

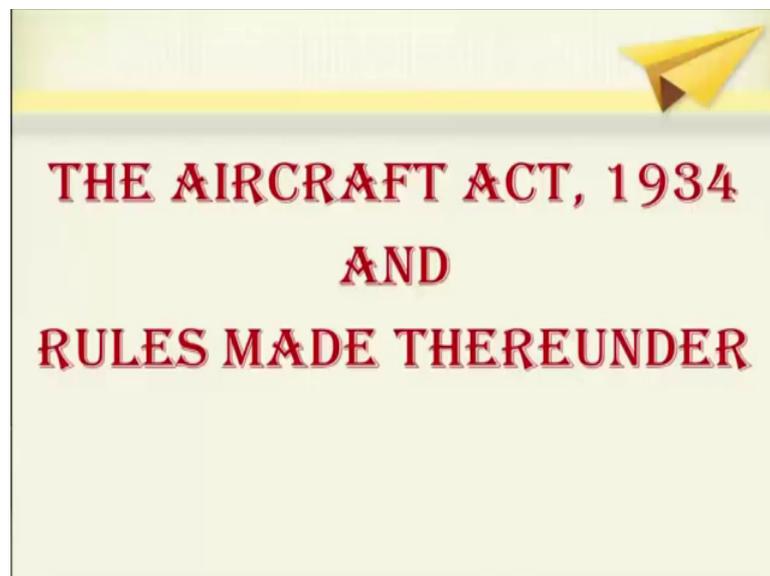
**Aircraft Maintenance**  
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**Lecture - 01**  
**Rules and Regulation For Civil Aviation in India**

Hello everyone welcome to the course for Aircraft Maintenance. Before actually going to aircraft maintenance, we will see what are the regulations, what are the rules, requirements, for civil aviation in our country; I will give you a brief idea about the aircraft act, the aircraft rules, and the civil aviation requirements mainly for aircraft maintenance.

So, today we will be looking at the aircraft act and the aircraft rules formed under that aircraft act.

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So, we are looking at the aircraft act 1934 and the rules made there under.

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## The Aircraft Act, 1934

- An act to make better provision for the *CONTROL* of the manufacture, possession, use, operation, sale, import and export of aircraft.
- **1. Short title and extent.-**
  - (1) This Act may be called The Aircraft Act, 1934.
  - (2) It extends to the whole of India and applies also-
    - (a) to citizens of India wherever they may be
    - (b) to, and to the persons on, aircraft registered in India wherever they may be
    - (c) to, and to the persons on, aircraft registered outside India but for the time being in or over India; and
    - (d) to an aircraft operated by a person who is not a citizen of India but has his principal place of business or permanent residence in India.

The aircraft act 1934 it is an act to make better provision for the control of the manufacture, possession, use, operation, sale, import and export of aircraft. This act may be called the aircraft act 1934. It extends to the whole of India and applies also to citizens of India, wherever they may be to and to the persons on aircraft registered in India, wherever they may be to and to the persons on aircraft registered outside India, but for the time being in or over India and to an aircraft operated by a person, who is not a citizen of India, but has his principle place or business or permanent residence in India.

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## Section 4

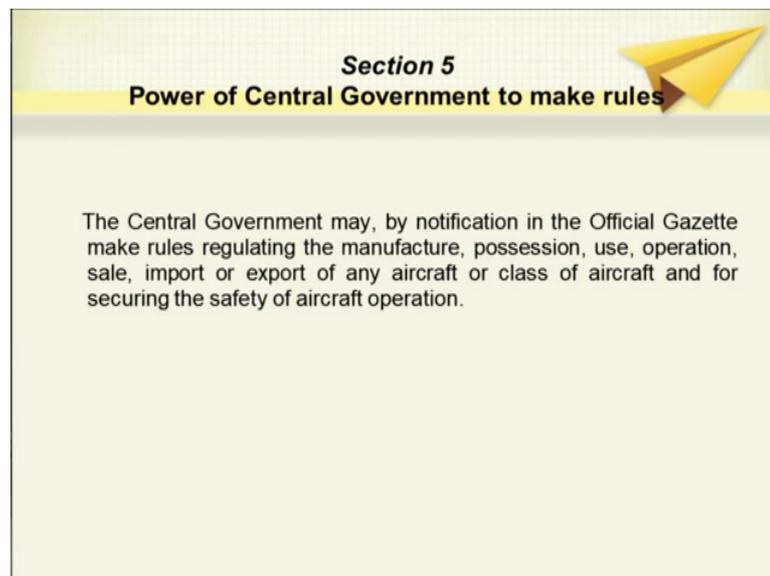
- **4. Power of Central Government to make rules to implement the Convention of 1944,**

The Central Government may, by notification in the Official Gazette, make such rules as appear to it to be necessary for carrying out the Convention relating to International Civil Aviation signed at Chicago on the 7th day of December, 1944 (including any Annex thereto relating to international standards and recommended practices) as amended from time to time.
- **4A. Safety oversight functions.-** The Director General of Civil Aviation or any other officer specially empowered in this behalf by the Central Government shall perform the safety oversight functions in respect of matters specified in this Act or the rules made there under.

Section 4 of this aircraft act 1934 and empowers the Central Government to make rules to implement the convention of 1944. The central government may by notification in the official gazette make such rules as appear to, it to be necessary for carrying out the convention relating to international civil aviation signed at Chicago on the 7th day of December of 1944, including any annexures thereto relating to international standards and recommended practices as amended from time to time.

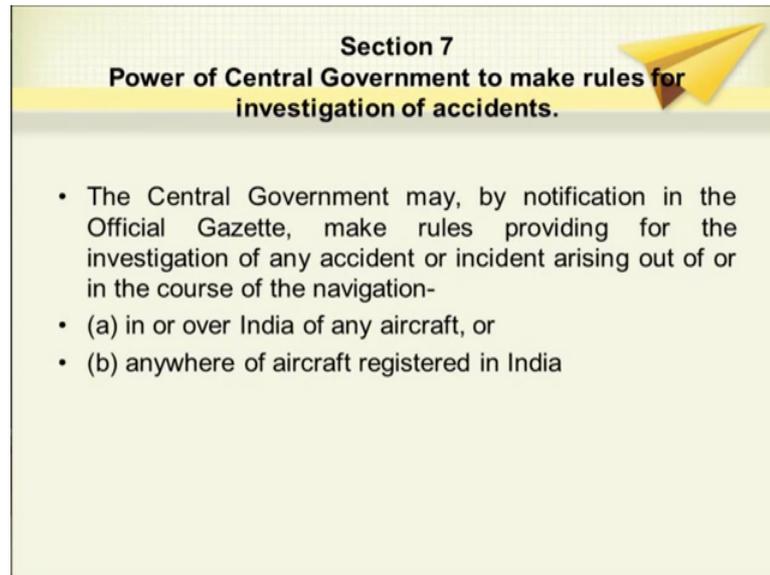
Section 4 A is regarding safety oversight functions, the director general of civil aviation or any other officer specially empowered in this behalf by the central government shall perform the safety oversight functions, in respect of matters specified in this act or the rules made there under.

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Section 5 is for the power of central government to make rules the central government may by notification, in the Official Gazette make rules regulating the manufacture, possession, use, operation, sale, import or export of any aircraft or class of aircraft and for securing the safety of aircraft operation.

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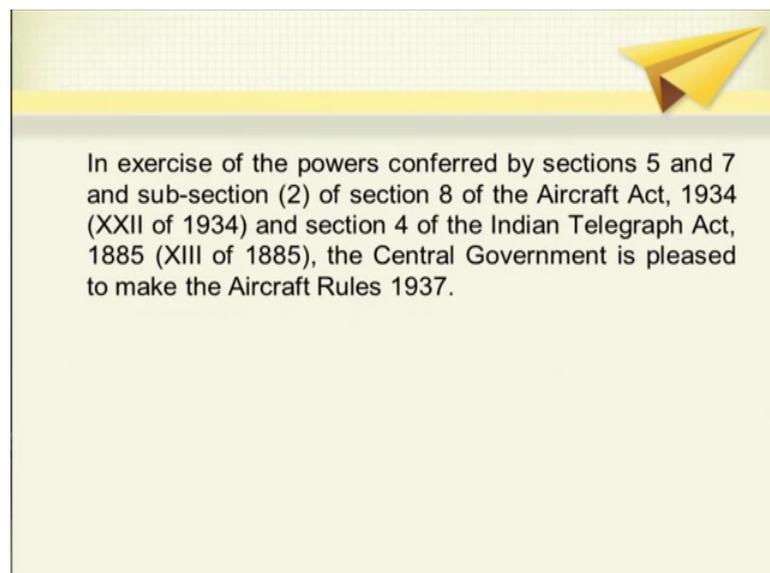


**Section 7**  
**Power of Central Government to make rules for investigation of accidents.**

- The Central Government may, by notification in the Official Gazette, make rules providing for the investigation of any accident or incident arising out of or in the course of the navigation-
- (a) in or over India of any aircraft, or
- (b) anywhere of aircraft registered in India

Section 7 of the aircraft act gives power to the central government to make rules for investigation of accidents. The central government may by notification in the official gazette make rules providing for, the investigation of any accident or incident arising out of or in the course of navigation in or over India of any aircraft or anywhere of aircraft registered in India.

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In exercise of the powers conferred by sections 5 and 7 and sub-section (2) of section 8 of the Aircraft Act, 1934 (XXII of 1934) and section 4 of the Indian Telegraph Act, 1885 (XIII of 1885), the Central Government is pleased to make the Aircraft Rules 1937.

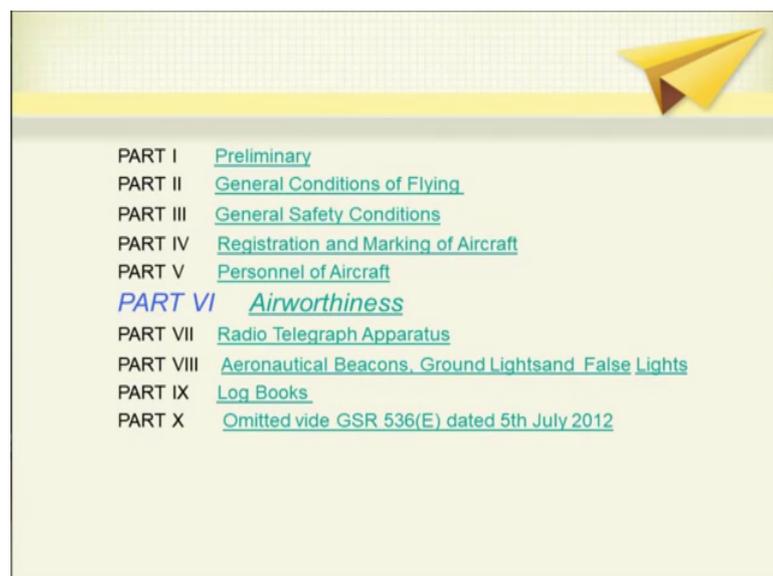
In exercise of powers conferred by section 5 and 7 and sub section 2 of section 8 of the aircraft act 1934 and section 4 of the Indian telegraph act 1885, the central government is pleased to make the aircraft rules 1937 .

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Now, the aircraft rules 1937 they are divided into various parts.

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You can see on the slide part 1 is regarding preliminary, part 2 is regarding general conditions of flying, part 3 is general safety conditions, part 4 is registration and marking of aircraft, part 5 personnel of aircraft, part 6 is for airworthiness, we are mainly

concerned with the air worthiness of aircrafts. Since the since the courses for aircraft maintenance we will be seeing this airworthiness part in details, part 7 is radio telegraph apparatus, part se 8 is aeronautical beacons ground lights and false lights, part 9 log books.

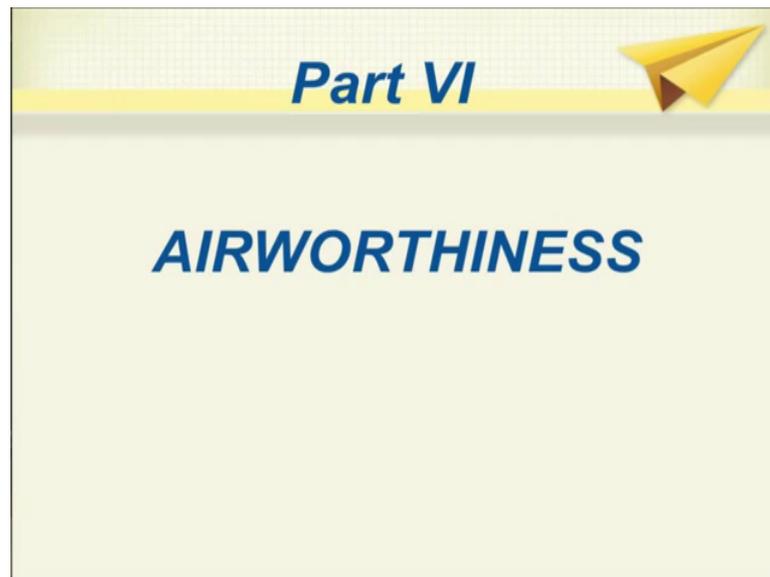
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PART X-A	<a href="#">Omitted vide GSR 536(E) dated 5th July 2012</a>
PART XI	<a href="#">Aerodromes</a>
PART XII	<a href="#">Personnel Of Air Traffic Services</a>
PART XII-A	<a href="#">Aeronautical Telecommunication</a>
PART XII-B	<a href="#">Regulatory Provisions</a>
PART XII-C	<a href="#">Engineering, Inspection and Manual Requirements for Organisations other than Operators</a>
PART XIII	<a href="#">Air Transport Services and Aerial Work</a>
PART XIII-A	<a href="#">Engineering, Inspection and Manual Requirements -Owners or Operators</a>
PART XIV	<a href="#">General</a>

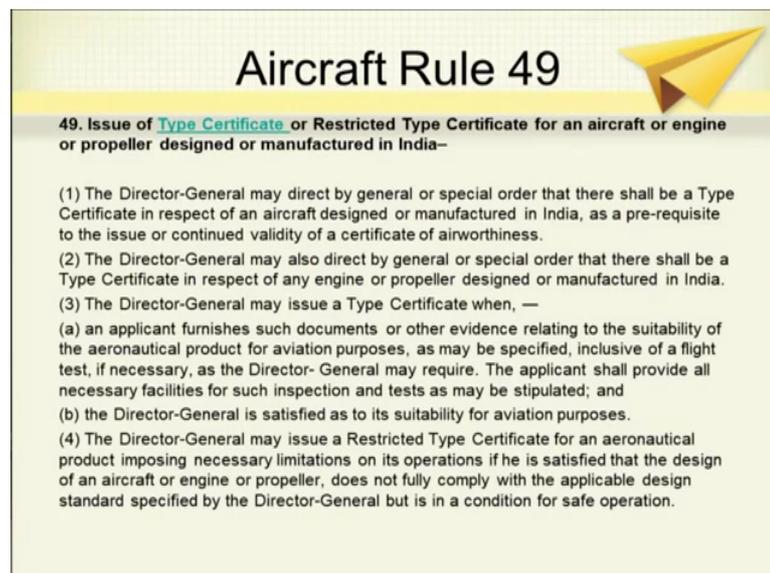
Part 10 A is omitted, part 11 is regarding aerodromes, part 12 personnel of air traffic services, part 12 A aeronautical telecommunication, part 12 B regulatory provisions, part 12 C engineering inspection and manual requirements for organisations other than operators, part 13 air transport services and aerial work, part 13 A engineering inspection and manual requirements owners or operators, part 14 is general.

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Now, coming to part 6 airworthiness we will be looking this part in detail.

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Under the airworthiness part there are various rules first is aircraft rule 49 the capital U the airworthiness part, that is part 6 covers aircraft rule 49 to aircraft rule 62. So, we are here at aircraft rule 49.

Aircraft rule 49 is regarding issue of type certificate or restricted type air certificate for an aircraft or engine or propeller designed or manufactured in India. Any aircraft any engine or any propeller, if it is designed or manufactured in India, the aircraft engine or

propeller has to be first type certified what is type certificate? Let us see what is type certificate?

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### TYPE CERTIFICATE

A type certificate is issued by a regulatory authority to signify the airworthiness of an aircraft manufacturing design or type. It is the determination made by the regulatory authority that the aircraft is manufactured according to approved design and the design ensures compliance with airworthiness requirements.

A type certificate is issued by a regulatory authority to signify the air worthiness of an aircraft manufacturing design or type. It is the determination made by regulatory authority that the aircraft is manufactured according to approved design and the design ensures compliance with airworthiness requirements.

Here the regulatory authority is the regulatory authority of the state where the aircraft engine or propeller is designed and manufactured. So, it is a type certificate issued by the regulatory authority of the country, where the aircraft is being manufactured to signify the airworthiness of an aircraft manufacturing design or type. This certificate signifies that the manufacture the aircraft being manufactured is air worthy, it is as per the approved design. It is the determination made by the regulatory authority that the aircraft is manufactured according to the approved design and the design ensures compliance with air worthiness requirements.

So, the director general the director general here means the director general of civil aviation may direct by general or special order. That there shall be a type certificate in respect of an aircraft designed or manufactured in India. As a pre requisite to the issue or continued validity of a certificate of air worthiness, in order of the aircraft engine or propeller is termed as air worthy it is given the clearance to fly.

It is a pre requisite condition that particular aircraft that engine or propeller, which has been designed manufactured, is type certified.

The director general may also direct by general or special order that there shall be a type certificate in respect of any engine or propeller designed or manufactured in India. The director general may issue a type certificate, when an applicant furnishes such documents or other evidence relating to the suitability or aeronautical product for aviation purposes as may be specified inclusive of a flight test is necessary as the director general may require.

The applicant shall provide all necessary facilities for such inspection or tests as may be stipulated and the director general is satisfied as to it is suitability for aviation purposes. The director general may issue a restricted type certificate for an aeronautical product imposing necessary limitations on it is operations, if he is satisfied that the design of an aircraft or engine or propeller does not fully comply with the applicable design standard specified by the director general, but is in a condition for safe operation.

In case if the director general is convinced that that aircraft being designed or manufactured is safe for operation, but it does not fully comply with the applicable design standards then the director general may issue a restricted type certificate for that particular product.

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## Aircraft Rule 49-A

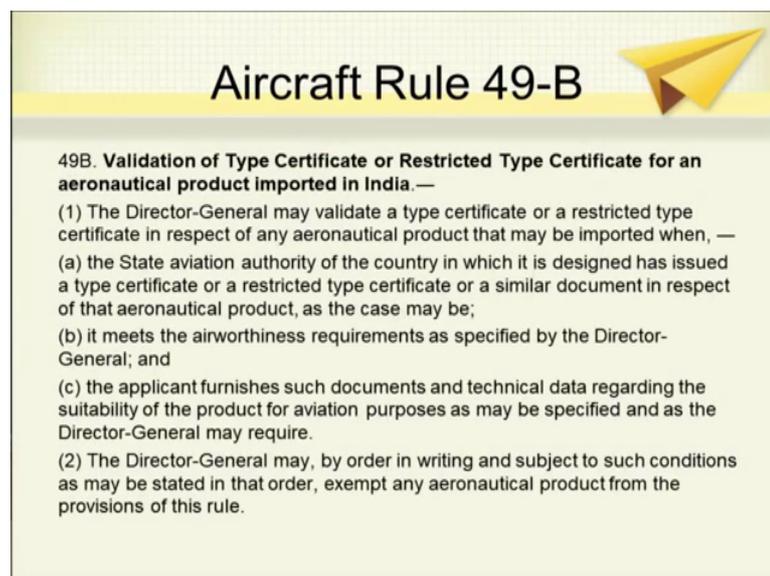
49A. Issue of [Type Certificate](#) or Restricted Type Certificate to an aircraft imported in India.— (1)  
The Director-General may direct by general or special order that there shall be a type certificate or restricted type certificate in respect of any aircraft imported in India.

(2) The Director-General may issue a type certificate or restricted type certificate in respect of any aircraft imported in India.

Rule 49 A is regarding issue of type certificate or restricted type certificate to an aircraft imported in India. The earlier one was you can see the earlier one aircraft rule 49 was regarding the aircraft engine or propeller designed or manufactured in India rule 49 A is regarding issue of type certificate or res restricted type certificate to an aircraft imported in India.

The director general may direct by general or special order that there shall be a type certificate or restrict restricted type certificate in respect of any aircraft imported in India. So, any aircraft being imported in the country also needs to be type certified the director general may issue a type certificate or restricted type certificate in respect of any aircraft imported in India.

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### Aircraft Rule 49-B

**49B. Validation of Type Certificate or Restricted Type Certificate for an aeronautical product imported in India. —**

(1) The Director-General may validate a type certificate or a restricted type certificate in respect of any aeronautical product that may be imported when, —

- (a) the State aviation authority of the country in which it is designed has issued a type certificate or a restricted type certificate or a similar document in respect of that aeronautical product, as the case may be;
- (b) it meets the airworthiness requirements as specified by the Director-General; and
- (c) the applicant furnishes such documents and technical data regarding the suitability of the product for aviation purposes as may be specified and as the Director-General may require.

(2) The Director-General may, by order in writing and subject to such conditions as may be stated in that order, exempt any aeronautical product from the provisions of this rule.

Now, rule 49 B. Rule 49 B states validation of type certificate or restricted type certificate for aeronautical product imported in India. So, any aeronautical product which is being imported in India, it is type certificate or restricted type certificate can be validated by the director general. The type certificate in this case or the restricted type certificate is issued by the regulatory authority of the country of manufacture and the same type certificate is validated by the director general in India.

The director general may validate a type certificate or a restricted type certificate, in respect of any aeronautical product that may be imported when? The state aviation authority of the country in which it is designed has issued a type certificate or a restricted

type certificate or a similar document in respect of that aeronautical product as the case may be it meets, the airworthiness requirements as specified by the director general and the applicant furnishes such documents and technical data regarding the suitability of the product for aviation purposes as may be specified and as the director general may require.

The director general may by order in writing and subject to such conditions as may be stated in that order exempt any aeronautical product from the provisions of this rule. So, this is rule 49 B, well any aeronautical product being imported in India needs to have a type certificate restricted type certificate and the type certificate restricted type certificate, which is issued why the state aviation authority of that country where it is manufactured, that type certificate can be validated by the director general in India.

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## Aircraft Rule 49-C

**49C. Type Certificate or Restricted Type Certificate- aeronautical product categories.—**

The type certificate or restricted type certificate of an aeronautical product when issued or validated may be grouped as an aeronautical product in one or more categories as may be specified. The operation of the aircraft shall be restricted to those categories.

Rule 49 C it is type certificate or restricted type certificate aeronautical product categories the type certificate or restricted type certificate of an aeronautical product, when issued or validated may be grouped as an aeronautical product in one or more categories as may be specified. The operation of the aircraft shall be restricted to those categories.

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## Aircraft Rule 49-D

**49D. Cancellation, suspension of or endorsement on Type Certificate or Restricted Type Certificate.**— If at any time the Director-General is satisfied that there is a reasonable doubt to indicate that the safety of the aeronautical product is imperilled because of a defect, he may cancel, suspend or endorse the type certificate or restricted type certificate issued or validated for the aeronautical product having defect, or may require the incorporation of any modification as a condition for the type certificate or restricted type certificate remaining in force, as the case may be.

Rule 49 D is cancellation, suspension of or endorsement on type certificate or restricted type certificate. So, type certificate or restricted type certificate may also be cancelled suspended or some endorsement can be made on it you can see when if at any time the director general is satisfied, that there is a reasonable doubt to indicate that the safety of the aeronautical product is imperilled.

Because of a defect he may cancel, suspend or endorsed the type certificate or restricted type certificate, issued or validated for the aeronautical product having defect, or may require the incorporation of any modification as a condition for the type certificate or restricted type certificate remaining in force as the case may be.

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## Aircraft Rule 49-E

**49E. Recognition of Type Certificate or Restricted Type Certificate of an aeronautical product issued by a Contracting State.**— The Director-General may accept the type certificate or restricted type certificate in respect of an aeronautical product issued by a Contracting State whose airworthiness requirements shall be in accordance with these rules, if—

- (a) the State aviation authority of the State in which it is designed has issued a type certificate or restricted type certificate in respect of that aeronautical product;
- (b) it meets the airworthiness requirements specified by the Director-General; and
- (c) the applicant furnishes documents and technical data as may be required to assess the suitability or safety of the aeronautical product.

Recognition of what type certificate or restricted type certificate of an aeronautical product, issued by a Contracting State; this is aircraft rule 49 E, where the type certificate or restricted type certificate of an aeronautical product issued by a contracting state can be recognized by the director general in India.

The director general may accept the type certificate or restricted, type certificate in respect of an aeronautical product issued by a contracting state whose airworthiness requirements shall be in accordance with these rules.

If the state aviation authority of the state in which it is designed has issued a type certificate or restricted type certificate in respect of that aeronautical product. It meets the air worthiness requirements specified by the director general and the applicant furnishes documents and technical data as may be required to assess the suitability or safety of the aeronautical product.

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## Aircraft Rule 49-F

**49F. Issue of Supplemental Type Certificate in respect of an aeronautical product.**— The Director-General may issue a supplemental type certificate in respect of any aeronautical product for which a type certificate or a restricted type certificate has been issued or validated or accepted as provided in rules 49A, 49B and 49E, and which has undergone a structural modification or installation of new item of equipment on account of the following reasons, namely:-

- (a) the aeronautical product in-service has developed deficiencies that may affect the safety or performance of the product;
- (b) there is a genuine need of the operator to change the configuration of the aeronautical product; and
- (c) there is a need to change or install new item of equipment for the purpose of enhancing safety or to bring in more user comfort.

Now, we come to aircraft rule 49 f it is issue of supplemental type certificate in respect of an aeronautical product. First of all let us see what is supplemental type certificate?.

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### SUPPLEMENTAL TYPE CERTIFICATE (STC)

- A supplemental type certificate (STC) is a type certificate (TC) issued when an applicant has received Civil Aviation Regulatory authority approval to modify an aeronautical product from its original design. The STC, which incorporates by reference the related TC, approves not only the modification but also how that modification affects the original design.

So, supplemental type certificate is a type certificate issued when applicant has received civil aviation regulatory authority approval to modify an aeronautical product from it is original design. The STC which incorporates by reference, the related TC that is the type certificate approves not only the modification, but also how that modification affects the original design.

So, you can see STC or a supplemental type certificate it is a type certificate, which is issued when the type certificate is once the type certificate is already issued and if some modification is to be done in that type certified product, then after complying all the requirements a supplemental type requirement can be issued.

So, rule 49 f is regarding issue of supplemental type certificate or the STC in respect of an aeronautical product. The director general may issue a supplemental type certificate in respect of any aeronautical type product for which a type certificate or a restricted type certificate has been issued or validated or accepted.

As provided in rules 49 A 49 B and 49 E and which has undergone a structural modification or installation of new item of equipment on account of the following reasons namely. The aeronautical product in service has developed efficiencies, that may affect the safety or performance of the product, there is a genuine need of the operator to change the configuration of the aeronautical product.

And there is a need to change or install new item of equipment for the purpose of enhancing safety or to bring in more user comfort. So, you have seen the reasons why a person may require a supplemental type certificate, in case the aeronautical product, in service has developed some deficiencies and for the safety or performance of the product you need to modify the product. So, you need a STC for that there is a genuine reason for the operator to change the configuration of the aeronautical product or there is a need to change or install, new item of equipment for the purpose of enhancing safety or making it more comfortable.

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## Aircraft Rule 49-G

**49G. Recognition of Supplemental Type Certificate issued by a Contracting State.—**

The Director- General may accept a Supplemental Type Certificate issued by a Contracting State in respect of the aeronautical product, if,—

- (a) the airworthiness requirements of that Contracting State are acceptable in accordance with the Indian law; and
- (b) sufficient evidence is provided (including flight tests if required) by the applicant in respect of the safety and airworthiness of the product.

Now, rule 49 G, aircraft rule 49 G is regarding recognition of supplemental type certificate issued by a contracting state. The director general may accept a supplemental type certificate issued by a contracting state in respect of the aeronautical product. If the airworthiness requirement of that contracting state are acceptable in accordance with the Indian law and sufficient evidence is provided including flight test, if required by the applicant in respect of the safety and airworthiness of the product.

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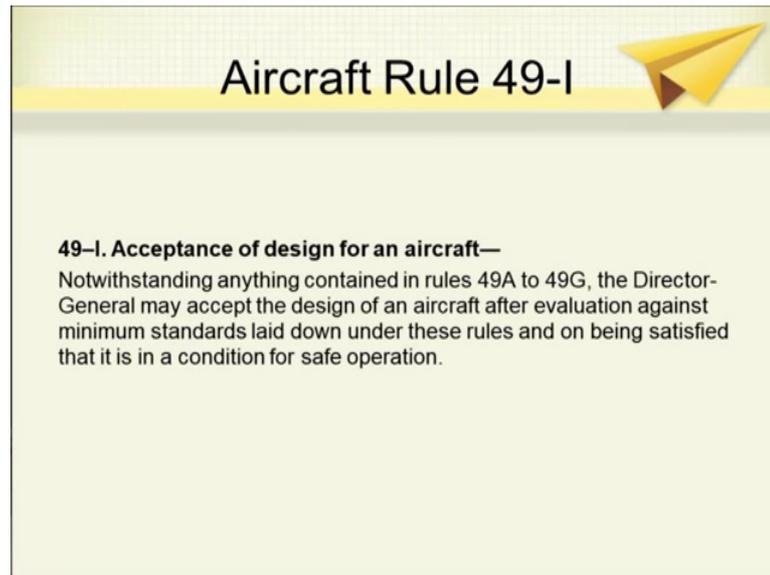
## Aircraft Rule 49-H

**49H. Regulation and control of aircraft components and items of equipment.—**

The aircraft components and items of equipment not covered under rule 49A to 49G shall be in accordance with the requirements specified by the Director-General under rule 133A".

Aircraft rule 49 H is regarding regulation and control of aircraft components and items of equipment, the aircraft component and items of equipment not covered under the rule 49 A to 49 G, shall be in accordance with the requirements specified by the director general under rule 133 A. So, rule 133 A it can be seen there is a link here you can refer rule 133 A via this link.

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Aircraft rule 49-I is regarding acceptance of design for an aircraft not withstanding anything containing in rules 49 A to 49 G, the Director-General may accept the design of an aircraft after evaluation, against minimum standards laid down under these rules and on being satisfied that it is in a condition for safe operation.