Piper PA-28-140 Flight Characteristics, Landing Patterns, & Flight Planning

Climb 75 mph

Vx Climb

Full Power
12-13° Pitch

Climb 85 mph

Vy Climb

Full Power
7° Pitch
9-10° (Take-off)

Climb 100 mph

Cruise Climb

Full Power
6° Pitch

Straight-Level 100 mph

2200 RPM
0° Pitch

Straight-Level 80 mph

1900 RPM
3° Pitch

Slow Flight
Flaps 0, 70 mph

1800 RPM
5° Pitch

Landing Config 70 mph

1950 RPM
1-2° Pitch

Approx. sight picture as 100 mph S/L

Slow Flight
Flaps 25, 60 mph

2000 RPM
5° Pitch

Approx. sight picture as 70 mph/F0° slow flight

30° AOB Turn

100 mph
0.5° Pitch

30° AOB Turn

100 mph
0.5° Pitch

45° AOB Turn

100 mph
2° Pitch

45° AOB Turn

100 mph
2° Pitch

Descent - 100 mph

Idle Power
-7° Pitch

Descent - 83 mph

Vg Descent

Idle Power
-2.5° Pitch

Stall Attitude

Idle RPM
15-20° Pitch

Instrument

100 mph, +500 FPM
2400 RPM
5° Pitch

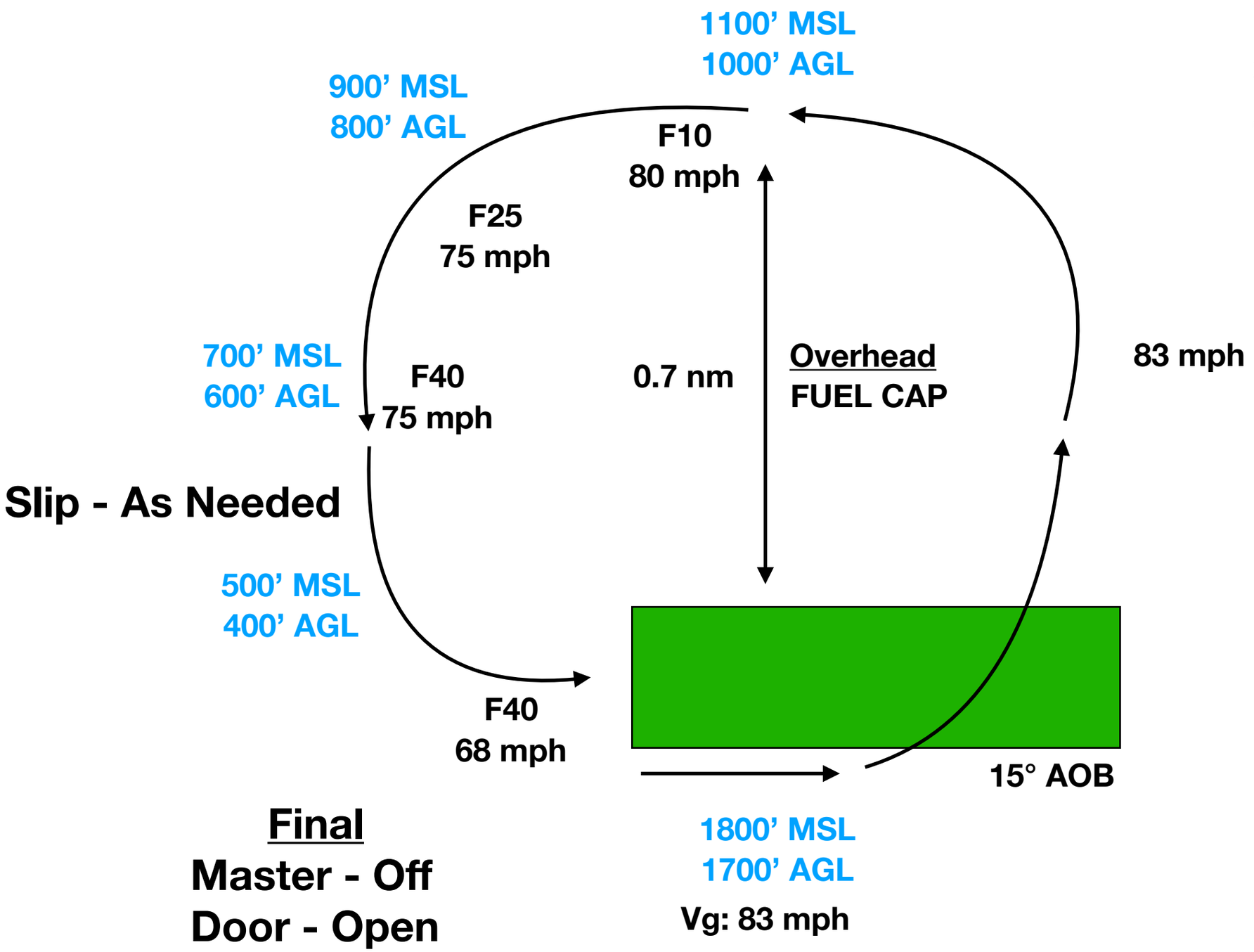
90 mph, Flaps 10°, Level
2000 rpm
0° Pitch

100 mph, -500 FPM
1800 RPM
-2.5° Pitch

90 mph, Flaps 10°, -400 FPM
1700 RPM
-2.5° Pitch

Engine Failure in Flight

<u>360° Turn</u>
15° AOB: 1400’, 0.7nm
30° AOB: 1000’, 0.3nm
45° AOB: 700’, 0.2 nm



<u>Final</u>
Master - Off
Door - Open

<u>Flow</u>
Secure Fuel
- Fuel Selector
Secure Engine
- Ignition
- Mixture
Communicate
- 121.5
- 7700

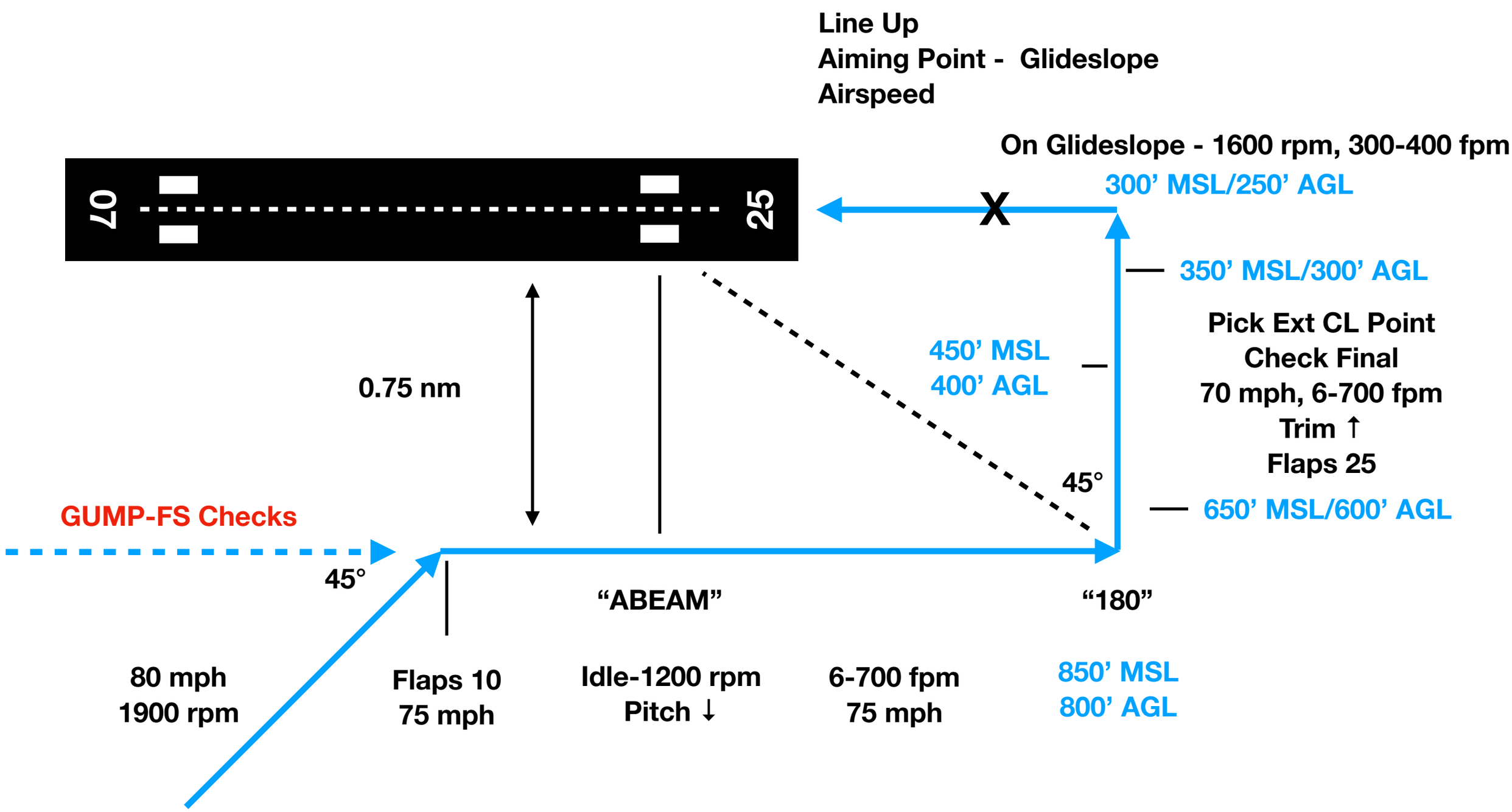
Piper Landing Pattern

Mid-Field: 1.0 nm

Mid-Field: 0.7 nm

Mid-Field: 0.5 nm

Landing Pattern



1100’ MSL/1000’ AGL, 100 mph - Checklists Complete

Touch & Go

1. If not on centerline, parallel centerline
2. Correct to centerline
3. Crosswind Controls - Input if required
4. Flaps - Up
5. Carb Heat - Off
6. Power - Slowly to full
7. Right Rudder - As required
8. Engine Instruments - Check
9. Airspeed - Check

When at 70 mph:

8. Rotate

Turn downwind when:

9. Above 700’ AGL, and
10. Abeam interval (45° behind wing if interval is Stop-N-Go)

Stop & Go

1. If not on centerline, parallel centerline
2. Correct to centerline
3. Crosswind Controls - Input if required
4. Flaps - Up
5. Brakes - Apply

When stopped: “Flaps-Trim-Heat”

6. Flaps - Set
7. Take-off Trim - Set
8. Carb Heat - Off
9. Take-off Procedure - Perform

Full Stop

1. If not on centerline, parallel centerline
2. Correct to centerline
3. Crosswind Controls - Input if required
4. Flaps - Up
5. Brakes - Apply as required
6. Lead Off Line - Follow

When past the holdshort marking and stopped:

6. After Landing Checklist - Complete
7. Taxi Clearance - Obtain if required

Flight Planning
1950# GW

- Start/Taxi/Take Off: 0.5 gal
- Climb @ 100 mph (total, includes S/T/T)
  - 500 fpm, 12.9 gph
  - 1,000’ MSL: 0.7g, 1.9nm
  - 1,500’ MSL: 0.9g, 2.9nm
  - 2,000’ MSL: 1.0 g, 4.1nm
  - 2,500’ MSL: 1.2g, 5.2nm
  - 3,000' MSL: 1.4g, 6.5nm
  - 3,500’ MSL: 1.5g, 7.6nm
- Climb Fuel ROT: 0.4g/1,000’
- Reserve:
  - 75%: 7.9 gph, 45 min: 5.9g
  - 50%: 5.3 gph, 45 min: 3.9g
- Cruise (75% HP)
  - Leaned to 50° ROP, Surface 38°F
  - 3,500’ MSL: 2500 rpm, 120 IAS, 9.5 gph
  - 4,500’ MSL: 2500 rpm, 121 IAS, 9.0 gph
  - 5,500’ MSL: 2500 rpm, 122 IAS, 8.4 gph

Flight Planning
1950# GW

- Idle Descent
  - 100 mph
  - 800 fpm
  - 2.5 gph
- Cruise Descent (1600 rpm)
  - 100 mph
  - 500 fpm
  - 3.9 gph
- VFR Tower Pattern
  - Abeam to Full Stop: 0.2g
  - T/G to Full Stop: 0.5g
- Instrument Approach
  - Abeam Field to Full Stop: 1.1g
  - T/G to Full Stop: 2.0g