

## SECTION 2

# LIMITATIONS

---

### TABLE OF CONTENTS

CERTIFICATION STANDARDS .....	3
TYPE OF OPERATION .....	3
AIRSPPEED LIMITATIONS .....	3
AIRSPPEED INDICATOR MARKINGS .....	3
FLIGHT LOAD FACTOR LIMITS AT MAXIMUM WEIGHT .....	4
BALANCE .....	4
LOAD PLANNING .....	5
ENGINE LIMITATIONS .....	5
TACHOMETER MARKINGS .....	6
OIL .....	6
FUEL .....	6
LOAD LIMITS .....	6
OPERATION PLACARDS .....	7
USE LIMITS IN "U" CATEGORY .....	8
DEMONSTRATED CROSSWIND .....	8

4

Intentionally left blank

## CERTIFICATION STANDARDS

The DR400/180R aircraft has been certified on November 28, 1972 in the "NORMAL" and "UTILITY" category according to the following technical conditions:

- General conditions of the AIR 2052 standard, updated 6 June 1966
- Complementary conditions for conformity to FAR part 23 - Amendment 7
- Special conditions: the cockpit canopy must be jettisonable.

## TYPE OF OPERATION

Day VFR in non-icing conditions.

## AIRSPEED LIMITATIONS

Indicated Airspeed	km/h	kt
Vne, never exceed	308	166
Vno, normal operation	260	140
Va, manoeuvring speed	215	116
Vfe, flaps extended limit speed	170	92

## AIRSPEED INDICATOR MARKINGS

		km/h	kt
Red line (never exceed)	Vne	308	166
Yellow arc (operate with caution and only in "smooth air")	Vno-Vne	260-308	140 - 166
Green arc (normal operating range)	Vs1-Vno	99-260	53 - 140
White arc	Vso-Vfe	87-170	47 - 92

**FLIGHT LOAD FACTOR LIMITS AT MAXIMUM WEIGHT**

(2205 lb) 1000 kg (category "N")

Flaps up ..... n between - 1.9 and + 3.8

Flaps down ..... 0 to + 2

(2006 lb) 910 kg (category "U")

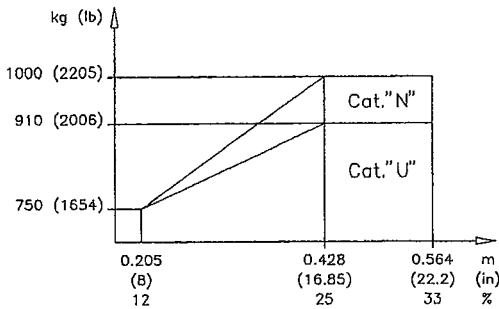
Flaps up ..... n between - 2.2 and + 4.4

Flaps down ..... 0 to + 2

**MAXIMUM AUTHORIZED WEIGHTS**

	Cat. "N"	Cat. "U"
On take-off	(2205 lb) 1000 kg	(2006 lb) 910 kg
On landing	(2205 lb) 1000 kg	(2006 lb) 910 kg

**BALANCE**



Levelling ..... upper fuselage longeron

Datum ..... wing leading edge, rectangular section

Reference Chord ..... (67.3 in) 1.71 m

## LOAD PLANNING

(Also refer to weight and balance chart, section 6)

The weight of the engine oil, as well as the unusable fuel must be included in the empty weight of the aircraft.

	Weight kg (lb)	Arm m (in)
Front seats	2 x 77 (2 x 170)	0.36 - 0.46 (14) - (18)
Rear seats (*)	2 x 77 (2 x 170)	1.19 (47)
Fuel, main fuselage tank	80 (176.4)	1.12 (44)
Baggage (**)	60 (132.3)	1.9 (75)

\* The carriage of more than two passengers (whose total weight remain below or equal to the maximum indicated) is authorized on the rear bench, provided that passenger seat belts are installed for each passenger and that weight and balance are kept within the authorized limits.

\*\* Within the authorized weight and balance limits.

## ENGINE LIMITATIONS

Continuous starter operation .....30 sec.  
 Maximum rpm (red line)..... 2700 rpm  
 Maximum cylinder head temperature (red line) ..... (500°F) 260°C

**TACHOMETER MARKINGS**

Red arc .....	2150 to 2350 rpm
Green arc .....	2350 to 2700 rpm
Red line .....	2700 rpm

**OIL**

Maximum temperature (red line).....	(244°F) 118°C
Normal temperature (green arc) .....	(140 to 244°F) 60 to 118°C
Normal pressure (green arc).....	(55 to 95 psi) 3.8 to 6.6 bar
Minimum pressure at idle (red line) .....	(25 psi) 1.70 bar
Maximum oil pressure (red line) .....	(115 psi) 7.9 bar
Total engine capacity.....	(8 US quarts) 7.6 l
Grades.....	see section 1

**FUEL**

Aviation gasoline .....	AVGAS 100 LL
Normal pressure .....	(0.5 to 8.0 psi) 35 to 550 mbar
Pressure indicator range .....	(1.2 to 5.1 psi) 80 to 350 mbar
Total fuel capacity .....	(24.2 Imp gal/29 US gal) 110 l

**LOAD LIMITS**

Number of occupants:	
Front seats .....	2
Rear seats .....	2

Baggage compartment:	
Maximum authorized weight.....	(132.3 lb) 60 kg

## OPERATION PLACARDS

The following information is displayed in the form of composite or individual placards.

In clear view of the pilot:

“THIS AIRCRAFT MUST BE USED FOR NORMAL OR UTILITY FLYING ONLY, IN ACCORDANCE WITH THE APPROVED FLIGHT MANUAL”

“ON THIS AIRCRAFT, ALL INDEXES, MARKINGS AND PLACARDS CORRESPOND TO NORMAL CATEGORY”

“FOR UTILITY CATEGORY, REFER TO THE APPROVED FLIGHT MANUAL”

“NO AEROBATIC MANEUVERES ALLOWED IN NORMAL CATEGORY”

“SPINS PROHIBITED”

“VA MANEUVERING SPEED: 215 km/h – 116 kt”

“APPROVED FOR VFR FLIGHT BY DAY OR BY NIGHT IN NON-ICING CONDITIONS”

“NO SMOKING”

“FOR TOWING INSTRUCTIONS, SEE APPROVED FLIGHT MANUAL”

In the baggage bay:

“BAGGAGE BAY MAX. LOAD 60 KG – SEE LOADING DIAGRAM”

On the canopy jettisoning levers:

“CANOPY RELEASE (PULL)”

Next to the cable release handle:

“TOWING HOOK PULL TO RELEASE CABLE”

**USE LIMITS IN “U” CATEGORY**

Following manoeuvres are authorized within the limits of this category:

- Lazy eights, chandelles (zoom) and steep turns.
- Precautionary stalls.

These manoeuvres can be done in the following conditions:

- Rear seats must be empty
- Entry and exit speeds must be within the flight envelope

**DEMONSTRATED CROSSWIND**

40 km/h – 25 mph – 22 kt