
Limitations

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GENERAL

The data approved by Lancair International and the Limitations presented herein are those established by Lancair as applicable to the Models 320 aircraft. The altitude related speed limitations were added following EAS (form 13) vibration tests and therein calculated speed's.

AIRCRAFT OPERATING SPEEDS, Lancair 320

Operation speed limitation = f (altitude)

Never Exceed Speed V_{ne} Red Line 255Mph
[CAS]

Altitude (ft)	TAS (mph)	IAS (mph)
6 000	255	237
8 000	255	230
10 000	255	223
12 000	255	217
14 000	255	210
16 000	255	203

SPEED	MARKING	CAS Mph
Caution, smooth air only	Yellow Arc	200-255
Maneuvering Speed V_a		170
Normal Operating Range V_{no}	Green Arc	100-200
Full Flap Operating Range V_{fe}	White Arc	65-115
Landing Gear Speed V_{le}/V_{lo}		140

POWERPLANT LIMITATIONS

Engine

A standard aircraft engine Lycoming IO 320-E2A (150 HP) powers this Lancair. It is a horizontally opposed, air-cooled, four cylinder engine made by Textron Lycoming.

OPERATING LIMITATIONS, Lancair 320

150 HP, IO-320-E2A Specification

Power Settings

Full Throttle, 150 HP	2700 rpm
75% Power, 112 HP	2450 rpm
65% Power, 97 HP	2350 rpm
Normal Operation (cruise)	600 (idle) - 2700 rpm

10/15/01

Cylinder Head Temperatures

Normal Operating Range, green arc	275-425 °F
High Operating Range, yellow arc	426-499 °F
Maximum, red line	500 ° F (260 ° C)

Oil Pressures

Minimum Operating (idle) red line	>25 psi
Normal Operating Range, green arc	60-99 psi
Maximum, red line	100 psi

Fuel Pressure

Minimum, amber light ON	< 14 psi
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FUEL GRADES (Aviation Gasoline), Lancair 320

100LL* or 100** minimum,
*Blue, **Green, maximum lead content 2 cc/gal.

OIL SPECIFICATION

The used Oil Specification should be the MIL L 22851 conforming to the applicable Lycoming engine handbook. Break-in (the first 50 hours or until oil consumption has stabilized) should be accomplished using a corrosion preservative oil or straight mineral oil. During Break-in, low-power settings (less than 65-75%) should be avoided.

POWERPLANT INSTRUMENT MARKINGS

OIL TEMPERATURE

Caution (Yellow Arc)	100-160 °F
Normal Operating Range (Green arc)	161-220 °F
Maximum (Red radial)	245 °F

OIL PRESSURE

Minimum (Idle) red line	25 psi
Operating Range (Green arc)	60 - 99 psi
Maximum (Red line)	100 psi

TACHOMETER

Operating Range (Green arc)	600 - 2700 rpm
Maximum (Red radial)	2700 rpm

CYLINDER HEAD TEMPERATURE

Operating Range (Green arc)	275 – 425 °F
Caution Range (Yellow arc)	429 – 499 °F
Maximum (Red line)	500 ° F

MANIFOLD PRESSURE

Operating Range (Green arc)	15 - 24 in Hg.
Maximum (Red radial)	29.6 in. Hg.

HYDRAULIC PRESSURE

(Not normally monitored)

Gear up	1'200 psi
Gear down	0 to 600 psi

WEIGHT LIMITS, Lancair 320

Maximum Take-off Weight	1685 lbs / 764 kg
Maximum Landing Weight	1685 lbs / 764 kg
Standard Empty Weight	1036 lbs / 470 kg
Maximum Baggage Weight (check CG)	40 lbs / 18 kg

CENTER OF GRAVITY LIMITS (Gear Extended)

The allowable Center of Gravity (GC) range is from Fuselage Station (FS) 629 mm to FS 740 mm. The aft CG limit is FS 740 mm, and must be considered a firm limit. Loadings, which place the CG, further aft are dangerous and must not be accepted. A "Weight and Balance" sheet must be completed and carried in the aircraft at all times. See Section VI.

REFERENCE DATUM

The datum, i.e. Fuselage Station zero (0) is the back (aft) side of the firewall. (This is easily located through the nose wheel gear well.)

MANEUVER LIMITS

This Lancair Model 320 aircraft is certified in the EXPERIMENTAL category.

- Spins are not recommended.
- Aerobatic maneuvers are not allowed.

WARNING

Since the engine do not have an inverted oil system, extreme care must be used during low or negative "g" maneuvers. Transient oil pressure conditions near zero must be limited to less than two (2) seconds.

FLIGHT LOAD FACTOR LIMITS

Flaps up, at MAX gross weight	+3,8 to -1,5 g's
Flaps down, at MAX gross weight	+2,0 to -1,0 g's

TYPES OF OPERATIONS AND LIMITS

The Lancair Models 320 are approved for the following types of flight when the required equipment is installed and operations are conducted as defined in the LIMITATIONS section1.

- VFR, day.

WARNING

Flight operations with passengers for hire and flight into known icing is prohibited.

FUEL QUANTITIES

Header tank (usable)

11Gal (42 Lt.)

Wing tanks (usable)

32 Gal (121 Lt.)

FUEL MANAGEMENT

Do not take-off without less than the minimum Trip and JAR additional Alternate-Fuel for 45 Min.

For take-off, forward tank must be almost full (35 – 40 Liters). For landing, minimum 20 liters.

SEATING AND OPERATION

These aircraft is a two Seat-Airplane (side by side), and must be flown from the left side. The aircraft has single rudder pedals and brakes (only on the left side).

PLACARDS

NOTE

There is one placard, which must be installed.

1. The word "EXPERIMENTAL" must be placed where it can be permanently seen upon entry into the cabin. These letters must be at least 3 inches high, and contrast sufficiently to be seen at entry.



NOTES