1. OBJECTIVE

The objectives of this procedure are to outline the responsibilities and procedures for CAAI Type Certification of new civil aircraft.

2. GENERAL

2.1 Type Certification of a new civil aircraft is performed by personnel of the CAAI Engineering Department, which is part of the CAAI Airworthiness Division.

2.2 The methods used by the CAAI for type certification activities are based on FAA Order 8110.4, as adapted to Israeli law and to the CAAI organization.

2.3 Definitions used in this procedure:

2.3.1 **Type Certificate (TC).** A TC, as defined by Regulation 19 of the Air Navigation Regulations (Procedures for Documentation of Aircraft and Aircraft Parts), 1977 (hereinafter – **"the Regulations"**) includes the type design, the operating limitations, the Type Certificate Data Sheet (TCDS), the applicable airworthiness and noise regulations, and any other conditions or limitations prescribed by the CAAI.

2.3.2 **Provisional Type Certificate**. A provisional Type Certificate is a time and operationally limited TC that may be issued when CAAI has not completed its findings compliance for a TC, but the applicant can show compliance with the applicable regulations, and as provided in Chapter 3 of the regulations.

2.3.3 **Amended TC**. An Amended TC is an approval for a change to a TC. Only the TC holder may apply for an Amended TC.

2.3.4 **Supplemental Type Certificate (STC)**. A STC is issued for major design changes to a TC when the change is not so extensive as to require a new TC, and as provided in Chapter 4 of the regulations.

2.3.5 **Production Certificate (PC)**. A PC is an authorization issued by the CAAI for a manufacturer to manufacture a product in compliance with an approved Type Design. A PC may be issued to either the holder of a TC, a STC, or to a licensee of a TC holder, who meets the requirements of Chapter 7 of the regulations.

2.3.6 **Product**. For Type Certification, a product is defined as an aircraft, an aircraft engine or a propeller.

3. Reference Material & Forms

3.1 Reference

3.1.1 Para. 51 of the Air Navigation Law, 2011;

3.1.2 Chapters 2 to 4 of the Air Navigation Regulations (Procedures for Documentation of Aircraft and Aircraft Parts), 1977;

3.1.3 Chapter 1 of the Air Navigation Regulations (Aircraft Noise), 1977;

3.1.4 ICAO Annex 8 – Airworthiness of Aircraft;

3.1.5 ICAO Annex 16 Volume I – Environmental Protection – Aircraft Noise;

3.1.6 CAAI Manufacturing Procedures:

3.1.6.1 MFG 1.4.003 - GROUND INSPECTION – AIRCRAFT

3.1.6.2 MFG 1.4.006 issuance of certificate of airworthiness - U.S. STANDARD, STANDARD, EXPERIMENTAL

3.1.6.3 MFG 1.4.507 – Material Review Board;

3.1.6.4 MFG 4.4.001 - DMIR APPOINTMENT AND SUPERVISION;

3.1.6.5 CAAI Advisory Pamphlet MFG AP 2.4.001A – Traceability of Critical Structural Components Parts;

3.1.7 CAAI Engineering Procedures:

3.1.7.1 ENG 1.4.004 – Process Specifications;

3.1.7.2 ENG 1.4.006 – Ground Tests – Plan, Witnessing, Approval;

3.1.7.3 ENG 1.4.013 – Engineering Evaluation of Data and Tests;

3.1.7.4 ENG 1.4.014 – Type Certification Flight Tests;

3.1.7.5 ENG 1.4.015 – Aircraft Flight Manual;

3.1.7.6 ENG 1.4.016 - Introduction of Design Changes

3.1.7.7 ENG 1.4.018 – Review and Approval of Design Drawings;

3.1.7.8 ENG 1.4.020 – Designated Engineering Representative Authority, Duties and Responsibilities;

3.1.7.9 ENG 1.4.026 – Special Flight Permit – Airworthiness Certification;

3.1.7.10 CAAI Procedure ENG 1.4.039 – Maintenance Review Board Procedure;

3.1.7.11 ENG 1.4.041 – Certification Maintenance Requirements;

3.1.8 14CFR Part 21 Section 21.101 – Designation of Applicable Regulations;

3.1.9 14CFR Part 34 – Fuel Venting and Exhaust Emission Requirements for Turbine Engine Powered Airplanes;

3.1.10 14CFR Part 36 – Noise Standards: Aircraft Type and Airworthiness Certification;

3.1.11 14CFR Parts 23 to 29, Sections 23.2, 25.2, 27.2, 29.2 - Special Retroactive Requirements;

3.1.12 14 CFR (FAR) sections 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4 and 35.4 – Instructions for Continued Airworthiness;

3.1.13 British Civil Airworthiness Requirements (BCAR) section S – Small Light Aeroplanes;

3.1.14 EASA CS-22 - Sailplanes and Powered Sailplanes;

3.1.15 FAA Order 8110.4 – Type Certification;

3.1.16 FAA AC 21.17-3 Type Certification of Very Light Airplanes Under FAR 21.17(b)

3.2 Forms:

3.2.1 CAAI Form 312 – Application for Type Certificate, Production Certificate, or Supplemental Type Certificate;

3.2.2 CAAI Form 8110-9 – Type Certificate;

3.2.3 CAAI Form 8110-1 – Type Inspection Authorization;

3.2.4 CAAI Form 8110-3 - Statement of Compliance with the Civil Aviation Regulations;

3.2.5 CAAI Form 8120-10 - Request for Conformity Inspection;

3.2.6 CAAI Form 8110-5, Type Inspection Report - Airplane Ground Inspection.

4. Type Certification Process

4.1 General

This chapter describes the Type Certification process. This process applies to TC and amended TC activities, although the steps and procedures may not all apply to all certification activities, especially on un-complex certification projects. Fig. 2 (at the end of this document) provides an outline of the type certification process.

4.2 Application for TC, Amended TC, and PC

4.2.1 **Type Certification Application**. An application for an aircraft TC must be accompanied by a three-view drawing of the aircraft and available basic data. An application for aircraft engine and propeller TC must have a description of the design features, operating characteristics, and the proposed operating limitations.

The application should be made on CAAI Form 312 - Application for Type Certificate, Production Certificate, or Supplemental Type Certificate, and submitted to the Head of the CAAI Engineering Department.

4.3 Establishment of TC Project

4.3.1 The Head of the CAAI Engineering Department will assign a Certification Project Manager, Specialists as required, and a unique project number.

4.3.2 **Assignments and Duties of the Project Manager and Team**.

4.3.2.1 The term "Certification Project Manager" means an assigned individual in the Engineering Department, who is responsible for planning, reviewing, evaluating, and coordinating all aspects of a TC project.

4.3.2.2 A project team is established for all projects that require significantinvolvement by technical personnel. The project team normally consists of the following:

4.3.2.2.1 A project manager;

4.3.2.2.2 Engineers or technical specialists;

4.3.2.2.3 Pilots and/or flight test engineers;

4.3.2.2.4 Manufacturing inspectors; and

4.3.2.2.5 Operations and/or airworthiness inspectors.

4.3.2.3 An acknowledgement letter is sent to the applicant identifying the project number and the project manager by name, telephone number, and email address.

4.4 Type Certification Meetings

4.4.1 **Meetings**. The following TC meetings are discussed in this chapter

4.4.1.1 Familiarization TC meeting;

4.4.1.2 Preliminary TC meeting;

4.4.1.3 Interim TC meeting;

4.4.1.4 Pre-flight TC meeting; and

4.4.1.5 Final TC meeting.

4.4.2 Minutes of each TC meeting should be transmitted to the applicant and should contain the following:

4.4.2.1 Subject: Minutes of (Familiarization, Preliminary, Interim, Pre-flight, or Final) TC meeting;

4.4.2.2 The manufacturer;

4.4.2.3 Model and project number;

4.4.2.4 Location and date of meeting;

4.4.2.5 Personnel present at meeting;

4.4.2.6 Purpose of meeting;

4.4.2.7 Discussion of agenda items; and

4.4.2.8 Specially items: include major problems and actions to be taken.

Each item or subject discussed should be identified and summarized under a separate heading with the appropriate regulation referenced, and should include the relevant discussion and conclusions.

4.4.3 **Familiarization TC meeting**. The Familiarization TC meeting between the CAAI and the applicant is held to explain the following:

4.4.3.1 The need for certification;

4.4.3.2 An overview of the certification process;

4.4.3.3 The CAAI's role; and

4.4.3.4 The applicant's responsibilities.

The Familiarization TC meeting may be combined with the Preliminary TC meeting.

4.4.4 **Preliminary TC Meeting.** The Preliminary TC meeting is held to:

4.4.4.1 Acquaint CAAI personnel with the project;

4.4.4.2 Initialize the Certification Basis establishment process;

4.4.4.3 Discuss design details and possible problem areas with specialists;

4.4.4.4 Identify areas needing the formation of special compliance teams to attain the earliest possible resolution of potential problems;

4.4.4.5 Identify novel or unique design features, materials, or processes; and

4.4.4.6 Establish a schedule for the certification program.

4.4.5 **Interim TC Meeting**. Interim TC meetings may be required to resolve problems that arise during the type certification program. Interim meetings may be requested by CAAI or the applicant and need only involve the necessary participants, including specialists needed to resolve problems.

4.4.6 **Pre-Flight TC Meeting**. The Pre-Flight TC meeting is held to discuss and clarify any questions the applicant may have relative to the required flight testing of the aircraft, the engine, or the propeller. The Pre-Flight TC meeting may be requested by either the CAAI or the applicant.

4.4.7 **Final TC Meeting**. The Final TC meeting is held when CAAI determines that the applicant has demonstrated compliance with all applicable airworthiness regulations in accordance with the technical requirements and policies established by the CAAI Engineering Department.

The purpose of the Final TC meeting is to:

4.4.7.1 Review all outstanding items, such as the TCDS, Aircraft Flight Manual, Instructions for Continued Airworthiness, and items on which there may be some question of compliance with the established airworthiness standard;

4.4.7.2 Determine the status of any outstanding technical data;

4.4.7.3 Decide on issuance of the TC; and

4.4.7.4 Issue the TC or amended TC. The TC is signed when CAAI concurs that all items are resolved.

4.5 Project Specific Certification Plan (PSCP)

4.5.1

4.5.2 The PSCP is a project management tool for coordinating activities between the applicant and CAAI.

4.5.3 The PSCP should be proposed by the applicant at the time of the Initial TC Meeting, but final approval of the plan will typically be close to project

end. This does not prevent approval of interim revisions of the PSCP, but both the applicant and CAAI should be aware of the possibility of future revision of the plan.

4.5.4 The PSCP should include or refer to other documents containing the following information:

4.5.4.1 Engineering overview of the project,

4.5.4.2 Proposed certification basis (including changed product rule analysis, if applicable),

4.5.4.3 Identified (or potential) outstanding certification issues,

4.5.4.4 Compliance Checklist (reference to independent CCL document),

4.5.4.5 Major subcontractors,

4.5.4.6 Major ground tests and flight test overview,

4.5.4.7 Project schedule including major milestones.

4.5.5 CAAI evaluation of the PSCP should include review of engineering, certification, and managerial aspects. This includes review of the data for CAAI concurrence and CAAI resource allocation planning (CAAI resource limits are a valid reason for PSCP revision and should be communicated to the applicant in a timely manner).

4.5.6 The PSCP should be reviewed periodically by both the applicant and CAAI, and revised as required

4.6 Issue Paper

4.6.1 An issue paper provides a means for the identification and resolution of significant technical, regulatory, and administrative issues that occur during the certification process. Issue papers are primarily intended to provide an overview of significant issues, a means of determining the status of issues, and a post-certification summary statement on how issues were resolved.

4.6.2 The Certification Project Manager is responsible for the processing of the Issue Papers including:

4.6.2.1 Issuance;

4.6.2.2 Updating;

4.6.2.3 Coordination with project team members;

4.6.2.4 Coordination with the applicant;

4.6.2.5 File keeping.

4.7 Type Certification Basis

4.7.1 **General**. The proposed certification basis is established by the CAAI at the beginning of a TC program, by defining the applicable regulations and amendment levels for the issuance of the requested TC. Every effort is made to assure the certification basis is correct, and the applicant is

advised of all relevant aspects at the beginning of the program, including operational and noise requirements.

Applicable Regulations. The certification basis, including the required amendment level of the airworthiness standards is established by CAAI in accordance with Regulation 5 of the regulations for issuance of an initial TC, and Regulation 38 for an Amended TC.

4.7.2 If the CAAI finds that the regulations in effect on the date of the application for the Type Certificate or change to a TC do not provide adequate standards with respect to the proposed product or change because of a novel or unusual design feature, the applicant must also comply with special conditions and amendments to those special conditions, prescribed under the provisions of Para. 51 of the Air Navigation Law, 2011 and Regulation 4(b) of the regulations to provide a level of safety equal to those established by the regulations in effect on the date of the application for the change.

4.7.3 An application for a Type Certificate or a change to a type certificate for a transport category aircraft is effective for 5 years, and an application for a Type Certificate or a change to any other type certificate is effective for 3 years (See Regulation 6 of the regulations). If the Type Certificate the change has not been approved during this period, or if it is clear that it will not be approved under the time limit established under this paragraph, the applicant may do either of the following:

4.7.3.1 File a new application for a Type Certificate or for a change to the type certificate and comply with all of the provisions of paragraph 4.7.4 applicable to an original application.

4.7.3.2 File for an extension of the original application and comply with the provisions of paragraph 4.7.4. The applicant must then select a new application date. The new application date may not precede the date the Type Certificate or the change is approved by more than the time period established under 4.7.7.

4.7.4 For aircraft certificated in the "Restricted" or "Military Surplus" categories, according to Regulations 10 through 12 of the regulations, airworthiness requirements applicable to the category of the product in effect on the date of the application for the change include each airworthiness requirement that the CAAI finds to be appropriate for the type certification of the aircraft in accordance with those sections.

4.7.5 Additional Requirements (Ref. Chapter 2 of the regulations):

4.7.5.1 Special conditions deemed necessary;

4.7.5.2 Equivalent Level of Safety findings;

4.7.5.3 Applicable requirements of the Air Navigation Regulations (Aircraft Noise) regulations (Equivalent to FAR 36 or ICAO Annex 16 Vol. I);

4.7.5.4 Fuel Venting and Emission Requirements.

4.7.6 **Changed Aeronautical Products**. This procedure is applicable to changes to the type design of previously certified aircraft, aircraft engines and propellers whose change is significant but not so extensive as to require a new TC under Regulation 7 of the regulations. This procedure applies to all changed products regardless of their approval method such as amended TC or STC. The TC basis for changed products is established as to enhance safety of the changed product through the use of later amendments to airworthiness standards. It should be emphasized that the applicant is responsible for the entire product as altered, and not just for the change.

Designation of the applicable amendments for certification of the change should be performed in accordance with regulation 38 of the regulations .

4.7.6.1 An applicant for a change to a Type Certificate must show that the changed product complies with the airworthiness requirements applicable to the category of the product in effect on the date of the application for the change and with 14CFR (FAR) Parts 34 and 36. Exceptions are detailed in paragraphs 4.7.6.2 & 4.7.7.

4.7.6.2 If paragraphs 4.7.6.2.1 through 4.7.6.2.3 apply, an applicant may show that the changed product complies with an earlier amendment of a regulation required by paragraph 4.7.6.1, and of any other regulation the CAAI finds is directly related. However, the earlier amended regulation may not precede either the corresponding regulation incorporated by reference in the original type certificate, or any regulation in 14 CFR (FAR) sections §§ 23.2, 25.2, 27.2, or 29.2 that is relevant to the change. The applicant may show compliance with an earlier amendment of a regulation for any of the following:

4.7.6.2.1 A change that the CAAI finds to be not significant. In determining whether a specific change is significant, the CAAI considers the change in context with all previous relevant design changes and all related amendments to the applicable regulations incorporated in the type certificate for the product. Changes that meet one of the following criteria are automatically considered significant:

(i) The general configuration or the principles of construction are not retained,

(ii) The assumptions used for certification of the product to be changed do not remain valid.

4.7.6.2.2 Each area, system, component, equipment, or appliance that the CAAI finds is not affected by the change.

4.7.6.2.3 Each area, system, component, equipment, or appliance that is affected by the change, for which the CAAI finds that compliance with a regulation described in paragraph 4.7.6.1 would not contribute materially to the level of safety of the changed product or would be impractical.

4.7.7 An applicant for a change to an aircraft (other than a rotorcraft) of 6,000 pounds or less maximum weight, or to a non-turbine rotorcraft of 3,000 pounds or less maximum weight may show that the changed product complies with the regulations incorporated by reference in the type certificate.

However, if the CAAI finds that the change is significant in any area, the CAAI may designate compliance with an amendment to the regulation incorporated by reference in the type certificate that applies to the change and any regulations that the CAAI finds is directly related, unless the CAAI also finds that compliance with that amendment or regulations would not contribute materially to the level of safety of the changed product or would be impractical.

4.7.8 **Special Conditions**.

4.7.8.1 Basis for Issuance. The basis for issuance and amendment of special conditions is Regulation 4(b) the regulations. A special condition is issued only if the existing applicable airworthiness standards do not contain adequate or appropriate safety standards for an aircraft, aircraft engine, or propeller as a result of novel or unusual design features of the product to be type certificated, or of the type design to be changed. The phrase "novel or unusual" applies to design features of the product to be certificated when compared to the applicable airworthiness standards. Special conditions will not be used to upgrade the applicable airworthiness standards when novel or unusual design features are not involved.

4.7.8.2 Issue papers. Issue papers are most often used for development of the basis, need, and wording of special conditions. A special condition contains only such airworthiness standards as are necessary to establish a level of safety equivalent to that established by the applicable regulations. Special conditions are unique to the specific certification program in which they are issued.

4.7.8.3 Procedures for Issuance. Proposed special conditions are drafted by the CAAI Engineering Department in conjunction with an application for a TC, or an amended TC. The proposal is formulated with full participation by the applicant. In cases where the design feature is covered by a specific objective rule, the CAAI will not use a special condition as a particular method or technique to show compliance with the rule. In those cases where CAAI determines a special condition is appropriate, and

the applicant indicates that he have or will voluntarily comply, the special condition nevertheless will be proposed. It is essential that the list of special conditions be complete. This establishes the certification basis and forms an exact record of the rules applicable to the product.

An applicant requesting a change to a TC will comply with either the regulations incorporated by reference in the TC, or the applicable regulations in effect on the date of the application and any other amendments CAAI finds to be directly related (See Para. 4.7.6). If CAAI finds the regulations do not provide adequate standards with respect to the proposed change, the applicant will comply with the applicable provisions of Chapter 2 of the regulations and any special conditions and amendments to those special conditions, prescribed by CAAI to provide a level of safety established in the regulations.

4.7.8.4 Changes. As technical information is developed during the design and testing of a product, it may become appropriate to modify a previously issued special condition or to adopt a new one. The same procedure is followed in amending a special condition or adding a new one, as is used for an original issuance.

4.7.8.5 General Applicability. Pending adoption of amendments, a special condition may be proposed by the Engineering Department for application to any subsequent design case for which they would be appropriate.

4.7.8.6 Flow Chart. The flow in the processing of a special condition, from the inception of the design feature by the applicant, to the action taken by CAAI, is shown in Figure 1 - Special Condition Process:

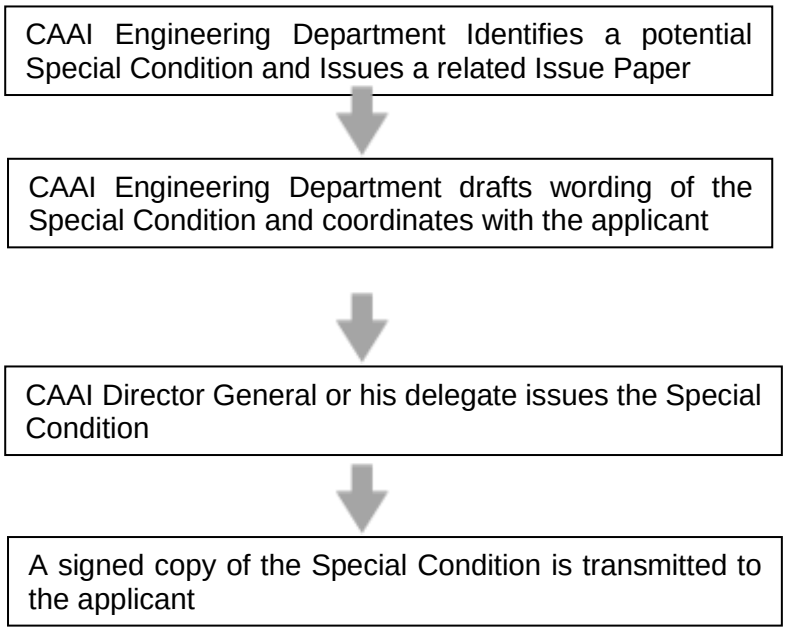


FIGURE 1: Special Condition Process

4.7.9 **Equivalent Level of Safety (ELOS) Finding**.

4.7.9.1 Equivalent level of safety (ELOS) findings are made when literal compliance with a certification regulation cannot be shown and compensating factors exist which can be shown to provide an equivalent level of safety (Ref. Regulation 4 of the regulations).

4.7.9.2 During the coordination stage of the ELOS Issue Paper, the applicant should submit the proposed ELOS to the Engineering Department. The Engineering Department makes all ELOS findings.

4.7.9.3 In documenting an Equivalent Level of Safety:

4.7.9.3.1 List the applicable regulation;

4.7.9.3.2 Describe the features of the design that require the Equivalent Level of Safety.

4.7.9.3.3 Describe any design changes, limitations, or equipment requirements imposed to make the equivalency; and

4.7.9.3.4 Provide an explanation of how the actions taken provide an Equivalent Level of Safety to that intended by the regulation.

4.7.9.4 All Equivalent Level of Safety findings must be listed on the TCDS.

4.8 Exemptions. In a Type Certification program, any interested person may petition the CAAI for a temporary or permanent exemption from any regulation. The petition for exemption is made to the Engineering Branch. The CAAI Director General approves the Exemption if the regulation is enacted under those articles of the Air Navigation Law for which exemptions are allowed (Ref. article 165 of Air Navigation Law). In cases where regulatory compliance is in question, the possibility of an Equivalent Level of Safety finding should be considered prior to submitting the petition for exemption.

4.9 Type Certification Program

4.9.1 **General**. An applicant for a TC or amended TC shall submit to the CAAI the type design, test reports, and computations necessary to show that the product to be certificated complies with the applicable airworthiness and noise requirements of the certification basis. The CAAI will examine the data submitted by the applicant and will determine if it complies with the airworthiness and noise requirements. In addition to compliance with the above requirements, to be entitled to a TC or amended TC the CAAI must find that no feature or characteristic makes the product unsafe for the category in which certification is being requested (Ref. Regulation 8 of the regulations).

4.9.2 **Noise Requirements**. CAAI has to approve that the noise requirements of the Air Navigation Regulations (Aircraft Noise), 1977 are met. These regulations require compliance with FAR 36 or with ICAO Annex 16, Vol. I.

4.9.3 **Release and Reference to Technical Data**.

4.9.3.1 Disclosure of Technical Data. Descriptive and substantive data received from applicants are proprietary and are not to be released by CAAI.

4.9.3.2 CAAI use of Technical Data. CAAI personnel may use the applicant's or certificate holder's data for reference or evaluation of any other applicant's submitted data as long as the information is used solely for that purpose. The CAAI will use the data solely to minimize the time and effort needed for the CAAI's evaluation of data. This information will not be disclosed to third parties who have not obtained written permission for access from the applicant or the certificate holder.

4.9.3.3 Authorized use of CAAI Approved Data. An applicant who applies for a TC, amended TC, or an STC, and desires to make use of data submitted by a previous applicant or certificate holder, should obtain and submit to the CAAI written consent from the previous applicant or certificate holder. If the applicant does not obtain such consent, prior CAAI approved data will not be considered.

4.9.3.4 Applicant Provided Data. An applicant showing compliance to the applicable requirements may submit previously approved data without showing further compliance if the applicant:

4.9.3.4.1 Provides sufficient evidence to substantiate that the data presented was in fact approved by the CAAI;

4.9.3.4.2 Establishes that the previously approved data is applicable to the applicant's design to the extent that any design deviations will have no effect on the airworthiness of the design or on showing compliance with the applicable regulations;

4.9.3.4.3 Provides sufficient substantiation and descriptive data that a finding of compliance can be made; and

4.9.3.4.4 Has sufficient engineering data necessary to provide continued airworthiness information should the alteration be the subject of a service difficulty or Airworthiness Directive (AD) and to produce duplicate detail parts and installations if multiple STC approval is requested.

CAAI will not question the source or the method by which an applicant for a design approval obtains data submitted with an application.

4.9.3.5 To reduce unnecessary administrative burdens upon the applicant and the CAAI, once one applicant has demonstrated that a design change meets the airworthiness requirements necessary for CAAI approval, subsequent applicants for a similar alteration may not be required to conduct all the same tests required of the previous applicant. This may permit a subsequent applicant to benefit from the work of a previous applicant. While needless duplication of testing and data gathering should be avoided, the agency's primary responsibility is to determine the airworthiness of the altered product.

CAAI will not supply a subsequent applicant with information submitted by a previous applicant, either directly or indirectly.

4.9.4 **Responsibility of the Applicant**. An applicant is responsible for showing compliance to the regulations applicable to the specific product or operation being certificated. The process is as follows:

4.9.4.1 An applicant shall submit the type design and substantiating data necessary to show that the product to be certificated meets the applicable airworthiness and aircraft noise requirements, and any special conditions prescribed by CAAI.

4.9.4.1.1 The type design consists of drawings and specifications; information on dimensions, materials, and processes; airworthiness limitations; and any other data necessary to describe the design of the product (Regulation 8 of the regulations). Type design data may allow determination of the airworthiness and noise characteristics (where applicable) of a later product of the same type by comparison.

4.9.4.1.2 Substantiating data is additional data which is required to show compliance with the certification basis, e.g., test and analysis reports, ground and flight test reports, etc.

4.9.4.1.3 The applicant shall prepare and submit to the CAAI a Compliance Check List which addresses each regulation applicable to the product. In this manner, the CAAI and the applicant can identify certification basis problem areas early in the type certification program.

4.9.4.2 An applicant shall submit a statement of conformity to the CAAI for each aircraft, engine, and propeller presented for certification.

4.9.4.3 An applicant must allow the CAAI to make any inspection and any flight or ground test necessary to determine compliance with the applicable requirements of the Regulations. However, the applicant must perform all inspections and tests necessary to show compliance prior to resenting the product to the CAAI for testing.

4.9.4.4 The applicant shall accomplish the requirements of Regulation 16 of the regulations prior to performing flight tests, and upon showing compliance makes all flight tests that CAAI finds necessary. The applicant must provide a person holding an appropriate pilot certificate to perform the flight tests.

4.9.5 **Responsibility of CAAI**. CAAI is responsible for:

4.9.5.1 Providing guidance to an applicant regarding the certification process;

4.9.5.2 Establishing the certification basis;

4.9.5.3 Establishing special conditions;

4.9.5.4 Processing petitions for exemptions;

4.9.5.5 Determination of Equivalent Levels of Safety;

4.9.5.6 Approving drawings, reports, data and flight manuals;

4.9.5.7 Performing Type Inspection Authorization (TIA) inspections and tests needed to verify compliance with the Regulations and conformity with the type design.

4.9.5.8 Preparing the Type Inspection Report (TIR) and the TCDS;

4.9.5.9 Issuing certificates; and

4.9.5.10 Chairing Maintenance Review Boards, approving Airworthiness Limitation Section (ALS) and developing Minimum Equipment List (MEL).

4.9.6 CAAI Evaluation and Approval of Design Data.

This process is detailed in CAAI Procedure ENG 1-4-013.

4.9.7 **Equipment Qualification**. Equipment and system components used in the design of a product require qualification. The applicant should submit a Qualification Plan for CAAI's approval. This plan should contain a list of all purchased equipment for each system of the product, and contain, as a minimum, the following information for each component:

4.9.7.1 Drawing / part number;

4.9.7.2 Description;

4.9.7.3 The manufacturer;

4.9.7.4 Conformity Inspection Requirement;

4.9.7.5 Acceptance Test Procedure (ATP);

4.9.7.6 Qualification Test Procedure (QTP); and

4.9.7.7 Qualification Test Results (QTR).

The need and level of qualification should be in accordance with the Functional Hazard Assessment (FHA) Document, previously approved by the CAAI, which establishes the criticality level of each system and is reflected in each system’s safety analysis.

4.9.8 Engineering Compliance Inspections by CAAI

4.9.8.1 Any aspect of the product design, for which compliance with the certification requirements cannot be ascertained only through the review of drawings or reports, should be the subject of an engineering compliance inspection.

4.9.8.2 An engineering compliance inspection is performed to determine if a product or an installation complies with the regulations. This inspection should not be confused with a conformity inspection done by manufacturing inspectors. A conformity inspection is performed to determine conformity to engineering data, while an engineering compliance inspection is performed to determine compliance to the regulations. An engineering compliance inspection provides an opportunity to review an installation and its relationship to other installations on a product.

4.9.8.3 The product should conform to the type design prior to conducting the engineering compliance inspection. Findings are to be documented and included by the applicant in the type design data. Engineering compliance inspections may be delegated to DERs, however, they should be provided proper guidance in order to effectively make the findings on behalf of CAAI.

4.9.8.4 Engineering compliance inspections for aircraft interiors are generally more complex than other compliance inspections. This is primarily due to the many varied regulations that must be complied with, e.g. emergency lighting, emergency exit arrangement, ordinance signs, aisle widths, cockpit controls, waste containers, placards, and occupant protection. In accomplishing an interior compliance inspection, the certification team will make many determinations and, therefore, should be very familiar with current regulations and policy.

4.9.8.5 Control system compliance inspections are accomplished to determine ease of control operation, strength of components, detection of interference, or deflection of control system linkages.

4.9.8.6 Flammable fluid fire protection compliance inspection. The regulations require separation and isolation of flammable fluid carrying lines from ignition sources. A physical inspection of installations is required to assure compliance.

4.9.8.7 Hydraulic and electrical system routings require inspection to assure that proper support and separation is maintained.

4.9.9 **Notification of Noncompliance**. The Engineering Department will notify the applicant in writing when noncompliance items are found during ground or flight inspections and the type certification tests are not discontinued. The notification will include reference to the specific regulations. The applicant must satisfactorily resolve all noncompliance prior to CAAI issuing the TC, amended TC, or STC.

4.9.10 **Discontinuance Letter**. The Engineering Department will notify the applicant by letter when it becomes necessary to discontinue official CAAI type certification tests for any reason. The letter should cite the applicable regulations and advise the applicant to notify the Engineering Department when the cause of the discontinuance has been corrected and a resumption of the type certification test is desired.

4.10 Type Inspection Authorization (TIA)

4.10.1 **General**. The TIA is prepared by the Engineering Department on CAAI Form 8110-1 and is used to authorize official conformity, airworthiness inspections, ground and flight tests necessary to fulfill certain requirements for TC, STC and amended TC certification. In addition, the TIA may contain a section (Operational and Maintenance Requirements) that provides for certain other operational evaluations identified by the Engineering Department.

4.10.2 **Preparation of a TIA**. The TIA is prepared by the Engineering Department. The TIA is issued when the examination of the technical data required for type certification is completed or has reached a point where it appears that the aircraft or component being examined will meet the applicable regulations.

4.10.3 **Letter of Notification**. At the time the TIA is prepared, a letter of notification to the applicant should also be prepared. The letter of notification informs the applicant that authorization for type inspection has been issued, and should include a copy of the TIA.

4.10.4 **Inspections**. Conformity inspections are accomplished by CAAI manufacturing inspection personnel or a CAAI designee prior to official CAAI certification flight tests (Ref. Regulation 15 of the regulations and CAAI Procedure MFG 1.4.002).

4.10.5 **Tests**. Official certification tests are conducted or witnessed by CAAI personnel or CAAI designees, when authorized, after the applicant has complied with Regulation 16 of the regulations and CAAI Procedure ENG 1.4.014.

4.10.6 **Type Inspection Report**. The results of the Type Inspection are reported on the 8110-5 form as per CAAI Procedure ENG 1.4.014.

4.11 Operational and Airworthiness Evaluation

4.11.1 **Aircraft Evaluation**. The Engineering Department project team should consult the airworthiness inspectors and the operations inspectors of the Flight Standards Division on the operational and maintenance aspects of the aircraft type certification process and, once the aircraft enters service, provide support for maintenance and operations activities.

The subjects to be coordinated are:

4.11.1.1 Advice to the applicant regarding pertinent operational and maintenance requirements during the design and certification process. Evaluation of the aircraft and its systems for operational suitability and continued airworthiness.

4.11.1.2 Operational suitability evaluations by analysis of type design data and by participation in the aircraft certification engineering compliance inspections and flight test programs.

4.11.1.3 Operational specifications, training and maintenance programs, and airmen qualification.

4.11.2 **Coordination**. It is possible that an aircraft could be type certificated and not be determined to be operationally acceptable for operations under the applicable regulations. These inconsistencies are avoided by proper and timely involvement of airworthiness and operations personnel from the Flight Standards Division. Their responsibility in evaluation the operational suitability and type rating requirements require flying the aircraft through prescribed type rating maneuvers using Flight Manual procedures. This may be accomplished during the certification flight test program and will require the allocation of flight time so that appropriate findings can be made.

4.11.3 If the aircraft subject to the certification process is to be operated in Israel, coordination with the Flight Standards Division is required. If the aircraft is manufactured for export, coordination with the Airworthiness Department activities of the state of import is necessary.

4.11.4 **Maintenance Review Board**. Specific procedures and requirements are detailed in CAAI Procedures ENG 1.4.039 and 1.4.041.

4.12 Aircraft Flight Manual (AFM)

An AFM approved in accordance with Procedure ENG 1.4.015 is required for each aircraft.

4.13 Post Certification Activities

4.13.1 **Certification Summary Report**. The purpose of the certification summary report is to provide a single source document which summarizes the record of the CAAI examination of a type design, discusses significant safety issues, and describes how the applicable airworthiness, noise, and emission requirements were complied with. The Certification Project Manager is responsible for preparation of the certification summary report.

Not all projects require Certification Summary Reports. The Head of the Engineering Branch will determine which projects do.

4.13.2 **Type Inspection Report (TIR)**. The process of issuing a TIR is detailed in CAAI Procedure ENG 1.4.014, Para. 3.4.

4.13.3 Continued Airworthiness

4.13.3.1 Instructions for Continued Airworthiness are required for type certification as they are part of the type design as defined in the CAAI's Directives, and are integral to the TC as defined in Regulation 19 of the regulations, CAAI Directive 05-607, and 14 CFR (FAR) sections 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4 or 35.4, as applicable.

4.13.3.2 Instructions for Continued Airworthiness are prepared in accordance with FAR 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, or 35.4, and are reviewed by the Engineering Department. For engines and propellers – the Airworthiness Limitations Section and the installation and operation instructions require CAAI approval. For other category products, only the Airworthiness Limitations Section requires CAAI approval.

As allowed in the applicable Regulations, the Instructions for Continued Airworthiness may be incomplete at the time of type certification, however, the airworthiness limitations are required and must be CAAI approved at the time of type certification (not necessarily in the final printed form). The Instructions for Continued Airworthiness must be in their final printed form when the first airworthiness certificate is issued, or prior to delivery of the first product, whichever is later.

Certification Maintenance Requirements (CMR) (i.e. systems and powerplant maintenance requirements developed during the certification process which define the frequency and extent of inspections) should be included as part of the maintenance instructions sections of the Instructions for Continued Airworthiness.

4.13.3.3 All approvals are based on substantiation data which is retained by the approving person/organization. In the case of DER approvals, a copy of CAAI Form 8110-3 - Statement of Compliance with the Regulations, shall be submitted to the CAAI Engineering Department.

5. TYPE CERTIFICATES

5.1 General

5.1.1 This chapter provides guidance for preparation of CAAI Form 8110.9 - Type Certificate, and the TCDS (Type Certificate Data Sheet).

5.1.2 The TCDS is part of the TC and provides a concise definition of the type certificated product.

5.2 Type Certificate

5.2.1 The Engineering Department issues a TC when an applicant completes all the requirements of the Certification Basis for the product.

Appendix 2 presents a sample CAAI Type Certificate.

5.2.2 **Type Certificate Number**. The Engineering Department assigns a CAAI TC number.

5.2.3 **Amendment to a TC**

5.2.3.1 A TC holder proposing a type design change to a certificated product may apply for a STC or an amendment to the original TC. Persons other than the TC holder must apply for an STC.

5.2.3.2 Some type design changes may not require alteration of the TC or TCDS. These changes are normally handled by CAAI approval in accordance with CAAI Procedure ENG 1.4.016.

5.2.3.3 Application for a TC amendment is made in writing to the CAAI Engineering Department. If the amendment involves a model change of the product, CAAI Form 312 - Application for Type Certificate, Production Certificate, or Supplemental Type Certificate should be used.

5.2.3.4 The completed amendment will be sent to the applicant and the revised TCDS, if required, published as soon as possible.

5.2.4 **Recordkeeping**. An original signed copy of the TC will be retained by the Engineering Department for official record purposes as required by CAAI Procedure ENG 1.4.34.

5.2.5 **Transfer of a TC**

5.2.5.1 The recipient of a transferred TC, as authorized in Regulation 22 of the regulations, agrees to all privileges of a TC holder and all responsibilities for all aircraft produced under that TC, including those aircraft produced by the previous TC holders.

5.2.5.2 When TC ownership is transferred, the TC holder completes the transfer endorsement on the back side of the TC and submits it to CAAI Engineering Department. The CAAI Engineering Department will reissue the TC.

5.2.5.3 If the TC holder maintains the CAAI data file, reissuance of the TC should not occur until the new owner and the CAAI reach an agreement regarding maintenance and storage of the CAAI data file, as detailed in CAAI Procedure ENG 1.4.034.

5.2.5.4 If the transfer of the TC is to another member state, the transfer should be performed only after reaching agreement between the foreign (receiving) authority and the CAAI on the terms of transfer of responsibility for data retention, Continued Operational Safety, etc. While initiating this agreement is the responsibility of the receiving state, CAAI engineering will support the transfer of the TC and its associated design data to the receiving state.

5.2.5.5 Any TC holder's name change requires that the TC be reissued.

5.2.6 Cancellation / revocation of a TC.

5.2.6.1 According to Regulation 25 of the regulations, a TC is effective until surrendered, revoked, suspended or exceeds its period of effectivity.

5.2.6.2 Revocation of a TC is a legal action which cancels the TC. For example, such action is taken when the TC holder is unwilling or unable to take the necessary action to assure continued airworthiness of the certificated product. Suspension is a temporary revocation of a TC. Revocation or suspension of a TC is a basis for invalidating the airworthiness certificates of all aircraft built under the TC.

5.2.6.3 Upon revocation or suspension of a TC, the holder must provide the original TC to CAAI. The word "Cancelled" is stamped or typed on the body of the original TC as well as the date and signature of the Head of the Engineering Department. The "Cancelled" original TC is then returned to the holder. In the case of a suspended TC, when the suspension ends, the TC should be reissued to the holder.

5.2.6.4 A note will be added to the TCDS documenting the cancellation date of the TC and advising that the TCDS is not valid for aircraft manufactured after the cancellation date.

5.2.6.5 An Airworthiness Directive (AD) will be issued documenting the TC cancellation or revocation.,.

All foreign authorities that have validated the TC and/or notified CAAI that the product has been registered in their country should be notified of the following:

5.2.6.5.1 The intent to revoke the TC and any associated production approval;

5.2.6.5.2 The effective date of TC cancellation or suspension;

5.2.6.5.3 The time period, if known, that the suspension will be in effect;

5.2.6.5.4 The cause of the cancellation or suspension; and-

5.2.6.5.5 If the cause for TC cancellation or suspension affects the airworthiness of the product - any recommended action that should be taken.

5.2.6.6 These authorities should be periodically notified of the status of TC suspension and/or reinstatement.

5.2.6.7 If the State of Manufacture of the product is not Israel, the relevant national authority should also be notified, as above.

5.2.7 Surrender of a TC

5.2.7.1 Surrender of the TC is a legal action by which the TC holder relinquishes the TC and the associated privileges to CAAI.

5.2.7.2 The surrender of a TC renders it ineffective.

5.2.7.2.1 Surrender of a TC precludes further production of the product covered by the TC, but it does not affect the

eligibility of the airworthiness certification of products produced prior to the surrender.

5.2.7.2.2 All information that constitutes the TC, including the type design with substantiating data, revert to the public domain and will be made available to the public on request.

CAAI will have custody of this information to conduct follow on activities related to the product such as STCs, Product Manufacturing Approval (PMA), field approvals, etc. CAAI will retain this information for as long as an aircraft of that type is registered.

5.2.7.3 Upon surrender of a TC, the word "Surrendered" will be stamped or typed on the body of the original TC as well as the date and signature of the Head of the Engineering Department. The "Surrendered" original TC is then returned to the holder.

5.2.7.4 A note will be added to the TCDS documenting the surrender date of the TC and advising that only airplanes manufactured prior to that date are eligible for airworthiness certification.

5.2.7.5 Persons or entities wishing to manufacture the product from a surrendered TC may:

5.2.7.5.1 Obtain copies of the TC data, which now resides in the public domain and apply for a new TC through the normal approval process. Since a new and distinct TC would be issued in this case, the certification basis would be established in accordance with Regulation 5 of the regulations, and not in accordance with Regulation 38.

5.2.7.5.2 Request that the TC be reissued in their name. This request will be honored if the requesting party is qualified and in possession of all information that would constitute the TC. The requesting party should be aware that he/she assumes all responsibilities for the product as well as the privileges of a TC holder, as defined in Chapter 2 of the regulations. The applicable procedures in paragraph 5.2.5 for transfer of a TC also apply.

5.2.7.6 The TC data may not be claimed by a third party as being proprietary - the data remains in the public domain for eternity.

5.2.7.7 Upon receiving a surrendered TC, CAAI will notify all relevant foreign Civil Aviation Authorities that the TC has been surrendered to CAAI, including the date of surrender.

5.3 Type Certificate Data Sheet (TCDS)

5.3.1 **Definition**. The TCDS is the part of the TC which documents the conditions and limitations necessary to meet the certification airworthiness requirements of the applicable regulations.

5.3.2 **Approval of TCDS**. CAAI prepares the TCDS, as required by Regulation 19 of the regulations, using data and information required fromby the applicant in showing compliance with the regulations. The contents of the TCDS are described in this chapter.

5.3.3 **Completion of the TCDS**. The TCDS should be completed as soon as possible after approval of the engineering data. The TCDS can be in a partial state of completion at the time of issuance of the TIA. However, the TCDS must be completed by the time the TC is issued.

5.3.4 **Format of the TCDS**. An example of a TCDS is provided in Appendix 3.

5.3.5 Information Required for an Aircraft TCDS

5.3.5.1 Engine(s);

5.3.5.2 Fuel and oil types;

5.3.5.3 Engine Limits;

5.3.5.4 Propeller(s) and Propeller Limits;

5.3.5.5 Rotor Speed Limits;

5.3.5.6 Transmission Torque Limits (for helicopters);

5.3.5.7 Airspeed Limits;

5.3.5.8 Center of Gravity (C.G.) Range;

5.3.5.9 Empty Mass C.G. Range;

5.3.5.10 Datum;

5.3.5.11 Leveling Means;

5.3.5.12 Maximum Mass;

5.3.5.13 Minimum Crew;

5.3.5.14 Number of Seats;

5.3.5.15 Maximum Baggage mass;

5.3.5.16 Fuel Capacity;

5.3.5.17 Oil Capacity;

5.3.5.18 Maximum Operating Altitude;

5.3.5.19 Control Surface Movements;

5.3.5.20 Manufacturer's Serial Numbers;

5.3.5.21 Import Requirements;(When appropriate)

5.3.5.22 Certification Basis;

5.3.5.23 Production Basis;

5.3.5.24 Special Equipment;

5.3.5.25 Notes.

If several aircraft models are included under the same TC, a section covers each model and items will be repeated under each section with the exception of items common to all models. These are listed under a "Data Pertinent to All Models" section.

5.3.6 **Information Required for an Engine TCDS**. Refer to FAA AC 33-2, Aircraft Engine Type Certification Handbook, for details required on an engine TCDS.

5.3.7 **Information Required for a Propeller TCDS**. TBD

5.4 Preparation of TCDS and Specifications for Printing

5.4.1 **Type Certificate Data Sheet Master**. The Type Certificate Data Sheet Master is issued by the CAAI Engineering Department.

5.4.2 **Type Certificate Data Sheet Revision**. It is important for the user to know the revision status of the TCDS, therefore, the revision number appears on each page.

6. SUPPLEMENTAL TYPE CERTIFICATES

The procedure relating to the issue of Supplemental Type Certificate is detailed in CAAI Procedure ENG 1.4.038.

7. Manufacturing and Engineering Responsibilities and Functions Relating to Inspection and Test

7.1 Manufacturing Inspectors

7.1.1 **General**. The applicant is responsible for conducting 100 percent satisfactory conformity to his proposed type design data andto the airworthiness requirements, as required by Regulation 15 of the regulations and that the products and parts thereof conform to the approved design drawings and specifications.

7.1.2 **Designees**. According to CAAI Procedures ENG 1.4.020, MFG 4.4.001.

7.2 Conformity Inspection

According to CAAI Procedure MFG 1.4.002.

7.3 Test Articles

7.3.1 **General**. Prior to initiating the conformity inspection activity for test articles, it is essential that the applicant, the project engineer, and the manufacturing inspector have a clear understanding as to the test article configuration, test equipment configuration and expected results. This information should be submitted by the applicant as test plan reports for Engineering Department approval.

7.3.2 A CAAI Form 8120-10, Request for Conformity Inspection, may be issued by the Engineering Department referencing these reports.

7.3.3 The TIA should reference the final test flight article configuration.

7.4 Witnessing Official Tests

Refer to CAAI Procedure ENG 1.4.006.

7.5 Structural Test Articles - Aircraft

7.5.1 Ground tests - plan, witnessing and approval are performed according to CAAI Procedure ENG 1.4.006.

7.5.2 The conformity determination inspection is performed in accordance with CAAI Procedure MFG 1.4.002 and 1.4.014.

7.5.3 Nonconformities are treated according to CAAI Procedures MFG 1.4 507.

7.6 Prototype Test Article - Aircraft

Should be performed as per section 4.10 of this procedure.

7.7 Endurance Test Articles - Engines and Propellers

Endurance tests for engines and propellers are performed in accordance with the procedure described in FAA Order 8110.4C, Para. 5-13.

7.8 Use of Engineering Data

Refer to CAAI Procedure ENG 1.4.013.

7.9 Ground Inspection - Aircraft

Refer to CAAI Procedure ENG 1.4.014 and MFG 1.4.003.

7.10 Airworthiness Certification for Prototype Products

Refer to CAAI Procedure MFG 1.4.006.

7.11 Accounting for Engineering Changes

Refer to CAAI Procedure ENG 1.4.016.

7.12 Function and Reliability Testing Responsibility

Refer to CAAI Procedure ENG 1.4.014.

7.13 Conformity Inspection Record Reporting

Refer to CAAI Procedure ENG 1.4.014

7.14 Type Inspection Report

Refer to CAAI Procedure ENG 1.4.014.

7.15 Completion of the TIR

Refer to CAAI Procedure ENG 1.4.014.

8. Additional Information on Selected Topics

8.1 Restricted Category Aircraft

General. Restricted category aircraft are certified by CAAI only to conduct certain special purpose operations. Regulations 10 through 12 of the regulations provide for the issuance of TCs in the restricted category for civil and surplus military aircraft, respectively.

8.2 Type Certification of Surplus Military Aircraft

8.2.1 Surplus aircraft of the Israeli Defense Force or foreign military forces may receive type certification in the normal, utility, acrobatic, or transport categories, according to Regulation 12 of the regulations, if -

8.2.1.1 The aircraft was designed and manufactured in Israel, and the applicant has shown compliance with the regulations in effect not more than 5 years prior to the aircraft's acceptance for use by the Israeli Defence Force; or,

8.2.1.2 The aircraft is a counterpart of a previously type certificated civil aircraft, and the applicant has shown compliance with the regulations governing the original civil aircraft type certificate.

8.2.2 Some surplus military aircraft have civil counterparts and may be listed on the civil TCDS with information concerning modifications required to make them eligible under the civil TC.

8.2.3 **Special Conditions**. Special conditions and later requirements may be imposed in order to achieve a satisfactory level of airworthiness.

8.2.4 **Approval of Engine, Propellers, and Related Accessories**. Engines, propellers, and their related accessories will be approved for use on these aircraft if the applicant shows that on the basis of military qualification, acceptance, and service record the product provides substantially the same level of airworthiness as would be provided by type certification of these products according to their respective airworthiness requirements (14CFR parts 33, 35).

8.2.5 **Equivalent Level of Airworthiness**. CAAI may relieve the applicant of strict compliance with appropriate regulations if the method of compliance proposed by the applicant provides the same level of airworthiness as the relevant regulations. CAAI may use the relevant military experience in making such a determination.

8.3 Noise Certification

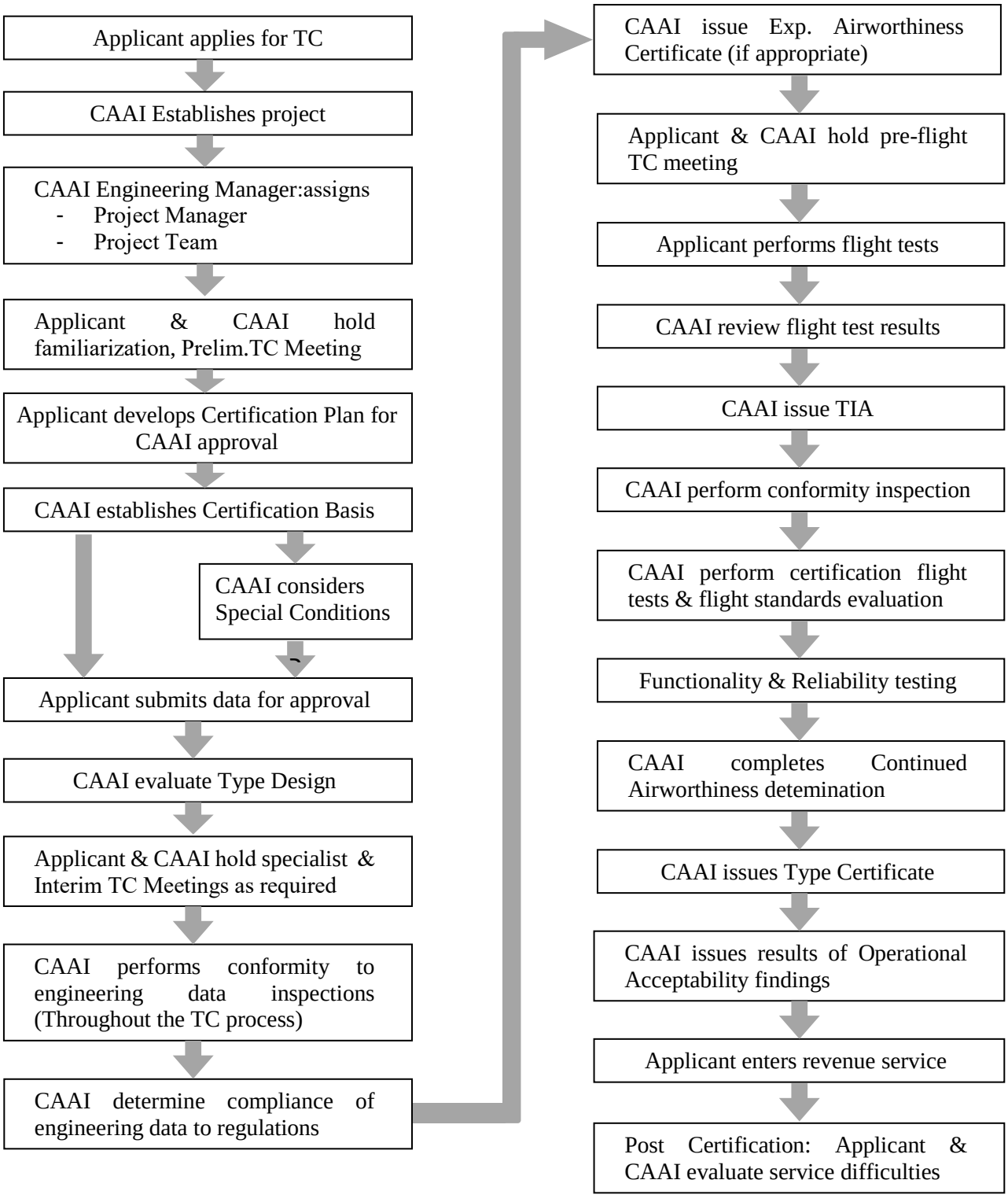
8.3.1 **General**. The Air Navigation Regulations (Aircraft Noise), 1977 require aircraft to have a noise certificate, and to comply with the noise requirements of ICAO Annex 16, Vol. I or FAR 36.

8.3.2 Noise Certification cannot be presently performed in Israel due to lack of facilities, and is usually performed in the United States, according to the procedure described in FAA Order 8110.4C, Chapter 7.

8.4 Flight Testing

Refer to CAAI Procedure ENG 1.4.014.

FIGURE 2: Type Certification Process



APPENDIX 1: CAAI Form 312

CIVIL AVIATION ADMINISTRATION OF ISRAEL (CAAI)
APPLICATION FOR TYPE CERTIFICATE, PRODUCTION CERTIFICATE, OR SUPPLEMENTAL TYPE CERTIFICATE

1. NAME AND ADDRESS OF APPLICANT:	2. APPLICATION MADE FOR:		3. PRODUCT INVOLVED:	
	☐	TYPE CERTIFICATE	☐	AIRCRAFT
	☐	PRODUCTION CERTIFICATE	☐	ENGINE
	☐	SUPPLEMENTAL T.C.	☐	PROPELLER

4. COMPLETE THE FOLLOWING FOR TYPE CERTIFICATE

A. MODEL DESIGNATION(S)

All models listed are to be completely described in the required technical data, including drawings, representing the design, material, specifications, construction, and performance of the Aircraft, Aircraft Engine, Propeller which is the subject of this application.)

5. COMPLETE THE FOLLOWING FOR PRODUCTION CERTIFICATE *(With this form submit, in manual form, one copy of quality control data or changes thereto covering new products, as required by applicable ANRs.)*

A. FACTORY ADDRESS *(If different from 1 above)*

B. APPLICATION, IS FOR: ☐ NEW P.C. ☐ ADDITIONS TO P.C. NO. _____

C. APPLICANT IS HOLDER OF OR A LICENSEE UNDER T.C. OR S.T.C. NO. _____ *(attach evidence of licensing agreement)*

6. COMPLETE THE FOLLOWING FOR SUPPLEMENTAL TYPE CERTIFICATE

A. MAKE AND MODEL DESIGNATION OF PRODUCT TO BE MODIFIED

B. DESCRIPTION OF MODIFICATION

C. WILL DATA BE AVAILABLE FOR SALE OR RELEASE TO OTHER PERSONS ?

☐ YES ☐ NO

D. WILL PARTS BE MANUFACTURED FOR SALE ? (CAAI ANR CERTIFICATION PARA # 95)

☐ YES ☐ NO

CERTIFICATION

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE.

_____
SIGNATURE OF CERTIFYING OFFICIAL

_____ _____
DATE TITLE

APPENDIX 2: TC Example

STATE OF ISRAEL
Ministry of Transport
Civil Aviation Authority

מדינת ישראל
משרד התחבורה
רשות התעופה האזרחית

תעודת סוג לכלי טיס
TYPE CERTIFICATE

No. A7IL מס

This Certificate issued to - תעודה זו שניתנה ל -

Gulfstream Aerospace LP
c/o Israel Aerospace Industries, LTD., Department 4199
Ben Gurion International Airport
70100, Israel

certifies that the Type Design for the following product with the operating limitations and conditions therefore as specified in the Air Navigation Regulations) Certification Procedures for Aircraft and Aeronautical Products) 1977, and the Type Certificate Data Sheet, meets the airworthiness requirements of

מאשרת שתכן הסוג למוצר דלהלן במגבלות ובתנאים המבצעיים בהתאם לתקנות הטיס (נהלי תיעוד כלי טיס וחלקיהם) תשל"ז – 1977, וגיליון הנתונים של תעודת הסוג, ממלא אחר דרישות כושר אווירי של

CFR TITLE 14 PART 25

MODEL: **GULFSTREAM G280** דגם :

This Certificate and the Type Certificate Data Sheet which is a part thereof shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Director General of the Civil Aviation Administration.

תעודה זו וגיליון הנתונים של תעודת הסוג המהווה חלק בלתי נפרד ממנה, תהיה בתוקף עד ביטולה, התליתה, השעיתה, או עד פקיעת תוקפה כפי שנקבע בה על ידי ראש מינהל התעופה האזרחית.

Date of application: **March 30, 2006** **תאריך הגשת הבקשה:** א' בניסן תשס"ו

Date of issuance **December 29, 2011** תאריך הוצאת התעודה: ג' בטבת תשע"ב

By the direction of Director General
Civil Aviation Authority.

בהתאם להוראות
ראש רשות התעופה האזרחית.

חתימה:

Signature : **Tamir Bar-Am**

Title : **Engineering Branch Manager** תואר: מנהל מחלקת הנדסה

TC EXAMPLE ONLY

TRANSFER ENDORSEMENT

Immediately after transfer the person making the transfer shall notify the Civil Aviation Administration of Israel (CAAI) of the name and address of the person to whom the certificate was transferred.

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

To..... (Name) By..... (Holder) Date.....

..... (Address) ..... (Signature)

.... (Title)

TC EXAMPLE ONLY

APPENDIX 3: TCDS Example

STATE OF ISRAEL
MINISTRY OF TRANSPORT
CIVIL AVIATION AUTHORITY

A7IL
Revision 0
Gulfstream Aerospace L.P.
GULFSTREAM G280
December 29, 2011

TYPE CERTIFICATION DATA SHEET No. A7IL

This Data Sheet which is part of Type Certificate No. A7IL prescribes conditions and limitations under which the aircraft for which the Provisional Type Certificate was issued meets the airworthiness requirements of the Aviation Regulations (Certification Procedures for Aircraft and Parts thereof) 1977 תקנות הט"ס – תשל"ז

Type Certificate Holder : Gulfstream Aerospace LP
C/o Israel Aerospace Industries, LTD., Department 4199
Ben Gurion International Airport, 70100, Israel

GULFSTREAM G280 (Transport Category) Approved December 29, 2001

Engines: 2 Honeywell AS907-2-1G (Turbofan) Engines per CAAI TC IE242.

Fuel: Fuels conforming to Honeywell International Inc. Specifications EMS53111 (Jet A type), EMS53112 (Jet A-1and JP-8 types) and EMS53116 (JP-5 type).

Oil: Conforming to Honeywell International Inc. Specification EMS53110, Type II.

Fuel Control Computer: Fuel control and power management by a Full Authority Digital Electronic Control (FADEC) system.

Engine Limits:

Static Thrust at Sea Level, lbs

- Maximum continuous	7,337 lbs
- Maximum Takeoff	7,765 lbs up to 31.7°C
- Normal Takeoff	7,425 lbs up to 31.7°C

Maximum Continuous Permissible Engine Operating Speeds for the Engine Rotors, % RPM (RPM)

- Low pressure rotor (N1)	96.49% (9,800)
- High pressure rotor (N2)	97.97% (27,530)

Page No.	1	2	3	4		
Rev. No.	0	0	0	0		

TCDS EXAMPLE ONLY

Maximum Interstage Turbine Temperature (ITT), °C

- Maximum Continuous	950
- Take-Off (5 minutes)	955
- During starting	Varies with N2

Oil Temperature, °C

- Maximum Continuous	5 to 13
- Take-Off	154
- During starting (minimum)	- 40

Oil Pressure (PSI)

- Pressure limits	Varies with N2

Airspeed Limits: **Vmo/Mmo (Maximum Operating Speed):**

- Vmo (Max. Operating) S.L. to 10,000 ft	300 KIAS
- Vmo between 10,000 & 20,000 ft	300 - 330 KIAS
- Vmo between 20,000 & 28,000 ft	340 KIAS
- Mmo between 28,000 & 45,000 ft	0.85

Val (Maneuvering)

- Below 20,000 ft	215 - 225 KIAS
- Between 20,000 ft to 35,000 ft	225 - 264 KIAS
- Between 35,000 ft to 39,200 ft	264 KIAS
- Between 39,200 ft to 45,000 ft	0.85

- Vfe (Flaps 10°)	250 KIAS
- Vfe (Flaps 20°)	220 KIAS
- Vfe (Flaps LND)	180 KIAS
- Vsb (Airbrakes Operation)	Vmo/Mmo
- Vle and Vlo (L/G Extension & Operating)	195 KIAS
- Vmc air (ISA; sea level)	97 KIAS
- Vmc landing (ISA; sea level)	95 KIAS
- Vmc ground (ISA; sea level)	95 KIAS
- Main landing gear tire ground speed limit	195 KTS
- Nose landing gear tire ground speed limit	182 KTS

C.G. Range: (Zero Fuel Weight Envelope)

Gross Weight	Forward Limit	Aft Limit
23,000 lbs	30.50 % MAC	45.60 % MAC
28,000 lbs	30.00 % MAC	45.60 % MAC
28,200 lbs	30.00 % MAC	45.40 % MAC

Linear variation between points

Datum: Fuselage Station 0 is located 221.77 inches (5.663 meters) forward of aft frame of main entrance.

Mean Aerodynamic Chord (MAC): 112.92 inches (2.868 meters) with leading edge at Fuselage Station 10305.

Leveling Means: Longitudinally:Place level on either seat rail at fuselage station 10534 (frame 34) parallel to aircraft centerline.

Laterally:Place level on seat rail at cockpit floor fuselage station 4518 (frame 10) 90° to aircraft centerline.

Maximum Weights: (Normal Operating Weight)
- Ramp Gross Weight39,750 lbs
- Maximum Take-Off Weight39,600 lbs
- Maximum Landing Weight32,700 lbs
- Maximum Zero Fuel Weight28,200 lbs

Minimum Crew: Two (Pilot and Copilot)

Maximum Passengers: None (See Note 5)

Maximum Baggage: Floor load 120 lb/ft2

lbs	arm (meters)
1980	544.21 inches (13.82)

Fuel Capacity (lbs): Total Usable Fuel All Tanks (lbs) 14,620
Density: 6.7 lbs/US gallon

	LH WING TANK	LH FEED TANK	CENTER TANK	AFT TANK	FWD TANK	RH FEED TANK	RH WING TANK
Tank Capacity (lbs)	4377	540	2153	1132	1619	540	4377
Tank Usable Fuel (lbs)	4340	530	2140	1130	1610	530	4340
Arm, inches (meters)	441 (11.20)	439 (11.15)	396 (10.05)	541 (13.75)	322 (8.20)	439 (11.15)	441 (11.20)
Unusable Fuel (lbs)	36.8	10.0	12.6	1.6	8.6	10.0	36.8
Arm, inches (meters)	441 (11.20)	439 (11.15)	396 (10.05)	541 (13.75)	322 (8.20)	439 (11.15)	441 (11.20)

Fuel System Unusable:	lbs
- Drainable from tanks drain and lines	86.8
- Undrainable (trapped in tanks and lines)	29.6

Oil Capacity: Usable (lbs): 19.2 for both engines combined.
Density: 8.14 lbs/U.S. gallon

Maximum Operating Altitude: 45000 ft

Other Operating Limitations: Aircraft shall be operated according to operating limitations and procedures specified in CAAI approved Airplane Flight Manual marked GULFSTREAM Model G280-1001-1 for GULFSTREAM G280 airplanes.

Control Surface Movements:

Surface		Travel (at trailing edge)	Tolerance
Aileron	Up	15°	± 0.25°
	Down	15°	± 0.25°
Aileron Trim	Up	15°	±1°
	Down	15°	±1°
Aileron Gear Tab	Up	15°	±1°
	Down	15°	±1°
Rudder	Left	30°	±1.5°
	Right	30°	±1.5°
	Left	9°	+1.1°

Rudder Trim Tab			
	Right	9°	+1.1°
Elevator	Nose Up	27.5°	± 0.5°
	Nose Down	20°	± 0.5°
Stabilizer Trim	Nose Up	12°	± 0.3°
	Nose Down	2.5°	± 0.3°
Roll Spoiler	Up	45°	± 1.65°
Ground Brake		55°	± 1.70°
Flaps	Max. Down	39°	± 1°

Certification Basis:

- 14 CFR Part 25, effective February 1, 1965, including Amdt. 25-1 through 25-120 and Amdt. 25-122 for §25.1317 and Section L 25.1.
- 14 CFR Part 36, effective December 1, 1969, including Amdt. 36-1 through 36-28.
- 14 CFR Part 34, effective September 10, 1990, including Amdt. 34-1 through 34-3.
- CAAI Special Conditions:

  a) HIRF; Maintenance of Lightning and HIRF Protection
  b) § 25.773(b) Windshield Precipitation Removal by Hydrophobic Coatings
  c) Go-Around Performance Credit for Use of Automatic Power Reserve (ATTCS)
  d) Engine Torque Loads for Sudden Engine Stoppage
  e) Design Roll Maneuver

- CAAI equivalent safety findings:
  a) §25.812 Emergency Exit Marking and Emergency Lighting floor surfaces and emergency egress assist means
  b) §25.831(g) Cabin Time-Temperature-Humidity conditions following improbable ECS failure
  c) §25.331(c) Checked Pitch Maneuver
- Exemptions:
  a) §25.901(c) Uncontrollable High Thrust
  b) §25.981(a) (3) Lightning Protection Fuel Tanks.
- Compliance with the following optional requirements has been established:
  §§25.801, 25.1411(d), (e), (f), (g) and 25.1415 for ditching
  §25.1419 for icing

Production Basis: None

Manufacturer's Serial Numbers eligible: S/N 2001 and subsequent (See Note 6).

Equipment: The basic required equipment as prescribed in the applicable airworthiness regulation (see certification basis) must be installed in the aircraft for certification. Refer to Master Equipment List Report No. 30P000/110634.

NOTES:

NOTE 1: Current weight and balance report including list of equipment included in certificated empty weight and loading instructions must be provided for each aircraft at the time of original certification.

TCDS EXAMPLE ONLY

NOTE 2: All required placards listed in the Limitations Section of the Airplane Flight Manual must be installed in the appropriate locations in the airplane.

NOTE 3: Service Life Limits and required Maintenance/Inspections:
The retirement times of fatigue critical life limited components are listed in Chapter 5 of the CAAI approved Provisional Aircraft Maintenance Manual. The retirement times of these life limited components cannot be altered without CAAI Engineering approval.

NOTE 4: Israel Aerospace Industries LTD. (IAI) located at Ben Gurion International Airport 70100, Israel, is licensed by Gulfstream Aerospace LP to manufacture and obtain Airworthiness Certificates for the Model aircraft listed in this TCDS.

- END -

TCDS EXAMPLE ONLY