A "user's manual" containing at least the following information regarding the operation and the maintenance of the aircraft should be acceptable.

MANUEL D'UTILISATION / GEBRUIKERSHANDBOEK / USER'S MANUAL

Aeroplane

A - PILOT'S HANDBOOK

1. General

(a) The operating limitations and other information necessary for safe operation must be made available to the pilot in the form of markings and / or placards as prescribed in § 5.

(b) The weight and center of gravity limitations must be established as operating limitations.

(c) The units of measurement used in the User's Manual or Pilot's Notes must be the same as those used on the instruments and the placards.

2. Operating limitations

(a) Airspeed limitations.

The information necessary for the marking of the hereunder airspeed limits on the airspeed indicator, as required in § 5.3 must be available.

The speeds Vso, V_{NO}, V_{NE} (V_{LO}, V_{LE}, where appropriate).

(b) Weights and center of gravity.

The following information must be available :

(1) The maximum weight.

(2) Any other weight limits, if necessary.

(3) The "in flight c.g. limits" and if pertinent, the "empty weight c.g. limits".

(c) Manoeuvres. The authorised manœuvres must be described or at least the forbidden manoeuvres.

(d) Powerplant limitations.

The following powerplant limitations must be established:

(1) Take-off operation.

(i) The maximum rotational speed (rpm);

(ii) The maximum allowable manifold pressure for aeroplanes equipped with a variable pitch propeller or supercharger;

(iii) The maximum allowable cylinder head (as applicable), liquid coolant, and oil temperatures.

(2) Continuous operation.

(i) The maximum rotational speed;

(ii) The maximum allowable manifold pressure for aeroplanes equipped with a variable pitch propeller or supercharger;

(3) The maximum allowable cylinder head, oil, and liquid coolant temperatures.

(e) Fuel grade.

The minimum fuel grade must be specified.

3. Operating data and procedures

Information concerning normal and emergency procedures and other pertinent information necessary for safe operation must be furnished, including :

(a) The stall speed in the various configurations.

(b) Recommended recovery procedure to recover from an inadvertent spin.

(c) Special procedures to start the engine in flight, if necessary.

(d) Information on the total quantity of usable fuel, and conditions under which the full amount of usable fuel in each tank can safely be used.

4. Performance information

The following information must be furnished:

(1) The take-off distance, the aircraft configuration (if pertinent), and the pertinent information with respect to cowl flap position, use of flight path control devices, and use of the landing gear retraction system.

(2) The landing distance, the aircraft configuration (if pertinent), and the pertinent information with respect to flap position and the use of flight-path control devices.

(3) The best rate of climb and the speed for the best rate of climb, the airspeed, power, and the aircraft configuration.

(4) The crosswind velocity and procedures and information pertinent to operation of the aircraft in crosswinds, and
(5) V_X (speed for best angle of climb).
(6) The approach speeds.

5. Markings and placards)

5.1. General

(a) The aircraft must contain
(1) The markings and placards specified in §5.3. to 5.8 and
(2) Any additional information, instrument markings, and placards required for the safe operation if it has unusual design, operating, or handling characteristics.

(b) Each marking and placard prescribed in sub-paragraph (a) of this paragraph
(1) Must be displayed in a conspicuous place; and
(2) May not be easily erased, disfigured, or obscured.

5.2. Instrument markings

For each instrument
(a) When markings are on the cover glass of the instrument, there must be means to maintain the correct alignment of the glass cover with the face of the dial; and
(b) Each arc and line must be wide enough and located to be clearly visible to the pilot.

5.3. Airspeed indicator

(a) Each airspeed indicator must be marked as specified in sub-paragraph (b) of this paragraph, with the marks located at the corresponding indicated airspeed.
(b) The following markings must be made;

- White arc - commonly referred to as the flap operating range.
  Lower limit of white arc (VS0) - the stalling speed or the minimum steady flight speed in the landing configuration. In small aircraft, this is the power-off stall speed at the maximum landing weight in the landing configuration (gear and flaps down).
  Upper limit of the white arc (VFE)—the maximum speed with the flaps extended.
- Green arc—the normal operating range of the aircraft. Most flying occurs within this range.
  Lower limit of green arc (VS1)—the stalling speed or the minimum steady flight speed obtained in a specified configuration. For most aircraft, this is the power-off stall speed at the maximum takeoff weight in the clean configuration (gear up, if retractable, and flaps up).
  Upper limit of green arc (VNO)—the maximum structural cruising speed. Do not exceed this speed except in smooth air.
- Yellow arc—caution range.
  Fly within this range only in smooth air, and then, only with caution.
- Red line (VNE)—never exceed speed.
  Operating above this speed is prohibited since it may result in damage or structural failure.

5.4. Magnetic direction indicator

(a) The placard must show the calibration of the instrument in level flight with the engine operating.
(b) The placard must state whether the calibration was made with radio receivers on or off;
(c) Each calibration reading must be in terms of magnetic headings in not more than 30° increments.

5.5. Powerplant instruments

For each powerplant instrument, as appropriate to the type of instrument:
(a) Each maximum and if applicable, minimum safe operating limit must be marked with a red radial or red line;
(b) Each normal operating range must be marked with a green arc or green line not extending beyond the maximum and minimum safe limits;
(c) Each take-off and precautionary range must be marked with a yellow arc or a yellow line; and
(d) Each engine or propeller range that is restricted because of excessive vibration stresses must be marked with red arcs or red lines.

5.6. Oil quantity indicator

Each oil quantity indicator must be marked to clearly indicate the maximum and minimum quantity of oil that is acceptable.

5.7. Control markings

(a) Each cockpit control, other than primary flight controls and simple push button type starter switches, must be plainly marked as to its function and method of operation.

(b) Each secondary control must be suitably marked.

(c) For powerplant fuel controls :

(1) Each fuel tank selector control must be marked to indicate the position corresponding to each tank and to each existing cross feed position;

(2) If safe operation requires the use of any tanks in a specific sequence, that sequence must be marked on or near the selector for those tanks.

(d) For accessory, auxiliary, and emergency controls

(1) If retractable landing gear is used the indicator must be marked so that the pilot can, at any time ascertain that the wheels are secured in the extreme positions; and

(2) Each emergency control must be red and must be marked as to method of operation.

5.8. Miscellaneous markings and placards

(a) Baggage and cargo compartments, and ballast location.
Each baggage and cargo compartment, and each ballast location, must have a placard stating any limitations on contents, including weight, that are necessary under the loading requirements.

(b) Fuel and oil filler openings.
The following apply:

(1) Fuel filler openings must be marked at or near the filler cover with the minimum fuel grade, fuel designation, fuel capacity of the tank, and for each 2-stroke engine without a separate oil system, fuel/oil mixture ratio.

(2) Oil filler openings must be marked at or near the filler cover :

(i) With the grade; and

(ii) If the oil is detergent or non-detergent.

(c) Fuel tanks.
The usable fuel capacity of each tank must be marked on the fuel quantity indicator.

(d) When an emergency exit is provided, each operating control must be red. The placards must be near each control and must clearly indicate its method of operation.

(e) The system voltage of each direct current installation must be clearly marked adjacent to its external power connection.

B - MAINTENANCE MANUAL

The informations that are essential for proper maintenance must be provided. The applicant must consider at least the following in developing the essential information:

1. Description of systems.
2. Lubrication instructions setting forth the frequency and the lubricants and fluids which are to be used in the various systems.
3. Pressures and electrical loads applicable to the various systems.
4. If necessary, tolerances and adjustments necessary for proper functioning of the aircraft.
5. If pertinent, methods of leveling, jacking, raising and ground towing.
6. If pertinent, special inspection techniques.
7. Statement of service life limitations (replacement or overhaul) of parts, components and accessories subject to such limitations.
8. List of placards and markings and their locations.
9. If pertinent , instructions for rigging and de-rigging.
10. Information on supporting points and means to prevent damage during ground transport, rigging and de-rigging.
11. Instructions for weighing the aircraft and determining the actual center of gravity.
12. Check list for inspection and periodic maintenance of the aircraft.