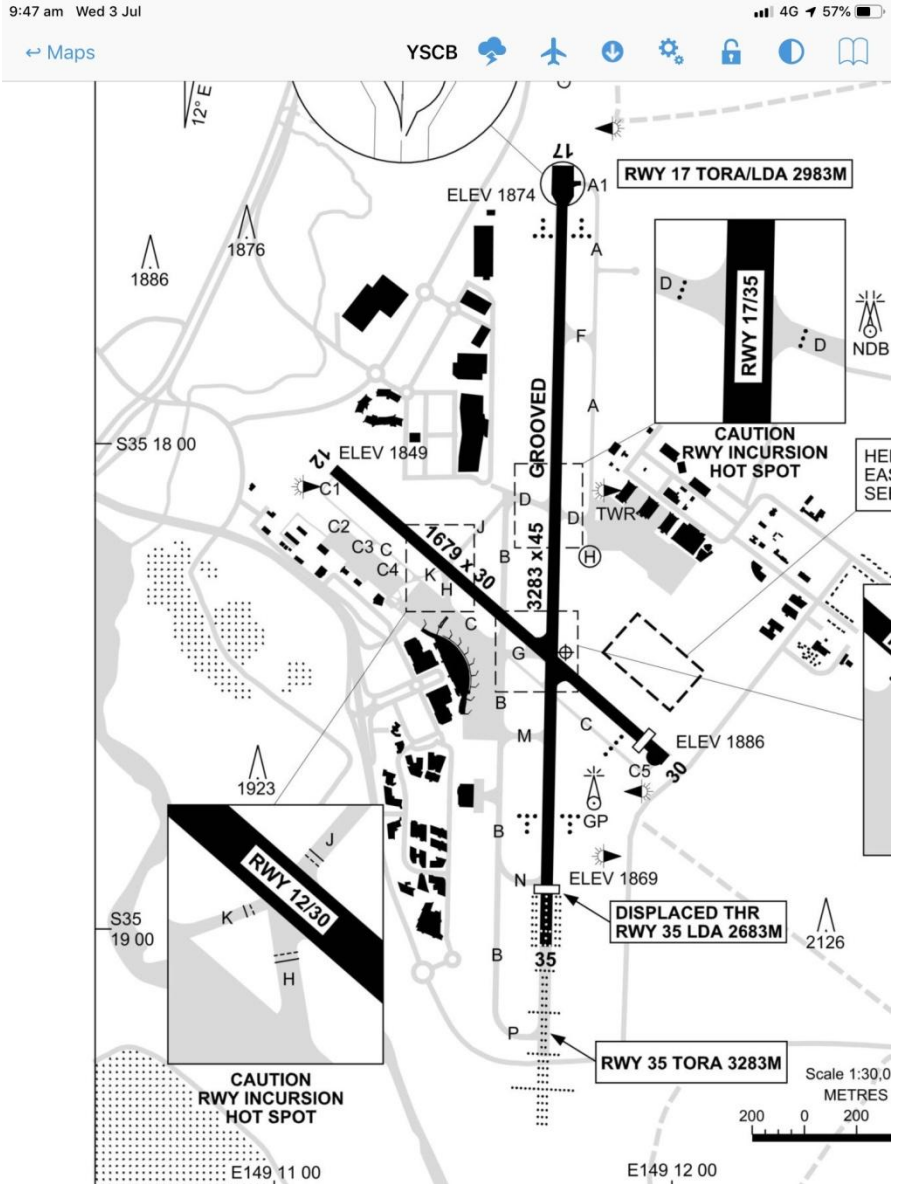


PIPER LANCE 1977. ITJ
BMT CORPORATIONS PTY LTD



PA32-LANCE
PILOT CHECKLIST



**PA32-LANCE ITJ (I Trust Jesus)
CHECKLIST and Performance Information**

Fuel Grade 100/130 green or 100 Blue	
Airspeeds for Normal Operation	
Best angle of climb Vx gear up flap up	87 KTS
Gear down flaps up	68 KTS
Best rate of climb Gear up, Flaps up	92 KTS
Gear down flaps up	87 KTS
Turbulent air operating speed	122 KTS
Maximum demonstrated crosswind	17 KTS
Landing approach speed	86 KTS
Stall speed (gear, flaps down)	61 KTS
Best glide speed	92 KTS
Max gear extension speed	129 KTS
Max gear retraction speed	106 KTS
Best rate of climb (fpm):	1000
Service ceiling (ft.):	14,600
Takeoff ground roll (ft.):	870 ft or 295 meters
Landing ground roll (ft.):	870 ft or 265 meter
75% power Kts	158 KTS
65% Power Kts	148 KTS
Range	
75% power: (no headwind and no tail wind)	700
65% power: (no headwind and no tail wind)	800
Fuel consumption (gph):	
75% power:	16.5 GAL
65% power:	14.0 Gal
Estimate endurance (75% power with 45 min reserve)	5 hrs
Estimated endurance (65% power with <u>1-hr. reserve</u>):	5 hrs. 30 .

Normal Procedures

REFLIGHT CHECK

- **Remove cover, chocks, and ropes** and stow. Release seat BELT
- **Remove 3 bird stops/ two at prop and one at air intake**
- **Parking brake** Set as required
- **Master Switch** nav light on, pitot heat on Check
- **Fuel Quantity Gauges** (Gauges are not ever to be trusted , and Careful flight management must be carried to ensure fuel quantity At all times) Check
Note: Aircraft total endurance is 356 litres = 5 hrs 45 min to empty.
- Stall warning..... (LH Wing).. Check
- Check Navigation lights Check
- Pitot Head.....remove cover and confirm that it is heating
- Fuel vents – OPEN . Check for wasps etc
- **Master Switch.** OFF
- Ignition Place key in the Ignition. OFF
- Exterior Check for damage
- Control surfaces check for interference
- Hinges Check for full and free
- Wings Free of ice, snow, frost
- Fuel tank check supply visually – secure caps
- **Fuel tank drain & sump** drain, check for water, Sediment and proper fuel. Two in each wing and Fuel Strainer central with valve located at second row Passenger lower Leg position. Check for water, Sediment and proper fuel Drain
- Main Gear Strut proper inflation (4.0 in.)
- Tire/ pressures on door of fron storage check
- Brake and block check
- Windshield clean as required
- Propeller & Spinner check
- **Fuel & Oil.** Check for leaks Oil ... (Never less than 9 and not more than 12) 10 to 10.5 good
- **Dip-stick** properly seated
- CowlingSecure

- Inspection covers..... Secure
- Nose Wheel Tire Check
- Nose Gear Strut proper inflation (2.6in.)
- Air Inlets..... Clear
- Alternator Belt..... Check tension
- Tow bar and chocks stow
- Baggage .secure bags ,loose objects, luggage and un-used seat belts, Baggage door Closed, secure bottom and top. Check
- Primary flight controls full and free
- Cabin Door Closed & secure-may be left open for ventilation !
- **Maintenance release** signed and **VDO** hrs recorded
- Seat Belts adjust & check (brief passengers for harnesses)

BEFORE START

- BrakesSET
- Propeller..... Full increase RPM
- Fuel Selector Desired tank

STARTING ENGINE WHEN COLD- Normal

- Battery Master Switch..... ON
- Mixture..... Rich
- Throttle Full "OPEN
- Electric Fuel Pump... (Run till 10 Gal flow)..... ON then off
- **Then set** throttle ½ "
- Mixture full lean
- Propeller..... CLEAR
- Starter. ENGAGE
- Mixture . Ounce firing (Steadily) and at same time adjusting full rich
- Throttle..... ADJUST 1000 RPM
- Oil Pressure, vacuum and charge (radios Master on) CHECK

STARTING ENGINE WHEN HOT

- Throttle ½" OPEN
- Battery Master Switch ON

PA 32 Rev 5

- Electric Fuel Pump ON
- Mixture Idle cut off
- Propeller CLEAR
- Starter ENGAGE
- Mixture Advance
- Throttle ADJUST
- Oil Pressure CHECK

FLOODED ENGINE START

- Throttle Open full
- Electric Fuel Pump OFF
- Mixturelean
- Starter ENGAGE
- Mixture ...(simultaneous)..ADVANCE
- Throttle(Simultaneous).. RETARD
- Oil Pressure CHECK

STARTING WITH EXTERNAL POWER SOURCE

- Battery Master Switch OFF
- All Electrical Equipment OFF
- Terminals connect
- External Power PlugInsert in fuselage
- *Proceed with normal start checklist*
- Throttle Lowest possible RPM
- External Power Plug DISCONNECT FR FUSELAGE (brief prior to ie prop danger)
- Master and Alternator Switches ON – check ammeter
- Oil pressure

AFTER START / WARM UP

- Throttle 1000 to 1200 RPM
- Oil Pressure/ oil temp GREEN
- Mixture full
- Alternator CHARGING v 14.4
- Avionics and Intercom .(Transpr on ground).... ON / SET / CHECK

TAXI CHECKS

- Parking brake. Release
- Taxi area Clear
- Throttle . Apply slowly
- Prop Full fine
- Brakes Check
- Steering Check
- **Flight Instruments** Check

GROUND CHECKS (RUN UPS)

- Park Brake Set
- Propeller Full increase
- Fuel Selector. (plan by aircraft load configure)
make graph see last page Check
- Engine Instruments CHECKED GREEN
- Throttle . 2000 RPM
- Magnetos ..left & right MAX DROP 175 RPM MAX
Differential. 50 RPM And back to both magnetos **CHECK**
- RPM (pull 3 times to warm oil in head and prove working)
- Vacuum 5.0" HG +/-1
- Oil Temp & Pressure CHECK GREEN
- Enunciator Panel PRESS
- Alternate Air (closed) CHECK
- Electric Fuel Pump OFF
- Fuel Pressure CHECK
- Throttle retard and ensure idling..... RETARD

- Auto pilot – do check if required and ensure off for flight

BEFORE TAKE OFF

- **T** **Throttle** set and locked as required, **trim** set
- **M** **Master/** Alternator Switch on, **Magnetos** on Both, **Mixture** rich, prop full fine
- **P** **Primer** in and locked (not applicable)
- **F.** **Fuel** on correct tank, **Fuel** pump on, **Flaps** set as required (Max 10 Deg)Unless short take off is not required
- **I** **Instruments**, AH, DG incl vac, t's and P's, Circuit breakers, Alternate air closed
- **S** **Switches**, check all circuit breakers & fuel pump again
- **C** **Controls** full and free
- **H** **Hatches** and harnesses secure. **And ensure the door has been secured.**
- Departure brief IN CASE OF EMERGENCY. Complete
- Take off safety brief IN CASE OF EMERGENCY. Complete
- Parking Brake Released

LINE UP

- Compass .CHECK DG TO COMPAS..... check
- Strobes & Lights On AS REQ
- Transponder on altitude / ADSB

Normal TAKE OFF

- Flaps Retracted
- Trim slightly aft of neutral
- Accelerate 65 to 75 KIAS
- Control wheel .back pressure to rotate to climb attitude. Trim as req manual only

AFTER TAKE OFF

- Landing Gear ..(After no runway left)..... UP / NO LIGHT indicators
- Flaps RETRACTED
- Engine Instruments ...T and P'S..... CHECKED
- **Power** set climb 25 manifold and 25 Propeller..

- Set fuel flow to 20 GAL. SET
- Electric Fuel Pump (be ready for change in conditions).....OFF

Cruise

- Cruise power manifold 23 inch Prop 24 fuel flow 16.5 gal (75%)
- Normal max cruise power – 75%
- Power – SET PER TABLE
- Mixture – ADJUST .To lean on EGT peak - 75 deg

APPROACH AND LANDING

- **Reduce aircraft speed** to below 129 kts indicated. Put gear down and observe 3 greens (1 first time) Keep fingers on control til greens.
- Then **BUMFH check**
- **B Brakes** are off
- **U Undercarriage** is down and locked (2 second time)
- **M Mixture** is full rich
- **F Fuel** on correct tank, **Fuel pump** is on
- **H Hatches and harnesses** secure, seat upright, sash belts on
Flaps as required
- **Auto pilot** -- OFF as required
- **Strobes & Lights** – AS REQUIRED

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Final Approach to land

(**Pitch is rich is 3 greens**)

- **Propeller** ..Full fine
- **Mixture** full rich
- **Gear down** 3 greens (3 Third time)
- Trim to approach.....(80 kts on late, late final)..... **86 KIAS**
- Throttle as required

AFTER LANDING

- **Flaps** identified and Retracted
- **Electric Fuel Pump** OFF
- **Strobes & Landing light** .. as required

- Transponder Ground
- Trims neutral

STOPPING ENGINE

- Flaps Retract
- Electric Fuel Pump OFF
- Radios /Avionics OFF
- Throttle Full aft
- Magnetos Check
- Mixture Retard
- Magnetos OFF
- Master Switch OFF
- **Take the key**

SECURING AEROPLANE

- Wheel Chocks in front tyre
- Control Wheel secure with belts
- Tie Downs & Covers, battery charger on. secure

Emergency Procedures

Engine Fire during Start

- Starter – CRANK ENGINE
- Mixture – IDLE CUTOFF
- Throttle – OPEN
- Electric fuel pump – OFF
- Fuel selector – OFF
- ABANDON IF FIRE CONTINUES

Engine Power Loss during Takeoff

- If sufficient runway remains for a normal landing leave gear down and land straight ahead.
- If area ahead is rough, or if it is necessary to obstructions:
Gear selector – UP

If sufficient altitude has been gained to attempt restart:

- Airspeed – MAINTAIN SAFE AIRSPEED (ABOVE STALL SPEED, 106 KTS)

- Fuel selector -- SWITCH TO TANK CONTAINING FUEL
- Electric fuel pump – ON
- Mixture -- RICH
- Alternate air – OPEN
- Gear lever – AS REQUIRED

If power is not regained, proceed with power off landing.

Engine Power Loss in Flight

- Fuel selector – SWITCH TO TANK CONTAINING FUEL
- Electric fuel pump – ON
- Mixture – RICH
- Alternate air – OPEN
- Engine gauges – CHECK FOR ISSUES
- CHECK FUEL SELECTOR ON PROPER TANK

When power is restored:

- Alternate air – OFF
- Electric fuel pump – OFF

If power is not restored prepare for power off landing.

Power off Landing

- Airspeed – 106 MPH
- LOCATE FIELD
- 86 KTS WHEN FIELD IS MADE
- T/ down at slowest airspeed possible, with full, flaps.(stall 59 KTS)

Gear down Landing

For gear down landing proceed as follows when committed to landing:

- Landing gear selector – DOWN
- **Ignition** – OFF
- **Master switch** – OFF
- **Fuel selector** – OFF
- **Mixture** – IDLE CUTOFF
- **Seat belts** and harnesses – TIGHT

Gear up Landing

For gear up landing, proceed as follows when committed to landing:

- Ignition – OFF
- Master switch – OFF

- Fuel selector – OFF mixture – IDLE CUTOFF
- Seat belts and harnesses – TIGHT

Fire in Flight

- Source of fire – CHECK
- **Electric fire (Smoke in Cabin):**
- Master switch – OFF
- Vents – OPEN
- Cabin heat – OFF
- Land as soon as possible

Engine fire:

- Magneto switch – OFF
- Throttle – CLOSED
- Mixture – IDLE CUTOFF
- Fuel selector – OFF
- Electric fuel pump – OFF
- Master switch – OFF
- **Dive to blow out fire** (If altitude permits) Proceed with power off landing

Loss of fuel pressure

- Electric fuel pump – ON
- Fuel selector – FULLEST TANK
- Alternator Failure
- Verify Failure
- Reduce electrical load
- Alternator circuit breakers -- CHECK
- Alternator switch – OFF (1 second) then ON
- If no output alternator switch – OFF
- Maintain reduced electrical load

Propeller Over speed

- Throttle – RETARD
- Oil pressure – CHECK
- Prop control – FULL DECREASE
- Airspeed – REDUCE
- Throttle – AS REQUIRED (remain below 2700 RPM)

- Landing Gear Extension

Prior to emergency extension procedure:

- Master switch – ON
- Circuit breakers – CHECK
- Radio/lights – OFF (daytime)
- Gear indicators bulbs – CHECK
- **If landing gear does not check down and locked:**
- Airspeed – BELOW 100 MPH
- Landing gear selector – DOWN
- **If landing gear still does not check down and locked:**
- **HOLD EMERGENCY GEAR LEVER DOWN** and fish tail airplane (Gear takes approximately 10 seconds to drop and lock)
- Open Door in Flight top latch or as determined.
- Slow Airplane to 100 MPH
- Cabin vents – CLOSED
- Storm window – OPEN
- Lower latch – push door open and close
- Note: If a loss of oil pressure or high oil temperature is indicated, land as soon as possible and investigate.

Gear red warning light illuminating during flight

Prognosis

- Possibly low hydraulic fluid
- Failure or partial failure of gear pump
- Door switches out of adjustment

Remedy

- Slow aircraft to gear speed max 129 kts
- Recycle the gear and monitor

Do not exceed gear speed with red warning light illuminated. This is usually not possible while in normal straight and level flight. If it can be determined

that the micro switches are not set correctly then by pulling gently on the red illuminated panel indicator the switch can be turned off.

POWER TABLE SETTING — LYCOMING MODEL IO-540-K, -L, -M SERIES, 300 HP ENGINE

Press. Alt. Feet	Std. Temp F	165 HP - 55% Rated RPM and MAN. Press.				195 HP - 65% Rated RPM and MAN. Press.				225 HP - 75% Rated RPM and MAN. Press.		
		2100	2200	2300	2400	2100	2200	2300	2400	2200	2300	2400
SL	59	22.5	21.8	21.2	20.7	25.6	24.7	23.8	23.2	27.6	26.6	25.8
1,000	55	22.3	21.6	21.0	20.5	25.3	24.4	23.5	22.9	27.3	26.3	25.5
2,000	52	22.1	21.4	20.7	20.2	25.1	24.2	23.3	22.7	27.1	26.1	25.2
3,000	48	21.9	21.2	20.5	20.0	24.8	23.9	23.0	22.5	26.8	25.8	24.9
4,000	45	21.7	21.0	20.3	19.8	24.6	23.7	22.8	22.2	26.5	25.6	24.6
5,000	41	21.5	20.8	20.1	19.6	24.3	23.5	22.5	22.0	-	25.3	24.4
6,000	38	21.3	20.6	19.8	19.3	24.0	23.2	22.3	21.7	-	25.0	24.1
7,000	34	21.0	20.4	19.6	19.1	23.7	22.9	22.0	21.5	-	-	23.8
8,000	31	20.8	20.2	19.4	18.9	-	22.5	21.8	21.2			
9,000	27	20.6	20.0	19.2	18.6	-	-	21.5	21.0			
10,000	23	20.4	19.8	19.0	18.4	-	-	21.2	20.7			
11,000	19	20.2	19.6	18.7	18.2	-	-	-	20.4			
12,000	16	20.0	19.4	18.5	18.0							
13,000	12	-	19.2	18.3	17.7							
14,000	9	-	-	18.0	17.3							
15,000	5	-	-	-	16.9							

To maintain constant power, correct manifold pressure approximately 0.18" Hg for each 10°F variation in induction air temperature from standard altitude temperature. Add manifold pressure for air temperature above standard; subtract for temperature below standard.

Left Tank Minutes	Right tank Minutes	Time departure ...01.10 UTC..... Change time
30		01.40
	30	02.10
30		02.40
	30	03.10
20		03.30
	20	03.50 landing