1. OBJECTIVE

This advisory pamphlet contains direction and guidance in order to provide guidance to persons or organizations involved in the operation and\or maintenance of Israeli registered aircraft on the control of unapproved, unserviceable, unsalvageable and scraped aircraft parts, including parts removed from aircraft no longer in service.

2. General

2.1 ICAO Annex 8, and accordingly – the Israeli Air Navigation Regulations specified in Para. 3.1, requires that all materials used in those parts of an aircraft which are essential for its safe operation shall conform to approved specifications, and that those specifications shall be such that materials accepted as complying with them shall have the essential properties assumed in the design.

2.2 Regulation 134 of the Air Navigation Regulations (Operation of Aircraft and Rules of Flight), 1981 requires that each person performing maintenance, preventive maintenance or alteration on an aircraft shall -

2.2.1 use the methods, techniques, and practices acceptable by the Director General of the CAAI;

2.2.2 use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. If special equipment or test apparatus is recommended by the manufacturer involved, he must use that equipment or apparatus or its equivalent;

2.2.3 do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly repaired condition, with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness;

2.2.4 use the manufacturer's maintenance program, maintenance manual, overhaul manual or service bulletin, or the maintenance organization procedure manual of the approved maintenance organization, unless otherwise instructed by the Director General of the CAAI.

The installation of any part to an aircraft, failing to meet these requirements, will lead to a degradation of airworthiness of the aircraft.

2.3 The CAA is becoming increasingly concerned about the serviceability of aircraft parts, especially the quantity and variety of unapproved parts, which are finding their way to Israeli registered aircraft.

2.4 It is essential that for the purpose of continuing airworthiness a system of control exists which ensures that only parts meeting the approved design data applicable to a particular aircraft are installed on that aircraft.

2.5 This policy provides guidance on the essential elements to be observed when establishing such a system.

3. Reference Material, Forms & Job-Aids

3.1 Reference:

- Chapter 9 of the Air Navigation Regulations (Procedures for Documentation of Aircraft and Aircraft Parts), 1977
- Regs. 126, 134 and 241(b)(18) of the Air Navigation Regulations (Operation of Aircraft and Rules of Flight), 1981
- Reg. 12(b)(2) of the Air Navigation Regulations (Repair Stations, Authorization Institute and Self-Maintenance), 1979
- Regs. 14(f), 28, 32, 37 of the Air Navigation Regulations (Approved Maintenance Organizations), 2013
- ICAO Annex 8
- ICAO Doc. 9760

3.2 Forms: AWF 2.2.216A - SUSPECTED UNAPPROVED PARTS NOTIFICATION

4. Process

4.1 Control of Unapproved Parts

4.1.1 Reg. 134(3) of the Air Navigation Regulations (Operation of Aircraft and Rules of Flight), 1981 requires that maintenance work must be done in such a manner, and using material of such quality, that the condition of the aircraft, airframe, aircraft engine, propeller or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration, deterioration, and other qualities affecting airworthiness).

4.1.2 To determine that the installation of a part complies with the applicable regulations, the installer of the part is ultimately responsible for establishing that the part conforms to its type design and is in a condition for safe operation (i.e. Airworthy).

4.1.3 The airworthiness of aeronautical products would be in question if the design and quality of the parts are unknown. Positive identification of unapproved parts can be difficult if the parts display characteristics similar to that of an approved part. The guidelines listed in Paragraphs 4.1.5 and 4.1.6 offer means by which approved parts (and their sources) may be assessed.

4.1.4 Approved Parts

4.1.4.1 An approved part is a part whose design has been found to be acceptable to the State of Design and that has been found to be in a condition for safe operation by the State of Registry.

Note: Parts approved are eligible for installation on a specific aircraft only if they also meet the approved design data applicable to the particular aircraft they are to be installed on. For example, a seat designed and approved for 9g forward loads is not eligible for installation on an aircraft which is required to have a seat that is dynamically tested for 16g.

4.1.4.2 Standard parts (such as fasteners) are considered as approved parts when they are in compliance with accepted standards and when

referenced in the type design of the particular aircraft.

4.1.5 Unapproved Parts

4.1.5.1 For the purpose of this advisory pamphlet, an unapproved part is a part or material intended for installation on a type certificated product/aircraft, which has been neither manufactured according to approved procedures, nor conforms to an approved type design; an unapproved part is also a part that fails to conform to declared specifications or accepted industry standards (i.e. standard parts).

4.1.5.2 Unapproved parts include, but are not limited to:

(a) Parts specified in the illustrated parts catalogues (IPC) of a type certificated aircraft, but which have been manufactured, reclaimed or reworked and then marked by an unauthorized source and provided with documents which indicate falsely that the part(s) are genuine and conform to the approved type design, or meet a particular industry standard and are offered for use as conforming with an aircraft manufacturer's authorized IPC.

(b) Parts shipped directly to users by manufacturers, suppliers, or distributors who do not themselves hold appropriate production approvals for the parts, and have not been authorized to make direct shipments to users or stockiest by the Type Certificate holder.

(c) Parts which have not been maintained, overhauled or repaired in accordance with the requirements of approved airworthiness data, or that have been maintained, overhauled or repaired by persons not authorized to perform and certify these functions.

4.1.5.3 Unapproved parts also include those parts improperly returned to service, for example:

(a) Parts supplied directly to the end user by a subcontractor without direct authority from the

design holder and the State of Manufacture to do so;

(b) Parts having reaching their life limit, including, if applicable, any shelf-life limit.

4.1.6 Supporting Documentation

4.1.6.1 A documentation process providing written evidence of the acceptability of a part is an essential element of any system designed to ensure that only approved parts are installed on an aircraft. Such a process is intended to provide all relevant information concerning the part to which it refers sufficient to enable a potential installer to readily ascertain its status.

4.1.6.2 Such documents will contain information relating to:

(a) The authority under which it is issued;

(b) Reference identification for the purposes of traceability;

(c) Name, address and approval reference of the issuing organization;

(d) Work order, contract or invoice number;

(e) Quantity, description, part number and, if applicable, serial number of the part;

(f) Relevant information concerning any life limitations, including in-service history records;

(g) The signature and approval reference of the person issuing the document; and

(h) Whether the part is new or used.

4.1.7 Precautions to Prevent the Inadvertent Acceptance of Unapproved Parts

4.1.7.1 Documentary evidence of compliance with an approved process will not in itself provide a guarantee against the installation of unapproved parts if the original supplier of such parts

knowingly provides false information or otherwise sets out to deceive.

4.1.7.2 The primary defense in such cases is a strong, well-informed and alert parts ordering and receiving system which, through auditing and reports, establishes a satisfactory level of confidence in its parts suppliers and which:

(a) Ensures a continual correlation between parts ordered and parts received;

(b) Is alert to any unauthorized alterations to supporting documentation and to any inability of the supplier to supply the required documentation;

(c) Is aware if a quoted price for the part is significantly lower than that quoted by other suppliers;

(d) Is aware that delivery times are significantly shorter than those quoted by other suppliers; and

(e) Is aware of packaging methods used by approved parts manufacturers, maintenance organizations and distributors, and can detect deviations from these methods.

4.1.7.3 Organizations, particularly approved maintenance organizations and air operators, should ensure that all those staff who have routine contact with parts, including especially buyers, stores staff, mechanics and certifying staff, are fully aware of the dangers posed by unapproved parts and also the likely sources. Ample warnings should be given to such staff about accessing any unapproved parts database. Approved maintenance organizations and operators will also need to ensure that their parts suppliers are fully integrated into the reporting network, and audits will be necessary among staff at intervals to ensure that all remain vigilant to the problem.

4.1.8 Notification & Reporting

4.1.8.1 Reports of Suspected Unapproved Parts (SUP) may originate from numerous sources such as incoming/receiving inspections, audits, facility surveillance, complaints, accident or incident investigations, or various service difficulty reports.

4.1.8.2 CAAI encourages the disclosure of information regarding aviation safety. Reporters may be concerned with the potential repercussions of reporting the discovery of parts that are alleged to be unapproved. Although reports may be made anonymously, CAAI requests the submission of the reporter's name to enable it to verify information and provide confirmation and/or follow up to the reporter.

4.1.8.3 CAAI Form AWF 2.2.216A includes instructions to complete, and identifies the information needed to initiate, an SUP investigation.

4.1.8.4 CAAI website includes information regarding Suspected Unapproved Parts that were reported through aviation authorities:

http://caa.gov.il/index.php?option=com_content&view=category&id=47&Itemid=93

4.2 Parts removed from an aircraft no longer in service

4.2.1 Aircraft withdrawn from service are often used as a source of spare parts. These parts, although serviceable at the time the aircraft was placed in storage, may have been affected adversely by storage conditions, including especially environmental factors, or by the length of storage.

4.2.2 It is important that the removal process be planned and controlled in a manner as close as possible to that adopted for routine maintenance tasks on in-service aircraft. The following points in particular should be considered:

4.2.2.1 The means by which the part is removed should be in accordance with the approved maintenance manuals, using the tooling specified;

4.2.2.2 Adequate access equipment should be provided;

4.2.2.3 If conducted in the open, disassembly should cease during inclement weather;

4.2.2.4 All work should be carried out by appropriately qualified maintenance personnel;

4.2.2.5 All open connections should be blanked; and

4.2.2.6 A protected and enclosed quarantine storage area for the parts being removed should be provided in the immediate vicinity of the area.

4.2.3 An assessment for condition and eventual return to service for each removed part will need to be conducted by a suitably approved organization. The extent of the work necessary before the part is returned to service may, depending on the factors noted in 4.2.1, range from a simple external visual inspection to a complete overhaul. The following factors must be ensured before a part is considered for returned to service:

4.2.3.1 The part is checked for satisfactory conditions, in particular for damage, corrosion, damage and compliance with any manufacturers' maintenance instructions.

4.2.3.2 part life (TBO \ Retirements life \ Shelf life) is not exceeded.

4.2.3.3 previous maintenance history can be verified from the records, and particularly for serialized component, maintenance history card must be available.

4.2.3.4 modification standards, including status of Ads and SBs compliance can be determined.

4.2.3.5 the part is not associated with any known defect or involvement in incidents, accidents, heavy landing or lightening strikes. Under no circumstances, an approved maintenance organization or a person on behalf of such an organization shall release the part to service if it

has been subjected to extreme of stress, temperature or immersion which could affect its operation.

4.2.3.6 an acceptance test should be available for all components that are subjected to acceptance testing after manufacturing or maintenance, as appropriate.

4.2.4 Parts removed from a serviceable aircraft, or aircraft on storage, which comply with the manufacturer's recommended storage procedures and satisfy the requirements specified in paragraph 4.2.3 may be acceptable for return to service. The part must be properly identified and tagged, and adequate entries must be made on the Component History card (for serialized parts) or Log Book on the following:

4.2.4.1 detail description of the part.

4.2.4.2 actions taken in determining the status of the part as serviceable.

4.2.4.3 list of applicable Ads, SBs or repair carried out (if applicable).

4.2.4.4 reference to work-card or work-sheets or any incoming document,

4.2.4.5 aircraft from which the part is removed,

4.2.4.6 detail life used (for life limited parts, being any combination of fatigue, overhaul or storage life).

4.2.4.7 who carried out the certification and date and the name of the organization.

4.2.5 Part originated from aircraft which do not comply to the manufacturer's recommended storage procedure, even if it satisfy the requirements specified in paragraph 4.2.3, does not automatically qualify for return to service. Internal condition and degradation to internal parts and may not be visible through visual inspection. The manufacturer's recommendations must be satisfied before returning to service of the part.

4.2.6 Parts removed from an aircraft which has doubtful maintenance records, must undergo recertification to meet

the manufacturers recommendations before returning to service.

4.2.7 When determining the status of the part, the recommendations of the manufacture must be complied.

4.2.8 Economic advantage shall not outweigh the requirements to maintain the airworthiness of the aircraft. Owners or air operators are therefore encouraged to discuss with CAAI when intending to put any aircraft on storage programs or to reactivate thereafter.

4.2.9 A person or organization who intends to install a part removed from an aircraft no longer in service must also be aware to the following requirements:

4.2.9.1 The aircraft parts may only be deemed serviceable if the last flight operation with the aircraft parts fitted was fault free and within 6 months prior to the issue date of the removal or certification. However, the 6 months limit will not apply when the approved maintenance organization has procedures to ensure that only fault free aircraft parts will be processed in accordance with paragraph 4.2.3.

4.2.9.2 Serviceable aircraft components removed from a Non-Israeli Registered aircraft may only be considered for released to service for fitment to Israeli Registered aircraft, provided that the requirements of paragraphs 4.2.2, 4.2.3 and 4.2.4 are satisfied, and that an approved Released Certificate or equivalent was issued by an acceptable organization approved to issue such certificate.

4.3 Parts recovered from an aircraft involved in accidents or incidents

4.3.1 When an aircraft has been involved in an accident, the title may pass from the insured owner to other persons (e.g. aircraft insurers); this salvage may be offered for sale either complete or as separate items in an “As is, where is” condition. While some items may be totally unaffected by the accident or 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.

4.3.2 Before overhaul and reinstallation can be considered, 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. Confirmation of this assessment in the form of an airworthiness release is essential.

4.3.3 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 a fire overheat. It is therefore of utmost importance to establish that the item is neither cracked, distorted or overheated. The degree of distortion may be difficult to asses 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 a cause for a laboratory investigation into the significant change of material properties.

4.3.4 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 from the manufacturer's manual or other technical publications is insufficient to deal with the consideration 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.

4.4 Control of unserviceable parts

4.4.1 A part shall be considered unserviceable in any one of the following circumstances:

4.4.1.1 expiry of the service life limit as defined in the maintenance program;

4.4.1.2 non-compliance with the applicable airworthiness directives or other continuous airworthiness requirement mandated by the CAAI;

4.4.1.3 absence of the necessary information to determine the airworthiness status or eligibility for installation;

4.4.1.4 evidence of defects or malfunctions;

4.4.1.5 involvement in an incident or accident likely to affect its serviceability.

4.4.2 Unserviceable parts must me identified and stored in a secure location until a decision is made on the future status of such parts.

4.5 Disposal of scrapped parts

4.5.1 Approved maintenance organizations or air operators, who dispose of scrapped aircraft parts and materials, should consider the possibility of such parts and materials being misrepresented and sold as serviceable at a later date. Caution should be exercised to ensure that the following types of parts and materials are disposed of in a controlled manner that does not allow them to be returned to service:

4.5.1.1 parts with non-repairable defects, whether visible or not to the naked eye;

4.5.1.2 parts that are not within the specifications set forth by the approved design, and cannot be brought into conformity with applicable specifications;

4.5.1.3 parts and materials for which further processing or rework cannot make them eligible for certification under an approved system;

4.5.1.4 parts subjected to unacceptable modifications or rework that is irreversible;

4.5.1.5 life-limited parts that have reached or exceeded their life limits, or have missing or incomplete records;

4.5.1.6 parts that cannot be returned to an airworthy condition due to exposure to extreme forces or heat (see 4.2 above); and

4.5.1.7 principal structural elements removed from a high-cycle aircraft for which conformity cannot be

accomplished by complying with mandatory requirements applicable to aging aircraft.

4.5.2 Scrapped parts should always be segregated from serviceable parts and when eventually disposed of should be mutilated or clearly and permanently marked. This should be accomplished in such a manner that the parts become unusable for their original intended use and unable to be reworked or camouflaged to provide the appearance of being serviceable, such as by re-plating, shortening and rethreading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.

4.5.3 Mutilation may be accomplished by one or a combination of the following procedures:

4.5.3.1 grinding;

4.5.3.2 burning;

4.5.3.3 removal of a major lug or other integral feature;

4.5.3.4 permanent distortion of parts;

4.5.3.5 cutting a hole with cutting torch or saw;

4.5.3.6 melting;

4.5.3.7 sawing into many small pieces;

4.5.3.8 any other method accepted by the airworthiness authority on a case by case basis.

4.5.4 The following procedures are examples of mutilation that are often less successful because they may not be consistently effective:

4.5.4.1 stamping or vibro-etching;

4.5.4.2 spraying with paint;

4.5.4.3 small distortions, incisions or hammer marks;

4.5.4.4 identification by tag or markings;

4.5.4.5 drilling small holes;

4.5.4.6 sawing in two pieces only.

4.5.5 Since manufacturers producing approved parts should maintain records of serial numbers for “retired” certified life-limited or other critical parts, the organization that mutilates a part should provide the original manufacturer with the data plate and\or serial number and final disposition of the part.

4.5.6 When scrapped parts are disposed of for legitimate non-flight uses, such as training and education aids, research and development, or for non-aviation applications, mutilation is often not appropriate. In such cases the parts should be permanently marked indicating that they are not serviceable.

In this case, the following methods should be used to prevent the part's re-entering the aviation supply system:

4.5.6.1 permanently marking or stamping the part, as “NOT SERVICEABLE” (ink stamping is not an acceptable method);

4.5.6.2 removing the original part number identifications;

4.5.6.3 removing the data plate identification;

4.5.6.4 maintaining a tracking or accountability system, by serial number or other individualized data, to record transferred unsalvageable aircraft parts;

4.5.6.5 including written procedures concerning disposal of such parts in any agreement or contract transferring such parts.

4.5.7 Unsalvageable parts should not be released to any person or organization that is known to return unsalvageable parts back into the aviation supply system due to the potential safety threat.