

Comments to Advisory Circular AC XX

British Airways PLC has the following comments with respect to Advisory Circular (AC) No. 120-CPCP 'Development and Implementation of Corrosion Prevention and Control Programs'.

Level 2 Corrosion definition

The level 2 corrosion definition contained in Section 5. h. of the draft AC does not contain any comments with regard to widespread corrosion approaching rework limits. An extract from the Boeing 777 Maintenance Planning Document (MPD) provided below illustrates the level 2 corrosion definition which is common to all Boeing commercial aircraft maintenance programmes, some of which are mandated by FAA airworthiness Directives (AD's).

'CORROSION LEVEL 2

Corrosion occurring between successive inspections that requires a single rework / blend-out which then exceeds allowable limits, requiring a repair / reinforcement, or complete or partial replacement of structure listed in the baseline Program,
OR,

Corrosion occurring between successive inspections that is widespread and requires a single blend-out approaching allowable rework limits.'

(B777 MPD D622W001 page 8.0-12 dated May 99)

Section 5.0 o. contains a definition for widespread corrosion. A reference to widespread corrosion is not contained in any of the corrosion level definitions provided in Section 5.0 of the draft AC. As discussed above, the current industry definition of level 2 corrosion refers to widespread corrosion.

If the corrosion level definition provided in the AC is not amended to contain the omitted reference to widespread corrosion, industry will be working to a dual standard. If the original premise for the original definition has altered and therefore the statement is no longer required, all existing Airworthiness Directives, Aircraft Maintenance Programs (AMP's), and other associated documents should be amended to meet the revised definition of level 2 corrosion.

The sentence quoted below taken from the proposed AC further appears to indicate an omission in the Level 2 definition provided in the proposed AC Section 5.0.

'Lower allowable limits are often necessary for widespread corrosion than are established for local corrosion in order to take into consideration the greater potential for lower material strength.'

(AC 120-CPCP, Appendix 2, page 1)

British Airways request the FAA add, '...OR, Corrosion occurring between successive inspections that is widespread and requires a single blend-out approaching

allowable rework limits' to the level 2 definition contained in Section 5.0 of the proposed AC.

If the FAA concurs with British Airways comments with regard to the level 2 corrosion definitions, British Airways request the FAA consider adding a definition of 'approaching limits' to Section 5.0 of the AC. It is suggested that the definition for 'approaching limits' should include an expression detailing percentage of total approved blend limit.

Advisory Circular CPCP affected structure

The last sentence of paragraph 1-4 'FAA APPROVAL OF A CPCP' states the operators CPCP should address all corrosion likely to affect Primary Structure. Other sections of the proposed AC also refer to Primary Structure.

Previously FAA mandated CPCP's have been applicable to Principle Structural Elements (PSE's). For example, FAA AD90-25-05 amendment 39-6790. Docket No. 89-NM-271-AD mandates Boeing Model B747 classic D6-36022, this document states,

'The effectiveness of a corrosion control program is determined for a given airplane area by the level of corrosion found on Principal Structural Elements (PSE's) or other structure listed in the baseline program, during repeat scheduled corrosion program inspections.'

(D6-36022 rev. E, page 1.1-1)

'Maintenance programs for affected airplanes must include a corrosion prevention and control procedure that limit corrosion findings, on all PSE's and other defined structural areas, to level 1 or better.'

(D6-36022 rev. E, page 3.1-1)

Advisory Circular AC 25-1529-1, dated 01/08/91 provides definitions for PSE and Primary structure. As stated in AC 25.1529-1, PSE's are a sub category of Primary structure. As such, the magnitude of the structure affected by the proposed AC would be greater than that required by existing mandated programs. British Airways feel that existing mandated corrosion programs have provided a high degree of safety and the associated airworthiness risk has abated. As such, British Airways request the proposed AC should be amended to state PSE structure in lieu of Primary structure. Previous comments with respect to dual standards, and consistency prevail.

Inspection Levels

Mandated CPCP's to date have generally been based on a directed Surveillance level of inspection. Boeing model B747 classic D6-36022 mandated by FAA AD90-25-05 provides an example.

'All CPCP inspections including "pay particular attention to" items are visual surveillance type inspections unless otherwise stated by a note in the appropriate task description'

(D6-36022 rev. E, page C.2-2)

The proposed AC does not provide any guidance on the general level of inspection required. British Airways believe the proposed AC would be enhanced if a statement on the general level of inspection to be assumed when developing a CPCP.

For example, Note 2 of Table 9 contained in Appendix 3 of the proposed AC refers to possible boroscope inspections. Similar references can be found on some of the other tables contained in Appendix 3. Boroscope inspections are typically used as an aid to Detailed Visual Inspections or as Special Detailed Inspection techniques. References to boroscope inspections may lead operators to develop programs with inspection tasks that are too highly defined and may actually detract from the corrosion inspections generally focusing on large areas or zones of the aircraft e.g. the fuselage skin may be too large an area to inspect using a Detailed Visual level of inspection.

Structure or System?

The intent of any CPCP is to address corrosion arising on PSE or primary structure (see comments above with regard to the definitions of PSE and Primary structure). To date, British Airways is not aware of any CPCP that also covers aircraft systems such as control rods, torque tubes etc.

The example task, C55.220.06 provided in Table 12 of Appendix 3 of the proposed AC appears to imply a systems component e.g. the elevator torque tube, to be inspected by the operators program. System components are considered within aircraft type maintenance program development (Maintenance Steering Group, MSG3 or equivalent) and normally are inspected under a 'zonal' program or during overhaul. British Airways thus consider the example of 'elevator torque tube' provided in table 12 to be inappropriate for the development of a CPCP and could lead to ambiguity of structure that should fall under the auspices of a CPCP. British Airways request the example task discussed (and any other similar task contained in Appendix 3 of the proposed AC) be removed.