CESSNA 310 "L" (1967)

AVTECH TOTAL RECALL®

Vso	**75MPH**
Vs1	**84MPH**
Vmc	**87MPH**
Vr ..... (FAA REC. / Vmc + 5MPH)	**92MPH**
Vx ..... (SINGLE ENGINE 108MPH) (SL)	**97MPH**
Vsse	**105MPH**
Vy .... (SINGLE ENGINE 113MPH) (SL)	**124MPH**
Vfe ..... (15° @ 180MPH)	**140MPH**
Vlo	**160MPH**
Va ..... (GROSS)	**170MPH**
Vno	**210MPH**
Vne	**257MPH**

POWER PLANT DATA

CONTINENTAL	IO-470
MAXIMUM GROSS WEIGHT	5200LBS
FUEL CONSUMPTION	30GPH

APPROACH SPEEDS

FLAPS DOWN	105MPH

(BLUE LINE UNTIL RUNWAY IS MADE)

PRE - FLIGHT COCKPIT INSPECTION

DOCUMENTS (AROW)	ON BOARD
MASTER SWITCH	ON
FUEL QUANTITY	CHECK
FLAPS	DOWN
MASTER SWITCH	OFF
CONTROL LOCK	REMOVE

EXTERIOR INSPECTION

RIGHT WING ..... CHECK
(CONTROL SURFACES,PITOT,FUEL QTY./SUMP)
RIGHT MAIN GEAR ..... CHECK
(STRUT,BOLTS,BRAKE LINES,TIRE COND.)
ENGINE COMPARTMENT *(L / R)* .... CHECK
(CLEAN,OIL QTY./LEAKS,FUEL STRAIN,NESTS)
NOSE GEAR *(STRUT,TIRE,NUTS,BOLTS)* CHECK
PROPELLER .... *(NICK,DENTS,TIGHTNESS,ETC)*
LEFT WING ..... CHECK
(CONTROL SURFACES,PITOT,FUEL QTY./SUMP)
LEFT MAIN GEAR ..... CHECK
(STRUT,BOLTS,BRAKE LINES,TIRE COND.)
FUSELAGE LEFT SIDE .. *(CONDITION)* CHECK
TAIL SECTION *(COND.HINGES,ETC.)* ... CHECK
FUSELAGE RIGHT SIDE .... *(COND)* CHECK

BEFORE STARTING CHECKLIST

LANDING GEAR *(LIGHTS/CHECK)*	DOWN / LOCKED
PARKING BRAKE	SET
SEATS / SEAT BELTS	SECURE
ELECTRICAL EQUIPMENT	OFF
CIRCUIT BREAKERS	CHECK / IN
FUEL SELECTORS	PROPER TANKS
ALTERNATE AIR	OFF
MASTER SWITCH / GENERATORS	ON
FLAPS	UP

ENGINE STARTING CHECKLIST

MIXTURES / PROPELLERS	RICH / FORWARD
THROTTLE	1" OPEN
MAGNETOS	ON
AREA	CLEAR
FUEL PUMP (CHECK PRESSURE)	ON / PRIME
STARTER	ENGAGE
FUEL PUMP	OFF / AFTER START
THROTTLE	800-1000RPM
OIL PRESSURE / ALTERNATOR(S)	CHECK / ON

LIGHTS AS REQUIRED / AVIONICS SWITCH(S) ON

BEFORE TAKE-OFF CHECKLIST

PARKING BRAKE	SET
DOORS / WINDOWS	CLOSED / LOCKED
FLIGHT CONTROLS	CHECK
FUEL SELECTORS	PROPER TANKS
MIXTURES / PROPS	AS REQ. / FWD
THROTTLES	1700RPM
FUEL PUMPS (CHECK PRESSURE)	OFF
MAGNETOS	CHECK

(MAXIMUM DROP 125RPM /MAXIMUM DIFF. 50RPM)

PROPELLERS	(GOV./FEATHER) CYCLE / *FWD*
VACUUM	CHECK
ALTERNATE AIR	CHECK / COLD *(OFF)*
GENERATOR / WARNING LIGHTS	CHECK
FUEL PUMPS (CHECK PRESSURE)	ON
THROTTLES	IDLE
TRIM / FLAPS	SET
ENGINE INSTRUMENTS	(GREEN) CHECK
CLOCK / TIME-OFF / TRANSP	SET / LOG / ALT

NORMAL TAKE-OFF

FLAPS / FUEL PUMPS	AS REQ. / ON
MIXTURES / ALT.AIR	AS REQUIRED / COLD
PROPELLERS	FORWARD
THROTTLES	MAXIMUM POWER
ROTATE	92MPH
POSITIVE RATE	GEAR UP
CLIMB SPEED *(FLAPS UP)*	124MPH

SHORT FIELD TAKE-OFF

FLAPS / FUEL PUMPS	AS REQ.(15°) / ON
BRAKES	APPLY FULL
MIXTURES / ALT.AIR	AS REQUIRED / COLD
PROPELLERS	FORWARD
THROTTLES	MAXIMUM POWER
BRAKES	RELEASE
ROTATE	92MPH
POSITIVE RATE	GEAR UP
CLIMB SPEED	(Vyse- 120MPH) (Vx) 97MPH
(OBSTACLES CLEARED) *(FLAPS UP)*	124 -140MPH

CRUISE CHECKLIST

POWER	AS REQUIRED
PROPELLERS	AS REQUIRED
MIXTURE CONTROLS	(FUEL FLOW) ADJUST
TRIM	SET
FUEL PUMPS	OFF

DESCENT CHECKLIST

FLIGHT INSTRUMENTS ..... SET
MIXTURE ..... ADJUST
POWER ..... AS REQUIRED
FUEL PUMPS ..... ON
FUEL SELECTORS ..... PROPER TANKS (MAIN)

(SET DESCENT SPEED TO ALLOW FOR TURBULENCE)

OBTAIN ATIS OR CURRENT AIRPORT WEATHER

PLAN A DESCENT RATE THAT WILL BE COMFORTABLE FOR YOUR PASSENGERS!

BEFORE LANDING CHECKLIST

SEATS / SEAT BELTS ..... SECURE
FUEL PUMPS ..... ON
FUEL SELECTORS ..... PROPER TANKS (MAIN)
GEAR ..... DOWN / LOCKED
MIXTURES ..... RICH / AS REQUIRED
PROPELLERS ..... FORWARD
GUMPS .... (GAS,UNDER,MIX,PROPS,SWITCH(S))
ALTERNATE AIR ..... AS REQUIRED

NORMAL LANDING

APPROACH (BLUE LINE UNTIL RUNWAY MADE) (F/DN) 105MPH

SHORT FIELD LANDING

APPROACH SPEED (BLUE LINE UNTIL RUNWAY MADE) 105MPH
FLAPS ..... FULL
THROTTLES ..... IDLE
(AFTER CLEARING ALL OBSTACLES)
TOUCHDOWN ..... BRAKES FIRM
FLAPS ..... RETRACT

BALKED LANDING PROCEDURES

THROTTLES ..... FULL
PROPELLERS ..... CHECK / FORWARD
POSITIVE RATE OF CLIMB ..... GEAR UP
CLIMB SPEED ..... (Vx -97MPH) (Vyse) 120MPH
POSITIVE RATE OF CLIMB ..... CHECK
FLAPS ..... RETRACT
(AFTER CLEARING ALL OBSTACLES)
REPEAT BEFORE LANDING INSTRUCTIONS ..... ABOVE

AFTER LANDING CHECKLIST

CLEAR OF RUNWAY ..... THEN
FUEL PUMPS ..... OFF
ALTERNATE AIR ..... COLD / OFF
FLAPS ..... UP
TRANSPONDER ..... STANDBY
LIGHTS ..... AS REQUIRED
CONTACT ..... GROUND CONTROL

SHUT DOWN CHECKLIST

ELECTRICAL EQUIPMENT ..... OFF
MIXTURES ..... IDLE-CUTOFF
MAGNETOS ..... OFF
MASTER SWITCH / ALTERNATORS ..... OFF
PARKING BRAKE ..... SET
CONTROL LOCK / GUST LOCK ..... INSTALL
AIRCRAFT ..... SECURE / TIE DOWN

ENGINE FAILURE TAKE-OFF ROLL

@ OR BELOW 105MPH (RWY REMAINING)

PILOTS DISCRETION - ABORT

THROTTLES ..... CLOSED
BRAKES ..... APPLY FULL
FLAPS ..... RETRACT
MIXTURE CONTROLS ..... IDLE-CUTOFF
MAGNETOS ..... OFF
MASTER SWITCH ..... OFF

ENGINE FAILURE AT TAKE-OFF

@ OR ABOVE 105MPH (NO RWY REM)

PILOTS DISCRETION - GO AROUND
MAINTAIN DIRECTIONAL CONTROL

THROTTLES, PROPELLERS, MIXTURES ..... FORWARD
GEAR, FLAPS ..... UP
FUEL PUMPS ..... ON / AS REQUIRED
FUEL SELECTORS ..... PROPER TANKS
MAGNETOS ..... ON
IDENTIFY (FOOT), VERIFY (THROTTLE), FEATHER (INOP)
INOPERATIVE ENGINE (MIXTURE,MAGS,PUMP) ..... OFF

ENGINE FAILURE IN FLIGHT

MAINTAIN DIRECTIONAL CONTROL @ 120MPH

THROTTLES, PROPELLERS, MIXTURES ..... FORWARD
GEAR, FLAPS ..... UP
FUEL PUMPS ..... ON / AS REQUIRED
FUEL SELECTORS ..... PROPER TANKS
MAGNETOS ..... ON
ALTERNATE AIR ..... ON
IDENTIFY (FOOT), VERIFY (THROTTLE), FEATHER (INOP)
INOPERATIVE ENGINE (MIXTURE,MAGS,PUMP) ..... OFF
CROSS FEED ..... AS REQUIRED

FOR AIR RESTART - REFER TO POH

ENGINE FIRE DURING START UP

CRANKING ..... CONTINUE

IF ENGINE STARTS :

THROTTLE 1800RPM
ENGINE ..... SHUTDOWN
ENGINE ..... INSPECT

IF ENGINE FAILS TO START:

THROTTLE ..... FULL OPEN
MIXTURE ..... IDLE-CUTOFF
CRANKING ..... CONTINUE
FIRE EXTINGUISHER ..... OBTAIN / ARM
ENGINE ..... SECURE
MAGNETOS ..... OFF
MASTER SWITCH ..... OFF
FUEL SELECTOR ..... OFF

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CESSNA 310I

CHECK LIST

NORMAL PROCEDURES

AIRSPEEDS FOR SAFE OPERATION

	MPH
Never Exceed	254
(Glide or dive, smooth air)	
Maximum Structural Cruising	210
(Level Flight or Climb)	
Design Maneuvering	170
Maximum Flaps Extended:	
Flaps 15°	160
Flaps 15°- 35°	140
Maximum Landing Gear Extended	140
Landing Light Extended	160
Best Twin-Engine Rate of Climb:	
Sea Level	121
10,000 Feet	119
Best Angle of Climb:	
Sea Level	93
15,000 Feet	109
Normal Cruise Climb	130 - 160
Safe Single Engine Speed	100
Minimum Single Engine Control VMC	85
Best Single Engine Angle of Climb Speed	105
Best Single Engine Rate of Climb Speed (Flaps Up)	116
Pilot's Window Open	130
Normal Approach Flaps Down	102

BEFORE STARTING THE ENGINES.

(1) Seats and Safety Belts -- Adjust and lock.
(2) Brakes -- Test and set.
(3) Landing Gear Switch -- Check DOWN.
(4) Battery Switch -- ON.

NOTE

When using an external power source, do not turn on the battery switch until external power is disconnected, to avoid a weak battery draining off part of the current being supplied by the external source.

(5) Generator Switches -- ON.

NOTE

If 50 ampere generators are installed, turn on one at a time as the engines are started.

(6) Landing Gear Lights -- Press to test (check Iris - open).
(7) Fuel Selectors - Left Engine -- LEFT MAIN (feel for detent).
Right Engine -- RIGHT MAIN (feel for detent).
(8) Trim Controls -- Set.
(9) Altimeter and Clock -- Set.
(10) Turn All Radio Switches -- OFF.

STARTING ENGINES (Left Engine First).

(1) Mixture -- Full Rich.
(2) Propeller -- High RPM.
(3) Throttle -- Open 1 inch.
(4) Magneto Switches -- ON.
(5) Start Engine.
(a) Primer Switch - Left Engine -- LEFT.
Right Engine -- RIGHT.
(b) Starter Button -- Press.

BEFORE TAKEOFF.

(1) Flight Controls -- Check (free and correct).
(2) Throttle Settings -- 1700 RPM.
(3) Engine Instruments -- Check.
(4) Generators -- Check.
(5) Magnetos -- Check (50 RPM maximum differential between magnetos).
(6) Induction Air Heat Source -- Check by noting RPM and manifold pressure drop.
(7) Propellers -- Check feathering to 1200 RPM; return to high RPM (full forward position).
(8) Vacuum Source -- Check source and suction (4.75 to 5.25 inches of mercury).

(9) Oil Temperature -- Check green arc.
(10) Trim Controls -- Check.
(11) Cabin Door and Windows -- Closed and locked.
(12) Flight Instruments and Radios -- Set.
(13) Auxiliary Fuel Pumps -- ON.

TAKEOFF.

NORMAL TAKEOFF.

(1) Wing Flaps -- 0°.
(2) Mixtures -- Lean for field elevation.

NOTE

Leaning during the takeoff roll is normally not necessary; however, should maximum takeoff or subsequent engine-out performance be desired, fuel flow should be adjusted to match field elevation.

(3) Induction Air -- Check COLD.
(4) Power -- Full throttle and 2625 RPM.

NOTE

Apply full throttle smoothly to avoid propeller surging.

(5) Maintain Level Attitude.
(6) Elevator Control -- Raise nose wheel at 90 MPH.
(7) Break Ground at 100 MPH.
(8) Brakes -- Apply momentarily.
(9) Landing Gear -- Retract.
(10) Climb Speed -- 121 MPH (best twin-engine rate-of-climb speed). (Set up climb speed as shown in "NORMAL CLIMB" paragraph.)
(11) Auxiliary Fuel Pumps -- OFF.

MAXIMUM PERFORMANCE TAKEOFF.

(1) Wing Flaps -- 15°.
(2) Power -- Full throttle and 2625 RPM.
(3) Maintain Level Attitude.
(4) Elevator Control -- Lift nose wheel at 75 MPH.

(5) Break Ground at 85 MPH -- Hold speed until all obstacles are cleared.
(6) Brakes -- Apply momentarily.
(7) Landing Gear -- Retract.
(8) Flaps -- Retract (after obstacles are cleared).
(9) Auxiliary Fuel Pumps -- OFF.

CLIMB.

NORMAL CLIMB.

(1) Airspeed -- 130 - 150 MPH.
(2) Power -- 24 inches Hg. and 2450 RPM.
(3) Mixtures -- Adjust to climb fuel flow.

MAXIMUM PERFORMANCE CLIMB.

(1) Airspeed -- 121 MPH at sea level; 119 MPH at 10,000 feet.
(2) Power -- Full throttle and 2625 RPM.
(3) Mixtures -- Adjust for altitude and power.

CRUISING.

(1) Cruise Power -- 23 -24 inches Hg. and 2100 - 2450 RPM.
(2) Mixtures -- Lean for desired cruise fuel flow as determined from your Cessna 310 Power Computer.
(3) Fuel Selectors - MAIN TANKS for first 60 minutes. After 60 minutes of flight, if auxiliary fuel tanks are installed, fuel selectors may then be placed in AUXILIARY position, and feel for detent.
    (a) If wing locker tanks are installed, fuel selectors - MAIN TANKS or, after wing locker tanks are transferred and main tank quantity is less than 30 gallons each - AUXILIARY TANKS.

NOTE

Turn auxiliary fuel pumps to LOW and mixtures to FULL RICH when switching tanks.

(4) Trim Tabs -- Adjust.
(5) If wing locker tanks are installed, Crossfeed -- SELECT as required to maintain fuel balance after wing locker tank fuel transfer.

CESSNA 310
CHECK LIST
EMERGENCY PROCEDURES

ENGINE-OUT PROCEDURES.

ENGINE-OUT ON TAKEOFF.
(With Sufficient Runway Remaining).

(1) Cut power and decelerate to a stop.

NOTE

The airplane can be accelerated from a standing start to 100 MPH on the ground, then decelerated to a stop with heavy braking within 3048 feet of the starting point of the takeoff run at sea level, and within 3863 feet of the starting point at 5000 feet altitude (zero wind, hard surface runway, standard conditions, full gross weight).

ENGINE-OUT AFTER TAKEOFF—ABOVE 100 MPH.
(Without Sufficient Runway Ahead).

(1) Throttles -- Full Forward.
(2) Propellers -- High RPM.
(3) Landing Gear -- UP.
(4) Determine Inoperative Engine (idle engine same side as idle foot).
(5) Propeller -- FEATHER (inoperative engine).
(6) Climb Out at 100 MPH.
(7) Accelerate to 116 MPH after Obstacle is Cleared.
(8) Wing Flaps -- UP (if extended) in small increments.
(9) Secure Inoperative Engine as Follows:
  (a) Auxiliary Fuel Pump -- OFF.
  (b) Mixture -- IDLE CUT-OFF.
  (c) Magneto Switches -- OFF.
  (d) Generator Switch -- OFF.
  (e) Fuel Selector Valve -- OFF.

ENGINE-OUT DURING FLIGHT.

(1) Determine Inoperative Engine (idle engine same side as idle foot).
(2) Power -- Increase as required.
(3) Mixture -- Adjust for altitude.

Before securing inoperative engine:

(1) Fuel Flow -- Check, if deficient, position auxiliary fuel pump switch to ON.

NOTE

If fuel selector valve is in AUXILIARY TANK position, switch to MAIN TANK and feel for detent.

(2) Fuel Quantity -- Check, and switch to opposite MAIN TANK if necessary.
(3) Oil Pressure and Oil Temperature -- Check, shut down engine if oil pressure is low.
(4) Magneto Switches -- Check.

If proper corrective action was taken, engine will restart. If it does not, secure as follows:

(1) Auxiliary Fuel Pump -- OFF.
(2) Mixture -- IDLE CUT-OFF.
(3) Propeller -- FEATHER.
(4) Turn off Generator, Magneto Switches and Fuel Selector Valve.
(5) Turn off Sufficient Electrical Equipment to Eliminate a Negative Ammeter Reading.

ENGINE RESTARTS IN FLIGHT (After Feathering).

(1) Fuel Selector Valve -- MAIN (feel for detent).
(2) Throttle -- Advance until gear warning horn is silent.
(3) Propeller -- HIGH RPM.

NOTE

With the optional propeller unfeathering system installed, the propeller will automatically windmill when the propeller lever is moved to the HIGH RPM position. As propeller unfeathers and starts to windmill, decrease propeller lever to cruise position.

(4) Mixture -- FULL RICH.
(5) Magneto Switches -- ON.
(6) Primer Switch -- Engage.
(7) Starter Button -- Press.
(8) Starter Button and Primer Switch -- Release when engine fires.
(9) Power -- Increase slowly until cylinder head temperature reaches 200° F.

NOTE

If start is unsuccessful, turn magneto switches OFF, retard mixture to IDLE CUT-OFF, open throttle fully, and engage starter for several revolutions. Then repeat air start procedures.

SINGLE-ENGINE APPROACH.

(1) Approach at 100 MPH with excess altitude.
(2) Landing Gear -- Extend when within gliding distance of field.
(3) Wing Flaps -- As required when landing is assured.
(4) Decrease speed below 100 MPH only if landing is a certainty.

SINGLE-ENGINE LANDING.

(1) Approach at 112 MPH with excess altitude.
(2) Delay extension of landing gear until within gliding distance of field.
(3) Avoid use of flaps until landing is assured.
(4) Decrease speed below 102 MPH only if landing is a certainty.

FORCED LANDING.
(Precautionary Landing with Power).

(1) Drag over selected field with flaps 15° and 100 MPH airspeed, noting type of terrain and obstructions.
(2) Plan a wheels-down landing if surface is smooth and hard (pasture, frozen lake, etc.).
(3) Execute a normal short-field landing, keeping nosewheel off ground until speed is decreased.
(4) If terrain is rough or soft, plan a wheels-up landing as follows:
   (a) Select a smooth grass-covered runway, if possible.
   (b) Landing Gear Switch -- UP.
   (c) Approach at 100 MPH with flaps down only 20°.
   (d) All Switches Except Ignition Switches -- OFF.
   (e) Unlatch Cabin Door Prior to Flare-out.

IMPORTANT

Be prepared for a mild tail buffet as the cabin door is opened.

   (f) Land in a slightly tail-low attitude.
   (g) Mixtures -- IDLE CUT-OFF (both engines).
   (h) Ignition Switches -- OFF.
   (i) Fuel Selector Valve Handles -- OFF.

NOTE

Airplane will slide straight ahead about 500 feet on smooth sod with very little damage.

FORCED LANDING (Complete Power Loss).

(1) Mixtures -- IDLE CUT-OFF.
(2) Feather propellers and rotate them to a HORIZONTAL position with starter, if time permits.
(3) Fuel Selector Valve Handles -- OFF.
(4) All Switches OFF except battery switch.
(5) Approach at 115 MPH.
(6) If field is smooth and hard, extend landing gear within gliding distance of field.
(7) Extend flaps as necessary within gliding distance of field.
(8) Battery Switch -- OFF.
(9) Make a normal landing, keeping nosewheel off the ground as long as practical.
(10) If terrain is rough or soft, plan a wheels-up landing as follows:
  (a) Select a smooth grass-covered runway if possible.
  (b) Landing Gear Switch -- UP.
  (c) Approach at 100MPH with flaps down only 20°.
  (d) Battery Switch -- OFF.
  (e) Unlatch cabin door prior to flare-out.
  (f) Land in a slightly tail-low attitude.

SYSTEM EMERGENCY PROCEDURES.

FUEL SYSTEM.

In the event of an engine-driven fuel pump failure, turn the auxiliary fuel pump switch (on the inoperative side) to ON. This pump will supply sufficient fuel for emergency takeoff, however, the mixture control must be reset.

IMPORTANT

If both an engine-driven fuel pump and an auxiliary fuel pump fail on the same side of the airplane, the failing engine cannot be supplied with fuel from the opposite MAIN tank since that auxiliary fuel pump will operate on