

Civil Aeronautics Manual 02

Production Certificates



March 15, 1945

U. S. DEPARTMENT OF COMMERCE

Henry A. Wallace, *Secretary*

CIVIL AERONAUTICS ADMINISTRATION

T. P. Wright, *Administrator*

Civil Aeronautics Manual 02
PRODUCTION CERTIFICATES



March 15, 1945

United States
Government Printing Office
Washington : 1945

INTRODUCTORY NOTE

This Manual interprets and explains the requirements of Part 02 of the Civil Air Regulations regarding the issuance and continuation of a Production Certificate. The greatest possible freedom will be allowed the applicant in meeting these requirements. The Civil Aeronautics Administration will determine, on the basis of the manufacturer's showing, whether or not the minimum standards have been met.

It should be understood that any method or procedure, which can be shown to be the equivalent of any set forth in the Manual, will be equally acceptable to the Administrator. Likewise, any interpretation herein shown to be inapplicable to a particular case may be suitably modified for such case on request. In either event, such acceptance or modified interpretation will become effective as of the date of approval, rather than the date of its incorporation in this Manual. This Manual will be revised from time to time as equally acceptable methods, new interpretations, or the need for additional explanations are brought to the attention of the Administrator.

This Manual has been arranged to include the complete text of the Civil Air Regulation concerned, followed immediately by the interpretive material (printed in larger type), thereby obviating the necessity of working with more than one volume. For reference purposes, this Manual will be abbreviated as "CAM 02." The designation "CAR 02" will be used in referring to Part 02 of the Civil Air Regulations.

This edition of Manual 02 contains material pertaining to CAR 02.2 through 02.35. The remaining sections of CAR 02 are covered in Manuals 04, 13, 14 and 15.

CONTENTS

	Page
02.2 PRODUCTION CERTIFICATES.....	1
02.20 Application.....	1
02.21 Requirements for issuance.....	1
1. Materials and Parts	1
2. Purchasing.....	1
3. Records of Purchases.....	2
4. Records of Inspection.....	2
5. Stock Room.....	2
6. Identification of Stock.....	2
7. Protection of Stock.....	2
8. Production.....	2
9. Facilities.....	3
10. Processes.....	3
11. Inspection System.....	3
12. Operational Test.....	4
13. Technical Data.....	4
14. Personnel General.....	4
02.22 Production limitation record.....	4
02.23 Duration.....	5
02.24 Transferability.....	5
02.3 TYPE AND PRODUCTION CERTIFICATE RULES.....	6
02.30 Display.....	6
02.31 Cancellation.....	6
02.32 Surrender.....	6
02.33 Inspection.....	6
02.34 Statement of conformity.....	6
02.35 Production reports.....	6
APPENDIX I (Forms).....	7

PRODUCTION CERTIFICATES

02.2 PRODUCTION CERTIFICATES

A Production Certificate is a document issued by the Administrator to a manufacturer certifying that certain manufacturing facilities in a particular location have been inspected by a representative of the Administrator and are considered adequate for the production of duplicates of the article for which a Type Certificate has been issued.

02.20 Application. An application for a Production Certificate for an aircraft, aircraft engine, propeller, or for any appliance specified in the Civil Air Regulations as eligible for such certificate, shall be made upon the applicable form prescribed and furnished by the Administrator.

Application for Production Certificate, Form ACA 332, should be submitted in duplicate by the applicant to the appropriate branch office of the Flight Engineering and Factory Inspection Division of the Civil Aeronautics Administration. Attached thereto should be a current organizational chart, which will show line of authority governing the quality control departments. (See Appendix I for location and addresses of branch offices.)

Upon receipt of an application for a Production Certificate, the branch office of the Flight Engineering and Factory Inspection Division will issue a Factory Inspection Authorization, Form ACA 313, authorizing an inspection of the applicant's facilities to determine their adequacy for the production of duplicate articles. As a result of the issuance of the Factory Inspection Authorization, an inspector will be assigned to conduct the required inspection and report thereon.

The branch office, upon receipt of the Factory Inspection Report, will endorse the form and forward it to the Washington office of the Flight Engineering and Factory Inspection Division with its recommendations concerning the proposed issuance of the Production Certificate.

Upon receipt by the Flight Engineering and Factory Inspection Division of a satisfactory application and a Factory Inspection Report recommending the issuance of a Production Certificate, and when the Division concurs in the recommendation of the branch office, a Production Certificate, Form ACA 333, together with a Production Limitation Record, Form ACA 333-A, will be issued by the Chief of the Flight Engineering and Factory Inspection Division. The original and one copy each of the Production Certificate and the Production Limitation Record will be forwarded to the appropriate branch office of the Flight Engineering and Factory Inspection Division; the originals will be transmitted to the manufacturer concerned and the copies retained in the files of the branch office.

02.21 Requirements for issuance. The applicant shall hold a currently effective Type Certificate for the type of aircraft, aircraft engine, propeller, or appliance proposed to be manufactured, or shall hold a current right to the benefits of such Type Certificate under a licensing arrangement. The applicant shall also demonstrate, to the satisfaction of the Administrator, that he is adequately prepared to produce duplicates of the aircraft, aircraft engine, propeller, or appliance for which such Type Certificate has been issued.

For conventional aircraft, aircraft engines, propellers or appliances, the following provisions are considered a minimum which must be met in order that a satisfactory showing be made that the applicant is adequately prepared to produce duplicates as stated above.

1. **MATERIALS AND PARTS.** The manufacturer should have a reliable source for obtaining materials and parts which are uniform in quality and suitable for aircraft construction.
2. **PURCHASING.** The manufacturer's method of purchasing should be such as to provide a check on the suitability of the materials received. Therefore, recognized specifications should, in general, be used on purchase orders. The manufacturer should receive, with cer-

tain materials, reports of tests made on a sample of the specific material, showing compliance with the purchase specifications. The specification should be sufficiently detailed and comprehensive to insure procurement of material of a uniformly high grade, equalling or exceeding the minimum strength properties assumed in the structural data approved by the Aircraft Engineering Division of the Civil Aeronautics Administration.

Deviations from the procedure outlined above may be made under the following conditions:

- a. The manufacturer may use materials, subassemblies and essential components obtained from a supply source specializing in the manufacture of aircraft material and parts. In this case, he will ascertain that the supply source is following the procedures outlined in the foregoing paragraphs and should require copies of the applicable verified test and inspection reports with his purchases.
- b. Manufacturers may establish their own specifications, provided these data are submitted to the appropriate Aircraft Engineering branch office for approval. (See Appendix I for addresses of branch offices.)

3. RECORDS OF PURCHASES. The manufacturer should maintain complete records of all purchases and the dispositions of such purchases for a reasonable period to enable him to check back on any particular lot of material in which defects may later be found.

4. RECORDS OF INSPECTION. The manufacturer should have an established procedure for the inspection of all purchases before placing them in the stock room. Records of all incoming inspections should be maintained at all times. They should include information concerning source, source inspection, incoming inspection, quantity (both accepted and rejected), vendor's affidavits, or reports indicating conformity with recognized aircraft standards and disposition of materials handled.

5. STOCK ROOM. The manufacturer should maintain a clean, orderly, and carefully managed stock room and have:

- a. An adequate number of shelves, bins and cupboards properly marked;
- b. A place for keeping records;
- c. Boundaries defined by partitions or railings with a designated opening through which all stock is issued in order to prevent access to the stock by unauthorized personnel;
- d. A responsible person in charge of all entries, storing, withdrawals and an appropriate system for recording them;
- e. No stock on the floor or in other undesignated places except temporarily during sorting and inspection;
- f. No material or parts stocked which are known to be defective or damaged, even though they may be so marked.

There is no objection to combining toolroom with stockroom.

6. IDENTIFICATION OF STOCK. All stock items in the stockroom should be so stored and identified that there can be no possibility of inadvertently issuing the wrong material. Particular attention should be given to the segregation of items of similar appearance but with different physical characteristics.

7. PROTECTION OF STOCK. Adequate protection should be provided for materials subject to damage from sunlight, moisture, grease or corrosion.

8. PRODUCTION. The majority of firms manufacturing aircraft or aircraft components have adopted a production control system which is recognized as being conducive to production of reliable articles. Under the guidance of Production Control or Production Planning, procedures should be established to insure proper routing of materials and parts for fabrication and inspection. Adequate containers, or other suitable means, should be provided for handling such parts as they progress through the factory. Upon issuance of materials or parts to production for processing, a routing or job card should be initiated, which will establish the sequence of each operation and record all pertinent information. This card follows the material through all stages of manufacture and a continuous record of all materials or parts is thus maintained.

It is realized that equivalent procedures may be employed and are acceptable provided the control is adequate to preclude unfinished or damaged parts being installed in the completed articles.

9. **FACILITIES.** The manufacturer's facilities should be adequate to produce units in conformity with technical data upon which the Type Certificate is granted.

Accommodations should be provided which will adequately protect both the facilities and the product during manufacture. Provisions should be made to isolate processes which adversely affect or may be affected by other operations.

The amount and type of equipment required will depend upon the complexity of the product and the rate and volume of production.

10. **PROCESSES.** Production manufacturing processes such as woodwork, gluing, welding, heat treatment, metalwork, etc., employed by the applicant, should be so controlled as to produce parts and assemblies consistent with the original approved article.

In addition to controlling manufacturing processes, a definite procedure should be established and followed in connection with each process employed so that conformity of material, workmanship, and standard are maintained.

(a) *Woodwork.*—Provisions should be made to maintain the moisture content of wood within approved limits during manufacture. (Ref. ANC 19. Wood Aircraft Inspection and Fabrication.)

(b) *Gluing.*—Gluing operations should be accomplished in accordance with specification approved by Aircraft Engineering Division.

(c) *Welding.*—Gas welding is approved for aircraft fabrication with certain limitations as required in Part 04 of the Civil Air Regulations. The use of arc and resistance welding in the primary structure must be specifically approved by the Aircraft Engineering Division of the Civil Aeronautics Administration. Particular attention should be given to the problems of alignment, expansion and contraction of parts during fabrication by welding.

(d) *Heat treatment.*—Under the category of heat treatment comes all processes for the conditioning of metals by heat; such as hardening, tempering, annealing, normalizing, etc., of both ferrous and nonferrous metals. Rigid procedures should be established to control heat treat operations in order to assure that desired values are obtained. In the event parts are heat treated by an outside agency, it is the responsibility of the Production Certificate holder to determine the adequacy of such agency, and the acceptability of the results.

(e) *Metal work.*—The fabrication of metal parts by various forming and machining operations should be controlled by the observance of approved standards to attain the surface finishes which are indicated on approved drawings, regular contours, etc., required in metal structures.

11. **INSPECTION SYSTEM.** The activities of the aircraft industry are of such number and variety that it is impracticable, within the scope of this Manual, to give more than a general outline of the manner in which an approved inspection organization should operate.

The inspection organization should be controlled by a chief inspector who, in turn, should be directly responsible to the management of the firm so that his decisions are not influenced by considerations other than the quality of the work for which he is responsible. It is also essential that the chief inspector should control inspection through all departments of the firm. If such an arrangement is not possible by reason of the fact that certain departments are engaged in specialized work, these departments should operate under a separate inspection system. However, their activities should be coordinated under the general supervision of a quality control organization. The same procedure should apply in the case of dispersed or branch facilities of a main organization when inspection activity is divided.

The inspection system should be so organized that all parts and materials will receive routine inspection while in an inspectable condition.

The inspection department should be provided with tools and equipment necessary to conduct all phases and types of inspection essential to the continued production of duplicate articles and their components. Master templates, precision tools, and gauges should be used by the inspection department. The tools used by the production department in constructing the part should never be used, since it is obvious that if the fabrication tools and fixtures become damaged, or otherwise altered, the possibility of detecting errors is minimized.

Clearly defined areas for inspection of large units on the production floor and cages or booths for smaller items should be provided in order that the inspectors may operate efficiently and without interference.

Definite procedures should be established for delivering parts to the inspection booths and for removing and storing inspected parts in order that installation of uninspected parts will be prevented.

After the manufacturer's facilities are approved for a Production Certificate, detailed inspection by the CAA of each part or component during fabrication will not normally be necessary. Continuation of this procedure will depend upon the extent to which the manufacturer maintains the adequacy of such facilities and the quality control of the article produced.

Civil Aeronautics Administration personnel will spot check to determine whether individuals in the inspection department are capable and fulfill their duties in an efficient manner.

(a) *Inspection records.*—Records should be maintained which are complete and present a historical compilation of all events during the course of manufacture. Complete inspection forms which identify the item or group of items and indicate acceptance or rejection by the inspector should be provided for this purpose. Smaller parts, which are inspected in quantities, should be segregated, tagged, or otherwise marked after having been inspected.

It is recommended that continuous records of all parts be maintained which indicate the name, drawing number, number of pieces inspected, and the number accepted and rejected.

At final assembly the inspection forms for the components of the completed unit should be identified with the complete unit, so that they may be traced at a later date if it becomes necessary to place responsibility for inspection of various components or to determine that all components have been inspected.

Inspection forms should be permanently filed for future reference. Under such a system, individual inspection responsibility may be established at any later date.

(b) *Inspector's identification.*—All parts inspected should be permanently marked when practicable to identify the individual inspector responsible.

(c) *Inspectors required.*—The number of inspectors required to perform the necessary inspection will vary with the product. It will also vary between departments and with labor conditions. A ratio of approximately 1 inspector to 20 production personnel is considered minimum for a factory with varied processes. A higher ratio of inspectors will be required when the major process consists of complex operations. Under any circumstances there should be sufficient inspection personnel to adequately check all processes and to inspect all parts produced.

(d) *Salvage.*—Procedures should be established for satisfactorily processing items rejected due to damage of manufacturing errors, but which are considered to be serviceable. Such procedures should provide for the routing of salvaged or reworked parts for reinspection, the maintenance of complete records concerning the salvage or rework operations and the results of reinspection.

12. **OPERATIONAL TEST.** After final assembly inspection by the manufacturer's personnel, each aircraft and aircraft engine, whether produced under the terms of a Type Certificate or under a Production Certificate, should be tested by the manufacturer's test personnel as a final check on the operation of the assembled product. On other articles the necessity for such functional tests will depend upon the nature of the articles. The results of any tests should be included in the pertinent inspection record.

13. **TECHNICAL DATA.** A system should be established whereby detailed drawings and other technical data are available to both production and inspection personnel.

14. **PERSONNEL GENERAL.** The executives of the company should exercise adequate control either by direct contact with the product and production procedures, or by the delegation of authority to suitable persons in supervisory capacities who are held responsible for the product.

02.22 Production limitation record. The benefits of a Production Certificate shall be available only with respect to the Type Certificate or certificates set forth in the currently effective Production Limitation Record, prescribed and issued by the Administrator, which shall be attached to the Production Certificate.

The Production Limitation Record, Form ACA 333-A, will be attached to the Production Certificate, and become a part of it. The addition or deletion of Type Certificate numbers to any given Production Certificate will be reflected only on the Production Limitation Record. Upon receipt of a request from a manufacturer for the deletion of one or more of the Type Certificates listed on a Production Limitation Record, a new Production Limitation Record will be issued by the Washington office and forwarded to the appropriate branch office for transmittal to the manufacturer with a request that the superseded Production Limitation Record be immediately returned through the branch office to the Washington office.

Before an additional Type Certificate number will be added to a Production Limitation Record, it will be necessary that (1) the manufacturer submit a written request to the appropriate branch office of the Flight Engineering and Factory Inspection Division for the addition of the new Type Certificate number to the Production Limitation Record; (2) a factory inspection be authorized by the appropriate branch office; and (3) a Factory Inspection Report be submitted for the article covered by the new Type Certificate.

Upon receipt of the manufacturer's request and an approved Factory Inspection Report, a superseding Production Limitation Record will be issued by the Washington office.

02.23 Duration. A Production Certificate shall be of 60 days' duration, and, unless the holder thereof is otherwise notified by the Administrator within such period, shall continue in effect indefinitely thereafter, unless cancelled, suspended, or revoked.

Where production under the terms of the Certificate has been indefinitely or permanently discontinued, a request for cancellation of the Certificate should be submitted by the manufacturer to the appropriate Flight Engineering and Factory Inspection branch office of the Civil Aeronautics Administration.

A Production Certificate may be suspended by the Administrator of Civil Aeronautics. In case of an emergency, that is, if it appears that a dangerous condition may develop as a result of continued production of an article being manufactured under a Production Certificate by reason of unsatisfactory conditions noted, the Production Certificate may be immediately suspended in whole or in part for a period not in excess of 30 days without regard to any requirements as to notice or hearing. An emergency has been defined in Administrative Order No. 7 dated June 25, 1941, as follows:

Whenever the condition or conduct of a certificated airman or the condition of a certificated aircraft or the operation of a certificated air agency is such as to indicate immediate danger or injury to any person or damage to property, and the immediate suspension of the airman, aircraft, or air agency certificate might avert such injury or damage, an emergency is deemed to exist within the meaning of Section 609 of the Civil Aeronautics Act of 1938, as amended, and in such circumstances any officer or employee of the Administration charged with the duty of examining airmen or inspecting aircraft or air agencies shall, subject to the approval of the Administrator, suspend the certificate for a period of 30 days.

02.24 Transferability. A Production Certificate shall not be transferred.

A Production Certificate is not transferable and becomes invalid if a transfer is made of the controlling interest of the concern or upon movement of manufacturing facilities from one location to another. In the event the controlling interest of a manufacturer holding a Production Certificate is transferred, or the manufacturing facilities are physically moved from the location as noted on the Production Certificate, the Production Certificate should be returned immediately to the appropriate branch office of the Flight Engineering and Factory Inspection Division for cancellation. Simultaneously with the return of the Production Certificate, application may be made for a Production Certificate to cover future articles manufactured under either or both of the conditions outlined above.

02.3 TYPE AND PRODUCTION CERTIFICATE RULES

02.30 Display. Type and Production Certificates shall be presented upon the request of any duly authorized representative of the Administrator, or any State or municipal official charged with enforcing local laws or regulations involving Federal compliance.

The purpose of this regulation is to make the Certificate available to the representatives of the Administrator in order that they may at any time see that the Certificates are current and in order. To facilitate such examination as may be involved, it is recommended that the Certificates be posted in a conspicuous place in the office of the factory.

02.31 Cancellation. Type and Production Certificates may be cancelled upon written request of the holder thereof.

The Production Certificate should be returned for cancellation when any changes are made in the organization or facilities which would make the firm ineligible for original issuance of a Production Certificate.

02.32 Surrender. Upon the cancellation, suspension, revocation, or expiration of a Type or Production Certificate, the holder thereof shall, upon request, surrender such Certificate to any officer or employee of the Administrator.

02.33 Inspection. An inspector of the Administrator shall be permitted at any time and place to make such inspections as may be deemed necessary to determine compliance with the requirements of this part of the Civil Air Regulations.

A duly authorized representative of the Administrator will conduct a factory inspection at least once each year, and submit a report upon the appropriate Form ACA 314.

In addition to the foregoing, periodic inspections will be conducted to ascertain that each manufacturer holding a Production Certificate continuously complies with regulations pertaining thereto, the terms of the Certificate, and of the currently effective Production Limitation Record issued therewith; and that the facilities, equipment and organization are such that the holder of the Certificate is adequately prepared to produce duplicates of the article or articles to which Type Certificates listed on the Production Limitation Record were issued; these facilities, equipment, etc., to be at least the equivalent of those upon which was based eligibility for the original issuance of the Production Certificate.

02.34 Statement of conformity. The holder of a Type Certificate or of a current right to the benefits of a Type Certificate under a licensing arrangement, upon the transfer by him of the ownership of any aircraft manufactured under such Type Certificate, shall unless an airworthiness certificate has previously been issued, furnish to the transferee of such aircraft a Statement of Conformity on a form prescribed and furnished by the Administrator.

In addition to the transferee, the manufacturer will present to an inspector of the Administrator a certified Statement of Conformity, upon a form to be supplied by the Administrator, in which the manufacturer's chief engineer, or other responsible technical representative should certify that the completed article submitted for type inspection or certification has been manufactured in accordance with the latest technical data submitted to and approved by the Administrator (including all revisions and additions required by the Administrator in connection with authorization of the type inspection), except for any deviations therefrom, which should be listed and described on Form ACA 317.

02.35 Production reports. On the first day of January and July of each year, and at such other times as the Administrator may require, every holder of a Type Certificate, or a Production Certificate, or of a current right to benefits of a Type Certificate under a licensing arrangement, shall transmit to the Administrator a correct and completely executed production report on the form prescribed and furnished by the Administrator. Such reports shall be transmitted regardless of whether any aircraft, aircraft engines, propellers, or appliances were constructed during the period covered by the report.

Semi-Annual Production Report, Form ACA 503, should be utilized by all holders of Type or Production Certificates, or both.

Space is provided on the form for requesting cancellation of any Type Certificate that should be deleted from the Production Limitation Record or Production Certificate.

The explanatory notes contained on the form are considered adequate to facilitate the execution of the report without reference to other interpretative material.

APPENDIX I

Figure I. Regions and Regional Offices of the Civil Aeronautics Administration

Forms	Title	Date
ACA 332	Application for Production Certificate	6-1-41
ACA 313	Factory Inspection Authorization	11-30-41
ACA 314	Factory Inspection Report	11-30-41
ACA 317	Statement of Conformity	3-1-41
ACA 333	Production Certificate	6-1-41
ACA 333-A	Production Limitation Record	5-15-41
ACA 503	Semiannual Production Report	11-1-43

ADDRESSES OF FLIGHT ENGINEERING & FACTORY INSPECTION BRANCH OFFICES

385 Madison Avenue New York 17, N. Y.	608 S. Dearborn St. Chicago 5, Ill.
9th Fl., City Hall Bldg. Kansas City 6, Mo.	1500 Fourth St. Santa Monica, Calif.

APPENDIX I

Form ACA 332
(Rev. 8-1-41)

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

APPLICATION FOR PRODUCTION CERTIFICATE

To the CIVIL AERONAUTICS ADMINISTRATION:

- 1. Manufacturer's name JOHN A. DOE AIRCRAFT COMPANY
(Print or type)
- 2. Business address 4515 HIGHLAND AVENUE NEW YORK CITY N.Y.
(Street) (City) (State)
- 3. Factory address 4515 HIGHLAND AVENUE NEW YORK CITY N.Y.
(Street) (City) (State)

Application is made for a Production Certificate for the production of duplicates of

AIRCRAFT

(Specify aircraft, aircraft engine, propeller, or appliance)

, in conformity with Type

Certificate(s) No. (s) 745, 746 and 966

held by JOHN A. DOE AIRCRAFT COMPANY

I CERTIFY that the above statements are true.

DATE December 11, 1944

JOHN A. DOE AIRCRAFT COMPANY
(Manufacturer)

By John A. Doe
(Signature)

President
(Title)

APPENDIX I

Form ACA 313
Rev. 11-30-41

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

FACTORY INSPECTION AUTHORIZATION

Date December 15, 1944

Request No. F-1-201

To: SENIOR AIRCRAFT FACTORY INSPECTOR. Attention: J. D. Brown

Address: 102 Allan Road, New York City, N.Y.

From: Chief, Flight Engineering and Factory Inspection Branch, Region No. 1

An application for Production Certificate has been received from the company noted below for the manufacture of the AIRCRAFT designated.
(Specify aircraft, engine, propeller or kind of appliance pertinent)

Please conduct the required inspection and prepare Factory Inspection Report, Form ACA 314.

1. Manufacturer JOHN A. DOE AIRCRAFT COMPANY

2. Address 4515 HIGHLAND AVENUE, NEW YORK CITY, N.Y.

3. AIRCRAFT Model(s) ABC-1
(Specify aircraft, engine, propeller or kind of appliance as pertinent)

NOTE.—Prepare in triplicate. Original to Factory Inspector concerned. One copy to Branch Office file. One copy to Flight Engineering and Factory Inspection Division, with application, Form ACA 332, attached.

P. T. Smith

P. T. Smith

Chief, Flight Engineering and Factory Inspection Branch.

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

FACTORY INSPECTION REPORT

Date December 24, 1944

Request No. F

To: Chief, Flight Engineering and Factory Inspection Division.

FROM: (~~Engineering~~) (Factory) Inspector J. D. Brown

SUBJECT: Inspection of factory facilities, shop practices, and personnel of John A. Doe Aircraft Co.
(Name of company)

Located at New York City N.Y., as to adequacy for the production of identical
(City) (State)

airworthy AIRCRAFT of the type known as Model(s) ABC-1

RECOMMENDATION: This factory is (Approved) (~~Disapproved~~) for production certificate for the manu-
(Circle one)
facture of the above model(s)

NOTE.—This form should be completely filled in, signed, and forwarded to the Chief, Flight Engineering and Factory Inspection Branch, who will endorse this report if he agrees with it and will forward it as addressed above.

PURCHASING

- 1. Are sources of supply satisfactory? Yes No*
- 2. Are materials and parts purchased on detailed specification? Yes No
- 3. Are records of purchases and specifications kept? Yes No
- 4. Are purchased parts inspected before stocking? Yes No

STOCK ROOM

- 5. Is general arrangement orderly? Yes No
- 6. Are materials and parts segregated and marked? Yes No
- 7. Is adequate protection provided for materials subject to damage from sunlight, moisture, grease, or corrosion? Yes No

MATERIALS

- 8. Does random inspection of the following materials in stock and the applicable purchase specifications used indicate that they conform with the general requirements for aircraft materials?
 - (a) Wood None Yes No
 - (b) Bolts, nuts, and rivets None Yes No
 - (c) Glue None Yes No
 - (d) Steel tubing and sheet None Yes No
 - (e) Aluminum alloy tubing and sheet None Yes No
 - (f) Tierods and cables, including terminals and turnbuckles None Yes No
 - (g) Castings, Fittings None Yes No
 - (h) Fabric None Yes No
 - Other (name in each case):
 - (i) Yes No
 - (j) Yes No
 - (k) Yes No

EQUIPMENT

- 9. Is general arrangement conducive to accurate orderly work? Yes No
- 10. Is the machinery installed adequate for the processes attempted by the manufacturer? Yes No
- 11. Are sufficient jigs and fixtures used to guarantee accurate work reasonably free from defects? Yes No
- 12. Is general equipment, other than 10 and 11, suitable for processes employed? Yes No

PROCESSES

- 13. Are precision and care used on all details? Yes No
- 14. Are the following processes performed in accordance with accepted good practice and are results satisfactory?
 - (a) Welding None Yes No
 - (b) Brazing and soldering None Yes No
 - (c) Glueing None Yes No
 - (d) Woodwork None Yes No
 - (e) Metal cutting and forming None Yes No
 - (f) Heat treatment None Yes No
 - (g) Fabric covering None Yes No
 - (h) Corrosion prevention None Yes No
 - (i) General practices None Yes No
 - (j) Finishing None Yes No
 - (k) Assembly None Yes No

INSPECTION SYSTEM

- 15. Is inspection system organized under one responsible head designated as the chief inspector? Yes No
- 16. Is the chief inspector under the supervision of the: Shop foreman (); production manager (); sales department (); chief engineer (); general manager (); other ()

* Circle one "No" denotes unsatisfactory condition—for each unsatisfactory item give details on reverse side numbered to correspond to item in question.
NOTE. Submit in triplicate if approved—in quadruplicate if disapproved.

APPENDIX I

INSPECTION SYSTEM—Continued

- 17. Are the inspectors provided with sufficient precision instruments, space, and other facilities for careful work? Yes No
- 18. Are reports and records kept or parts marked to show definitely which parts have been inspected? Yes No
- 19. Does system for 18 show which inspector handled each case? Yes No
- 20. Are sufficient inspectors employed to insure that all parts will be inspected? Yes No
- 21. Does inspection system actually function satisfactorily? (Determine from inspection of passed parts and from general observation) Yes No

PERSONNEL

- 22. Do the executives of this company exercise adequate control over the airworthiness of the products manufactured by:
 - (a) Personal close contact with work? Yes No
 - (b) Delegation of subordinate responsibility to suitable persons for each department? Yes No
 - (c) Strict insistence upon rules, policies, and supervisory action in keeping with absolute reliability and freedom from defects? Yes No

GENERAL

- 23. Does manufacturer assemble and flight-test each aircraft as a final check? Yes No
- 24. After flight check are suitable steps taken to correct any defects? Yes No
- 25. During your inspection of this factory, was any attempt made to deceive you or make your inspection difficult? Yes No
- 26. Is sealed drawing list available? Yes No
- 27. Are adequate production drawings with approved tolerances available to:
 - (a) Inspection personnel? Yes No
 - (b) Production personnel? Yes No
- 28. Are methods for processing deviations satisfactory? Yes No
- 29. Remarks concerning items not covered in 1 to 29 _____

EXPLANATION OF UNSATISFACTORY ITEMS
REMARKS

Item No.

J. D. Brown
 (Inspector's signature)
 J. D. Brown

I have furnished the manufacturer with full information (in writing, copy attached) concerning all of the unsatisfactory items noted in this report (if any) and have advised him to communicate with this office when he feels that suitable corrective measures have been instituted. I have also advised the manufacturer that, at that time, a further inspection will be conducted and a supplementary Factory Inspection Report will be prepared and submitted.

J. D. Brown
 (Inspector's signature)
 J. D. Brown

Approved _____

P. T. Smith
 P. T. Smith
 Chief Flight Engineering and
 Factory Inspection Branch.

APPENDIX I

Form ACA 317
(Rev. 3-1-41)

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

STATEMENT OF CONFORMITY

To the CIVIL AERONAUTICS ADMINISTRATION:

I, having been authorized for this purpose by JOHN A. DOE AIRCRAFT COMPANY,
(Manufacturer)
certify that the aircraft DOE AIRCRAFT, ABC-1,
(Make) (Model)
114, has been manufactured, under Production Certificate No. 16,*
(Serial number)
in conformity with the data forming the basis for Type Certificate No. 746 and any
revision or modification thereof approved by the Administration as of January 15, 1945,
(Date)
with the exception of the following deviations:

Radio Receiver installation in accordance
with Drawing No. 8-123

Quick Release Door mechanism in accordance
with Drawing No. 9-456

DATE January 15, 1945

X. C. Burns
X. C. Burns (signature)
Chief Engineer
(Title)

* Delete this phrase if not applicable.

APPENDIX I

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

PRODUCTION CERTIFICATE No. 16

This certificate, issued to JOHN A. DOE AIRCRAFT COMPANY

business address 4515 HIGHLAND AVENUE, NEW YORK CITY, N.Y.

authorizes the production of duplicates of AIRCRAFT

and certifies that the production facilities of the factory of the holder hereof, located at

4515 HIGHLAND AVENUE, NEW YORK CITY, N.Y.

are adequate for the production of such duplicates in conformity with the authenticated data, including drawings, for those type certificates specified in the currently effective Production Limitation Record.

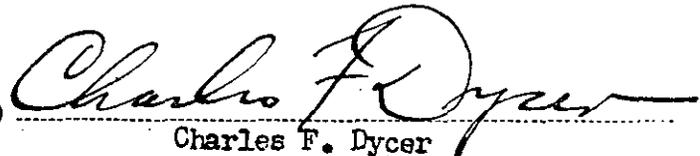
DURATION

This certificate is of 60 days' duration, and, unless the holder hereof is otherwise notified by the Administrator within such period, shall continue in effect indefinitely thereafter, unless canceled, suspended, or revoked.

Date DECEMBER 30, 1944

By direction of the Administrator:

(Signature)



Charles F. Dycer

(Title) Chief, Flight Engineering and Factory
Inspection Division

This Certificate is Not Transferable

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

APPENDIX I

Form ACA 333-A
(Rev. 5-15-41)

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

PRODUCTION LIMITATION RECORD

The holder of Production Certificate No. 16 may receive the benefits incidental to the possession of such certificate with respect to AIRCRAFT manufactured in accordance with the data forming the basis for the following Type Certificate(s) No.(s):

745 (Issued November 1, 1943)

746 (Issued June 16, 1944)

966 (Issued October 23, 1944)

By direction of the Administrator:

(Signature)

Charles F. Dycer
Charles F. Dycer

DATE OF ISSUANCE December 30, 1944

(Title) Chief, Flight Engineering & Factory Inspection
Division

U. S. GOVERNMENT PRINTING OFFICE

APPENDIX I

DEPARTMENT OF COMMERCE
 CIVIL AERONAUTICS ADMINISTRATION
 WASHINGTON

Date January 1, 1945

SEMIANNUAL PRODUCTION REPORT

MANUFACTURER John A. Doe Aircraft Co. ADDRESS 4515 Highland Ave., New York City, N.Y.

To the CIVIL AERONAUTICS ADMINISTRATION:

AIRCRAFT

A summary report of all _____ which were constructed under
 (Name article - separate report required for each type manufactured)
 the terms of, and in conformity with, Type Certificates listed below, and under Production Certificate No. 16

between July 1, 1944, and December 31, 1944. (See Note 1)

TC No. (See Note 2)	MODEL (See Note 2)	UNITS PRODUCED (See Note 3)							TOTAL	SERIAL NUMBERS INVOLVED (See Note 4)	
		January	February	March	April	May	June	FIRST		LAST	
		July	August	September	October	November	December				
746	XYZ	none	none	none	none	none	none				
745	XFX	"	"	"	"	"	"				
966	ABC-1	3	6	6	10	15	1	41	101	141	

I CERTIFY that the above statements are true and correct.

It is requested that the following listed Type and/or Production Certificates be cancelled due to the fact that no further production is contemplated. It is understood that such cancellation concerns future production only and has no effect upon existing articles of the models concerned.

Please cancel Production Certificate No. 16

(Type and/or Production Certificate numbers to be cancelled)

(Signature) X. C. Burns (Title) Chief Engineer

Note 1: Each holder of a type certificate, of a production certificate, or of a current right to the benefits of a type certificate under a licensing arrangement, will submit this form in triplicate on January 1 and July 1 of each year, regardless of whether any articles were manufactured during the period being reported, through the appropriate branch office of the Flight Engineering and Factory Inspection Division. (See part 02 of Civil Aeronautics Regulations)

Note 2: List all type certificates currently in effect. Also list all models approved for each type certificate. Show in parenthesis those type certificates and models for which no production certificates have been issued.

Note 3: If no production during the period reported, so indicate by the word "None".

Note 4: Serial numbers involved need only show first and last of the total production, regardless of whether or not they are consecutive.