

**Safety Regulation Group**  
Aircraft Certification Section

For the Attention of : [REDACTED]

11 October 2002  
Our ref.9/33/7213/G01

Dear [REDACTED]

**SHACKLETON AIRCRAFT, N790WL**

Further to [REDACTED] letter to you of 11 July 2002 on this subject and your reply of 18 July 2002, we have now received some information from the FAA and discussed it internally.

The aircraft, having gone some way past its original life, has only been allowed to continue flying on the basis of continuing structural inspections. This was the situation when the aircraft was operated by the RAF and it is how the FAA allows its operation. In order for the CAA to be able to consider whether such structural inspections would be an acceptable basis for the aircraft's operation in the UK on the US Register we need to be assured that such inspections have been, and are likely to continue to be, adequate for maintaining this aspect of the airworthiness of the aircraft.

It appears that the FAA approved the use of the maintenance schedule without requiring to see the rationale behind the fatigue related structural inspections or any justification of the intervals laid down in the schedule. The CAA feel that this approach is inadequate and would require to see such information before allowing the aircraft's operation in the UK.

In order to be satisfied that the fatigue aspect had been adequately addressed, we would wish to see an assessment of the aircraft structure and a justification for the proposed methods and intervals of the structural inspections. As the FAA do not appear to be able to satisfy us in this respect, we need to look elsewhere for the provision of the necessary evidence on which we can make a judgement.

In the first instance, in order to gain a better understanding of the FAA's certification process in this particular case, we would like to take you up on your suggestion of contacting [REDACTED], as stated in your letter of 26 February 2002 to [REDACTED]. In the meantime may I suggest that you ascertain what supporting data you may have that relates to these inspections and we could discuss this when [REDACTED] and I come up for the Modifications Meeting next week. I look forward to seeing you then.

Yours sincerely

[REDACTED]

Civil Aviation Authority

Aviation House 2E Gatwick Airport South West Sussex England RH6 0YR [www.caa.co.uk](http://www.caa.co.uk)  
Direct Line [REDACTED] Fax [REDACTED]

**Safety Regulation Group**  
Aircraft Certification Section

For the Attention of : [REDACTED]

[REDACTED]

18 March 2003  
Our ref.9/33/7213/G01

Dear [REDACTED]

**SHACKLETON AIRCRAFT, N790WL**

Subsequent to my letter to you of 11 October 2002 on this subject, we have received several letters from yourselves with some additional information on the aircraft and the use to which you intend putting it in 2003. We have carefully reviewed the information that we have on the aircraft, including previous documentation going back to 1991 and that supplied by yourselves over the past year, with the result that, regrettably, there is insufficient data upon which to agree to your request to operate the aircraft in the UK this year.

My letter of 11 October 2002 indicated that we had reviewed the FAA documentation supplied and that we sought further information to enable us to be satisfied that the fatigue aspect had been adequately addressed. Unfortunately little justification for the intensive inspection programme, or the changes to it made by Kosola and Associates, has been received. Therefore at this time, in the absence of such justification, we are unable to change our view on the airworthiness of this aircraft. Should any such information become available in the future we would be prepared to review our decision.

If you wish to discuss the situation further I would be quite happy to do so, perhaps at our next regular Modifications Meeting at Coventry.

Yours sincerely

[REDACTED]

**Civil Aviation Authority**

Aviation House 2E Gatwick Airport South West Sussex England RH6 0YR [www.caa.co.uk](http://www.caa.co.uk)

Direct Line [REDACTED] Fax [REDACTED]

[REDACTED]

7<sup>th</sup> September 2005  
Our ref. 9/33/01/7213/G01

Dear [REDACTED]

**Potential Eligibility of Shackleton MR2/AEW2 for a Permit to Fly**

Following our meeting here on 26<sup>th</sup> July 2005 I agreed to write with some thoughts on how this activity could be progressed.

The CAA position on the eligibility of any Shackleton Mark 2 for a CAA Permit to Fly is that we understand that the aircraft were out of fatigue life by the time that they left RAF service and therefore they could not be considered for a Permit to Fly. The aircraft operated in the USA has a maintenance programme used by the RAF to operate the aircraft beyond the end of their fatigue life but we have not been presented with sufficient evidence to allow us to be satisfied that said programme is adequate to ensure the airworthiness of these fatigue life expired machines.

Your proposal to replace the top booms of both spars may negate a lot of the existing SIs and STIs and zero the fatigue life of these components. Assuming there is life left on any other calendar time or aircraft hours limited components then it looks as if the major hurdle to our consideration of the aircraft for a Permit to Fly will have been overcome. I suggest that you carry out a review of the life limited items on the aircraft and provide us with a pre and post spar boom replacement assessment so that we can see how the situation changes. The assessment should include as a minimum the basic life of each component, the current hours and the associated specific maintenance activities for operation beyond nominal life. Any additional information would also be helpful.

Assuming we are satisfied that this action will allow the aircraft to operate within its published component life limits you could proceed to the next stage of satisfying us on the rest of the topics relevant to an Ex-Military aircraft. We would probably progress such an activity under your 1993 application for a Permit to Fly which has been allocated AAN 23921. The first items that would need agreement are the Category of the type, probably Intermediate, and its Safety Record per BCAR Section A, Chapter A8-20.

**Civil Aviation Authority**

Aviation House 2E Gatwick Airport South West Sussex England RH6 0YR [www.caa.co.uk](http://www.caa.co.uk)  
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Other major areas that we would be interested in on any aircraft would be your programme to return the aircraft to flight after a period on the ground including consideration of its aging aircraft status, a low utilisation maintenance schedule for subsequent operation and an assessment of any repairs made to the aircraft.

For your information I have now located the missing file and have available all the correspondence on this subject.

I hope these points are useful to you and I look forward to seeing your proposal in due course.

Yours sincerely

[REDACTED]

cc

[REDACTED]

[REDACTED] CAA



12<sup>th</sup> November 2012

Dear 

**AVRO Shackleton MR-2 Serial Number WR963**

Thank you for your letter of 7<sup>th</sup> November regarding the possibility of obtaining a Permit to Fly for a Shackleton. To answer your specific questions:

- 1) *"Would a Shackleton be granted a Permit to Fly if all safety concerns regarding the age of the aircraft were addressed?"* The CAA has always stated that the type is eligible for application for a Permit to Fly. The Permit to Fly would only be granted once the aircraft had met the requirements for the issue of a Permit, not only in terms of restoration, but also in terms of design, maintenance, continued airworthiness and organisational support.
- 2) *"Would replacing all structure on an aircraft that has little or no fatigue life be considered as keeping the aircraft within the defined limit?"* Replacing these items may negate a lot of the existing SIs and STIs and zero the fatigue life of these components. The life of other calendar time or aircraft hours limited components would have to be taken into account as well.

In more general terms, the CAA position on the eligibility of any Shackleton Mark 2 for a CAA Permit to Fly is that we understand that the aircraft were out of fatigue life by the time that they left RAF service and therefore they could not meet the requirements for a Permit to Fly. However, replacing such as the top booms of both spars would overcome the major hurdle to our consideration of the aircraft for a Permit to Fly. Without that rectification the situation remains unchanged that the aircraft cannot identifiably meet the required standards for a Permit to Fly.

As you note, the original manufacturer no longer provides type support for the aircraft. In view of this, you would need to employ the services of a suitably approved design organisation with access to the original design information in order to design such a repair scheme. An approved organisation would also need to be in place to effect the replacement of the structures and to bring the aircraft up to flight status.



If you were to proceed then it is suggested that you carry out a review of the life limited items on the aircraft and provide us with a pre and post spar boom replacement assessment so that we can see how the situation changes. The assessment should include as a minimum the basic life of each component, the current hours and the associated specific maintenance activities for operation beyond nominal life. Any additional information would also be helpful.

Assuming we are satisfied that this action would allow the aircraft to operate within its published component life limits you could proceed to the next stage of satisfying us on the rest of the topics relevant to an ex-military aircraft. The first items that would need agreement are the Category of the type, probably Intermediate, and its Safety Record as per CAP 553 BCAR Section A, Chapter A8-20. This Chapter also gives useful guidance on company approvals and other useful guidance regarding ex-military aircraft.

Other major areas that we would be interested in on the aircraft would be your programme to return the aircraft to flight after such a long period on the ground. This would include consideration of its ageing aircraft status, a low utilisation maintenance schedule for subsequent operation and an assessment of any repairs and modifications made to the aircraft – such as returning it to MR-2 standard from AEW-2 configuration.

I hope this helps and meets your request.

Yours sincerely

A black rectangular redaction box covering the signature area.



10<sup>th</sup> December 2012

Dear 

**AVRO Shackleton MR-2 Serial Number WR963**

Thank you for your response letter of 19<sup>h</sup> November regarding the restoration of a Shackleton. I noted that you do intend to proceed with bringing the aircraft to the standard where it might be granted a Permit to Fly. To this end I would suggest that you register the aircraft with Aircraft Registry via Form CA1 and then apply for a Permit to Fly via CA Form CA3. These two actions kick off the internal process within CAA and allow us to recover our costs. At this point you would be allocated a Design Liaison Surveyor here at Gatwick to cover design and process aspects and also a Regional Office Surveyor to cover the maintenance and physical restoration aspects. The two forms and associated guidance may be found on the CAA website at:

<http://www.caa.co.uk/default.aspx?catid=122&pagetype=90&pageid=1144>

<http://www.caa.co.uk/default.aspx?catid=1413&pagetype=90>

With regards to your specific questions regarding suitably approved designed organisations and also the prescribed format for structural reviews etc, these are precisely the sort of detail questions that we can discuss once your application has been made. Design organisations come under this Department, inspections etc. under the Regional Office although we obviously work closely together.

I hope this helps

Yours sincerely



**From:** [REDACTED]  
**To:** [RegAircraft](#)  
**Cc:** [REDACTED]  
**Subject:** RE: Application to register an Avro Shackleton  
**Date:** 30 January 2013 11:34:30

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[REDACTED]

We are aware of the intent to apply for a Permit to Fly and have had recent correspondence with a representative of the Trust. We also believe that it should be registered as an MR Mk.2 as this is the configuration the aircraft is at least cosmetically in.

Hope that all helps

All the best

[REDACTED]

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**From:** RegAircraft  
**Sent:** 29 January 2013 16:12  
**To:** [REDACTED]  
**Subject:** Application to register an Avro Shackleton

[REDACTED]

We have received an application to UK register an Avro Shackleton (WR963) and would be grateful if you could advise if you are aware of an intention to apply for a Permit for this aircraft from the Shackleton Preservation Trust.

If so could you advise if it would seem logical to register the aircraft as an Avro 696 Shackleton MR MK2 which is how we have currently designated the aircraft. The trust declared the aircraft as an Avro Shackleton AEW Mk2 but assuming the Airborne Early Warning Equipment has been removed this would revert the aircraft back to an MR MK2?

Many thanks.

Regards

[REDACTED]

Air/Reg