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SHELTER, PORCH
1.8 M x 1.8 M (6 FT x 6 FT)

NSN J11/8340-99-225-8188

OPERATING INFORMATION

Sponsored for use

in the

UNITED KINGDOM MINISTRY OF DEFENCE AND ARMED FORCES

by the

DEFENCE EQUIPMENT AND SUPPORT ORGANISATION

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PREFACE

Sponsor: DE&S OIP
Publication Authority: DE&S JSC SCM EngTLS-TD-Pol

INTRODUCTION

1 Service users should forward any comments on this publication through the channels prescribed in AESP 0100-P-011-013. An AESP Form 10 is provided at the end of the preliminary pages; it should be photocopied and used for forwarding comments on this AESP.

2 AESPs are issued under Defence Council authority and where AESPs specify action to be taken, the AESP will of itself be sufficient authority for such action and also for the demanding of the necessary stores, subject to the provisions of Para 3 below.

3 The subject matter of this publication may be affected by Defence Instruction Notices (DINs), Standard Operating Procedures (SOPs) or by local regulations. When any such Instruction, Order or Regulation contradicts any portion of this publication it is to be taken as the overriding authority.

RELATED AND ASSOCIATED PUBLICATIONS

Related publications

4 The octad for the subject equipment consists of all the categories shown in Table 1. All references are prefixed with the first eight digits of this publication. The availability of the publications can be checked by reference to the relevant Group Index in AESP 0100-A-001-013.

TABLE 1 RELATED PUBLICATIONS

Category/Sub-Category			Information Level			
			1 User/Operator	2 Unit Maintenance	3 Field Maintenance	4 Base Maintenance
1	0	Purpose and Planning Information	101	*	*	*
	1	Equipment Support Policy Directives	*	*	*	*
2	0	Operating Information	201	*	*	*
	1	Aide Memoire		*	*	*
	2	Training Aids	*	*	*	*
3		Technical Description	*	*	*	*
4	1	Installation Instructions	*	*	*	*
	2	Preparation for Special Environments	*	*	*	*
5	1	Failure Diagnosis	*	*	*	*
	2	Repair Instructions	*	*	*	*
	3	Inspection Standards	*	*	*	*
	4	Calibration Procedures	*	*	*	*
6		Maintenance Schedules	201	*	*	*
7	1	Illustrated Parts Catalogues	*	*	*	*
	2	Commercial Parts Lists	711	*	*	*
	3	Complete Equipment Schedule, Production	*	*	*	*
	4	Complete Equipment Schedule, Service Edition (Simple Equipment)	*	*	*	*
	5	Complete Equipment Schedule, Service Edition (Complex Equipment)	741	*	*	*
8	1	Modification Instructions	*	*	*	*
	2	General Instructions, Special Technical Instructions and Servicing Instructions	*	*	*	*
	3	Service Engineered Modification Instructions (RAF only)	*	*	*	*

* Category/Sub-category not published.

Associated publications

5 The following publications are associated with this AESP octad.

Reference	Title
NONE	

ABBREVIATIONS

6 The following abbreviations are used in this AESP octad.

Abbreviation	Nomenclature
AESP	Army Equipment Support Publication
DIN	Defense Instruction Notices
Fig	Figure
ft	feet (foot)
ft^3	feet cubed
in.	inch
kg	kilogram
lb	pound
m	metre
m^2	metres squared
m^3	metres cubed
mm	millimeters
NATO	North Atlantic Treaty Organisation
NSCM	NATO Supply Code for Manufacturers
NSN	NATO Stock Number
Para	Paragraph
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures

WARNINGS AND CAUTIONS

HAZARDOUS SUBSTANCES

7 Before using any hazardous substances or material, the user must be conversant with the safety precautions and first aid instructions:

7.1 on the label of the container it was supplied in;

7.2 on the material Safety Data Sheet;

7.3 in local Safety Orders and Regulations.

WARNINGS

(1) PERSONNEL INJURY/EQUIPMENT DAMAGE. SUFFICIENT PERSONNEL ARE REQUIRED WHEN LIFTING THE ASSEMBLED ROOF. THE MINIMUM IS ONE PERSON PER WALL MEMBER.

(2) PERSONNEL INJURY/CRUSH HAZARD. EXERCISE CAUTION WHEN ASSEMBLING POLES AND BRACKETS DUE TO THE RISK OF CRUSH INJURY TO FINGERS.

(3) PERSONNEL INJURY. WHEN POLES ARE CURVED UNDER TENSION THERE IS A HIGH RISK THAT THEY MAY SLIP AND SPRING BACK TO THEIR STRAIGHT RELAXED POSITION. PERSONNEL SHOULD NOT POSITION THEMSELVES DIRECTLY IN FRONT OF THE POLES.

(4) PERSONNEL INJURY/HEAVY WEIGHT. A MINIMUM OF FOUR PERSONNEL ARE REQUIRED TO LIFT OR MOVE THE SHELTER.

(5) PERSONNEL INJURY/BURN HAZARD. WHEN BURNING WEBBING TO PREVENT FRAYING, THE WEBBING WILL BECOME EXTREMELY HOT AND MELT.

(6) PERSONNEL INJURY/TOXIC HAZARD. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING GLOVES, GOGGLES OR FACEMASK AND COVERALLS ARE TO BE WORN WHEN USING MYSTOX.

(7) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX COMES INTO CONTACT WITH SKIN OR EYES WASH THE AFFECTED AREA IMMEDIATELY WITH WATER AND SEEK MEDICAL ATTENTION. JSP 437 REFERS.

(8) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX IS SWALLOWED, SEEK IMMEDIATE MEDICAL ATTENTION.

(9) PERSONNEL INJURY/TOXIC HAZARD. ONLY USE MYSTOX IN AUTHORIZED AREAS. DO NOT USE WHERE THERE IS A DANGER OF SPILT MYSTOX ENTERING THE WATER COURSE INCLUDING PONDS, DITCHES OR WATERWAYS.

(10) PERSONNEL INJURY/TOXIC HAZARD. DISPOSAL OF SURPLUS MYSTOX AND EMPTY CONTAINERS IS TO BE ORGANISED BY THE UNIT QUARTERMASTER/SUPPLY OFFICER IN ACCORDANCE WITH UNIT ENVIRONMENT STANDING ORDERS AND/OR LOCAL PUBLIC HEALTH BY-LAWS.

11) PERSONNEL INJURY. WHEN FITTING OR RELEASING THE INSULATION TENSIONERS THERE IS A HIGH RISK THAT UNDER TENSION THEY MAY SLIP AND SPRING BACK AT PERSONNEL.

CAUTIONS

(1) **EQUIPMENT DAMAGE. The shelter is to be pitched on firm level ground and it is essential that adequate anchorage or ballast be placed on the coated fabric sod cloths at the bottom of the wall and ends of the shelter. The listed tent pins or spoil from drainage trenches is suitable for this purpose and may be used in sandbags or other flexible containers, if available. Guy lines are also provided to give additional stability under high wind conditions.**

(2) **EQUIPMENT DAMAGE. Wet canvas should never be folded or packed unless circumstances render this unavoidable. Shelters should therefore be left to dry thoroughly before they are struck. If the shelter is not completely dry the officer in charge of the campsite or receiving unit is to be informed.**

(3) **EQUIPMENT DAMAGE. All insulation panels can be added after the shelter has been erected EXCEPT the roof panel that must be attached to the frame prior to the canvas.**

(4) **EQUIPMENT DAMAGE. When lifting the roof, the supervisor must ensure that the lift is even along the length of the frame, thus avoiding distortion of the brackets and poles.**

(5) **EQUIPMENT DAMAGE. The sunshade is to be erected prior to the shelter if possible or alternatively moved into position over the tent after assembly with the base restraint straps being added after it is in its final position. The ratchet straps should not be over tightened and never used if damaged.**

(6) **EQUIPMENT DAMAGE. The shelter is to be erected on ground that has been cleared of any large stones or rubble.**

(7) **EQUIPMENT DAMAGE. A power washer may be used at low pressure with warm water. Use judgement and caution regarding water pressure and temperature.**

(8) **EQUIPMENT DAMAGE. Do not use solvents or detergents to clean the shelter as they will dissolve the protective coating on the fabric.**

OPERATING INFORMATION

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Fig

DESCRIPTION

1 The porch is a framed shelter with gradual sloping side walls. A single canvas comprising one roof and walls section fits over the top of the frame. An end section that closes with slide fasteners, toggles and loops can be fitted to the roof and wall canvas with zip fasteners.

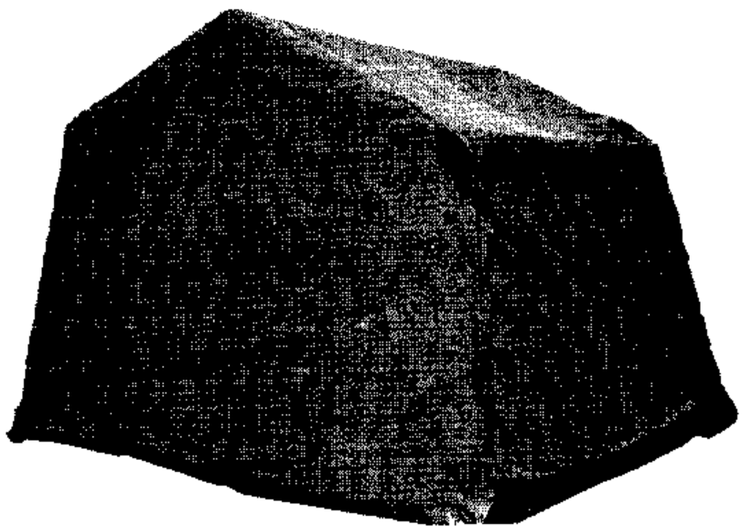

Fig 1 Shelter, porch 1.8 m x 1.8 m

2 The frame is constructed of thirteen light alloy tubular members connected together by six ridge and eaves brackets and four base brackets. The tubular members are of the same diameter. The 3 ft and 6ft lengths allow for easy transportation.

3 The entrances are fitted with a blackout curtain inside the opening to allow exit and entry under blackout conditions.

4 The shelter, porch can be connected to a general purpose 12 ft x 12 ft or 24 ft x 18 ft shelter. Any number of porches can be connected together to form a covered passageway.

5 In general, interconnectability between old and new pattern canvas components has been maintained by the continued use of a 'Dutch lacing' interface as shown in Fig 2 to Fig 9. This allows for an old pattern roof and wall section to be used with newer pattern end sections and vice versa.

6 A base restraint strap and an adjustable roof restraint strap are provided to give extra stability to the frame. Guy lines and a selection of tent pins are available to secure the shelter in windy conditions.

7 Optional fitments include a groundsheet, hard flooring and insulation panels for the roof, walls and end section.

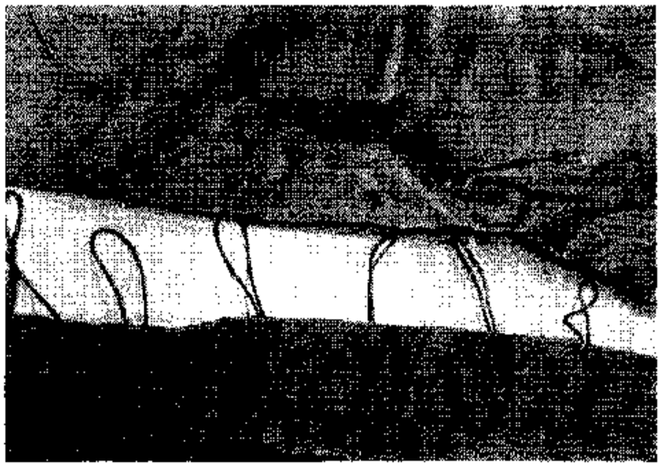

Fig 2 Lacing canvas sections (1)

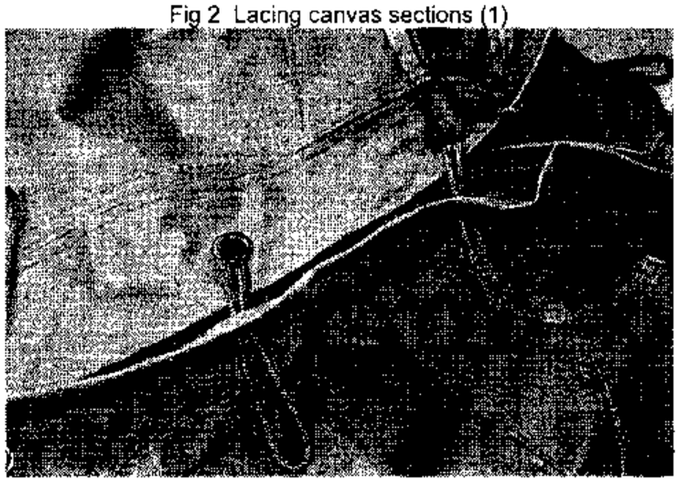

Fig 3 Lacing canvas sections (2)

Fig 4 Lacing canvas sections (3)

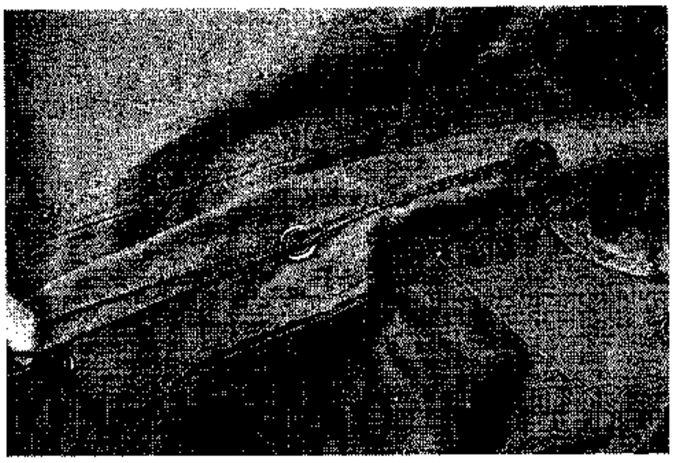

Fig 5 Lacing canvas sections (4)

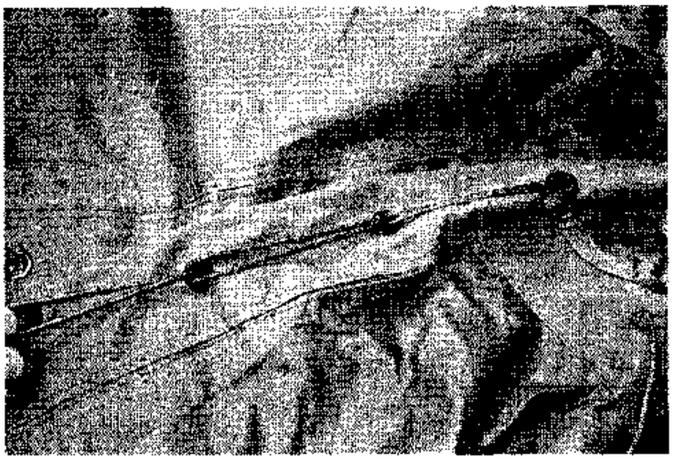

Fig 6 Lacing canvas sections (5)

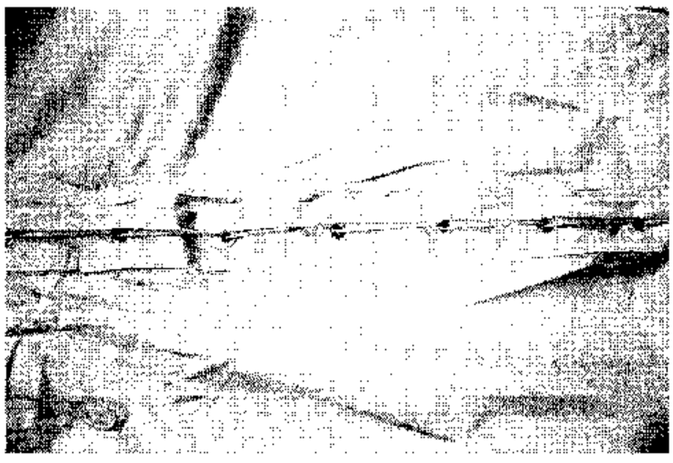

Fig 7 Lacing canvas sections (6)

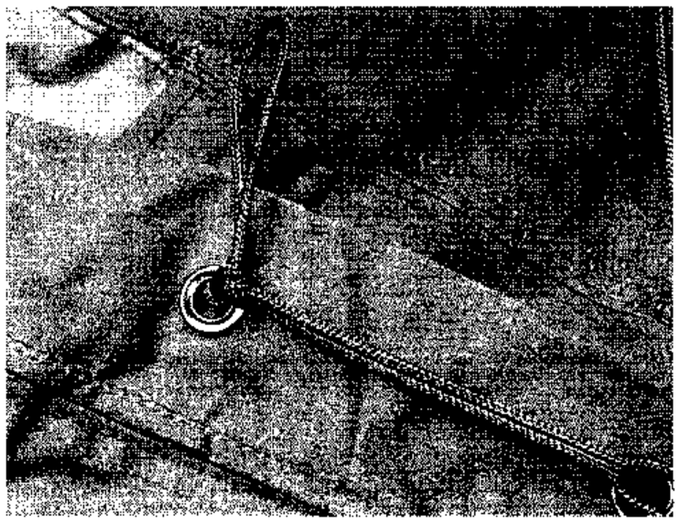

Fig 8 Lacing canvas sections (7)

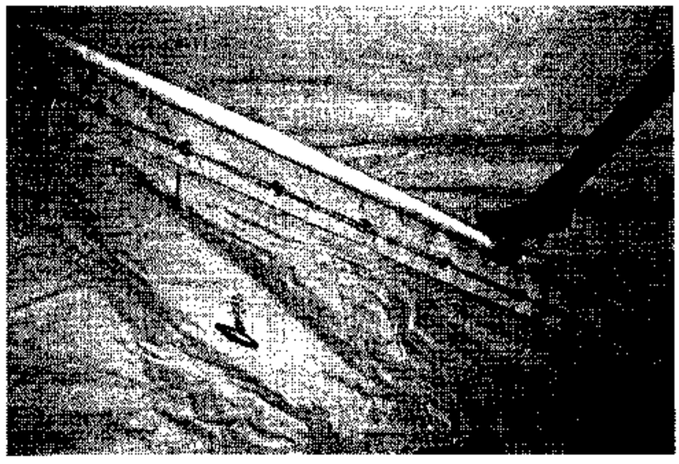

Fig 9 Lacing canvas sections (8)

SITING

8 To site the shelter, porch proceed as, follows:

8.1 The ground should be as level as possible, avoiding hollows where water would collect during heavy rain. Dry river beds or wadis must be avoided as heavy rainfall or flash floods, however infrequent, can jeopardise the integrity of the shelter.

8.2 The ground should also be firm, thus ensuring stability for pins and poles.

8.3 The site should be clear from obstacles such as rocks, trees and bushes to avoid the risk of tears in the canvas or ground cloth.

8.4 Drainage may be achieved by cutting channels around each shelter when the gradient and composition of the ground allows it.

8.5 Alternatively, the ground should be broken up between the tent pins and tent walls and a small bank of earth built on the inside of the tent wall.

8.6 Attention should be paid to the direction of the prevailing wind so that the tent is erected with its entrance located on the side facing away from the wind. Consideration should also be given towards minimising the area exposed to the wind, as this will gradually loosen the over straps and guy lines.

8.7 To prevent the propagation of fire between shelters, wherever possible, a spacing of 6 m between shelters or shelter complexes is to be maintained.

PITCHING

WARNING

PERSONNEL INJURY/EQUIPMENT DAMAGE. SUFFICIENT PERSONNEL ARE REQUIRED WHEN LIFTING THE ASSEMBLED ROOF. THE MINIMUM IS ONE PERSON PER WALL MEMBER.

CAUTION

EQUIPMENT DAMAGE. The shelter is to be pitched on firm level ground and it is essential that adequate anchorage or ballast be placed on the coated fabric sod cloths at the bottom of the wall and ends of the shelter. The listed tent pins or spoil from drainage trenches is suitable for this purpose and may be used in sandbags or other flexible containers, if available. Guy lines are also provided to give additional stability under high wind conditions.

Deployment

9 The porch pitching party will comprise of three personnel and a supervisor.

10 The pitching space should be marked out in accordance with the ground plan provided.

11 The valise or bundle containing the tent canvas and accessories should be carried as near as possible to the pitching site.

Assemble the shelter

NOTE

Insulation panels, if required, must be fitted before erection of canvas.

12 Refer to Fig 10 and proceed as follows:

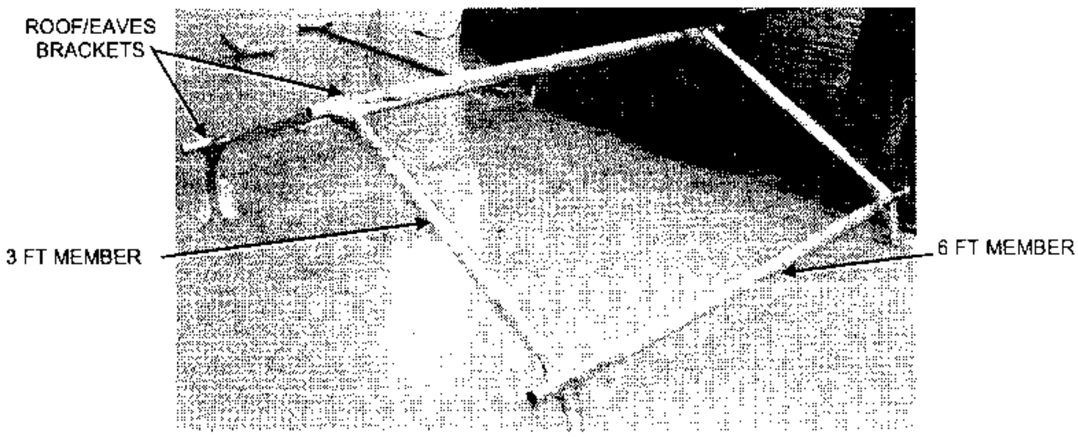

Fig 10 Roof frame assembly

12.1 Assemble the roof section using three 6 ft members, four 3 ft members and six ridge and eaves brackets. Ensure that the poles are inserted fully into the brackets.

12.2 Attach and tighten the adjustable roof restraint straps diagonally between opposing corners.

12.3 Assemble one side of the frame using three 6 ft members and two base brackets.

12.4 Lift one side of the roof frame to shoulder height and connect the side to the eaves brackets on the roof section. One person is required for each wall member and the lift should be even to avoid distortion and subsequent damage to the frame components.

13 If there is a requirement to fit the roof insulation panel, proceed as follows:

13.1 Drape the strap roof insulation and strap roof insulation centrally over the roof frame Fig 11.

Fig 11 Insulation roof restraints fitted and support straps placed across frame

13.2 Lay the roof insulation panel, over the roof with white side facing inwards and fold the sides up onto the roof Fig 12. Loosely attach to the framework by the use of the tensioners, ensuring the ridge of the roof panel is aligned centrally.

NOTE

The roof insulation panel must be fitted before erection - all other panels may be fitted after erection.

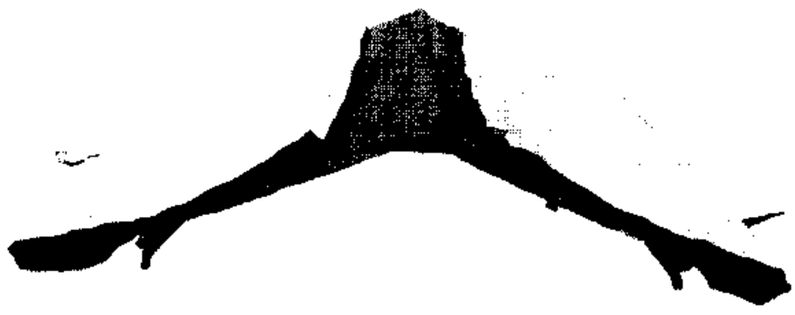

Fig 12 Roof frame with insulation panel unsecured

WARNING

PERSONNEL INJURY. WHEN FITTING OR RELEASING THE INSULATION TENSIONERS THERE IS A HIGH RISK THAT UNDER TENSION THEY MAY SLIP AND SPRING BACK AT PERSONNEL.

13.3 The Mk 3 end panel consists of 34 items per end and are shown in Fig 13, viewed from the inside.

13.1 Lay the 3 end wall component insulation panels at one end of the passageway. Attach the centre insulation panel with tensioners to the roof panel ensuring the tensioners are fitted around the poles Fig 15.

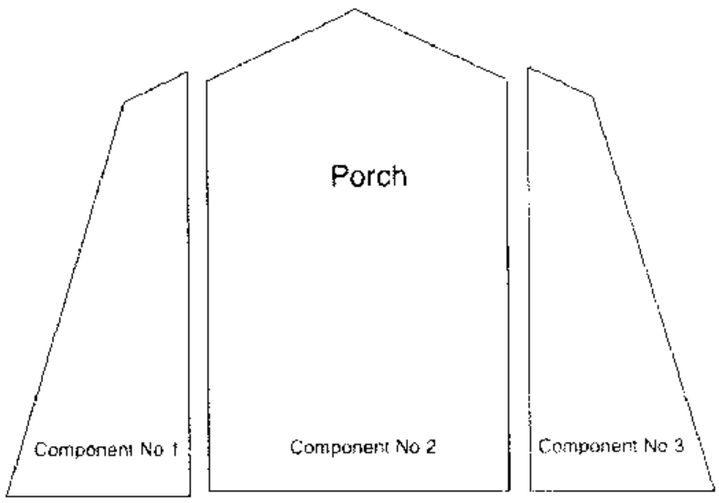

Fig 13 The Mk 3 end panel (Typical arrangement viewed from inside)

13.2 The tensioners are fitted by passing the loose end through the centre of the clip, pulling the tail to tension, then still under tension laying the tail into the jaws and end opening of the clip before releasing the tension to secure; the remaining tail should continue round and be reinserted through the centre of the clip to double secure. To release pull the tail to tension' lift the loose cord out of the clip, and release. Tensioner tails should pass through the insulation from the inside and be secured around the tent frame. Fig 14 and Fig 15.

Fig 14 Tensioner loose and locked

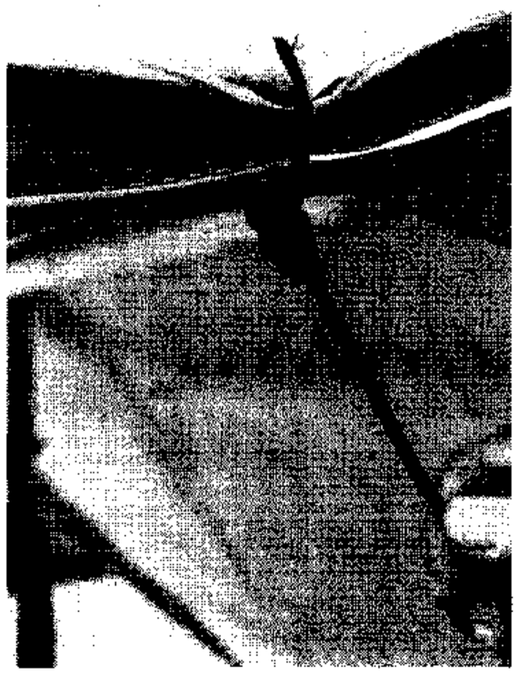

Fig 15 Tensioner

13.3 Attach the remaining end wall insulation panels at each end. Viewed from the outside the outer end wall panels must overlap the centre panel Fig 16.

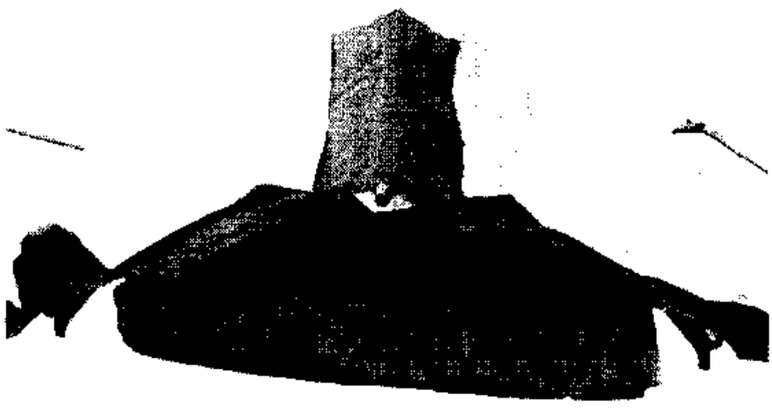

Fig 16 End wall insulation panel

13.4 Raise one side of the shelter and, working from inside, tighten the tensioners and ensure that all panels overlap correctly.

13.5 Raise the other side of the shelter, lower the roof sides and attach to the end wall insulation panels at each end.

14 To provide access the centre end wall panels should be rolled up from the inside Fig 17.

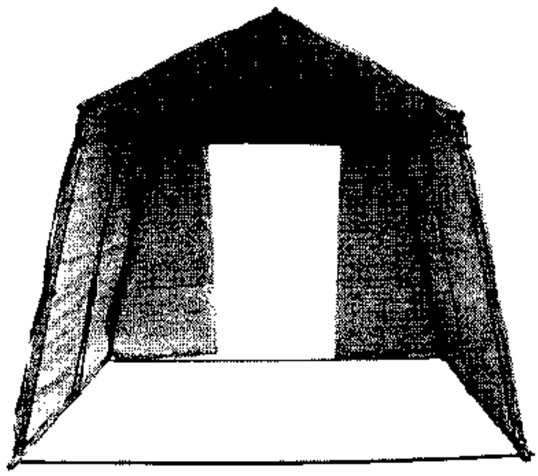

Fig 17 Access (Typical arrangement)

15 To fit the canvas proceed as follows:

15.1 Orientate the roof and wall canvas into the required position and drape it over the frame.

15.2 Ensure that the ends of the ridge brackets are located in the canvas at the required positions.

15.3 Assemble the remaining frame side.

15.4 Raise the roof frame and canvas to shoulder height and connect the side to the eaves brackets on the roof section. One person is required for each wall member and the lift should be even to avoid distortion and subsequent damage to the frame components.

15.5 Attach the base restraint straps to the base brackets between opposing sides at each end of the frame.

15.6 Tighten the insulation support strap if fitted.

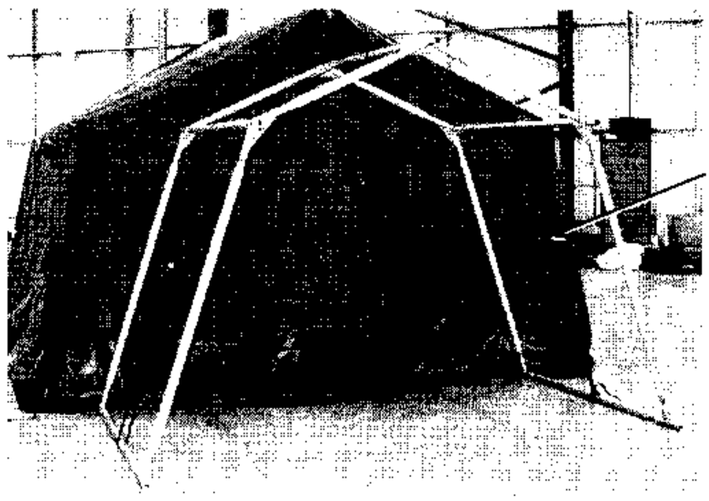

Fig 18 Frame with insulation support strap

Fit the base restraint straps

16 To fit the base restraint straps proceed as follows:

16.1 Lift the vertical members out of the base brackets and place the ring of the base restrairt strap over the base brackets.

16.2 Refit the vertical members in the base brackets and re-tighten the insulation support straps.

16.3 Pass the strap underneath the base bracket and position next to the base bracket on the opposite side of the frame.

16.4 Repeat the operations detailed in para 16.1 and 16.2 and secure the base restraining straps to the opposite side of the framework. Ensure that the straps are not twisted.

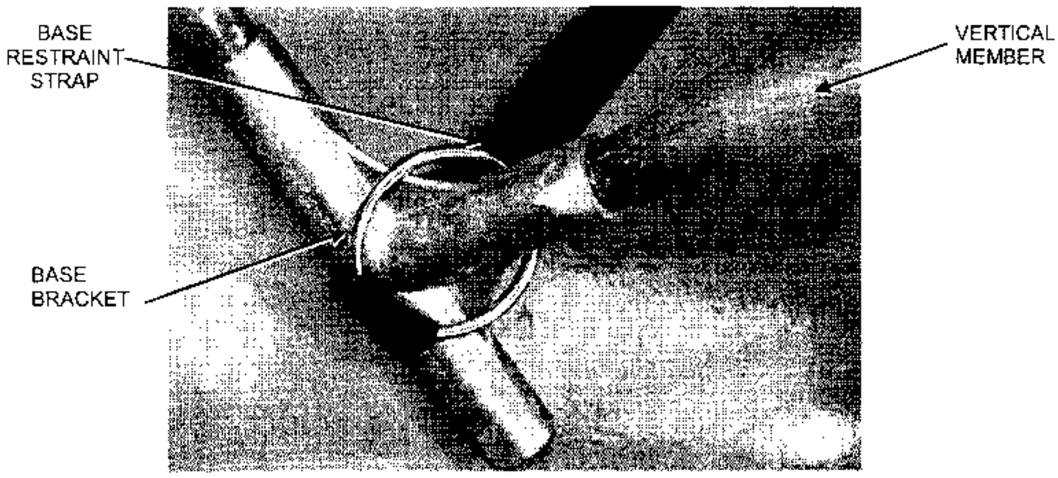

Fig 19 Base restraint strap fixing

17 If the shelter is not being used as a passageway the end section must be fitted at this point.

Fit the end section

18 The end section is fitted to the roof/wall canvas with a zip fastener.

Forming a passageway

19 To form a passageway using multiple shelters proceed as follows:

19.1 Site the first shelter in its required position.

19.2 Insert three 6 ft members into the roof and eaves brackets.

19.3 Insert two 6 ft members into the base brackets.

19.4 Fit two 3 ft members to the roof frame using three ridge and eaves brackets.

19.5 Fit two 6 ft members between the eaves and the base brackets.

19.6 Refer to para 12 and continue to construct the shelter.

19.7 Refer to Fig 2 through to Fig 9 and 'Dutch Lace' the roof and side sections together in the manner shown.

Secure the shelter

20 Secure the sod-cloth to the ground through the external eyelets using 400 mm steel tent-pins.

21 The sod-cloth can be ballasted to restrict the bellowing effect of the wind. Sandbags (F2/5610-99-200-4386) filled with spoil from the drainage trench is recommended for this purpose.

22 When pegging out the shelter, proceed as follows:

22.1 Pins for shelter lines (8340-99-943-9052) should be driven at an angle of 60 degrees from the horizontal approximately four fifths into the ground whereby the bottom of the hook or head of the pin is level with the ground and approximately 300 mm (1ft) from the edge of the sod cloth.

22.2 Hooks on tent pins should face in the opposite direction to the pulling force of the line and any cords should be placed around the pin prior to pegging.

22.3 For ease of driving the pins into the ground and to obtain the correct angle, personnel should try to position themselves behind the pin, facing away from the direction of the pulling force of the line when striking.

22.4 Avoid unequal strain and wear on the canvas by ensuring that:

22.4.1 Weather lines are not twisted and lie flat across the canvas.

22.4.2 Restraint and insulation straps are not twisted and lie flat across the insulation.

22.4.3 Doorways are closed while erection and pegging is carried out.

Fit the ground sheet

23 To fit the groundsheet, proceed as follows:

23.1 Ensure that the ground area to be covered is free of debris.

23.2 Spread the groundsheet over the floor area taking care to smooth out any creases.

23.3 Attach the sides of the groundsheet to the base of the frame using tensioners.

23.4 Secure the ends of the groundsheet to the ground using tent pins if necessary.

24 When fitting multiple groundsheets to form a passageway, proceed as follows:

24.1 Fit the groundsheets in accordance with para 23.

24.2 Overlap the groundsheets ensuring that the peg rings align.

24.3 Secure the overlapping groundsheets with tent pins.

Fitting the hard flooring

NOTE

Do not use hard flooring on hard surfaces.

25 The hard flooring is constructed of interlocking square mats. Lay the mats on the groundsheet and push to lock the mats together.

STRIKING

WARNING

EQUIPMENT DAMAGE. WET CANVAS SHOULD NEVER BE FOLDED OR PACKED UNLESS CIRCUMSTANCES RENDER THIS UNAVOIDABLE. SHELTERS SHOULD THEREFORE BE LEFT TO DRY THOROUGHLY BEFORE THEY ARE STRUCK. IF THE SHELTER IS NOT COMPLETELY DRY THE OFFICER IN CHARGE OF THE CAMPSITE OR RECEIVING UNIT IS TO BE INFORMED.

26 Striking the shelter is the reverse of the pitching procedure.

FOLDING

27 To fold the shelter canvasses proceed as follows:

27.1 Lay the shelter roof and wall canvas flat on the ground.

27.2 Fold the walls onto the roof.

27.3 Fold in half from end to end.

27.4 Roll to form the smallest possible bundle.

27.5 Fold the end section in half so that the sides meet.

27.6 Fold in half again so that the so that the uppermost part of the section touches the base.

27.7 Roll to form the smallest possible bundle.

Insulation panels

28 To fold the end wall panels fold in half and half again. The roof panel is folded in half and half again long ways and then rolled from one end.

PACKING

29 To pack the shelter, proceed as follows:

29.1 Whenever it becomes necessary to pack canvas in a wet condition the packages are to be clearly marked 'NOT DRY'.

29.2 If the wet canvas is being retained in the campsite, the officer in charge is to be notified of the condition of the canvas so that he can arrange for it to be dried at the earliest opportunity.

29.3 If the wet canvas is to be despatched, the consignee is to be notified by telephone or signal so that the canvas can be unpacked and dried as soon as possible after receipt.

29.4 Place the folded shelter canvas in the Valise with the straps.

29.5 Place the shelter frame components and the tent pins in the bags provided.

MAINTENANCE INSTRUCTIONS

Introduction

30 The life of tentage can be enhanced considerably if reasonable care is taken whilst in use or in storage. Such care will also help to minimise costs involved in refurbishment after exercises or operations.

Common causes of damage to canvas

31 Common causes or damage to canvas are as follows:

31.1 Burns, due to careless smoking or siting of shelters near braziers or incinerators.

31.2 Holes due to careless pitching, stacking or stowage of articles too close to shelter walls. When shelters are used for storage, stacks should be approximately 60 mm (2 ft) from the walls and should not touch the canvas at any point. Gangways are essential in case of fire.

31.3 Tears in canvas can be caused through over-taut weather lines. In wet weather, lines directly attached to the canvas should be slackened.

31.4 Tears in the sod-cloth can be caused by walking on it if there are sharp stones or rubble beneath, or if sharp rubble is used to ballast the shelter.

31.5 Damage to the fabric may occur as a result of folding canvasses when wet, or on ground contaminated by oil etc.

31.6 Similarly, fabric may be damaged when shelters are used as kitchens or medical theatres if blood, grease or other fats come into contact with the canvas. Canvas should be rinsed off as soon as possible should this occur. Work surfaces that would normally have blood, grease or other fats on them should be kept clear of the canvas. Grease and fats will also become a fire hazard if not cleaned.

31.7 Grease or oil on the hands or clothing of personnel handling or using the tentage will cause damage if in contact with the canvas.

31.8 Care must be exercised when loading or unloading tentage into or from vehicles to avoid damage from contact with projections on the vehicle.

31.9 Vehicles must be examined before loading to check for dirty or contaminated interiors or any oily or dirty items. Unless they can be cleaned prior to loading tentage, such vehicles should not be employed.

31.10 In overseas theatres where native flora and fauna may damage the canvas, regular checks should be carried out.

31.11 When joining a number of shelters together, care should be taken to avoid abnormal stress being placed on the canvas.

31.12 Exposure to Ultra Violet (UV) light causes damage to all fabrics. To prolong the life of a shelter in areas of high UV an appropriate sunshade should be used.

EFFECTS OF DAMP

32 Wet or damp canvas deteriorates rapidly. If stored in this condition it is liable to catch fire due to spontaneous combustion.

33 All canvas must be thoroughly dry before storing. Stacks should be examined periodically and any damp or suspect canvas removed and examined immediately.

34 Storehouses employed for storing tentage should be inspected regularly for any sources of water ingress.

35 Shelter weather lines and ropes should be dry before storing.

DAMAGE TO POLES AND BRACKETS

36 Common causes of damage to shelter poles are as follows:

36.1 Distortion of alloy shelter frames through misuse and carelessness, i.e. using the alloy poles as bearers or levers, or permitting components to lie where they can be crushed by vehicle tyres/tracks.

36.2 Excessive use of force when fitting the framework together. Care should be taken to ensure that the hollow ends of the components are free from dirt or other blockages.

36.3 Employing too few people when pitching and striking tentage will result in loss of control over the twisting and bending of the frame and will eventually result in the components becoming unserviceable.

36.4 Excessive loading to the roof such as snow, sand and other debris. Personnel should never climb on or over any shelters.

DAMAGE TO INSULATION

37 The following repair kit is available to effect repairs on the insulation panels

TABLE 1 INSULATION REPAIR KIT

Serial (1)	Item (2)	D of Q:	DMC	NSN (3)
1	INSULATION PANEL REPAIR KIT	1	J11	8340-99-839-8761
2	FABRIC TAPE	Roll	J11	7510-99-854-9439
3	FABRIC HAGIHARA . POLYETHYLENE UV FR - WHITE	2 SQ M	J11	8305-99-741-6212
4	FABRIC HAGIHARA POLYETHYLENE UV FR - GREEN	2 SQ M	J11	8305-99-929-8077
5	MATERIAL REPAIR PATCH KIT	1	J11	8340-99-153-6635
6	ALUMINIUM TAPE	Roll	J11	5999-99-872-2227
7	ALUMINIUM FOIL	2 SQ M	J11	5640-99-297-9453

38 To carry out a repair on the insulation fabric outer cover proceed as follows:

38.1 Apply the green/white tape to repair slits or tear in fabric cover material where there is sufficient remaining material to bring together for a complete tape covering. Using a suitable support behind the panel light pressure should be applied to the tape to ensure a tight seal.

38.2 Apply fabric patch material for holes or tears where there is insufficient material to bring together to enable a tape only repair. Cut a patch to cover the hole/tear. Apply tape to all edges of the patch. Using a suitable support behind the panel light pressure should be applied to the tape to ensure a tight seal.

39 To carry out a repair on the insulation inner material proceed as follows:

39.1 Apply the foil tape to repair slits or tear in inner material where there is sufficient remaining material to bring together for a complete tape covering. Using a suitable support behind the panel light pressure should be applied to the tape to ensure a tight seal.

39.2 Apply foil/bubble patch material for holes or tears where there is insufficient material to bring together to enable a foil tape only repair. Cut a patch to cover the hole/tear. Apply tape to all edges of the patch. Using a suitable support behind the panel light pressure should be applied to the tape to ensure a tight seal.

40 Repairs that require a patch larger than supplied in the repair kit will require the panel to be replaced.

41 Where damage to the eyelets has occurred this will require the panel to be replaced.

PROOFING

WARNINGS

(1) PERSONNEL INJURY/TOXIC HAZARD. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING GLOVES, GOGGLES OR FACEMASK AND COVERALLS ARE TO BE WORN WHEN USING MYSTOX. JSP 437 REFERS

(2) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX COMES INTO CONTACT WITH SKIN OR EYES WASH THE AFFECTED AREA IMMEDIATELY WITH WATER AND SEEK MEDICAL ATTENTION.

(3) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX IS SWALLOWED, SEEK IMMEDIATE MEDICAL ATTENTION.

(4) PERSONNEL INJURY/TOXIC HAZARD. ONLY USE MYSTOX IN AUTHORIZED AREAS, DO NOT USE WHERE THERE IS A DANGER OF SPILT MYSTOX ENTERING THE WATERCOURSE INCLUDING PONDS, DITCHES OR WATERWAYS.

(5) PERSONNEL INJURY/TOXIC HAZARD. DISPOSAL OF SURPLUS MYSTOX AND EMPTY CONTAINERS IS TO BE ORGANISED BY THE UNIT QUARTERMASTER/SUPPLY OFFICER IN ACCORDANCE WITH UNIT ENVIRONMENT STANDING ORDERS AND/OR LOCAL PUBLIC HEALTH BY-LAWS.

Introduction

42 A waterproofing agent Mystox TRP (8030-99-225-1573) is available for the renovation of all canvas tentage. This is a preservative coating that is an olive drab, water solvent emulsion that will restore the Flame resistance, Water resistance and Rot Resistance (FWRR).

Personal protective equipment (PPE) JSP 437

43 Table 2 details some of the NATO Stock Numbers (NSNs) of suitable Personal Protective Equipment (PPE) for personnel using Mystox.

44 Units that do not have sufficient quantities of the items to equip a 4-6 person reproofing team should demand items through the normal supply chain. A team should be sufficient to reproof a battalion's entitlement of shelters.

TABLE 2 PPE

Serial (1)	Item (2)	D of Q:	DMC	NSN (3)	Size (4)
	GLOVES				
1	Chemical & Oil Protective	PR	GL	8415-99-132-1427	Size 7
2	Chemical & Oil Protective	PR	GL	8415-99-132-1428	Size 8
3	Chemical & Oil Protective	PR	GL	8415-99-132-1429	Size 9
4	Chemical & Oil Protective	PR	GL	8415-99-132-1430	Size 10
5	Chemical & Oil Protective	PR	GL	8415-99-978-3706	Size 7
6	Chemical & Oil Protective	PR	GL	8415-99-978-3707	Size 8
7	Chemical & Oil Protective	PR	GL	8415-99-978-3708	Size 9
8	Chemical & Oil Protective	PR	GL	8415-99-978-3709	Size 10
9	Chemical & Oil Protective	PR	GL	8415-99-978-3710	Size 11
10	Rubber		GL	8415-99-130-8250	Size Small
11	Rubber		GL	8415-99-130-8251	Size Medium
12	Rubber		GL	8415-99-130-4729	Size Large
13	Rubber		GL	8415-99-130-8252	Size Extra Large
14	Rubber		GL	8415-99-571-3559	Size 7/7 IA
15	Rubber		GL	8415-99-571-3560	Size 8/8 1/2
16	Rubber		GL	8415-99-571-3561	Size 9/9 1/2
17	Rubber		GL	8415-99-571-3562	Size 10/10 1/2
	GOGGLES, INDUSTRIAL				
18	Goggles	EA	VO47	4240-99-577-3798	
19	Goggles	EA	VO47	8415-99-130-9776	
	COVERALLS				
20	Coverall, disposable		CAS	8415-99-130-8302	Size M
21	Coverall, disposable		CAS	8415-99-130-8303	Size L
22	Coverall, disposable		CAS	8415-99-130-8304	Size XL
23	Coverall, disposable		CAS	8415-99-665-7624	Size XXL
24	Coverall, disposable		CAS	8415-99-665-7625	Size XXXL
25	Coverall, disposable		CAS	8415-99-978-4772	Size M
26	Coverall, disposable		CAS	8415-99-978-4773	Size L
27	Coverall, disposable		CAS	8415-99-978-4774	Size XL
28	Coverall, disposable		CAS	8415-99-978-4775	Size XXL
29	Coverall, disposable		CAS	8415-99-978-4776	Size XXXL
	FACEMASK				
30	Mask, disposable		VO47	4240-99-132-1426	
31	Mask, disposable		VO47	4240-99-257-8006	

Mystox – Instructions for use

WARNINGS

(1) PERSONNEL INJURY/TOXIC HAZARD. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING GLOVES, GOGGLES OR FACEMASK AND COVERALLS ARE TO BE WORN WHEN USING MYSTOX. JSP 437 REFERS

(2) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX COMES INTO CONTACT WITH SKIN OR EYES WASH THE AFFECTED AREA IMMEDIATELY WITH WATER AND SEEK MEDICAL ATTENTION.

(3) PERSONNEL INJURY/TOXIC HAZARD. IF MYSTOX IS SWALLOWED, SEEK IMMEDIATE MEDICAL ATTENTION.

(4) PERSONNEL INJURY/TOXIC HAZARD. ONLY USE MYSTOX IN AUTHORIZED AREAS. DO NOT USE WHERE THERE IS A DANGER OF SPILT MYSTOX ENTERING THE WATERCOURSE INCLUDING PONDS, DITCHES OR WATERWAYS.

(5) PERSONNEL INJURY/TOXIC HAZARD. DISPOSAL OF SURPLUS MYSTOX AND EMPTY CONTAINERS IS TO BE ORGANISED BY THE UNIT QUARTERMASTER/SUPPLY OFFICER IN ACCORDANCE WITH UNIT ENVIRONMENT STANDING ORDERS AND/OR LOCAL PUBLIC HEALTH BY-LAWS.

45 To apply Mystox, proceed as follows:

45.1 The emulsion is to be applied with a brush only. Spray painting is strictly forbidden.

45.2 The emulsion should be well stirred and look like ordinary emulsion paint. If it thickens during application it should be thinned by adding a small amount of water.

45.3 Under cold conditions it may be necessary to stir for a longer period than under warm conditions.

45.4 The emulsion should be stored in a temperature that does not fall below 0°C. If after extended storage, it can be applied with a brush without balling or curdling it should perform satisfactorily.

45.5 Only those parts of the tent which leak (i.e. most worn areas and seams) should be treated.

45.6 If, in spite of wearing protective clothing any Mystox comes into contact with the skin, the affected area should be washed immediately with water.

45.7 Disposal of surplus emulsion and empty containers must be organised by the unit.

45.8 Quartermaster/Supply Officer in accordance with the local public health by-laws and advice of local authorities must be sought as regulations may vary from area to area.

45.9 Drying time with good drying conditions is between seven and eight hours. To ensure that the emulsion is absolutely dry, whenever possible drying should be extended over 24 hours in a warm dry atmosphere.

45.10 Application can be made onto a damp canvas if necessary. In such a case extra care with drying is essential.

45.11 Mystox is issued in 25 kg containers therefore it will probably be necessary to decant the liquid into smaller containers. These are to be suitably labelled and treated for disposal in the same way as the original containers.

45.12 It is advisable, whenever practicable, to reproof shelters whilst they are erected and to leave them standing during the drying process. This is of course more difficult for the larger

shelters that may require their roofs to be reproofed prior to complete erection. Alternatively, a brush on an extended handle can be used, however extra care must be taken to ensure splashes and spillage are kept to a minimum and cleaned as soon as possible.

45.13 After use, all protective clothing should be scrubbed in soapy water and then thoroughly rinsed to aid the removal of residual deposits of Mystox.

45.14 Hands should be washed thoroughly and nails scrubbed with warm soapy water.

45.15 Mystox emulsion paint dries fairly hard, and provided that sufficient drying time is allowed, no problems with sticking (tackiness) should occur.

45.16 If cracking or flaking occurs, the applied layer of Mystox is too thick, and any excess should be removed and Mystox re-applied as necessary.

OIP GUIDANCE FOR CONDITIONING ITC/GS TENTAGE SYSTEMS

46 **Current Tentage.** Users must periodically inspect their tentage forthwith in order to apply the new OIP direction on condition based approach for service life outlined below. At any point should users be concerned with the level of fire protection or fire fighting systems being applied to their deployed tent systems they must raise it through the chain of command.

47 **Current General Service (GS) Canvas, including ITC Canvas.** The condition of the canvas is key, when the material becomes thin and worn it begins to loose its fire retardant properties. OIP have investigated each of the wearing factors (Age, Environment, Use) and found that alone Age is not a contributing factor. The minimum expected deployed life (in desert conditions) for ITC/GS canvas is 4 years of continuous use, however OIP have tested 30 year old samples and found them to achieve the required standard. The material characteristics degrade when the wearing factors are combined together, the actual service life of ITC/GS canvas will be determined by the environmental conditions experienced in storage and when deployed, as well as the nature of usage and the management/maintenance regime being applied by Users. Service life is therefore expected to vary widely.

48 The ITC/GS canvas retains its fire retardant properties as long as the material remains intact:

48.1 Users must inspect their GS tentage when erecting and striking the tent as well as every six months whilst in continual use.

48.2 There must be no open tears in the fabric.

48.3 There must be no holes in the fabric.

48.4 If the canvas leaks, then Users should apply the Mystox (J11/8030-99-225-1573) recoating agent in order to improve the waterproof properties, as well as the resistance to rot.

49 **Current General Service (GS) in service Insulation.** The condition of the insulation is critical. The ITC/GS current in service insulation must be in A1 condition. The minimum deployed life for ITC/GS insulation is 18 months of continuous use. This assessment is limited by the availability of test samples (none older than 18 months) however the actual service life of ITC/GS insulation will be determined by the environmental conditions experienced in storage and when deployed, as well as the nature of usage and the management/maintenance regime being applied by Users. Service life is therefore expected to vary.

49.1 Users must inspect their GS insulation when erecting and striking the tent as well as every six months whilst in continual use.

49.2 There must be no damage to the inner foil layer.

49.3 It is essential that there are no holes in the insulation. Cables must be passed under or around the insulation and not through.

49.4 There must be no damage to the joints or seams of the insulation.

49.5 The insulation must be attached to the tent frame by all points specified within the relevant AESP respective Category 201.

49.6 There must be no personal items hung directly from the insulation or canvas.

49.7 The outer 'polyethylene' layer is a protective layer and some minor damage may be acceptable. Materials included within the repair kit (NSN: 8340-99-839-8761) are to be used in accordance with manufacturer's instructions.

COMMENT(S) ON AESP*

To: OIP
Defence Equipment and Support
Spruce 3a # 1303
MOD Abbey Wood
Bristol BS34 8JH

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Thank you for commenting on AESP 8340-C-102-201

Your reference: ..... Date: .....

Action is being taken to:	Tick		Tick
Issue a revised/amended AESP*		Under investigation	
Incorporate comment(s) in future amendments		No action required	
Remarks			

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