


EASA	COMMENT RESPONSE DOCUMENT
	<p style="text-align: center;">EASA PAD No. 12-108 [Published on 14 August 2012 and officially closed for comments on 11 September 2012]</p>

Commenter 1: Starbow (Aero Surveys Ltd) – Phil Fenton – 29.08.2012

Comment # 1

This PAD has been discussed between various BAE 146/RJ operators, with consultation with the Type Certificate Holder and the NLG Manufacturer and nobody can find or does not how this PAD can be justified.

I believe that a more detailed investigation must be carried out, not just limited to short runway operations, like LCY and 'lift/tow' tugs.

Please supply all event findings that have been carried out to justify this PAD and circulated to all operators.

We currently operate 3 BAE 146-300 and one -200 due for delivery, 3 of which have 300 cyc repeat inspections on the NLG fitting, 2 of which will have to be replaced within one year and the 3rd in two years. I know Safety is paramount, but without correct due process, how can the PAD be justified if a full and correct investigation has not be completed.

I look forward to your comments including any alternate means of compliance, such as stripping down and a full NDT of the main fitting, as dropping the scrap life from 60000 cyc to 16000 cyc is not acceptable to operators.

EASA response:

It is accepted that the justification for the implementation of the new lower life limit was not very detailed and a more comprehensive statement, provided by BAE Systems, is shown below:

The Frankfurt item suffered complete fracture of the main fitting on touchdown which resulted in an un-commanded nose gear steer. It is possible that any cracking at the bell housing and resultant fracture on any standard of main fitting may result in an un-commanded nose gear steering input. An un-commanded nose gear steering input on touchdown is likely to result in a Major event but may result in a Hazardous event where adverse conditions prevent the pilots being able to stop the aircraft departing the runway.

Because neither modification or in-service inspection are viable as controlling actions, a safe life for the main fitting of 16,015 landings has been calculated. It is proposed that main fittings that have exceeded 16,000 landings are subject to a phased programme of replacement with new items. There is currently insufficient evidence to identify the cause of the premature cracking or to isolate any at risk group of main fittings. It will therefore be necessary to replace all main fittings which have exceeded 16,000 landings.

The Frankfurt event referred to above was the second failure of a cracked main fitting at the bell housing radius following the first at London City and in addition there have been two occurrences where cracks have been found before failure at the same location during other inspections on the main fitting. It is unfortunate that in this case the mechanism causing the cracking cannot be definitively identified and also there is no possible inspection regime that would detect a crack so the only alternative is to apply a reduced safe life to the component. On that basis it is intended to issue the AD in the form that was consulted on. Regarding the possibility of an AMOC, this is always an option for any AD but it should be noted that any AMOC proposed to EASA is likely to be shown to BAE Systems and also potentially to Messier-Dowty for their advice before making a determination of the suitability of the AMOC application.

Commenter 2: Tronosjet – Richard Thomasson – 29.08.2012

Comment # 2

The type certificate holder and gear manufacturer do not understand the root cause of these failures. The matter has not been fully investigated, with two prime operational factors not having been properly researched.

- 1.The use of Lift-Two trucks, which simply did not exist when the aircraft was originally certificated.
- 2.The use of the aircraft, particularly the higher weight variants; into demanding short airfield operations such as London City.

In the late 1990s Messier-Dowty issued a number of Service Sheets warning operators of the adverse effect on NLG life that the use of Lift-Tow trucks could have on NLG life. This advice was applicable not only to the 146/RJ but also to the Fokker series of aircraft. To date BAe have only conducted trials using the original towing equipment, no work has been done with Lift Tow equipment to use as a basis for comparison.

Most if not all equipment that has been subject to an event or finding has been operated into London City or similar airfields. No work has been done to compare investigate the difference in loadings that the gear experiences during such landing with more conventional airfields and no work has been done to compare the difference between 146 series aircraft and later aircraft with auto-spoiler.

There are a number of aircraft that accomplished service lives of 50,000 cycles plus without incident.

Whilst safety is paramount, operators should be given the option of an AMOC based around removal, strip and NDT of the gear a task easily accomplished in a 48 hr period and of no great penalty to low utilisation operators even if the interval was initially as low as 150 landings.

To issue such a heavy handed AD reducing the gear life from 60000 landings to 16000 landings based on incomplete investigations and with no plan to restore the original service life is not acceptable. The investigations identified above need concluding and the option of an AMOC needs including in the Service Bulletin/AD.

EASA response:

Please see the response to Comment 1 which is also applicable to this comment.