

# ARMSTRONG PULSAR FLIGHT REVIEW BRIEFING

## MY GAMEPLAN:

- I will begin briefing, then turn over to you
- Goal: Make you comfortable with my flight skills and aircraft
- Flow:
  - Weather, restrictions & facilities status
  - Documentation (pilot and aircraft)
  - Aircraft orientation (operating limits, maneuvers, idiosyncrasies, performance)
  - Expected flight profile & maneuvers
  - Pattern work
  - Local area review
  - Debrief plan
  - Emergencies & contingencies
- When I'm done, you can fill in details
- Questions/comments?

## EXPERIMENTAL AIRCRAFT WARNING:

- Amateur-built, does not comply with FAA safety requirements for "standard aircraft"
- You may opt-out at any time with no misgivings!

## DOCUMENTATION:

- Pilot: Flight certificate, medical certificate, checkride summary, flight hours (logbook)
- Aircraft: Registration, airworthiness, insurance, weight & balance

## PULSAR ORIENTATION:

- Experimental registration (does not meet FAA criteria for type certificate)
- Operating Limits:

$V_{NE}$  (never exceed): 160 mph indicated  
 $V_S$  (stall): approx 46 (flaps), approx 56 (clean)  
 $V_A$  (maneuver speed): 95 mph indicated  
 $V_G$  (glide speed): 70 mph indicated  
 $V_Y$  (best rate climb): 80 mph indicated  
 $V_X$  (best angle climb): 70 mph indicated  
 $V_{FL}$  (flap speed): 80 mph indicated (*placard is 65*)

Engine RPM: 5800  
Oil Temperature: 280° F  
Oil Pressure: 58 psi  
CHT: 300° F  
Fuel Pressure: 4-6 psi

n1: 4 g's (6 g's lightweight)  
n2: -2 g's

- Restrictions:
  - Aggressive aerobatics
  - Intentional spins
  - Rings, jewelry discouraged

- Spin Recovery:
  - Stick forward, opposite rudder, full power, maintain
  
- Instruments/avionics:
  - Basic VFR with night lighting
  - Handheld GPS
  - VFR electronic gyro
  - Dual headset intercom with squelch (behind seat)
  
- Controls:
  - Center stick (sensitive control)
  - Electric pitch & aileron trim (pitch trim meter)
  - Push-to-talk trigger switch
  - Center choke for cold starts
  - Center heater pull knob
  - Side air vents (twist open, may need to push butterfly valve to start)
  - Left side, pilot-only throttle
  - No fuel mixture (automatic)
  - No carb heat (not required)
  - Electrically adjustable prop (left stick toggle) (*display inop*)
  - Flap lever, left of pilot seat
  - Power cut-off (below passenger seat)
  - Pilot only brakes with castoring nosewheel
  
- Fuel
  - 3 tanks (2 wing, 1 fuselage)
  - Burn premium auto or AVGAS
  - Fuselage tank used with baggage for CG reasons
  - 4-position fuel selector in front control stick below seat (awkward to change)
  - Fuel switch positions: L, R, Up=center, Down=off
  - Fuel pumps: electrical boost (always on, but flies without it), engine driven
  - Bottom drain at low point
  
- Entry
  - Canopy slides forward, do not grab for entry/exit
  - Approx 1 sq ft step area on wing forward of flap (do not step on flap)
  - Step up, over rail and onto seat
  - Grab back of airframe bulkhead behind seat for support
  - Slide into seat, lifting butt away from back cushion slightly
  - Strap in with shoulder and lap belts; shoulder straps insert in lap belt attachment
  - Don headset
  
- Exit
  - Remove headset, undo lap/shoulder belts
  - Use left elbow on seat back to help lift up
  - Step on seat, wing and out
  - Do not grab canopy

- Idiosyncrasies
  - Cosmetic (superficial) cracks in wing paint
  - Left flap droops on ground
  - Brakes overheat easily (avoid overuse)
  - Typically run with external lights off in day to reduce power draw (used for high traffic areas)
  - Trim indicator does not indicate neutral
  - No checklists (simple airplane, we'll discuss procedures)
  
- Performance Notes
  - No density altitude performance charts (demonstrated performance at high density altitudes)
  - Weight & balance verification
  - Clean airframe, hard to slow down (if descending, best to slow first if tight descent)

#### EXPECTED FLIGHT PROFILE & MANEUVERS:

- Discussion session (1.0): Discuss VFR procedures, etc.
- Ground ops, start up, taxi, takeoff, departure, enroute to area, maneuvers, RTB, pattern work
- Flight ops (1.0): Steep turns, slow flight, approach to stalls, unusual attitudes forced landing considerations
- Pattern ops: Pattern entry, low approach, touch and go, full stop

#### GROUND OPS:

- Preflight (inspection usually performed day prior, quick check prior to flight)
- Start: Power cutoff on, master on, choke on, fuel tank selected, fuel pump on, throttle idle, clear, start
- Before taxi: Panel/avionics on, adjust volumes, monitor weather, altimeter, squawk stby, call as req'd
- Runup: Canopy locked, mag check above 3K
- Before takeoff: Canopy locked, strapped in, trim neutral, squawk VFR, lights (night), call for takeoff

#### FLIGHT OPS:

- Takeoff: Power and prop for approx 5500-5800 RPM
- Departure: Climb at approx 80, monitor RPM, instruments
- Area: No checks, clear area
- Steep Turns: Airspeed 120 mph indicated, approx 60° bank, level
- Slow Flight: Airspeed 70 mph indicated, flaps down, turns, maintain altitude
- Approach to Stalls: Reduce power, maintain altitude, airspeed decays
  - Avoid full stall, airspeed indicates zero, minimize aileron inputs
  - Recover: release back pressure, add power
- Unusual Attitude Recoveries: Deviate from straight & level, apply appropriate recovery procedure
- Forced landing consideration: reduce power, set up glide (approx 70 mph), trim
  - Look for landing site, road preferred, look for power lines
- Other maneuvers?
- Depart area, check weather, listen to pattern freq

#### PATTERN WORK

- Call approaching pattern, 45° entry at about 6840'
- Call downwind, base, final, crosswind
- Downwind 70-80 mph
- Abeam numbers: Flaps down, reduce power as req'd, slow to 70 mph, begin descent
- Turn base approx 45° from runway, maintain 70 mph
- Turn final, power as req'd, slow to 60 mph
- Prefer low approaches
- Touch and gos: no brakes, flaps up, power up

- Go around: power, flaps up above 60 mph
- Full stop: Canopy open, squawk off, trim neutral, prop pitch back

#### LOCAL AREA REVIEW:

- Map: orientation, frequencies, airspace, altitudes, area work

#### DEBRIEF PLAN:

- Post flight: secure aircraft
- Meet in briefing room, discuss mission

#### EMERGENCIES, CONTINGENCIES:

- Fly the airplane!
- System failures
  - Engine: switch fuel tanks, restart
  - Electrical: loss of comm, trim
    - Loss of comm: eyes out, land if clear
    - Loss of trim: aircraft controllable throughout range
    - Loss of prop control: performance issue, power as required, land
  - Flap failure: land flaps up
  - Brake failure: shutdown engine, tow airplane back

#### QUESTIONS?

- My part is complete