

Leaflet B-220 Return to Service of Aircraft Items Recovered from Aircraft Involved in Accidents/Incidents

NOTE: For the purpose of this Leaflet the term 'items' includes all components, parts, engines and accessories.

1 Introduction

- 1.1 This Leaflet reviews the factors involved in establishing the acceptability of aircraft items recovered from aircraft involved in accidents/incidents, and states the conditions to be met before such items may be returned to service.
- 1.2 This Leaflet applies to aircraft designated as falling under Annex II to Regulation EC 216/2008. These are known as non-EASA aircraft and come under the regulatory control of the Civil Aviation Authority and are issued with National Certificates of Airworthiness and Permits to Fly. It does not apply to EASA type certificated aircraft, which are covered by requirements defined in Part 145 and Part M.
- 1.3 The Civil Aviation Authority has evidence that some aircraft items, (including highly stressed rotating parts) have been released to service after having been recovered from aircraft involved in accidents/incidents even though the accident circumstances may have caused damage or changed characteristics from those of the type design. Since such items may not manifest any visual evidence of damage, distortion or changed characteristics, a serious airworthiness hazard could result from their use without special precautions being taken as detailed in this Leaflet.

NOTE: The subject of this Leaflet was first promulgated to industry by a CAA Letter to Operators Number 461 (revised to LTO 461/A on the 18 December 1981), following informal consultation with industry and with aviation insurers.

2 Establishing Origin of Recovered Items

- 2.1 When an aircraft has been involved in an accident/incident, the title to the salvage may pass from the insured owner to other persons (e.g. aircraft insurers) and this salvage may be offered for sale either complete or as separate aircraft items in an 'as is - where is' condition. While some items may be totally unaffected by the accident/incident which caused the aircraft to be declared as salvage, it is essential to obtain clear evidence that this is the case. If such evidence cannot be obtained, the item may not be returned to service.
- 2.2 All such items must therefore be subject to competent assessment and inspection in the light of adequate knowledge of the circumstances of the accident, subsequent storage and transport conditions, and with evidence of previous operational history obtained from valid airworthiness records, before overhaul and re-installation can be considered.
- 2.3 In particular, if a crash load is sufficient to take any part above its proof strength, residual strains may remain which could reduce the effective strength of the item or otherwise impair its functioning. Loads higher than this may of course crack the item, with an even more dangerous potential. Further, a reduction in strength may be caused by virtue of the change of a material's characteristics following overheating from a fire. It is therefore of the utmost importance to establish that the item is neither cracked, distorted nor overheated. The degree of distortion may be difficult to assess

if the precise original dimensions are not known, in which case there is no option but to reject the item. Any suggestion of overheating would be cause for a laboratory investigation into significant change of material properties.

- 2.4 The standard procedures appropriate to items removed for overhaul following normal service life may not therefore be sufficient for items from salvaged aircraft. If the information in the Manufacturer's Manual, or other technical publications, is insufficient to deal with the considerations detailed above then the manufacturer must be consulted for guidance. If the manufacturer provides the additional information, and the item can be shown to meet this, then it may be returned to service.
- 2.5 Where a difficulty exists in classifying the airworthiness significance of an aircraft item recovered after an accident/incident, the question should be referred to the CAA Airworthiness Division, Airworthiness Evaluation and Surveillance Department, for advice. The CAA will require full details of the circumstances of the accident/incident before a response is made to the enquiry.
- 2.6 It should be noted that UK licensed engineers or CAA Approved Organisations cannot inspect components or assess the implications of impact damage or fatigue without the involvement of the manufacturer or a CAA Approved Design Organisation if the existing approved data for the aircraft type does not provide appropriate and specific inspections. The component can only be released in accordance with approved data, reference BCAR Section A6-2 and CAP 562 Leaflet No. H-20.

3 Information obtained from Aviation Insurers

- 3.1 Aviation insurers and other persons who obtain title to salvage parts may supply to salvage purchasers the details of the accident/incident leading to the aircraft, or aircraft item, being declared as salvage. It is also common practice for aviation insurers to pass over the airworthiness records to the salvage purchaser. Whilst such information and records are an essential part of the assessment, where return to service is being considered, they are not a guarantee that the item is acceptable for re-installation.
- 3.2 Some aviation insurers have agreed to co-operate with the CAA's attempt to prevent items being returned to service if their airworthiness cannot be confidently confirmed. They have agreed to supply details of the occurrence, and to identify the party to whom the salvage has been sold, to the Airworthiness Division, Application and Approvals Department. This information may be relevant when CAA advice is sought under paragraph 2.5 of this Leaflet, but does not excuse the enquirer from furnishing the information required by that paragraph.

4 Supplementary Information

- 4.1 Attention is drawn to CAP 562 Leaflets B-130 and C-140 which also deal with the safeguards necessary for users obtaining aircraft parts in the open market, particularly in relation to the release documentation and evidence of previous history.