

OPERATIONAL DOCUMENT

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ALPHA FLYING GROUP – PILOT HANDLING NOTES PA28-181 PIPER ARCHER II (VH-KTN)

1. PRE-FLIGHT

Before leaving home

Log into FSP (FLIGHT SCHEDULE PRO) to check if previous flight has checked in (send them a friendly reminder message if they have forgotten too) and if they have logged any defect notices that may prevent your flight.

Arriving at the Hangar

Alpha aircraft are housed in the Bankstown Flying School hangar (Ph: 9707 3822). Door codes are communicated to members separately and any changes will be advised by a separate note. The locker padlock code is **0156**. In the right locker is the Pilot Sign Out Folder, the two aircraft flight bags with documents and keys, cleaning products, spare oil, life jackets, spare headsets. In the left locker is, vacuum, overnight covers and tie down kits and other miscellaneous items.

Signing Out the Aircraft

When you arrive at the airport access the locker and remove pencil case for the aircraft you are about to fly and check the MR prior to anything else (you don't want to have pulled out an aircraft and preflight checked it to find out there's a major issue on MR and you cant fly it). Check the aircraft out on FSP (it will inform you of anything the previous pilot may have identified as major on MR or minor that may effect your flight and have not been reported on the MR). Pull the aircraft out for preflight checks, refuelling and sign the MR when you are satisfied.

If you identify a major issue that prevents the aircraft from being airworthy please note on MR the issue (write "aircraft not airworthy" if major safety defect) and remove the pencil case and place it in the other locker and make note of defect of FSP. Notify Paul Littman 0414 446 822 or Joseph Dagher 0404 632 451 that you have removed the pencil case and the nature of the defect.

Preparation for Flight

Open the hangar doors from the inside and use the handheld tow handle to move the aircraft out to the hard stand between the hangars. Immediately chock the wheels or apply the parking brake and return the tow bar to the hangar.

If only conducting a short flight (e.g. BK CCTS and/or Training Area) you can simply close the doors from the outside before departure. If heading away for a longer flight, including overnight trips, the doors must be locked from the inside with the PIC exiting the hangar from the airside door next to the toilets.

Be aware that if the doors on the adjacent hangar (Coulson Aviation) are fully open, there may not be enough clearance to pass. These doors need to be closed a few metres flush to the hangar walls to allow safe passage.

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For overnight flights away from YSBK, ensure you take sufficient oil, Mr Sheen, tie down kits, solar guards and/or overnight covers and the jumper pack.

The PIC is responsible for conducting the pre-flight and signing off the Maintenance Release.

Note: Even for VFR and daytime flights, the pitot heat and lights must be checked as part of the pre-flight and reported if not serviceable. Nav Lights are operated by a separate switch to the right of Carby Heat with UP being ON. (NOTE: Nav Light Switch ON position is UP).

Fuel and Oil

Fuel is ordered from World Fuel Supplies with payment on account or via card. During business hours call via phone and advise account name (Alpha), location (taxiway HOTEL), registration (KTN) and type of fuel (AVGAS) to have the tanker come to you. You can also use the 24hr self-serve bowser paying with the WFS card.

World Fuel Services: Phone: (02) 9790 2144 / 0412 585 550 VHF: 119.1

Oil is kept in the right cupboard inside the hangar with the PIC responsible for recording the oil added on the Maintenance Release and FSP, and the fuel uploaded on the Flight Time Sheet. Please advise the Flight Captain should oil supplies be low. Current oil used is Victory 100AW SAE 50 delivered in 1 US quart bottles.

Note: Oil capacity for KTN is **6 quarts** with 4 quarts being the minimum for flight. Filling above 6 quarts will result in overflow and apparent high oil usage.

2. AVIONICS SUITE

KTN has a new avionics suite incorporating:

- a. Aspen EFD 1000 (Electronic Flight Display)
- b. Avidyne IFD440 (GPS, Radio and Nav)
- c. STEC 50 (2 axis Auto Pilot)
- d. JPI EDM 830 (Engine Monitor)
- e. Garmin GI 275 (Certified for AH only)

The PIC must be fully knowledgeable with the new avionics suite for the aircraft. Pilot reference guides are available in the cockpit.

Useful tips - Keep all modes consistent across all systems. There are 3 altimeters (Aspen, Garmin and analogue altimeter). The PIC should ensure the current QNH is correctly set on all 3 altimeters at all stages of flight.

Aspen EFD 1000

Speed Bug – doesn't do anything. You can set desired speeds on the Aspen advisory purposes
ALT – use as primary Assigned Altitude Indicator

Avidyne GPS

RAIM is checked under AUX and then CALCULATORS tabs

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DEST – ensure the AD is loaded (e.g. YMDG) and not the aid (MDG) to avoid LOW TERRAIN alarms on final

Auto Pilot

To engage GPS steering, the AP has to be engaged in HDG mode, a waypoint has to be active in the Avidyne and the **GPSS button has to be pressed on the Aspen**. If GPSS is not selected, the AP will track the heading bug on the Aspen.

JPI 830 Engine Monitor

Monitor immediately after initialisation to enter or confirm the total fuel onboard at start-up. If you miss this, there is a procedure in the manual for entering the start-up fuel once you are enroute. The JPI is smart enough to back-calculate and will then display the correct inflight FOB.

As KTN is now 'very electric', monitoring the alternator and battery voltages is critical. Push the STEP button once to stop the monitor cycling through the parameters. Repeatedly push STEP again until the system voltage is shown in big white numbers on the bottom of the display. It is suggested to leave this voltage field displayed for the entire flight for pilot monitoring.

3. ENGINE START PROCEDURES

Recommended starting procedures and checklists are supplied in the aeroplane. The Avionics Master Switch is to be turned on after engine start with all avionics self-tests to be satisfactorily completed prior to taxiing. The Aspen is powered up using the Green switch on the left panel.

The first instrument to check upon start up is the JPI engine monitor. The PIC is to enter or confirm the fuel contents when prompted soon after the instrument has initialised.

4. FUEL SYSTEM AND MANAGEMENT

The total useable capacity is 181 litres (48 US gal.), or 91 litres either side (24 US gal.). KTN has one fuel tank in each wing. There are two fuel pumps, one engine driven and one electric. The electric pump is controlled by the PIC. The electric pump should always be used during take-off and landing, when changing tanks and at any time when in-flight fuel supply problems are suspected.

The JPI is the most accurate measure of fuel flow, however it will not detect fuel leakage. After engine start, the PIC is to enter or confirm the fuel contents as a total volume for both tanks into the JPI engine monitor. When tanks are less than full, it is recommended to reduce estimated fuel contents by 25 litres when inputting fuel contents into the JPI engine monitor.

There are three (3) fuel drain points in the fuel system, one below each main tank adjacent to the main gear and the third in the fuel strainer located on the lower left front of the fire wall. Drained fuel is to be placed in the fuel tank of the petrol tug.

KTN cannot draw fuel from both tanks simultaneously. It is therefore a good practice to ensure that fuel can be drawn from both tanks before take-off and before either tank runs dry. A good practice is to start and taxi to the runup bay on the lowest tank, and change to the fullest tank

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for runups, take-off and the first 30 minutes of flight. This ensures that fuel can be drawn from both tanks, and if there are any problems the PIC has the option of returning to the departure airport.

5. FLYING OPERATIONS

SPEED & SETTINGS

Rotate:	60-65 kts
Best Angle of Climb	64 kts
Best Rate of Climb	76 kts
Cruise Climb:	87 kts
Cruise:	~ 2450 RPM
Descent:	Plan for no more than 500 feet pm
Downwind:	2100 RPM & 90 kts
Approach:	1000-1800 RPM & 75-80 kts (with Carby ON)
Final:	70-75 kts
Short Final:	66 kts
GLIDE SPEED:	76 kts (Flaps up glide ratio is 9:1 – approx. 1.5nm per 1000')

PRE-LINE UP

F = FUEL ON

I = INSTRUMENTS aligned

S = SWITCHES ON - Fuel booster pump and landing light (pitot heat if required)

T = TRANSPONDER to ALT

TAKE-OFF

Fuel Pump on and Flaps up

Open the throttle slowly to full power

Check Temps and Gauges are Green (Oil and Fuel Pressure)

Back pressure should be applied to achieve a position rotation at 60-65 kts

CLIMB

Turn off Fuel Booster Pump (not below 300' AGL)

Recommended Cruise Climb is 90 kts for efficient engine cooling

Record Wheels OFF time

LEANING

It is recommended that KTN remains on full rich for the duration of the climb. Once established in the cruise, the aircraft can be leaned by reference to the JPI engine monitor.

DESCENT

Avoid sudden large power reductions which can cause shock cooling of the engine. The mixture should be progressively moved to Rich. Start the descent early and maintain a rate up to 500 feet per minute.

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LANDING

1000-1500 RPM during base and final

D/W 90 kts, APP 75-80 kts, SHORT FINAL 70-75 kts

Pre-Landing Checks

B = Brakes (check parking brake off and test brake pedal pressures)

U = n/a

M = Mixture Rich and Mags on BOTH

F = Flaps as appropriate, Fuel on fullest tank

I = Instruments checked

S = Switches on (fuel booster pump and landing light)

H = Hatches and Harnesses secure

Short Finals (approx. 300' AGL)

F = Full Flaps

C = Carby Heat OFF

C = Correct RWY

C = Clearance to Land

GO-AROUND

Apply power smoothly. When positive rate of climb is established, gradually remove flap and accelerate to the desired speed. Complete post take-off checks (fuel pump and landing light off)

Best Rate of Climb Speed: 76 kts

Best Angle of Climb Speed: 64 kts

Enroute Climb: 90 kts

POST LANDING (after exiting RWY)

F = FLAPS - identify and Retract

R = RADIO - change to GRD freq (or report clear of all active runways if CTAF)

O = Check Oil Temps

S = SWITCHES - turn off fuel booster pump and landing light

T = TRIM, TRANSPONDER & TIME - return Trim to neutral position, Transponder to STBY and note Wheels ON time

6. POST FLIGHT ACTIONS

Engine Shutdown

1. Switch off Aspen Master (green switch on the left) and Avionics Master
2. Conduct pre-shutdown magneto checks
3. Fully lean to idle cut-off until engine stops
4. Turn off Master and manually shutdown Garmin.
5. Remove keys and place on dash in view of persons outside the aircraft

Post-Flight Procedures

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1. Ensure SARWATCH / SARTIME is cancelled by the most appropriate means. (CENSAR Ph: 1800 814 931)
2. Record the flight times on the Flight Docket and Maintenance Release (note for the MR only actual flight time is to be recorded in decimal Hrs from Wheels OFF to Wheels ON)
3. Take photos of the Flight Sheet and Maintenance Release and email to:
accounts@alphaaviation.com.au
4. Clean the interior of rubbish (vacuum if required) and use Mr Sheen to wipe down the windscreens and leading edges
5. Ensure hangar doors and locker are secured.

Ensure MASTER and Brakes are OFF, Wheels CHOCKED, and Pitot Tube and Air Intake Covers are ON.