


<b>EASA</b>	<b>COMMENT RESPONSE DOCUMENT</b>
	<p align="center"><b>EASA PAD No. 12-119</b></p> <p align="center"><b>[Published on 14 September 2012 and officially closed for comments on 12 October 2012]</b></p>

**Commenter 1: UPS Airlines – Mark R. Hilborn – 14-09.2012**

**Comment # 1**

As a preliminary comment on PAD 12-119, under Required Actions and Compliance Time(s) paragraph 4, please confirm that the service bulletin referenced is suppose to read A300-57-6028 and not A340-57-6028.

UPS will further review the proposed ruling and may provide additional comments as applicable prior to the consultation closure date.

**EASA response:**

EASA agrees. The Final AD has been modified accordingly.

**Commenter 2: UPS Airlines – Mark R. Hilborn – 11.10.2012**

**Comment # 2**

Per Reference (A), EASA has released a proposed airworthiness directive to supersede an existing airworthiness directive to maintain the inspection requirements but at a reduced initial threshold and repeat inspection interval. The interval changes were the result of subsequent fatigue and damage tolerance analysis as part of an Extended Service Goal (ESG2) project. Prior to the issuance of Reference (B), all aircraft were to be inspected prior to the accumulation of 24,000 total flight cycles and at intervals not to exceed 9,000 flight cycles (reference Airbus SB A300-57-6027, Revision 6, dated May 17, 2006). The proposed rule now has initial thresholds and repeat intervals that are aircraft model and utilization rate dependent. The initial threshold ranges between 30,900 and 51,800 flight hours or 19,100 and 25,900 flight cycles, whichever occurs first. Subsequent repeat inspection intervals are between 11,500 and 19,400 flight hours or 7,100 and 9,700 flight cycles, whichever occurs first.

UPS would like clarification on two items in the proposed ruling. The first item is in the “Required Action(s) and Compliance Time(s)”, paragraph 4. In the proposed rule, multiple references in the noted paragraph are made to “SB A340-57-6028”. UPS believes this to be a typographical error and the intent of this paragraph is to accomplish the work noted in accordance with Airbus SB A300-57-6028.

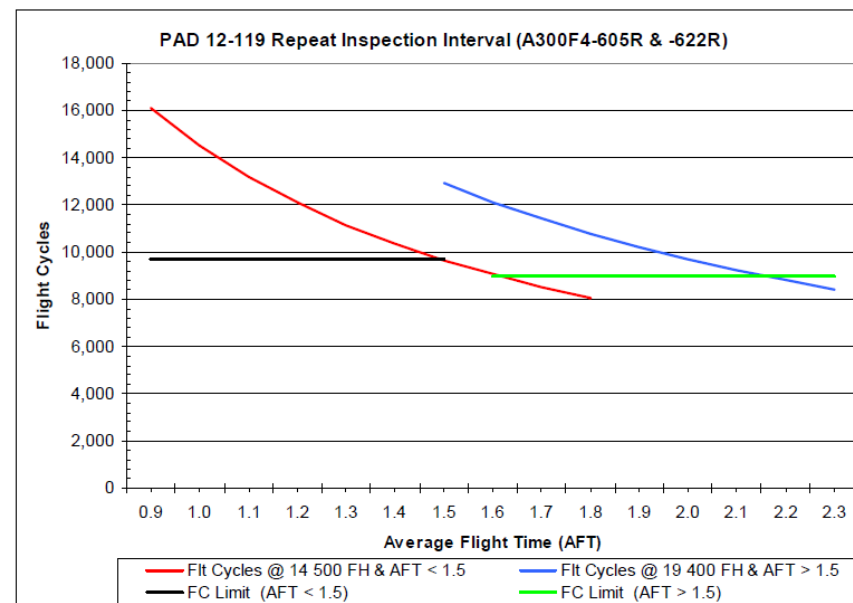
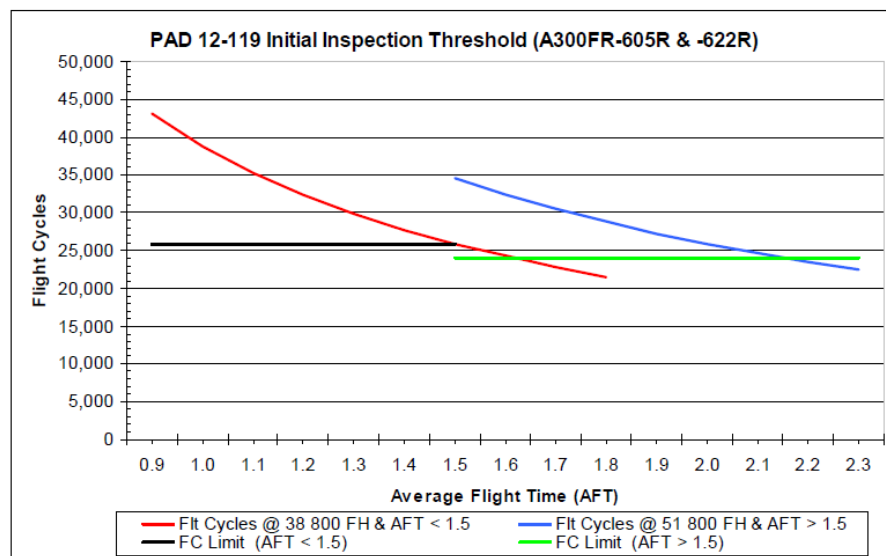
The second item is in regards to the inspection threshold and repetitive intervals identified in Tables 1 and 2 of the proposed rule. In general, fatigue damage in wing structure is based on flight hours rather than cycles as the structure is loaded throughout the flight profile and is dependent on a number of factors. Naturally, the higher

wing loading periods are during take-off and landing but during cruise flight can introduce isolated amplitude loads that can be of the same magnitude as take-off or landing loading. In these tables, the inspection requirements are dependent on the aircraft type and the average flight time or AFT. United Parcel Service Co. (UPS) has not been able to determine a definition as to when the AFT value is determined for the applicable rule or if the AFT value is to be continually monitored over the life of the aircraft. With varying aircraft utilization over time, it is possible for an operator near the 1.5 value to transition between a “short range” and “normal range” operations with a small change in the aircraft utilization. This transition from short range to normal range operations can result in inspection interval changes that can result in a ruling compliance issue solely based on a six minute (0.01 hour) change in the aircraft utilization.

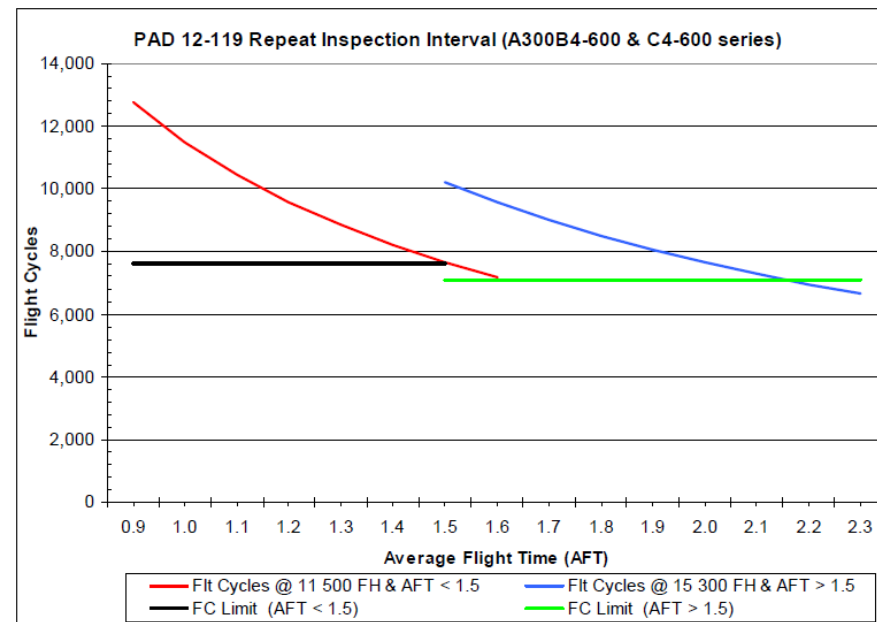
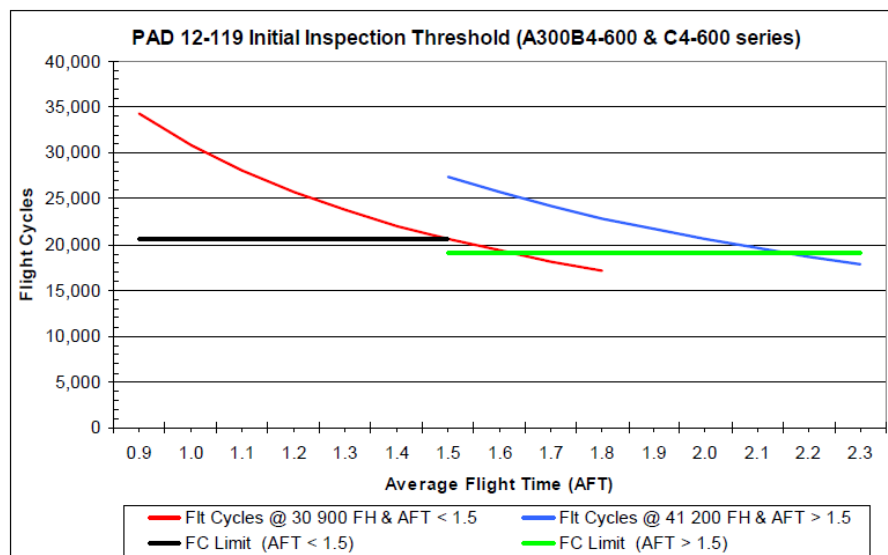
Under the current proposed threshold for aircraft utilization below the 1.5 AFT value (“short range” operations), the aircraft is flight cycle limited as the flight hour limit cannot be reached without being classified as a “normal” operations aircraft (reference Figures 1 and 2). In the “normal” operations category, the aircraft is still flight cycle limited until an AFT value of 2.16 is achieved. As the flight hour limitation for an AFT value below 1.5 cannot be achieved, the flight hour limit adds an unnecessary complexity to the threshold table. Additional investigation notes that the A300-600 Airworthiness Limitation Items (ALI) Issue 13, dated October 2010, Part 2, Section B, paragraph 7, established industry guidelines and provisions to address utilization differences between aircraft operations. Adjustments to the published values are typically for average flight times (AFT's) greater than 2.1. For AFT values below 1.5, the thresholds in the ALI document are valid and no adjustments are required. The philosophy and practice used in the proposed ruling appears to be inconsistent with the industry standard and policy established in the ALI program.

We believe that this complex inspection threshold method and the constant monitoring of each aircraft to ensure compliance with this proposed rule does not have enhance the safety or airworthiness of the aircraft. Instead, it provides an opportunity for errors to occur and places an undue burden on aircraft operators and the regulatory authority that monitors compliance. We believe a more consistent and simplified incorporation table as shown in Figure 3 achieves the safety intent of this ruling, provides a simplified compliance requirement in line with industry practices established in the ALI program and eliminates the continuous AFT monitoring that is necessary to comply with the conditional timelines recommended in the proposed rule.

**FIGURE 1 – Threshold and Repeat Inspection Intervals Based on AFT Values  
(Freighter Configured Aircraft)**



**FIGURE 2 – Threshold and Repeat Inspection Intervals Based on AFT Values  
(Passenger Configured Aircraft)**



**FIGURE 3 – Proposed Revision to Ruling Threshold and Repeat Inspection Intervals**

Aeroplane Models	Compliance Time (whichever occurs later)		Interval (whichever occurs first)
	A (whichever occurs first)	B (whichever occurs first)	
A300F4-615R and A300F4-622R	25 900 Flight Cycles (FC) or 51 800 Flight Hours (FH) since aeroplane first flight	2 100 FC or 4 300 FH after the effective date of this AD	9 700 FC or 19 400 FH
A300B4 -600 and A300C4-600 series	20 600 FC or 41 200 FH since aeroplane first flight	1 600 FC or 3 200 FH after the effective date of this AD	7 600 FC or 15 300 FH

**EASA response:**

EASA agrees with the first comment regarding incorrect SB references (see also Comment #1). The Final AD has been modified accordingly.

EASA disagrees with the second comment regarding the inspection threshold and repetitive intervals identified in Tables 1 and 2 of the AD Appendix.

It must be emphasised that the current method named "Range Effect" was first presented by Airbus to its WB operators in 2005 during a STG and that for approximately 8 years, UPS seems to be the sole operator to question the benefits of the new method. The original approach used at AIRBUS to cope with Range Effect (i.e. the way a longer flight duration negatively influences the fatigue and crack growth lives of aircraft structural elements) was to adjust the maintenance tasks, using a parameter called Fatigue Ratings. Standardized Fatigue Rating values were provided for each inspection task in Maintenance Programmes and Airlines/Maintainers had to adjust their maintenance tasks function of each A/C utilization. EASA has been told that this approach was progressively abandoned from 2000 onwards, because of the difficulties for the Airlines in implementing it and for the Airworthiness Authorities in controlling and monitoring its implementation. A proposed solution was the - currently used - concept for Range Effect. The merits of this method are that it accounts for mission mix, does not request adjustment of maintenance figures by the Airlines and provides Flight Cycles and Flight Hours pair "caps" for each maintenance tasks where Flight Hours are relevant.

This method is not only in use for the A300-600 series aeroplanes but on most of the Airbus types. Besides, for aeroplanes close to the transitional AFT (1.5 in our case) the method has such a conservatism that the use of either of the two pair-caps does not compromise the airworthiness of the aeroplane to be inspected.

However, EASA concurs with the commenter when he says that the Service Bulletin does not provide sufficient definition as to when the AFT value is determined or if the AFT value is to be continually monitored over the life of the aircraft. As a response to this shortfall, the Final AD will be modified to explain when and how the AFT is to be determined. Airbus will also amend its ALI documentation to prevent any future misinterpretation in the implementation of the method and calculation of the AFT for determining the inspection threshold and interval.