

CHECKLIST PIPER ARROW N780FM



Fort Meade Flight Activity, Inc.

7509 General Aviation Drive, Fort Meade, MD 20755
(410) 672-0080



DO NOT REMOVE FROM AIRCRAFT

EMERGENCY CONTACT NUMBERS

Sue Hall (443) 690-2627 (cell)
Co-manager

Frank Turney (443) 499-1287 (cell)
Co-manager

Transponder Codes

7500 Hijacked
7600 Lost Communications
7700 Emergency

Draft ICAO Domestic

Notice: Per FAA Guidance, all civilian flight plans must be filed as ICAO flight plans.

Recent Flight Plans KFME TO PALEO 780FM Save as Favorite

Aircraft ID: N780FM Flight Rule: IFR No. of Aircraft: 1 Aircraft Type: P28R Wake Turbulence: L Aircraft Equipment: SG Surveillance Equipment: EB2

Departure: KFME Airport Info: Area Brief: Departure Date & Time: 03/20/2020 11:10 Departure Date & Time: HHMM UTC Level: VFR/013 Optimize

Route of Flight: DCT Map Plan Other Information (Optional): RMK/ DC SFRA

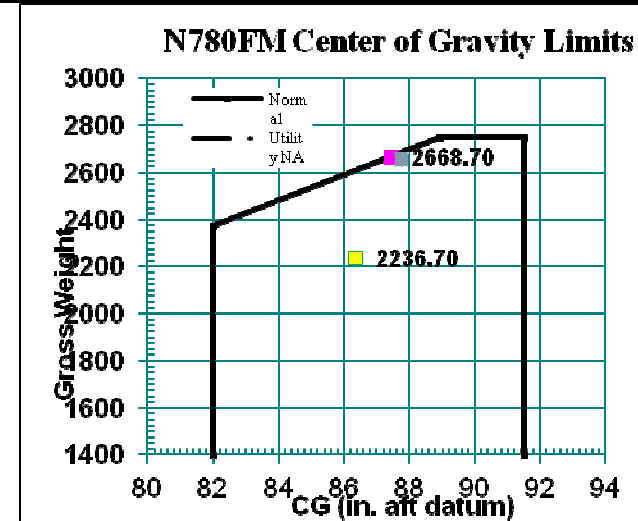
Destination: PALEO Airport Info: Area Brief: Est Elapsed Time: 0020 Alternate 1 (Optional): Airport Info: Area Brief: Alternate 2 (Optional): Airport Info: Area Brief:

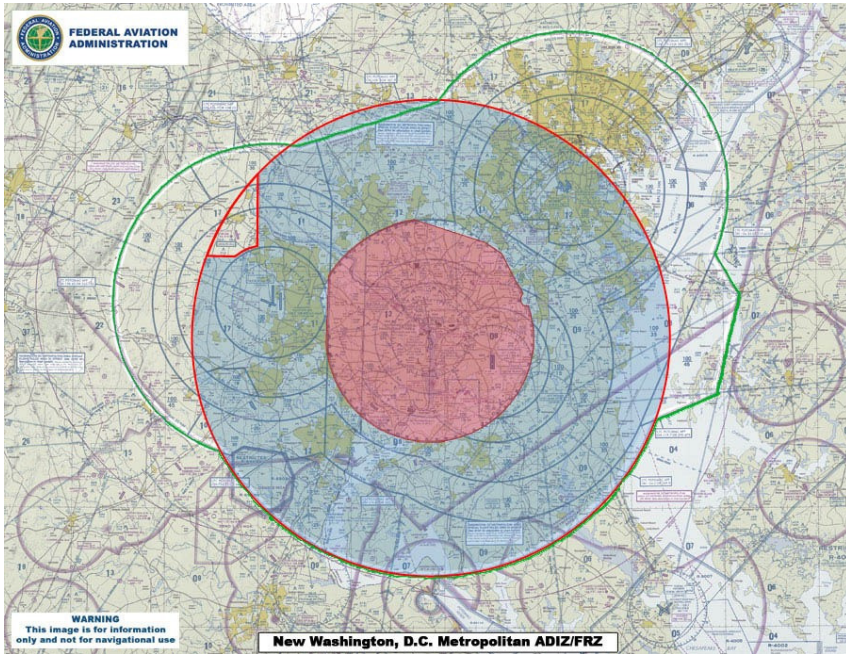
Fuel Endurance: 0400 Persons on Board: 2 Aircraft Color & Markings (Optional): W:B:R Supplemental Remarks (Optional): Pilot In Command (Optional): Pilot Contact Information:

Emergency Radios: UHF VHF ELBA Survival Equipment: Polar Desert Maritime Jungle Jackets: Light Fluorescent UHF VHF Dinghies (Optional): Number Capacity Color Covered

Weight & Balance Example

FAA Tail No.	N780FM	Color		W/B/R	
Flight Plan Designator	P28R	Useable Fuel		72.0	
Year of Manufacture	2002	Make/Model		Piper PA-28R-201	
	#	Weight	Arm	Moment	
Basic Empty	17-Aug-2015	1826.70	86.857	158661.69	
Fuel (gal)	72.0	432.00	95.000	41040.00	
Pilot		200.00	80.500	16100.00	
Copilot		200.00	80.500	16100.00	
Passenger 1		0.00	118.100	0.00	
Passenger 2		0.00	118.100	0.00	
Baggage		10.00	142.800	1428.00	
		Weight	Arm	Moment	
Ramp		2668.70	87.432	233329.69	
Gear Retraction Moment				819.00	
Takeoff		2657.70	87.737	233179.69	
No Fuel		2236.70	86.336	193108.69	





Washington SFRA

ATC COMMUNICATIONS AND SQUAWK CODE REQUIRED

FSS: 1-800-WX-BRIEF (1-800-992-7433)
(SFRA flight plan & weather briefing)

Potomac TRACON: 1-866-429-5882
(squawk code & frequency)

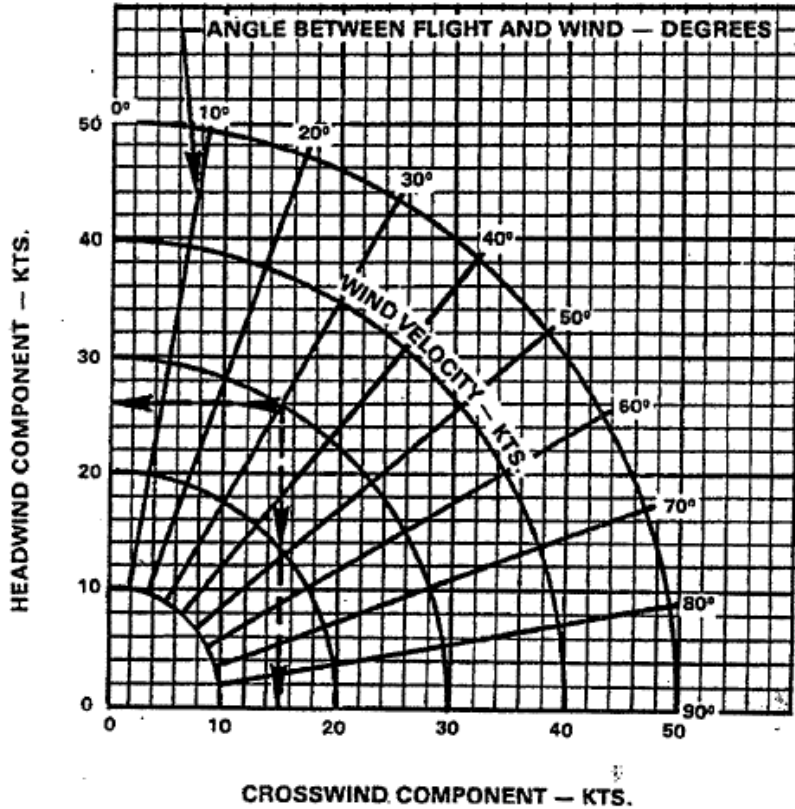
Potomac TRACON: 1-540-351-6129
(close SFRA flight plan after pattern work)

AIRSPEEDS FOR SAFE OPERATION (KIAS)

V_{SO}		55
V_{SI}		60
V_R		65-75
V_X	(gear down/gear up)	72/78
V_Y	(gear down/gear up)	78/90
V_F		103
V_{LO}	(gear up)	107
V_{LE}	(gear down)	129
V_A	(GW 2750/1865)	118/96
V_{NO}		146
V_{NE}		183
V_{ref}	(flaps up)	85
	(flaps down)	75
	(short field 1.3V_{so})	72
V_G	(Best Glide)	79

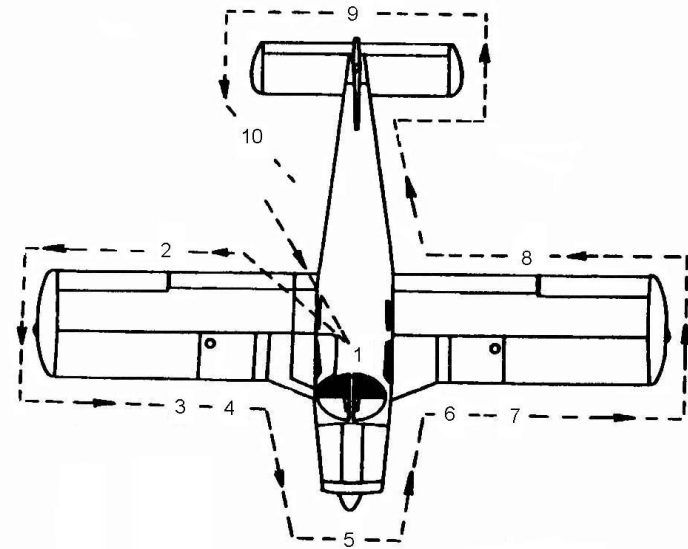
WIND COMPONENTS

Example:
 Wind velocity: 30 knots
 Angle between flight path and wind: 30°
 Headwind component: 26 knots
 Crosswind components: 15 knots



Maximum demonstrated crosswind component 17 kts.

PREFLIGHT INSPECTION



COCKPIT

Ignition Key	ON DASH
Hobbs, Tach Times	NOTE
Documents (AROW)	CHECK
Control Lock(s)	REMOVED
Trim Tabs	TAKEOFF RANGE
Radios Master Switch	OFF
Autopilot	OFF
Magnetos	OFF
Throttle	CLOSED
Mixture	FULL LEAN
Gear Handle	DOWN
Master Switch	ON
Circuit Breakers	CHECK
Fuel Gauges	CHECK
Electric Fuel Pump	ON
Fuel Pressure	CHECK

Fuel PumpOFF
 Lights CHECK
 Stall Horn CHECK
 Master SwitchOFF
 Flaps EXTEND

RIGHT WING

Flap and Aileron CHECK
 Static Wicks CHECK
 Wing Tip, Lights and Leading Edge CHECK
 Tiedown, Chocks REMOVE
 Fuel Vent CLEAR
 Fuel Sump DRAIN
 Fuel Quantity CHECK
 Wheel Strut (2”), Tire, Brakes CHECK
 Wheel Well/Door CHECK

NOSE

Oil (5-7 QTS, min 2, max 8) CHECK
 Cowling, Intakes, Spinner, Propeller CHECK
 Nosewheel Strut (2.75”), Tire CHECK
 Gear Linkage and Door CHECK
 Wheel Well CHECK
 Hydraulic Lines and Gear Cylinders CHECK
 Landing Light CHECK
 Chocks, Towbar REMOVED
 Fuel Sump DRAIN
 Windshield CHECK

LEFT WING

Wheel Strut (2”), Tire, Brakes CHECK
 Wheel Well CHECK
 Fuel Vent CLEAR
 Fuel Sump DRAIN

Tiedown, Chocks.....REMOVE
 Pitot Tube and Static Port CHECK
 Fuel Quantity CHECK
 Leading Edge, Wing Tip and Lights CHECK
 Aileron and Flap CHECK
 Static Wicks CHECK

FUSELAGE

Skin Condition CHECK
 Antennas CHECK

EMPENNAGE

Stabilator CHECK
 Static Wicks CHECK
 Trim Tab CHECK
 Rudder CHECK
 Lights CHECK
 Antennas CHECK
 Tiedown REMOVED
 Baggage Door SECURED

BEFORE ENGINE START

Seats, Belts, Harnesses SECURED
 Fuel Selector FULLEST TANK
 Brakes TEST AND SET
 Flaps RETRACT
 Gear Handle DOWN
 Strobes ON
 Propeller FULL FORWARD
 Mixture FULL LEAN
Battery Master Switch ON
 Alternate Suction Pump ON THEN OFF
 Key IGNITION
 Propeller Area CLEAR
 Review Type of Start Checklist COMPLETE

ENGINE START (COLD)

Throttle OPEN 1/2"
Electric Fuel Pump ON
Mixture RICH UNTIL FUEL FLOW, THEN IDLE CUT-OFF
Starter ENGAGE
Mixture ADVANCE AS ENGINE STARTS
Oil Pressure CHECK

ENGINE START (HOT)

Note: Hot engine is prone to flooding

Electric Fuel PumpOFF
Throttle OPEN 1/8"
MixtureFULL LEAN
Starter ENGAGE
MixtureSLOWLY ADVANCE AS ENGINE FIRES
Oil Pressure CHECK

ENGINE START (FLOODED)

Throttle FULL OPEN
Electric Fuel PumpOFF
MixtureFULL LEAN
Starter ENGAGE
Mixture ADVANCE AS ENGINE STARTS
Throttle RETARD
Oil Pressure CHECK

BEFORE TAXI

Throttle800-1200 RPM
Mixture LEAN FOR TAXI
Electric Fuel PumpOFF
Fuel Pressure CHECK
Alternator Switch ON
Avionics Master Switch ON
Transponder Code SET/ALT
GPS/Radios PROGRAM/SET

Lights AS REQUIRED
ControlsPOSITION FOR WIND
Brakes TEST

ENGINE RUN-UP

Nosewheel CENTERED
Brakes HOLD
Mixture RICH
Throttle2000 RPM
Engine Instruments CHECK
Magnetos CHECK (175 MAX DROP, 50 DIFF)
Propeller EXERCISE (X3)
Mixture FULL RICH
Alternate Air CHECK
Ammeter CHECK
Circuit Breakers CHECK
Suction Gauge CHECK (4.8-5.2")
Throttle800-1200 RPM
Flight Controls FREE & CORRECT
Flight InstrumentsCHECK AND SET

BEFORE TAKEOFF

Doors and Windows CLOSED
Seats, Belts and Harnesses SECURE
Autopilot OFF
Trim SET TAKEOFF
Flaps AS REQUIRED
Propeller FULL FORWARD
Mixture RICH
(LEAN if at high density altitude)
Throttle Friction Lock ADJUST
Electric Fuel Pump ON
Lights AS REQUIRED
Radios SET/CHECKED
Transponder Code/ALT VERIFIED
Emergency Briefing COMPLETE

Review Type of Takeoff COMPLETE

NORMAL TAKEOFF

Throttle FULL OPEN
Engine Instruments CHECK
Brakes RELEASE
Rotation Speed 65-75 KTS
Climb Speed (Gear Down/Up) 78/90 KTS (V_y)
Brakes TAP
Landing Gear (Check Positive Climb Rate UP

SHORT FIELD TAKEOFF

Brakes SET
Flaps 25 DEGREES
Throttle FULL OPEN
Engine Instruments CHECK
Brakes RELEASE
Rotation Speed 50-60 KTS
Speed 55-65 KTS
Brakes TAP
Landing Gear (Check Positive Climb Rate UP
Climb Speed 78 KTS
Flaps (Obstacle Cleared) RETRACT
Climb Speed 90 KTS

SOFT FIELD TAKEOFF

Flaps 25 DEGREES
Stabilator FULL NOSE UP
Throttle FULL OPEN
Engine Instruments CHECK
Flyoff Speed LOWEST POSSIBLE
Climb Speed 72/78 KTS (V_x/V_y)
Brakes TAP
Landing Gear (Check Positive Climb Rate) UP
Flaps (Obstacle Cleared) RETRACT
Climb Speed 90 KTS

CLIMB (1000 FEET)

Throttle 25" MP
Propeller 2500 RPM
Airspeed 104 KTS
Lights AS REQUIRED
Electric Fuel Pump OFF
Flaps UP
Flight Plan (If Filed) ACTIVATE

CRUISE

Power SET PER TABLE
Mixture LEAN (<75% POWER)
Fuel Selector AS REQUIRED*
*Change tanks 30 minutes after takeoff, then each hour after that. Turn electric fuel pump on prior to changing tanks.

DESCENT

Fuel Selector FULLEST TANK
Mixture ENRICH
ATIS/AWOS CHECK
Altimeter SET
Autopilot AS REQUIRED

BEFORE LANDING (GUMPSBL)

Electric Fuel Pump ON
Landing Gear (Check airspeed <129 KTS) DOWN
Mixture RICH
Propeller FULL FORWARD
Flaps (Check airspeed <103 KTS) SET
Seats, Belts, and Harnesses SECURE
Brakes TEST
Lights AS REQUIRED

LANDING

Power AS REQUIRED
Airspeed ... 80/75/72 KTS (CLEAN/FLAP DN/SHORT FIELD)
Flaps FULL DOWN
Brakes AS REQUIRED

AFTER LANDING

Flaps RETRACT
Electric Fuel Pump OFF
Mixture LEAN FOR TAXI
Trim SET TAKEOFF
Lights AS REQUIRED

SECURING AIRCRAFT

Throttle 1800 RPM
Mixture LEAN TO SLIGHT DROP
Wait 30 SECONDS
Throttle 1000 RPM
Magnetos CHECK GROUND
Avionics Master Switch OFF
Mixture IDLE CUT-OFF
Magnetos OFF
Alternator Switch OFF
Battery Switch OFF
Ignition Key ON DASH/BINDER
Control Lock INSTALL
Hobbs/Tach Times, Fuel, Squawks NOTE
Flight Plan (If Filed) CLOSE
Chocks and Tiedowns INSTALL
Pitot, Cowl & Tail Covers INSTALL

EMERGENCY PROCEDURES

ENGINE FIRE DURING START

If Engine Has Not Started:

Starter CRANK ENGINE
Mixture IDLE CUT-OFF
Throttle OPEN
Electric Fuel Pump OFF
Fuel Selector OFF

Abandon aircraft and extinguish if fire continues for longer than a few seconds.

If Engine Has Started:

Continue operating to draw fire into engine for a few minutes, then shut down and inspect for damage.

If External Fire Extinguisher Is Used:

Fuel Selector OFF
Mixture IDLE CUT-OFF

ELECTRICAL FIRE (SMOKE IN CABIN)

Alternator Switch OFF
Battery Switch OFF
Vents OPEN
Cabin Heat OFF

Land as soon as possible.

ENGINE FIRE IN FLIGHT

Fuel SelectorOFF
 ThrottleCLOSED
 MixtureIDLE CUT-OFF
 Electric Fuel PumpOFF
 Heater and DefrosterOFF

Proceed with power off landing procedure.

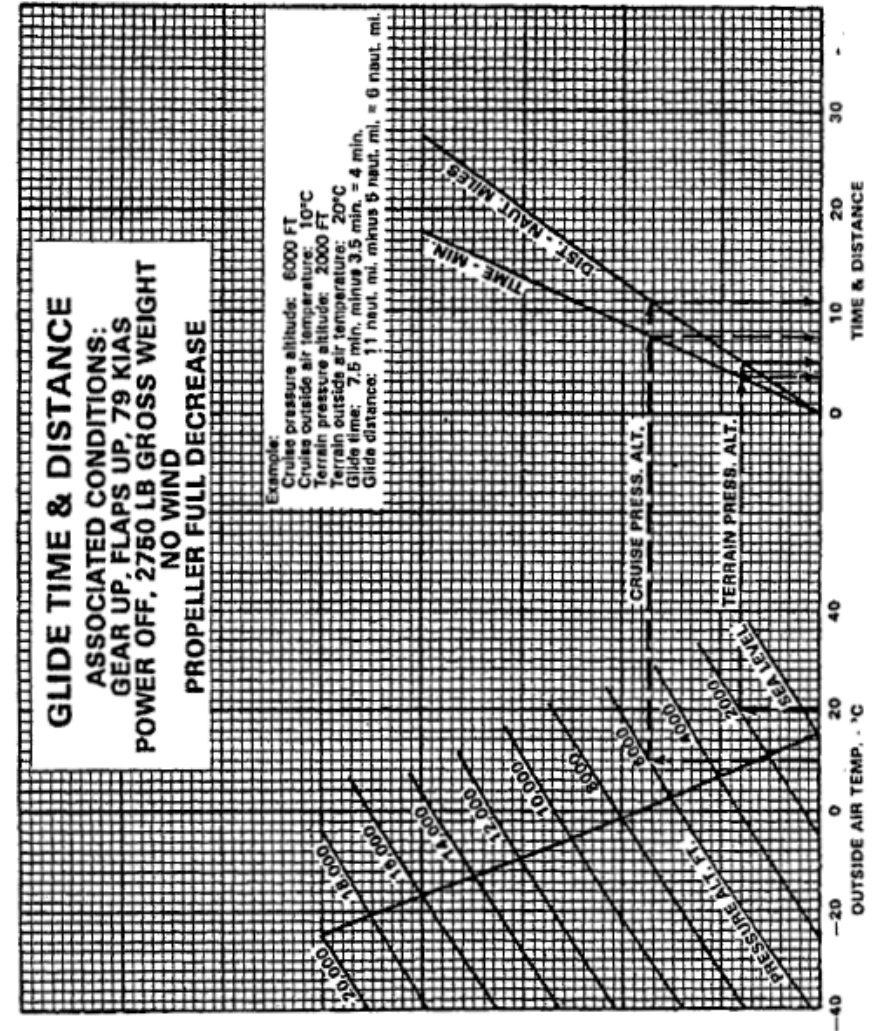
ENGINE FAILURE DURING TAKEOFF RUN

ThrottleCLOSED
 BrakesAPPLY

ENGINE FAILURE DURING INITIAL CLIMB

Airspeed79 KTS
 MixtureIDLE CUT-OFF
 Electric Fuel PumpOFF
 Fuel SelectorOFF
 IgnitionOFF
 Landing GearAS REQUIRED*
 Alternator SwitchOFF
 Battery SwitchOFF
 FlapsAS REQUIRED

* Leave up if area is rough or to clear obstructions.



ENGINE FAILURE IN FLIGHT

Airspeed79 KTS
Electric Fuel Pump ON
Fuel SelectorSWITCH TANKS
Mixture FULL RICH
Alternate Air ON
Engine Gauges CHECK
Ignition/MagnetosBOTH
Starter ENGAGE

If unable to restart engine, proceed with power off landing procedure.

POWER OFF LANDING

Airspeed79 KTS
Seat belts and harnessesSECURE
IgnitionOFF
Fuel SelectorOFF
Landing GearAS REQUIRED*
Throttle CLOSED
Mixture IDLE CUT-OFF
Battery SwitchOFF
Alternator
Switch.....OFF
Flaps AS REQUIRED
Door UNLATCH
Short Final Airspeed72 KTS

* Leave up if area is rough or to clear obstructions.

PROPELLER OVERSPEED

Throttle RETARD
Oil Pressure CHECK
Propeller ControlLOW RPM

If no propeller control available:

Airspeed DECREASE
Throttle AS REQUIRED

Maintain engine RPM below 2700 RPM. Land as soon as possible.

LOSS OF FUEL PRESSURE

Electric Fuel Pump ON
Mixture FULL RICH
Fuel Selector FULLEST TANK

LOSS OF OIL PRESSURE AND/OR HIGH OIL TEMPERATURE

Land as soon as possible. Prepare for power off landing.

ALTERNATOR FAILURE

Ammeter VERIFY ALT FAILURE
Electrical LoadREDUCE
Circuit Breakers CHECK
ALT Switch OFF, then ON

If ammeter continues to show no output or if alternator will not stay reset:

ALT SwitchOFF
Electrical LoadREDUCE
Land as soon as possible.

NOTE: Proceed with emergency landing gear extension procedure if total electrical failure occurs.

LANDING GEAR EXTENSION FAILURE

Battery Switch ON
 Alternator Switch ON
 Circuit Breakers CHECK
 NAV Light Switch OFF (DAYTIME)
 Gear Indicator Bulbs CHECK

If gear not down and locked:

Airspeed BELOW 87 KTS
 Landing Gear Handle RECHECK DOWN

If gear not down and locked: (in sequence)

Emergency Gear Lever HOLD EMERGENCY DOWN

If gear does not extend, yaw the airplane abruptly from side-to-side with rudder.

If this procedure is performed for training purposes, the landing gear selector must be left in the UP position, rather than DOWN, until all gear position indicators are green. This will prevent the hydraulic pump from activating during the procedure.

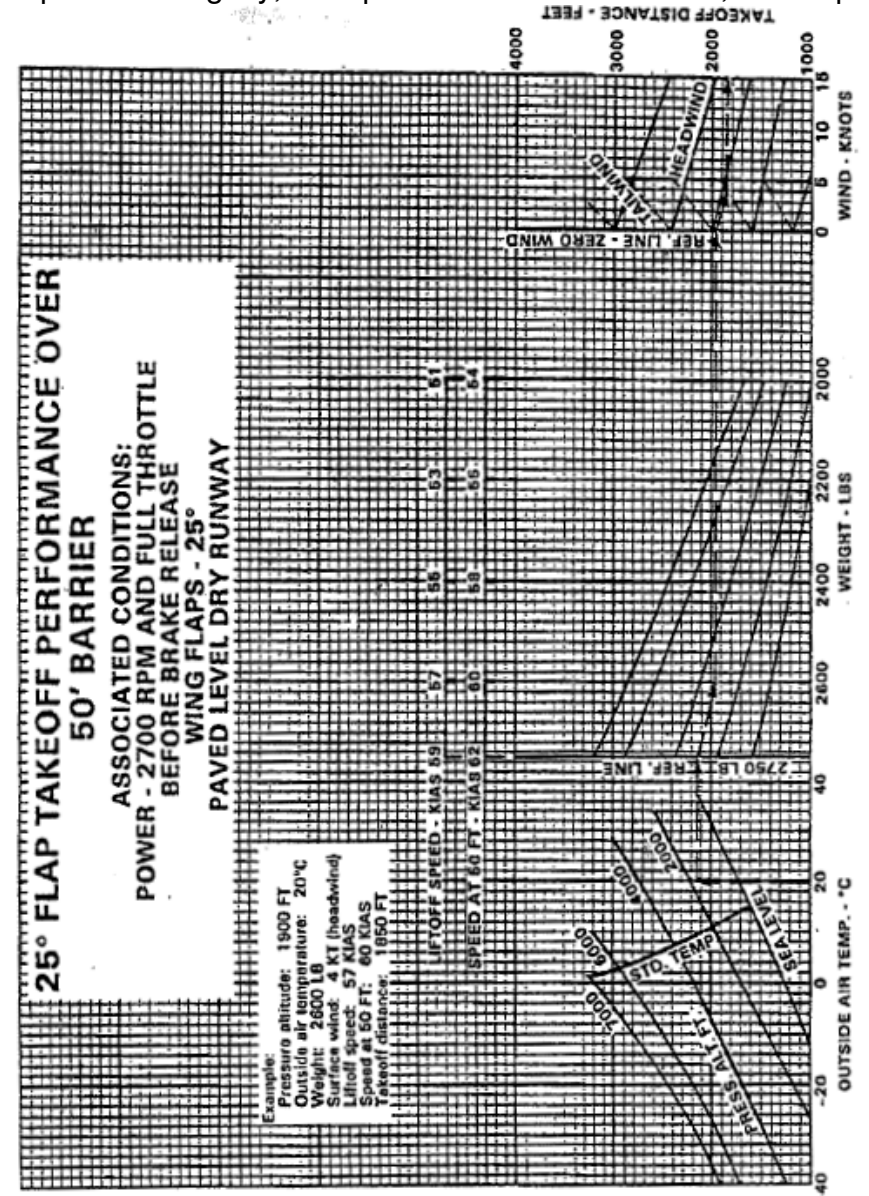
SPIN RECOVERY

Throttle IDLE
 Rudder FULL OPPOSITE
 Control Wheel ... FULL FORWARD & AILERONS NEUTRAL
 Rudder (when rotation stops) NEUTRAL
 Recover from dive.

OPEN DOOR

Airspeed REDUCE TO 87 KTS

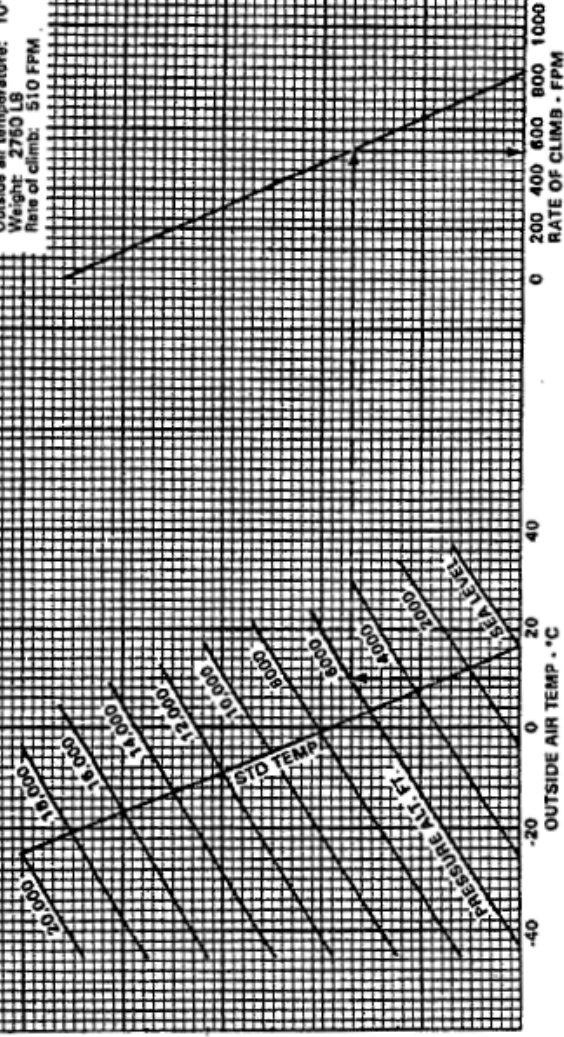
Cabin Vents CLOSE
 Storm Window OPEN
 Open door slightly, then pull closed and latch side, then top.



GEAR UP CLIMB PERFORMANCE

ASSOCIATED CONDITIONS:
 POWER 2700 RPM, FULL THROTTLE
 MIXTURE FULL RICH
 GEAR AND FLAPS RETRACTED
 CLIMB SPEED 90 KIAS

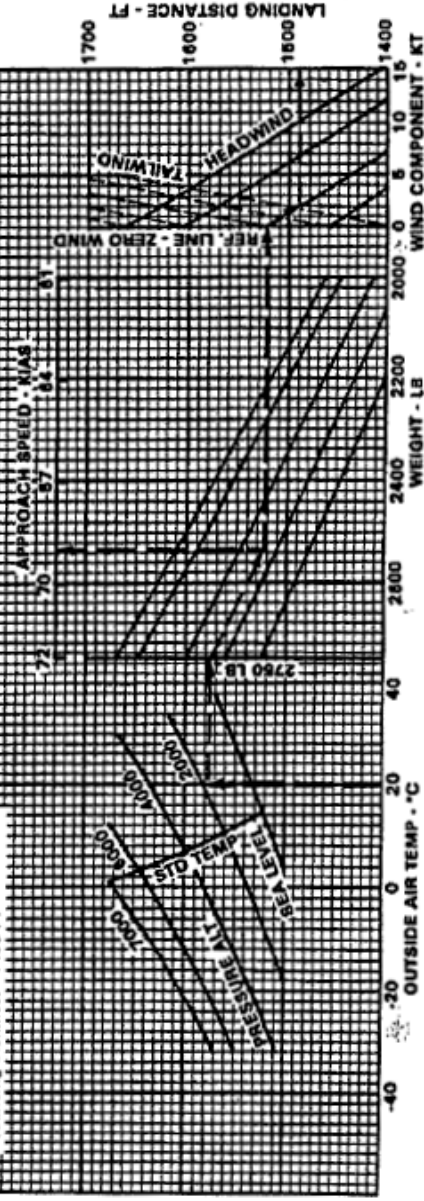
Example:
 Climb pressure altitude: 6000 FT
 Outside air temperature: 10°
 Weight: 2760 LB
 Rate of climb: 510 FPM



LANDING DISTANCE OVER 50 FT BARRIER

ASSOCIATED CONDITIONS:
 POWER OFF APPROACH
 WING FLAPS 40°
 FULL STALL TOUCHDOWN
 MAXIMUM BRAKING
 PAVED LEVEL DRY RUNWAY

Example:
 Destination pressure altitude: 1800 FT
 Outside air temperature: 20°C
 Landing Weight: 2760 LB
 Surface wind: 2 KTS (tailwind)
 Approach speed: 68 KIAS
 Landing Distance: 1490 FT



Power Setting Table for Lycoming Model IO-360-C1C6 Engine as Installed in PA-28R-201 Arrow Best Power Mixture

Pressure Altitude	ISA Temperature		55% power 110 BHP @ Prop Mixture Peak EGT + 100° F RPM and Manifold Press.		65% power 130 BHP @ Prop Mixture Peak EGT + 100° F RPM and Manifold Press.		75% power 150 BHP @ Prop Mixture Peak EGT + 100° F RPM and Manifold Press.		Pressure Altitude
	°F	°C	2200 RPM	2500 RPM	2200 RPM	2500 RPM	2200 RPM	2500 RPM	
Feet									Feet
S.L.	59	15	23.7	21.7	26.1	24.1	28.3	26.3	S.L.
1000	55	13	23.4	21.4	25.8	23.7	26.0	26.0	1000
2000	52	11	23.0	21.1	25.4	23.4	25.6	25.6	2000
3000	48	9	22.6	20.8	25.1	23.1	25.3	25.3	3000
4000	45	7	22.3	20.5	24.7	22.8	24.9	24.9	4000
5000	41	5	21.9	20.2	24.3	22.4	24.6	24.6	5000
6000	38	3	21.6	19.9	24.0	22.1	24.3	24.3	6000
6800	35	2	21.3	19.7	23.7	21.9	F.T.	F.T.	6800
7000	34	1	21.2	19.6	23.6	21.8			7000
7500	32	0	21.0	19.4	F.T.	21.6			7500
8000	30	-1	20.8	19.3		21.5			8000
8000	27	-3	20.5	19.0		21.1			8000
9400	25	-4	20.3	18.9		F.T.			9400
10000	23	-5	F.T.	18.7					10000
11000	19	-7		18.4					11000
12000	16	-9		18.1					12000
13000	12	-11		17.8					13000
14000	9	-13		17.5					14000

Note: To maintain constant power, correct manifold pressure approximately 0.16" Hg for each 10° F (5.5° C) variation in inlet air temperature from standard altitude temperature. Add manifold pressure for air temperatures above standard; subtract for temperatures below standard. Full throttle manifold pressure values may not be obtainable when atmospheric conditions are non-standard.