenance and exclusive dealing are reasonable and make "provision for compromising specific legal claims arising from a breach of a condition of a contract". It is E.L.M.A.'s view that where there is no contractual agreement between distributor and manufacturer, "the use of a stop list is the only remedy available to the manufacturer"; but it is a remedy which has in fact been used very sparingly indeed. The practice of enforcing resale price maintenance by fines or money payments is said to be "maintained as a necessary method of mitigating the major penalties", namely cancellation of agreement, inclusion in the stop list, or, in the case of members, expulsion from E.L.M.A.; "it is also a method of agreeing the compromise of the right in damages which is conferred in law".

242. The practice of granting quantity rebates to distributors and discounts related to quantity purchases to users is, according to E.L.M.A., a normal weapon of competition; the fact that quantity rebates necessarily "involve some pressure on the purchaser not to get supplies elsewhere" is, it is claimed, universally accepted as legitimate. Rebates "are aggregated so as not to operate against other members" and E.L.M.A. relies on aggregation "as an advantage of the system of regulated competition produced by E.L.M.A. members between one another".

243. The payment of over-riding commissions to certain associations of distributors has, we are told, "facilitated amicable commercial relations" and "it is convenient from E.L.M.A.'s point of view to be able to negotiate with organised associations instead of with individuals".

Quotas and Market Allocation

244. E.L.M.A. submits that the system of quotas between members is historically justifiable under the economic conditions existing when the Phoebus Agreement under which they originated was made. Under the system as then operated, "healthy British industry was preserved and extended," while at the same time it imposed no restriction on expansion.

245. The present system is claimed to reflect the changed conditions and it was agreed on the basis that, the growth of the business being due in some part to the common effort, all should have a share in the increase. E.L.M.A. claims that the system ensures a reasonable measure of stability within the industry, mitigates the hardship of fluctuations in the level of business of individual firms, enables capital and other commitments to be taken on with confidence, and plays an important part in facilitating the valuable co-operation which E.L.M.A. members give to one another; further, that since under the revised provisions of the system the manufacturer now retains a substantial proportion of his profit, there remains an adequate incentive for him to increase his share of the market, more particularly as quota allocations will be reviewed in 1955 and he, therefore, wants "to get as much of the trade as he can before that date". The effect of quotas on costs is said to be very small and is "more than counter-balanced by the better service which E.L.M.A.'s co-operative effort makes possible".

246. As regards international quota arrangements, E.L.M.A. states that these have in the past protected the British market from an influx of surplus goods of foreign manufacture at uneconomic prices, while at no time were the prices fixed for the British market under such arrangements increased: "the international effect of quotas at the present day is, for all practical purposes, nil". In agreements made between individual E.L.M.A. members and foreign manufacturers, exclusivity in home markets was incidental to the interchange of technical information and "know-how", and E.L.M.A. suggests that the agreements ought to be considered as a whole. As regards the agreement by which lamps made by the American G.E.C. are excluded from the United Kingdom, E.L.M.A. says that it is unreal to suggest that an arrangement having the effect of restricting imports of goods made by one foreign manufacturer, however large, would affect the level of prices of the domestic market, since the effect of imports on the domestic price level would be dependent on world prices determined by world competition.

Materials and Components

247. E.L.M.A. submits that the production of components and materials was originally developed by individual members to meet their own needs, supply being extended to fellow-members "under the E.L.M.A. system of 'co-operative competition'", and that a manufacturer is in general under no moral obligation to supply components or materials made for his own use to his competitors, particularly where such components and materials are covered by patents, or involve to a substantial degree the vital techniques or "know-how" of lamp manufacture.

248. It is claimed that, in fact, the E.L.M.A. members concerned make supplies of all components and materials except coiled filaments and

fluorescent powders freely available. Price differentials in favour of fellow-members and the Controlled Companies, where they occur, are small, and it is submitted by E.L.M.A. that some freedom to fix prices must be conceded to the member-supplier unless he is to be placed under an unfair commercial handicap compared with outside suppliers. In the case of supplies to fellow-members, it is said to be normal commercial practice to give a preference to firms with whom one is in close business relationship. In the case of supply to the Controlled Companies, it is submitted that these companies are the joint subsidiaries of E.L.M.A. members, that the members supplying components and materials hold a controlling interest, and that it is normal practice to supply subsidiaries on preferential terms; it is considered in this specific case that the shareholders supplying components should not make a profit on sales at the expense of the other shareholders.

The Controlled Companies

249. As regards the ownership of the Controlled Companies by the E.L.M.A. members, it is submitted that they are not "used to sell at a loss or even without profit". They are intended to compete in the cheap lamp market and "this involves competition with independents and not with E.L.M.A. members; but this follows from the nature of the business they do". The quality of their lamps is claimed to be as good as it can be at the price. E.L.M.A. states that "this use of a separate firm to make the lower grade article (however good it be in its class) is a normal business practice and in the public interest".

Standards and Quality

250. It is explained that E.L.M.A.'s policy has two aspects: in the first place E.L.M.A. members have sought to reduce costs and increase efficiency by type standardisation, hoping thereby to increase profits, extend their business and benefit the consumer; secondly, they have sought that official standards should give credit to manufacturers making lamps of the highest commercially practicable quality, hoping thereby to gain an advantage over competitors making inferior lamps.

Patents, Inventions and Manufacturing Experience

251. E.L.M.A. submits that, since under the Patents Act, 1949, an individual manufacturer is entitled in law to retain his own statutory monopoly provided he can work his patents and meet demands, it would not be against the public interest if access to the patent pool were not available to non-member manufacturers at all on any conditions. E.L.M.A. members, by pooling their patents, voluntarily waive their exclusive rights as between one another, with the result, it is said, that a new invention or development becomes available to the public at the earliest possible moment through the widest possible distributive channels. They are now prepared to go further than this and under the new licensing policy access to any patent in the patent pool will also be made available to non-members on the sole condition of maintenance of E.L.M.A.'s prices on the patented article and on payment of reasonable royalties. Since a patentee who does not grant licences can fix prices provided that the level is reasonable, E.L.M.A. contends that the patentee who grants licences is entitled to do the same, and that while "in one sense it can perhaps be said that the patent licensing system supports the price system . . . it is more correct to say that the price system has enabled the patent licences to be granted where otherwise each manufacturer might have retained his inventions for himself".

252. E.L.M.A. further submits that the practice whereby its members agree together not to provide manufacturing assistance to non-members is a necessary corollary of the agreement to share manufacturing experience. It is E.L.M.A.'s opinion that, if a company has not the right to keep its manufacturing experience to itself, incentives are destroyed; at the same time it is also "in the public interest that a firm should have the right, by freely negotiated agreement, to share this experience". E.L.M.A. maintains that it is therefore in the public interest that a group of companies be entitled to agree not to divulge information so shared to companies outside the group.

Restricted Membership

253. E.L.M.A. submits the following case in support of restriction on its own membership:—

"(i) E.L.M.A. has grown up during the years as an arrangement between firms accepting certain common standards of commercial dealing and able to accept competition without preventing real and effective co-operation in certain spheres. The essence of such an organisation can only be retained if absolute control is retained on the entry of new members.

(ii) E.L.M.A. depends on willing co-operation rather than on penal rules for enforcement of its obligations. That spirit can only be maintained by control of new entry.

(iii) E.L.M.A. is in certain respects a partnership. It is an essential element of such partnerships that new partners can only be admitted by agreement and not as of right.

(iv) E.L.M.A. does not desire to become a monopoly in the generally accepted sense of the word."

CHAPTER 17 : CONCLUSIONS AND RECOMMENDATIONS

254. In this chapter we use the term "the E.L.M.A. system" to describe the complex network of arrangements governing the production and distribution of lamps in the United Kingdom which we have described in the earlier chapters of this report. All these arrangements are the responsibility of the members of E.L.M.A.; in general, the lead is taken by G.E.C. and the A.E.I. Group, but among the other members is the British Philips Company, a subsidiary of Philips (Holland), one of the major lamp manufacturers of the world. The expression "the E.L.M.A. system" covers all these arrangements but, as will be clear from the earlier chapters, E.L.M.A. itself as an association is concerned with only some of them.

255. Total production in 1950 was just over 250 million lamps, value £13½ million; the production of E.L.M.A. members is shown in paragraph 3. It has been shown in paragraph 208 that only about 10 per cent. of the total capital employed by the E.L.M.A. members in the whole of their undertakings is employed in their home lamp business but that, immediately before the war, the estimated distributed profits on this business were nearly 30 per cent. of the distributed profits on the whole of their undertakings. This fact appears to us to explain to some extent the very large amount of care and attention which has been devoted by E.L.M.A. members, over a large number of years, to regulating the trade in electric lamps.

THE MANUFACTURING SIDE

256. The general structure and many of the details of the E.L.M.A. system as we find it at the present time are of long standing: several of them are heritages from the Phoebus Agreement. It is for this reason that we

have in earlier chapters described the Phoebus Agreement and the organisation that went with it so far as they affected the United Kingdom market. The representatives of E.L.M.A. members have claimed in evidence to us that the general results of the Phoebus Agreement were beneficial to the United Kingdom lamp industry. Whether this was so (despite the organisation's many extremely restrictive practices) we are not called on to judge. We are concerned with it because of its influence on the present system, in which many of its features can be seen.

257. The E.L.M.A. system, on the manufacturing side, presents today the following picture, which is a simplified outline of the complicated arrangements described in detail in earlier chapters. The companies which constitute E.L.M.A. are bound together in what they themselves describe as "in certain respects a partnership", which is not dissoluble until 1955, and in which two senior partners (G.E.C. and the A.E.I. Group) play a predominant role. These two are between them responsible for over half of the production of lamps by the members of E.L.M.A. and work very closely together in all matters concerned with lamp production: they take the initiative in E.L.M.A.'s price-fixing activities and they jointly own the factories making bulbs and caps which supply most of the other members' needs as well as a considerable part of the requirements of the Controlled Companies and Independent Manufacturers. Patents, which have been, and as regards fluorescent lamps still are, of great importance in the industry, are mostly controlled by a few members, including particularly G.E.C. and the A.E.I. Group, but are made available to most of the others. Six of the E.L.M.A. members undertake a certain amount of research but most of this is done by G.E.C. and B.T.H. in friendly rivalry. The results of this research, and other manufacturing knowledge, are passed on to the other members, except Crompton,* B.E.L.L. and Aurora. Members at present have access also to patents, research and manufacturing experience originating in the United States and Holland. A rapid and comprehensive exchange of information about new developments, as they occur, has encouraged the more rapid application of new discoveries and must also, we believe, make more effective the efforts of individual research departments. We have noted the invention of fluorescent lighting and the technical advances made in production methods by E.L.M.A. members. Although we have recorded our opinion that prices were unduly high before the war, none the less it is only fair to record also that much of the benefit of this technical progress has been passed on to the public in a progressive and substantial reduction in the prices of lamps; in the case of general service filament lamps this trend has continued even during the last twelve years when prices of most other goods have been rising, though we have noted in paragraph 202 the circumstances in which these more recent reductions of price were made. We call attention also to the rise in output per man-hour (see paragraph 214).

258. E.L.M.A. members manufacture only such types of lamps (a very wide range) as E.L.M.A. sitting in council agrees upon. The Council fixes the price at which each type is to be sold by all the members who make it, and by laying down the prices to be charged by distributors E.L.M.A. ensures that uniform prices are charged at any given stage of distribution. Each E.L.M.A. member, therefore, foregoes any competitive advantage he might secure over other members by fixing lower retail prices or giving larger discounts to distributors, by developing different types of lamp, by ownership

* Crompton obtained such information in the discharge field until the end of 1949 (see Appendix 10).

of patents or new discoveries, or by superior manufacturing methods. Competition is, in practice, confined to advertising and salesmanship. Though each is selling his lamps under his own brand, all members, so far as any given type is concerned, are selling practically identical lamps at a common price.*

259. Each E.L.M.A. member is free to secure as many orders as he can for any approved type of lamp. The principle of the sales quota system as inherited from Phoebus, however, is that each member is entitled only to a fixed percentage of the total trade in E.L.M.A. lamps of all kinds taken together, on the ground that all are entitled to share *pro rata* in any change in the level of the trade of the members. Any member who sells more than his quota has to make a compensatory payment and any who has sold less than his quota receives a compensatory donation. There is no restriction on the total number of lamps of all kinds sold by E.L.M.A. members, and the total volume of production is free to grow or diminish according to the demands of trade.† Under the provisions of two international agreements, imports from the American G.E.C. and its subsidiaries are excluded and imports from Philips (Holland) are limited.

260. This short general description relates to the present position. If the picture had been painted in 1939, it would have shown a very much greater degree of restriction both in the practices and in the policies of the members of E.L.M.A. We are not asked to say whether the conditions restrictive of competition in the supply of lamps have operated against the public interest in the past but whether they do so now or may be expected to do so in the future, and for this purpose it is necessary to record the change which has come over the E.L.M.A. system in the last few years, and to consider to what extent this change may be expected to be permanent. We note here, therefore, the following important differences between the practices of the E.L.M.A. members in the supply of lamps now and in 1939.

(i) The prices fixed before the war were unduly high in relation to costs, whereas those fixed now are on average moderate, although the prices for motor lamps still provide very high profits to the manufacturers and distributors' margins which are considerably higher than those obtained on most electrical goods.

(ii) Until the war, members of E.L.M.A. were parties to the Phoebus Agreement under which action was taken to hamper the growth of independent competition and to extend the scope of the ring by bringing independent manufacturers within it, both by the control of materials and by means of patent litigation. By 1939 the main independent manufacturers of the inter-war years had been either absorbed into E.L.M.A. (Crompton) or purchased by E.L.M.A. members (Britannia and Ismay). There is no sign that any such policy is being pursued at present.

(iii) The parties to the Phoebus Agreement maintained fighting companies as another means of attacking independent manufacturers; one of the objects of the E.L.M.A. members in buying Britannia and Ismay was to get control of the market for cheap lamps and to use these companies with Splendor as a means of "taking business away from the remaining outsiders", that is to say, as fighting companies. The evidence is, however, that these companies have in fact been left to run their business largely independently of

* There is a certain amount of manufacture by members of other members' branded lamps and, indeed, provision is made for this in some of the agreements between members. E.L.M.A. has told us that in other parts of the Commonwealth there are jointly owned factories each of which regularly produces lamps bearing the various members' brands.

† Except to the extent that the obligation to make compensatory payments may indirectly restrict the output of individual members.

the shareholders' management committees; there is no evidence that they have been used as fighting companies and we are assured that there is no present intention of so using them.

(iv) The patent licensing policy of the members of E.L.M.A. was extremely restrictive before the war so far as non-members were concerned. In only one case did an Independent Manufacturer (British Luma) receive a licence from members of E.L.M.A., and even in this case the grant was part of a bargain made by the Phoebus organisation with the Swedish Kooperativa Förbund, and was given subject to some very strict conditions. The patent policy now proposed by the members of E.L.M.A. who own patents is much more liberal.*

(v) There were no provisions in the Phoebus Agreement for amendment of the sales quotas which the members of E.L.M.A. enjoyed before the war and they were not in fact amended except for adjustments to accommodate new parties: the penalties were extremely heavy, involving the loss of considerably more than the profit made if quotas were greatly exceeded. Under the 1948 Lamp Agreement the penalties are much less in amount and no compensation is payable in respect of a deficiency of more than 15 per cent; further, we are informed that the intention is to review the quotas in 1955.

(vi) Under the Phoebus arrangements, there were upper limits on the life of lamps made by the members, with penalties if these were exceeded. There are now no such provisions except in the case of Type B lamps.

261. In considering how far these changes might be expected to be permanent in the absence of any recommendations by us, it is necessary to consider the circumstances in which they were made. Counsel, towards the end of his submission to us on behalf of E.L.M.A.,† expressed the view that times had changed and that the past had little significance today, not so much "for what may be called political reasons" as because of the degree of competition from Independent Manufacturers. We note, however, as regards the price reductions made during and since the war that they were made either at Government request or in response to public policy in relation to monopoly, that the new patent policy has avowedly been evolved in the light of the new Patents Act and the Monopolies and Restrictive Practices (Inquiry and Control) Act and that, in the period of shortage of bulbs during and since the war, a Government allocation scheme has operated. Moreover, old Phoebus ideas of a very restrictive kind are certainly not dead. In all the circumstances we do not feel that the present improved state of affairs could be relied upon to continue if the E.L.M.A. system were left without considerable amendment and additional safeguards in the public interest.

* But see paragraph 273 regarding the position of Philips (Holland).

† Extract from Counsel's speech—E.L.M.A. Hearing 12th April, 1951. "In that connection you may very well think that the original intentions of the founders of the Phoebus arrangements are of very little significance indeed today and those of the founders of the E.L.M.A. organisation of very little more. After all, even if those people a long time ago did dream of a monopoly, of a real monopoly in the proper sense, as they sat around the table in Geneva or wherever it was, any serious prospects of such a thing becoming effective in this country must have faded away long ago, and, as I understand it, no one today seriously envisages the possibility of any such thing coming about.

I think Mr. Williams [formerly Chairman of E.L.M.A.] put it in his evidence quite clearly, from his great knowledge of the matter, that in recent years, in recent times at any rate E.L.M.A. has never seriously contemplated any kind of closed shop, not for what may be called political reasons, although those no doubt come into it, but simply because it is just not on when you have got people like Mr. Thorn in existence, who tells everyone, and it may very well be perfectly right, that he is now one of the three biggest manufacturers of electric lamps in the country and will soon be even more, you do begin to see that the atmosphere is quite unfavourable to any kind of monopolistic operation".

262. We see considerable advantage in the exchange of technical knowledge within the industry and much force in the argument that it could not continue if there were price competition between the companies concerned. The manufacturers' price ring, therefore, has this advantage to offset its potential dangers. We note also that the prices fixed under it are now on average moderate in relation to costs and that there is at present a considerable measure of efficient independent competition; we estimate that 27 per cent. of filament lamps are supplied by Independent Manufacturers and 13 per cent. by the Controlled Companies and that, in the case of fluorescent lamps, the Independent Manufacturers supply between 30 per cent. and 40 per cent.*

263. On balance we see no sufficient reason why the E.L.M.A. system should be completely broken up, but we think that the system may be expected to operate against the public interest in the future unless considerable changes are made and additional safeguards for the public interest provided, as described in paragraph 264. Given these we do not recommend that the members of E.L.M.A. should be prohibited from continuing to fix minimum manufacturers' selling prices for agreed types of lamp sold by them to wholesalers, to retailers or to users, provided two conditions are fulfilled. These are first, that the E.L.M.A. members should take steps to ensure that the system of exchange of technical knowledge extends to all manufacturers who are within the system of common prices, and second, that the level of the prices fixed by E.L.M.A. should be reasonable. We think that the Government should review the prices from time to time. This is our present recommendation as regards the system of common prices; for the future we record our view that if at any time changes occur which substantially reduce the degree of competition with E.L.M.A. which we advocate in the following paragraphs it will be necessary for this whole question to be examined afresh.

264. Our recommendations for changes in the system and for safeguards on the manufacturing and on the distributive side to maintain and strengthen effective competition are given below; we list them together here because, though each is dealt with in turn later, the practical effect of each cannot be considered in isolation. In summary they are:—

(i) that E.L.M.A. should undertake that members who sell lamp components (other than patented components and ready-coiled filaments) will make them equally available to members and non-members at prices which shall not be higher to non-members than to members;

(ii) that, if the working of the new patent policy results in an appreciable reduction of the degree of competition to which E.L.M.A. is subjected, the whole question should be examined afresh;

(iii) that the E.L.M.A. members should give an assurance that the Controlled Companies will continue to provide a measure of competition as suppliers of cheap lamps, and that they will not be used as fighting companies;†

* As we explain in Chapter 13, these percentages are only approximate. We think that filament lamps are supplied to the home market roughly in proportion to production, as between the three groups of manufacturers: the Controlled Companies' share of the home market for general service filament lamps, however, is almost certainly higher than 13 per cent. As regards discharge lamps, the Independent Manufacturers have a bigger share of output than of sales in the home market because they export more of their products, relatively, than the E.L.M.A. members.

† i.e. companies which, as a matter of policy, sell lamps regardless of cost, specifically in the markets of Independent Manufacturers.

- (iv) that the sales quota system should be brought to an end ;
- (v) that E.L.M.A.'s rules about Type B lamps should be altered to remove quantity and quality restrictions ;
- (vi) that the arrangements for exclusive dealing and aggregation of quantity rebates should be brought to an end ;
- (vii) that payments to associations of distributors should be brought to an end ;
- (viii) that the enforcement of resale price maintenance by means of the collective sanctions of fines and the Stop List should be brought to an end ;
- (ix) that E.L.M.A.'s Rules should be altered to permit other distributors as well as co-operative societies to give "dividends".

Competition from Independent Manufacturers : Supplies of Components

265. E.L.M.A. members are the main manufacturers of lamp components and the only manufacturers of machine-made glass bulbs for general service filament lamps. The independent manufacturers competing with E.L.M.A. before the war were dependent to a very considerable degree for their components on imports from abroad. During the war when imports were cut off arrangements were made under the auspices of the Government for the component-making members of E.L.M.A. to supply the Independent Manufacturers as well as the other members of E.L.M.A. with components such as bulbs, caps and tungsten and molybdenum wire. The Independent Manufacturers have continued to buy a large proportion of their components and materials from E.L.M.A. members up to the present time, and there will be found at Appendix 15 (Table 4) particulars of the agreed prices at which the E.L.M.A. members sell to them. E.L.M.A. has said in evidence to us that its members do not want all present competition wiped out and to become monopolistic (using the word in its normal sense), and that their present policy is to supply all materials and components freely and at reasonable prices, except those components which they consider "embody to a very substantial degree the vital techniques and 'know-how' of lamp manufacture".

266. The supply of glass bulbs made on the new Ribbon plant constitutes a special case among components since it is, or shortly will be, in effect a monopoly arising inevitably from technical development. This new plant when in full production will be capable of producing more than enough bulbs for the whole of the lamp industry of this country, and there will be no room for a competing plant. E.L.M.A. has informed us that the proprietors of the Ribbon plant fully recognise the special obligations which fall upon them in view of their monopoly position and they have given an undertaking to the Ministry of Supply, a copy of which is attached at Appendix 12, that they will supply bulbs made on this plant to all purchasers in the United Kingdom without discrimination, and that the prices will be the same to all purchasers except for the proprietors themselves (G.E.C. and B.T.H.) and the Controlled Companies.

267. It seems doubtful whether the present situation under which Independent Manufacturers are so largely dependent upon E.L.M.A. members for their supplies of components, and are able to obtain them, could have arisen save under the strain of war, but it follows from what we have said about the need to maintain and strengthen independent competition that we think it important that these supplies should continue. We recognise that the members of E.L.M.A. cannot be expected to share all the benefits of their own knowledge and skill with their competitors, and we think the line is

reasonably drawn at present, the only components which are not supplied freely to Independent Manufacturers being fluorescent powders (covered by patents) and ready-coiled filaments. Further, since the manufacture of many of these components involves the application of technical knowledge of the sort that is exchanged among the members, we do not recommend prohibiting the fixing of common prices for components, given the safeguards we recommend. We consider, however, that the E.L.M.A. members who sell components and materials should give an undertaking similar to that already given to the Ministry of Supply in respect of bulbs made on the Ribbon plant (see paragraph 266) that they will make them available equally to members and non-members at prices no higher, quantity for quantity, to non-members than to members, subject possibly to lower prices being charged to parent, subsidiary or fellow-subsidary companies of the supplier.* Should the members at any time cease to agree among themselves the prices at which any components are supplied, we think they should continue individually to observe the principles we have recommended.

268. As regards bulbs made on the Ribbon plant there should in our view be an additional safeguard to that contained in the undertaking already given, namely that the supplying company should publish a price list showing the gross prices and quantity discounts at which it is prepared to sell.

269. Should temporary shortages of any materials or components arise and some form of allocation between purchasers be necessary, we suggest that unless the Government takes direct responsibility by imposing control E.L.M.A. or its component-making members should keep in close touch with the responsible Government Department in order to ensure that no misunderstandings arise about the fairness of the shares received by Independent Manufacturers.

Patents

270. We have described in Chapter 5 the patent policies formerly followed by members of E.L.M.A. and the new policy they propose to follow in the light of the passing of the Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948, and the Patents Act, 1949. The new policy represents a major change, since the use of patents as a buttress of the E.L.M.A. system is to a large extent abandoned. The decision to grant licences to non-members goes well beyond the obligations placed on patentees by the law. The dropping of the requirements that licences be taken under all patents or none, and the abandonment of the control of prices of non-patented articles and of the control of output of any articles, are all changes of which we approve.

271. There are, however, two features of the new patent policy on which we must make some further comment. The first is that a patent licence will still fix the price at which the lamps under the patent are to be sold. It is, as we have said, common for patentees to fix prices in this way, and it is no doubt natural to do so when those settling the terms of the licence have agreed common prices among themselves. The new policy does, however, make it easier to bring the whole industry into E.L.M.A.'s system of common prices for those lamps which are covered by patents (because other onerous conditions have been abandoned), and we have explained above the importance we attach to securing that E.L.M.A. members face an adequate amount of price competition from outside. Where the patents

* At present the British Philips Company, Stella and Cryselco among the members of E.L.M.A. get preferential terms for glass tubing and rod under agreements with G.E.C. and B.T.H.— see Appendix 15 (Table 4).

cover only minor improvements or very special types of lamp, as is at present the case with filament lamps, the point is unimportant. The patent position for fluorescent lamps, however, is not entirely clear and it is possible (we cannot assess the probability) that fundamental patents exist and that the application of the new policy would result in the extension of the system of common prices for fluorescent lamps to the whole industry.

272. If at any time the application of the new patent policy results in a substantial reduction in the degree of competition to which the E.L.M.A. system is subjected, either through the acceptance of price conditions in patent licences by Independent Manufacturers or by successful patent litigation against such manufacturers or in any other way, we recommend that the whole question whether the continuance of the E.L.M.A. system, in the form it would then take, would be likely to operate against the public interest should thereupon be examined afresh.

273. The second comment we have to make about patents arises from the circumstances that some of the lamp patents to which members of E.L.M.A. have access are owned by Philips (Holland), which is not itself a member of E.L.M.A. though it is a party to the 1948 Lamp Agreement; we are informed that the new patent policy will be pursued by E.L.M.A. members but that licensees who wish to use patents belonging to Philips (Holland) will have to approach that company separately. It follows from the approval we have expressed for the dropping of many restrictive features in the new patent policy of E.L.M.A. members that, if any substantially more restrictive policy were to be pursued by Philips (Holland)—if, for example, any restrictions were placed on the quantity of lamps supplied to the United Kingdom market through a patent licence to a United Kingdom manufacturer—then a state of affairs contrary to the public interest might well exist. In these circumstances—which are quite hypothetical—the procedure laid down in Section 40 of the Patents Act, 1949, might be appropriate.

Competition from the Controlled Companies

274. Splendor was one of the original Hydra companies: it has long been under the control of E.L.M.A. members and is now owned by them. Britannia and Ismay (and Britannia's subsidiary Gnome) were acquired jointly by E.L.M.A. members in 1938, the method of acquisition being that laid down in the Phoebus Agreement*; the objects of the E.L.M.A. members in acquiring them were both to gain control of the market for cheap lamps "with the least possible injurious effect on the regular Phoebus business," and to use the companies, if required, as fighting companies. The Controlled Companies make lamps of satisfactory quality which are marketed through the chain stores and in other ways, usually at lower prices than E.L.M.A. lamps; they buy most components from E.L.M.A. members at lower prices than do other manufacturers. Both the price differential between the lamps of the Controlled Companies and those of E.L.M.A. members, and the proportion of the market supplied by the Controlled Companies, are less now than they were before the war.

275. There is a Management Committee for Ismay and Britannia appointed by the E.L.M.A. members who are shareholders, but both E.L.M.A. and the companies themselves have said in evidence that there is no interference by the E.L.M.A. members in the administration of the Controlled Companies and that they are left to run their business very much as they did before they were acquired. Splendor is supervised similarly. While, however, so far as the general public and other users are concerned, competition

* There is a similar provision in the 1948 Lamp Agreement.

between the Controlled Companies and E.L.M.A. members undoubtedly exists, E.L.M.A. has admitted to us that so far as practicable the policy is not to compete in E.L.M.A. markets, i.e., at the wholesale and retail levels: indeed, competition at the wholesale level could only be conducted by trying to persuade E.L.M.A. wholesalers to break their exclusive dealing agreements, and many retail outlets are similarly barred to the Controlled Companies through exclusive agreements between retailers and E.L.M.A. We cannot overlook the fact that E.L.M.A. members are in a position at any time to control the policy of the Controlled Companies and that the termination of the system of exclusive dealing (see paragraphs 287 to 292) would create a new situation in which they might be tempted to do so.

276. In our view it is important, if the E.L.M.A. members themselves are to be left to carry on with agreed manufacturers' prices, that the Controlled Companies should continue to provide a measure of competition as suppliers of cheaper lamps and should not be used as fighting companies; and we recommend that the E.L.M.A. members should give an assurance that this will be done.

277. The preservation of the Controlled Companies as competitors would become even more important if E.L.M.A. or its members were to absorb any of the Independent Manufacturers. Although we have seen nothing in evidence to suggest that either E.L.M.A. or any of the Independent Manufacturers are contemplating this absorption, we cannot ignore the possibility of its happening in view of the past history of the trade (see in particular paragraph 28). We recommend that if it does, or if the Controlled Companies cease to practise an independent price policy, the position of these companies should be reviewed in the light of the situation as it would then exist.*

Quotas

278. The system of sales quotas established under the Phoebus Agreement is continued in a modified form by the 1948 Lamp Agreement†; we have noted that the latter provides both for less severe penalties and also for an upper limit to the compensation to parties who fail to sell their full quotas. These changes substantially reduce the practical effects of the system, so much so that the elaborate machinery of administration described in paragraph 102 seems out of all proportion to the result achieved. We have been informed that the parties regard the agreement as a means of meeting unitedly any potential competition; no doubt, too, it is a means of maintaining good relations with Philips (Holland) in the markets in which the British manufacturers are principally interested. E.L.M.A. has said as regards the present position that "since the manufacturer retains a substantial proportion of the profit, there remains an adequate incentive to increase his share in the market. Further, the quota will be reviewed in 1955 and this gives him an additional incentive to get as much of the trade as he can before that date".

279. While the practical effects of the sales quota system may not now be large, we cannot see that any gain to the public interest is secured by it, and we think that it is contrary to the public interest in the following ways:—

- (i) The principle on which the system is based—that all changes in the market should be shared *pro rata* very largely on the basis of members' shares in 1924, regardless of any changes in relative efficiency—conflicts

* See Addendum by Mrs. Robinson, paragraph 296.

† The quotas of B.E.L.L. and Aurora have been determined, not by the 1948 Lamp Agreement, but by separate agreements made concurrently with their patent licence agreements. These agreements have expired but we understand that new agreements providing for bigger quotas are being negotiated.

with the need, so strongly emphasised in Section 14 of the Act, for "the fullest use and best distribution of men, materials and industrial capacity in the United Kingdom".

(ii) We see no reason why compensation should now be paid to a manufacturer for failure to sell his full quota of lamps.

(iii) The quotas cover such different articles as motor lamps, projector lamps, general service filament lamps and fluorescent lamps, with the result that an increase in a member's share of the market for one type of lamp must be offset by a decrease in his share of the market for other types unless penalties are to be incurred; in particular we note that there have been no adjustments in the quotas settled many years ago for filament lamps only, consequent on the introduction of fluorescent lamps. (This point was put to a representative of E.L.M.A. who replied that in practice "everybody would sell as much as they could and pay the compensation"—a reply which only reinforces the view expressed in (iv) below.)

(iv) If the lower scale of payment and compensation under the 1948 Lamp Agreement does not force members to keep to their quotas then an elaborate and unnecessary piece of administrative machinery is being maintained.

For these reasons we recommend that the sales quota system in the United Kingdom should be brought to an end.

Restrictions on Imports

280. Imports of lamps are restricted in two ways. First, certain E.L.M.A. members are parties to agreements under which imports of lamps from the American G.E.C. and its subsidiaries are excluded. As we are asked to consider only the supply of lamps to the United Kingdom market and this arrangement forms part of a wider whole we express no opinion on it. In any case, as is explained in paragraph 63, these agreements will end when the current United States action against the American G.E.C. and I.G.E.C. under the anti-trust laws is concluded. Secondly, as Philips (Holland) is a party to the 1948 Lamp Agreement, the quota system formally limits imports from Holland, though in fact that company's quota has been largely filled by the production of its two United Kingdom subsidiaries, the British Philips Company and Stella. We have recommended that the quota system in the United Kingdom should be brought to an end, and this step would automatically terminate this theoretical restriction on imports.

Type B Lamps

281. E.L.M.A. provides in its rules for members to make, if they wish, general service filament lamps called "Type B" for sale at lower prices than E.L.M.A. lamps proper. For these lamps, which do not bear the usual trade marks of E.L.M.A. members, a maximum efficiency and a maximum life are laid down by E.L.M.A., and each member's sales are limited in quantity. The fixed prices of these lamps have not been changed since before the war, while the prices of E.L.M.A. lamps proper have been (see Appendix 15 (Table 6)), and production is now very small, being practically entirely confined to Crompton's "Kye" lamp. We recommend that E.L.M.A.'s rules should be altered so as to remove both the limitation on the quantity allowed and the upper limits on efficiency and life of these lamps. No doubt the lower limits of efficiency and life would have to be below the limits for E.L.M.A. lamps proper, but upper limits are contrary to the public interest.

Life Standards

282. The members of E.L.M.A. and many non-members make lamps to B.S.I. specifications where these exist. Although B.S.I. has a certification

marking scheme for general service filament lamps and nearly all members of E.L.M.A. and one non-member hold licences to use the mark, none of them uses it (except in respect of London County Council contracts which prescribe it), the members of E.L.M.A. in fact agreeing together not to do so.

283. As regards life standards, before the Phoebus Agreement and to this day the general service filament lamp was and is designed to have, on average, a minimum life of 1,000 hours. It has often been alleged—though not in evidence to us—that the Phoebus organisation artificially made the life of a lamp short with the object of increasing the number of lamps sold. As we have explained in Chapter 9, there can be no absolutely right life for the many varying circumstances to be found among the consumers in any given country, so that any standard life must always represent a compromise between conflicting factors. B.S.I. has always adopted a single life standard for general service filament lamps, and the representatives of both B.S.I. and B.E.A., as well as most lamp manufacturers, have told us in evidence that they regard 1,000 hours as the best compromise possible at the present time, nor has any evidence been offered to us to the contrary. Accordingly we must dismiss as misconceived the allegation referred to above.

284. The attitude of E.L.M.A. members to this matter, however, strikes us as rather arbitrary. When asked whether it would not be possible to market a type of lamp with a longer life in order to test whether the public in fact liked it, their reply was to the effect that this was a matter on which the public could not judge and which ought to be left entirely to the manufacturer, and that in any event users as well as manufacturers are represented on the B.S.I. committees which draw up the specifications to which they manufacture. The whole question contains technical difficulties and is best left to B.S.I., the appropriate body to keep it under review in the interests of both consumers and manufacturers. We have noted the general efforts of B.S.I., described in the report of the Cunliffe Committee on the Organisation and Constitution of the British Standards Institution (1950), to associate representatives of users and consumers more closely with its work. Effective representation of consumer interests is particularly important in this case, where many of the manufacturers' representatives are bound together by close commercial ties and trading agreements.

THE DISTRIBUTIVE SIDE

285. The E.L.M.A. system on the distributive side presents the following picture. There are uniform fixed prices and discounts for each type of E.L.M.A. lamp,* and those handling E.L.M.A. lamps do so only on condition that they maintain these prices and terms and require the same condition of those to whom they resell (if not users). Thus there is no price competition between E.L.M.A. lamps at any stage. No distributor may deal in any E.L.M.A. lamps unless he accepts these conditions and their observance is enforced by E.L.M.A. by means of fines and the power of the Stop List. In addition, all wholesalers of E.L.M.A. lamps must undertake not to sell lamps made by non-E.L.M.A. manufacturers (whether Independent Manufacturers or Controlled Companies) and retailers get extra discounts if they agree not to sell non-E.L.M.A. lamps. These exclusive agreements are enforced by E.L.M.A. by fines and the power to cancel agreements; in the case of a wholesaler, cancellation of his agreement has much the same effect as the use of the Stop List, since without an agreement he cannot deal in E.L.M.A. lamps on wholesale terms. There are also aggregated quantity rebates payable to wholesalers and retailers and some users based on their

* Flash lamps and cold cathode discharge lamps are excluded from the system, though the E.L.M.A. Rules lay down common manufacturers' selling prices for flash lamps.

total purchases during the year of all E.L.M.A. members' lamps. Finally E.L.M.A. makes payments to certain associations of distributors based on the volume of business done by their members in E.L.M.A. lamps.

286. The E.L.M.A. distributive system is, therefore, based on the prevention of price competition at all stages and on a substantial measure of exclusive dealing by distributors. It is extremely elaborate and involves a considerable administration. E.L.M.A.'s individual agreements with distributors run into many thousands and the provisions for the payment of aggregated quantity rebates must involve the dissection of some thousands of invoices a day.

Exclusive Dealing and Rebates

287. The two fundamental features of the system of exclusive dealing established by E.L.M.A. are :

(a) E.L.M.A. members will not supply any concern on wholesale terms unless it signs an agreement containing an undertaking not to sell any non-E.L.M.A. lamps.

(b) A retailer who is willing to sign an agreement containing an undertaking not to sell non-E.L.M.A. lamps gets an extra discount of 5 per cent.*

288. E.L.M.A.'s argument for requiring its wholesalers to be exclusive is that they must be given confidential lists of customers (with details of the special discounts allowed in some instances), and that it could never take the risk of entrusting this information to a wholesaler who also dealt with its competitors. E.L.M.A. points out that there are many other wholesalers who, since they do not trade in E.L.M.A. lamps, are available to the Independent Manufacturers. It follows that the Independent Manufacturers are at little risk of being completely shut out of the distributive trade, but we have noted that the exclusive E.L.M.A. wholesalers form a considerable proportion of the leading electrical wholesalers. The denial of all E.L.M.A. lamps to wholesalers who will not sign exclusive agreements is clearly a powerful inducement to them to sign, and the arrangement accordingly hampers the competition of the Independent Manufacturers. The reason for it adduced by E.L.M.A. does not seem to us at all conclusive. In view of the importance we attach to the existence of effective competition we consider that it is against the public interest that exclusivity should be required as an essential part of the contracts under which E.L.M.A. lamps are supplied to wholesalers, and we recommend that the practice should be brought to an end.

289. It will be seen from the figures in paragraph 155 that, out of an estimated total of about 35,000 retailers of general service filament lamps, 19,000 have each signed an exclusive agreement with E.L.M.A., entitling them to the 5 per cent. extra discount. The 5 per cent. discount for exclusivity has a less serious effect, in relation to the public interest, than a completely exclusive system which would shut independent traders out of the market. Nevertheless, the effect of the special discount is important. Gross margins are of the order of 20 per cent. to 30 per cent. of the retail price for most lamps other than motor lamps and 30 per cent. to 38 per cent. for motor lamps ; and although there are no data on which to estimate net profit margins with any precision, it seems probable that 5 per cent. of the retail price is, in many cases, a figure comparable with that of the net profit margin made by retailers from the sale of lamps ; this special discount therefore puts a very severe pressure on retailers to accept the exclusive arrangement and so reduces the effectiveness of the independent competition on the strength of which we rely in our judgment that the E.L.M.A. system of agreed uniform manufacturers' prices need not be prohibited. In practice, Independent Manufacturers

* Sometimes rather more in the case of motor lamps—see Appendix 15 (Table 5).

compete by offering higher margins to retailers rather than a lower price to the general public, so that the effect of E.L.M.A.'s preferential discount has been to transfer competition from the stage of the consumer to the stage of the distributor; consequently, the consumer has been deprived of the benefit of the price reductions which the Independent Manufacturers have made. It seems to us that competition in the margins allowed to distributors is a poor alternative to competition in price to the public. We conclude that it is contrary to the public interest for E.L.M.A. members to give retailers a pecuniary inducement to buy their lamps exclusively, and that this practice should be brought to an end.

290. It is perhaps useful here to recall (see paragraph 176) that B.E.A. when reviewing its own system of retail lamp distribution decided not to sign any exclusive agreement with E.L.M.A., though many of the former supply undertakings which it had absorbed had previously done so and nevertheless B.E.A. enjoys the same discount as retailers who sign exclusive agreements.

291. A few large users of lamps receive special terms from E.L.M.A. for which one consideration is an agreement to buy E.L.M.A. lamps for the whole, or a stated proportion, of their needs. These users are, no doubt, capable of looking after their own interest, but the principle of exclusivity is, none the less, against the public interest, in that it limits access to these markets by the non-E.L.M.A. manufacturers and so weakens their competition. The practice should therefore be brought to an end.

292. A further point which arises in connection with the distribution system is whether or not it is against the public interest for E.L.M.A. to give to wholesalers, retailers, and users (whether exclusive or not) an aggregated quantity rebate based on their total purchases during the year of all E.L.M.A. members' lamps, and to users a discount which is virtually a quantity discount of a similar kind. This is less important than the two matters dealt with in paragraphs 288 and 289 above, but it follows from the conclusions we have expressed there that in our opinion this practice is also against the public interest. It is certainly a form of pecuniary pressure to buy exclusively from E.L.M.A. members. In considering the matter, it is also difficult to ignore the waste of effort and manpower that occurs from the elaborate statistical machinery which must be used to calculate the aggregated rebates due to each recipient, and the amounts payable by each E.L.M.A. member. We recommend that the practice should be brought to an end.

293. Another practice of E.L.M.A. in relation to distribution is that of making payments to certain associations of distributors proportionate in amount to the volume of business done in E.L.M.A. lamps by the members (see paragraphs 184 and 185). In the case of motor lamps the overriding commission paid to M.F.A. is $2\frac{1}{2}$ per cent. or $4\frac{1}{2}$ per cent. on the net value of purchases by members who have Factors' or Wholesalers' Agreements, respectively, with E.L.M.A. In other cases these payments are on a low scale, but we see no advantage in the practice; its effect though small appears to us to be contrary to the public interest in the context of a continuing agreement between the E.L.M.A. members to maintain uniform manufacturers' selling prices, since it tends to weight the scales against the Independent Manufacturers. We recommend that all these payments should be brought to an end.

Resale Price Maintenance*

294. We are concerned in this section of our conclusions not with the prices at which E.L.M.A. members themselves sell at the various stages of distribution but with E.L.M.A.'s system of resale price maintenance

* See paragraph (xiii) of the Introduction.

whereby E.L.M.A. fixes uniform resale prices to be charged for E.L.M.A. lamps by distributors and enforces the maintenance of those prices by the distributors by means of fines and a Stop List, i.e. by collective action by all E.L.M.A. members. The following are the outstanding facts about this system as disclosed in the course of our inquiry:—

(i) There is no price competition between E.L.M.A. lamps at any stage of distribution.

(ii) E.L.M.A. does not object to payment of "dividend" on its members' lamps by co-operative societies, but does not allow similar freedom to other distributors.

(iii) Fines and the Stop List though effective as methods of enforcement have been used by E.L.M.A. with moderation and for the specific purpose of enforcing resale prices.

(iv) A distributor of lamps has little choice as to accepting a condition to maintain resale prices since in addition to all E.L.M.A. lamps many of the lamps made by Independent Manufacturers are price maintained.

295. We consider that the collective enforcement of resale price maintenance by E.L.M.A. by means of fines and a Stop List should be brought to an end and should not be replaced by any other method of collective enforcement. We are satisfied that it is not in the public interest that E.L.M.A. members should any longer use collective sanctions to enforce the maintenance of the resale prices they themselves fix. We think, too, that E.L.M.A.'s Rules should be altered to extend the permission given by E.L.M.A. to co-operative societies to pay dividends on E.L.M.A. lamps to cover any general price reduction made by a distributor by means of a dividend or other method which does not single out products of particular manufacturers. These changes will in our view assist in keeping the E.L.M.A. prices and distribution system reasonable and so add appreciably to the safeguards for the public interest which are needed so long as E.L.M.A. members continue to fix common manufacturers' prices.

R. H. A. CARTER (*Chairman*)
G. C. ALLEN
C. N. GALLIE
FREDERICK GRANT
JOAN ROBINSON (subject to the
Addendum below)
H. L. SAUNDERS
GORDON STOTT
JOSIAH WEDGWOOD
R. E. YEABSLEY

ALIX KILROY (*Secretary*)

31st August, 1951.

296. *Addendum to paragraphs 276 and 277.* It seems unrealistic to expect the Controlled Companies to compete freely and effectively with the members of E.L.M.A. while they continue to be owned by them. I therefore recommend that the Government should acquire the share capital of these companies at a fair valuation. There would be no need to make any change in the management of the companies. By this means, these companies would be freed to take advantage of the situation created by the abolition of E.L.M.A.'s exclusive dealing arrangements, a modicum of competition would be permanently secured, and the effect of our other recommendations generally strengthened.

JOAN ROBINSON

APPENDIX 1

Principal Concerns and Organisations from whom Evidence was Obtained

Electric Lamp Manufacturers' Association and its members.

Britannia Electric Lamp Works Ltd.

Ismay Lamps Ltd.

Splendor Lamp Co. Ltd.

Independent Lamp Manufacturers' Export Group.

Ekco-Ensign Electric Ltd.

Thorn Electrical Industries Ltd.

In co-operation with the Parliamentary Committee of the Co-operative Union Ltd.:—

British Luma Co-operative Electric Lamp Society Ltd.

Co-operative Wholesale Society Ltd.

Scottish Co-operative Wholesale Society Ltd.

Co-operative Union Ltd.

Electrical Fair Trading Council.

Electrical Wholesalers' Federation.

Motor Factors' Association.

The N.E.C.T.A. Ltd.

Electrical Contractors' Association of Scotland.

National Federation of Ironmongers.

Radio and Television Retailers' Association (R.T.R.A.) Ltd.

Motor Agents' Association, Ltd.

F. W. Woolworth & Co. Ltd.

Joseph Lucas Ltd.

British Electricity Authority and the Area Electricity Boards.

Railway Executive.

London Transport Executive.

National Coal Board.

Ministry of Supply.

Board of Trade.

Ministry of Works.

General Post Office.

Department of Scientific and Industrial Research.

Ministry of Labour.

British Standards Institution.

In co-operation with the Trades Union Congress:—

National Union of General and Municipal Workers.

Union of Shop, Distributive and Allied Workers.

We also obtained evidence or collected information from a large number of lamp manufacturers, lamp component manufacturers, distributors, associations of traders in related industries and users of lamps (including many local authorities, manufacturers of apparatus incorporating lamps and other industrial and commercial concerns).

APPENDIX 2

Referred to in paragraphs (xii), 6, 18, 72, 81, 134, 230 and 232 (footnote)

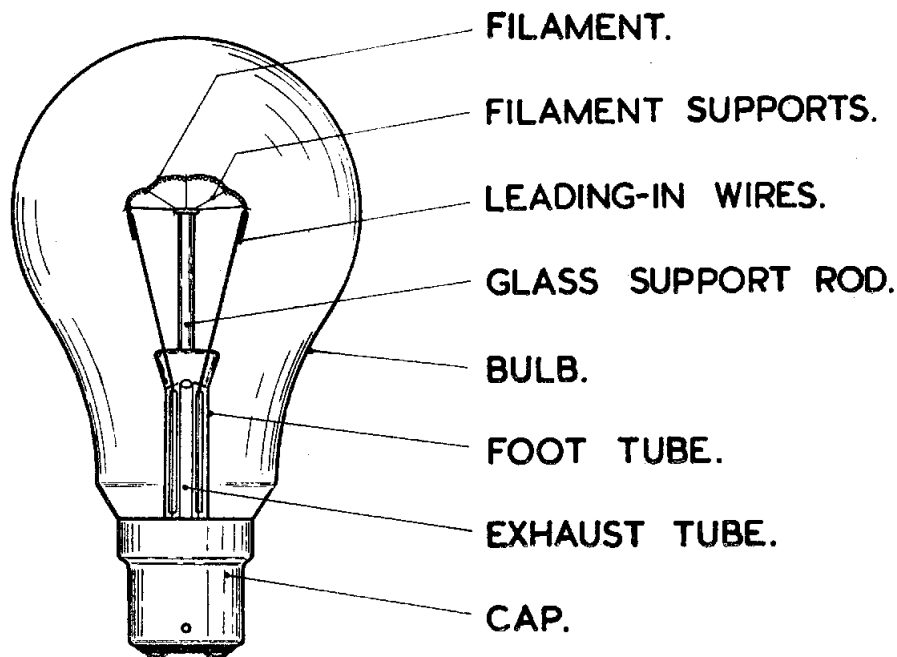
Explanation of Technical Terms Used in the Report

1. Lamp Components

(a) *Components of Filament Lamps*

The principal components of filament lamps are listed in paragraph 6 of the report in the form in which they are frequently purchased by those manufacturers who do not make their own components from the raw materials. The way in which these semi-manufactured components fit into the finished lamp is explained in the following notes and diagram:—

CAP	... ..	The terminal base of the lamp (see diagram), normally made of brass.
COPPER WIRE	... ..	Used to make part of the leading-in wires (see diagram) which conduct the current from the cap to the filament.
COPPER-CLAD NICKEL-IRON WIRE.	... ..	Used to make that part of the leading-in wires (see diagram) which is sealed through the foot tube.
GAS	... ..	Most modern filament lamps are gas-filled to reduce the rate of evaporation of the filament: the gas, usually argon or nitrogen, is introduced into the bulb after it has been exhausted of air.
GLASS BULB	... ..	The glass envelope of the lamp (see diagram).
GLASS ROD	... ..	Used to make the glass support rod (see diagram) which carries the filament supports.
GLASS TUBING	... ..	Used to make (i) the foot tube (see diagram), an air-tight seal through which the leading-in wires pass from the cap into the bulb, and (ii) the exhaust tube (see diagram) by means of which the lamp is exhausted of air after assembly. (Glass tubing is also used to make miniature glass bulbs and the envelopes of tubular filament lamps.)
MOLYBDENUM WIRE	... ..	Used to make the filament supports (see diagram). Also used as the mandrel around which the tungsten wire is coiled during manufacture of the filament: the molybdenum mandrel is later removed by dissolving it in acid.
NICKEL WIRE	... ..	Used to make part of the leading-in wires (see diagram) which conduct the current from the cap to the filament.
TUNGSTEN WIRE	... ..	Used to make the filament (see diagram), a coiled thread-like conductor which, when rendered incandescent by the passage of a current through it, is the source of the light emitted by the lamp.



(b) *Components of Discharge Lamps*

The components listed in (a) above are used for similar purposes in discharge lamps: the glass envelope may be a bulb or, as in the ordinary fluorescent lamp, tubular. In a discharge lamp the light is produced by an electric discharge between two electrodes. In the usual (hot cathode) type each electrode consists of a filament which is heated to emit electrons for starting the discharge. In another (cold cathode) type the electrodes consist of cylinders or discs and the discharge is started by applying a high voltage between the electrodes. In fluorescent lamps a deposit of *fluorescent powder* on the inside of the glass envelope is excited by the discharge and modifies the colour of the light.

2. Other terms used in the report

PEARL BULB	... ..	A glass bulb which has been roughened so that it diffuses the light of the lamp: the usual method of producing pearl bulbs is by inside-frosting (see "inside-frosted bulb").
INSIDE-FROSTED BULB	...	A glass bulb the inside surface of which has been roughened by acid treatment: its effect is to diffuse the light of the lamp without appreciable loss of light (see "pearl bulb").
SINGLE-COIL FILAMENT	...	A filament wound into a coil, but not into a further coil (see "coiled coil filament").
COILED-COIL FILAMENT	...	A filament made by coiling the primary coil together with the mandrel (see "molybdenum wire" under 1 (a) above) around another and larger mandrel: both mandrels are later removed. A coiled-coil filament presents a larger area of incandescent surface than a single-coil filament and therefore emits more light, other things being equal.

CARBON FILAMENT LAMP ...		A filament lamp in which the filament is composed of carbon (now obsolete for ordinary purposes).
PREFOCUS HEADLAMP ...		A motor headlamp whose filament is kept in fixed relation to the reflector: for this purpose a special cap (which is gripped rigidly in the holder) and particularly accurate location of the filament are necessary.
MERCURY VAPOUR DIS- CHARGE LAMP.		A discharge lamp in which the light is produced by an electrical discharge through mercury vapour.
SODIUM VAPOUR DIS- CHARGE LAMP.		A discharge lamp in which the light is produced by an electrical discharge through sodium vapour.
AUXILIARY GEAR FOR DIS- CHARGE LAMPS.		This does not form part of a lamp for the purposes of this report. The term refers in particular to the controlling apparatus (choke, transformer, capacitor) used in the wiring circuits of fluorescent lamps.

APPENDIX 3

Referred to in paragraph 32

Electric Lamp Manufacturers' Association : Objects

1. To promote, encourage, foster, develop and protect in Great Britain, all Ireland, the Channel Islands, and the Isle of Man, the interests of the public, the trade and the Manufacturers of Electric Lamps, and to impose such conditions on the conduct of the trade or business in Electric Lamps as in the opinion of the Association may be conducive to those objects, and accordingly to make, enforce and from time to time repeal, alter, amend and add to such Regulations, Bye-laws and Rules as in the opinion of the Council are necessary or desirable for the purpose of giving effect to the objects of the Association.

2. To enter into agreements with and/or promote agreements between Manufacturers of Electric Lamps for the purpose of providing for all or any of the following, namely (1) more advantageous utilization of their manufacturing facilities in producing Electric Lamps, (2) securing and maintaining a uniformly high quality of product, (3) arriving at more economical arrangements for the distribution of such lamps, (4) promoting more efficient methods of illumination or heating by Electric Lamps, and to enable Manufacturers to produce electric lamps economically with advantage to the public.

3. To enter into Agreements with and/or obtain agreements between member and member and/or between members and wholesale and/or retail dealers in and/or users of Electric Lamps relating to the manufacture, supply and/or sale of Electric Lamps, and in particular but without prejudice to the generality thereof for the maintenance and protection of Manufacturers' retail list prices, discounts, and other conditions of retail sale of electric lamps and of the Regulations, Bye-laws and Rules.

4. To support and enforce all such agreements as mentioned in the preceding clause and to exercise and put into operation all or any of the powers referred to in the Regulations, Bye-laws and Rules and to fix, impose and enforce penalties, fines and/or forfeitures upon any member of the Association and/or upon any wholesale or retail dealer or other person for the breach or non-observance by him of any such agreements before referred to or of any of the Regulations, Bye-laws or Rules of the Association for the time being in force.

5. To do all lawful and necessary acts for the suppression and/or prevention of the sale or offer for sale of Electric Lamps of low standard of quality, design or workmanship.

6. To disseminate amongst its members information on matters affecting the Electric Lamp Industry and to provide for and be a central medium for members and generally for the furtherance and promotion of their interests.

7. To raise and/or administer from time to time any fund or funds and borrow any moneys for any purpose and on such terms and conditions as the Association shall think fit. Provided that in the event of any fund being raised for political purposes within the meaning of the Trade Union Acts, 1913 and 1927, the provisions of those Acts with regard to the application and disposition of and the contribution to such fund shall be duly complied with.

8. To do all such other things as are incidental or as the Association may think conducive to the attainment of the above objects or any of them.

APPENDIX 4

Referred to in paragraphs 32 and 42 (footnote)

Electric Lamp Manufacturers' Association : Regulations*

Office.

1. The place of all meetings and the office for the principal management and the general superintendence of the business of the Association shall be in London.

Members.

2. Members must be persons manufacturing Electric Lamps.

3. The first members shall be:—

The British Thomson-Houston Co., Ltd.,
Cryselco, Ltd.,
The Edison Swan Electric Co., Ltd.,
The General Electric Co., Ltd.,
Metropolitan-Vickers Electrical Co., Ltd.,
Siemens Electric Lamps and Supplies, Ltd.

4. Subsequent members shall be elected by the Council as set forth in Regulation No. 41.

5. [Register of members.]

6. [Rights, obligations and privileges of membership not transferable. Corporate bodies to appoint authorised representatives.]

7. Until otherwise determined, every member shall pay and contribute a share of the working and other expenses and of the liabilities of the Association, incurred during the time he is a member and such share shall be payable half-yearly in advance, in the manner provided in the next succeeding regulation and such working and other expenses and liabilities shall be paid and borne by the members in the respective proportions of the number of votes to which each member is entitled in accordance with Regulation No. 32.

Such proportions shall be varied from time to time by the Association in General Meeting upon any member ceasing to be a member for any reason or upon the election of any new member and upon any such election the proportion of such working and other expenses and the liabilities of the Association to be paid and borne by such new member shall likewise be determined by the Association in General Meeting.

8. [Procedure for collecting members' contributions.]

9. Subject to the provisions of the next succeeding Regulation, every member shall remain a member until at least the 30th June, 1955, but by giving notice in writing to the Director on or before the 30th March, 1955, any member may retire from membership on the 30th June, 1955. Membership may be terminated at any time after the 30th June, 1955, by the member concerned giving three calendar months' previous notice in writing to the Director of his intention to retire.

Retirement and exclusion of Members.

10. Membership shall cease:—

(a) If the member retire under the provisions of Regulation No. 9.

(b) If the member, being a corporate body or limited company, be dissolved, go into liquidation or be wound up, except for the purpose merely of reconstruction or amalgamation.

(c) If the member, being an individual, become bankrupt, compound with or make any assignment for the benefit of or by way of trust for his creditors.

* Regulations describing procedure and other matters not relevant to this report are not reproduced in full; their general substance is indicated in square brackets.

(d) If the member or his authorised representative or any person over whom such member has control or with whom such member is associated shall commit any act or omit to do any act, which in the opinion of the Council may by commission or omission respectively be detrimental or contrary to the interests of the Association, or of its members or any of them, or shall disclose any confidential information, discussions or proceedings of the Association or Council or of Committees or Sub-Committees or reports which the Association or its members may have obtained, or shall be in arrear with the payment of any moneys due from him to the Association for more than six calendar months or shall cease to possess the qualification for membership as defined in Regulation 2, and if the Association shall pass the resolution of expulsion referred to in the next clause.

11. The Association may in the event of the happening of any of the events set out in paragraph (d) of the last preceding Regulation by a resolution passed at an Extraordinary Meeting to be called for the purpose, call upon such member (who shall neither by himself nor by his authorised representative be entitled to vote at such meeting on such resolution) to resign, and thereupon such member shall *ipso facto* cease to be a member.

12. [Financial provisions on cessation of membership.]

General Meetings.

13-20. [Procedure for calling General Meetings.]

Proceedings at General Meetings.

21-27. [Procedure.]

28. The voting powers of the members at all General Meetings shall be those existing from time to time under Regulation 32, and a resolution shall only be deemed to have been carried if and when the same shall have been passed by a majority of at least two-thirds of the votes cast, provided, however, that Price Schedules (which expression shall include general sales terms and conditions) shall be carried by a majority of at least three-fourths of the votes cast. A declaration by the Chairman of the meeting that a resolution has been carried or lost by a particular majority shall be conclusive, unless such declaration is objected to by any member or authorised representative at or immediately after the making thereof, and an entry in the Minute Book of the Association to the effect that a resolution has or has not been passed by a particular majority (together with the names of the members voting for or against any resolution or abstaining from so voting) shall be conclusive evidence thereof.

29-31. [Procedure.]

Votes of members.

32. Subject to these Regulations the number of votes to which each of the first members is respectively entitled shall be decided unanimously by the Council at its first meeting.

The number of votes to which members are respectively entitled for the time being shall be varied from time to time by the Association in General Meeting upon any member ceasing to be a member or upon the election of any new member and upon any such election the number of votes to which such new member shall for the time being be entitled shall likewise be determined by the Association in General Meeting.

33-37. [Procedure for votes by proxy.]

Council of management.

38. The business of the Association shall be managed by a Council. Membership of the Association or being an authorised representative of a member, shall constitute the qualification for membership of the Council, subject to the provision of Regulation 40. Members of the Council shall retain their office (excepting as set forth in Regulation 40) until disqualified as set forth in Regulation 53.

39. Unless otherwise determined by the Association in General Meeting the number of members of the Council shall not be less than 6 nor more than 15. The first members of the Council shall be S. H. Callow, C. H. Cox, N. V. Everton, J. Y. Fletcher, H. A. Lingard and W. F. Moir, being the respective authorised representatives of the first members of the Association.

40. The Council may, by a majority of two-thirds of the votes recorded, from time to time and at any time appoint any member of the Association, or any authorised representative of a member, or any person proposed by the Council to be elected Chairman of the Council, as a member of the Council, either to fill a vacancy or by way of addition, provided that the prescribed maximum be not thereby exceeded, the votes on such appointment to be computed as set forth in Regulation 32. Any member so appointed shall retain his office only until the next Ordinary Meeting, but he shall then be eligible for re-election. Each member of the Association represented on the Council may nominate two alternate representatives on the Council who may attend meetings and take part in the discussions and proceedings, but only one of his representatives shall be entitled to vote on any question, and then only in his nominator's absence.

Powers of Council.

41. Subject to Regulation 2 the Council shall have the power by resolution to elect new members of the Association and from time to time to determine the eligibility of and the conditions under which any applicant for membership shall be elected, and the Council may in their discretion refuse any application for election without giving any reason for such refusal.

42. The Council may exercise all such powers of the Association and do on behalf of the Association all such acts as may be exercised and done by the Association, and as are not by these Regulations required to be exercised or done by the Association in General Meeting. No regulation made by the Association in General Meeting shall invalidate any prior act of the Council which would have been valid if such Regulation had not been made. The Council shall have power to make rules and bye-laws relating generally to the members or their authorised representatives and to committees and other persons and from time to time to vary the same or any of them, and such rules and bye-laws shall be binding unless overruled by the Association in General Meeting.

43. The continuing members of the Council may act notwithstanding any vacancy in their body.

44. [Council's powers to appoint officers.]

Proceedings of the Council.

45. [Procedure.]

The voting powers of the members at all Council meetings shall be those existing from time to time under Regulation 32, and decisions shall only be adopted by a majority of two-thirds of the votes cast, provided, however, that Price Schedules (which expression shall include general sales terms and conditions) shall be adopted only by a majority of three-fourths of the votes cast.

46-47. [Procedure.]

48. The Council may delegate any of their powers to Committees consisting of such member or members or representatives of members of the Association as they think fit, and any Committee so formed shall conform to any regulations imposed on it by the Council. The meetings and proceedings of any such Committee shall be governed by the provisions of these presents for regulating the meetings and proceedings of the Council so far as applicable and so far as the same shall not be superseded by any regulations made by the Council as aforesaid.

49-52. [Procedure.]

Disqualification of members of the Council.

53. The office of a member of the Council shall be vacated—

(a) If by notice in writing to the Association a member withdraws him as a representative or such representative dies or resigns but in any of these events such member may appoint another in his stead ;

(b) If the member appointing him ceases to be a member of the Association ;

(c) By a vote at any Ordinary Meeting (or Extraordinary Meeting called for the purpose) of the Association cancelling the appointment ;

Provided that until an entry of the vacating of office by a member of the Council under one of the paragraphs of this Regulation shall be made in the Minutes of the Council his acts as a member thereof shall be effectual.

Trustees.

54-58. [Appointment and functions of trustees.]

Auditors.

59. [Appointment of auditors.]

Notices.

60-62. [Procedure.]

Indemnity.

63. [Indemnity of Council and Committee members, and of officers.]

Dissolution.

64-65. [Financial provisions on dissolution.]

Alterations to objects or Regulations.

66. The objects and any of these Regulations may be varied, amended, altered, added to or cancelled at any time by resolution of an Extraordinary Meeting specially called for the purpose, but the notice convening such meeting shall set forth full particulars of the proposed variations, amendments, alterations, additions or cancellations to be proposed at such meeting.

APPENDIX 5

Referred to in paragraphs 32 and 161

Electric Lamp Manufacturers' Association : Bye-Laws

1. The Electric Lamps referred to in the Objects and Regulations of the Association and coming within the scope of the Association are manufactured and sold under the following trade names:—

<i>Member</i>	<i>Trade Mark</i>
The British Thomson-Houston Co., Ltd.	Mazda
Cryselco Ltd.	Cryselco
The Edison Swan Electric Co., Ltd.	Royal Ediswan
The General Electric Co., Ltd.	Osram
Metropolitan-Vickers Electrical Co., Ltd.	Cosmos
Siemens Electric Lamps and Supplies, Ltd.	Siemens

and such other names, brands or trade marks as may from time to time be reported to the Association.

2. On proof to the satisfaction of the Council that any person has offered or advertised or sold any Electric lamp at a price above or below that for the time being fixed by the Rules or Bye-laws or not in accordance with the terms and conditions for sale for the time being fixed by the Rules or Bye-laws or has otherwise howsoever committed a breach of any of the Regulations, Bye-laws or Rules or of any agreement entered into by him with the Association, or with any member in pursuance of any of the Objects, Regulations, Bye-laws or Rules of the Association, the Council may (unless such person shall be a member) place the name of such person on a list to be called the "N/T List" and give notice thereof to all members of the Association and/or others by such means or in such manner as the Council shall think fit. The Council may in lieu thereof or in addition thereto inflict and enforce payment of such fine or penalty, monetary or otherwise, on any such person not being a member as they may in their discretion think fit.

3. For the purpose of the last preceding Bye-law a person shall be deemed to have committed a breach of the Regulations who shall have offered or advertised or sold any Electric Lamp at a price fixed by the Association, but who in conjunction or combination with such offer, advertisement or sale shall have offered, advertised or sold as an inducement to any such sale of an Electric Lamp at such price any other article as a gift or at a price which is below the ordinary price of such article to that class of customer, or who shall offer or cause to be offered any gift or any advantage which in the opinion of the Council is tendered as an inducement to effect a purchase of any Electric Lamp, or who shall advertise or contribute to the cost of the advertising of electric lamps for any agreement-holder or for any customer or proposed customer.

4. No member or agreement-holder of the Association shall supply any Electric Lamps to, or have any trade relations in respect of Electric Lamps with any person whose name is on the N/T List so long as the name of such person remains thereon provided that any order for lamps, existing but unfilled, of a person whose name is placed on the N/T List may be completed, but all such orders shall be communicated to the Director by the member or agreement-holder immediately upon receipt of notification of the placing upon the N/T List of such name, and provided that any Electric Lamps supplied or to be supplied under a Contract existing at the date of admission to membership of the member, and which the member or his agent has, in the opinion of the Council, no power to terminate, shall be exempt from the operation of this

Bye-law, but such contract must before admission to membership be produced and submitted to the Director for examination and acceptance by the Council as such a Contract.

5. The Council may also place in the N/T List the name of any person who shall supply Electric Lamps to, or have any trade relations in respect of Electric Lamps with any person whose name is on the N/T List.

6. The Council may also place on the N/T List the name of any person whose business is to their satisfaction so identified with that of a person on the N/T List as to make that course desirable in pursuit of the objects of the Association.

7. For the purpose of ascertaining and checking the amount of rebates (if any) to which any person may under any Regulation, Bye-law or Rule be entitled, every member shall from time to time and at any time on request by the Director give to the Director full and accurate particulars of the amount of business done with him by any individual customer.

APPENDIX 6

*Referred to in paragraphs 32, 133, 145, 148, 149, 150 (and footnote)
and 159 (footnote)*

Electric Lamp Manufacturers' Association : Extracts from the Rules*

SECTION I. THE RULES OF ELECTRIC LAMP MANUFACTURERS' ASSOCIATION (E.L.M.A.)†

(1) Objects.

The main object of the Electric Lamp Manufacturers' Association is to formulate, regulate and secure uniformity of practice in the manufacture, sale and purchase of electric lamps in the British Isles in such a manner as to benefit both the trade and the public by the adoption of standard conditions of sale and of product.

(2) Members and Brands.

The following companies are Members of the Association :—

Aurora Lamps, Ltd.	General Electric Co., Ltd.
British Electric Lamps, Ltd.	Metropolitan-Vickers Electrical Co., Ltd.
British Thomson-Houston Co., Ltd.	Philips Electrical, Ltd.
Crompton Parkinson, Ltd.	Pope's Electric Lamp Co., Ltd.
Cryselco, Ltd.	Siemens Electric Lamps & Supplies, Ltd.
Edison Swan Electric Co., Ltd.	Stella Lamp Co., Ltd.

and the principal brands under which their lamps are sold are :—

AURORA	BELL	CROMPTON	CRYSELCO
ELASTA	MAZDA	METROVICK	OSRAM
PHILIPS	ROYAL "EDISWAN"	SIEMENS	STELLA

but other brands are used in certain cases.

The brands of any of the above companies can also be purchased from Foster Electrical Supplies Ltd., The Stearn Electric Co., Ltd. and the Z Electric Lamps & Supplies Co., Ltd. Any Buyer who is in doubt as to whether any particular brand is an E.L.M.A. Lamp should communicate with E.L.M.A. or any of its Members.

(3) Types and Groups of Lamps.

The Rules of E.L.M.A. govern List Prices, Selling Conditions, Discounts, etc., of all E.L.M.A. makes of lamps enumerated in the Groups below. Doubtful points not covered by the Rules must be referred to E.L.M.A. for decision.

Lamps of E.L.M.A. makes cover the following types of electric lamps :—

- | | |
|---------------------|------------------------|
| (1) Carbon Filament | (3) Glim |
| (2) Metal Filament | (4) Electric Discharge |

which for the purpose of Rules, Terms, etc., are divided into the following distinct and separate Groups, which are subject to alteration from time to time :—

Group I.—Lamps in 25 to 260 volts for general lighting service purposes (except those in Group VIII.), Projector and Sign type lamps in all voltages, and Traction and Glim type lamps.

* The extracts in this Appendix are taken from Sections I and II of the Rules: the Rules also cover List Price Schedules (Section III); Technical Data (Section IV); Nett Price Schedules (Section VI); there is no longer a Section V. The general purport of passages in the Rules not reproduced in full is indicated within square brackets. All footnotes are our own.

† Only Section I is issued to distributors with agreements: for the purposes of those agreements, accordingly, "the Rules" the signatories are required to observe means Section I of the Rules.

Group II.—Lamps of Battery type in 24 volts and below for automobile, bus, train-lighting and railway signal purposes, and other Battery type lamps in 24 volts and below except Flashlamps and those in Groups IV., V., VI., VII. and X.

Group IV.—Cycle Dynamo Lamps.

Group V.—Lamps for Miners' Safety-lamps.

Group VI.—Christmas Tree Decoration Lamps.

Group VII.—Telephone Switchboard Lamps.

Group VIII.—Lamps of a general lighting service type, known as and marked "Type B."

Group IX.—Electric Discharge Lamps.

Group X.—Radio Panel Lamps.

(4) Definition of Users.

The User class consists of private and trading individuals, firms and companies, and public bodies, purchasing lamps for own use only.

This class is sub-divided into the following categories:—

(a) Ordinary Users. Those Users whose names do not appear in any of the E.L.M.A. lists or who are not Classified Users or Public Bodies (see (c) and (d) below).

(b) Listed Users. Those Users whose names appear in the E.L.M.A. lists.

(c) Classified Users. Those Users who come within any of the following descriptions:—

Air Transport Companies owning twelve or more aircraft for goods or passenger transport.

Cinemas.

Dock Boards.

Dog Racing Tracks.

Harbour Boards.

Ice Skating Rinks.

Individuals, Firms or Companies engaged in trade who possess not less than twelve motor vehicles for goods transport.

Manufacturers of the following complete (not parts of) electrical apparatus:—

Accessories (lamp holders, switches, wall plugs, adaptors or fuse boxes).

Accumulators or Accumulator Charging Sets.

Arc Lamps.

Bells, Instruments, Fans or Meters.

Cables or Insulated Wires.

Cooking or Heating Appliances.

Dry Batteries.

Generating Plant (dynamos, motors, alternators, transformers).

Lighting Fittings.

Refrigerators.

Switchboards, Distributing Boards or Switchgear.

NOTE:—This does not cover firms who manufacture nothing but wireless material or apparatus.

Museums not worked as a department of a Public Body (as defined below).

Music Halls.

Schools teaching engineering technology.

Shipbuilders or Repairers.
 Shippers of Electrical Goods.
 Steamship Companies.
 Theatres.
 Town Development Boards.
 Transport Companies shown in the Motor Transport section of "The Motor Transport Year Book and Directory" as possessing not less than six motor vehicles for passenger transport.
 Travelling Showmen and Roundabout Proprietors having their own electrical plant and engineer.
 Water Companies.

(d) Public Bodies. Those Bodies who have power to administer money raised by rates in pursuance of any Public General Act.

(5) Definition of Resellers.

The Reseller class consists of trading individuals, firms and companies who purchase lamps for resale.

This class is sub-divided into the following categories:—

(a) Retailers.—Groups I, VIII. and IX. Lamps.

Any person, firm or company, with shop or showroom premises and equipment suitable for a retail trade or equivalent facilities for resale and who carries a reasonable stock of electrical products.

NOTE:—An individual not having business premises apart from his private house and who is mainly employed by other persons may not be recognised as a Retailer.

(b) Retailers.—Other Groups of Lamps.

Those Resellers who have business premises, trade on their own account, carry reasonable stocks of lamps for resale to Users, and purchase lamps on their own order forms.

(c) Factors.

Certain approved and specified persons, firms and companies whose business is the wholesale distribution of electrical goods, capable of fulfilling the obligations necessary between Manufacturer and Retailer both as regards financial and commercial status; having suitable premises on which the words "Wholesale only" are prominently displayed; holding a wide range of stock on their own account for the convenience of the trade; employing travelling representatives; issuing a catalogue; having no contracting (wiring) interests or retail organisation; and who enter into specific obligations with E.L.M.A.

(d) Wholesale Distributors.

Certain approved and specified persons, firms and companies whose business complies with the above definition headed "Factors" and whose annual purchase of lamps is not less than the minimum figure determined by E.L.M.A. from time to time.

(6) Discounts and Rebates.

The Discounts off list prices to which various Buyers (as defined) are entitled and the rebates they may claim are shown in the following tables.

[The particulars given are of discounts and rebates to be allowed to customers of distributors; these terms are incorporated in Appendix 15 (Table 5).]

All rebate payments due will be made direct by E.L.M.A. except those to Retailers who are not listed, which are payable by Suppliers after E.L.M.A. authorisation.

(7) Listing.

Applications must be sent by the recommenders direct to E.L.M.A. and not to individual Members, standard forms supplied by E.L.M.A. being used. Extent of annual purchases with suppliers' names and any other required information must be furnished.

Listing of Users is dependent upon :—

(a) Compliance with the following definition of a Recognised User: Any person, firm or company, whose business is of such a nature as to require and give permanent employment to one or more journeymen electricians, engaged wholly on the installation and/or maintenance of electrical products; or

(b) The list value of annual purchases being regularly not less than £27 of Groups I. and VIII. lamps or £50 of Group IX. (Electric Discharge) lamps.

Where, however, a User places an order for immediate delivery in one lot for £27 list value of Groups I. and VIII. lamps, or for £50 list value of Group IX. lamps and annual purchasing capacity regularly reaches these amounts, such User may be listed on request; subject to approval of E.L.M.A., new terms will apply to the order, but listed terms otherwise are not retrospective.

(8) Purchase Tax.

Filament lamps up to and including 250 watts and fluorescent tubular lamps up to and including 80 watts are subject to Purchase Tax of 33¼% of their wholesale value. At the wholesale values accepted by the Commissioners of H.M. Customs and Excise the Tax is chargeable as follows:—

[Table showing the rate of purchase tax on all types of lamp.]

Purchase Tax must be charged in full, the percentages being calculated on the total list value of lamps in each respective tax category, without any deductions except that any fraction of a penny may be ignored in the final calculation. It must be entirely excluded from all claims for terms and rebate.

Retailers, however, when selling to the Public, i.e., at list prices nett, must charge the Tax by adding fixed amounts to the list prices (as agreed by the Central Price Regulation Committee) as follows:—

[A table follows showing the precise amount of tax to be added by retailers in relation to the list price.]

(9) Price Maintenance.

In all purchase or resale transactions for each Group of lamp, the established prices (including Purchase Tax in full), Rules, terms and discounts of E.L.M.A. must be maintained.

(10) Allowances.

No payment or allowance, direct or indirect, shall be given at any time which would either reduce the selling prices of lamps as fixed by E.L.M.A. to any class of buyer or form an inducement to purchase from one seller rather than another who offers no such inducement.

“Inducement” includes:

- (a) Allowance for burnt-out lamps or parts thereof.
- (b) Allowance for caps where lamps are supplied uncapped, the caps being supplied by customer.
- (c) Cost of testing lamps.
- (d) Cost of advertising lamps.
- (e) Gift or loan to any Reseller of any article or thing, the use of which by exposure, or circulation by post or otherwise, would relieve the Reseller of expense that he would otherwise incur.
- (f) Gift or loan of lamps for signs or displays.

“Inducement” does not include:

- (a) Overprinted catalogues or price lists.
- (b) Loan of electros or blocks for illustration purposes.

- (c) Loan of articles other than lamps for window display.
- (d) Loan of lamps for display at exhibitions open to the public.

(11) Samples.

The following quantities of lamps may be supplied as free samples:—

- (a) General lighting service types—up to 60 watt size, not more than 12 lamps; 75 and 100 watt sizes, not more than 6 lamps.
- (b) Traction and Bus types—one full car or bus equipment consisting of not more than 36 lamps.
- (c) Trainlighting type—not more than 24 lamps.
- (d) Flashlamps—not more than 50 lamps.
- (e) All other filament types up to 100 w. size—not more than 6 lamps in all.

(12) Sale or Return Orders.

Lamps must not be supplied on approval or on a sale or return basis, except only as follows:—

Electric Discharge lamps (Group IX) may be loaned on approval for a period not exceeding six weeks, the quantities permitted being for:—

- an outside installation—sufficient for one fitting up to a maximum of 6 lamps.
- an inside installation—6 lamps.
- a floodlighting installation (inside or outside)—3 lamps.

(13) Export.

(a) Prices or terms on lamps for export must not be used in any way to influence orders for home use. Export tenders must be submitted separately and prices must be based solely on the export order without reference to any home requirements of the purchaser.

(b) Suppliers must consign lamps for export direct to ship or if sending them by post, must forward the package to the foreign address of the buyers. If, however, 100 lamps or less for export are required for packing with other goods, they may be consigned to the exporter without special authorisation.

(14) Quotations and Invoices.

In quotations and invoices and in all dealings in E.L.M.A. lamps:

(a) Standard prices (including Purchase Tax in full), sales rules and ratings must be strictly observed. Prices of lamps not catalogued must be obtained from the Manufacturer before quoting.

(b) The list price of each item must be clearly indicated, except in those cases where special nett prices are authorised by E.L.M.A., and the prices of lamps of different types and ratings must be shown separately. The discount to which the buyer is entitled must be indicated or shown deducted from the total value.

(c) E.L.M.A. designations and descriptions of lamps must be followed, and care taken to give trade name, type, volts, watts (candle power for carbon filament lamps) and also amperes and size of bulb when these regulate the price.

(d) Lamps must be shown separately from all other material, except when forming part of any specified inclusive tender or installation. Where such an inclusive charge is made the customer shall have the right to require his supplier to invoice the other material at a price equal to that quoted or invoiced, less the authorised price of lamps to him.

(e) The terms of any firm must not be given to any associated firm until authorised by E.L.M.A. Such terms will only be authorised when definite ownership or control of the associated firms exist. The association of two or more firms merely through their directorates, or any other association, does not entitle them to common terms, nor to rebate on combined purchases. On amalgamation of two or more firms, terms are retrospective only to the date authorised by E.L.M.A.

(f) In arriving at the nett price "per each," "per dozen," or any other quantity, calculations must be made to the third place of decimals, and should any fractional part of a farthing arise, the whole farthing higher is to be taken.

Examples.

.001d.	.016d.	.024d.	= one farthing.
.251d.	.366d.	.499d.	= one halfpenny.
.501d.	.616d.	.749d.	= three farthings.
.751d.	.790d.	.999d.	= one penny.

(g) The 2½% discount for cash or monthly account may be quoted where authorised but must not be included in calculations. It must not be included in invoices except on settlement.

(h) When the total sum results in a fraction of a penny being included, the odd fraction may be ignored and the total expressed to the next lower penny. This applies only to the aggregate total of all items.

(i) Invoices to resellers must bear the following price maintenance clause :

"The discounts shown in this invoice are allowed you upon the conditions that these lamps are sold at Makers' list prices and no cash or other discounts whatsoever are allowed on resale except as authorised by the Electric Lamp Manufacturers' Association. In addition, the full amount of Purchase Tax as authorised by Electric Lamp Manufacturers' Association must be charged. Acceptance of the lamps will constitute an acceptance of the above conditions and creates a binding agreement."

(j) The date of invoice must be that of the day on which lamps are dispatched.

(k) Purchase Tax must be shown as a separate and independent item.

(l) Quotations must be based on current prices and must state that if prices change, new prices will apply on deliveries made on and from the date of the change.

(15) Contracts and Tenders.

No maintenance guarantee shall be given nor any arrangement entered into which would be equivalent to giving a fixed price for lamps per point or holder. Contracts must not be entered into with Resellers but contracts for semi-annual or annual supplies of lamps may be entered into with all Users, except Ordinary Users.

When tendering for such contracts the following rules additional to those covering quotations-(Rule 14) must be observed:—

(a) The period of any Tender must not exceed 12 months and it must provide for any resulting contract to be terminable on 31st May by 14 days notice.

(b) As it is impossible to guarantee that all employees involved in the execution of a contract are members of their appropriate Trade Unions, exception must be taken to any clause in a tender requiring as a condition of the contract that all employees engaged in its execution shall be members of the Trade Unions catering for such workers.

(c) Tenders must be based on list prices current at date of dispatch, and also on the terms and conditions of standard quotation forms or those under which the purchaser is officially listed for each Group of lamps.

(d) Nett prices "per each," "per dozen," "per 100," or "per gross" must be quoted as requested, provided the total quantity of each type and rating required is not less than the quantity rate. Alternative rates which show a preference over that requested must not be given.

(e) When nett prices are required and the quantity rate specified is in excess of the total number of lamps requested or when no quantity rate is specified, if the quantity required per type or rating is less than 12 lamps, "per each" must be quoted; if less than 100 lamps, "per dozen" must be quoted. If 100 lamps or over, "per 100" must be quoted. In the event of list prices for such Electric Lamps being increased, the nett prices quoted will be increased correspondingly on all lamps dispatched on and from the date of such increases.

(f) When the nett price per quantity rate given in a tender has to be extended over a larger quantity the extended price must be equal to:

$$\frac{\text{Nett price per quantity rate} \times \text{Total number of lamps}}{\text{quantity rate}}$$

(16) Cash Discount.

Cash discount must not be allowed to Ordinary Users. A discount of 2½% for cash with order or for approved monthly account may be allowed to all other Users and Resellers.

(17) Marking.

Lamps may not be marked with the name, initials or symbol of the customer.

(18) Direct Invoicing.

All orders arising from local canvassing must be executed and invoiced direct to customers by principals. They must not be handed over nor must any discount or other consideration in respect thereof be given to any Reseller.

(19) Advertising.

In catalogues, price lists and other publications:

(a) Standard prices and ratings of E.L.M.A. as issued by Members must be used.

(b) Metal filament and electric discharge lamps must be rated in watts and carbon filament lamps in candle power.

(c) Nett prices and trade or cash discount must not be communicated to the public.

(20) Delivery Conditions.

(a) Within E.L.M.A. Areas.

These areas are:

(i) Twenty miles radius of G.P.O., London.

(ii) Ten miles radius of G.P.O. at any of the following towns:

[100 towns are listed.]

Packing and delivery of any number of lamps free. Sound delivery may be guaranteed under conditions given on sheet 13.*

(b) Outside E.L.M.A. Areas. (Route at suppliers' discretion.)

(i) Orders of £1 list value or over (excluding Purchase Tax) to one address.

Packing and delivery free. Sound delivery may be guaranteed under conditions given on sheet 13.*

(ii) Orders of less than £1 list value (excluding Purchase Tax) to one address.

Packing free, but carriage chargeable at not less than cost. Sound delivery must not be guaranteed, lamps being forwarded at buyers' risk.

(iii) Composite orders of a total list value of £2 or over (excluding Purchase Tax) from any of the following firms:—

(a) Any concern listed as a Multiple Shop in E.L.M.A. List D.†

[(b), (c) and (d) list 26 concerns with multiple interests.]

Packing and delivery free to the head office or branch addresses specified in the composite order. Sound delivery may be guaranteed under conditions given below.

* See Rule 20(c) in this Appendix.

† i.e., in E.L.M.A.'s List of Users entitled to 12½ per cent. or 17½ per cent. discount.

(c) Sound delivery.

Where sound delivery is guaranteed, the Consignors may credit or replace lamps broken in transit between their store and the customer's premises, provided they are duly advised and the lamps returned, carriage paid, within seven days of date of dispatch, the Consignors dispatch note number to be quoted. Consignors will not accept responsibility for safe custody of such returned lamps. Claims for transportation and breakage allowance can be entertained by the Consignors only on their own consignments.

(21) Replacements.

Where a guarantee to replace lamps failing during any period of life is required, the guarantee given must be confined to the following wording:—

“These lamps are guaranteed to be of the best material and workmanship throughout, and we will replace all lamps which fail in service when such failure is shown to be due to defective material or construction.”

(22) Efficiencies and Life.

(a) Where efficiencies have to be stated, the figures must be those of the current B.S. Specifications or as agreed by E.L.M.A.

(b) The life of lamps must not be quoted in catalogues except in the case of Projector and Photographic lamps.

Average life may, however, be quoted in tenders, in reply to enquiries and in technical publications.

(c) Guarantee of life must not be given except when authorised by E.L.M.A.

When a specific guarantee of life is called for and where references to life are permitted, the following clause must be used:—

(i) For general lighting service lamps in Group I.

The life of electric lamps may be influenced by conditions of use over which the manufacturer has no control; it is therefore impossible to give a specific life guarantee. As an indication of what might be expected, however, we would say that in regard to general lighting service lamps covered by current B.S.S. No. 161 an average useful life of 1,000 hours is being obtained when the lamps are operated at their marked voltage.

(ii) For other lamps.

The life of electric lamps may be influenced by conditions over which the manufacturer has no control; it is therefore impossible to give a specific life guarantee but the life quoted is the designed average life under normal test conditions.

(23) Stop List.

If any buyer in the opinion of E.L.M.A. has committed a breach of E.L.M.A. Rules or Agreement, E.L.M.A. in its sole discretion may, without prior notice, reduce that buyer's terms or may cause that buyer's name to be added to the E.L.M.A. Stop List.

When a buyer's name is added to the E.L.M.A. Stop List, that buyer is not to be supplied, directly or indirectly, with electric lamps of E.L.M.A. brands except under any contract already existing which the supplier is by law obliged to fulfil. Details of such contracts must be submitted to E.L.M.A. by the supplier immediately on receipt of notification of the buyer's name being added to the Stop List.

Specimen Trade Quotation to Retailers of Groups I, VIII. & IX. Lamps.

INVOICE DISCOUNT.—Lamps will be invoiced to you at 20% or if you enter into an Agreement with E.L.M.A. at 25% off list prices current at date of invoice.

CASH DISCOUNT.—For cash with order or for approved monthly account 2½%.

REBATE.—If within 12 months ending 31st May the nett value of Groups I, VIII. and IX. lamps delivered and invoiced to you is on the following scale a claim for rebate should be made to E.L.M.A., 25 Bedford Square, London, W.C.1. within one month of that date. Claims not made within six months cannot be recognised.

PURCHASE TAX.—Filament lamps up to and including 250 watts and fluorescent tubular lamps up to and including 80 watts are chargeable with Purchase Tax at the rate of 26% (for Kye 22%) of list prices, except for Projector lamps in Classes A.1 and G. which are exempt. Tax is not subject to any discounts or rebates.

REBATE SCALE.

On deliveries effected during 12 months, to the net value of.							
£100	£400	£800	£1,250	£2,500	£5,000	£7,500	£10,000
1%	2%	3%	4%	5%	6%	8%	10%

PACKING, DELIVERY & TRANSIT.

District	Quantity	Packing and Delivery	Transit Breakages
Within the E.L.M.A. Free Delivery Area.	Any number of lamps	Free	Lamps are to be returned to us carriage paid within 7 days, our advice note number being quoted. To be replaced or credited at our option.
Outside the E.L.M.A. Free Delivery Area. (Route at our discretion.)	Not less than £1 list value of lamps to one address.	Free	Purchaser's Risk.
	Less than £1 list value of lamps to one address.	Packing free, but carriage charged at not less than cost.	

No responsibility is accepted for the safe custody of lamps returned.

RESALE CONDITIONS.—The terms quoted above will be allowed subject to the lamps being resold at Makers' List Prices only and that no cash or other discount whatsoever is allowed on resale except as authorised by the Electric Lamp Manufacturers' Association. In addition, the full amount of Purchase Tax as authorised by Electric Lamp Manufacturers' Association must be charged.

This quotation cancels all previous quotations and is without engagement.

[Three other Specimen Trade Quotations are shown—to Classified Users, Retailers of Group II lamps and Recognised Users of Group II lamps.]

SECTION II

This Section is *Private and Confidential* and for Members only. It is additional to Section I and where further information regarding terms and further rules, etc. will be found.

[The Members' Rules are preceded by tables of discounts, rebates, and nett prices (for special cases) and particulars of the terms to be allowed under certain special arrangements for street lighting, Council housing schemes, etc.]

MEMBERS' RULES

(1) Maintenance of Prices, Rules and Terms.

(a) Members must conform to the terms of any licence or other legal agreements between Members to which they may be parties.

(b) Members must see that all their agents, representatives and branches are kept fully advised as to the correct prices, discounts and rules, etc., and that these prices, discounts and rules, etc., are fully maintained and shall be held responsible for the acts of their agents, representatives and branches in respect thereof.

(c) Members must report to the Association any act on the part of any representative, agent, Wholesale Distributor, Factor or Retailer which violates price maintenance or any rule of the Association.

(2) Listed Terms and Rebates.

(a) Listed, other preferential terms or rebate must not be allowed without notification from E.L.M.A.

(b) All applications for listed, other preferential terms or rebate, must be made direct to E.L.M.A.

(c) All decisions agreed at and recorded in the minutes of any meetings, with regard to the offer of new terms to any buyer, are to be communicated to that buyer by the Director and must not be disclosed to that buyer or any supplier by any Member until the Director has issued an official notification to all authorised suppliers that such terms have been offered.

(d) Any rebate authorised should be allowed preferably by credit note and be subject to the usual $2\frac{1}{2}\%$ cash discount.

(e) The amount of any rebate earned over a period must not be deducted when making a return of purchases for a subsequent period.

(3) Re-Transit.

Members supplying lamps in bulk to Wholesale Distributors or Factors may also supply new boxes for re-transit of the lamps in smaller quantities to customers, provided the Wholesale Distributor or Factor pays not less than the cost price of such boxes.

(4) Returned Lamps.

Lamps which are alleged to be faulty, whether as transit breakages or premature failures, etc., must be returned to the Manufacturers before any allowance in respect of them is made. In the case of Wholesale Distributors, however, it is permitted for Members' representatives to inspect such lamps on their premises without insisting on the lamps being returned to the Manufacturer.

(5) Agents.

No agent is to be appointed without the consent of E.L.M.A.

An agent is to be defined as:—"Any person or firm having established business premises, is paid by commission on goods sold for and on behalf of principals who must themselves invoice such goods to, and receive payment for them direct from, the purchaser, to whom the name of the principals for whom the agent acts must be made clearly known."

This rule does not prevent the employment of representatives on a commission basis provided they are not engaged in trade on their own account and only solicit orders for and on behalf of their principals.

(6) Specifications.

(a) Lamps must be made to comply with specifications agreed to by E.L.M.A. and not to any other specifications. All current B.S.I. specifications for lamps are agreed to by E.L.M.A.

(b) Where specifications have been agreed to by E.L.M.A., only these must be offered or quoted by Members or their agents.

(c) Guarantees of life must be given only on the basis of average life.

(7) Types and Sizes.

Members must not sell lamps deviating in any respect from the recognised E.L.M.A. standard except in such cases where deviations are taken care of in the Rule Book or as provided below.

Prices of new or special lamps not covered by schedules must be those agreed to by the Sales Committee. Members must bring all such cases to the attention of the Committee and await action thereon before advertising, listing, quoting, soliciting orders for or selling such lamps.

On receipt of a request for the manufacture of special lamps for experimental purposes, Members should notify the Director of the type of lamp required, and he may, without reference to any committee, fix the price to be quoted, it being understood that the experimental quantity is not to exceed one dozen lamps of any one design. In the event of the experiment proving a commercial success, the list price is then to be fixed by the Sales Committee as provided above.

(8) Trade Names.

All lamps supplied by Members must be marked with their trade name on the bulb or cap.

(9) Advertising.

(a) Advertisements must not indicate that any individual make of Association lamp possesses any advantage over or is better than another.

(b) Members must not issue to the Press advertising matter relating to the introduction into the E.L.M.A. schedules of any new size or type of lamp or to changes in price, until authorised to do so by E.L.M.A.

(c) Members must not take advertising space in any publication issued by a Reseller, or any department of a Municipal Supply Authority, when such space involves payment, direct or indirect, to the Reseller or Municipality, without the express permission of E.L.M.A.

(d) Members must not take space at any exhibition for the purpose of displaying lamps without the express permission of E.L.M.A.

(e) Members must not circularise information regarding any local firm stocking any specific make or makes of lamps, nor issue pamphlets, etc., relative to any local firm.

Information regarding local stockists and local recommendations may be quoted by letter to specific written requests.

(f) Members may supply only price lists without extra charge for over-printing.

(g) In their catalogues and price lists Members must follow designations and descriptions of lamps given in the Association's schedules.

(h) In their catalogues Members must state the standard caps which may be supplied at no extra charge.

(10) Reports.

Members must, when requested, furnish E.L.M.A. with full and accurate particulars of the amount of business done with them by any individual customer and with any information requisite for dealing with Rules, Regulations, Minutes and Correspondence of the Association. Purchases of any buyer from any individual supplier, are not to be revealed by E.L.M.A. but the total purchases of a buyer from all sources may be given.

(11) Breach.

On proof to the satisfaction of the Fines Committee of Council that any person has offered or advertised or sold any electric lamp at a price above or below that for the time being fixed by the Rules or Bye-laws or not in accordance

with the terms and conditions for sale for the time being fixed by the Rules or Bye-laws or has otherwise howsoever committed a breach of any of the Regulations, Bye-laws or Rules or of any agreement entered into by him with the Association or with any member in pursuance of any of the Objects, Regulations, Bye-laws or Rules of the Association, the Fines Committee of the Council may:

(a) In the case of a Member impose on such Member a fine up to a maximum amount of £1,000, and

(b) In the case of any other person, place the name of such person on the E.L.M.A. Stop List or may inflict and enforce payment of such fine or penalty, monetary or otherwise, as they may in their discretion think fit.

[The Members' Rules are followed by a list of the members, their trade marks and the addresses of their head offices, works and branches.]

APPENDIX 8

Referred to in paragraphs 25, 55 (and footnote), 91, 120 and 137

Extracts* from the General Patent and Business Development Agreement (generally known as the "Phoebus" Agreement) and Documents Supplementary thereto.

The undersigned, and they with or for their respective subsidiary companies and for their respective successors and assigns, have joined to sign and agree as follows:

ARTICLE 1—SCOPE

This Agreement relates to the entire business of each of the parties hereto in incandescent lamps, as hereafter defined.

For the purpose of this Agreement the incandescent lamp is defined as comprising all electric lamps for illuminating, heating or medical purposes, operating by any or all of the following methods: incandescence of a refractory filament, luminescence of gas, and cathode incandescence (except so called arc or enclosed arc-lamps, not operating in a sealed container, and also excepting Neon, X-Ray and Radio tubes), and all of the aforesaid are hereinafter comprehended by the word *lamps*.

ARTICLE 2—PURPOSE OF THE AGREEMENT

The purpose and intent of this Agreement is to secure the co-operation of all the parties in:

- (1) providing for more advantageous utilization of their manufacturing facilities in producing lamps,
- (2) securing and maintaining a uniformly high quality of product,
- (3) arriving at more economical arrangements for the distribution of the product,
- (4) promoting more efficient methods of electric illumination and the increased use of light to the advantage of the consumer;

with the understanding that all parties are to continue their business on independent lines, as heretofore, except as hereinafter specified, and with provision for securing to each of the individual parties its proper share of the increased business resulting from such co-operative effort.

ARTICLE 3—STANDARDIZATION

The parties hereby agree to adopt, within a period to be fixed by the General Board, the recommendations of the Incandescent Electric Lamp Manufacturers' Technical Association made at the meeting held in Paris, April 14-16-1924, with respect to standardization, lamp efficiency and other related matters.

ARTICLE 4—EXCHANGE OF INVENTIONS AND EXPERIENCE

(A) Existing contracts between any parties hereto, relating to patents and experience covering lamps or the methods or appliances of their manufacture, are hereby extended by such parties to the expiration of this Agreement.

(B) Where it is possible for a party to attain specified advantages given him by this Agreement only by using an invention owned or controlled by another party or by the use of another party's experience not at the time available by any other agreement, such first party shall be licensed under the patents necessary therefor

* The general purport of passages not quoted in full is indicated within square brackets. The agreement was amended from time to time; we quote what has been submitted to us as the final version.

and/or shall have such experience available for the period both parties shall remain bound by this Agreement under the terms and conditions ordinarily applied by the second party to such a situation. Licence contracts already in force as well as the royalties usually paid in the lamp trade and the services to be rendered shall be taken into consideration in fixing the terms and conditions. Lack of agreement regarding conditions shall not operate to prevent the use of inventions or experience. Suitable security for the payment of royalty or service charges for such use must be deposited with the management, in accordance with regulations established by the General Board.

All of the sureties deposited by the several Parties with the General Manager in accordance with Article 8 (A) shall be available to provide the suitable security for the payment of royalty or service charges envisaged by Article 4, section (B).

(C) 1. Disputes or disagreements, arising under the foregoing section (B) will be settled by the Tribunal of Arbitration, which Tribunal, however, shall in such cases co-opt one or more impartial persons experienced in patent matters.

2. Except by the before-mentioned procedure of arbitration, which shall apply only between the parties in dispute and within the scope, territory and term of this Agreement, no opposition against a patent or patent application will be possible during the continuance of the Agreement.

(D) No licence and/or experience granted under or in pursuance of this Article shall of itself operate to relieve any grantee from any obligation included in any other agreement which it may have with the grantor.

(E) Nothing in this Agreement may be interpreted as a licence to or as an agreement to license any party to manufacture in any country where it is not now manufacturing.

ARTICLE 5—BASIS FOR DETERMINING RELATIVE POSITION OF PARTIES

(A) Basic Period.

1. The total sales of each of the parties hereto in the territories covered by this Agreement will be ascertained according to its effective net sales in one of the preceding years, amongst which it must choose either the year 1922, the year 1923, or the year running from July 1-1922, to June 30-1923, with the following exceptions:

(a) as far as Brazil is concerned the sales of all parties are to be taken for the period April 1-1923, to March 31-1924; as far as concerns China the period from October 1-1922, to September 30-1923, will be taken, and as far as concerns Australia the period will be from September 1-1923, to August 31-1924, inclusive, and

(b) as far as the sales of the British Group and the Compagnie des Lampes are concerned, a period of twelve consecutive calendar months between July 1-1923, and August 31-1924, may be taken.

2. With the exceptions under 1 (a), each individual party must choose the same period for all countries in which it is interested.

(B) Definition of Effective Sales.

For the purpose of this Article 5 and only for that purpose effective net sales shall be construed to include only lamps shipped and billed in actual bona fide sales to distributors and consumers, and shall not include lamps sold to selling companies if the manufacturer has a financial interest in the selling company or the selling company has such an interest in the manufacturing company, or lamps sold to agents financed by the manufacturer, or lamps supplied by the manufacturer to an agent or selling company on a consignment basis or on terms of sale involving credit longer than six months, except to the extent and amount that such lamps have been actually sold or re-sold, bona fide, to other customers or distributors. Sales to other parties hereto shall be counted in the effective sales of only one party. Disputes arising under this section (B) shall be settled by the General Board.

(C) Ways and Means.

1. In order to fix the effective sales during the Basic Period chosen by it, the quantity of lamps sold by each party in the said period will be converted into units of lamps by means of a special schedule. This schedule (which will be the same for all countries) is hereby attached—marked Exhibit A. The total sales of all parties in the territories governed by this Agreement being thus fixed, the General Participating Percentage of each party will be then found and unless additional parties subscribe hereto will remain unchanged except as provided herein or by unanimous agreement, during the whole period of the Agreement for the purpose of adjustments as hereinafter provided, it being the intent of the Agreement that, so far as is practicably possible, each party shall continue to enjoy the volume of business corresponding to its General Participating Percentage.

2. The total sales for each party, ascertained as above provided, will be split up into allotments for the different countries in proportion to the units sold in each country in the Basic Period chosen by such party. The Local Participating Percentage of each party in each country will be ascertained from the ratio of the allotments of the several parties in such country.

3. In principle, lamps will be counted in the Local Participating Percentage in the country to which they have been invoiced, except when sold expressly for export therefrom. As far as it can be made morally certain that lamps invoiced to one country have been re-sold or distributed in another country, these lamps will count in the Local Participating Percentage of such other country, as far as these lamps have not disturbed the normal business of such other country. A committee appointed by the General Board will in this case propose adjustments of the Local Participating Percentages.

This committee shall take into special consideration the prices realised for such lamps.

Decision lies with the General Board.

(D) Territorial Groups.

1. For the purpose of the allotments, proportions and sharing in the business, as herein defined, two or more countries may be formed into a group.

2. All countries other than Home Countries and other than the British Colonies are combined into one Group—called Common Territory.

3. No groups can be formed which include any one of the following countries, called Home Countries:

Austria,	Great Britain,
Belgium,	Holland,
Brazil,	Hungary,
China,	Italy,
France,	Japan,
Germany,	Spain.

4. The expression Great Britain shall include all Ireland, the Channel Islands and the Isle of Man.

5. The expression France shall include the French Colonies and Protectorates and the Principality of Monaco.

6. The expression China shall include China proper, Manchuria, Mongolia, Thibet and Chinese Turkestan, as well as all concessions or territories leased by China to foreign powers, the British Colonies of Hongkong and Weihaiwei and the Portuguese Province of Macao.

7. The expression Italy shall include the Italian Colonies and Protectorates.

8. The expression Belgium shall include the Grand Duchy of Luxemburg as of July 1, 1932.

(E) In determining any allotments, business based on sales made in or to the United States of North America and Canada (including Newfoundland) shall not be considered.

(F) For the purpose of this Agreement the various Home Countries, the British Colonies and the United States of America and Canada shall, unless otherwise provided herein, be considered as defined by their present political frontiers.

(G)1. After June 30-1930, the provisions of section (A) of this Article 5 shall not be used for the purpose of ascertaining the effective net sales of a non-member manufacturer desiring to join the General Agreement. Thereafter, the sales of the non-member which determine its allotments, both general and local, shall be the average effective net sales in each country wherein the non-member claims to have made sales, for the last three consecutive periods of twelve calendar months immediately preceding the date of receipt of its application for admission, without any deduction on account of codicil settlements made in the said periods. For the purpose of determining said non-member manufacturer's Participating Percentages, both General and Local, such average sales shall be compared with the average sales of all parties (plus those of said non-member) in the said three periods. If the said non-member's average sales in any country during said preceding three periods, exceed its sales therein in the last preceding period of twelve calendar months, then the sales of all parties and those of said non-member in that country for the latter period shall be used for the purposes stated above.

2. In the event of aid being lawfully given to a non-member lamp manufacturer by an arrangement made after June 30-1930, the number of units to which the sales, both local and general, of the said non-member shall be restricted shall not be more than the quantity to which the non-member has been restricted by other contracts existing at the time and in any case shall not be more than would have been granted if the non-member had become a new party after said date.

ARTICLE 6—METHOD OF MAINTAINING RELATIVE POSITION OF PARTIES

(A)1. Each party participating in any country or established group of countries will be entitled to make sales in such territory up to the number of units corresponding to its Local Participating Percentage. All excess over that number shall be regarded as growth due to co-operative effort, and the profit thereon shall be divided between the several parties in deficit in such territory.

2. For the first 7½% excess sales over the number of units corresponding to its L.P.P. for each territory, the party making such excess sales will be required to pay to the parties in deficit in such territories an amount representing a percentage of the Average Realised Price per unit in the territory according to the following scale:

PERCENTAGE OF PENALTY TO BE PAID									
Average realised price up to and including Ph.Scts.									Per cent.
under 7	...	...	...	...	...	...	...	...	10
from 7-01-8	...	...	...	...	...	...	...	...	12½
„ 8-01-9	...	...	...	...	...	...	...	...	15
„ 9-01-10	...	...	...	...	...	...	...	...	15
„ 10-01-11	...	...	...	...	...	...	...	...	20
„ 11-01-12	...	...	...	...	...	...	...	...	25
* „ 12-01-13	...	...	...	...	...	...	...	...	30
„ 13-01-14	...	...	...	...	...	...	...	...	35
over 14	...	...	...	...	...	...	...	...	40

Nevertheless, no payment shall be made as the result of applying a particular percentage penalty which would leave a remainder to the payer of less amount than remains to him after payment of the highest penalty due under next lower percentage penalty appearing in the scale.

The Average Realised Price shall be established as follows :

The total proceeds of all parties shall be established from the invoices for each fiscal territory and decreased by the amount of credit notes.

From the total proceeds as established above and converted into Ph.\$ there shall be deducted :

(a) in each fiscal territory the total amount of taxes applying specifically to lamps—if any—actually paid by all parties in the respective fiscal territory and fiscal period and converted into Ph.\$.

(b) in each fiscal territory other than home countries, the total amount of duty, established by Phoebus, paid by all parties in the individual fiscal territory in Ph.\$ in the 11th F.P.

The total proceeds of all parties in each fiscal territory reduced as per (a) and (b) shall be divided by the total number of units effectively sold by all parties in the resp. fiscal territory and the price per unit in Ph.\$ so arrived at is called herein Average Realised Price (A.R.P.).

The sums expended and claimed to be deducted for taxes applying specifically to lamps shall be reported monthly to the General Manager in order to make control possible.

3. For the following $7\frac{1}{2}\%$ the party making such sales will be required to pay to the parties in deficit in such territory an amount representing a percentage of the A.R.P. per unit in that territory according to the following scale :

PERCENTAGE OF PENALTY TO BE PAID							
Average realised price up to and including Ph.\$cts.							Per cent.
under 7	...	...	...	...	...	...	30
from 7.01-14	...	...	...	...	...	...	40
over 14	...	...	...	...	...	...	50

Nevertheless, no payment shall be made as the result of applying a particular percentage penalty which would leave a remainder to the payer of less amount than remains to him after payment of the highest penalty due under next lower percentage penalty appearing in the scale.

The A.R.P. shall be calculated in the same way as under (A) 2.

4. For the following 10% excess the party making such sales will be required to pay :

(a) to the parties in deficit according to the same rate as under (A) 3.

(b) to the General Manager a sum equal to $\frac{1}{2}$ of the difference of the payments under (A) 3 and 100% of the A.R.P.

5. For all further sales in excess the party making such sales will be required to pay :

(a) to the parties in deficit according to the same rate as under (A) 3.

(b) to the General Manager a sum equal to the difference of the payments under (A) 3 and 100% of the A.R.P.

6. The sums paid under (A) 4b and (A) 5b to the General Manager shall be administered by him, and unless repaid by him according to the stipulations of the paragraph (A) 7, be used in accordance with the decision of the General Board, preferably for the development of business in that country in which these excess sales have been made.

No party will, however, be required to pay under paragraphs (A) 4b and (A) 5b for any number of units sold in any fiscal period which is equal to or smaller than the average number of units it was entitled to sell annually during the two preceding fiscal periods plus 10% or in case it can prove to the satisfaction of the General Board that its excess over 15 per cent. has resulted from a situation of "force majeure" or by deliberate intent of the party or parties in deficit.

7. The amount paid by any party in accordance with paragraphs 4b and 5b will be refunded to it by the General Manager totally or partially at the end of the next fiscal period in case this party has adjusted itself totally or partially, i.e. in case its effective sales in the same country during such next fiscal period are less than the number of units it would have been entitled to sell in accordance with its Local Participating Percentage. In such a case the amount paid by it under paragraphs 4b and 5b will be refunded to it in proportion with the number of units by which it will have adjusted itself as compared with the number of units for which said amount has been paid.

8. Such payments on excess sales, except those into the special fund, will be divided among the parties participating in such territory whose sales in that territory are less than the number of units corresponding to their Local Participating Percentages in the proportion of their deficits.

9. In all fiscal territories a party not having an L.P.P. giving it the right to permissible sales of 1000 units or more shall be permitted to sell up to 1000 units, paying for its possible excesses up to this limit the rates established under Art. 6 (A) 2.

For Great Britain the percentages and zones of penalties shall continue as they are for the 5th F.P. until June 30th, 1939.

10. For the fiscal territories Belgium, Brazil, China A and B, Great Britain, Italy, Japan and C.T.O. the percentage figures in the 2nd column of the scale quoted in Art. 6 (A) 2 and 6 (A) 3 shall remain unchanged. In the fiscal territories B.O.E. "A" and "B" and C.T.E. the penalty percentages resulting from the application of the scale quoted in Art. 6 (A) 2 and 6 (A) 3 shall be increased by $2\frac{1}{2}$ points; the maximum of 40% for 6 (A) 2 and 50% for 6 (A) 3 shall be maintained. For the fiscal territories Austria, Germany, France & Colonies, Holland, Hungary and Spain the penalty percentages resulting from the application of the scale quoted in Art. 6 (A) 2 and 6 (A) 3 shall be increased by 5 points; the maximum of 40% for 6 (A) 2 and 50% for 6 (A) 3 shall be maintained. Consequently, if for example the percentage of penalty to be paid in B.O.E. "A" is on the basis of the scale in 6 (A) 2 established to be 27.6%, this percentage will be increased to 30.1% and this latter percentage applied to the A.R.P. to establish the penalty in Ph.\$cts to be paid for every unit by which a party is in excess in B.O.E. "A" in the first penalty zone.

(B)1. In order to calculate any party's sales for the purposes referred to in section (A) above, the effective sales of all parties are to be converted into units by the schedule, Exhibit A.

2. It being a fundamental principle that each party shall continue to enjoy the volume of business corresponding to its General Participating Percentage, it is agreed that whenever the average world-prices show a price ratio at variance with the existing ratios of the schedule Exhibit A this schedule will be altered to agree with the new price ratios established; such changes in the schedule, however, will be made only at regular intervals of not less than six months.

When such alterations in the schedule are made, vacuum tungsten lamps in pearshaped and dropshaped bulbs and gasfilled tungsten lamps (these definitions to include the lamps of the Simplified Line and of the Einheitsreihe up to and including 25 watts, over 19 volts will always be rated at 1.

When making such calculations opal, white sprayed, daylight, projection and gasfilled tubular (two caps) lamps shall be disregarded as heretofore.

(C) So far as France is concerned the businesses of the Compagnie des Lampes (with its present and future licensees) and of Philips will be considered as a bloc for effecting settlements herein of the character contemplated in (A) above, unless otherwise determined by these two companies. If these two companies should determine not to bloc their business, that of the Compagnie des Lampes with its other licensees will be considered as a bloc in any case, should it so elect.

Similarly, the Società Edison Clerici, for Italy, the Tokyo Electric Company, for Japan, the Osram Company, for Germany, the Compagnie des Lampes, for Spain, the Philips Company, for Holland and for Belgium, each shall have the right to make such arrangements with its licensees in its Home Country as will result in the formation of a bloc for such country, if it shall so elect.

Similarly, the businesses of the manufacturing companies of the E.L.M.A., referred to as the British Group, shall unless otherwise determined by them be considered as a bloc so far as Great Britain is concerned, and they may join together therein the businesses of their present and future licensees, should they so elect.

Only licensees conforming with and subject to the terms of the Agreement can be included in a bloc.

(D) The business of the companies forming the Overseas Group will be considered as a bloc for all purposes.

ARTICLE 7—ADJUSTMENTS NECESSITATED BY ACTIONS OF ANY PARTY PREJUDICIAL TO THE INTERESTS OF OTHERS

In connection with the intention of the parties to encourage co-operation in arriving at economical systems of distribution and in stimulating the consumer to use a proper amount of light for his needs, and in recognition of the fact that co-operation in such progressive matters sometimes may operate to the temporary disadvantage of the party actively furthering the common interest, which disadvantage may become permanent or far-reaching if the other parties do not fairly and fully co-operate by following the policies and procedure agreed on, and to avoid that any party not thus co-operating may profit to the disadvantage of others, it is agreed that, if one of the parties should in any way, directly or indirectly, gain or try to gain advantages immediate or ultimate over the other parties by actions not in accordance with the Agreement, the other parties shall be adequately compensated for all immediate and ultimate damage through such actions, by the collection of sums sufficient for the liquidation of that damage from the offending party and the payment thereof to the other parties, in accordance with the procedure provided by the General Board.

ARTICLE 8—SURETIES

(A) 1. As a surety for the fulfilment of the obligations incurred by the parties on signing this Agreement, and for the discharge of their liability to bear a share in the cost of carrying it into effect and eventually to provide for the adjustments and payments foreseen in Articles 6, 7 and 9, each of the parties agrees to deposit with the General Manager negotiable securities or instruments, the form of which shall in each case be in concert with the laws of the country in which it is payable, 10% of which must be in cash or the equivalent. The initial amount will be for each of the signatory parties \$4,000; if its basic turnover should be more than one million units the amount will be increased by \$4,000 for each complete million of units above the first million.

2. These securities of instruments can only be presented to the respective parties or cashed after a decision to do so has been taken by the General Board at a regularly called meeting and by a three-quarters' majority vote of the

members present other than those representing the offending party. Such presentation or conversion into cash may be allowed only in case:

(a) the party in question is in default with its pecuniary liabilities, and

(b) notwithstanding that it has been pressed for payment by registered letter in which it was advised of the imminent presentation of its surety, it has failed to pay the amount owed by it within a stated reasonable period.

3. }
4. } [Subsidiary provisions.]
5. }

(B) 1. A second series of sureties, of which 10% must be in cash or the equivalent, will be deposited with the General Manager. The amount will be for each of the signatory parties \$10,000; if its basic turnover should be more than one million units, the amount will be increased by \$4,000 for each complete million of units above the first million.

2. Its securities or instruments of this second series can be presented to a party or cashed only in case said party has made an infringement of the Agreement such that the other parties can fairly demand the cancellation of the Agreement. The decision to realise upon the surety in such a case can be taken only by the General Board at a regularly called meeting and by a three-quarters' majority vote of the members present other than those representing the offending party.

(C) [Subsidiary provisions.]

(D) It is understood that all sureties of each party not disposed of shall be returned to the depositor immediately after the termination of the Agreement, so soon as the party shall have met all of its liabilities.

(E) [Subsidiary provisions.]

ARTICLE 9—FINES

The General Manager may from time to time submit for the approval of the General Board a schedule of fines to apply in cases where parties by neglect or omissions (such as failing to render reports at the time required) hinder the efficient daily working of the joint business of the parties.

ARTICLE 10—ORGANISATION

(A) **General Meeting.**

1. A General Meeting of all parties signatory to the Agreement will be called at least once a year. The first General Meeting shall be held after two weeks' notice at a time and place indicated in a call issued over the signatures of 60% of the parties signatory to the Agreement.

2. The General Meeting will have supreme authority in all matters relating to the Agreement and will supervise the carrying out of its provisions except in so far as it may delegate, either generally or specifically, its powers to the General Board. Its decisions are binding for the General Board, for the management, and for the parties hereto.

3. At each General Meeting one vote shall be given for each basic unit. The basic units which carry a vote shall be the basic units validly established for the basic period either by the Public Accountants or otherwise, increased by:

(a) The number of basic units not included in the figure established as above to which any Party may be entitled under any codicil and

(b) The number of basic units acquired by any Party through the acquisition of "New Parties" in accordance with Article 14.

4. Unless otherwise provided, decisions in the General Meeting are to be carried by three-quarters' majority of the votes cast; in any vote a minority comprising less than two Parties shall not count for more than one fourth.

5. Decisions of the General Meeting must come within the limits of and be not contrary to this Agreement.

(B) Local Meetings.

1. The interested parties in each of the individual countries listed in Article 5, referred to as Home Countries, will take part in a Local Meeting for such country, which will watch over the special interests of that country in relation to the Agreement. The voting power of each party therein will be according to its Local Participating Percentage. A party forming a bloc with its licensees also shall cast the votes based on its licensees' effective sales. Decisions can only be adopted by a majority of two-thirds of the votes cast, except as may be otherwise provided herein.

2. For countries other than the Home Countries, the General Board shall provide for Local Meetings of the parties concerned in each such country with such procedure and methods of voting therein as may be required in addition to any specially provided for. Local Meetings may combine one with another at their discretion by unanimous vote. Decisions can be adopted by a majority of two-thirds of the votes cast, except as may be otherwise provided herein, the votes being apportioned among the parties in accordance with their Local Participating Percentages until the expiration of three full fiscal periods of twelve months each after which they shall be apportioned in accordance with the average annual effective sales in the three preceding fiscal periods.

3. Decisions in Local Meetings may not be made contrary to the conditions of the Agreement. Whether or not they are contrary to such conditions will be decided for the individual country by the General Board in advice with the General Manager and the General Counsel. A party forming a bloc with its licensees also shall cast the votes based on its licensees' effective sales.

4. Rules for these Meetings shall be established by the General Board.

(C) General Board.

1. The administration of the Agreement will be under the supervision and direction of a General Board, which will have jurisdiction over matters relating thereto, subject to decisions of the General Meeting.

2. Membership of the General Board will be made up, as indicated below, of representatives of each of the following groups which may subscribe hereto:—

Osram Group	3	Representatives
Philips Group	3	”
Overseas Group	2	”
British Group	1	Representative
Compagnie des Lampes Group	1	”
Kremenezky Group	1	”
Società Edison Clerici Group	1	”
Spanish Group	1	”
Swedish, Swiss and German Groups	1	”
Tokyo Electric Co. Group	1	”
Vereinigte Group	1	”

3. Where there are two or more lamp manufacturing companies in any of the above groups they are to nominate the representative of that group on the General Board.

4. Each member may appoint a substitute who may be present at all the Board Meetings but is entitled to vote only when acting as a substitute.

5. The General Board may issue such By-laws, Rules and Regulations as it may think necessary for the operation of the Agreement, which will be binding equally with the Agreement itself, and it may appoint committees with specific duties, functions and authority.

6. Decisions in the General Board are to be carried by three-quarters' majority of the votes cast, each representative having one vote, and may not be contrary to the conditions of the Agreement.

(D) Chairman and Vice-Chairman.

1. The General Board shall elect for each fiscal period from among its members a Chairman and a Vice-Chairman.

2. The duties of the Chairman shall be to preside at all meetings of the General Meeting and the General Board, to perform all of the functions commonly required of the Chairman of such a body and to perform such specific functions as may be confided to him by it. In case of his absence from any meeting or of his inability to perform his functions, the Vice-Chairman shall act in his stead.

(E) General Counsel.

There will be a General Counsel, who will be the legal adviser of the organisation and of the management. He will be nominated by the General Board, with the approval of the General Meeting.

(F) General Manager.

1. There will be a General Manager appointed by the General Board, subject to approval by the General Meeting. The General Manager shall be responsible for the daily administration of the affairs of the organisation and shall act as its executive head, subject to the limitations of the Agreement and the direction of the General Board.

2. The General Manager shall be an ex-officio member of the General Board and of every committee without, however, the right to vote.

3. The location of the office of the General Manager shall be determined by the General Board.

(G) Public Accountants and Auditors.

1. The General Meeting shall elect, annually, a well-established firm of Certified Public Accountants to act as auditors. They shall be responsible for the audit of the books and accounts of the management, and the verification and control of such reports and statements as shall be rendered by the parties hereto under the operation of this Agreement.

2. Decisions of the Public Accountants in such matters as the accuracy of records and reports, shall be final and not subject to appeal or arbitration unless promptly appealed from to the General Board.

3. The Accountants shall be eligible for re-election.

4. It is agreed that the auditing work provided for the firm of Certified Public Accountants in Article 10 (G) but actually done by the Phœbus Office for the first, second and third fiscal periods shall for all purposes be treated as having the same status and quality as if done by said Public Accountants; and this rule shall apply to the work done by the Phœbus Office in each succeeding fiscal period unless objection shall be made in writing, by any party, to the General Manager at least three months before the beginning of such a fiscal period.

(H) Executive Committee.

1. There shall be an Executive Committee consisting of not more than six members, who shall be appointed by the General Board. This Committee shall have the usual functions of an Executive Committee, such as acting for the General Board in giving the necessary approval to the acts of the various organs and committees. Its powers shall be defined and its duties and actions shall be based upon the decisions of the General Board. The decisions of this Committee must be taken by a majority of five-sixths; when the Committee is unable to arrive at a decision the matter must be referred to the General Board for decision.

2. [Substitutes.]

(I) Development Committee.

1. There shall be a Development Committee which shall decide the general policy to be followed in matters of lighting development, technical development

and standardization for the information of the Local Meetings. The Development Committee shall supervise the Local Meetings so far as concerns the policies decided upon.

2. The Development Committee shall consist of at least twelve members, of whom one half shall be technical and one half shall be commercial, who shall be appointed by the General Board. Each member may appoint a substitute for any meeting which he does not attend, which substitute shall then be entitled to vote at that meeting.

The Committee shall at its first meeting after appointment elect a Chairman, a Vice-Chairman and a permanent Secretary, which latter shall be from the Phœbus organisation. The Vice-Chairman shall preside over the meeting in the absence of the Chairman.

3. [Procedure.]

4. [Procedure.]

(K) Committee of Accountants.

A Committee of Accountants, appointed by the General Board, will accumulate such knowledge for the information of the General Manager and give such advice as may be requested by him.

(L) Form of Permanent Organisation.

The parties hereto agree, severally and jointly, that the General Counsel shall fully investigate the matter and recommend to the General Board that form of permanent organization which seems most desirable, and so soon as the General Board shall act favourably on that recommendation, the several parties shall each do whatever is required to make the decision of the General Board effective.

(M) Date of Effectiveness of Decisions.

1. No decision of any organ or committee shall be binding upon any party until the decision shall have been communicated to it in the manner ordinarily followed for such decisions; and whatever right of appeal therefrom exists shall attach as of the date on which said communication is made.

2. No decision of any organ or committee shall be immediately effective with the exception of decisions of the General Meeting, General Board, Executive Committee and the Local Meetings, and in these instances only as it may have been duly provided that such decisions shall be immediately effective.

3. Unless otherwise provided, the decisions of the organs and committees provided for and established under this Agreement shall become effective thirty days after the day of mailing of the decision.

If after such a decision has become effective an appeal is lodged, the decision nevertheless remains effective, pending the result of the appeal.

If such a decision is not effective at the date of the lodging of an appeal, such decision in cases of appeal to the General Meeting or General Board will only become effective thirty days after final decision of the said organs if no appeal has been lodged against said decision, and immediately after the formal delivery of the final decision of the Tribunal of Arbitration in all cases of appeal to said Tribunal. This provision shall not be construed to curtail any right of appeal which, in any instance, may exist after the period of thirty days.

ARTICLE 11—SPECIAL OBLIGATIONS

(A) All expenses incurred in the working of the General Agreement shall, unless otherwise provided, be borne proportionately by all parties and shall as from July 1-1937 be allocated to each party in proportion to the summation of:

1. The total number of units which have been sold without payment for excess under the General Agreement by a party and by that party's licensees whose sales are included in the sales of that party under Article 6 (C) or otherwise.

2. The unsold units, if any, for which it has the right to receive indemnification if not sold.

(B) In order to assist the General Manager to perform his duties, each party must:

1. Submit its books and records for examination by the General Manager or his agents.

2. Give to the General Manager all such information and data as he may reasonably require for the fulfilment of his duties.

3. Take such measures as are necessary to carry out the decisions which the management may take on behalf of the parties.

4. In accordance with the intention of the parties that this Agreement shall cover the entire business of each party, it is agreed that all lamps manufactured by or for each of the parties shall be definitely accounted for, either as having been sold, or placed in stock, or destroyed under such circumstances that the Public Accountants may verify them. The parties further agree that they shall render all assistance within their power to the General Manager or his agents (amongst whom are the Public Accountants) in the verification of the statements rendered by each party, which shall be signed jointly by the Executive Head and the Chief Accountant of the party rendering such statements, in regard to the manufacture and sale of lamps manufactured by or for them, such assistance to include granting to the Public Accountants at all reasonable hours, access to its offices, factories and warehouses, for the purpose of making such verifications as they may deem necessary in the proper execution of their duties. This shall include the examination and control, by actual physical test checks, of lamps manufactured and inventories.

(C) Each party is responsible for any violation of this Agreement through acts not in accordance herewith, or with the By-laws, Rules and Regulations, by members of its organization and by its agents, regardless as to through whose fault the violation has occurred.

(D) Each party agrees to take such measures as may in the opinion of the General Board be necessary to limit effectively the operations of its distributors, agents and branches, to the territory which they are authorized by the party to serve.

(E) 1. Each party agrees to give to the General Manager, immediately on the signing of the Agreement, written authority, irrevocable during the tenure of his office and within the limits of his competency as fixed in the Agreement and By-laws, such as may be necessary for the performance of his duties and the execution of the provisions of this Agreement. This written authority must be approved by the General Counsel.

2. Furthermore, each party shall, in all cases where it may be necessary in the interest of the parties, give to the General Manager a special power of attorney in terms to be prescribed by the General Counsel.

ARTICLE 12—INCLUSION OF OTHER PARTIES

(A) So far as is possible, the benefits of this Agreement will be extended to other reputable and well-established manufacturers of lamps, through a formal procedure to be laid down by the General Board, in which case the Participating Percentages of each party hereto shall be altered accordingly.

(B) In view of the necessary change of position of each party, necessitated by the co-operative purposes of this Agreement, and further, in view of the various obligations undertaken by each party, such, for example, as those of giving private technical information and manufacturing experience and patent licences as provided in Article 4, sections (A) and (B), it is understood and agreed that no party hereto will aid directly or indirectly in any manner whatever any lamp manufacturer not sharing the burdens and obligations of this Agreement except in so far as existing contracts may necessitate it.

**ARTICLE 13—PURCHASE AND SALE OF BUSINESS BELONGING
TO PARTIES HERETO**

(A) 1. In the event of the death of a party on or after the 1st July 1936, his rights and obligations under this Agreement shall automatically pass to the successor to his lamp business, but in the event of such successor being a lamp manufacturer not a Party hereto, then the General Meeting shall have the right to decide by the majority prescribed in Article 10 (A) 4 that such successor shall not be a Party to this Agreement. On request of the successor, the General Meeting shall make its decision within two months after such request.

2. In case of bankruptcy or forced liquidation of a Party to this Agreement, such Party shall cease to be a Party to this Agreement as from the date of such bankruptcy or liquidation, provided, however, that the other Parties shall retain the right to use the then existing patents of such Party under the same conditions as those of Article 4 of this Agreement.

3. (a) Neither the whole nor any part of the lamp business of a Party shall be transferred to a Lamp Manufacturer not a Party to this Agreement.

(b) Neither the whole nor any part of the lamp business of a Party shall be transferred to a person or concern not a lamp manufacturer unless the resultant joint enterprise shall have undertaken all the obligations of the original Party under this Agreement and unless the General Meeting shall have consented to such transfer with the majority prescribed in Article 10 (A) 4 of this Agreement. The consent of the General Meeting, however, shall not be unreasonably withheld and, in the case of a difference of opinion as to whether such consent has been unreasonably withheld, such transfer shall not be made unless and until the Tribunal of Arbitration established under Article 19 hereof shall have decided that such consent has been unreasonably withheld.

(c) No transfer of the whole or any part of a Party's lamp business to a transferee not a Party to the Agreement shall relieve the transferor of his burden and obligations under this Agreement and he shall maintain on deposit with the General Manager the full amount of sureties which he should lawfully have had on deposit prior to such transfer.

(d) If a Party violates any of the stipulations of this Paragraph 3, the total sureties of that Party shall be immediately forfeited without prejudice to further claims of Phoebus S.A. or of any Party to this Agreement. Accordingly the General Manager shall, notwithstanding the stipulations of Article 8 hereof, immediately present for payment or convert into cash such sureties and shall hold the resultant cash at the disposal of the General Meeting.

4. The stipulations of Par. 3 above relating to a transfer shall be mutatis mutandis applicable to the case of an amalgamation.

(B) Any party hereto is allowed to purchase independently a part or the whole of another party's business, but in buying such business it must comply with such general requirements as the General Board may prescribe as a condition precedent to the purchaser obtaining a corresponding increase of its Participating Percentages under the terms of this Agreement.

**ARTICLE 14—ACQUISITION OF OTHER LAMP MANUFACTURING
INTERESTS**

(A) No party shall interest itself directly or indirectly in the business of a lamp manufacturer not a party. In principle it is understood that if opportunity offers of acquiring other lamp manufacturing interests, such acquisition shall be made for the joint account of the parties hereto, and that no party will proceed independently of the others in either negotiation or purchase of such lamp manufacturing interests, and that each party will act only in agreement with the others in such matters.

(B) The foregoing shall not of itself prevent any party from building new factories or acquiring others for the sole purpose of providing for such party's business covered by this Agreement.

(C) As an exception to the above the parties having their principal factories in any Home Country shall have the preferential right to purchase other lamp interests or business in that country solely for their own account.

If a Party wishes to exercise its preferential rights under this Section C, the whole allotment attached to the business acquired shall be fixed in accordance with the original provisions of Article 5 (A), attention being directed to the distinction between Article 5 (A) and Article 5 (G).

(D) The purchase of the business of a manufacturer not a party hereto does not of itself give the right to any allotment.

The procedure to be followed is to be determined by the General Board.

In the event however of the acquisition after June 30-1930 of non-member lamp manufacturing interests for the joint account of the parties as provided in Article 14 (A) above, the allotments which may lawfully accrue by reason of such acquisition shall be those which would have been granted if the said non-member had become a new party after said date, in accordance with the stipulations of Article 5 (G) 1.

ARTICLE 15—DURATION OF AGREEMENT AND PRIVILEGE OF WITHDRAWAL THEREFROM

(A) Any party may withdraw from this Agreement at the end of a fiscal period as fixed hereunder, on three months' written notice to each of the other parties, such notice to be given not prior to April 1-1955, to become effective not prior to June 30-1955.

(B) In the event that in any fiscal period, after and including the period beginning July 1-1928, the aggregate business of the parties, measured in units of lamps sold, shall be less by an amount exceeding 20% than the average aggregate business of the same parties during the three preceding years, such decrease being due to diversion of business of the parties to other interests, then any party may withdraw from this Agreement on three months' notice in writing to the other parties.

ARTICLE 16—CANCELLATION

This Agreement is to be subject to cancellation at June 30th of any year (but not before June 30-1927) on three months' notice in writing to the parties, by vote of a majority at an Extraordinary General Meeting called for the purpose of considering the proposition, such majority votes representing at least 60% of the total business of the parties. In the event of 60% of the total business not being present, a second meeting will be held within a month's time, in which meeting a vote of 60% of the business present will be sufficient to carry the proposition.

ARTICLE 17—EXCESS SALES DISQUALIFIED FOR VOTING BASIS

Excess sales of a party shall be disregarded in fixing the basis of such party's vote for the purposes of this Agreement.

ARTICLE 18—SUBSIDIARY COMPANIES

(A) For this Agreement, each signatory party will be considered to form one party with its subsidiary companies and a list of such present subsidiary companies shall be at the time of signing or promptly thereafter attached hereto and marked Exhibit B.

(B) The expression Subsidiary Company comprehends any enterprise in the field of this Agreement of which a party holds an interest of more than 50% of the voting shares or a controlling interest financial or otherwise.

(C) No signatory party hereto shall be considered as a Subsidiary Company, unless expressly signing as such.

ARTICLE 19—SETTLEMENT OF DISPUTES

(A) In the event of disputes between parties to this Agreement such disputes shall be submitted to the General Meeting or the General Board for decision.

(B) Unless otherwise provided in this Agreement and/or valid decisions thereunder, disputes or disagreements arising from, with respect to, or in connection with the provisions of this Agreement, as well as disputes arising from the decisions and acts of the organs and committees provided for and established under this Agreement, with the exception of the decisions of the General Meeting and the General Board, may be appealed from only to the General Board. All disputes arising from the decisions and acts of the General Meeting and of the General Board may be appealed from only to and shall be settled by a Tribunal of Arbitration to be elected by the General Board subject to the approval of the General Meeting.

(C) The Tribunal of Arbitration shall be composed of three or more impartial persons, who shall base their decisions on justice and equity, in accordance with the obvious intent and purpose of the parties, and the said decisions shall be made by majority vote.

Its decision shall be final and binding.

(D) Appeals may only be lodged with the Tribunal of Arbitration within a period of thirty days after formal delivery of the decision or ruling appealed from.

(E) An appeal to the Tribunal of Arbitration becomes invalid if the Party lodging it does not deposit with the General Manager the amount fixed for this procedure by the General Counsel as advance for the costs, within three weeks from receipt of the respective notification of the General Counsel's Office.

(F) No two or more parties to the Agreement may submit any matter whatever involving or relating to their lamp business to any court of arbitration which may include as members any of the Members of the Tribunal of Arbitration provided for in this Agreement—except under the same rules provided for the appeals to the Tribunal of Arbitration arising under this Agreement, nor unless the General Counsel shall have been first given ample opportunity to review the matter for the purposes of determining whether in his opinion the general interest of the parties to the Agreement or of any party thereto may by any chance be prejudiced by the fact or manner of the proposed arbitration, with the right, should he conclude that any such interest may be so prejudiced, to introduce Phoebus as a party to the matter and to represent it as such throughout the proceedings. However, in any case not coming to the Tribunal on appeal from a decision below nor arising under Article 4, no parties shall have the right to appear before the Tribunal at the hearing as interveners except those parties who, having lodged their statements of intervention shall, in the opinion of the Tribunal (after the latter prior to the hearing of the case shall have read such statements) be deemed to have a material interest in the issue; in order that the several parties may have the necessary information to guide them in the matter of intervention, the statements of claim (or appeal, however it may be designated) and of defence shall be communicated to all parties to the General Agreement in accordance with the provisions of the rules relating to Appeals-General. In arbitration cases of this character, that is those which do not come to the Tribunal from a decision below nor arising under Article 4, no parties or their representatives except the parties to the arbitration and the accepted interveners thereto shall be permitted to attend the hearings.

ARTICLE 20—NECESSARY LEGAL REQUIREMENTS

(A) Each party signing this Agreement agrees to take legal advice upon its ability lawfully to discharge each and all of its obligations hereunder and if it shall find that it is unable so to discharge them in its own country it shall notify each of the other signatory parties to that effect within a period of 30 days after signing and withdraw from the agreement so far as the business in that country is concerned but shall remain bound otherwise.

Absence of such notification shall be effective as and equivalent to an affirmative statement that such party lawfully can and will discharge said obligations.

(B) In the event that later, in consequence of a change in the laws or of the interpretation thereof by the courts in any country in which any party hereto operates or if in consequence of the manner in which the Agreement is put into effect any such party shall consider that it may not lawfully continue either its adherence to the Agreement or its operations in such country, the matter shall be submitted at the expense of the petitioning party to review by a College of three practising barristers, nationals of the country concerned, and who shall be experts learned in the law thereof, of which one shall be designated by the said party, another by the General Counsel, and the third selected either by agreement between the two first members selected, or, failing such agreement, shall be appointed by the President of the Highest Court in the said country. The report of this College shall be final as to the point of law, and if it shall sustain the view that the operations of the petitioning party as required by the Agreement are contrary to the law of the said country, then an urgent General Meeting shall be called immediately and an opportunity be given to amend the Agreement to meet the views of the experts. Under these conditions the Agreement may be amended by three-fourths majority.

If the General Meeting shall not so amend the Agreement, the General Manager shall note that the petitioning party has withdrawn from the Agreement as to said country and return to it its sureties in the proportion its business in that country bears to its total business.

ARTICLE 21—FISCAL MATTERS

(A) The fiscal period for the determinations provided for in the Agreement is to be from July 1st of each year to June 30th of the following year inclusive. However, the first period will run from January 1-1925, to June 30-1926.

(B) No payments provided for in Article 6(A) 4(b) will be made for the first fiscal period if the excess sales which would have resulted in such payment shall have been made during the period running from January 1-1925, to June 30-1925.

(C) All obligations and payments under this Agreement shall be liquidated in U.S.A. gold dollars in a way to be stipulated by the General Board.

ARTICLE 22—ENFORCEMENT

(A) The parties to this Agreement hereby bind themselves, severally and jointly to observe the terms and conditions thereof in a spirit of mutual co-operation, fully realizing that in specific cases defined therein individual sacrifice may be immediately demanded in return for benefits which shall ultimately accrue from their common endeavour.

(B) They further agree that they will severally and jointly appoint the corporation (société anonyme) Phoebus S.A. Compagnie Industrielle pour le Développement de l'Eclairage (hereinafter referred to as Phoebus), having its principal office in Geneva, Switzerland, as the Bearer of their Rights (Porteur des Droits) insofar that it shall have the right to enforce on their behalf and in the name of said Phoebus their common and individual rights under this Agreement and further to enforce in particular the following provisions of this Agreement:

(a) The due collection by suit or otherwise, and the due distribution to those entitled thereto, of any sum that may become payable for any cause under this Agreement.

(b) The enforcement by suit or otherwise, of any right that may accrue to one or more of said parties under the provisions of this Agreement.

(c) The enforcement by suit or otherwise in any court, or by any other lawful means, of any valid and final decision, order, vote or resolution made or passed by any committee, board, tribunal, organ or other agency under the provisions of this Agreement.

(C) 1. And for the common benefit and convenience of all the parties hereto, it is further agreed that all the parties hereto shall execute a common contract with said Phoebus of which contract this Agreement will form a part and which confirms its terms and conditions, and expressly constitutes and appoints said Phoebus as Bearer of its Rights (Porteur des Droits) as defined in section (B) of this same Article:

2. And in said Common Contract each of said parties shall, for itself, its subsidiaries, successors and assigns, enter into the following Agreements:

(a) Not to raise any issue or question as to the power, authority or competence of said Phoebus to maintain any suit or process in any court of competent jurisdiction, to enforce against it, or in its behalf, any provision of this Agreement.

(b) To furnish any other or further written power or authority that may be requested by said Phoebus to render certain its competence to maintain any suit or process to enforce any provision of this Agreement.

(c) To recognise as the *Forum Prorogatum* in every case where the forum or tribunal is not specifically provided for under the terms of this Agreement, the Common Courts of the Canton of Geneva, Switzerland; but in every case said Phoebus shall have the right to waive this provision and recognize the jurisdiction of any court which would be competent under ordinary rules. This provision shall apply especially to those parties who refuse to be bound by the arbitration clauses of this Agreement, on the ground that they are nationals of a country the legislation of which does not recognize general arbitration.

(D) It shall be the duty of the General Board to transmit promptly to said Phoebus for appropriate action all final decisions, orders, votes or resolutions made or adopted by itself, or by any committee, board, tribunal, organ or other agency under the provisions of this Agreement. Every such committee, board, tribunal or organ or agency shall render its decisions promptly, and shall, in all proper cases, transmit its decisions, orders, votes or resolutions to the General Board without delay.

(E) The share capital of the Phoebus S.A. shall be subscribed and paid by the parties to the General Agreement in accordance with their General Participating Percentages existing at the end of the fourth fiscal period. The shares shall be transferred to a trustee, the form of which trusteeship shall be determined by the Conseil d'Administration of Phoebus S.A. The trustee shall issue in exchange for such shares certificates, establishing the proportionate part of each party to the total rights so transferred to the trustee.

The trustee shall always vote in the Assemblées Générales of Phoebus in accordance with the valid decisions of the General Board and General Meeting.

If an alteration takes place in the General Participating Percentages of the parties during the fifth or following fiscal periods through agreement between one or more parties, an equivalent adjustment in the holding in Phoebus S.A. shall only be made if the parties making such agreement have expressly stipulated it and notified the trustee accordingly. Parties entering the General Agreement after July 1-1929 shall have no right nor obligation to acquire the part in Phoebus S.A. proportionate to their General Participating Percentage.

In the event of liquidation of S.A. Phoebus, the net proceeds shall first be used to reimburse to the shareholders the amount paid by such shareholders toward the nominal capital of Phoebus; the balance shall be distributed amongst all parties to the General Agreement in proportion to their General Participating Percentages existing at the moment of such distribution.

SIGNATURES

The signatures of the following parties are affixed to the General Patent and Business Development Agreement, dated at Zurich December 20-1924.

"Alpha" Fabrique de Lampes à Incandescence, S. à r. l., by C. Schlesinger.

Bergmann Elektrizitäts-Werke A.G.	...	...	by Steinert, Riehl
BRITISH GROUP:			
British Thomson-Houston Co., Ltd.	...	...	by P. J. Brewer
Cryselco Ltd.	...	...	by Wm. F. Moir
Edison Swan Electric Co.	...	...	by C. H. Cox
General Electric Co., Ltd.	...	...	by J. Y. Fletcher
Metropolitan-Vickers Electrical Co. Ltd.	...	...	by R. H. Haviland
Siemens and English Electric Lamp Co. Ltd.	...	...	by F. Hird
Compagnie des Lampes	...	...	by M. Saurel
A. C. Cossor Ltd.	...	...	by W. R. Bullimore
Crompton Parkinson, Limited	...	...	by J. Harwood Fryer
Elektra Glühlampenfabrik, A.G.	...	...	by Dr. Ed. Schwartz, Dr. Felix Illner
Aktiebolaget Elektra	...	...	by Henke
Dr. Just Glühlampen u. Elektrizitäts Fabrik, A.G.	...	...	by Aschner
Joh. Kremenezky	...	...	by Joh. Kremenezky
La Lampe Electrique Belge S.A.	...	...	by J. Soetewey, A. Bemelmans
Licht A.G. (S.A. Lumière) Goldau	...	...	by K. Gyr
Manufacture Belge de Lampes Electriques	...	...	by Pierre Boty
Nordisk Glödelampe Industri	...	...	by Rémané, A. Teign
Osram G.m.b.H., Kommanditgesellschaft	...	...	by Meinhardt, Friedeberg
Osram A.G., Prague	...	...	by Rosenblatt, Brehmer
OVERSEAS GROUP:			
Anderson, Meyer & Co. Ltd.	...	...	by V. Meyer (General Man- ager)
Australian General Electric Co. Ltd.	...	...	by A. Maughan
General Electric Company of Cuba	...	...	by M. T. McGovern
General Electric, S.A. (Rio de Janiero)	...	...	by Octavius S. Delaney
General Electric, S.A. (Mexico, D.F.)	...	...	by M. V. Stewart
Società Italiana per le Lampade Elettriche "Z"	...	...	by O. Grauding
South African General Electric Co. Ltd.	...	...	by R. R. Elliot
N.V. Philips Gloeilampenfabrieken	...	...	by A. F. Philips
Sté Ame Philips, Eclairage & Radio	...	...	by Spaens
Julius Pintsch A.G.	...	...	by Dr. Golen, v. Pabst
Radium Elektrizitäts G.m.b.H.	...	...	by E. Kersting
Aktiebolaget Skandinaviska Glödlampfabriken	...	...	by Almen.
Società Edison per la Fabbricazione delle Lampade: Ing. C. Clerici & C.	...	...	by O. Grauding
Stella Lamp Co. Ltd.	...	...	by C. R. B. Leake
Tokyo Electric Co. Ltd.	...	...	by O. Pruessman (Vice-President)
Vereinigte Glühlampen & Elektrizitäts A.G.	...	...	by Aschner, Fischmann.
Vertex Elektrowerk, G.m.b.H.	...	...	by C. O. Rothweiler, L.
J. Visseaux	...	...	by J. Visseaux

EXHIBIT A

SCHEDULE FOR TRANSLATING LAMPS INTO UNITS

[The Exhibit lists the various classes of lamps and is followed by tables showing the unit value for each class in each fiscal period from 1925 to 1940. Schedule "B" 8 reproduced below shows the classification of lamps and the unit value for each class in the final fiscal period.]

SCHEDULE "B" 8

FOR TRANSLATING LAMPS INTO UNITS

<i>Class:</i>	<i>Type of Lamp:</i>						<i>Ratio:</i>
1	Miniature Tungsten lamps	...	...	...	...	...	0.22
	Electrical Data:	Volts.	Amp.				
		1.0-4.5 up to	0.8				
		4.6-6.5 up to	0.55				
	Bulb: round bulb maximum diameter	...	15.5 mm.				
	tubular bulb maximum diameter...	...	10.5 mm.				
	Cap: one cap only, not to exceed	...	10.5 mm. in diameter				
	Varieties: to include all special types, for instance:						
	lamps with lenses or reflectors,						
	lamps for bicycles, radio panel, etc.						
2	Vacuum Tungsten lamps 1-19 volts included & Vacuum Tungsten motor car lamps of 24 volts, all excluding, however, lamps of classes 01 and 38	...	...	...	...	...	0.51
	Vacuum Tungsten lamps in pearshaped, dropshaped and spherical bulbs and Gasfilled Tungsten lamps,						
12	Over 19 volts	25 watts and below	...	...	...	...	1.00
14	"	40	"	...	...	...	1.11
16	"	60	"	...	...	...	1.33
17	"	75	"	...	...	...	1.80
18	"	100	"	...	...	...	1.90
19	"	150	"	...	...	...	3.30
20	"	200	"	...	...	...	4.80
21	"	300	"	...	...	...	7.30
22	"	500	"	...	...	...	10.00
23	"	750	"	...	...	...	13.10
24	"	1,000	"	...	...	...	14.70
25	"	1,500	"	...	...	...	20.60
26	"	2,000	"	...	...	...	33.00
27	"	3,000	"	...	...	...	54.00
28	"	5,000	"	...	...	...	117.00
29	"	10,000	"	...	...	...	176.00

The above classes include lamps of the Simplified Line and/or Einheitsreihe. Only the wattage of the lamp will decide into which of the classes 12-29 it should be included. Other wattages than those mentioned in the classes 12-29 will have to be classified as the next higher wattage.

<i>Class:</i>	<i>Type of Lamp:</i>						<i>Ratio:</i>
<i>Multiplying Ratios</i>							
<i>(to be applied to the ratios of lamps of the same wattage)</i>							
	Projection and gasfilled Soffitten (tubular two caps) lamps excepting auto Soffitten lamps of 24 volts of						
	classes 12-18	...	...	...	...	...	3.24
	19-22	...	...	...	...	...	2.09
	23-25	...	...	...	...	...	1.84
	26-29	...	...	...	...	...	1.77
	Daylight Lamps	...	...	...	...	...	1.47
	Whitespray and opal bulb lamps	...	...	...	...	...	1.25
	Onion shaped lamps	...	...	...	...	...	1.37
	Mercury vapour lamps						
	Sodium vapour lamps						
	Photographic floodlight lamps 2 hours life:						
	Clear—classes 19-21	...	...	...	...	...	0.33
	" " 22	...	...	...	...	...	0.31
	Opal—classes 19-21	...	...	...	...	...	0.33 × 1.25
	" " 22	...	...	...	...	...	0.31 × 1.25

<i>Class</i>	<i>Type of Lamp :</i>	<i>Ratio:</i>
30	Carbon lamps 1-19 volts of all shapes and executions, except telephone lamps	1·16
32	Carbon lamps over 19 volts, all types except heating and telephone lamps	1·05
33(A)	Glimlamps of every kind and size except dwarf glimlamps as described in 33(B) below	2·06
33(B)	Dwarf glimlamps for all voltages with miniature caps, small bayonet caps, small Edison caps, and American intermediate screw caps, excluding night lamps, figure or letter lamps and photo glimlamps	1·86
34	Wolfram arc lamps of every size and voltage are translated at the same figures as the gasfilled lamps. In cases of different wattage the next higher wattage of the translating schedule has to be employed.	
35	Carbon filament heating lamps	3·47
36	Gasfilled lamps up to 19 volts up to 60 watts and gasfilled motor car lamps of 24 volts up to 60 watts, all exceeding either 1·0 amp. or 10 watts	1·67
37	Gasfilled lamps up to 19 volts and gasfilled motor car lamps of 24 volts, all exceeding neither 1·0 amp. nor 10 watts	0·58
38	Telephone lamps of every kind	1·15
40	Vacuum candle and tubular Tungsten lamps of all descriptions, over 19 volts excluding however, lamps of classes 41 and 42	1·62
41	Vacuum tubular (two caps) Tungsten lamps over 19 and not exceeding 32 volts excepting motor car lamps of 24 volts of class 02	3·06
42	Vacuum tubular (two caps) Tungsten lamps over 32 volts for all dimensions and Condensator lamps (Sparlampen)	5·05

All special types and/or finishes, unless specifically provided otherwise, are included in the above classes.

EXHIBIT B

LIST OF SUBSIDIARY COMPANIES

[This Exhibit contains a list of the Subsidiary Companies of eight of the signatory parties.]

SUPPLEMENTARY DOCUMENTS

POWER OF ATTORNEY

The undersigned hereby irrevocably constitutes and appoints Dr. Walter Levy its attorney with full power to vote for it and in its place and stead at the first regularly convened General Meeting of the signatory parties to the General Patent and Business Development Agreement concerning Incandescent Electric Lamps executed by the undersigned on even date herewith and similarly at the first regularly convened meeting of the General Board provided for in said General Agreement upon the following resolutions:—

Sales Committee.

1. There shall be a Sales Committee which shall decide the general sales policy and lay down principles for the determination of prices, terms and conditions of sales for the information of the Local Meetings. The Sales Committee shall supervise the Local Meetings as far as concerns sales rules.

2. The Sales Committee shall consist of at least five members, who shall be appointed by the General Board, and who shall each have one vote. Each member may appoint a substitute who may be present at the meetings, but who shall be entitled to speak and vote only when the member is not present. If the member is present, the substitute shall be entitled to speak only by permission of the chairman in each instance, and at the request of the member. Substitutes shall be approved by the General Board, before being entitled to act as such.

The Committee shall, at its first Meeting after appointment, elect a chairman, vice-chairman and permanent secretary, which latter shall be from the Phoebus organisation. The vice-chairman shall preside over the meeting in absence of the chairman.

3. The Committee will make its decisions by unanimous vote, each member having one vote.

Decisions shall be immediately circulated by the General Manager to all parties.

If a written objection is received by the General Manager within thirty days after the date of the letter of the General Manager circulating the decisions, the decision objected to shall not become effective or binding until and unless passed by the General Board with three-quarters' majority; and the General Manager shall immediately advise all parties to this effect. He shall accordingly place such decision of the Sales Committee on the agenda of the next General Board meeting in its identical form.

Failing written objection filed with the General Manager within said thirty days' time-limit, he shall immediately advise all parties that no objection has been filed and that consequently such decision shall become effective and binding on all parties forty-five days after the date of its adoption by the Committee.

4. If decisions of the Committee should not comply with the purpose and scope of this Agreement or should be prejudicial to the interest of the parties, the General Board may intervene and decide if and how far such decisions are thus prejudicial. The decision of the General Board shall be transmitted to the Committee which must revise its decision accordingly.

Sales Rules.

GENERAL

It being a recognized condition existing in this art that the field is covered by many patents owned by parties hereto, each of whom has uniformly made it a condition precedent to the use of its inventions by others that no licensee may destroy the ordinary value of the invention by selling either at prices below or subject to conditions other than those followed by the licensor itself in the same locality, it is agreed to be necessary for every country that the local trade, the licensees and the licensor should confer prior to the fixing or changing of prices and sales terms and conditions therein. After having thus conferred, the price schedules (which expression includes general sales terms and conditions) for each country will be adopted by the Local Meeting.

Price schedules in the Local Meetings for the Home Countries can be adopted only by a majority of three-fourths of the votes cast, the votes being apportioned among the parties in accordance with their Local Participating Percentages.

(B) Price schedules in Local Meetings in countries other than the Home Countries can be adopted only by a majority of three-fourths of the votes cast, the votes being apportioned among the parties in accordance with their Local Participating Percentages until the expiration of three full fiscal periods of twelve months each after which they shall be apportioned in accordance with the average annual effective sales in the said three preceding fiscal periods.

(C) In adopting prices, appropriate recognition will be given to the commercial value of different types. For any lamps of a special nature, any one of the parties whose sales in a country amount to at least one-half of the total sales of such lamps in the said country, shall have a veto right, if the Local Meeting shall alter the prices of such lamps. The Local Meeting shall take into consideration the market conditions of the country, and shall adopt prices in conformity with the prices of the corresponding types.

(D) If prices adopted shall be against the interests of the parties in other countries into which such lamps could be imported, the Sales Committee may intervene, on request of one of the parties, and shall decide if and how far such adverse circumstances prevail. This decision is to be transmitted to the Local Meeting, which must revise its decision accordingly.

(E) Each party is bound to adhere to the prices, terms and conditions of sale adopted for each country as above.

(F) In case a party cannot sell its stocks of types which have been superseded by new types or inventions, the General Board will devise means that will enable it to sell such stocks within a reasonable time and within the limits of its allotment, but such means shall not operate so as to delay the marketing of new types at reasonable prices, or to prevent the public from obtaining the full benefits of the progress of the industry.

(G) It is understood that the unstable commercial conditions in the Common Territory, which resulted in congested markets in some countries and the unnatural and uneconomical re-handling and re-shipment of lamps from one market to another, shall be relieved by adjusting prices as soon as practicably possible, in such a way that the variation between countries having an influence upon each other will not be substantially more than 10% after deduction of duty.

Interpretation of Article 6, Section (A), Paragraph 2.

The percentage of the minimum sales price referred to in Article 6, section (A), paragraph 2, is established to be forty per cent.

Amendment or Repeal of the Provisions of these Resolutions.

No alteration or cancellation of the provisions of these Resolutions may be made except by unanimous consent of the parties to the said General Agreement.

This power of Attorney is specifically limited to the authority to vote as expressly stated above and shall cease and determine upon the casting of such vote.

COMMON CONTRACT

[In accordance with Article 22 (C) of the main Agreement.]

CONTRACT

[Directors of Phoebus S.A. to comply with instructions of General Board in accordance with Article 22 (D) of the main Agreement.]

STATUTS DE LA SOCIETE ANONYME PHOEBUS S.A.

[Constitution.]

STATUS OF CODICILS

All codicils to the General Patent and Business Development Agreement signed in connection therewith shall have the same force and effect for those parties signing each codicil as if included in the body of the Agreement.

CODICIL RELATIVE TO VOTES IN LOCAL MEETINGS IN GREAT BRITAIN

That the member of the General Board representing the British Group shall be and is hereby appointed its Attorney, irrevocably, to support with its vote or votes any propositions which may be made by the British Group in the Local Meetings for Great Britain, as far as sales rules are concerned, with the exception mentioned in the proposed Resolution relative to Sales Rules, section (C), second sentence.

If, however, any decisions should be made contrary to the purpose, scope and intent of the said Agreement, or the interest of the parties, or should not observe the proviso set forth in the said proposed Resolution, section (C), first sentence, the parties will have the right to request the intervention of the General Board.

CODICIL RELATIVE TO ADHERENCE OF BRITISH GROUP

It is understood and agreed by all parties to the General Patent and Business Development Agreement that, notwithstanding anything to the contrary which may be contained in the said Agreement and/or in any Codicil or other document forming a part thereof or relating thereto, the following companies:

The British Thomson-Houston Company Ltd.
Cryselco Limited.
Edison Swan Electric Company Ltd.
General Electric Company Ltd.
Metropolitan-Vickers Electrical Co. Ltd.
Siemens & English Electric Lamp Co. Ltd.

comprising the British Group, sign the said General Patent and Business Development Agreement upon the conditions and subject to the reservations set forth below:—

1. All decisions with respect to the following matters relating to the business in Great Britain shall rest solely with the said British Group:

(a) Prices, sales rules and conditions.

(b) By-laws, rules and regulations for the conduct of Local Meetings.

(c) Method of voting in Local Meetings, provided however that the British Group accepts the second sentence of section (C) of the proposed Resolutions relative to Sales Rules.

(d) Such matters as are referred to under 6 (A) of the Agreement.

The British Group accepts however the 40% fixed under 6 (A) 2 (provided this is not found to be more than the entire profit) and also accepts the provisions of 6 (A) 4(b) and agrees that the minimum sales price which will be adopted by them for the purposes of 6 (A) will be the price established by them for tenders to the Main Departments of the British Government, and also agrees that if the percentage of the minimum sales price representing the entire profit which will be adopted by them is not acceptable to the General Board, then this percentage shall be ascertained by the Auditors referred to under 10 (G).

2. Local Meetings in connection with the business in Great Britain shall be held in London.

3. Any payment to be made by the British Group under this Agreement shall, if subject to the payment of Income Tax to the British Government, be paid less such tax.

RELATIVE TO EDISON SWAN ELECTRIC COMPANY LTD.

By virtue of Agreement between Edison Swan Electric Co. Ltd. (referred to as Edison Swan) and Philips Glow Lamp Works Limited (referred to as Philips) all methods, information, models, plans, data, drawings, experience, advice or assistance given by Philips to Edison Swan are for the latter's own use and are to be kept confidential by them at all times, and Edison Swan are also for the period of five years from the 13th July 1922 prohibited from putting their existing Lamp Works and/or such lamp manufacturing experience as shall have been acquired from Philips at the disposal of any person, firm or company manufacturing lamps.

RELATIVE TO CRYSELCO LTD.

Notwithstanding Clause 4 (B) of the Principal Agreement Cryselco Limited is not bound to disclose technical information without the consent of N.V. Philips.

Cryselco Limited expressly declares that in signing the said Agreement it cannot bind Duram Limited (which is a holder of certain shares in Cryselco Limited) relative to the supply of materials to firms not parties to the Agreement.

CODICIL RELATIVE TO ADHERENCE OF THE COSSOR LIMITED

Pursuant to the decision of the IV General Meeting of the General Patent and Business Development Agreement, held in Berlin on November 24 and 28-1925, the Cossor Limited shall have a General Participating Percentage, as defined under Art. 5 (C) par. 1 of the G.P. & B.D. Agreement, based upon the assumption that its Basic Period sales amount to five hundred seventy five thousand (575,000) units.

The Cossor Limited agrees that all sales made by it are to be made only and exclusively in Great Britain and all Ireland.

Dated at Geneva, this 21st day of January 1926.

S.A. PHOEBUS, Compagnie Industrielle
pour le Developpement de l'Eclairage
by: Walter Levy,
General Manager.

COSSOR LIMITED
by: W. R. Bullimore
10.3.26.

CODICIL RELATIVE TO ADHERENCE OF CROMPTON PARKINSON LIMITED

It is agreed by Crompton Parkinson Limited (hereinafter called "Crompton") and by all Parties to the General Patent and Business Development Agreement (hereinafter called "the General Agreement") that Crompton become a Party to the General Agreement as and from the 1st day of April 1937 subject to the following special conditions:

1. Basic Quota.

In place of the provisions of Article 5 (G) 1 the sales of Crompton which shall determine its allotments both general and local shall be the average effective net sales of lamps branded "Crompton" or "Kye" in each country wherein Crompton have made sales, for the three years ending the 30th June 1935 without any deduction on account of Codicil Settlements made during such three years. For the purpose of determining Crompton's Participating Percentages, both General and Local, such average sales shall be compared with the average sales of all Parties (plus those of Crompton) in the said three years.

2. Procedure.

Section 2 of the Procedure for Article 12 Section A as adopted by XIII G.M. 12 (D) shall be modified so as to be in accordance with the provision of Clause 1 hereof and the provisions of Section 3 of the said Procedure (other than the first sentence thereof) shall not be applied to Crompton's admission as a Member.

3. Selling allowance for Great Britain.

(i) Crompton shall for each Fiscal Period be granted for Great Britain a Selling Allowance of a fixed number of units. The amount of this selling allowance shall be determined by ascertaining the difference between (a) the number of units which Crompton would have become entitled to sell in Great Britain for the Fiscal Period ending 30th June 1935 had Crompton been a Member of the General Agreement during that Fiscal Period and been entitled to a quota in Great Britain based upon the method prescribed in Clause 1 hereof (no deduction in respect of other Codicils being made from Crompton's permissible sales) and (b) the number of units corresponding to Crompton's actual effective net sales of lamps branded "Crompton" or "Kye" during the Fiscal Period ending 30th June 1935 provided that the number of units under (b) is greater than the number under (a).

(ii) The selling allowance having been determined as above would then become a fixed number of units which would remain the same for each Fiscal Period. Such selling allowance would not be transferable or capable of being converted into a quota at any time, and should Crompton at any time dispose of the whole

or part of their business or transfer the whole or any part of their quota in Great Britain, then this selling allowance would be cancelled.

(iii) In so far as Crompton's sales in Great Britain in any Fiscal Period exceed the number of units Crompton is entitled to sell in Great Britain according to their quota and such excess remains within the limits of the selling allowance, Crompton will not be called upon to pay penalty on such excess, it being however understood that no penalty is payable to or receivable by Crompton in the event of the selling allowance or any part thereof being unabsorbed by Crompton's sales.

(iv) All lamps delivered or sold by Crompton must be marked with one of Crompton's own registered brands and will be counted against Crompton's quota and selling allowance. Should Crompton enter into an arrangement to supply lamps to other Phoebus Parties having a quota in Great Britain, it must be a condition of such an arrangement that the lamps, which must bear one of the registered brands of the party to whom they are supplied, shall be counted against such party's quota and not against the quota or selling allowance of Crompton.

4. Penalties for excess or deficit sales in Great Britain.

(i) If in any Fiscal Period Crompton are in deficit by failing to make sales in Great Britain equivalent to their quota, or Crompton makes sales in Great Britain in excess of their quota and selling allowance, Crompton shall be paid, or shall pay, as the case may be, penalty in accordance with the provisions of Art. 6A of the General Agreement, but so long as the provisions of Art. 6A continue to remain as at present in force and so long as Crompton's own average realised price per unit for Great Britain is lower than the General Average Price per unit for Great Britain, diminished by the duties per unit paid by Crompton for lamps sold, then Crompton shall be paid or shall pay, as the case may be, penalty at the British Group rate of percentage, applied however to Crompton's own average realised price for Great Britain.

The expression "Crompton's own average realised price per unit" shall mean the proceeds shown by the invoices covering effective sales of Crompton in Great Britain divided by the total number of units effectively sold by Crompton in Great Britain and diminished by the quotient obtained by dividing the total duties and taxes, if any, paid for lamps sold by Crompton by such number of units sold by them in the Fiscal Period.

(ii) In no case shall Crompton at any time be entitled to receive penalty on a greater number of deficit units than is equivalent to 25% of Crompton's quota, and any permissible transfer by Crompton to other Phoebus Parties which transfers shall in no case exceed *in toto* 25% of Crompton's quota, shall be treated as having been made out of that part of the quota upon which Crompton are entitled to receive penalty, and the 25% of Crompton's quota on which they might otherwise be entitled to receive penalty shall be reduced accordingly.

5. Selling conditions in countries outside Great Britain.

(i) Crompton may carry out their contractual obligations to agents and representatives under contracts existing on the 31st day of March 1937, notwithstanding that these may be contrary to or inconsistent with the terms of the General Agreement and the Sales Rules.

Crompton undertake to terminate such obligations at the earliest dates on which they can respectively be terminated.

(ii) Crompton may enable any of their agents and representatives to carry out any commitments which such agent or representative has entered into prior to the 31st day of March 1937 in respect of the sale of Crompton's lamps, notwithstanding that they may be contrary to or inconsistent with the terms of the General Agreement and the Sales Rules. Crompton undertake to use their best endeavours to procure that their agents and representatives will terminate such obligations at the earliest possible date under the terms of such contract.

(iii) *Malaya*

Crompton's Agents, United Engineers Ltd., may sell Crompton's lamps in the territory covered by their Agreement with Crompton at 7½% below the recognised Phoebus prices for that territory during the period from 1st April 1937 to 31st July 1937, and at 5% below the recognised Phoebus prices for that territory during the period from 1st August 1937 to 31st March 1942. This right is limited to the sale of not more than 168,000 lamps in any one period of twelve months ending 31st March. Crompton may also sell such lamps to United Engineers Ltd. during the above-mentioned period of five years (i.e., 31st March 1942) at such prices as will enable United Engineers Ltd. to secure the same percentage of gross profit on such sales as they would obtain in selling at the recognised prices in the territory and under the Phoebus Rules and Conditions. The above price preference does not apply to automobile and flashlight.

Crompton undertake to use their best endeavours to persuade United Engineers Ltd. not to insist on price preference being applied to Government tenders.

(iv) *South Africa*

Crompton's Agents in South Africa, Messrs. Hubert Davies & Co. Ltd., are authorized to sell Crompton's lamps at prices not exceeding and on conditions not less favourable than the prices and conditions enjoyed by or granted from time to time to the agents or representatives of any other Phoebus Member during a period of three years and three months expiring on the 30th June 1940, and Crompton is permitted to sell such lamps to their Agents, Messrs. Hubert Davies & Co. Ltd., at prices which will allow the latter during the period from the 1st April 1937, to the 30th June 1937, to realise a gross profit of 25% of the agents' selling price, and to realise a gross profit of 20% of the agents' selling price during the period from the 30th June 1937, to the 30th June 1940.

(v) Sales made under the provisions of Paragraphs (i), (ii), (iii) and (iv) above shall count against Crompton's quota and the selling allowance (mentioned hereafter) in the Fiscal Territories concerned.

(vi) *Selling Allowance in British Colonies "B"*

(a) Crompton shall be granted for British Colonies "B" the following Selling Allowances, namely,

For the Period	1st April, 1937	to 30th June, 1937:	25,000 units
" "	1st July, 1937	" " "	1938: 100,000 "
" "	" " "	1938 " " "	1939: 100,000 "
" "	" " "	1939 " " "	1940: 100,000 "
" "	" " "	1940 " " "	1941: 75,000 "

Such Selling Allowances shall be subject to the same conditions mutatis mutandis as are provided in subclauses (ii), (iii) and (iv) of Clause 3 hereof.

(b) Penalty shall be payable by Crompton upon any sales made by them in British Colonies "B" in excess of their quota and Selling Allowance applicable for the Fiscal Period concerned.

6. Period 1st April, 1937—30th June, 1938.

(1) Crompton's permissible sales for the period 1st April, 1937, to 30th June, 1938, shall be established by applying the L.P.P.'s of Crompton in the Fiscal Territories to the total sales of all Parties plus Crompton, and Crompton's selling allowance for Great Britain for the Period 1st April, 1937, to 30th June, 1938, shall be determined accordingly.

7. No part of the burdens arising from the Selling Allowances hereinbefore granted to Crompton shall be borne by Crompton.

8. Except as expressly varied by the above provisions, all the terms and conditions of the General Agreement shall apply to Crompton.

[There are twelve other codicils concerning the affairs of other individual parties.]

APPENDIX 9

Referred to in paragraphs 46, 61, 89, 100, 102, 139 and 161 (footnote)

Extracts* from the 1948 Lamp Agreement

AN AGREEMENT made this Twenty-sixth day of June 1950 BETWEEN THE BRITISH THOMSON-HOUSTON CO. LTD. of Crown House, Aldwych, London, W.C.2. (B.T.H.)

CROMPTON PARKINSON LTD. of Guiseley, near Leeds (C.P.)

CRYSELCO LTD. of Kempston Works, Bedford (Cryselco)

EDISON SWAN ELECTRIC CO. LTD. of 155 Charing Cross Road, London, W.C.2. (Ediswan)

THE GENERAL ELECTRIC CO. LTD. of Magnet House, Kingsway, London, W.C.2. (G.E.C.)

METROPOLITAN-VICKERS ELECTRICAL CO. LTD. of St. Pauls Corner, 1 to 3, St. Paul's Churchyard, London, E.C.4. (Metrovick)

N.V. PHILIPS' GLOEILAMPENFABRIEKEN of Eindhoven, Holland (Philips)

SIEMENS ELECTRIC LAMPS & SUPPLIES LTD. of Caxton House, London, S.W.1. (Siemens), and

STELLA LAMP CO. LTD. of Winchelsea Road, London, N.W.10. (Stella)

WHEREAS

(A) The Parties hereto with certain other Parties entered into an Agreement dated Fifteenth January One thousand nine hundred and forty-one which was known as the New General Agreement and is hereinafter referred to as the "N.G.A." under which the Parties thereto continued between themselves a form of relationship substantially similar to that which had existed under a previous Agreement.

(B) The N.G.A. expired by effluxion of time on the thirtieth June One thousand nine hundred and forty-eight.

(C) The Parties hereto have considered that the interests of the Electric Lamp Industry and of those concerned with the use of electric lamps in Great Britain and the rest of the Territory covered by this Agreement would be best served if they were again to enter into co-operative relations and accordingly they have agreed to make a fresh Agreement upon the terms hereinafter appearing.

NOW on behalf of themselves and with and for their respective present and future Subsidiary Companies and for their respective Successors and Assigns the Parties hereto in consideration of the mutual obligations undertaken herein agree as follows:—

ARTICLE 1—SCOPE AND TERRITORY

(A) 1. The Scope of this Agreement shall comprise all electric lamps for illuminating, heating or medical purposes operated by one or more of the following methods:—

- (a) incandescence of a refractory filament,
- (b) cathode incandescence,
- (c) the passage of electrical energy through matter in the state of gas and/or vapour,
- (d) fluorescence and/or phosphorescence,

* The general purport of passages not quoted in full is indicated within square brackets.

but shall not comprise the following devices :—

- (w) Radio Valves,
- (x) X-Ray Tubes,
- (y) So called arc or enclosed arc lamps not operating in a sealed container,
- (z) Neon Tubes—[Definition of Neon Tubes].

2. For the purposes of this Agreement the expression "lamps" shall mean all electric lamps comprised within the scope as defined in Article 1 (A) 1 hereof. (B) The Territory covered by this Agreement shall consist of the Fiscal Territories defined in Article 5 (A) hereof Provided always that there shall be excluded from the Territory hereof any Fiscal Territory or part thereof which may at any time either be at War with Great Britain or the Netherlands or be occupied by the enemies of either Great Britain or the Netherlands, such exclusion to last for so long as such War or occupation shall constitute a legal impediment to trade with the area concerned by any of the Parties hereto.

ARTICLE 2—PURPOSE OF THE AGREEMENT

The purpose and intent of this Agreement is to secure the co-operation of all the Parties in :—

- (1) providing for more advantageous utilization of their manufacturing facilities in producing lamps,
- (2) securing and maintaining a uniformly high quality of product,
- (3) arriving at more economical arrangements for the distribution of the product,
- (4) promoting more efficient methods of electric illumination and the increased use of light to the advantage of the consumer ;

with the understanding that all Parties are to continue their business on independent lines, as heretofore, except as hereinafter specified, and with provision for securing to each of the individual Parties its proper share of the increased business resulting from such co-operative effort.

ARTICLE 3—STANDARDISATION

The General Meeting shall make regulations regarding standardisation, which shall be binding upon the Parties hereto.

ARTICLE 4—EXCHANGE OF INVENTIONS

(A) Where it is possible for a Party hereto to attain specific advantages given it by this Agreement only by using an invention (not at the time available by any other Agreement) which is owned or controlled by another Party or in respect of which another Party has the right to grant or direct the grant of licences, such first Party shall be licensed under the patents necessary therefor for the period both Parties shall remain bound by this Agreement under the terms and conditions ordinarily applied by the second Party to such a situation. Licence contracts already in force as well as the royalties usually paid in the lamp trade and the services rendered shall be taken into consideration in fixing the terms and conditions. Lack of agreement regarding conditions shall not operate to prevent the use of inventions.

(B) 1. Disputes or disagreements arising under Article 4 (A) hereof shall be settled in accordance with the provisions of Article 19 hereof, but in such cases the Arbitrator may co-opt one or more impartial persons experienced in patent matters.

2. No issue relating to any patent or patent application of a Party hereto within the Scope and Territory of this Agreement shall be taken by any of the Parties hereto except by the afore-mentioned procedure of arbitration.

3. The decisions of the Arbitrator in any case brought before him under this Article shall be binding only upon the parties to the arbitration proceedings (including Interveners) and shall apply only within the Scope and Territory of this Agreement.

(C) No licence granted under or in pursuance of this Article shall of itself operate to relieve any grantee from any obligation included in any other agreement which it may have with the grantor.

(D) Nothing in this Agreement may be interpreted as a licence to or as an agreement to license any Party to manufacture in any country where it is not now manufacturing lamps.

ARTICLE 5—BASIS FOR DETERMINING RELATIVE POSITION OF THE PARTIES

(A) Fiscal Territories.

The Territory of this Agreement shall be divided into the following Fiscal Territories:—

- | | |
|-------------------|-------------------------------|
| 1. Great Britain. | 4. India, Pakistan and Burma. |
| 2. Australia. | 5. South Africa. |
| 3. New Zealand. | 6. Remaining Territories. |

The areas comprised in each of the above Fiscal Territories are respectively set out in Annex A hereto. For the purposes and duration of this Agreement each such area shall be understood to be in accordance with its political frontiers as at the first July One thousand nine hundred and forty-eight.

(B) Local Participating Percentages and L.P.P. Sales.

1. The Local Participating Percentages of the Parties hereto for the several Fiscal Territories covered by this Agreement shall be as set out in Annex B hereto. In the event of any area being excluded from the Territory of this Agreement through the operation of the Proviso to Article 1 (B) hereof the Local Participating Percentages of the Parties hereto shall be equitably adjusted for so long as such exclusion shall last.

2. The expression "L.P.P. Sales" in relation to a Party shall mean the number of units resulting from the application of that Party's Local Participating Percentage in the Fiscal Territory and Fiscal Period concerned to the total number of units effectively sold by all the Parties in such Fiscal Territory during such Fiscal Period.

ARTICLE 6—EXCESS AND DEFICIT SALES

(A) 1. As the essence of this Agreement is co-operation between the Parties hereto and in view of the possibility of a Party being temporarily unable to sell its L.P.P. Sales it is agreed that if the sales of any Party are in excess of its L.P.P. Sales such Party shall share with the Party or Parties in deficit a part of the profits resulting from such excess sales in manner hereinafter stipulated.

2. For excess sales made by a Party up to 7½% of its L.P.P. Sales (after its excess sales have been adjusted, if necessary, in accordance with the provisions of Article 6 (A) 8 hereof) the Party making such excess sales shall pay to the Parties who are in deficit (after the aforesaid adjustment has been made) an amount representing 30% of the Net Profit per unit (as hereinafter defined) in respect of each unit so sold in excess.

3. For all further excess sales made over and above the said 7½% excess sales the Party making such further excess sales shall pay to the Parties who are in deficit an amount representing 52½% of the said Net Profit per unit in respect of each unit of such further excess.

4. The Net Profit per unit shall be the excess (if any) of:—

(a) the Average Realised Price per unit less 10% thereof
over

(b) the Weighted Average Manufacturing Cost per unit.

5. The Average Realised Price per unit shall be established in pence Sterling in the following manner:—

(a) The total proceeds of all Parties shall be ascertained from their respective relevant invoices;

(b) From the said proceeds there shall be deducted:

(i) cash discounts and/or customary rebates,

(ii) the value of credit notes,

(iii) duties,

(iv) such taxes as Purchase Tax or Sales Tax and other taxes applying to lamp sales (other than taxes on profits);

(c) The amount resulting from the application of (a) and (b) above shall be divided by the total number of units effectively sold by all Parties.

6. The Weighted Average Manufacturing Cost per unit shall be established in pence Sterling in the following manner:—

(a) GREAT BRITAIN. The Administrative Office shall calculate the Weighted Average Manufacturing Cost per unit in accordance with the provisions set out in Annex C hereto, and for that purpose the Parties shall supply the said Office with sufficient details regarding their production of lamps and their manufacturing costs. The provisions of Annex C hereto may from time to time be varied by the General Meeting.

(b) REMAINING TERRITORIES. The Weighted Average Manufacturing Cost per unit for Great Britain, plus 20% thereof (or such other percentage as may be decided upon by the General Meeting from time to time) as a charge for export and shipping expenses, shall be deemed to be the Weighted Average Manufacturing Cost per unit for the Remaining Territories.

(c) AUSTRALIA; NEW ZEALAND; INDIA, PAKISTAN AND BURMA; AND SOUTH AFRICA. The Weighted Average final billing price (plus the cost of cartons and/or wrappers) per unit charged to the Parties by the respective Local Joint Factory, namely:—

Electric Lamp Manufacturers (Australia) Pty. Ltd. for Australia,

New Zealand Electric Lamp Manufacturers Ltd. for New Zealand,

Electric Lamp Manufacturers (India) Ltd. for India, Pakistan and Burma,

Electric Lamp Manufacturers of South Africa (Pty.) Ltd. for South Africa,

shall be deemed to be the Weighted Average Manufacturing Cost per unit for the respective Fiscal Territory.

7. There shall be a limitation on the number of units in respect of which a Party in deficit shall share in the payments which, but for the provisions of this Article 6(A) 7 and of Article 6(A) 8, 9 and 10 hereof, would otherwise have been made by the Parties in excess, namely, a Party in deficit shall not share in respect of a number of units greater than that representing the undermentioned percentages of its L.P.P. Sales, viz.:—

(a) For Great Britain and the Remaining Territories:—

First Fiscal Period	25%
Second Fiscal Period	20%
Third and subsequent Fiscal Periods	15%

(b) For each of the other Fiscal Territories respectively the percentages to apply shall (subject to the modifications hereafter mentioned) be as follows:—

(i) For any Fiscal Period during which "Allocation" (as hereinafter defined) applies in respect of the Party in deficit concerned 35%

(ii) For the Fiscal Periods during which "Allocation" does not apply in respect of the Party in deficit concerned:—

- (a) For the First Fiscal Period if "Allocation" did not apply therein to the Party in deficit concerned or for the Fiscal Period immediately following a Fiscal Period during which "Allocation" ceased in respect of the Party in deficit concerned (as the case may be) ... 35%
- (b) For the Fiscal Period immediately following (ii) (a) above ... 25%
- (c) For the Fiscal Period immediately following (ii) (b) above ... 20%
- (d) For all subsequent Fiscal Periods ... 15%

Provided always that the number of Units in respect of which a Party in deficit who is subject to "Allocation" in any Fiscal Territory shall share in the payments made by the Parties in excess for that Fiscal Territory in respect of any Fiscal Period during which such Party in deficit is so subject to "Allocation" shall be either the number of Units in respect of which such Party shall be in deficit (after taking into consideration the adjustment, if any, necessitated by the provisions of Article 6(A) 8 hereof) or the number of Units equivalent to the application of the above percentage to its L.P.P. Sales augmented by the "Relief Quantity" (as hereafter defined) whichever shall be the less.

For the purposes of this Article 6(A) 7 (b) the following expressions shall have the following meanings:—

"*L.P.P. Quantity*" in relation to a Party shall mean the number of lamps (converted into Units) of the type or types to which the "Allocation" relates and which the Party concerned would have received from the Local Joint Factory had such Party been allotted by the said Factory a proportion of the Factory's output of such type or types equal to that Party's Local Participating Percentage for the Fiscal Period and Fiscal Territory concerned.

"*Allocation Quantity*" in relation to a Party shall mean the number of lamps (converted into Units) of the type or types in question which the Party concerned was entitled to receive from the Local Joint Factory during the Fiscal Period concerned according to the allocation percentage or proportion used by such Factory for such Party.

"*Allocated Deficiency*" in relation to a Party shall mean the quantity of Units by which that Party's L.P.P. Quantity exceeds its Allocation Quantity for the Fiscal Period and Fiscal Territory concerned.

"*The Overdelivered Quantity*" in relation to a Party shall mean the quantity of lamps (if any) (converted into Units) of the type or types to which "Allocation" relates and which such Party receives from the Local Joint Factory in the Fiscal Period concerned over and above such Party's Allocation Quantity for such Fiscal Period and Fiscal Territory.

"*The Underdelivered Quantity*" in relation to a Party shall mean the quantity of lamps (if any) (converted into Units) of the type or types to which "Allocation" relates and which such Party receives from the Local Joint Factory below such Party's Allocation Quantity for such Fiscal Period and Fiscal Territory.

"*The Relief Quantity*" in relation to a Party shall mean either (a) the excess of such Party's Allocated Deficiency over such Party's Overdelivered Quantity, or (b) the excess of such Party's Allocated Deficiency over such Party's Underdelivered Quantity as the case may be. In the event of their being no such excess there shall not be a Relief Quantity.

"*Allocation*" in relation to a Party shall mean and such Party shall be said to be subject to Allocation when the output of a type or types of the lamps made by the Local Joint Factory concerned is insufficient to meet all the demands of all the Parties participating in such Factory's output for such type or types and (i) the output of such type or types expressed in Units is greater than 10% of the total sales in Units of all the Parties in the Fiscal Period and Fiscal Territory concerned and (ii) the Party's Allocation Quantity for such type or types is less than its L.P.P. Quantity or is less than the

Quantity of the type or types in question which such Party had indicated it was prepared to take from the Factory within the limits of its L.P.P. Quantity, and (iii) either the Party's Overdelivered Quantity is not greater than its Allocated Deficiency or the Party's Underdelivered Quantity is equal to or less than its Allocated Deficiency.

8. The number of Units in respect of which a Party in deficit is not entitled to share by reason of the provisions of Article 6 (A) 7 hereof shall be deducted from such Party's deficit sales. The number of Units so deducted shall be divided between all the Parties (other than those whose shares are reduced by the operation of the provisions of Article 6 (A) 7 hereof) *pro rata* to their Local Participating Percentages in the Fiscal Territory and Fiscal Period concerned, and the share of such division accruing to a Party in excess shall be deducted from such Party's excess sales and the share of such division accruing to a Party in deficit shall be added to (and so increase) such Party's deficit sales but so that no Party shall be entitled to share in respect of a number of Units greater than that stipulated in Article 6 (A) 7 hereof and accordingly if the deficit of a Party whose deficit sales have been increased pursuant to the adjustment hereinbefore provided in this Article 6 (A) 8 shall become greater than that stipulated in Article 6 (A) 7 hereof, then the provisions of Article 6 (A) 7 hereof and the previous provisions of this Article 6 (A) 8 shall again be brought into operation. From the figures so adjusted there shall be ascertained the number of Units in respect of which any party is liable thereon to share its profits with other Parties under the provisions of Article 6 (A) 2 and 3 hereof.

9. A Party not having L.P.P. Sales of 100,000 units or more shall not be called upon to share its profits on the difference between 100,000 units and its L.P.P. Sales at a rate per unit greater than that stipulated in Article 6 (A) 2 hereof Provided always that no Party shall be entitled to claim the benefit of this Article 6 (A) 9 in a Fiscal Territory where its L.P.P. Sales in the Fiscal Period concerned have been reduced below 100,000 units by reason of a transfer made under the provisions of Article 13 (B) hereof.

10. The amount payable by all the Parties in excess under the foregoing provisions shall be divided between those Parties who are in deficit *pro rata* to the number of units in respect of which they are entitled to share therein after making the adjustments (if any) required under the provisions of Article 6 (A) 7 and 8 hereof.

11. All the information and calculations necessary to ascertain the amounts payable or receivable under the provisions of this Article 6 (A) shall be supplied and made separately for each Fiscal Territory and for each Fiscal Period.

(B) In order to calculate the Parties' sales for the purposes referred to in Article 6 (A) hereof the effective sales of all Parties shall be converted into units in accordance with the Schedule for Translating Lamps into Units set out in Annex D hereto. Unless otherwise decided by the General Meeting the Schedule shall be modified for each Fiscal Period in accordance with the latest conveniently available data regarding selling prices, numbers and types of lamps sold.

(C) For Great Britain only, the businesses of B.T.H., Cryselco, Ediswan, G.E.C., Metrovick and Siemens shall, for the purposes of Article 6 (A) hereof and the Settlements to be made thereunder, be considered as a bloc and treated as if they were one party. Similarly the businesses of B.T.H., Ediswan and Metrovick outside Great Britain shall, for the purposes of Article 6 (A) hereof and the Settlements to be made thereunder, be considered as a bloc and treated as if they were one party.

ARTICLE 7—ACTIONS BY ANY PARTY PREJUDICIAL TO OTHERS

Inasmuch as this Agreement and the policies and procedure agreed upon can operate fairly and efficiently only if all Parties hereto fully co-operate and refrain from attempting to gain undue advantage over the other Parties, it is hereby agreed that none of the Parties hereto shall in any way directly or indirectly gain or try to gain an undue advantage, immediate or ultimate, over the other

Parties or any of them by actions not in accordance with the letter or spirit of this Agreement. An Arbitrator as referred to in Article 19 hereof shall be empowered to impose such remedies as he may deem appropriate, including (but not limited to) indemnification to such of the other Parties as may have suffered as a result of such actions.

ARTICLE 8—SURETIES

The General Meeting may, by unanimous vote of all the Parties hereto, decide whether, and if so what, sureties shall be deposited by the Parties hereto for the fulfilment of their obligations hereunder.

ARTICLE 9—FINES

The General Meeting may from time to time institute a schedule of fines to apply in cases where Parties, by neglect or wilful omission (such as failure to render reports at the time required), hinder the efficient operation of the Administrative Office.

ARTICLE 10—ORGANISATION

(A) General Meeting.

1. A General Meeting of all the Parties hereto shall be held at least once in every Fiscal Period.

2. The General Meeting shall have supreme authority in all matters relating to this Agreement and shall supervise the carrying out of its provisions, except in so far as it may delegate, either generally or specifically, its powers to the Executive Committee or to any other Committee it may think fit. The decisions of the General Meeting shall be binding on the Parties hereto.

3. At each General Meeting each Party hereto shall be accorded such number of votes as are equivalent to the summation of its L.P.P. Sales in the several Fiscal Territories for and in respect of the last preceding Fiscal Period for which a Provisional Settlement has been issued by the Administrative Office adjusted, if necessary, upwards or downwards by the number of units transferred to or by that Party under the provisions of Article 13 (B) hereof. However, for the first Fiscal Period of this Agreement and thereafter until a Provisional Settlement has been issued, the voting rights of each Party shall be as set out opposite its name in Part II of Annex B hereof.

4. No decision of the General Meeting shall be valid unless reached by a majority representing at least 90% of the votes cast. Where all Parties are present at a Meeting (and a Party shall be deemed to be present if it shall have dealt with its vote under the provisions of Article 10 (A) 6 (a) hereof) decisions taken at that Meeting shall, unless otherwise decided, be effective as and from the date thereof.

5. Decisions of the General Meeting, unless taken by the unanimous vote of all the Parties hereto, must come within the limits of and be not contrary to this Agreement.

6. [Procedure]

(B) Local Meetings.

1. For each of the following Fiscal Territories, namely:—

- (a) Great Britain,
- (b) Australia,
- (c) New Zealand,
- (d) South Africa.

and for each of the following Countries or Groups of Countries, namely : —

- (e) India,
- (f) Pakistan,
- (g) Burma,
- (h) Ceylon,
- (i) Malaya,
- (j) British West Indies,
- (k) Other Remaining Territories,

there shall be a Local Meeting on which all Parties hereto may be represented. A Local Meeting may be subdivided into two or more Local Meetings or may combine with another Local Meeting if all Parties having voting rights in the Local Meetings concerned unanimously so agree.

2. A Local Meeting shall watch over the special interests of the countries or areas which are within its territory and shall be autonomous with regard to such matters as fall within its functions as defined in the Rules for Local Meetings Provided always that a decision of a Local Meeting must come within the limits of and not be contrary to this Agreement or to valid decisions of the General Meeting.

3. Decisions of a Local Meeting can only be made provided two-thirds of the votes cast are in favour thereof, except as may be otherwise provided in the Rules for Local Meetings. The voting rights of the Parties shall be as stipulated in the said Rules.

(C) Executive Committee.

1. There shall be an Executive Committee consisting of five Members who shall be appointed by the General Meeting. In making such appointments the General Meeting shall appoint one representative from B.T.H., Ediswan or Metrovick, one representative from C.P., one representative from G.E.C., one representative from Philips and one representative from Siemens. The Executive Committee shall in general exercise the usual functions of an executive committee and in particular shall control all financial matters arising in connection with the ordinary operation of the Administrative Office. The decisions of the Executive Committee must be taken by a majority of four-fifths of the votes cast. Each Member of the Executive Committee shall have one vote.

2. [Substitutes]

3. [Procedure]

4. Decisions of the Executive Committee must come within the limits of and be not contrary to this Agreement or to valid decisions of the General Meeting.

(D) Chairman and Vice-Chairman.

1. The General Meeting shall elect for each Fiscal Period from among the Members of the Executive Committee a Chairman and a Vice-Chairman.

2. The duties of the Chairman shall be to preside at all Meetings of the General Meeting and the Executive Committee, to perform all the functions commonly required from a Chairman of such bodies and to perform such specific functions as may be entrusted to him by them. In case of his absence from any Meeting or of his inability to perform his functions it shall be the duty of the Vice-Chairman to act in his stead.

(E) Administrative Office.

1. The General Meeting shall forthwith establish an Administrative Office to carry out the day-to-day administration of those matters which arise out of the obligations of the Parties hereto towards one another under this Agreement.

2. The Administrative Office shall act in accordance with the instructions given to it from time to time by the competent bodies constituted under this Agreement

and shall keep secret all matters coming within its knowledge, except that such matters as ought properly to be disclosed to the Parties hereto may be disclosed to them.

3. The Executive Committee shall appoint a Manager of the Administrative Office.

(F) Auditors.

The General Meeting may from time to time elect one or more well-established firms of Accountants to act as auditors.

(G) Advisory Committees.

The General Meeting shall appoint such Advisory Committees for such purposes and with such functions as it shall from time to time decide. In particular the General Meeting shall appoint the following:—

(1) An Accountants Committee which will collect such knowledge for the information of the Administrative Office and give such advice as may be required by it or by the General Meeting on all matters regarding accountancy, statistics and settlements;

(2) A Schedule Committee which will advise the Administrative Office and the General Meeting in connection with all matters concerning the Schedule for Translating Lamps into Units;

(3) A Juridical Committee which will advise generally on all legal matters arising out of or in connection with this Agreement;

(4) A Standardisation Committee which will advise the General Meeting on all matters affecting standardisation;

(5) A Technical Development Committee which will advise generally on matters relating to technical improvements in the performance and quality of lamps and methods of lighting.

ARTICLE 11—SPECIAL OBLIGATIONS

(A) All expenses incurred by the Administrative Office during a Fiscal Period for and in respect of the operation of this Agreement shall, unless otherwise provided, be borne by the Parties hereto in proportion to the summation of their respective L.P.P. Sales for the Fiscal Period concerned, adjusted (if necessary) upwards or downwards by the number of units transferred to or by a Party under the provisions of Article 13 (B) hereof. However, such expenses shall be borne provisionally by the Parties hereto on the basis of the most nearly accurate figures available and the necessary adjustments shall be made as soon as the true figures for the Fiscal Period concerned are known.

(B) In order to assist the Administrative Office to perform its duties, each Party hereto shall:—

1. make available its books and records for examination by the Administrative Office or its agents;

2. give to the Administrative Office all such information and data as it may reasonably require for the fulfilment of its duties;

3. take such measures as are necessary to carry out the decisions taken under this Agreement.

(C) In accordance with the intention of the Parties hereto that this Agreement shall cover the entire lamp business of each Party within the Territory of this Agreement, all lamps manufactured by or for each of the Parties hereto shall (except as hereinafter provided) be definitely accounted for, either as having been sold for use in the Territory hereof, or sold for use in territory not covered by this Agreement, or placed in stock, or otherwise dealt with, in order that the Administrative Office or its agents may verify them. The Parties shall render all assistance within their power to the Administrative Office or its agents (amongst whom are the Accountants referred to in Article 10 (F) hereof) in the verification of the statements rendered by each Party, which shall be signed jointly by the Executive Head and the Chief Accountant of the Party rendering such statements,

in regard to the manufacture and sale of lamps manufactured by or for them, such assistance to include granting to the Administrative Office or its agents, at all reasonable hours, access to its offices, factories and warehouses for the purpose of making such verifications as they may deem necessary in the proper execution of their duties. This shall include the examination and control, by actual physical test checks, of lamps manufactured and inventories.

Provided always that the foregoing provisions of this Article 11 (C) shall not apply to lamps manufactured outside the Territory hereof by or for Philips, but in place of such provisions the following shall be substituted, namely:—

Philips shall account for all lamps sold by it for use within the Territory hereof which from time to time shall have been manufactured by or for Philips and/or held in stock outside the Territory hereof, and Philips shall produce the certificate of an independent firm of Accountants confirming such sales and certifying that the remainder of the lamps manufactured or held in stock by Philips outside the Territory hereof have either been sold for use outside the Territory hereof, or have been placed or retained in stock, or have been otherwise dealt with. In the case of lamps manufactured outside the Territory hereof by or for Philips which shall have been sold or placed in stock or otherwise dealt with within the Territory hereof, Philips shall account for such lamps in the same manner as if such lamps had been manufactured in the Territory hereof, and Philips shall render all assistance in their power to the Administrative Office or its agents (amongst whom are the Accountants referred to in Article 10 (F) hereof) in the verification of the statements rendered by Philips in connection with these lamps, which statements shall be signed jointly by the Executive Head and the Chief Accountant of Philips. Such assistance shall include granting to the Administrative Office or its agents, at all reasonable hours, access to Philips' offices and warehouses within the Territory hereof for the purpose of making such verifications as they may deem necessary in the proper execution of their duties. This shall include the examination and control, by actual physical test checks, of lamps held in stock within the Territory hereof.

(D) Each Party hereto is responsible for any violation of this Agreement or of valid decisions taken thereunder by members of its organisation, or by its agents or distributors, regardless as to through whose fault the violation has occurred.

ARTICLE 12—INCLUSION OF OTHER PARTIES

Whenever possible the benefits of this Agreement will be extended to other reputable and well-established lamp manufacturers in such manner as the General Meeting may from time to time prescribe. When such a lamp manufacturer is admitted as a Party to this Agreement consequential adjustments shall be made to the Local Participating Percentages of the Parties hereto. The Parties hereto shall not directly or indirectly aid any lamp manufacturer whose principal place of business is within the Territory hereof until it shall have accepted and undertaken the mutual obligations which the Parties hereto have themselves undertaken under the provisions of this Agreement, or until the General Meeting shall have prescribed the terms and conditions upon which aid may be granted. In prescribing such terms and conditions the General Meeting, having in mind all relevant circumstances, shall act reasonably and with due regard to the common interests of the Parties hereto. In the event of any Party hereto granting aid to a lamp manufacturer who is not a party hereto and whose principal place of business is outside the Territory hereof, the Party hereto who grants such aid shall use its best endeavours to procure that the lamp manufacturer who receives such aid shall, whenever required by a Local Meeting, observe and adhere to the decisions of that Local Meeting valid from time to time in respect of lamps sold within the territory of that Local Meeting.

ARTICLE 13—DISPOSAL OF A PARTY'S LAMP BUSINESS

(A) 1. In the event of the death of a Party hereto, being an individual, his rights and obligations under this Agreement shall automatically pass to the successor to his lamp business, but should such successor be a lamp manufacturer not a Party hereto, then the General Meeting shall have the right to decide by the majority prescribed in Article 10 (A) 4 hereof that such successor shall not

be a Party to this Agreement. The General Meeting shall make its decision within two months after being requested so to do by such successor.

2. In case of bankruptcy or forced liquidation of a Party hereto, such Party shall cease to be a Party to this Agreement from the date of such bankruptcy or liquidation provided, however, that the other Parties hereto shall retain the right to use the then existing patents of such Party under the same conditions as those of Article 4 hereof.

3. (a) Unless the General Meeting unanimously agrees, no Party hereto shall transfer the whole or any part of its lamp business within the Territory hereof to a lamp manufacturer who is not a Party to this Agreement.

(b) No Party hereto shall transfer the whole or any part of its lamp business within the Territory hereof to a person or concern not a lamp manufacturer unless the transferee shall undertake all the obligations of the transferor under this Agreement and unless the General Meeting shall have consented to such transfer. The consent of the General Meeting, however, shall not be unreasonably withheld and, in the case of a difference of opinion as to whether or not such consent has been unreasonably withheld, such transfer shall not be made unless and until an Arbitrator as referred to in Article 19 hereof shall have decided that such consent has been unreasonably withheld.

(c) No transfer of the whole or any part of a Party's lamp business shall relieve the transferor of its burdens and obligations under this Agreement and it shall maintain on deposit the full amount of such sureties, if any, as it should lawfully have had on deposit prior to such transfer.

4. The stipulations of Article 13 (A) 3 hereof shall *mutatis mutandis* apply in the case of an amalgamation.

(B) A transfer of the whole or part of a Local Participating Percentage or L.P.P. Sales by one Party to another as well as a transaction involving the sale of lamps by one Party to another if such sale counts as an effective sale against a Local Participating Percentage of the Selling Party shall not be valid unless such transfer or transaction aforesaid—

(a) is a *bona fide* business deal,

(b) is reported to the Administrative Office by the Parties concerned not later than the 30th June 1949, and

(c) is for and in respect of each Fiscal Period from the 1st July 1948 to the 30th June 1955 inclusive and is irrevocably binding on the Parties concerned.

The above provisions of this Article 13 (B) shall not apply to any transfer or transaction involving the sale of lamps between—

(1) Philips and Stella ;

(2) B.T.H. and/or Ediswan on the one hand and Metrovick on the other hand ;

(3) B.T.H., Cryselco, Ediswan, G.E.C., Metrovick and Siemens or any of them in respect of Great Britain only.

ARTICLE 14—ACQUISITION OF OTHER LAMP MANUFACTURING INTERESTS

(A) (1) (a) In principle any acquisition of the business of a lamp manufacturer not a Party hereto manufacturing lamps within the territory hereof shall be made for the account of all the Parties hereto. Should a Party hereto become aware that there is an opportunity of acquiring the lamp business of such manufacturer such Party shall immediately notify all the Parties hereto who shall have the right if they so desire to take part in such negotiations and to participate in such acquisition in proportion to their respective Local Participating Percentages. No Party shall proceed with the negotiations for the acquisition until a reasonable opportunity has been given to the other Parties to decide whether or not they wish to participate in the negotiations and/or acquisition. No Party shall be obliged to participate in such acquisition or be entitled to prevent any of the other Parties hereto from making such acquisition.

(b) An acquisition the subject of this Article 14 (A) (1) shall not give rise to any adjustment to the Local Participating Percentages of any of the Parties hereto unless the General Meeting shall otherwise decide.

(c) Save as aforesaid no Party shall interest itself directly or indirectly in the business of a lamp manufacturer not a Party hereto manufacturing lamps within the Territory hereof.

(2) (a) Should any Party interest itself directly or indirectly in the business of a lamp manufacturer who is not a Party hereto and who does not manufacture lamps in the Territory hereof then all lamps sold thereafter by such lamp manufacturer for use within the Territory shall be counted against the Local Participating Percentages of the Party or Parties acquiring such interest and such Party or Parties shall, in addition to their other obligations under this Agreement, use their best endeavours to procure from such lamp manufacturer the information necessary to implement the above provisions. Provided always that the holding by one or more of the Parties hereto of not more than 5% of any class of the issued share capital or of any class of the debenture or loan capital for the time being of such lamp manufacturer shall not of itself be regarded as an interest in the business of such lamp manufacturer for the purposes of this Article 14 (A) (2). Provided further that the holding by one or more of the Parties hereto of more than 5% but less than 50% of any class of the issued share capital or of any class of the debenture or loan capital for the time being of such lamp manufacturer shall not of itself cause to be counted against the Local Participating Percentages of the Party or Parties concerned a greater percentage of the lamps sold thereafter by such lamp manufacturer in any Fiscal Period for use within the Territory hereof than is equivalent to the largest percentage so held in any such class.

(b) Nothing contained in this Article 14 (A) (2) shall override the provisions of Article 18 hereof.

(B) The foregoing shall not of itself prevent any Party from building new factories or acquiring others for the sole purpose of providing for such Party's business covered by this Agreement.

ARTICLE 15—DURATION OF AGREEMENT

This Agreement shall be deemed to have come into force as and from the 1st July 1948 and, except as hereinafter provided, shall remain in full force and effect until the 30th June 1955.

ARTICLE 16—TERMINATION AND WITHDRAWAL

(A) This Agreement may be terminated on the 30th June of any year upon not less than three months' previous written notice to that effect being addressed by registered post to the Administrative Office by Parties who together would have been entitled to cast no less than 90% of the total votes of all the Parties hereto at a General Meeting if such General Meeting were held at the time of the giving of such notice. The Administrative Office shall upon receipt of such notice immediately notify all the Parties hereto.

(B) 1. Furthermore each Party hereto shall be entitled at any time to withdraw from this Agreement on account of important reasons, by giving notice in writing by registered letter addressed to the Administrative Office or to all the other Parties, stating the reasons for which such notice is given. If any Party shall, within fourteen days after receipt of such notice, inform the Administrative Office that it does not consider the reasons given in the notice to be sufficiently important to warrant withdrawal, then the documents shall be transferred by the Administrative Office to an Arbitrator as referred to in Article 19 hereof, with the request that the matter shall be decided, if possible, within thirty days. If the Arbitrator decides that the reasons given in the notice are of sufficient importance to warrant

withdrawal, then such notice shall take effect as from the end of the calendar month following the calendar month in which the Arbitrator's decision is given. If no Party opposes the withdrawal within the said fourteen days, then such withdrawal shall take effect as from the end of the calendar month following the calendar month in which the registered letter of notice was posted.

2. In case a Party withdraws in accordance with this Article 16 (B), a settlement for the then current Fiscal Period shall be made in the following manner:—

(a) L.P.P. Sales of each Party hereto (including the Withdrawing Party) for each Fiscal Territory for the portion of the then current Fiscal Period which has expired at the date of withdrawal shall be established for this purpose by applying the Party's respective Local Participating Percentage to the total effective sales made by all the Parties (including the Withdrawing Party) in the Fiscal Territory concerned during the said expired portion.

(b) L.P.P. Sales of each remaining Party for each Fiscal Territory for the unexpired portion of the then current Fiscal Period shall be established for this purpose by applying the Party's respective Local Participating Percentage (adjusted in accordance with the provisions of Article 16 (B) 4 hereof) to the total effective sales made by all the remaining Parties in the Fiscal Territory concerned during the said unexpired portion.

(c) For each Fiscal Territory the effective sales of the Withdrawing Party for the said expired portion shall be compared with the Withdrawing Party's L.P.P. Sales computed in accordance with paragraph (a) hereof and the effective sales of each Remaining Party for the whole of the then current Fiscal Period shall be compared respectively with the summation of each such Party's L.P.P. sales as computed in accordance with paragraphs (a) and (b) hereof and from such comparisons the excess and deficit sales of the Parties shall be established. A Settlement shall then be made with all the Parties concerned (including the Withdrawing Party) on the basis of Article 6 (A) hereof modified to the extent hereinbefore provided.

3. The term "important reasons" shall mean a situation in which a Party can no longer reasonably be expected to remain bound by the provisions of the present Agreement, as for example (and without in any way restricting the generality of the foregoing), where such Party is unable, on account of legislation or other governmental measures, to exercise or obtain the benefit of its fundamental rights as against one or more of the Parties to this Agreement.

4. Upon a Party hereto withdrawing from this Agreement under the foregoing provisions consequential adjustments shall be made to the Local Participating Percentages of the remaining Parties.

ARTICLE 17—EXCESS SALES DISQUALIFIED FOR VOTING BASIS

Excess sales of a Party hereto shall be disregarded in fixing the basis of such Party's votes in Local Meetings and for the purpose of this Article 17 any adjustment brought about by the application of Article 6 (A) 8 hereof shall be disregarded.

ARTICLE 18—SUBSIDIARY COMPANIES

(A) Each Party Signatory hereto will, for the purposes of this Agreement, be considered to form one Party with its Subsidiary Companies.

(B) The expression "Subsidiary Companies" shall mean and include any enterprise in the field of this Agreement of which a Party holds an interest of more than 50% of the voting rights or shares, or a *de facto* control, financial or otherwise.

(C) No Party signatory hereto shall be considered as a Subsidiary Company unless expressly signing as such.

ARTICLE 19—SETTLEMENT OF DISPUTES

(A) Any dispute or difference of opinion in connection with this Agreement or the rights or obligations of the Parties hereunder or the failure of a Party to carry out its obligations under this Agreement shall be referred to the General Meeting. If such dispute or difference or such failure aforesaid is not settled to the satisfaction of the Parties concerned, or if any Party is dissatisfied with the manner in which the General Meeting shall have dealt with the matter or with any resolution of the General Meeting, then any Party or Parties may, not later than 60 days from the date of the despatch of the Minutes of the General Meeting, refer the matter as Plaintiff for final decision to a single Arbitrator. In the proceedings before the Arbitrator the Party or Parties alleged to have failed to have carried out its or their obligations as well as all Parties not having voted at the General Meeting in the same manner as the Plaintiff shall be deemed severally to be Defendants.

(B) The said Arbitrator and the manner and method of laying the matter before the Arbitrator shall in each individual case be as mutually agreed by the Parties concerned and, failing such agreement within 30 days from the reference to arbitration, the Arbitrator shall be such person as shall be appointed by the President for the time being of The Law Society and the provisions of the Arbitration Acts of 1889 to 1934 or any statutory modification for the time being in force shall apply to the proceedings in such arbitration, incorporating in addition the provisions of Article 19 (D) hereof.

(C) The arbitration shall be held in London and the Arbitrator shall base his decision on justice and equity in accordance with the obvious intent and purpose of the Parties. The decision of the Arbitrator shall be absolutely final and shall be binding on the Parties hereto.

(D) Any Party hereto who is neither a Plaintiff nor a Defendant shall have the right to intervene in any proceedings before the Arbitrator in connection with this Agreement and consequently shall be entitled to lodge with the Arbitrator a statement of intervention within such time as the Arbitrator shall decide.

(E) Notification to refer any matter to arbitration shall be addressed by the Party or Parties concerned to the Administrative Office, which shall be the sole channel through which all communications relative to the arbitration shall pass, except as otherwise may be agreed under Article 19 (B) hereof, and it shall promptly circulate copies thereof to all the Parties to this Agreement and to the Arbitrator.

(F) The Arbitrator shall award the costs of the arbitration proceedings against the several Plaintiffs, Defendants and Intervening Parties in any proportions he may deem expedient. In general no award shall be made by the Arbitrator to the Parties for their own individual costs.

ARTICLE 20—WITHDRAWAL OF SIGNATURES

Each Signatory hereto shall be at liberty forthwith to take advice upon its ability lawfully to undertake and discharge each and all of its obligations hereunder and if it shall come to the conclusion that it is unable so to undertake or discharge them or any of them it may notify each of the other Signatories hereto to that effect within a period of sixty days after the date hereof and may withdraw its signature, in which event this Agreement shall be deemed not to have been entered into by any of the Signatories hereto.

ARTICLE 21—FISCAL MATTERS

(A) In this Agreement the expression "Fiscal Period" shall mean a period of 12 months from the 1st of July in one year to the 30th of June in the following year inclusive.

(B) All obligations and payments under this Agreement shall be liquidated in Pounds Sterling.

(C) (1) If after the beginning of a Fiscal Period any Party has reason to anticipate that it will be in excess in any Fiscal Territory at the end of the Fiscal Period, it shall have the right, upon giving ten days' notice, to make Sterling payments in advance to the Party or Parties anticipated to be in deficit.

(2) If any Party shall so have paid in advance to any other Party any sums on account of its liabilities, then both the Paying Party and the Receiving Party shall forthwith notify the Administrative Office which shall take such payments into account when issuing the Settlement for the Fiscal Period concerned.

(D) If any payments to be made under this Agreement should attract any Tax which must lawfully be deducted at source, such payment shall be made less such Tax.

ARTICLE 22—SPIRIT OF THE AGREEMENT

The Parties hereto hereby bind themselves to observe the terms and conditions hereof in a spirit of mutual co-operation, fully realising that in specific cases individual sacrifice may be demanded in return for benefits which will accrue from their common endeavour.

ARTICLE 23—SECRECY

Each Party hereto undertakes to observe strict secrecy towards third parties regarding anything of a confidential nature communicated to it under this Agreement.

ARTICLE 24—GOVERNMENT MEASURES

Notwithstanding the provisions of this Agreement no Party hereto shall be under obligation to do anything in any country which would be contrary to any law, enactment or regulation of a Government having jurisdiction in the matter.

ARTICLE 25—INTER-PARTY AGREEMENTS

1. Unless otherwise mutually agreed between the Parties concerned, agreements entered into between individual Parties hereto (hereinafter referred to as "private agreements") having reference to or relationship with the N.G.A. and/or the previous Agreement referred to in Recital (A) of this Agreement shall, so far as is compatible with the obvious intent of the Parties as expressed in this Agreement, continue and remain in force for the period stipulated in the private agreement concerned. Subject as aforesaid and to anything hereafter expressly mentioned, should the duration of any such private agreement be expressed to be for the duration of the N.G.A. and/or the previous Agreement aforesaid, such private agreement shall continue in force for the whole period during which the parties to the private agreement concerned remain Parties to this Agreement. Nevertheless, in the event of a private agreement containing any provisions whereby the same can be terminated by any of the parties thereto on a date not dependent upon the duration of the N.G.A. and/or the previous Agreement aforesaid, such provisions shall continue to apply.

2. Save to the extent specifically incorporated in the previous provisions of this Agreement the Inter-Party Agreement between C.P. and certain other Parties to the N.G.A. shall not continue or have effect in respect of this Agreement.

3. Licence agreements and agreements relating to experience shall be deemed to be included in the expression "private agreements."

4. The provisions of this Article 25 shall be entirely without prejudice to the question of the possible duration of any such private agreements as aforesaid after the expiration of this Agreement.

ARTICLE 26—NAME OF AGREEMENT

The Parties hereto intend to name this Agreement "The 1948 Lamp Agreement" and to refer to it by this name.

IN WITNESS whereof the Parties hereto have respectively caused their duly authorised representatives to set their hands to these presents on their behalf the day and year first above written.

For and on behalf of:—

[SIGNATURES.]

ANNEX A

FISCAL TERRITORIES

(Article 5 (A))

1. "GREAT BRITAIN"

United Kingdom of Great Britain
Northern Ireland
Eire
Channel Islands
Isle of Man

Hervey Islands
Mangaia Island
Mauke (or Parry) Island
Mitiaro Island
Niue or Savage Island
Palmerston Island
Rarotonga Island

2. "AUSTRALIA"

Australia } With adjacent
Tasmania } islands including
Papua } Ashmore Island and
(British) } Cartier Island
Lord Howe Island
Norfolk Island
Solomon Islands (Southern Group),
including:—
Guadalcanal
Malaita
San Cristoval
Savo
New Georgia
Australian Antarctic Territory
(South of 60° South and between
160° East and 45° East, except
Adelie Land)

Kermadec Islands, including:—

Curtis Island
L'Esperance Rock
Macaulay Island
Raoul or Sunday Island

Macquarie Island

Manihiki Islands, including:—

Danger Island or Pukapuka
Manihiki Island
Nassau Island
Penrhyn or Tongareva Island
Rakahanga
Suvarrow

Stewart Island

Snare Islands
Solander Island
Three Kings Island
Tokelau Islands

Ross Dependency (South of 60°
South and between 160° East and
150° West, comprising South
Victoria Land)

3. "NEW ZEALAND"

North Island
South Island
Antipodes Islands
Auckland Islands
Bounty Islands
Campbell Island
Chatham Islands
Cook Islands, including:—
Aitutaki Island
Atiu Island

4. "INDIA, PAKISTAN AND BURMA"

India (including Native States) and
Andaman Islands
Laccadive Islands
Nicobar Islands
Pakistan (including Native States)
Burma

5. "SOUTH AFRICA"

Union of South Africa
Prince Edward Island
Marion Island
Northern Rhodesia
Southern Rhodesia
Basutoland
Bechuanaland Protectorate
Swaziland

6. "REMAINING TERRITORIES"

(a) *Ceylon*, including:—

Maldivé Islands

(b) *Singapore, Federation of Malaya, British Borneo*

Singapore comprising:—

Singapore Island
Christmas Island (Indian Ocean)
Cocos Island (Cocos-Keeling)

Federation of Malaya comprising:—

Perak
Selangor
Negri Sembilan
Pahang
Johore
Kedah
Perlis
Kelantan
Trengganu
Penang
Malacca

British Borneo, including:—

British North Borneo
Labuan
Balambangan
Banguey
Brunei
Sarawak

(c) *British West Indies*

Bermudas
Bahamas
Barbados
Jamaica, including:—

Turks Islands
Caicos Islands
Cayman Islands
Morant Cays
Pedro Cays

Leeward Islands, including:—

Antigua
Barbuda
Redonda
St. Christopher (St. Kitts)
Nevis
Anguilla

Sombrero
Montserrat
Aves Island

Trinidad and Tobago

British Virgin Islands, including:—

Tortola
Virgin Gorda
Anegada
Jost Van Dykes

Windward Islands, including:—

Dominica
Grenada
St. Vincent
The Grenadines
St. Lucia

(d) *British Guiana*

(e) *British Honduras*

(f) *Falkland Islands*, including:—

West Falkland
East Falkland
South Georgia
South Orkneys
South Shetlands
South Sandwich Islands
Graham Land

(g) *Gibraltar*

(h) *Malta*, including:—

Gozo Island
Comino Island

(i) *Cyprus*

(j) *Mauritius*, including:—

Rodrigues
Cargados
Garayos
Chagos Archipelago
Oil Islands Group—
Diego Garcia
Peros Banhos
Agalega
St. Brandon Group
Trois Freres
Six Islands
Solomon Islands (India Ocean)

(k) *British East Africa*

Kenya
Uganda
Zanzibar, including Pemba and adjacent Islands

(l) *British West Africa*

Gambia
Gold Coast, including Ashanti and Northern Territories
Nigeria Colony and Protectorate (including Lagos)
Sierra Leone

(m) *Other British Colonies in Asia.*

Aden, including:—
Peninsula of Aden
Little Aden with Sheik Othman
Perim
Socotra
Kuria Muria Islands
Bahrein Islands
Kamaran

Other British Colonies in Africa.

St. Helena, including:—
Ascension Island
Tristan da Cunha
Inaccessible Islands.
The Nightingale Islands
Gough Island
Nyasaland
Seychelles Islands and British
Amirante Islands
British Somaliland

(n) *Pacific Islands, comprising:—*

Caroline Island
Christmas Island
Ducie Island
Ellice Islands
Fanning Island
Fiji Islands
Flint Island
Gilbert Islands
Henderson Island
Malden Island
New Hebrides
Ocean Island
Oeno Island
Phoenix Islands
Pitcairn Island
Rotuma Island
Starbuck Island
Tonga (or Friendly) Islands
Victoria Island
Vostock Island
Washington Island

(o) *Anglo-Egyptian Sudan*

ANNEX B

PART I

LOCAL PARTICIPATING PERCENTAGES

(Article 5 (B))

Parties	Great Britain	Australia
Philips	9·09246	48·57497
B.T.H./Ediswan	—	18·16496
British Bloc (Article 6 (C))	77·56517	—
G.E.C.	—	12·13994
Met. Vick	—	2·81754
Siemens	—	1·92529
Stella	0·92426	—
C.P.	12·41811	16·37730
Total ...	100· —	100· —

Parties	New Zealand	India, Pakistan and Burma
Philips	33·74575	35·62008
B.T.H./Ediswan	19·10960	11·55292
G.E.C.	19·47455	27·94631
Met. Vick.	2·74643	8·22438
Siemens	1·87670	1·80421
C.P.	23·04697	14·85210
Total ...	100· —	100· —

Parties	South Africa	Remaining Territories
Philips	36·89245	20·84013
B.T.H./Ediswan	16·17640	13·79285
G.E.C.	19·56835	36·97112
Met. Vick.	5·10276	5·49247
Siemens	1·85329	1·99483
C.P.	20·40675	20·90860
Total	100· —	100· —

PART II

VOTING RIGHTS IN GENERAL MEETING

(Article 10 (A) (3))

	Number of Votes
B.T.H.	28,700,110
C.P.	30,049,991
Cryselco	5,412,746
Ediswan	18,297,843
G.E.C.	59,369,635
Metrovick	7,717,391
Philips	37,784,988
Siemens	20,007,110
Stella	1,496,469
B.T.H./Ediswan	10,225,668

ANNEX C

PROVISIONS FOR CALCULATING THE WEIGHTED AVERAGE
MANUFACTURING COST PER UNIT FOR GREAT BRITAIN

(Article 6 (A) 6 (a))

1. The Weighted Average Manufacturing Cost per Unit for each Fiscal Period shall be calculated by the Administrative Office in the manner following:—

2. Not later than six months after the expiration of each Fiscal Period each Party shall report to the Administrative Office:—

(a) The total number of lamps it has produced in Great Britain sub-divided into the various classes of the Schedule for Translating Lamps into Units in force for the Fiscal Period concerned together with such other data as may be required to enable the Administrative Office to convert the lamps so produced into Units in accordance with such Schedule;

(b) The total manufacturing cost (ascertained in accordance with the provisions set out in paragraph 7 below) incurred by such Party in producing such lamps.

3. The report to be given under the provisions of paragraph 2 above shall be in respect of the lamps produced by the Party during the Fiscal Period concerned or alternatively during such Party's financial year which closes nearest to the end of the Fiscal Period concerned. *Provided always* that should a Party's financial year close on the 31st December, the financial year ending within the Fiscal Period concerned shall be taken.

4. The Administrative Office shall calculate the total number of Units produced by each Party in the twelve months period covered by its report and shall summate all such totals in order to arrive at the total production of all Parties in Units.

5. Similarly the total manufacturing cost of the lamps covered by such reports shall be summated by the Administrative Office in order to arrive at the total manufacturing cost of all Parties.

6. The total manufacturing cost arrived at under paragraph 5 above shall be divided by the total production in Units arrived at under paragraph 4 above and the result shall be deemed to be the Weighted Manufacturing Cost per Unit for Great Britain for the Fiscal Period concerned.

7. Manufacturing cost shall represent the cost price ex-factory store including normal Home Trade packing but excluding any special packing such as wooden cases, and shall comprise the items listed below in manner and to the extent therein indicated:—

(1) Actual cost of raw materials;

(2) Direct labour;

(3) Overhead Expenses in connection with the Factory only which comprise the following:—

(a) Indirect hourly labour and supplementary labour costs;

(b) Salaries specifically applicable to the manufacture of lamps;

(c) Power, Heat, Light and Services;

(d) National, Fire and Accident Insurance excluding loss of profits and consequential loss;

(e) Maintenance of buildings including reserves for normal repairs but excluding deferred repairs;

(f) Maintenance of plant and equipment;

(g) Rates and taxes including gross Schedule "A" assessment where premises are owned and actual rent, rates and taxes where premises are rented;

(h) Travelling expenses;

(i) Stationery and Office requisites;

(j) Postage, Telegraph and Telephone;

(k) Social welfare including Canteen, hospital facilities and contributions to Staff Pension Fund;

(l) Legal expenses;

(m) The proportion of actual cost of development and research expenses applied to the Manufacture of lamps according to the normal practice of the Party;

(n) Subscriptions;

(o) Non-durable small tools and miscellaneous shop supplies;

(p) Cost of all lamp testing before lamps go into Stock excluding lamps tested for Government or similar contracts;

(q) Depreciation comprising:—

(i) *Depreciation of Plant and Equipment*

Initial Allowance and Wear and Tear Allowance permitted by the Tax Authorities.

(ii) *Depreciation of Buildings*

Depreciation of brick and/or concrete buildings 2% per annum on cost;

Depreciation of wood and/or steel buildings 10% per annum on cost.

(iii) *Land*

No depreciation to be allowed.

In arriving at the costs of these items included above Stocks thereof shall be valued at market or cost price whichever is the lower.

8. In addition to the above items the following shall be added namely:—

In the case of Philips, 1% of Philips' total cost established on the basis set out above to cover such items as central organisation of quality control, welfare, etc., so long as these items are not included in the framework of the Philips' costing system; and

In the case of C.P., such proportion of its central organisation cost as refers exclusively to the manufacture of lamps such proportion not to exceed 1% of C.P.'s manufacturing costs.

ANNEX D

SCHEDULE FOR TRANSLATING LAMPS INTO UNITS

(Article 6 (B))

[This Schedule is identical with Schedule "B" 8 of the Phoebus Agreement (see Appendix 8) except in the following particulars:—

Class 34 of the Phoebus Schedule (Wolfram Arc Lamps) is omitted, so that Class 33A becomes Class 34. The following classes are added:—]

<i>Class:</i>	<i>Type of Lamp:</i>	<i>Ratio:</i>
	Mercury Fluorescent Discharge Lamps Tubular Bulb with 2 caps for main voltage:	
43	up to 15 watts	2·20
44	up to 30 watts	2·25
45	up to 40 watts	3·25
46	up to 65 watts	6·05
47	up to 80 watts	8·00
48	up to 100 watts	7·25
	All types of Gas Discharge Lamps—Mercury, Sodium, Neon, etc. (excluding Mercury Fluorescent Tubular 2 cap, i.e., Classes 43 to 48):	
49	up to 50 watts	26·86
50	up to 85 watts	26·68
51	up to 150 watts	34·85
52	up to 300 watts	32·12
53	up to 500 watts	37·94
54	up to 1,000 watts	109·09
55	up to 3,000 watts and over	422·96

APPENDIX 10

Referred to in paragraphs 72, 73, 76, 77, 78 and 257 (footnote)

Summary of Agreements governing the E.L.M.A. Patent Pool

(a) G.E.C., B.T.H. and Siemens give each other non-exclusive licences under all their patents in the United Kingdom and share them with Ediswan, Metrovick and Cryselco who are financially associated with G.E.C. or B.T.H. (These six companies constitute the British Group.)

(b) Crompton, Aurora, and B.E.L.L. are licensed by G.E.C., B.T.H. and Siemens under the patents held by the last three in the United Kingdom, Crompton as regards all types of lamps but Aurora and B.E.L.L. as regards filament lamps only.* Aurora has specifically undertaken not to make discharge lamps.

(c) As regards lamps made in the United Kingdom for export, Siemens is licensed by G.E.C. and B.T.H. for the British Empire, except Canada, and Crompton is licensed for export except to North America and Japan (but without protection under other than United Kingdom patents): B.E.L.L. and Aurora, whose exports are restricted, get no patent protection outside the United Kingdom.

(d) All parties agree not to oppose any patents of their licensors.

(e) Decisions on licensing and litigation under patents are mutually agreed by G.E.C. and B.T.H., Siemens undertaking to abide by their decisions. G.E.C. and B.T.H. share equally the expenses of taking out and maintaining their own patents and of licensing and litigation under them. (Siemens can participate in decisions and share the proceeds of royalties if it becomes possessed of a new or radical invention.)

(f) Research and manufacturing information are exchanged between G.E.C., B.T.H. and Siemens.†

(g) The following royalties (calculated on the net selling prices of the lamps) are payable in addition to those payable under international agreements, as mentioned in paragraph 64 of the report:—

(i) by Siemens to G.E.C. and B.T.H. on all sales of discharge lamps— $1\frac{1}{2}\%$.

(ii) by Crompton to G.E.C. and B.T.H. on all sales of discharge lamps made under the licensors' patents— 3% as to sales in the United Kingdom and $1\frac{1}{2}\%$ as to sales elsewhere: in practice, this royalty is payable on all Crompton's sales of discharge lamps.

(iii) by Aurora to G.E.C. and B.T.H. on all sales of filament lamps— 1% .

* The licences of B.E.L.L. and Aurora have formally expired but new agreements are in course of negotiation.

† Until 1st December, 1949, Crompton also exchanged manufacturing information and research with G.E.C. and B.T.H. about discharge lamps only. We are informed that in practice technical matters are discussed in the Works Committee of E.L.M.A. where all members are represented; moreover, it is customary, when members supply lamp components to other members, to give such technical information as will enable the components supplied to be used efficiently.

Thus no royalties are payable between G.E.C. and B.T.H. and no royalties are now payable between members on filament lamps except in the case of Aurora.*

(h) G.E.C. and B.T.H. agree to restrict the sales of patented lamp parts and lamp-making machinery to licensees, to sell tungsten at uniform prices, and to pool their profits on sales of tungsten†: fluorescent powders are still covered by this clause and Crompton accordingly undertakes in its licence not to sell fluorescent powders except to other licensees. Aurora and B.E.L.L. both undertake not to sell lamp parts except to manufacturers approved by the licensors while Crompton is similarly restricted as to the sale of tungsten and filaments.

(i) As far as concerns those members of E.L.M.A. who are neither in the British Group nor subsidiaries of Philips (Holland), namely, Crompton, Aurora and B.E.L.L., their obligations as members of E.L.M.A. to sell at E.L.M.A. terms and to conform to E.L.M.A. types and standards have been written into their licences or concurrent agreements.

(j) No restrictions are imposed by these agreements on output or sales except in the case of two companies, namely, Aurora and B.E.L.L. (whose sales are not subject to the quota provisions of the 1948 Lamp Agreement—see Chapter 6): in their cases, quotas and penalty rates are laid down in the licences or concurrent agreements.

* Former royalties were as follows:—

Siemens: until 30th June 1946 paid 3 per cent. on all sales of discharge lamps and on all sales in the United Kingdom of filament lamps. From the 1st July 1946 to 30th June 1948 the royalty was reduced to 1½ per cent.

Crompton: until 31st March 1942 paid on all sales of filament lamps 1 per cent. in the United Kingdom and ½ per cent. elsewhere besides the royalty on discharge lamps. From 1st December 1942 to 30th November 1949 Crompton paid an additional fee of 3 per cent. on all sales of discharge lamps in respect of manufacturing information and research received from G.E.C. and B.T.H. (These royalties and fees were additional to the royalties paid by Crompton to Philips (Holland)—see paragraph 64 of the report.)

Aurora: the royalty payable has not been altered at any time but the agreement was expressed to expire on 30th June 1949—See footnote (*) on page 173.

B.E.L.L.: until 30th June 1934 paid 4 per cent. on gas-filled lamps and 1½ per cent. on vacuum lamps, subject to the expiry of a certain patent, after which royalty was to be at the uniform rate of 2 per cent. The rate was reduced to 1 per cent. after 30th June 1934 and licences have been royalty-free since 30th June 1939—but see footnote (*) on page 173.

† We are informed that the profits have never been pooled in practice.

APPENDIX 11

Referred to in paragraphs 79, 133 and 138 (footnote)

Extracts* from the Licence Granted by B.T.H., G.E.C. and Siemens to British Luma

THIS LICENCE is made the 29th day of January 1937 BETWEEN THE BRITISH THOMSON-HOUSTON COMPANY LIMITED whose registered office is at Crown House Aldwych in the County of London THE GENERAL ELECTRIC COMPANY LIMITED whose registered office is at Magnet House Kingsway in the County of London and SIEMENS ELECTRIC LAMPS AND SUPPLIES LIMITED whose registered office is at Caxton House Tothill Street in the County of London (hereinafter called "the Licensors") of the one part and BRITISH LUMA CO-OPERATIVE ELECTRIC LAMP SOCIETY LIMITED whose registered office is at 95 Morrison Street Glasgow Scotland (hereinafter called "the Licensees") of the other part.

WHEREAS the Licensees have requested the Licensors to grant to the Licensees a licence under the Licensors' present and all future patents for electric lamps and the Licensors have agreed so to do upon the terms and subject to the conditions hereinafter contained.

NOW THIS LICENCE WITNESSETH and it is hereby agreed by and between the parties hereto as follows:—

1. (A) In consideration of the royalties hereinafter reserved and of the terms and conditions hereinafter contained the Licensors respectively do hereby grant unto the Licensees a non-exclusive non-transferable licence and authority to manufacture in Scotland and thereafter sell in the United Kingdom of Great Britain and Northern Ireland the Irish Free State the Channel Islands and the Isle of Man (hereinafter called "Great Britain") electric lamps (as hereinafter defined) made in accordance with the inventions the subject of all British Letters Patent now owned or controlled by the Licensors or any of them or that may be owned or controlled (subject to the provisions of Clause 19 hereof) by them or any of them during the period of this Licence and for the purposes of this Licence the expression "electric lamps" shall be defined as comprising all electric lamps for illuminating heating or medical purposes operating by any or all of the following methods: incandescence of a refractory filament luminescence of gas and/or vapour or cathode incandescence (excepting so-called arc or enclosed arc lamps not operating in a sealed container and also excepting Neon X-ray and Radio-tubes) and all the aforesaid are hereinafter comprehended by the word "lamps".

(B) In the event of the Swedish Luma Factories being prevented from manufacturing lamps by act of God or owing to destruction or damage by fire then the Licensees shall be at liberty to manufacture lamps in Scotland and to supply such lamps to the Swedish Luma Factories provided that the consent of the Licensors of the Swedish Luma Factories has been previously obtained. Any lamps so manufactured and supplied by the Licensees shall not be counted as a sale for the purpose of this Licence but the Licensees shall render to the Licensors as and when they render statements under the provisions of Clause 3 hereof a full statement of the number of lamps manufactured for and supplied to the Swedish Luma Factories PROVIDED ALWAYS that nothing herein contained shall entitle the Licensees to continue to manufacture for or to supply to the Swedish Luma Factories any lamps after the Swedish Luma Factories have ceased to be prevented from manufacturing lamps under the conditions before mentioned.

(C) The Licensors shall upon the request of the Licensees give to the Technical Manager for the time being of the Licensees' Lamp Factory reasonable access to one of the Lamp Works owned by the Licensors (or any one of them) for

* The general purport of passages not quoted in full is indicated within square brackets. All footnotes are our own.

the purpose of giving such Manager a demonstration of any lamp process which is the subject of a patent owned or controlled by the Licensors (or any one of them) and which is being carried out by one or more of the Licensors in their own factories.

2. The Licensees shall during the continuance of this Licence pay to the said British Thomson-Houston Company Limited on behalf of the Licensors at the times hereafter mentioned in respect of each lamp manufactured and sold by the Licensees a royalty of 3% on the net selling price (before deducting cash discounts) at which each such lamp shall be sold or on 50% of the Retail List Price fixed by E.L.M.A. (hereinafter referred to) for such type of lamp whichever is the higher.

3. [Submission of periodical statements by the Licensees of lamps manufactured and sold.]

4. [Licensees to keep proper books of account, which may be inspected by an independent accountant on behalf of the Licensors.]

5. Every lamp manufactured by the Licensees and sold used delivered or disposed of by the Licensees shall be treated and counted as having been sold by the Licensees and such lamps shall be converted into units at the rate of conversion from lamps to units by means of a Schedule (hereinafter referred to as "Schedule 'B'") applicable for the Fiscal Period in question and shall be reported and ascertained in accordance with the stipulations of this Licence PROVIDED ALWAYS that good lamps returned to and taken back into stock by the Licensees and credited as such in the Licensees' books of account and lamps delivered free of charge to replace lamps that have been rejected by reason of breakage in transit or faulty manufacture shall not be treated as having been sold. The Schedule for the Fiscal Period ending the 30th day of June 1937 shall be that set out in Annex I hereof with the title "Schedule 'B' 7."

Schedule "B" may be varied by the Licensors from time to time and any alterations or amendments to it shall be communicated to the Licensees as and when such occur. The Licensors declare that Schedule "B" with alterations and amendments shall be such as is used by the Licensors themselves for the purpose of determining their own sales.

6. For the purposes of this Licence the expression "Fiscal Period" shall mean the period from the 1st day of July in one year to the 30th day of June in the following year inclusive.

7. The quantity of lamps converted into units in accordance with the stipulations of Clause 5 hereof which the Licensees are permitted under this Licence to sell or otherwise dispose of is as follows:—

For the Fiscal Period ending 30th June					1937: 1,920,000 units
"	"	"	"	"	1938: 2,137,000 "
"	"	"	"	"	1939: 2,342,000 "
"	"	"	"	"	1940: 2,447,000 "
"	"	"	"	"	1941: 2,665,000 "
"	"	"	"	"	1942: 2,957,000 "
"	"	"	"	"	1943: 3,174,000 "
"	"	"	"	"	1944: 3,392,000 "
"	"	"	"	"	1945: 3,610,000 "
"	"	"	"	"	1946: 3,840,000 "
"	"	"	"	"	1947: 3,840,000 "

8. If in any Fiscal Period the Licensees sell a greater quantity of units than the quantity permitted for that Fiscal Period under Clause 7 hereof then on each unit sold over and above the permitted quantity plus 2 per cent. thereof the Licensees shall pay to the Licensors an additional royalty at the rate of 100 per cent. of the realised price per unit and for the purpose of this clause the realised price per unit shall be ascertained by dividing the total of the nett selling prices of all lamps sold in the Fiscal Period by the total quantity of units which such lamps represent and the nett selling prices of such lamps shall be the nett selling prices actually used for computing the royalty due under Clause 2 hereof for

the Fiscal Period in question. Any royalty that accrues in respect of a Fiscal Period by virtue of this clause shall become due and payable within one calendar month from the 30th day of September following the end of the Fiscal Period in question.

9. The Licensees shall not supply any lamps of type size characteristics and finish which differ from those sold by the Licensors or any of them from time to time except in the case of a new type of lamp the subject of a fundamental patent owned by the Licensees or acquired by them under Clause 19 hereof but reasonable notice shall be given by the Licensees to the Licensors prior to the introduction of such new type of lamp and the list price thereof shall be first agreed as between the Licensors and the Licensees and should the parties hereto fail to agree then the matter shall forthwith be settled by arbitration under Clause 24 hereof as if it was a dispute.

All lamps manufactured and sold by the Licensees shall be marked with a permanent and distinctive mark and the Licensees shall not use or allow or permit to be used in connection with or upon any other lamps any mark similar to or being a colourable imitation of such permanent or distinctive mark. The Licensees shall inform the Licensors of the mark so adopted and shall not change or alter the same without the previous consent in writing of the Licensors such consent not to be unreasonably withheld.

10. (A) The Licensees shall sell only such lamps as have been manufactured by themselves or which shall have been purchased by the Licensees from the Licensors (who shall supply to the Licensees all particular lamps desired by them at prices to be arranged) or from third parties approved of by the Licensors.

(B) The Licensees shall not directly or indirectly without the previous consent in writing of the Licensors export or sell for export to any country outside Great Britain any lamps and will take all reasonable precautions to prevent any lamps manufactured by them from being directly or indirectly exported to or sold in any country outside Great Britain PROVIDED ALWAYS that if the Swedish Luma (Kooparativa Förbundet A.-B. Hammarbylampan Stockholm) transfers to the Licensees the whole or part of its quota rights in the Overseas British Empire which the Swedish Luma possesses by virtue of its Agreement with Phœbus S.A. dated the 5th day of December 1936 then the Licensees shall be at liberty to manufacture lamps in Scotland and to sell or dispose of such lamps in those countries where the quota rights have been transferred to the Licensees subject to the same terms obligations and conditions and to the same restrictions as to quantity as apply to such quota rights and such lamps shall not be counted as a sale for the purposes of this Licence but the Licensees shall furnish to the Licensors as and when they render statements under the provisions of Clause 3 hereof full details of the number of lamps supplied by them country by country.

11. The Licensees shall not directly nor indirectly give any assistance technical financial or otherwise to any lamp manufacturer not previously approved by the Licensors and in particular (but without affecting the generality of this clause) shall not supply any raw material lamps or parts thereof to any such manufacturer PROVIDED that nothing in this Licence shall be construed as prohibiting the Licensees from entering into contracts engagements or arrangements with any Co-operative Luma Factories which hold a licence from S.A. Phœbus.

12. The Licensees shall not assign or sub-license nor attempt to assign or sub-license the benefits or obligations accruing to or undertaken by the Licensees hereunder and any assignment or sub-license or attempted assignment or sub-license shall be null and void.

13.* The Licensees shall in all their price lists advertisements announcements and other trade publications relating to and on the wrappers surrounding any lamps manufactured by them under or in accordance with the Patents of any of them belonging to the Licensors state that the lamps so sold or offered for sale are manufactured under a Licence granted under some or all of the said Patents which Patents shall be identified by number as and when they are used.

* In a joint letter dated 29th January 1937 the Licensors informed British Luma that it was not their intention to enforce against the Licensees the provisions of Clause 13 to a greater extent than they, the Licensors, enforce the observance of such provisions against their other Licensees.

14. The list prices discounts terms and conditions of sale at which lamps manufactured by the Licensees may be sold or disposed of shall (except as hereinafter expressly provided) be the same as the list prices discounts terms and conditions of sale at present fixed or which may hereafter for the time being and from time to time be fixed for the sale of lamps by E.L.M.A. and (subject as hereinafter mentioned) the Licensees shall not sell or dispose of their lamps on terms less favourable to the Licensees whether by way of rebate allowance advantages as to packing breakages faulty lamps credit or otherwise than the list price discounts terms and conditions of sale aforesaid PROVIDED ALWAYS that:—

(A) In respect of incandescent filament electric lamps of the single coil construction the Licensees themselves may if they so desire quote and sell such lamps to Municipal or other Local Government Authorities in Scotland and Institutions owned by such Authorities and Voluntary Infirmaries and Hospitals in Scotland at an additional discount of 10 per cent. on the nett price for the same type of lamp authorised for the said Authorities Institutions Infirmaries and Hospitals by E.L.M.A. for the time being and from time to time but such additional discount aforesaid may only be quoted or given in respect of tenders or orders in which incandescent filament lamps of the single coil construction have been separately invited for tender or ordered and such additional discount shall not be quoted or given in respect of such lamps if such lamps together with other types of lamps are invited for tender or ordered in the same invitation for tender or order.

(B) In respect of lamps manufactured by the Licensees and sold by them to Co-operative Wholesale Societies or to Co-operative Retail Societies such sales may be at list prices discounts terms and conditions of sale other than at the list prices discounts terms and conditions of sale aforesaid.

IT IS HEREBY EXPRESSLY DECLARED that the Licensees shall use their best endeavours to secure that lamps of their manufacture which are re-sold by Co-operative Wholesale Societies (except when re-sold to Co-operative Retail Societies) or which are re-sold by Co-operative Retail Societies are only re-sold in conformity with the list prices discounts terms and conditions of sale aforesaid.

IT IS HEREBY EXPRESSLY DECLARED that the granting by Co-operative Retail Societies of any "Dividend" to Members of those Societies in respect of lamps manufactured by the Licensees and purchased by such Members shall not be treated as a breach of any of the above stipulations but should notwithstanding the best endeavours of the Licensees lamps of their manufacture be re-sold by Co-operative Wholesale Societies (otherwise than to Co-operative Retail Societies) or be re-sold by Retail Co-operative Societies at list prices discounts terms and conditions not in conformity with those fixed by E.L.M.A. for the time being and from time to time and the extent of such non-conformity is such as to be prejudicial to the business of the Licensors or to the Licensors' relationship with their other Licensees or with the Lamp Trade or with the Public then the Licensors shall be at liberty to terminate this Licence by giving to the Licensees not less than three months' written notice to that effect and from and after the expiration of such notice this Licence shall cease and determine without prejudice to the Licensors' right to payment of any royalties or any other rights then accrued hereunder. Should however the Licensees prior to the expiration of such three months' notice aforesaid serve upon The British Thomson-Houston Co. Ltd. on its and the other Licensors' behalf a counter notice to the effect that they the Licensees do not consider that the extent of such re-sale aforesaid is such as to be prejudicial to the Licensors in any manner aforesaid then the matter shall be deemed to be a dispute and shall forthwith be referred to arbitration pursuant to the terms of Clause 24 hereof and this Licence shall not terminate pursuant to such notice by the Licensors as aforesaid until the Arbitrators shall have given their award in favour of the Licensors' contention.

14(a).* The Licensors declare that they have obtained from E.L.M.A. an undertaking that for so long as this Licence continues in force any sales or purchases by any Co-operative Wholesale Society or Co-operative Retail Society

* By an exchange of letters between the parties on 18th October 1939 this clause was deemed to have been inserted in the original Licence.

of lamps manufactured by the Licensees shall not be treated as a breach of any exclusive Agreement which such Society may have with E.L.M.A., it being understood that such lamps shall not be taken into consideration when calculating the amount of rebate or commission due from E.L.M.A. to such Society.

15. The Licensees shall place all lamps manufactured by them in cartons or wrappers on which have been clearly and conspicuously printed the E.L.M.A. Retail List Price for the time being of the lamp in question.

16. The expression "E.L.M.A." wherever used in this Licence shall mean and include Electric Lamp Manufacturers' Association or any other Association formed for a like purpose and of which the Licensors are members or failing any such Association then the Licensors only.

17. The Licensors shall be entitled free of royalty to make use and sell lamps embodying or utilising any invention (whether the subject of Letters Patent or not) owned or controlled by the Licensees subject to the provisions of Clause 19 hereof.

18. So long as this Licence has not been terminated neither the Licensors on the one hand nor the Licensees on the other hand shall directly or indirectly attack dispute or question the validity of any patent or patent application relating to lamps which is owned or controlled by the other of them.

In the event of the Licensors deciding that a patent belonging to any of them should not be renewed then the Licensors shall notify such fact to the Licensees and shall permit the Licensees if they so desire to pay the renewal fees but the Licensors shall not be liable in damages or otherwise if by reason of an oversight they omit to give any such notification to the Licensees.

19. In the event of the Licensors (or any of them) or the Licensees acquiring during the continuance of this Licence (other than its continuance under the provisions of Clause 20 hereof) rights to an invention or Letters Patent relating to lamps from third parties against payment of a fixed sum and/or against royalties and the non-acquiring party desires to make use of the invention or Letters Patent so acquired then such non-acquiring party shall be at liberty to do so upon payment of a fair participation in the purchase price and/or upon payment of the royalty due to the third party upon giving to the acquiring party notice in writing within six months after having received notice of such acquisition from the acquiring party PROVIDED ALWAYS that the provisions of this clause hereinbefore contained shall apply only in so far as the rights to inventions or Letters Patent aforesaid shall have been acquired without any restriction that would restrain the acquiring party from granting a licence or sub-licence to the non-acquiring party but the parties hereto hereby undertake to use their best endeavours when acquiring any patent rights from third parties to obtain such rights free from any such restriction aforesaid.

20. Unless this Licence shall have been previously determined the Licensors and each of them on the one hand and the Licensees on the other hand shall upon the expiration of this Licence on the 30th day of June 1947 be at liberty for and during the residue of the life of the patent or extension thereof to make use and sell lamps embodying or utilising the subject matter of any Letters Patent or Applications for Letters Patent for Great Britain which are owned or controlled by the Licensors or Licensees as the case may be and which shall then be in existence. Any such licence to the Licensors shall be free but any lamps made or sold by the Licensees embodying or utilising the subject matter of any such Letters Patent or Application for Letters Patent during the subsistence of same shall be subject to the same rate of royalty as provided in Clause 2 hereof and to such other provisions of this Licence as are in force immediately prior to the expiration thereof.

21. [Provisions for determining Licence on breach of covenant by Licensees (subject to arbitration under Clause 24).]

22. This Licence (unless previously terminated under the provisions hereof) shall continue in force until the 30th day of June 1947 subject however to the provisions of Clause 20 hereof.

23. This Licence shall be deemed to incorporate the provisions relating to notices contained in Section 196 of the Law of Property Act, 1925, as if notices or complaint given pursuant to this Licence were notices referred to in that Section.

24. If any dispute or difference shall arise between the Licensors and the Licensees hereunder the same shall be referred to two arbitrators one to be appointed by the Licensors and one to be appointed by the Licensees or to an umpire to be chosen by the Arbitrators before entering on the consideration of the matter referred to them and every such reference shall be deemed to be an arbitration pursuant to the Arbitration Acts 1889 to 1934 or any statutory modification thereof for the time being in force and any such arbitration shall be held in London.

25. This Licence shall be construed in accordance with the laws of England.

IN WITNESS whereof the Licensors and the Licensees have caused their respective Common Seals to be hereunto affixed the day and year first above written.

ANNEX 1 above referred to.

SCHEDULE "B" 7

FOR TRANSLATING LAMPS INTO UNITS

Valid for the Fiscal Period: July 1-1936 to June 30-1937.

[This Schedule is in a form similar to Schedule "B" 8 attached to the Phoebus Agreement (see Appendix 8) but as it relates to an earlier period there are some variations in the ratios for converting lamps into units.]

[SIGNATURES]

APPENDIX 12

Referred to in paragraphs 143 and 266

Undertaking by Glass Bulbs Ltd. about the Supply of Bulbs

LETTER DATED 6th JUNE, 1951 TO THE MINISTRY OF SUPPLY

DEAR SIR,

We have been asked by the Monopolies and Restrictive Practices Commission to write to you amplifying the assurance given by me in a letter dated 20th June, 1947 in connection with the distribution of glass bulbs made on the Ribbon Machine at Harworth.

We again confirm that bulbs will be distributed, without discrimination, and that the prices to be charged will be the same—quantity for quantity—to all purchasers in the United Kingdom, with the exception that the proprietors, viz.:—The British Thomson-Houston Company Limited and The General Electric Company Limited, will purchase at lower prices; the same applies to the controlled firms where we have an obligation to the other shareholders.

I have sent a copy of this letter to the Secretary of the Commission.

Yours faithfully,
(Signed)

Acting Chairman.

APPENDIX 13

Referred to in paragraph 155

Summary of E.L.M.A.'s Standard Agreements with Distributors and Users of Lamps

A. TYPES OF AGREEMENT

The following is a list of eighteen standard forms of agreement between E.L.M.A. and distributors and users in the United Kingdom (a specimen agreement—with a Retailer of general service filament lamps and discharge lamps—is reproduced in Appendix 14):—

Agreements with Purchasers primarily of General Service Filament Lamps and Discharge Lamps (Groups I, VIII and IX)*

Wholesaler
Trader
Retailer
Retail Co-operative Society
Special Wholesaler†
Special Retailer (Large)†
Special Retailer (Small)†
Apparatus Maker‡
Fittings Maker‡
Special Large Buyer§

Agreements with Purchasers of Motor Lamps (Group II)*

Wholesaler
Factor
Retailer (Large)
Retailer (Small)
Car Accessory Maker‡

Agreements with Purchasers of Miners' Lamps (Group V)*

Wholesaler
Manufacturer of Miners' Lamps||:—
(i) Members of the Miners' Electric Lamp|| Manufacturers' Association (M.E.L.M.A.).
(ii) Non-members of M.E.L.M.A.

B. PRINCIPAL PROVISIONS OF THE AGREEMENTS

1. **Discounts and Rebates.** E.L.M.A. undertakes in each agreement that its members will allow specified discounts, and in some of them that E.L.M.A. will pay quantity rebate according to a specified scale. The trade discounts and rebates (if any) for the principal classes of signatories are shown in Appendix 15 (Table 5): all agreements provide in addition for cash discount of 2½ per cent.

Notes:

(i) In order to get full wholesale terms on general service filament and discharge lamps and on motor lamps, a buyer would have to sign two agreements. There is, however, a provision in the Wholesaler's agreement for general service filament and discharge lamps under which he is allowed discount

* For a definition of lamps covered by these Groups see Appendix 6, Section I, paragraph(3).

† "Special" Wholesalers and Retailers are primarily distributors of projector and photographic lamps, which are included in Group I.

‡ These agreements relate primarily to terms of purchase of lamps required for embodiment in the apparatus, etc.

§ The number of signatories of this agreement in the standard form is very small. Other very large users negotiate special terms with E.L.M.A. individually.

|| In this context "lamp" means the complete lantern.

on motor lamps at the Retailer's rate (i.e. 35 per cent. as against the full wholesaler's discount of 47½ per cent.). The Retailer's agreement for general service filament and discharge lamps also provides that the signatory shall be allowed the Retailer's discount of 35 per cent. on motor lamps. The agreements for motor lamps contain no corresponding provisions about allowances on general service filament and discharge lamps, although in practice distributors of motor lamps are allowed discounts as users of general service filament and discharge lamps.

(ii) The agreements with distributors of general service filament and discharge lamps also specify the discounts to be allowed to the signatories on Christmas Tree lamps (Group VI) and Cycle Dynamo lamps (Group IV).

(iii) The agreements with Wholesalers, Factors and Traders provide that in the event of a reduction of the retail price the members will credit the signatories with the difference in the net value of stocks not exceeding a quarter of a year's purchases: the agreements with Retailers (except Small Retailers of motor lamps) provide for an allowance equivalent to the difference on one month's purchases.

2. Price Maintenance. The signatories undertake to observe the E.L.M.A. Rules (see Appendix 6). The most notable effect of this provision is to bind distributors to maintain the prices and discounts fixed by E.L.M.A.

Variations:—

(i) Retail Co-operative Societies may pay "dividend" on sales of lamps.

(ii) Wholesalers, Factors and Traders agree in addition to insert a Retail Price Maintenance clause in all invoices to Retailers (see Appendix 6, Section I, paragraph 14 (i)).

(iii) Small Retailers of Motor Lamps and Apparatus Makers do not undertake to observe the E.L.M.A. Rules. The former agree instead "to sell all lamps at List Prices net only . . ." unless otherwise authorised by E.L.M.A.; the latter agree not to sell lamps except when embodied in apparatus.

3. Exclusive Dealing. The signatories undertake not to sell lamps other than those of brands supplied by E.L.M.A. members*.

Variations:—

(i) Special Large Buyers who sign the standard form undertake to purchase 80 per cent. of their total requirements in E.L.M.A. lamps.

(ii) Members of M.E.L.M.A. may sell in any half year non-E.L.M.A. miners' lamps to a maximum of 10 per cent. by value of total purchases of miners' lamps (of types made by E.L.M.A. members) and any quantity of miners' lamps of types which E.L.M.A. members are not prepared to make.

(iii) In practice, although there is no special provision in the agreements with Retail Co-operative Societies, they have been allowed to sell British Luma's lamps in accordance with Clause 14 (a) of that company's licence from members of E.L.M.A. (see Appendix 11).

4. Returns, Agents and Maintenance Guarantees. The Signatories undertake to furnish E.L.M.A. with statements and returns and permit inspection of their books; not to appoint any agents for the sale of electric lamps; not to enter into any maintenance guarantees.

Variations:—

(i) Special Large Buyers and Small Retailers of Group II (Motor) Lamps do not give any of these undertakings.

(ii) Apparatus Makers and Car Accessory Makers do not undertake to furnish statements and returns or permit inspection of their books.

* The wording of this clause in distributors' agreements is as follows:—"Not to sell, directly or indirectly, those types of electric lamps falling within the Groups listed in No. 3 of the Rules except those brands supplied by Members of the Association".

(iii) Wholesalers and Manufacturers of Miners' Lamps do not give the undertaking not to enter into maintenance guarantees.*

5. **Breach.** In the event of a breach of any provision by the signatory E.L.M.A. may cancel the agreement without further obligation.

Variations:—

(i) Wholesalers of general service filament and discharge lamps and Special Wholesalers are liable in addition to pay damages of £500 for each breach of the exclusive dealing clause.

(ii) Agreements with Special Large Buyers and Small Retailers of Group II Lamps include no provisions in the event of breach.

(iii) Agreements with Wholesalers and Factors provide for arbitration upon any dispute in connection with the agreement.

6. **Miscellaneous.** In addition to the common clauses set out above, certain distributors give undertakings as follows:—

(i) Wholesalers of general service filament and discharge lamps and Special Wholesalers agree to contribute a proportion of the rebate earned by certain Retailer customers (including B.E.A. Area Boards).†

(ii) Wholesalers and Traders of general service filament and discharge lamps and Special Wholesalers agree to notify E.L.M.A. when lamps to the net value of £100 have been supplied in any twelve months to any distributor not an E.L.M.A. agreement-holder, and to credit rebate to such a distributor when authorised by E.L.M.A.

(iii) Wholesalers, Special Wholesalers and Factors undertake to hold minimum stocks.

* Agreements for Wholesalers of Miners' Lamps and for non-M.E.L.M.A. Manufacturers are (in June, 1951) under revision. The clauses here referred to are accordingly those in the 1949/50 forms of agreement.

† The Wholesaler makes no contribution unless his Retailer customer earns rebate of 5 per cent. or more: in that event he contributes according to the following scale:—

<i>Retailer earns rebate of</i>	<i>Wholesaler contributes</i>
5% 6% 8% 10% 11% 12%	1% 2% 4% 5% 6% 7%
} on his purchases from } all sources of E.L.M.A. } general service filament } and discharge lamps.	} on lamps supplied by } him to that Retailer.

APPENDIX 14

Referred to in paragraph 155

Form of Standard Agreement between E.L.M.A. and Retailers of Lamps

AN AGREEMENT

applying to Lamps sold for use in Great Britain and Northern Ireland, the Channel Isles and the Isle of Man, covering the period commencing and terminating May 31st, 1951, between Electric Lamp Manufacturers' Association of 25 Bedford Square, London, W.C.1. (hereinafter called "the Association") of the one part and

(hereinafter called "the Retailer") of the other part.

WHEREBY THE ASSOCIATION AGREES

(1) **Discount.** To instruct all its Members and its authorised distributors to allow the Retailer a discount of twenty-five per cent. (25%) off list prices current at date of dispatch, on orders accepted by them for Groups I., VIII. and IX. lamps, as defined in the Rules of the Association current from time to time (hereinafter called "the Rules").

(2) **Rebate.** To pay to the Retailer through his banking account, a rebate on his total net purchases made direct from Members of the Association and authorised suppliers of Groups I., VIII. and IX. lamps during the twelve months ending May 31st, 1951 (excluding Purchase Tax), in accordance with the following scale:—

Minimum Purchase	£100	£400	£800	£1,250	£2,500
(excluding Purchase Tax)					
Rebate	1%	2%	3%	4%	5%

provided that—

(a) the Association is satisfied that the Retailer has observed all the Conditions of this Agreement.

(b) In determining the rebate payable according to the above scale the invoice value of lamps sold by the Retailer to other Retailers shall be deducted from the said total net purchases.

(3) **List Price Reduction.** To instruct authorised suppliers, in the event of any reduction in the list prices of Group I. or Group IX. lamps becoming operative during the period of this Agreement, to credit the Retailer with the difference in the net value of his purchases of such lamps (after deduction of credits and excluding Purchase Tax) during one calendar month preceding the date of such reduction.

(4) **Discounts—Other Lamps.** To instruct all its Members and its authorised distributors to allow the Retailer the following discounts off list prices current at date of dispatch on orders accepted by them for the following Groups of lamps as defined in the Rules, purchases of which are not subject to the Rebate specified in Clause 2, viz.:—

Group II.—Automobile Lamps	35%
Group IV.—Cycle Dynamo Lamps	35%
Group VI.—Christmas Tree Decoration Sets & Lamps	25%

(5) **Cash Discount.** That all accounts will be subject to a cash discount of 2½% (excluding Purchase Tax which is strictly net) if paid on or before the last day of the month following date of invoice.

AND WHEREBY THE RETAILER AGREES

(6) To observe the Rules as they may be amended from time to time (current copy herewith).

(7) Not to sell, directly or indirectly, those types of Electric Lamps falling within the Groups listed in No. 3 of the Rules except those brands supplied by Members of the Association.

(8) To furnish the Association on request with any returns, statements or other particulars relating to electric lamps as may be required for the proper working of the Association, and to provide all facilities for his books and accounts to be inspected by an independent accountant appointed by the Association.

(9) Not to appoint any agent for the sale of electric lamps nor to assign this Agreement or any of its rights or benefits.

(10) Not to enter into any maintenance guarantee or arrangement which shall be equivalent to giving a fixed price for lamps per point or holder.

AND FURTHER IT IS MUTUALLY AGREED

(11) That the terms and conditions of this Agreement shall be held to cover any subsidiary company owned or controlled by the Retailer and any branch of the Retailer and of any such subsidiary company.

(12) That in the event of the Association being satisfied that the Retailer has committed any breach of the above conditions, or

(a) If, being a person, has a receiving order made against him or makes any arrangements with his Creditors or calls a meeting of any of his Creditors for the purpose of proposing the making of any arrangement with any of his Creditors, or if any distress, execution or attachment shall be levied against him or attempted, or

(b) If, being a Company, passes a resolution for winding up, or has an order made for winding up, or has a Receiver appointed for any of its property or assets, or calls a meeting of any of its Creditors for the purpose of considering a scheme of arrangement with any class of its Creditors, or if any distress, execution or attachment shall be levied against it or attempted.

then the Association may forthwith by notice in writing to the Retailer determine this Agreement and all the obligations of the Association hereunder.

Signed for and on behalf of the Association.

[Signature]

Director.

N.B.—This agreement is not complete until acceptance has been received by the Association from, in the case of a Limited Company, the Secretary or one of the Directors, and in the case of an unincorporated firm from the owner or one of the partners.

APPENDIX 15 Statistical Tables

TABLE I
OUTPUT OF LAMPS IN THE PRINCIPAL PRODUCING COUNTRIES,
1924 to 1950(a)

Year	United Kingdom (b)	United States (c)	Germany (d)	Japan (e)
	'000	'000	'000	'000
1924	36,140	—	71,510	55,123
1925	—	454,311	77,902	57,063
1926	36,000	—	76,311	63,631
1927	41,000	530,197	93,972	87,255
1928	—	—	98,692	97,550
1929	—	626,575	94,754	134,183
1930	55,625	—	84,588	160,250
1931	—	485,543	63,700	266,230
1932	—	441,622	61,367	320,540
1933	72,109	370,868	67,478	340,390
1934	87,247	—	82,368	324,380
1935	98,529	642,529	88,170	324,800
1936	—	738,970	101,311	428,540
1937	—	809,388	113,028	464,660
1938	—	738,700	122,917	310,760
1939	—	656,739(f)	152,580	274,300
1940	—	—	144,485	304,800
1941	—	—	140,108	220,100
1942	—	—	144,331	220,352
1943	180,723	—	116,409	139,631
1944	171,647	—	—	53,776
1945	172,768	1,224,917	—	16,337
1946	188,988	1,338,069	—	52,815
1947	192,735	1,881,395	—	102,872
1948	244,189	1,976,674	39,012(g)	179,540
1949	233,384	1,832,423	81,264(h)	161,556
1950	252,382	2,084,607	73,136(h)	159,552

(a) (i) Figures for lamp production in Holland are not available. The production capacity of Philips (Holland) was in 1939 estimated at 75 million lamps a year ("Incandescent Electric Lamps", U.S. Tariff Commission Report No. 133, p. 72).

(ii) Figures shown for other countries give a broad indication of relative size and growth but are not individually comparable since not all include the same range of types of lamp. Figures for United Kingdom production include small quantities of photographic lamps not covered by our terms of reference.

(b) Sources: Balfour Committee's "Survey of Metal Industries" (1927), p. 319; Census of Production 1930, 1935, 1948; production returns by manufacturers to the Ministry of Supply.

The following values have been given for United Kingdom production:—

1924	—	£2,485,000	1930	—	£2,597,000
1933	—	£2,744,000	1934	—	£3,009,000
1935	—	£3,347,000	1946	—	£9,288,000
1947	—	£10,380,000	1948	—	£11,172,000
1949	—	£10,704,000	1950	—	£13,212,000

Sources: Balfour Committee's Report, p. 318; Census of Production 1930, 1935; Monthly Digest of Statistics.

(c) Sources: United States Tariff Commission Report No. 133, p. 7; Arthur A. Bright, "The Electric Lamp Industry", (New York, 1949), pp. 490/491; Census of United States Manufactures, and Facts for Industry Series M32B issued by the U.S. Department of Commerce, Bureau of the Census.

(d) Sources: 1924–1928, United States Tariff Commission Report No. 133, p. 69; 1929–1943 Statistisches Handbuch von Deutschland; 1948–1950, Wirtschaft und Statistik.

(Figures for 1924–1943 are for fiscal years 1st April to 31st March.)

(e) Sources: 1924–1929, United States Tariff Commission Report No. 133, p. 64; 1930–1950, Japanese Economic Statistics, Section I—Industrial Production.

(f) Excludes Christmas tree, flashlight and other special types.

(g) Figures for Bizone only.

(h) Figures for Federal Republic.

TABLE 2

UNITED KINGDOM IMPORTS OF LAMPS, 1920 TO 1950(a)

(i) Year(b)	(ii) Total imports into United Kingdom		(iii) Flashlamps included in Column (ii)		(iv) Principal Sources of Imports in Column (ii)		
	Quantity	Value	Quantity	Value	Country	Quantity	Value
1920 ...	'000 1,203	£'000 75	'000 —	£'000 —	Holland	'000 804	£'000 45
1921 ...	3,604	280	—	—	Belgium	128	10
1922 ...	7,870	213	—	—	Holland	2,159	207
1923 ...	11,268	219	—	—	Austria	396	32
1924 ...	13,487	215	—	—	Holland	2,183	108
1925 ...	19,436	426	—	—	Austria	1,424	62
1926 ...	18,332	335	—	—	Germany	1,968	11
1927 ...	22,408	435	—	—	France	1,063	3
1928 ...	27,690	425	—	—	Holland	2,289	100
1929 ...	40,325	495	28,956	99	Austria	1,779	56
1930 ...	42,656	563	29,423	90	Germany	4,288	31
1931 ...	46,812	472	32,990	85	France	1,678	8
1932 ...	50,748	169	42,311	80	Holland	3,866	96
1933 ...	54,487	179	39,323	49	Austria	2,142	57
1934 ...	63,367	177	45,422	53	Germany	5,864	38
1935 ...	39,804	130	23,839	29	Holland	4,477	187
1936 ...	54,804	173	36,102	35	Austria	3,839	131
1937 ...	63,105	189	43,699	36	Germany	8,754	58
1938 ...	52,512	123	31,981	25	Austria	3,175	111
1939 ...	36,821	89	27,240	28	Holland	2,608	96
					Germany	9,465	82
					Holland	4,092	159
					Austria	4,386	133
					Germany	8,418	45
					Holland	3,947	170
					Austria	4,094	108
					Germany	9,076	53
					Japan	6,124	18
					Austria	5,079	157
					Japan	18,555	50
					Germany	7,423	30
					Austria	8,272	280
					Japan	19,293	49
					Germany	8,946	41
					Austria	5,737	182
					Japan	25,569	68
					Japan	42,961	103
					Japan	50,095	131
					Germany	1,220	5
					Japan	56,682	116
					Holland	1,484	20
					Germany	2,346	15
					Japan	32,179	54
					Holland	1,786	29
					Germany	1,739	16
					Japan	48,544	75
					Holland	2,250	43
					U.S.S.R.	1,155	9
					Japan	53,057	77
					Holland	2,135	56
					Germany	1,811	19
					Japan	39,953	52
					Holland	2,069	26
					Japan	16,992	31
					U.S.A.	6,559	11
					Hong Kong	5,396	5

TABLE 2—continued

(i) Year	(ii) Total imports into United Kingdom		(iii) Flashlamps included in Column (ii)		(iv) Principal Sources of Imports in Column (ii)		
	Quantity	Value	Quantity	Value	Country	Quantity	Value
1940 ...	'000 184,341	£'000 322	'000 181,385	£'000 307	Japan	'000 68,517	£'000 104
					U.S.A.	24,742	78
					Hong Kong	44,120	60
1941 ...	103,173	178	100,942	173	China	39,921	49
					Hong Kong	88,723	149
1942 ...	28,826	47	27,107	43	China	8,850	15
					Japan	3,966	10
					Hong Kong	21,828	31
1943 ...	59,175	543	48,869	446	U.S.A.	1,995	7
					China	3,300	5
					U.S.A.	57,597	536
1944 ...	64,220	625	64,070	606	U.S.A.	56,223	565
1945 ...	15,574	189	15,476	159	U.S.A.	15,000	158
1946 ...	323	8	17	—	—	—	—
1947 ...	1,856	50	229	4	Holland	847	23
1948 ...	4,104	88	1,593	15	Holland	1,992	50
					Belgium	1,035	19
1949 ...	7,405	129	5,440	416	Holland	3,918	90
					Hong Kong	2,830	9
1950 ...	41,358	259	35,773	133	Hong Kong	36,583	138
					Holland	3,930	103

(a) Figures for the years 1920–1948 are based on those published in the Annual Statement of Trade of the United Kingdom compiled by the Statistical Office of the Customs and Excise Department, by whom the figures for 1949 and 1950 have also been supplied. All figures include re-exported lamps; it is estimated that re-exports, except in abnormal post-war years, have seldom exceeded 5 per cent. of total imports.

(b) Motor lamps are not included in the figures for the years 1920–1933.

TABLE 3

UNITED KINGDOM EXPORTS OF LAMPS, 1920 to 1950 (a)

(i) Year (b)	(ii) Total Exports from United Kingdom		(iii) Exports to British Commonwealth and Empire Countries included in Column (ii) (c)	
	Quantity '000	Value £'000	Quantity '000	Value £'000
1920	4,109	320	3,000	237
1921	5,538	443	3,744	349
1922	5,085	363	4,186	287
1923	5,191	338	4,317	295
1924	5,148	341	4,439	286
1925	7,012	511	6,136	430
1926	7,733	501	6,856	446
1927	8,547	593	7,624	529
1928	7,964	533	7,251	484
1929	10,183	663	9,306	604
1930	10,018	589	9,077	529
1931	6,276	346	5,640	307
1932	8,245	375	7,011	320
1933	9,720	428	8,417	363
1934	13,341	508	12,011	444
1935	16,204	571	14,399	507
1936	18,023	596	16,261	533
1937	20,289	652	18,256	572
1938	19,657	593	17,569	510
1939	18,496	531	16,574	464
1940	22,876	740	21,182	650
1941	22,811	793	16,871	594
1942	20,730	770	15,197	560
1943	13,100	556	10,704	467
1944	12,776	565	10,806	472
1945	19,261	824	15,706	678
1946	35,187	1,291	25,121	896
1947	29,731	1,284	22,897	1,010
1948	33,795	1,691	25,566	1,278
1949	35,805	1,633	28,451	1,254
1950	36,112	1,667	23,954	1,072

(a) Figures for the years 1920-1948 are based on those published in the Annual Statement of Trade of the United Kingdom compiled by the Statistical Office of the Customs and Excise Department, by whom the figures for 1949 and 1950 have also been supplied. The figures given do not include re-exports, which, however, have been comparatively small (see footnote (a) to Table 2).

(b) Motor Lamps are not included in the figures for the years 1920-1933.

(c) With the following exceptions exports to individual countries other than those in the Commonwealth and Empire have been small:—

1941 to Java	...	1,797,000 lamps, value £63,000
1946 to Palestine (including Transjordan)	...	1,320,000 lamps, value £58,000

TABLE 4

E.L.M.A. MEMBERS' SELLING PRICES FOR LAMP COMPONENTS, 1950 (a)

Component	Index figures (b) of prices on sale by E.L.M.A. members to:—			
	Independent Manufacturers	British Luma	Controlled Companies	E.L.M.A. Members (c)
<i>Glass Bulbs</i>				
Clear—without contract ...	100	85	73	100
—contract (5 million p.a.)	92½	—	—	92½
—contract (10 million p.a.)	90	—	—	90
Pearl—without contract ...	100	80	74½	94
—contract (5 million p.a.)	92½	—	—	87
—contract (10 million p.a.)	90	—	—	85
<i>Glass Tubing and Rod</i>				
Flange, uncut—without contract	100	85	86½	100
—minimum contract	91	—	—	91
Stem, uncut—without contract	100	85	70	100
—minimum contract	92½	—	—	92½
Stem, cut—without contract	100	85	75½	100
—minimum contract	94½	—	—	94½
Rod, uncut—without contract	100	85	70	100
—minimum contract	92½	—	—	92½
Rod, cut—without contract	100	85	77	100
—minimum contract	95	—	—	95
<i>Caps</i>				
—up to 2 million p.a.	100	93	93	93
—2 to 7 million p.a.	96½	89½	89½	89½
—over 7 million p.a.	93	86	86	86
<i>Tungsten and Molybdenum Wire</i>				
—without contract	100	90	87½	90
—with annual contract	92½	83	81	83

(a) This table is based on information submitted by E.L.M.A. in March, 1950, about the selling prices of components required to make 60-watt general service filament lamps of normal voltages.

(b) The price of any given type of component (e.g. clear bulb or uncut flange tubing) on sale to Independent Manufacturers without quantity (or contract) discount is taken as 100. The maximum index prices (100) of glass bulbs and caps represent approximately the following cash prices per unit:—

Glass bulb, clear	1d.
„ „ pearl	1½d.
Cap	½d.

We estimate that the average quantities of glass tubing and rod and of wire used in making a lamp, if bought at maximum index prices (100), would cost approximately as follows:—

Glass tubing and rod	¾d.
Wire	½d.

(c) Special prices are allowed in some instances to those members who own, directly or indirectly, the component-making factories. Special prices are allowed to the British Philips Company and Cryselco for glass tubing and rod.

TABLE 5

GROSS ALLOWANCES OFF RETAIL SELLING PRICE ALLOWED BY E.L.M.A. TO VARIOUS CLASSES OF PURCHASERS, 1951

Class of Purchaser	(a) Gross Allowance off Retail Price (exclusive of Purchase Tax)		
	General Service Filament and Discharge Lamps (Groups I, VIII and IX)		Motor Lamps (Group II)
	Minimum	Maximum	
Wholesaler—exclusive	Per cent. 33½	Per cent. 37½	Per cent. 47½
Factor—exclusive	—	—	42½
Retailer—exclusive			
Trader	25	32½	35
Large Retailer	} 25	} 32½	} 38
Small Retailer			
Retailer—non-exclusive	20	28	30
B.E.A. Area Board—non-exclusive	25	34½	38
Apparatus Maker—exclusive	25(b)	28(b)	25
Car Accessory Maker(c)—exclusive	—	—	42½(b)
Fittings Maker—exclusive	32½(b)	—	35
Public Body—non-exclusive	25	28½	35
Listed User(d)—non-exclusive			
Purchases of E.L.M.A. lamps not less than £5,000 p.a.	22½	28	25
Purchases of E.L.M.A. lamps not less than £100 but less than £5,000 p.a.	17½	22½	25
Purchases of E.L.M.A. lamps not less than £27 (Group I) or £50 (Group IX) but less than £100 p.a.	12½	14½	25
Classified User—non-exclusive	12½	14½	25

(a) The gross allowance for motor lamps and the minimum gross allowance for general service filament and discharge lamps is the fixed discount rate (not including cash discount) applicable to each class of purchaser. The maximum gross allowance for general service filament and discharge lamps takes into account the maximum quantity rebate which can be earned by each class of purchaser: the full scale of rebates (which are calculated as percentages of the retail price exclusive of Purchase Tax and less discount) is shown in the supplementary table below.

(b) The allowances shown apply to lamps bought for "initial embodiment" in the signatory's apparatus, etc.; the allowances are smaller if the lamps are bought for other purposes.

(c) Joseph Lucas Ltd. and certain other concerns obtain special preferential terms.

(d) A very few large users, including Government Departments, obtain by individual arrangement better terms than the user terms shown above.

SUPPLEMENTARY TABLE TO TABLE 5

(see Note (a) on page 192)

Quantity Rebates Allowed on purchases of General Service Filament and Discharge Lamps
(Groups I, VIII and IX)

Annual Purchases not less than :-	Wholesaler	Trader	Retailer	B.E.A. Area Board	Apparatus Maker	Public Body	Listed User entitled to :-			Classified User
							22½ per cent. Discount	17½ per cent. Discount	12½ per cent. Discount	
£	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
50	—	—	—	—	—	—	—	—	2	2
100	—	—	1	1	1	—	—	—	—	—
200	—	—	1	1	1	—	—	1	—	—
300	—	—	1	1	1	—	—	2	—	—
400	—	—	2	2	2	—	—	2	—	—
500	—	—	2	2	2	—	—	3	—	—
750	—	—	2	2	2	—	—	4	—	—
800	—	5	3	3	3	—	—	4	—	—
1,000	—	5	3	3	3	—	—	5	—	—
1,250	—	6	4	4	4	1	—	5	—	—
2,500	1	7	5	5	—	2	—	6	—	—
3,500	2	7	5	5	—	2	—	—	—	—
5,000	3	8	6	6	—	3	2	—	—	—
7,500	4	9	8	8	—	4	5	—	—	—
10,000	4½	10	10	10	—	5	7	—	—	—
15,000	5	—	—	10½	—	—	—	—	—	—
20,000	5½	—	—	11	—	—	—	—	—	—
25,000	5½	—	—	11½	—	—	—	—	—	—
30,000	6	—	—	12	—	—	—	—	—	—
40,000	6½	—	—	12½	—	—	—	—	—	—

TABLE 6

E.L.M.A.'S RETAIL SELLING PRICES FOR FILAMENT LAMPS, 1930 to 1951 (a)
Single Coil 230 volt Filament Lamps for General Lighting Purposes (b)

Description of Lamp		Price in 1930 Sept.	Prices in subsequent years (showing dates of changes)						
Wattage	Clear or Pearl		1931 May	1932 March	1933 Jan.	1936 April	1938 Sept.	1945 July	1949 June
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
25	Clear	2 1	—	1 11	—	1 9	1 8	1 3	—
	Pearl	1 10	—	1 9	—	1 7	1 6	1 3	—
40	Clear	2 1	—	1 11	—	1 9	—	1 3	1 1
	Pearl	1 10	—	1 9	—	1 7	—	1 3	1 1
60	Clear	2 1	—	1 11	—	1 9	—	1 3	1 1
	Pearl	1 10	—	1 9	—	1 7	—	1 3	1 1
75	Clear	3 3	—	—	3 0	2 6	2 0	1 7	1 5
	Pearl	2 6	—	—	—	2 3	1 10	1 7	1 5
100	Clear	3 6	3 3	3 0	—	2 6	2 3	1 9	1 6
	Pearl	3 0	2 9	2 6	—	2 3	2 0	1 9	1 6

Motor Lamps

Description of Lamp			Price in 1931	Prices in subsequent years (showing dates of changes)						
Voltage	Wattage	Type		1933 Jan.	1933 July	1934	1936	1938	1946	1948
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
6	24	Head	2 6	2 6	—	—	2 0	2 0	3 0	2 6
12	36	"	2 6	2 6	—	—	2 6	2 0	3 0	2 6
12	36 & 36	"	5 0	—	—	—	—	—	4 6	3 6
6	24 & 24	"	3 6	—	—	3 0	—	2 9	4 2	3 6
6	3	Side and Tail	1 3	1 3	—	—	1 3	1 0	1 4	1 4
6	6	"	1 3	—	—	—	—	1 2	1 7	1 7
12	6	"	1 3	1 3	—	—	1 3	1 0	1 4	1 4
6	3	Dashboard Indicator	1 8	—	—	—	1 3	1 0	1 6	1 3
12	2.2	"	1 8	—	—	—	1 3	1 0	1 6	1 3
6 & 12	3	Festoon	—	—	—	—	2 0	1 6	2 3	2 3
6 & 12	6	"	—	3 0	2 0	—	2 0	1 9	2 7	2 7

(a) The figures shown are based on information supplied by E.L.M.A. Prices exclude Purchase Tax.

(b) The present retail selling prices of Type B lamps are as follows:—

25, 40 and 60 watt 1s. 0d.
100 watt 1s. 6d.

Prices have remained unchanged since the introduction of the Type B lamp in 1935.

TABLE 7

RETAIL SELLING PRICES FOR FILAMENT LAMPS IN THE UNITED KINGDOM AND OTHER COUNTRIES, 1939 AND 1951(a)

Country	Volts	25-watt Lamp		40-watt Lamp		60-watt Lamp		100-watt Lamp	
		1939	1951	1939	1951	1939	1951	1939	1951
		Pence	Pence	Pence	Pence	Pence	Pence	Pence	Pence
United Kingdom ...	200-260	18.0	15.0	19.0	13.0	19.0	13.0	24.0	18.0
Belgium ...	"	15.5	23.0	15.5	23.0	19.0	25.5	33.0	41.0
Switzerland ...	"	12.5	24.0	12.5	24.0	15.0	28.5	26.0	49.0
France ...	"	10.0	22.0	10.0	22.0	12.5	27.5	20.0	43.0
Sweden ...	"	11.0	15.0	13.0	16.5	16.0	20.5	27.0	29.5
Norway ...	"	12.5	12.0	14.5	13.5	18.5	18.5	33.5	31.5
Portugal ...	"	13.0	28.5	14.5	33.5	18.5	40.0	32.5	65.5
Germany ...	"	14.0	21.0	17.0	22.5	22.5	26.0	32.5	35.0
Holland ...	"	26.0	14.5	28.0	16.0	33.0	16.0	41.5	20.0
United States ...	100-130(b)	7.6	11.2	7.6	12.0	7.6(c)	12.0(c)	7.6(e)	15.5(c)
"	200-260	11.7	15.5	17.2	20.6	17.2	15.5(d)	16.8	20.6
Canada ...	100-130(b)	10.0	15.0	10.0	15.5	10.0	15.5	14.5	22.5
"	200-260	18.0	19.5	18.0	—	18.0(d)	19.5(d)	25.5	25.5

(a) The table is based on information submitted by E.L.M.A. We are informed that prices have been converted into sterling at the rates of exchange ruling in June of the year concerned and calculated, except for the United States, to the nearest halfpenny: prices are exclusive of purchase tax, sales tax and light tax.

(b) Electricity is generally supplied at lower voltages in the United States and Canada than in the other countries.

(c) These are the prices of coiled-coil lamps: all other prices in this table are of single-coil lamps.

(d) The prices are those of 50-watt lamps.

(e) This lamp had an objective life of 750 hours.

TABLE 8
AVERAGE REALISED PRICE PER PHOEBUS UNIT IN TERRITORIES COVERED
BY THE PHOEBUS AGREEMENT, 1938 (a)

	<i>Phoebus cents(b)</i>
Austria	12·269
Belgium	7·189
Brazil	6·212
China A	5·260
" B	3·142
France and Colonies	6·542
Germany	12·117
Great Britain	12·065
Holland	15·742
Hungary	11·011
Italy and Colonies	7·655
Japan	2·505
British Empire A	9·533
" " B	10·283
Common Territory—Europe	9·429
" " Overseas	7·863

(a) The figure for one territory, namely Spain, is omitted in the "preliminary" settlement papers we have inspected.

(b) The prices include duty, except in the British Empire and Common Territory, but exclude taxes applying specifically to lamps. Phoebus cents were hypothetical currency.

TABLE 9
ESTIMATED FACTORY COST OF SOME INDIVIDUAL TYPES OF
LAMPS, 1948 to 1949(a)

Type of Lamp (i)	Makers (ii)	Factory Cost	
		Individual Companies(b) (iii)	Weighted Average(c) (iv)
<i>General Service Filament Lamps</i> 60w. 230v. Single Coil, Clear	E.L.M.A. Members (5)	pence 5·65, 5·76, 5·86, 6·63, 6·56	pence 6·17
	Controlled Cos. (3) ...	5·45, 5·53, 5·66	
	Independent Mfs. (2)	6·03, 7·18	
60w. 230v. Single Coil, Pearl	E.L.M.A. Members (5)	6·00, 6·07, 6·20, 6·34, 6·90	6·28
	Controlled Cos. (3) ...	5·77, 5·79, 5·94	
	Independent Mfs. (3)	6·30, 6·90, 7·62	
100w. 230v. Single Coil, Clear	E.L.M.A. Members (4)	6·69, 6·74, 6·92, 7·89	7·16
	Controlled Cos. (3) ...	6·03, 6·17, 6·45	
	Independent Mfs. (2)	6·91, 7·88	
100w. 230v. Single Coil, Pearl	E.L.M.A. Members (5)	7·15, 7·15, 7·38, 7·50, 8·11	7·45
	Controlled Cos. (3) ...	6·24, 6·67, 7·03	
	Independent Mfs. (3)	7·28, 8·47, 8·75	
60w. 230v. Coiled Coil, Clear	E.L.M.A. Members (3)	6·13, 6·93, 6·98 ...	6·54
	Independent Mfs. (1)	8·30	
60w. 230v. Coiled Coil, Pearl	E.L.M.A. Members (5)	6·48, 7·27, 7·28, 7·29, 8·03	7·23
	Independent Mfs. (1)	8·57	
100w. 230v. Coiled Coil, Clear	E.L.M.A. Members (3)	7·66, 7·84, 9·05 ...	7·93
	Independent Mfs. (1)	9·08	
100w. 230v. Coiled Coil, Pearl	E.L.M.A. Members (3)	8·12, 8·25, 9·47 ...	8·64
	Independent Mfs. (1)	9·45	

TABLE 9—continued

Type of Lamp (i)	Makers (ii)	Factory Cost	
		Individual Companies (b) (iii)	Weighted Average (c) (iv)
<i>Filament Lamps, Motor</i>			
36w. 12v. Head Lamp ...	E.L.M.A. Members (4)	6·19, 7·83 , 8·64, 9·79	pence 8·51
" " " ...	Controlled Cos. (1) ...	7·27	
" " " ...	Independent Mfs. (1)	—	
6w. 12v. Side Lamp ...	E.L.M.A. Members (4)	2·27, 4·47 , 4·46 , 5·41	4·38
" " " ...	Controlled Cos. (1) ...	4·14	
" " " ...	Independent Mfs. (1)	—	
<i>Fluorescent Lamps</i>			
80w. 5 ft. ...	E.L.M.A. Members (4)	74·20, 83·06 , 83·07 , 140·06	86·06
" " ...	Independent Mfs. (2)	98·00, 98·94	

(a) The dates on which cost data were assessed vary between March, 1948 and September, 1949.

(b) Figures in bold type = G.E.C. and B.T.H.

(c) The weighted average figures in Column (iv) cannot be calculated for the Controlled Companies and the Independent Manufacturers because figures of lamps sold are not available in the case of certain companies.

TABLE 10
RANGE OF MANUFACTURERS' SELLING PRICES AND
DISTRIBUTORS' GROSS MARGINS ON CERTAIN TYPES OF LAMPS(a)

I. 60w. 230v. Single Coil Pearl General Service Filament Lamp

E.L.M.A. STANDARD LAMP (Retail Price 13·0d.)

Transaction	Range of Realised Prices	Range of Gross Margins		
	Manufacturer	Wholesaler	Retailer	User(b)
Manufacturer—Wholesaler— Retailer—General Public	7·4d.—8·7d. 57·0%—66·7%	0·6d.—2·4d. 4·5%—18·2%	2·6d.—4·4d. 20·0%—33·6%	— —
Manufacturer—Wholesaler— Retailer—Large User	7·2d.—8·7d. 55·2%—66·7%	0·6d.—2·4d. 4·5%—18·2%	1·0d.—2·7d. 7·5%—21·1%	1·6d.—1·9d. 12·5%—14·2%
Manufacturer—Retailer— General Public	8·5d.—10·4d. 65·6%—80·0%	— —	2·6d.—4·5d. 20·0%—34·4%	— —
Manufacturer—Retailer— Large User	8·3d.—10·4d. 63·9%—80·0%	— —	1·0d.—2·8d. 7·5%—21·9%	1·6d.—1·9d. 12·5%—14·2%
Manufacturer—Wholesaler— Large User	7·3d.—8·7d. 56·4%—66·7%	1·4d.—2·7d. 10·8%—20·6%	— —	2·3d.—3·6d. 17·5%—27·9%
Manufacturer—Large User	8·8d.—10·7d. 67·5%—82·5%	— —	— —	2·3d.—4·2d. 17·5%—32·5%
A CONTROLLED COMPANY'S LAMP, OWN BRAND (Retail Price 13·0d.)				
Manufacturer—Wholesaler— Retailer—General Public	6·9d. 53·3%	1·7d. 13·3%	4·3d. 33·3%	— —
Manufacturer—Retailer— General Public	8·7d. 66·7%	— —	4·3d. 33·3%	— —

TABLE 10—continued

A CONTROLLED COMPANY'S LAMP, RETAILER'S BRAND (Retail Price 9·2d.)

Transaction	Range of Realised Prices	Range of Gross Margins		
	Manufacturer	Wholesaler	Retailer	User(b)
Manufacturer-Retailer-General Public	6·8d.(c) 73·5%	—	2·4d. 26·5%	—

A CONTROLLED COMPANY'S LAMP, RETAILER'S BRAND (Retail Price 10·1d.)

Manufacturer-Wholesaler-Retailer-General Public	6·3d. 62·4%	0·9d. 9·4%	2·9d. 28·2%	—
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AN INDEPENDENT COMPANY'S LAMP (Retail Price 13·0d.)

Manufacturer-Wholesaler-Retailer-General Public	7·1d.-7·7d. 54·7%-59·5%	0·5d.-2·0d. 3·5%-15·3%	3·9d.-4·8d. 30·0%-37·0%	—
Manufacturer-Wholesaler-Retailer-Large User	7·1d.-7·7d. 54·7%-59·5%	0·5d.-2·0d. 3·5%-15·3%	1·6d.-2·5d. 12·5%-19·5%	2·3d. 17·5%
Manufacturer-Retailer-General Public	7·5d.-9·1d. 57·5%-70·0%	—	3·9d.-5·5d. 30·0%-42·5%	—
Manufacturer-Retailer-Large User	7·5d.-9·1d. 57·5%-70·0%	—	1·6d.-3·2d. 12·5%-25·0%	2·3d. 17·5%
Manufacturer-Wholesaler-Large User	7·1d.-7·7d. 54·7%-59·5%	0·5d.-3·6d. 3·5%-27·8%	—	2·3d.-4·8d. 17·5%-37·0%
Manufacturer-Large User	8·2d.-10·7d. 63·0%-82·5%	—	—	2·3d.-4·8d. 17·5%-37·0%

II. 12v. 36w. Motor Headlamp

E.L.M.A. HEADLAMP (Retail Price 30·0d.)

Manufacturer-Wholesaler-Retailer-General Public	14·8d.-17·3d. 49·3%-57·5%	1·4d.-6·0d. 4·5%-19·9%	9·0d.-11·7d. 30·0%-39·0%	—
Manufacturer-Wholesaler-Retailer-Large User	14·8d.-17·3d. 49·3%-57·5%	1·4d.-6·0d. 4·5%-19·9%	1·5d.-4·2d. 5·0%-14·0%	7·5d. 25·0%
Manufacturer-Retailer-General Public	18·3d.-21·0d. 61·0%-70·0%	—	9·0d.-11·7d. 30·0%-39·0%	—
Manufacturer-Retailer-Large User	18·3d.-21·0d. 61·0%-70·0%	—	1·5d.-4·2d. 5·0%-14·0%	7·5d. 25·0%
Manufacturer-Wholesaler-Large User	15·0d.-17·3d. 50·1%-57·5%	5·3d.-7·5d. 17·5%-24·9%	—	7·5d. 25·0%
Manufacturer-Large User: (i) Large Users, Ordinary	22·5d. 75·0%	—	—	7·5d. 25·0%
(ii) Motor Transport Undertakings	19·5d.-21·0d. 65·0%-70·0%	—	—	9·0d.-10·5d. 30·0%-35·0%
(iii) Some Special Agreement Holders	14·2d.-17·1d. 47·4%-57·0%	—	—	12·9d.-15·8d. 43·0%-52·6%
(iv) Joseph Lucas Ltd.(d)	12·2d. 40·7%	—	—	17·8d. 59·3%

A CONTROLLED COMPANY'S HEADLAMP (Retail Price 30·0d.)

Transaction	Range of Realised Prices	Range of Gross Margins		
	Manufacturer	Wholesaler	Retailer	User(b)
Manufacturer—Wholesaler—Retailer—General Public	12·0d. 40·0%	3·0d. 10·0%	15·0d. 50·0%	— —
Manufacturer—Retailer—General Public	15·0d. 50·0%	— —	15·0d. 50·0%	— —

AN INDEPENDENT COMPANY'S HEADLAMP (Retail Price 30·0d.)

Manufacturer—Wholesaler—Retailer—General Public	12·0d. 40·0%	3·0d. 10·0%	15·0d. 50·0%	— —
Manufacturer—Retailer—General Public	15·0d. 50·0%	— —	15·0d. 50·0%	— —

AN INDEPENDENT COMPANY'S HEADLAMP (Retail Price 30·0d.)

Manufacturer—Wholesaler—Retailer—General Public	14·4d. 48·0%	3·6d. 12·0%	12·0d. 40·0%	— —
Manufacturer—Retailer—General Public	18·0d. 60·0%	— —	12·0d. 40·0%	— —
Manufacturer—Certain Large Users	12·8d.—20·0d. 42·5%—66·7%	— —	— —	10·0d.—17·2d. 33·3%—57·5%

- (a) The manufacturers' selling prices and distributors' gross margins are expressed both in pence and as percentages of retail prices. Purchase Tax is excluded throughout. The figures take account of trade discounts and rebates—or agreed net prices in appropriate cases—but not of cash discounts. The figures for E.L.M.A. lamps take into account overriding commissions paid to associations of distributors. The ranges embrace the terms allowed to both exclusive and non-exclusive retailers (in the case of E.L.M.A. lamps) and special terms allowed to B.E.A. as a retailer, but do not cover all individually negotiated terms.
- (b) "Gross margin" in the case of a user means the reduction in price he enjoys by virtue of his status.
- (c) This lamp is made by two Controlled Companies: one sells to the other at 6·3d., the latter selling to the retailer at 6·8d.
- (d) The terms shown are those allowed to Joseph Lucas Ltd. on purchase for incorporation in motor car lighting equipment: the price to that company is increased by 12½ per cent. if the lamp is purchased for re-sale.

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