Patents Act 1977 **Opinion Number** **08/24**

OPINION UNDER SECTION 74A

Patent	EP (UK) 2300673 B1
Proprietor(s)	Advocate hardware (UK)
Exclusive Licensee	
Requester	Fairfield IP Limited on behalf of Archibald Kenrick & Sons Limited
Observer(s)	Greywolf IP on behalf of Advocate hardware (UK) Limited
Date Opinion issued	Click here to enter a date.

The request

1. The Comptroller has been requested by Fairfield IP (the Requestor) to issue an Opinion on whether a product (the Product) supplied by Archibald Kenrick & sons Limited infringes Patent EP 2300673 B1 (the Patent) in the name of Avocet Hardware (UK) Limited (the Proprietor).

2. Observations were received from Grey Wolf IP (the Observer) which include arguments as to why the Patent is infringed by the Product.

3. Observations in reply were received 9th July 2024.

Preliminary matters

4. The observations in reply argue that if the claims are to be interpreted broadly, as asserted by the Observer, then the claims would be invalid over a prior art document US 4961328 cited at examination stage.

5. Observations in reply are strictly limited to matters raised in the observations, and anything new will not be considered. Furthermore, I would generally not consider any further evidence filed as part of the observations in reply, recognising that other parties have no opportunity to respond to such evidence. Note however that I may consider such evidence if it definitively settles a matter disputed in the observations. I will explain below why this in not the case in this instance.

The Patent

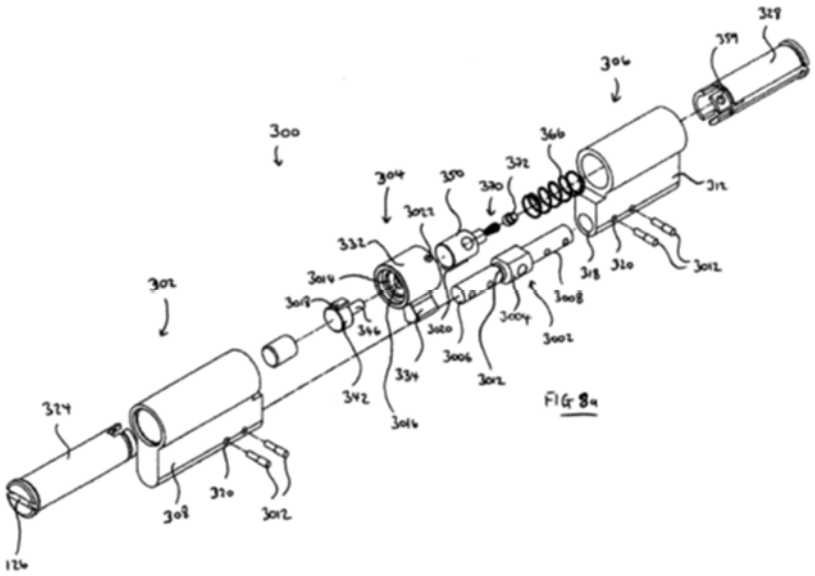
6. The Patent was granted 18th July 2018 and has a priority date 26th June 2008. The Patent is in force.

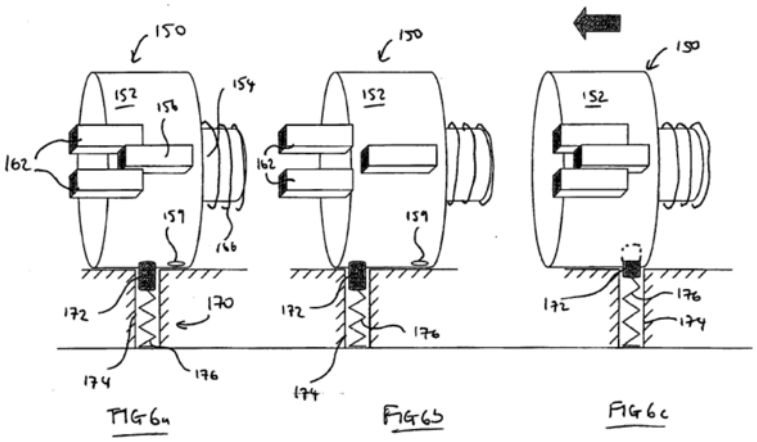
7. The Patent relates to a cylinder lock with additional security features. In a

conventional cylinder lock a lock cam, having an associated locking assembly, is arranged between an internal and external locking interface of a closure. The Patent identifies a particular problem with conventional cylinder locks wherein if an external locking interface is attacked and removed the lock cam can be manipulated from an external side of the closure.

8. The Patent aims to secure the lock cam in case of attack by blocking access to the lock cam from an attacked side of the cylinder lock whilst permitting normal operation of cylinder lock from the non-attacked side.

9. Referring to the figure 6a-c and 8 of the Patent, which are reproduced below, the Patent includes a first and second lock assembly 302, 306 which, in use, provide a locking interface arranged on an external and internal side of a closure, respectively. A key is used to turn a drum 324, 328 which transmits a rotational force to a lock cam 332 via a first or second actuator 342, 350 to operate the cylinder lock. The first and second actuator are movable in an axial direction such that the cylinder lock may be operated from either side of the closure, and a spring 366 biases the second actuator towards the first actuator, into engagement with the lock cam. Operation of the cylinder lock requires the first actuator to push the second actuator out of engagement with the lock cam against the spring 366. In doing so, the first actuator engages with the lock cam to operate the cylinder lock.





10. If the cylinder lock is forced open from the external side, the lock assembly and first actuator may be removed exposing the lock cam such that it may be manipulated to open the closure. However, the second actuator, which is biased towards the removed lock assembly, moves into the lock cam when the first lock assembly and first actuator is removed thereby blocking access to the lock cam. The second actuator is prevented from over traveling, and thereby being removed, by a locking pin 172 which engages a recess 159 in the second actuator.

11. The patent has a single independent claim 1, which reads;

A lock cylinder (100; 300; 400; 500) comprising:

a lock cam (132; 332; 432; 532) rotatable to unlock a lock assembly (50),

a first lock actuator assembly (102; 302; 402; 502) positioned on a first side of the lock cam (132; 332; 432; 532),

a second lock actuator assembly (106; 306; 406; 506) positioned on a second side of the lock cam (132; 332; 432; 532), the second side being opposite the first side,

a clutch defining an axis (X), the clutch being movable along the axis between:

a first condition in which the clutch provides a rotational force path from the first lock actuator assembly (102; 302; 402; 502) to the lock cam (132; 332; 432; 532) to rotate the lock cam, and,

a second condition in which the clutch provides a rotational force path from the second lock actuator assembly (106; 306; 406; 506) to the lock cam (132; 332; 432; 532) to rotate the lock cam,

characterised in that the clutch is moveable into;

a third condition in which the clutch is not movable along the axis (X),

the lock cylinder further comprising a security mechanism configured to put the clutch into the third condition upon removal of a component of the lock cylinder.

Claim construction

12. Before I can determine whether there would be infringement of the claims of the Patent, I must first construe them. This means interpreting them in light of the description and drawings as instructed by Section 125(1). In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately, the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean. This approach has been confirmed in the decisions of the High Court in *Mylan v Yeda*[1] and the Court of Appeal in *Actavis v ICOS*.[2]

13. I consider the person in the art to be a designer and manufacturer of cylinder locks.

14. There are several areas of contention highlighted in the request, observations and observations in reply which regard how the lock actuator assembly and the clutch, including their specific operation, ought to be interpreted.

The lock actuator assembly

15. The Requestor asserts that the term 'lock actuator assembly' is a general term that is used in relation to a cylinder locking mechanism and, in the absence of a clear definition, ought to be interpreted as an assembly which actuates a clutch. The Requestor further argues that, in the context of the Patent, the lock actuator assembly is a component that moves a clutch along the axis of the lock cylinder and rotationally around that axis; therefore, the lock actuator assembly is different to the clutch and there is a clear distinction between these two systems.

16. The Patent defines the lock actuator assembly at paragraph [0028] as comprising the drum, keyhole and a pin tumbler cylinder locking mechanism. Paragraph [0009] and [0028] state that both the first and second lock actuator assembly comprise the first and second actuator, respectively. Furthermore, paragraph [0009] and [0034] stipulate that the clutch is formed from the first and second actuator. Therefore, the lock actuator assembly is intended to incorporate the clutch as well as other components of the cylinder locking mechanism. This interpretation is consistent with the description of operation set out at paragraph [0040] which explains how the removal of the first lock actuator assembly, which includes removal of the first actuator, may occur at a line of weakness 103 between the first actuator and the lock cam assembly.

17. Therefore, I disagree with the Requestor in that there is no clear distinction between the lock actuator assembly and the clutch, nor do I think it necessary that there is one. It is clear to me that the clutch is a subassembly of the lock actuator assembly, much like the drum and pin tumbler cylinder.

18. Therefore, when reading the claim, the skilled person would understand the term 'lock actuator assembly' to include the structure housing the lock cylinder and the clutch mechanism, including all components therebetween. Therefore, I

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[1] *Generics UK Ltd (t/a Mylan) v Yeda Research and Dev. Co. Ltd & Anor* [2017] EWHC 2629 (Pat)
[2] *Actavis Group & Ors v ICOS Corp & Eli Lilly & Co.* [2017] EWCA Civ 1671

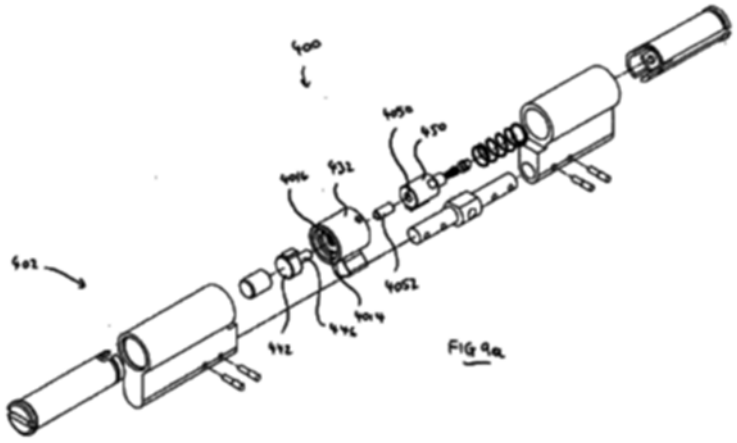
understand the term ‘lock actuator assembly’ to relate to the systems installed either side of the lock cam which are configured to operate the lock cam.

The clutch

19. The Requestor argues that the clutch is distinct from the lock actuator assembly and is the component that exclusively forms a rotational force path between the lock actuator assemblies and the lock cam. I Have already explained why I disagree with the Requestor on this issue: the clutch is a subassembly of the lock actuator assembly.

20. However, the claim requires the clutch to be able to move into a third condition upon removal of a component of the lock cylinder which would warrant clarification as it seems, according to all embodiments, that it is the removal of a first part of the clutch which allows a second part of the clutch to move into the third condition.

21. The Observer argues that the clutch may be an assembly of components that form a rotational force path between locking mechanisms of the lock actuator assembly and the lock cam. The Observer additionally asserts that the skilled reader would interpret the Patent such that the clutch includes other components such as pin 4052 shown in figure 9a of the patent, which I have copied below.



22. The observations in reply refer me to US 4961328, and components 16, 20, 25 and 26 which the Observer contends would invalidate the patent if a broader interpretation of the term ‘clutch’ is used. I will briefly consider US 4961328 below.

23. It is my understanding that a clutch is a mechanical device that is moved to engage and disengage a transmission means between an input and an output. Claim 1 does not define the extent of the clutch beyond stipulating that it defines an axis along which it is movable between a first, second and third condition and therefore the reader would look to the description to assist them in understanding what the patentee meant when using the term.

24. Paragraph [0009] of the Patent implies the clutch comprises the first actuator of the first actuator assembly and the second actuator of the second actuator assembly; this premise is supported throughout the description. Paragraph [0058] additionally describes an embodiment wherein the second actuator comprises a pin

4052. The pin serves to block access to the second actuator assembly if the first actuator assembly has been removed. The pin is formed from hardened material resistant to drill attack. Presumably, in this embodiment, the second actuator is additionally provided with some locking feature to restrict movement of the second actuator within the cam lock. The pin is exclusively provided as a security feature to prevent an attacker from drilling out the lock and does not serve any function relating to engaging or disengaging a transmission means between an input and an output.

25. Although the pin is housed within a component of the clutch it does not serve any function as a clutch and therefore is not a component of the clutch as I understand it. That is not to say that the clutch is limited to the first and second actuator, the clutch would include any feature that contributes to the function of the clutch in engaging and disengaging a transmission means.

26. Regarding US 4961328 it seems to me that a key, when inserted into a lock pushes directly against a coupling 20 to engage and disengage a lock cam. Sleeves 16 having a projection 25 cooperate with projections 26 of the coupling 20 to transmit rotational force but do not serve to move the coupling in and out of engagement. US 4961328 does not definitely settle the matter; therefore, I will set this document aside.

27. Therefore, in the context of the Patent, the skilled person would understand the term ‘clutch’ to mean the first and second actuator, and any other component, which moves between a first condition and second condition to provide a rotational force path between the first and second lock actuator assembly and the lock cam. It is noted that in each condition the respective first and second actuator are movable to the other condition depending on whether a key is inserted into an internal or external side of the closure.

28. Claim 1 requires a third condition in which the clutch is not movable along the axis. It is clear to the reader that the Patentee means that a part of the clutch is not movable along the axis as, in each disclosed embodiment, a second portion of the clutch is locked on removal of a first portion of the clutch. This construction is entirely consistent with the functional limitations of the claims and the embodiments discussed in the Patent.

29. The language of the remainder of the claim is plain and causes me no further issue in construing the scope of the invention.

The Product

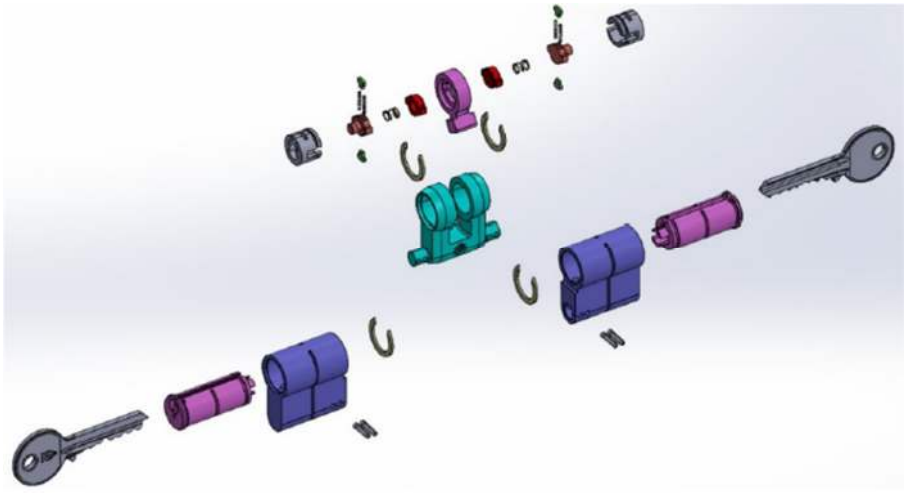
30. The Requestor defines the Product to be as described in UK patent application GB 2599382 A, and as illustrated in the further figures below.

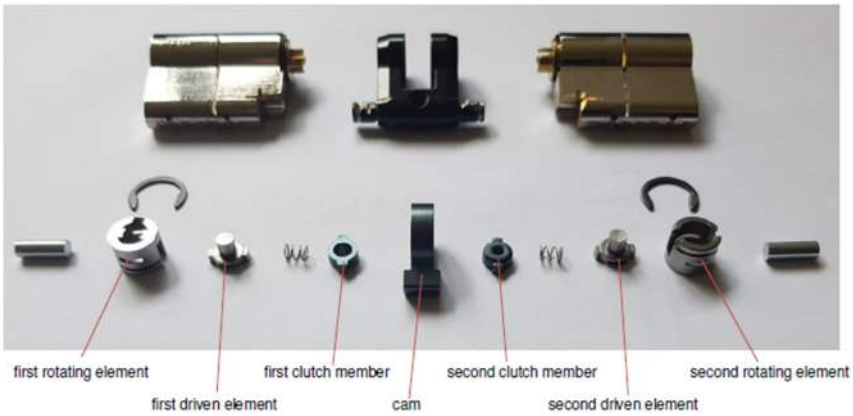
31. The Product is a cylinder lock for locking a closure, comprising a tumbler assembly 1 having a shaft 2 extending therethrough wherein the shaft is turned by a key inserted from an internal or external side of the closure as is entirely conventional. A lock cam is rotatably fixed within a generally u-shaped body, shown in turquoise below, and is movable between a locked and unlocked position by operation of the key.

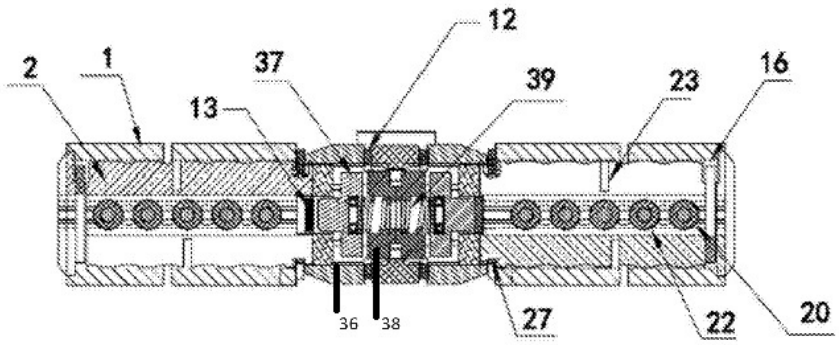
32. The shaft is secured in the tumbler assembly by a first circlip 27, and a rotating element 36 is keyed onto an internal facing end of the shaft. A second circlip 12 secures the rotating element to the U-shaped body such that, under normal circumstances, neither the shaft nor the rotating element are axially movable.

33. A driven element 37 and connecting part 38 (referred to as a clutch member in the figures below) are received within the rotating element and are axially movable with respect to the rotating element. A spring, under compression, is provided between the driven element and the connecting part biasing these two components apart. The connecting part is movable into engagement with the cam.

34. The product is identical about a centreline such that a tumbler assembly, rotating element, driven element and connecting part are associated with both the internal and external side of the cylinder lock.







35. The Requestor observes that, in normal operation, the spring arranged between the driven part and connecting part bias the connecting part away from the driven part into alignment with grooves of the cam. This interpretation is reinforced in the observations in reply wherein the Requestor asserts that the driven element cannot provide a rotational force onto the cam. I note that there is no contention on this matter from the Observer.

36. There is little disclosure in UK patent application GB 2599382 A regarding the operation of the driven part under normal circumstances. GB 2599382 A, at page 7 lines 5-9, reads "…and the driven part 37 drives the connecting part 38 to move the dial…", where the 'dial' is the cam labelled in the figure above. This passage could suggest that the driven part rotates the connecting part to move the cam. However, the figures of GB 2599382 A, particularly figure 10 which illustrates the left-hand connecting part engaged with the cam, shows a spacing between the driven part and the coupling part which is maintained by the associated spring. Additionally, the figures provided by the Requestor show no keying features on the driven element that would facilitate the connecting part to be driven by the driven element; the only keying features provided on the driven element or connecting part are lugs that cooperate with grooves provided on the rotating element, or an internal surface of the lock cam.

37. Therefore, it is my understanding that, in normal operation, a key is inserted into the tumbler assembly which presses the driven element and coupling part, against the bias of the spring, to slide along a groove of the driven element. Lugs of the connecting part engage the cooperating grooves of the clutch whilst being partially engaged with grooves of the rotating element, and rotation of the key, shaft and rotating element causes the connecting part to operate the lock cam. Therefore, there is no rotational force path through the driven element. The Product is symmetrical about its centre line, therefore when the connecting part of the operated side is moved into engagement with the cam it displaces the connecting part of the non-operated side against the bias of its own spring. On removal of the key the driven element and connecting part appear to be biased back into the first position by the spring of the non-operated side.

38. The Product has an additional security feature associated with the driven element comprising a pair of opposed steel plates biased outwards. If the tumbler assembly and shaft are removed, the driven element will overtravel under the bias from the spring 39 and the steel plates subsequently extend from a surface of the driven element to engage with a recess in the rotating element to lock the driven

element in a disengaged position.

Infringement

39. Section 60 of the Act states that:

> (*1) Subject to the provisions of this section, a person infringes a patent for an invention if, but only if, while the patent is in force he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say-*
>
> *(a) Where the invention is a product, he makes disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;*
>
> *(b) Where the invention is a process, he uses the process or he offers it for use in the United Kingdom when he knows, or it is obvious to a reasonable person in the circumstances, that its use there without the consent of the proprietor would be an infringement of the patent;*
>
> *(c) Where the invention is a process, he disposes of, offers to dispose of, uses or imports any product obtained directly by means of that process or keeps any such product whether for disposal or otherwise.*
>
> *(2) Subject to the following provisions of this section, a person (other than the proprietor of the patent) also infringes a patent for an invention if, while the patent is in force and without the consent of the proprietor, he supplies or offers to supply in the United Kingdom a person other than a licensee or other person entitled to work the invention with any of the means, relating to an essential element of the invention, for putting the invention into effect when he knows, or it is obvious to a reasonable person in the circumstances, that those means are suitable for putting, and are intended to put, the invention into effect in the United Kingdom.*

40. In the Supreme Court in *Actavis v Eli Lilly*[3] Lord Neuberger stated that the problem of infringement is best approached by addressing two issues, each of which is to be considered through the eyes of the notional addressee of the patent in suit, i.e. the person skilled in the relevant art. Those issues are:

> (i) does the variant infringe any of the claims as a matter of normal interpretation; and, if not,
>
> (ii) does the variant nonetheless infringe because it varies from the invention in a way or ways which is or are immaterial?

41. If the answer to either issue is “yes,” there is infringement; otherwise, there is not.

Does the Product infringe the Patent as a matter of normal interpretation?

[3] Actavis UK Limited and others v Eli Lilly and Company [2017] UKSC 48

42. There is agreement between the Requestor and Observer that the preamble of claim 1 is entirely conventional I will therefore restrict my consideration to the characterising features of the claim as set out above.

43. The Requestor has submitted that the driven element of the Product is a component of a lock actuator rather than a clutch, and additionally argues that the clutch members of the product do not share the stated third condition as set out in claim 1. The Requestor observes that the Patent requires a clutch to provide a rotational force path between a lock actuator and a lock cam, and additionally observes that the claimed clutch defines an axis wherein the clutch is movable along the axis. The Requestor argues that the driven element of the Product provides neither of these features, opining that the driven element is a component of a lock actuator assembly rather than a clutch.

44. In construing the claim, I have determined that the lock actuator assembly incorporates the clutch, and therefore there is no clear distinction between these two systems in the context of the claims. Furthermore, in construing the claim it is clear to me that the clutch is not restricted to a single component but would relate to a plurality of components that work together the provide a clutch, which I have considered to be a mechanical device that is moved to engage and disengage a transmission means between an input and an output.

45. There is no contention that the clutch of the Product includes the connecting part and that the connecting part is movable in an axial direction and provides a rotational force path between the lock actuator assembly and the lock cam. However, the connecting part is arranged to float with respect to the driven element and is movable between the first condition and the second condition by displacement of the driven element. Therefore, the driven element, as well as providing an anti-theft feature, is additionally complicit in engaging and disengaging the connecting member. Both the driven element and the connecting part are movable along an axis defined by both members and cooperate to provide a rotational force path between the lock actuator assembly and the lock cam.

46. Therefore, the first and second condition is clearly satisfied by the Product. Once a cylinder housing is removed the first or second driven element, which is a component of the clutch, overtravels and is locked against rotation and axial displacement in the rotating element. This is analogous to the third condition set out in claim 1.

47. I am live to the fact that the Product provides a security feature that is actuated when either side of the lock is attacked, wherein the Patent relates to a security feature that is actuated only when one side of the lock is attacked. Nevertheless, the Product has all the features of claim 1 of the Patent.

Opinion

48. It is my Opinion that the Product referenced in the request falls within the scope of claim 1 of the Patent as a matter of normal interpretation. Accordingly, it is my opinion that the Product infringes EP (UK) 2300673 B1 under Section 60(1) of the Act.

Sean OConnor
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.