# CHAPTER 59

## ISSUANCE / ACCEPTANCE OF SUPPLEMENTAL TYPE CERTIFICATES

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## 1.0 PURPOSE

**This chapter provides guidance for issuance and acceptance of supplemental type certificates (STC).**

## 2.0 REFERENCES

**2.1** ICAO Annex 8

**2.2** Part 5 of the Nigeria Civil Aviation Regulations

**2.3** Checklists

**2.4** Forms AC-AWS059,

## 3.0 GUIDANCE AND PROCEDURES.

3.1 GENERAL

3.1.1 What is a Supplemental Type Certificate (STC)?

A Supplemental Type Certificate (STC) is a form of approval issued when the design of a Type Certificated Aircraft, Aircraft Engine or propeller is changed or modified. It is issued when the change is not so extensive as to require a new Type Certificate (TC). An STC is supplementary to the original TC; it incorporates by reference the related Type Certificate. It does not change the previously issued TC.

An STC may be used to approve a modification or a repair. A modification may include any design change or a combination of a physical design changes (including the use of alternative parts or materials), or a change to an operating envelope, performance, operating characteristics, limitations or ICA. The change can be a single change or a collection of changes.

3.1.2 What does an STC consist of?

An STC consists of the TC or Type Acceptance Certificate (TAC) previously issued for the Aircraft or aeronautical product, and each change in the type design of the aircraft or aeronautical product described or identified in the STC.

3.1.3 How many items can be covered by an STC?

An STC may cover changes to the type design of:
a. only one item, identified by a single serial number (i.e. one aircraft, aircraft engine or propeller)
b. two or more items, identified by multiple serial numbers

c. all items of a particular type and model.

For an STC applicable to only one aircraft, aircraft engine or propeller (a 'one-only' STC), the technical data need not detail the production of parts and/or the installation to the degree required for an STC covering multiple items (a 'multiple' STC).

For an STC applicable to multiple items, the technical data must be of a quality that enables parts and the installation to be reproduced.

3.1.4 Who is eligible to apply for an STC?

Any person may apply to NCAA for an STC. The aircraft, aircraft engine or propeller requiring the STC must be the subject of a Nigerian TAC. The applicant is not required to be the holder of the TC or TAC, nor to be an operator/owner

3.1.5 When is an STC required?

a) An STC is required when major changes to type certificated aircraft, aircraft engines or propellers are classified as significant changes but not as substantial changes.
b) Major changes that are not significant changes may be considered for approval under Part 5 after submission of a Design Advice. A substantial change will require a new TC in accordance with requirements of the State of Design
c) An STC is necessary for each type certificated aircraft or aeronautical product affected. In some cases, more than one STC may be necessary. For example, if an engine is modified the applicant may require one STC to approve the engine modification and a second STC to approve the installation of the modified engine on an aircraft (in instances when the installation results in a significant change that requires an airframe STC).
d) An STC is also required when a flight manual supplement is required for a certification category change (e.g. changing an aircraft from 'normal' category to 'utility' or 'restricted' category), even though there may be no physical change to the aircraft.
e) In some cases an STC can be issued to approve a change to ICAs, including Airworthiness Limitations. For example, an increase to a time between overhaul (TBO) limit specified in the airworthiness limitations section of the ICA.

3.1.6 CHANGE OF OWNERSHIP/TRANSFERABILITY

The STC holder (i.e. the transferor) may transfer the STC to another person (i.e. the transferee) without NCAA's prior approval. However, the STC may be transferred only with the written consent of the transferee.

The transferor must:
a. give the transferee the STC, including all associated technical data, documents and records that they must keep in order to fulfil the regulatory obligations of an STC holder

b. give NCAA a written notice within 30 days after the transfer of the STC stating:
i. the date of the transfer
ii. the name and address of the transferee.

3.1.7 LICENSING OF AN STC

The STC holder (i.e. the licensor) may confer the benefits of the STC on another person (i.e. the licensee), without NCAA's prior approval, by making a written licensing agreement with the licensee. The licensor must give NCAA a written notice of the licensing agreement within 30 days of the arrangement being made. This reporting requirement is also applicable when a written licensing agreement is put in place for production purposes.

3.1.8 VALIDITY OF AN STC

a) An STC remains valid until it is surrendered by the STC holder for any reason or if NCAA or the regulatory agency of state of design cancels or suspends the STC.
b) A foreign STC remains in force until cancelled or suspended by NCAA or the Civil Aviation Authority (CAA) of the issuing country.
c) An STC or a foreign STC is also not in force for any period of suspension of the TC previously issued to the aircraft, aircraft engine or propeller.

3.1.9 CANCELLATION OR SUSPENSION

a) NCAA may cancel or suspend an STC if NCAA considers it to be in the interests of aviation safety. If NCAA takes such action, NCAA will give detailed reasons for the cancellation or suspension of the STC in a written notice sent to the STC holder. This notice will state:
    i. the grounds for cancellation or suspension
    ii. when the cancellation or suspension takes effect
    iii. for a suspension, when the suspension is no longer in effect.

b) NCAA expects that STC holders will have the engineering expertise necessary to provide continued airworthiness support for the design covered by their STC. An inability on the part of the STC holder to provide such support in relation to the STC may, in the case of occurrences that necessitate ongoing technical support, constitute grounds for cancellation or suspension of the STC. The STC holder may obtain the necessary expertise from another consultant/ organization.
c) NCAA may cancel or suspend foreign STCs in interest of aviation safety.
d) If NCAA cancels or suspends an STC or a foreign STC it must publish a notice in the Gazette. A cancellation or suspension takes effect on the day after the notice is gazetted, or at a later time specified in the notice. During any suspension period, the requirement to keep certain records and produce these to NCAA remains in force.

3.1.10 WRITTEN PERMISSION STATEMENT TO USE AN STC

a) An STC holder should keep a record of all aircraft or aeronautical products that have been changed in accordance with the STC in order to fulfil their responsibilities as the STC holder
b) If the STC holder permits another person to use the STC to make changes to one or more aircraft or aeronautical products then the STC holder should provide that person with written evidence in the form of a Permission Statement. The Permission Statement should contain the following:
   i. the STC number
   ii. identification of the person being given permission to use the STC
   iii. a statement regarding the permission and any limitations applied to the permission, defining those items that may be changed
   iv. an instruction that requires the person to give the STC holder the registration mark and/or serial number of each aircraft or aeronautical products that was changed in accordance with the STC.

c) Depending on the nature of the permission, additional information should be listed in the Permission Statement, including the duration of the permission and the number of times the STC may be used for fleets of aircraft.

3.1.11 INTERNATIONAL RECOGNITION OF STCS

a) Nig. CARs Part 5 provides for the automatic acceptance of foreign STCs (however described) issued by the CAA of recognized countries (including EASA), provided it is equivalent to an STC that could have been issued by NCAA – in particular:
   a. the certification basis used for the STC matches the certification basis stated on the Nigerian TAC for the aircraft, aircraft engine or propeller
   b. there is sufficient data provided to allow the installation of the STC into the candidate aircraft.

3.1.12 STC CERTIFICATION BASIS

(a) Certification basis, including:
i. applicable airworthiness standards
ii. exemptions
iii. special conditions
iv. equivalent level of safety findings

shall be as determined by the Foreign CAA of State of Design based on the date of initial application, agreement with NCAA and other considerations

## 4.0 STC APPLICATION PROCEDURES

### 4.1 PROCEDURES

4.1.1 The applicant shall be required to submit an application in a form and manner prescribed by the NCAA which shall contain all the requirement of the CAA of the State of Design;

An STC applicant shall submit a certification plan to the NCAA that details the proposed alteration to a type-certified product and how that alteration will comply with the applicable NCAA regulations and guidance material.

The NCAA reviews the certification plan and issues an STC project number if the plan is accepted.

Next, the applicant develops the required engineering design, analysis and continued airworthiness data, as well as ground and flight test plans.

The NCAA shall forward the application to the State of Design in accordance with the agreement between NCAA and the Foreign CAA of the State of Design and procedures of the State of Design.

After reviewing and accepting the data by the State of Design, the State of Design will issues a prototype installation and, if necessary, testing authorization for the proposed modification, usually in the form of a Type Inspection Authorization.

The applicant will complete the prototype modification to the product and conduct the required testing.

The prototype modification and testing are witnessed by an NCAA delegate, usually a Designated Airworthiness Representative (DAR) and/or Designated Engineering Representative (DER).

Upon successful installation and testing, the CAA of the State of Design will issue their own STC which will be communicated to the applicant by NCAA and NCAA also issues its own STC.

4.1.2 Where the CAA of the State of Design does not have a requirements on documents to be submitted then the applicant shall be required to submit an application containing items listed below::

a) Letter of application addressed to NCAA
b) NCAA Recognized Foreign CAA Notification Letter (For ongoing certification project).
c) Owner/Operator acknowledgement for the proposed design change.
d) Supplemental Type Certificate (STC) or Major Change Approval issued by NCAA Recognized Foreign National Aviation Authorities (For Existing Approved Data).
e) Certification Plan
f) Compliance Checklist.
g) Master Data List.
h) Required Operating Data such as Aircraft Flight Manual Supplement (AFMS).
i) Continued Airworthiness Data:
    1. Instructions for Continued Airworthiness.
    2. Airworthiness Limitations.
    3. Electrical Wiring Interconnection System (EWIS) Instructions.
j) Approval privileges document (FAA ACO Minor Change Agreement, EASA Design Organization Approval, or equivalent) (if applicable).
k) Company Manual (Handbook, Procedures, Work Instructions) related to the intended certification activities.

l) Proof of fee payment.
m) Only NCAA certificated AMO may perform actual work on Nigerian registered aircraft. If the Major Change Approval or STC (issued by NCAA Recognized Foreign CAA) is not issued yet, the procedure for Ongoing Certification Project will be used.
n) Additional Requirements

1. The letter of application should be of sufficient detail to allow the NCAA to make the decision to support the project. The content must indicate the following:
    a. Design Approval holder/applicant name and address of normal place of business;
    b. Description of the design change; including an explanation of the purpose of the change, the pre-modification and post-modification configuration(s) of the product, schematics/pictures, and any other detailed features and boundaries of the physical change (this may be supplemented by drawings or outlines of the design, as well as the identification of the changes in areas of the product that are functionally affected by the change, and the identification of any changes to maintenance and operational manuals;
    c. Aircraft type, serial number and Nigerian registration marks;
    d. Organization that will be responsible for performing the alteration on the aircraft;
    e. Location of the aircraft during the STC project;
    f. Starting date and duration of the STC project;
    g. Whether flight testing will be conducted;
    h. Concurrent activities on the aircraft;
    i. Request for NCAA concurrence for the use of an aircraft registered in Nigeria as a prototype;
    j. Request for NCAA concurrence for the use of NCAA Recognized Foreign CAA Designees if applicable.
    k. Request for any specific information required in support of the NCAA Recognized Foreign CAA undue burden process (if applicable);
    l. Invitation for NCAA participation; and
    m. Identification of the Certification Project Manager(s), including their contact details.
2. NCAA accepts all design changes (including STC) introduced by the holder of the TC. This is considered to be an automatic acceptance. There is no need to obtain NCAA concurrence for the embodiment of such design change into Nigerian registered aircraft.
3. The design change criteria stated in this section also apply to repair designs.
4. Other requirements of the foreign CAA

## 4.2 **STC ISSUANCE / ACCEPTANCE PROCESS**

a. Advise the applicant in writing:

- That the project has commenced

- The name and contact details of the Project Manager
- To make all correspondence on the project to the attention of the Project Manager.

b. The Project Manager shall open line of communication with the appropriate Foreign CAA of the State of Design and an agreement shall be reached on how to proceed with the STC process.

c. The NCAA shall forward the application to the State of Design in accordance with the agreement between NCAA and the Foreign CAA of the State of Design and procedures of the State of Design.

d. It is an NCAA philosophy regarding design changes; issued by foreign civil aviation authority other than NCAA Recognized Foreign CAA; to be performed on an aircraft registered in Nigeria, to minimize its involvement in the certification process. The PM shall be responsible for the involvement in the certification process.

e. Because of its responsibility as the State of Registry for the aircraft, the PM and team must understand the nature of the design change and might therefore need to participate in some of the activities of certification process to the extent required to secure that understanding on a case-by-case basis. This could include participation in meetings, requests for clarifications following review of design or certification documents, and participation in certification inspections and tests as an observer.

f. Based on the agreement reached with the foreign CAA of the State of Design, as soon as the STC certification process is concluded the report shall be received by the NCAA and the PM and team shall proceed with the issuance of the STC.

## 4.3 SUPPLEMENTAL TYPE CERTIFICATE NUMBERS

A common register of STC numbers is maintained by the Directorate of Airworthiness Standards for TACs issued under Nig. CAR's Part 5.

The STC number is not assigned until the STC is ready to be issued. This is because:

- Uncontrolled use of the STC number could lead to a perception that the STC has been issued
- If the project were to lapse, or never reach fruition, there would be gaps in the register.

When the STC is ready to be issued, the Project Manager obtains the STC number from the certification group responsible for STC.

## 4.4 SUPPLEMENTAL TYPE ACCEPTANCE CERTIFICATE FORMAT

The STC is prepared using the NCAA template for the STC Certificate (Form: AC-AWS059)

The STC is signed and dated by the Director, Airworthiness Standards and stamped with the NCAA official seal in blue ink after signing.

## 5.0 TASK OUTCOMES

A. Successful completion of this task will result in the issuance of STC. The STC will be issued by the Director, Airworthiness Standards

B. Document Task. All supporting documents and paperwork will be duly filed in the office file.

## 6.0 FUTURE ACTIVITIES

Normal surveillance.