PIPER PA-30
TWIN COMANCHE
CHECK LIST
NORMAL PROCEDURES

AIRSPEEDS FOR SAFE OPERATION	**MPH**
Never Exceed	230
Maximum Structural Cruising	194
Design Maneuvering	162
Maximum Flap Extended	125
Maximum Landing Gear Extended	150
Maximum Landing Gear Operating	150
Minimum Control Speed VMC	90
Twin Engine Best Rate of Climb	112
Twin Engine Best Angle of climb	90
Single Engine Best Rate of Climb	105
Recommended Safe Single Engine Speed	97
Enroute Climb	130
Stalling Speeds	
Gear and Flaps Down – Power Off	69
Gear and Flaps Up – Power Off	76
Normal Approach Speeds Gear Down, Flaps Down	
Downwind	115
Base	110
Final	100
Maximum Demonstrated Crosswind Component	20
Single Engine Approach Speed (Gear Down, Flaps – half)	105
Manual Landing Gear Extension – Maximum Speed	100
To Close Door Reduce Below	100

AIRCRAFT FILE

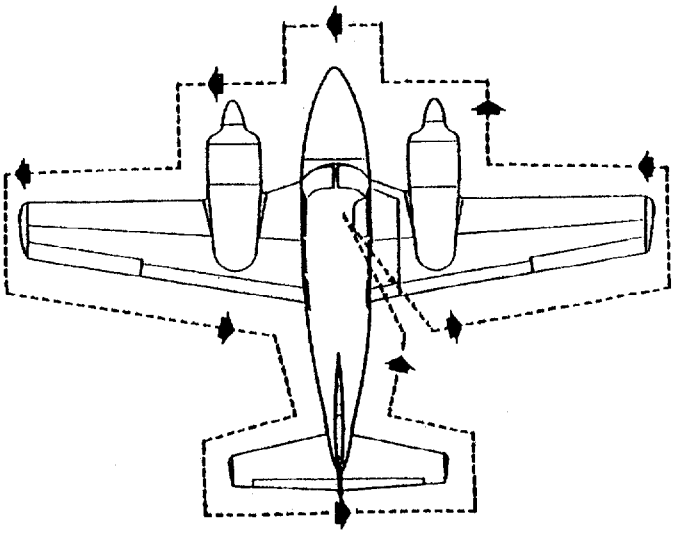
There are miscellaneous data, information and licenses that are a part of the aircraft file. The following is a checklist for that file. In addition, a periodic check should be made of the latest Federal Aviation Regulations to ensure that all data requirements are met.

A. To be displayed in the aircraft at all times:
(1) Aircraft Airworthiness Certificate (FAA Form 8100-2).
(2) Aircraft Registration Certificate (FAA Form 8050-2).
(3) Aircraft Radio Station License, if transmitter installed (FCC Form 556).

B. To be carried in the aircraft at all times:
(1) Weight and Balance, and associated papers (latest copy of the Repair and Alteration Form, FAA Form 337, if applicable).
(2) Aircraft Equipment List.

I. PREPARATION

1. Baggage – Weighed stowed and tied down.
2. Weight and Balance – Computed and within envelope
3. Performance – Computed and found safe
4. Aircraft Status – Papers aboard, Inspections complete
5. Charts and NAV. Equipment – On board



II. PREFLIGHT INSPECTION

1. Inside Cabin
    a. Gear Switch – Down
    b. Radios – Off
    c. Master Switch – On
    d. Gear Lights – Check green
    e. Fuel Quantity – Adequate with reserve
    f. Wing Flaps – Check operation & Indicator; leave up
    g. Master Switch – Off
    h. Cowl Flaps – Open
    i. Mag. Switches – Off
    j. Mixtures – Idle cut-off
    k. Trim – Neutral
    l. Fuel Drain – Drain all tanks; selectors back on mains
    m. Oxygen – Quantity sufficient, valve off, masks available
    n. Control Locks – Off

2. Outside Cabin
   a. Fuel Drains – No Drip
   b. Fuselage & Antennas – Check
   c. Right Wing, Flaps and Aileron – Check
   d. Right Wing Tip, Check
   e. Right Tie-Down – Untied
   f. Fuel Caps – Check fuel quantity & color; Secure caps
   g. Right Gear – 2 ¾"; tire inflation
   h. Right Engine – Oil at least 6 quarts
   i. Right Prop – Check, free of nicks
   j. Windshield – Clean, condition check
   k. Nose Gear – Struu 2 ¾"; tire inflation
   l. Left Wing – Check as right wing
   m. Stall Warning – Check
   n. Pitot Tube – Check
   o. Pitot Heat (if required) – Check
   p. Baggage Door – Secure
   q. Static Vents – Clear
   r. Tail – Check; Untied
   s. Lights (if required) - Check

III. **BEFORE STARTING ENGINES** Avionics Master Switch - OFF

1. Seats – Adjusted and locked; PASSENGERS BRIEFED
2. Seat Belts – Fastened
3. Parking Brakes – Set, if desired
4. Circuit Breakers – Check
5. Alternators – On
6. Cowl Flaps - Open

V. **STARTING ENGINES** Gear SW. DOWN

1. Fuel Tanks - On Mains
2. Mixtures – Idle Cut-off
3. Prop Controls – Forward
4. Throttles – Set for fast idle
5. Master Switch – On
6. Magnetos – On
7. Electric Fuel Pumps - On
8. Mixtures – Rich until flow is indicated, then Idle Cut-off
9. Electric Fuel Pumps – Off
10. Prop – Clear Beacon - on
11. Starter – Engage
12. Mixture – Advance as engine starts
13. Oil Pressure – Check
14. Vacuum – Check
15. Repeat 10 through 13 on other engine

V. **HOT ENGINE START**

1. Master Switch – On
2. Electric Fuel Pumps - On
3. Throttle – Set for fast idle
4. Prop Controls – Forward
5. Mixture – Idle cut-off
6. Electric Fuel Pumps - Off
7. Magneto Switches – On
8. Starter – Engage
9. If engine does not start, advance mixture for short time; them move mixtur cut-off
10. When engine starts, advance mixture and adjust throttle
11. Repeat 8 through 10 on other engine

VI. **FLOODED START**

1. Electric Fuel Pump – Off
2. Master Switch – On
3. Magneto Switches – On
4. Throttle – Open
5. Mixture – Idle cut-off
6. Starter – Engage
7. When engine fires, retard throttle; advance mixture slowly

VII. **PRE-TAXI AND TAXI**

1. Lights (as required) – On
2. Clock – Wound and set, if required
3. Autopilot – Off
4. Directional Gyro – Set
5. Transponder – Set code and turn on Standby
6. Radios – Check & Set
7. Parking Brake – Off
8. Brake Operation – Check
9. Directional Gyro, Turn Indicator and Attitude Indicator – CHECK DURIN

VIII. **PRE-TAKE-OFF**

1. Engine Run-up
    a. Cowl Flaps – Verify Open
    b. Mixture Controls – Forward
    c. Prop Controls – Forward
    d. Engine Instruments – Check
    e. Throttle Controls – Set for 1500 RPM
    f. Prop Controls – Check feather position – 500 RPM decrease ma exercise props to warm oil and check for control; leave in high
    g. Throttle Controls – Set for 2200 RPM
    h. Magnetos – Check
        -- Normal Drop – 100 RPM
        -- Maximum Drop – 175 RPM
        -- Maximum Difference Left to Right – 50 RPM

2. Throttles – Set 800-1000 rpm
3. Fuel Tanks – On Mains
4. Transponder – Verify Code and on Stand-by
5. Flaps – Check & Set
6. Pitch Trim – Set
7. Gyro Pressure – 4.8 to 5.1 in Hg
8. Directional Gyro – Verify Setting
9. Altimeter – Verify Setting
10. Clock – Verify Wound and Set
11. Alternator Output – Check right and left via voltmeter in Davtron OAT meter
12. Controls – Check
13. Door – Latched
14. Seat and Shoulder Belts – PASSENGERS BRIEFED
14. Parking Brake –Off

'IIIB. **PRETAKE-OFF (AFTER CLEARANCE)**

1. Note Time
2. Electric Fuel Pumps - On
3. Pitot Heat – As Required
4. Strobes - On
5. Transponder – Verify Code and Turn On - Altitude

K. **TAKE-OFF AND CLIMB**

1. Verify Runway and Directional Gyro
2. Engine Instruments – Check
3. Mixture Controls – Full Rich
4. Propellers- Full Forward
5. Throttles – Forward; check power
6. Accelerate to – 90 mph (Vmc) – Prior to Climb
7. Landing Gear – Retract
8. Accelerate to – 112 mph (Best Rate of Climb)
9. Flaps (if used) – Retract
10. Climb Power Set (At 400 or more AGL)
11. Electric Fuel Pumps
    - OFF above 1000 AGL
    - ON above 15,000 MSL

11. Cowl Flaps – Set

NORMAL CRUISE

1. **G** - Fuel Tanks – As Required
2. **G** - Electric Fuel Pumps – Off (unless above 15,000 MSL)
3. **U** - Landing Gear - Verify Retraction
4. **M** – Mixture Controls – Set
5. **P** - Propellers – Set
6. **S** - Flaps – Verify Retraction
7. **S** - Cowl Flaps – Closed

XI. **DESCENT**

1. Throttles – Retarded
2. Oxygen – Off (below 10,000 MSL)
3. Defroster – On, if required
4. Mixture Controls – Enrich

XII. **APPROACH - PRELANDING**

1. G – Fuel Tanks – Mains
2. G – Electric Fuel Pumps – On
3. U – Landing Gear – Extend (under 150 mph)
4. M – Mixture Controls – Forward (Best Power or Richer)
5. P – Propellers – 2400 rpm or greater
6. S – Flaps (under 125 mph) – Set
7. S – Cowl Flaps – Open
8. S – Seat and Shoulder Belts

XIII. **AFTER LEAVING RUNWAY**

1. Close flight plan, if required
2. Transponder – Stdby, or Off and 1200
3. Heater – If used, Fan Only and Close Fuel Valve
4. Flaps – Retract
5. Cowl Flaps – Open
6. Propellers – Full Forward
7. Strobes – Off
8. Pitot Heat – Off
9. Landing Lights – Off, if not needed
10. Electric Fuel Pumps – Off
11. Radios – Monitor Appropriate Frequency

XIV. **SHUTDOWN**

1. Parking Brake – As required
2. Radio Master & Electric Equipment – Off
3. Heater - If used, make sure that heat has been turned off for at least three before shutting off fan. Ensure that fuel valve is closed.
4. Landing Lights - Off
5. Position Lights – Off
6. Instrument Lights – Off
7. Cabin Lights - Off
8. Mixture Controls – Idle Cutoff
9. Magneto Switches – Off
10. Master Switch - Off

EMERGENCY PROCEDURES
PA-30 CHECK LIST

I. FEATHERING PROCEDURE

1. Airspeed & Dir. Control – Maintain
    a. Vmc – 90 mph
    b. Recom. Min. S.E. Speed – 97 mph
    c. Best R/C Speed S.E. – 105 mph
2. Mixture Controls – Forward
3. Prop Controls - Forward
4. Throttles – Forward
5. Gear – Retract
6. Flaps – Retract
7. Electric Fuel Pumps – On
8. Identify Inop. Engine
9. Throttle of Inop. Eng. – Retard to verify
10. Prop on Inop. Eng. – Idle cut-off
11. Mixture on Inop. Eng. – Idle cut-off
12. Electric Fuel Pumps – Off
13. Mags. Inop. Eng. – Off
14. Cowl Flaps – Close on Inop. Eng.
    As required on op. eng.
15. Alternator or gen. Inop. eng. – Off
16. Electrical load – Reduce
17. Trim – As required
18. Fuel Management – Fuel Off Inop.eng.
    Consider crossfeed

II. CROSSFEED PROCEDURE

1. Fuel Valve Inop. Eng. – On
2. Electric Fuel Pumps – OFF
    (Exception if engine-driven pump fails:
    electric fuel pump of op. eng. – on)
3. Crossfeed (op. eng. side) – On

III. UNFEATHERING PROCEDURE

1. Fuel Valve – On
2. Electric Fuel Pump – Off
3. Throttle – Open 1/4"
4. Prop Control – Forward to align with other
5. Mixture Control – Forward
6. Mag. Switches – On
7. Starter – Engage till prop windmills
8. Prop Control – Set to cruise rpm
9. Throttle – Reduced power till engine is warm

IV. MANUAL GEAR EXTENSION

1. Circuit Breakers – Check
2. Master Switch – On
3. Alternators and generators – Check
4. Instrument Lights – Off (daytime)
5. Emerg. Gear Ext. Cover - Lift
6. Slow aircraft to 100 mph
7. Gear Selector – Down (or – Off)
8. Disengage motor Raise motor release arm and push forward thru full travel.
9. Engage handle in right socket and twist to secure
   Extend handle and rotate forward until left socket is clear
10. Engage handle in left socket and twist to secure
    Rotate full forward
11. Green Gear Light – On

NOTE

Reducing power and rocking gear ext. handle will aid in manually extending gear. Do not retract with handle in socket. Do not re-engage motor in flight.

V. ENGINE FIRE ON GROUND

1. Electric Fuel Pump – Off
2. Fuel Selector of Affected Eng. – Off
3. If engine is running, advance power to use fuel in engine.
4. If fire is contained within cowling and engine is not running, keep engine turning with starter, attempting to start and draw flame into engine induction system.
5. In case of gasoline fire outside the cowling and on the ground, taxi away from fire, if possible.
6. Call for assistance thru tower or ground control.
7. Evacuate aircraft if fire cannot be controlled.

VI. ENGINE FIRE IN FLIGHT

1. Fuel Selector – Off
2. Follow feathering procedure to shut down engine.
3. Land at nearest suitable airfield.

VII. CABIN FIRE

1. Close Vents
2. Use hand fire extinguisher

VIII. ELECTRICAL FIRE

1. Master Switch – Off
2. Circuit Breakers – Check for tripped C.B. – Pull all
3. All Electrical Switches – Off
4. Master Switch – On
5. Circuit breakers and switches for individual units – on one at a time to locate faulty unit. When faulty unit located, leave it off; turn other units on, one at a time.

IX. ELECTRICAL MALF' 'CTION (Alternator-equipped Aircraft)

1. Electrical Load – ' 'v turning off all unnec. equip.
2. Voltage Regul' 'om MAIN to AUXILIARY
3. Circuit Breake' ' are tripped, except main volt. Reg. C.B.
4. Turn on electrical eq'

N/A

N7539L

If malfunction continues

5. Electrical load – Reduce as a'
6. Master Switch – Off for six seco'
7. Alternators – Off
8. Master Switch – On
9. Turn on one alternator
10. Turn on electrical equipment
11. If elec. System functions, continue flight with e' 'd reduced so that ammeter does not show a discharge

If malfunction continues

12. Repeat steps 5 thru 11 with other alternator turned on

X. ELECTRICAL MALFUNCTION (Generator-equipped Aircraft)

1. Electrical Load – Reduce till ammeter shows zero or pos. charge
2. Generator Switches – off, then on, one at a time to determine which generator is inop.
3. Turn off inop. generator.
4. Continue flight with reduced electrical load

SEE Panel Placard Below Alternator Sw
& PA30 QRH

XI. COMPLETE ELECTRICAL FAILURE

1. Alternators or Generators – off
2. Turn off as much equipment as possible with switches
3. Pull circuit breakers for unneeded equipment having no switches.
4. Land at nearest suitable airport, using manual gear extension.

XII. EMERGENCY DESCENT (Loss of Oxygen at Altitude)

1. Throttles – retard fully
2. Prop Controls – full forward
3. Roll approx. 30 degrees to pilot's side to establish shallow diving spiral.
4. Descent speed – 194 mph indicated
5. Cowl Flaps – Closed
6. Descend to altitude where oxygen is not mandatory

XIII. DOOR OPEN IN FLIGHT

1. Slow aircraft to less than 125 mph
2. Extend flaps
3. Slow to 100 mph
4. Open storm window
5. Push door out slightly and slam shut. (Skidding may assist)
6. Push handle down to lock.

XIV. RUNAWAY PROPELLER

1. Prop Control – pull aft
2. Throttle – retard
3. Reduce Speed
4. Descend to low altitude
5. Feather if prop speed continues excessive

XV. ASYMMETRIC FLAPS

1. Flap Control – Neutral for a few seconds
2. Flap Control – back to original position
3. If flap remains stuck, try to position other flap symmetrically with it.
4. Use aileron and rudder on side of high wing.
5. Maintain adequate airspeed.