U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: EXTENDING A PRODUCTION CERTIFICATE TO A FACILITY LOCATED IN A BILATERAL AIRWORTHINESS AGREEMENT COUNTRY

Date: 4/14/89
Initiated by: AIR-200

AC No: 21-24
Change:

1. PURPOSE. This advisory circular (AC) contains information and guidance concerning: (1) Federal Aviation Administration (FAA) production certificate (PC) holders located in the United States that plan to extend their PC to include a facility located in another country; (2) and the issuance of a PC to an applicant located in the United States when the applicant is engaged in a multinational coproduction program whereby major manufacturing facilities will be located in other countries. This AC further provides for extending a technical standard order authorization (TSOA) to include the production of auxiliary power units (APU) at a facility located in another country, in accordance with the criteria contained in this AC for a PC holder.

2. RELATED FEDERAL AVIATION REGULATIONS (FAR).

a. Part 21, Subpart G, Production Certificates.

b. Part 21, Subpart J, Delegation Option Authorization Procedures.

c. Part 21, Subpart L, Export Airworthiness Approvals.

d. Part 21, Subpart O, Technical Standard Order Authorizations.

e. Part 21, Section 21.137, Location of Manufacturing Facilities.

f. Part 21, Section 21.147, Changes in Quality Control System.

g. Part 21, Section 21.601(c), Applicability.

h. Part 183, Representatives of the Administrator.

i. Part 11, Section 11.25, Petitions for Rulemaking or Exemptions.

3. GENERAL. In the past several years, a number of FAA PC holders have entered into coproduction agreements with partners located in countries outside of the United States. These agreements include contractual commitments that are in essence partnership arrangements involving the production of entire products (i.e., aircraft, engines, propellers), or modifications to aircraft. These programs have resulted in requests of the FAA to extend PC's to include partner company facilities which are located outside the United States.

a. The FAA will only consider extending a PC to include a facility located in another country to PC holders that have established and continue to maintain a substantial production operation located in the United States under an FAA PC, i.e., the complete manufacture of an aircraft, engine, or propeller. Organizations and multinational consortiums with U.S. addresses alone (corporate headquarters, P.O. Boxes, etc.) will not be considered for PC extension programs since the FAA does not have jurisdiction over manufacturers located in other countries, and the FAA would be unable to administer its surveillance or compliance and enforcement program.

b. The FAA will consider extending a PC to include a facility located outside the United States when the production or modification takes place in a country with which the United States has a Bilateral Airworthiness Agreement (BAA). In addition, the Civil Aviation Authority (CAA) of that country must be willing to conduct the necessary surveillance at facilities located in their country on behalf of the FAA.

(1) It should be noted that certain CAA's may charge a fee for surveillance performed on behalf of the FAA at a PC holder's facility which is located in their country. The PC holder should be aware that any CAA surveillance fees incurred as a result of the coproduction program are solely the responsibility of the PC holder.

(2) Production certificate holders planning to enter into a coproduction agreement should also be aware that in some instances, manufacturing organizations must be approved by the CAA of that country before such an organization is authorized to manufacture civil aviation products. Similarly, certain CAA's can only perform surveillance of manufacturing organizations that currently hold CAA approval.

c. Notwithstanding any contractual commitments made by a PC holder, the PC holder is responsible for complying with the pertinent FAR and for ensuring that each product for which it holds a PC meets the type design and is in a condition for safe operation. Once the FAA extends a PC to include a facility located in another country, the FAA must not allow the PC holder to alter any terms or conditions of the coproduction agreement which would make them inconsistent with their responsibility under the FAR. In addition, it is the PC holder's responsibility to ensure that the management element of its partner companies do not alter any terms or conditions of the coproduction agreement which would make them inconsistent with the PC holder's responsibility under the FAR.

d. Production certificate holders who plan to enter into coproduction agreements should present their proposal to the FAA as soon as practicable to allow evaluation relative to the FAA's ability to administer the FAR without incurring any undue burden (reference FAR section 21.137). From a planning standpoint, the PC holder should give the FAA sufficient lead-time to evaluate the proposed program; e.g., it will be necessary for the FAA to notify the CAA of the proposed program to discuss the CAA's willingness and ability to assist the FAA in conducting the necessary surveillance. In addition, time may be needed for the FAA and PC holder to discuss terms and conditions of the coproduction agreement, negotiations with the CAA, etc.

e. Extension of a PC to a facility located in another country may require extra effort on the part of the PC holder to fulfill its responsibilities under the FAR, particularly in view of the potential for problems which may be associated with different cultures and languages.

f. There may be situations whereby a PC holder that is also a Delegation Option Authorization (DOA) holder is involved in a multinational coproduction agreement. In these instances, only the PC function of the DOA may be extended to include a facility located in another country, providing the guidance within this AC is satisfied. Although under FAR Part 21, Subpart J, DOA holders may have authorized employees sign airworthiness certifications for products manufactured under their DOA, these employees are not authorized to issue airworthiness certifications on behalf of the FAA for products being produced in another country under the DOA holder's PC. In these instances, the manufacturer may either request that those employees authorized to sign airworthiness certifications under the DOA also be appointed as Designated Manufacturing Inspection Representatives (DMIR) under their PC, request DMIR appointments for other qualified employees under their PC, or request the use of Designated Airworthiness Representatives (DAR). (Reference paragraph 9 of this AC.)

g. It should be noted that these products will be produced pursuant to FAR Part 21, Subpart G, as an extension of the United States manufacturer's PC and are considered to be United States manufactured or modified products.

> NOTE: Production certificate holders who are considering extending their production certificate to include a facility located outside the United States should be cautioned as follows: The bilateral airworthiness agreements between the United States and certain other countries provide for reciprocal acceptance of airworthiness certifications for products produced within the territory of the "exporting state" (exporting country). However, certain third-party countries are under no obligation to honor FAA export airworthiness certifications for products which are not manufactured or modified within the United States or its territories, notwithstanding that the production or modification that is to be accomplished at the production certificate holder's facility located in another country is considered a United States manufactured or modified product. For example, the Civil Aviation Authorities of certain countries are under no obligation to honor United States export airworthiness certifications for products that are manufactured and located in the United Kingdom under a coproduction agreement with a United States production approval holder. Similarly, the FAA is not obligated to honor such airworthiness certifications in a mirrored situation.

h. Federal Aviation Regulations Part 21, Subpart L, Export Airworthiness Approvals, does not permit the issuance of export approvals for engines,

propellers, Class II or Class III products which are not located in the United States. Therefore, in order for issuance of export airworthiness approvals for products located outside the United States, the PC holder must petition in accordance with FAR section 11.25 for an exemption from FAR section 21.325(b)(1) or (3) as appropriate.

4. CRITERIA.

a. The Directorate having certificate management responsibility should ensure that the PC holder implements a quality control system at their facilities located in other countries consistent with the PC holder's responsibility under the FAR, and shall:

(1) Make a determination that there will be no undue burden on the United States in administering the applicable requirements of the Federal Aviation Act of 1958 (FA Act) or of the FAR (reference FAR section 21.137 and 21.601). This determination should be based on the FAA's detailed analysis of each individual program, which should be documented in a decision paper as defined in paragraph 5 of this AC. At present, the only viable method for the FAA to mitigate the undue burden incurred during such programs, is by having the CAA of the country in which the production is to take place assist the FAA by conducting surveillance at the facility located in their country.

(2) Contact the appropriate CAA(s) as soon as practicable to alert them of the proposed program. Prior to forwarding the decision paper to the Manager, Aircraft Manufacturing Division (AIR-200) for concurrence, and the Director, Aircraft Certification Service (AIR-1) for approval, the Directorate must reach at least a tentative agreement with the CAA that they will assist the FAA by conducting the necessary surveillance at the facility located in their country.

NOTE: The Directorate should determine that the CAA is willing to agree to and approve a working arrangement paper as outlined in paragraph 7, Working Arrangement, and appendix 2 of this AC.

(3) Implement the guidance contained in this AC as appropriate for the particular program in a manner which is consistent with the FAR.

(4) Maintain ongoing communication with the CAA from program inception through extension of the PC to the facility located in their country, provide technical assistance as necessary, and ensure that all program and safety objectives are met.

(5) Provide the necessary resources to support the coproduction program, e.g., conducting initial audits and surveillance at the facilities located in other countries, and as necessary, providing guidance and direction to the CAA in those areas identified in the working agreement (reference appendix 2).

b. The FAA may permit a PC holder to extend its PC to include a facility located in outside the United States when:

(1) The FAA retains jurisdiction over the coproduction or modification program, including enforcement capability against the PC holder in the United States.

(2) The PC holder remains fully accountable for control of the design and quality of all products manufactured or modified at the facility located in another country under its PC.

(3) The proposal involves the manufacture or final assembly of an entire aircraft, engine, propeller, or the incorporation of a design change under a supplemental type certificate or an amended type certificate into these products.

(4) The FAA has assurance from the PC holder that it will be granted access to: their facilities located in other countries; design and quality data as the FAA deems necessary during approval of the facility; special or ongoing surveillance; and during any accident or incident investigation.

(5) The FAA has determined that the PC holder has implemented a quality control system at their facility located in another country in accordance with FAR section 21.143, Quality control data requirements; prime manufacturer. Existing quality control procedures at that manufacturing facility may be used providing the PC holder has shown they are equivalent to those used at the PC holders United States facility, and there is correlation with the PC holder's quality control data.

(6) The PC holder's quality control data states the manner in which the quality control system at their facility located in another country will be maintained for products manufactured under the coproduction agreement. This is necessary since such agreements would constitute a change to the PC holder's quality control system and could effect inspection, conformity, or airworthiness of its products. (Reference FAR section 21.147.)

(7) The quality control procedures and design data to be used at the facility located in another country are available in the English language and in sufficient detail to permit the FAA to perform certificate management functions. The extent to which quality control procedures and design data will be required in the English language will be determined by the FAA, and agreed upon by the CAA and the PC holder.

5. DECISION PAPER.

a. Federal Aviation Regulations sections 21.137 and 21.601 require the FAA to make a determination that there will be no undue burden on the United States in administering the applicable requirements of the FA Act of 1958 and of the FAR when production approvals are requested at manufacturing facilities located outside the United States. Once the foregoing criteria have been satisfied by the certificate management Directorate and the PC holder, the FAA office responsible for certificate management of the PC holder should prepare a decision paper (reference appendix 1).

b. The decision paper should explicitly describe the proposed program, the manner in which any undue burden will be mitigated, the manner in which the PC holder will control the design and quality of the production to be accomplished at the facility located in another country, applicable FAR section(s), supporting information, points of contact, surveillance and enforcement responsibilities, budget data, advantages or disadvantages of the program, recommendations, and any other information to support the decision to approve or disapprove the coproduction program.

c. The decision paper should be signed by the Aircraft Certification Directorate Manager who has certificate management responsibility for the PC holder prior to forwarding the decision paper to AIR-200 for concurrence and to AIR-1 for approval. The time period necessary to obtain AIR-200 concurrence and AIR-1 approval should be approximately 30 days.

6. SURVEILLANCE AT FACILITIES LOCATED IN OTHER COUNTRIES.

a. The FAA will be seeking to achieve the same results as if the program were being administered domestically at the PC holder's facility in the United States.

b. The principal inspector who has certificate management responsibility for the PC holder has the responsibility for ensuring that initial and ongoing surveillance at facilities located in other countries is accomplished in accordance with the provisions of FAA Order 8120.2, Production Approval and Surveillance Procedures. Existing CAA surveillance procedures in place at a facility located in another country may be used providing the FAA has determined they are consistent with, or equivalent to those contained in Order 8120.2.

c. The principal inspector should meet with the PC holder to establish the program implementation schedule leading to the PC extension so that an effective surveillance program can be established concurrently.

d. The principal inspector would normally be assisted by the CAA of the country where the facility is located in the surveillance effort. These services should be used to mitigate any undue burden which would otherwise be placed upon the FAA in administering the applicable requirements of the FAR at a facility located in another country. Within 30 working days after the decision paper is prepared and signed as outlined in this AC, the principal inspector should contact the CAA through the FAA Directorate responsible for coordinating with the country in which the facility is located to:

(1) Request a copy of the CAA surveillance procedures, written in the English language, so that the FAA can determine whether or not the CAA's surveillance procedures are consistent with, and equivalent to those used by the FAA. The extent that CAA surveillance procedures will be necessary in the English language will be determined by the FAA and agreed upon by the CAA.

(2) Establish a surveillance program in coordination with the CAA whereby the CAA will conduct the required surveillance at the facility located in their country on behalf of the FAA.

(3) Establish a date to conduct the initial FAA and CAA on-site capability evaluation (at the facility located outside the United States) to ensure that the PC holder's FAA-approved procedures will be effectively implemented.

7. WORKING AGREEMENT.

a. The FAA office having certificate management responsibility should prepare a working agreement paper as outlined in appendix 2 of this AC. The working agreement should include:

(1) A detailed description of the relationships between, and responsibilities of, the PC holder and the facility located outside the United States.

(2) The surveillance and inspection functions that the CAA will perform on behalf of the FAA. Such functions may include, but are not limited to:

(a) Witnessing first article inspections of parts.

(b) Monitoring controls on special processes.

(c) Conducting conformity inspections to pertinent design data on prototype or production parts.

(d) Performing product audit inspections on assemblies, piece parts, and installations.

(e) Monitoring DMIR activity.

(f) Conducting investigations of service difficulties, including witnessing teardown inspections of engines and components.

(g) Performing follow-up on corrective actions to ensure that they have been accomplished.

(h) Evaluating the implementation of FAA-approved quality control system changes.

(i) Evaluating management and organizational changes to ensure that quality control system integrity is maintained.

(j) Monitoring technical data control to ensure that only the required revision level of FAA-approved design data are available to production and inspection personnel.

(3) The functions which the FAA will perform.

b. The working agreement should be signed by an authorized representative of the CAA having such authority and the FAA Aircraft Certification Directorate Manager having certificate management responsibility prior to forwarding it to AIR-200 for concurrence.

8. PRODUCTION CERTIFICATE OR TSOA EXTENSION.

a. Once the FAA has determined that the PC or TSOA holder has established control over design and quality for products manufactured at the facility located in another country and the provisions of this AC are appropriately satisfied, the FAA may extend that PC or TSOA to include a facility located in another country.

b. Federal Aviation Administration Form 8120-4, Production Certificate, or the TSOA letter of authorization will be amended to include the name and address of the additional facility in accordance with the provisions of FAA Order 8120.2, chapter 2, paragraph 24.

9. DESIGNEES.

a. The PC holder may request appointment of DMIR or the use of DAR at the facility located in another country, to perform certain functions on behalf of the FAA as provided for in the FAR (reference FAR Part 183 and FAR Part 21, Subpart L); e.g., conduct conformity inspections, issue export approvals and airworthiness certificates, etc.

b. Federal Aviation Regulations Part 21, Subpart L, Export Airworthiness Approvals, does not permit the issuance of export approvals for engines, propellers, Class II or Class III products which are not located in the United States. Therefore, it is necessary for the PC holder to petition for an exemption from FAR section 21.325(b)(1) or (3) as appropriate, in accordance with FAR section 11.25.

Note: The prohibitions against issuing export airworthiness approvals for products not located in the United States apply to all FAA aviation safety inspectors and designees.

c. Designees will have direct supervision by the principal inspector having certificate management responsibility of the PC holder. The principal inspector will personally meet with designees a minimum of twice a year; this should consist of either two visits a year at the PC holder's facility located in another country, or one visit a year at the PC holder's United States facility and once at the PC holder's facility located in another country.

M.C. Beard
Director, Aircraft Certification Service

APPENDIX 1. DECISION PAPER, TRANSPORT AIRPLANE DIRECTORATE

ISSUE: Request for extension of United States (U.S.) Production Certificate No. 123 to allow the final assembly of ABC Engine Company, Model NRP-1 engines in the United Kingdom (U.K.).

ABC Engine Company, located in Long Beach, California, has requested Federal Aviation Administration (FAA) approval to extend manufacturing privileges under Production Certificate No. 123 to include the XYZ facility in Derby, England. The XYZ facility will be involved in the final assembly and test of ABC NRP-1 engines.

Section of the Federal Aviation Regulations (FAR) affected:

> Section 21.137 prohibits the issuance or extension of a production certificate for a manufacturing facility located outside the United States, unless the Administrator finds no undue burden on the United States in administering the applicable requirements of the Federal Aviation Act (FA Act) of 1958, or of the FAR.

ABC's Supporting Information:

> ABC Engine Company, located in Long Beach, California, will be the holder of the FAA type certificate and production certificate for the NRP-1 engine. The engines will be assembled and tested in Derby, England, as part of a U.K. workshare agreement involving the Royal Air Force's basic trainer aircraft. Type Certification and production of the engine are scheduled for January 19XX.
>
> ABC will be the single point of contact for the FAA and will accept total responsibility for the design, manufacture, and continuing airworthiness of the engines and parts, whether produced in Derby, England, or the United States.
>
> ABC has established configuration kits defined by drawing 1234567 for shipment from ABC Long Beach, California, to the XYZ facility in Derby, England. All detailed parts and subassemblies, regardless of where produced, will be inspected at the ABC Long Beach, California, facility. The engines produced in Derby, England, will have the same identification plate, model designation, and part numbering system as those engines produced in the U.S.

FAA Analysis and Summary:

> By permitting ABC to extend Production Certificate No. 123 to include the XYZ facility in Derby, England, production of the NRP-1 engine would be the total responsibility of ABC. This would include accountability for engine design, manufacture, and continued airworthiness. Any violation of the FAR originating in either the U.S. or the U.K. would be directed to the production

certificate holder, ABC, located in Long Beach, California. The FAA shall have regulatory responsibility for all engines produced either in the U.S. or U.K. under the ABC production certificate.

To fulfill its responsibility under Title VI of the FA Act of 1958, the FAA shall conduct periodic on-site surveillance of the ABC production facilities in the U.S. and U.K. This will ensure implementation and maintenance of the FAA-approved quality control system, and include such certificate management functions as: designee supervision, service difficulty investigation, enforcement actions, design change control systems, and other activities which ensure compliance with the FAR.

Ongoing FAA surveillance of ABC's production of the NRP-1 engine at the Derby, England, XYZ facility will be conducted (subject to its concurrence) by the U.K. Civil Aviation Authority (CAA) on behalf of, and under the direction of, the FAA. It is noted here that the engine will not be produced under the U.S./U.K. bilateral airworthiness agreement. However, UK-CAA's agreement to perform ongoing surveillance would mitigate the burden on the FAA in administering the applicable requirements of the FAR.

It is anticipated that FAA involvement for surveillance and certificate management at the ABC operations in Derby, England, will require two trips per year by manufacturing inspection personnel. Subsequent to the initial on-site evaluation, as determined appropriate by the principal inspector, it is estimated that the FAA surveillance task would amount to approximately $XX,XXX annually. This cost may be reduced in those instances where the FAA surveillance and certificate management effort at ABC in England could be accomplished in coordination with other directorates having similar programs in that geographical area.

Advantages and Disadvantages:

<u>Advantages</u>:

a. Positive regulatory agency and manufacturer accountability established for design, manufacture, and continuing airworthiness for all NRP-1 engines, whether produced in the U.S. or the U.K.

b. Relieve the burden on owners, operators, and installers, the task of attempting to determine the origin of the new engines and new spare parts (i.e., where manufactured) which have been produced and approved for use under the ABC production certificate.

c. Third country acceptability would be more favorable since all ABC NRP-1 engines would be considered U.S. manufactured under FAA cognizance.

d. Suppliers located in the U.S. and other countries would be under FAA cognizance.

Disadvantages:

It will be necessary for ABC to petition for exemption from FAR section 21.325(b) in order to export engines and parts thereof from a manufacturing facility located outside of the United States.

Recommendation:

Based on the recent FAA approvals to extend other manufacturer's production certificate's to the XYZ facilities in Derby, England, and the determination that these actions will not place an undue burden on the FAA, it is recommended that ABC be permitted to extend its production certificate to include the XYZ facility in Derby, England, provided that:

(1) The UK-CAA will agree to assist the FAA by conducting quality control system surveillance at the XYZ facility at Derby, England, on a no fee basis to the FAA; and

(2) ABC additionally assumes regulatory responsibility under its production certificate for the parts, subassemblies, and completed NRP-1 engines being produced at the XYZ facility in Derby, England, whereby any FAA enforcement actions will be processed against ABC's production certificate in Long Beach, California.

The above considerations indicate that granting an extension of the production certificate to the Derby, England, location would not place an undue burden on the United States in administering the applicable requirements of the FAR, is considered justifiable in this instance.

Approved:_____ Date:_____
Manager, Transport Airplane
Directorate, ANM-100

Concur:_____ Date:_____
Manager, Aircraft Manufacturing
Division, AIR-200

Approved:_____ Date:_____
Director, Aircraft Certification
Service, AIR-1

APPENDIX 2. FEDERAL AVIATION ADMINISTRATION/UNITED KINGDOM CIVIL AVIATION AUTHORITY WORKING AGREEMENT RELATIVE TO SURVEILLANCE OF NRP-1 ENGINES MANUFACTURED IN THE UNITED KINGDOM (U.K.)

The Federal Aviation Administration (FAA) has agreed to permit the ABC Engine Company to produce Model NRP-1 engines in the United Kingdom by extending its Production Certificate to include the XYZ facility in Derby, England.

ABC will have total responsibility for the production of the NRP-1 engines at both the ABC, Long Beach, California, and XYZ, United Kingdom, Derby, England, facilities, including accountability for engine design, manufacture, and continuing airworthiness. Any violation of the Federal Aviation Regulations originating in either the U.S. or U.K. would be directed to ABC's production certificate which is held at the ABC, Long Beach, California, facility. ABC engines produced in the U.S. or U.K. under Production Certificate No. 123 will be considered as U.S. manufactured engines.

FAA surveillance of the engines produced in the U.K. will be accomplished by the U.K. Civil Air Authorities (CAA) on behalf of, and under the guidance of, the FAA. This surveillance will be performed in accordance with FAA Order 8120.2, Production Approval and Surveillance Procedures, or UK-CAA procedures determined by the FAA to be equivalent to those contained in Order 8120.2.

The UK-CAA surveillance will be augmented by the FAA in those areas deemed necessary by the FAA to fulfill its certificate management responsibility. The mutually agreed upon functions to be performed by the UK-CAA on behalf of the FAA are listed below. The UK-CAA will normally perform these functions in conjunction with routine UK-CAA surveillance at the XYZ facilities and report all findings and make recommendations, as appropriate, to the FAA Los Angeles Manufacturing Inspection District Office. The functions to be performed by the UK-CAA include, but are not limited to:

- Witnessing first article inspection of parts.
- Monitoring controls on special processes.
- Conducting conformity inspections to pertinent design data on prototype or production parts.
- Performing product audit inspections on assemblies, piece parts, and installations.
- Monitoring Designated Manufacturing Inspection Representative (DMIR) activity.
- Conducting investigations of service difficulties, including witnessing teardown inspections of engines and components.

- Performing followup on corrective actions to ensure that they have been accomplished.

- Evaluating the implementation of FAA-approved quality control system changes.

- Evaluating management and organizational changes to ensure that quality control system integrity is maintained.

- Monitoring technical data control to ensure that only the required revision level of FAA-approved design data are available to production and inspection personnel.

Within 60 days from the final concurrence of this agreement, the FAA principal inspector having certificate management responsibility for the ABC production certificate, shall develop a working plan in coordination with the UK-CAA counterpart who will be assisting the FAA at the XYZ facility. The working plan should include information such as the reporting of UK-CAA surveillance activity, service difficulties, FAA on-site surveillance participation, monitoring of designees, and other FAA certificate management functions. A signed copy of the FAA/CAA working plan will be forwarded to AIR-200 and maintained with international program records.

Approved:_____ Date:_____
Manager, Transport Airplane
Directorate, ANM-100

Concur:_____ Date:_____
Head Powerplant Department
Civil Aviation Authority

Concur:_____ Date:_____
Manager, Aircraft Manufacturing
Division, AIR-200

U.S. Department
of Transportation

**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

**FORWARDING AND RETURN
POSTAGE GUARANTEED**

Official Business
Penalty for Private Use $300

BULK MAIL
POSTAGE & FEES PAID
FEDERAL AVIATION
ADMINISTRATION
PERMIT NO. G-44