



1967 C-172H-180

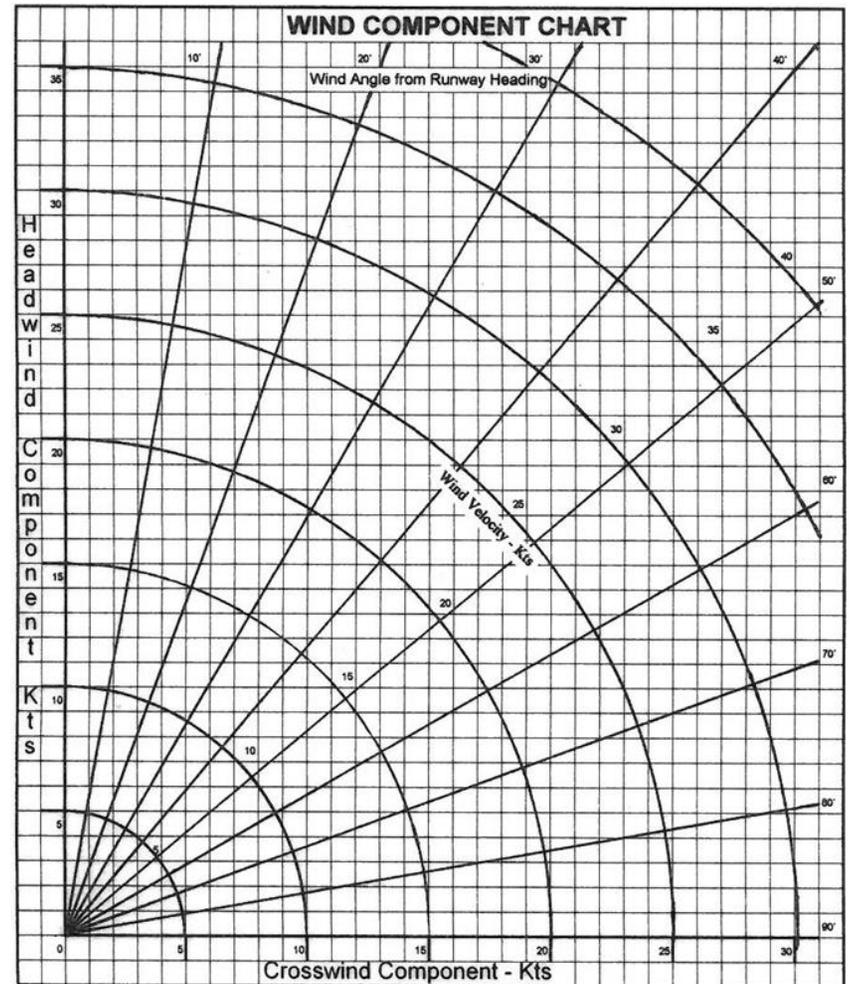
N3711F

OPERATING

CHECKLIST

July 2023

Airport (Desig.)	Serv.	Freq.	Elev.	Rwy. & Patt.	Patt.	Length	Lgt.
Anacortes (74S)	Traf	128.25	246'	18 Rt/36 Lt	1,200'	3,000'	Lgt
Arlington (AWO)	Traf	122.725	142'	16 Rt/34 Lt	1,200'	5,300'	Lgt
	AWOS	135.625		11 Rt/29 Lt		3,500'	Lgt
Bellingham (BLI)	Tw r	124.9	171'	16 Rt/34 Lt	1,200'	6,700'	Lgt
	ATIS	134.45					
Bremerton (PWT)	Traf	123.05	444'	02 Rt/20 Lt	1,400'	6,000'	Lgt
	AWOS	121.2					
Camano Is. (13W)	Traf	122.9	145'	16 Rt/34 Rt	1,200'	1,700'	
Concrete (3W5)	Traf	122.9	267'	07 Rt/25 Lt	1,300'	2,600'	
Darrington (1S2)	Traf	122.9	553'	10 Lt/28 Lt	1,500'	2,500'	
Fairchild (CLM)	Traf	122.975	291'	08 Lt/26 Rt	1,300'	6,300'	Lgt
	ASOS	135.175		13 Lt/31 Rt		3,200'	
First Air (W16)	Traf	122.9	50'	07 Rt/25 Lt	1,100'	2,100'	
Harvey (S43)	Traf	123.0	23'	15 Rt/33 Lt	1,000'	2,400'	Lgt
Jefferson Co. (0S9)	Traf	123.0	110'	09 Rt/27 Lt	1,000'	3,000'	Lgt
	AWOS	119.025					
Oak Harbor (OKH)	Traf	122.8	193'	7 Rt/25 Lt	1,200'	3,300'	Lgt
	AWOS	132.775					
Paine (PAE)	Tw r	132.95	607'	16R Rt/34L Lt	1,600'	9,000'	Lgt
	V-110.6 I-109.3 163	ATIS 128.65		16L Lt/34R Rt		3,000'	Lgt
Renton (RNT)	Tw r	124.7	32'	16 Lt/34 Rt	1,032'	5,400'	Lgt
	ATIS	126.95					
Sanderson (SHN)	Traf	122.8	273'	05 Rt/23 Lt	1,300'	5,000'	Lgt
	ASOS	119.275					
Sequim (W28)	Traf	122.7	151'	09R Rt/27L Lt	1,100'	3,500'	
Skagit (BVS)	Traf	123.075	145'	11 Lt/29 Lt	1,145'	5,500'	Lgt
	NDB 240	AWOS 121.125		4 Lt/22 Lt		3,000'	Lgt
Tacoma Nar. (TWM)	Tw r	118.5	295'	17 Lt/35 Rt	1,295'	5,000'	Lgt
	ILS 109.1 167°	ATIS 124.05					
Whidbey Air (W10)	Traf	122.9	271'	16 Lt/34 Lt	1,300'	2,500'	



Some Rules of Thumb:

1° at 1 nm = 100'; 1° at 60 nm = 1 nm

TAS is approximately IAS + 1.5% per 1,000' MSL

Density Altitude is approximately Field Elevation +/- (120 x temperature difference from standard temperature)

Standard Temperature = 15°C - 2°/1,000' MSL

WCA = Crosswind/TAS (in nm per minute)

TAKEOFF AND CLIMB

Full throttle = 2700 rpm (static check approx. 2350 rpm)

$V_{rot} = 50 \text{ mph}/10^\circ$ (2,500 lb) $45 \text{ mph}/10^\circ$ (2,000 lb)

$V_x = 65 \text{ mph}$ (2,500 lb) 60 mph (2,000 lb)

$V_y = 89 \text{ mph}$ (2,500 lb) 80 mph (2,000 lb)
(-1 mph per 2,500' MSL)

Cruise climb = 90 to 97 mph

CRUISE

2,000' 64% BHP 2400 rpm 125mph TAS 8.7 gal/hr

4,000' 65% BHP 2450 rpm 127 mph TAS 8.8 gal/hr

6,000' 65% BHP 2500 rpm 130 mph TAS 8.8 gal/hr

8,000' 65% BHP 2550 rpm 130 mph TAS 8.8 gal/hr

MANEUVERING

$V_a = 122 \text{ mph}$ (2,500 lb) 109 mph (2,000 lb)

Best glide = 86 mph (2,500 lb) 77 mph (2,000 lb)

PATTERN AND LANDING

Downwind approx. 2000 rpm 90 mph clean

Glide 1100 to 1200 rpm 85 mph 10° flaps

Base Turn 1100 to 1200 rpm 85 mph 20° flaps

Base 1100 to 1200 rpm 75 mph 30° flaps

Final 1100 to 1200 rpm 65 mph 30° flaps
(2,500 lb)

Final 1100 to 1200 rpm 60 mph 30° flaps
(2,000 lb)

1. Control wheel lock - removed/stowed
2. Circuit breakers - in
3. Avionics switch - Off (down)
4. Ignition switch - Off, key removed
5. Master switch - On
6. Check fuel quantity indicators, exterior lights, pitot heat, and interior lights
7. Flaps - extend fully 30° for exterior inspection
8. Master switch - Off
9. Required papers (ARROW) - aboard/stowed/displayed
10. Fuel strainer drain knob - pull for 4 sec. (1st flight of the day)

EXTERIOR INSPECTION

1. Fuel strainer drain valve - closed (not dripping)
2. Left instrument panel air vent and static port - unobstructed
3. Left wing strut & leading edge; air vent, pitot tube, and fuel vent unobstructed; test stall warning horn with suction bulb
 - a. Landing/taxi lights, wingtip, and wingtip light
 - b. Left aileron, counterweights, hinges, nuts, and rod end
 - c. Left flap, flap tracks, rollers, nuts, and rod end
 - d. Left wing sump drain - sample fuel
4. Left main gear strut, brake line, brake disk and pads, tire condition and inflation (38 psi)
5. Top of left wing, antenna
6. Left side and top of fuselage, antenna
7. Horizontal stabilizer - condition of top and underside
 - a. Elevator hinge bolts/nuts; securely attached to rt. elevator
8. Left side vert. stabilizer, antenna, rotating beacon, tail light
 - a. Left side of rudder, rudder hinge bolts and nuts
 - b. Right side vertical stabilizer, rudder, antenna
 - c. Rudder actuators (bolts, nuts, and cotter pins)
9. Right elevator; trim-tab bolt/nut/cotter pin; horiz. stabilizer
10. Right side and bottom of fuselage
11. Top of right wing, antenna
12. Right main gear strut, brake line, brake disk and pads, tire condition and inflation (38 psi)
13. Right wing sump drain - sample fuel
 - a. Right flap, flap tracks, rollers, nuts, and rod end
 - b. Right aileron, hinges, nuts, rod end, counterweights
 - c. Right wingtip, light, leading edge, wing strut, and air vent

14. Right instrument panel air vent - unobstructed **P. 2**
15. Cowling fasteners - secure
16. Nose gear shock strut extension; scissors, steering arms, and shimmy dampener linkages (bolts/nuts/cotter pins)
a. Tire condition and inflation (45 psi)
17. Right exhaust pipe - secure
18. Oil quantity - min. 6 qts, dipstick & access door secured
19. Prop blades - condition; spinner - all screws secure
20. Cylinder cooling fins, alternator belt, starter & ring gear teeth
21. Air filter - condition
22. Inside engine access door - hoses & wires connected; engine mounts - no cracks, attach bolts - secure; access door secured
23. Cowling fasteners - secure
24. Flaps - Up
25. Fuel tanks - check fuel quantity sufficient for planned flight plus reserve; secure fuel caps
26. Windscreen - Clean
27. Towbar and chocks stowed; baggage door - unlocked, secure

BEFORE STARTING ENGINE

1. Seats and seat belts - adjust and lock
2. Spot tracker - power on and tracking
3. Pray
4. Brakes - test hydraulic pressure (pedal resistance)
5. Fuel selector valve - Both

STARTING ENGINE

1. Mixture - Full rich
2. Throttle - Closed
3. Carb heat - Off
4. Master switch - On
5. Primer - 2 to 5 strokes (depending on temp.), then locked
6. Prop area - Clear
7. Brakes - hold (parking brake - off/released)
8. Throttle - open 1/8 inch
9. Ignition switch - Start (not longer than 30 seconds); after engine starts, release to Both
10. Oil Pressure - check min 25 psi (red line) within 30 seconds
11. Rotating beacon - On
12. Avionics switch - on (up)
13. Radios - set; Transponder - Alt

ENGINE FIRE IN FLIGHT

P. 11

1. **Throttle – IDLE**
2. **Mixture – FULL LEAN**
3. **Fuel selector valve – OFF**
4. Primer – IN and LOCKED
5. Cabin heat and air – CLOSE (except wing root vents)
6. Radio – 121.5 MAYDAY
7. Master switch – OFF

If fire is not extinguished

8. Emergency descent – EXECUTE [p. 10]
9. DO NOT RESTART ENGINE
10. Forced landing – EXECUTE [p. 9]

ELECTRICAL FIRE IN FLIGHT

1. **Master switch – OFF**
2. **Avionics master – OFF**
3. **Electrical switches – OFF**
4. Vents/cabin air/cabin heat – CLOSED
5. Fire extinguisher – ACTIVATE if needed
6. Cabin – VENTILATE after discharging extinguisher in closed cabin

If fire is out and power is needed:

7. Master switch – ON
8. Circuit breakers – CHECK for faulty circuit (*do not reset*)
9. Radios/Electrical – ON (*one at a time, looking for fire*)
10. Vents – OPEN (*only when fire is out*)

CABIN FIRE

1. **Master switch – OFF**
2. **Vents/cabin air/cabin heat – CLOSED (to avoid draft)**
3. **Fire extinguisher – ACTIVATE**
4. Cabin – VENTILATE after discharging extinguisher in closed cabin
5. Land the airplane as soon as practical to inspect for damage

WING FIRE

1. **Navigation light switch – OFF**
2. **Pitot heat switch – OFF**
3. **Landing/taxi light switch – OFF**
4. **Emergency descent – EXECUTE [p. 10]**

Sideslip to keep flames away from fuel tanks and cabin. Land as soon as possible, using flaps only as required for final approach and touchdown.

PRECAUTIONARY LANDING (with power)

P. 10

1. Radio – 121.5 PAN-PAN
2. Passengers – BRIEF
 - a. Seat belts/harness – TIGHT
 - b. Doors – OPEN and LOCKED (handles forward)
3. CHOOSE LANDING SITE and DRAG IT [p. 7]
4. Avionics master – OFF
5. Electrical equipment – OFF

On Final

6. Flaps – 30°
7. Approach speed – 70 to 76 MPH
8. Touchdown – GENTLY WITH POWER
9. Throttle – IDLE
10. Yoke – FULL AFT
11. Mixture – FULL LEAN
12. Master Switch – OFF
13. Ignition switch – OFF
14. Brakes – AS REQUIRED

DITCHING (as close as possible to land or boats)

1. Transponder – 7700
2. Radio – 121.5 MAYDAY
3. Passengers – BRIEF
 - a. Heavy objects – SECURE or JETTISON
 - b. Seat belts/harness – TIGHT
 - c. Doors – OPEN and LOCKED (handles forward)
 - d. Face – CUSHION
4. Establish glide
 - a. With power – set approximately 1400 rpm, Flaps – 30°, establish 300 ft/min descent at 76 MPH;
 - b. Engine out – 76 MPH, flaps 10°
5. Approach: PARALLEL TO SWELLS or ON BACKSIDE
6. Touchdown – Flaps 30° as slowly (near stall) as possible
7. EVACUATE airplane
8. Life vest/raft – INFLATE (after exiting airplane)

EMERGENCY DESCENT

1. Carburetor heat – FULLY ON
2. Throttle – IDLE
3. Bank – STEEP BANK will help nose drop to a very steep pitch
4. Flaps – UP
5. Pitch – LOWER NOSE
6. Back pressure on yoke to control airspeed:
do not exceed 182 mph (V_{NE}) or 145 mph (V_{NO}) in rough air
7. Throttle – CLEAR ENGINE periodically (except for fire)

BEFORE TAKEOFF

P. 3

1. Flight controls - check
2. Fuel selector valve - Both
3. Trim - Takeoff
4. Flaps - 10°
5. Mixture - Full rich
6. Cabin doors and window - closed and locked
7. Throttle - 1800 rpm; check mags (175 max drop/50 max diff.)
 - a. Carb heat - check, then off
 - b. Engine instruments/suction gauge - within green arcs
8. Flight instruments, radios, GPS, transponder - set
9. Review takeoff data and engine failure procedures

RUNWAY LINEUP

1. Align aircraft on centerline; set DG compass to rwy. heading
2. Check windsock, anticipate/set crosswind controls

NORMAL TAKEOFF (Flaps 10°)

1. Throttle - smoothly (2-3 sec) to full open (approx. 2350 rpm)
2. Airspeed indicator - check for movement
3. Yoke - lift nosewheel at 45 mph (light wt.), 50 mph (max wt.)

NORMAL (V_y) CLIMB or CRUISE CLIMB

1. Set pitch for 89 mph (-1 mph per 2,500' MSL) **or** 90-97 mph
2. Throttle - Full open
3. Trim
4. Mixture (above 3,000' MSL/density alt.) - Lean for max rpm

LEVEL OFF/CRUISE

1. Set pitch for level flight at planned cruise airspeed
2. Throttle - set for cruise (typically 2400-2600 rpm)
3. Trim
4. Mixture - Lean (to 50° rich of peak EGT)
5. Fuel selector valve (above 5,000' MSL) - Left or Right, then alternate as required during cruise flight

DESCENT (LET-DOWN)

1. Plan a descent point (altitude to lose, distance to go)
2. Throttle - as required (-500 rpm gives approx. -500 ft/min.)
3. Carb heat - On if below 1500 rpm
4. Mixture - enrich periodically as necessary

BEFORE LANDING - DOWNWIND

1. Airspeed - 90 mph (approximately 1900 to 2000 rpm)
2. Trim
3. Fuel selector valve - Both
4. Mixture - Full rich
5. Carb heat - Fully on

ABEAM TOUCHDOWN POINT

1. Throttle - set 1100 to 1200 rpm
2. Flaps - 10°
3. Trim for 85-mph (approx. -500 fpm) glide

TURNING BASE

Flaps - 20°

BASE

1. Airspeed - 70 mph to 75 mph
2. Flaps - 30°
3. Trim

FINAL

1. Airspeed - 60 mph (light weight) to 65 mph (max weight)
2. Trim

LANDING

1. Throttle - idle
2. Touchdown on main wheels, lower nose gently
3. Braking - minimum required

GO-AROUND/REJECTED LANDING

1. Throttle - smoothly (2-3 sec) to full open, rpm not past redline
2. Carb heat - Off
3. Set pitch to takeoff attitude to climb and accelerate
4. Trim - nose down trim as necessary to help control pitch-up
5. Flaps - raise to approximately 20°
6. At 70 mph retract flaps and set pitch for V_y (89 mph) climb

STOP-AND-GO - AFTER LANDING/BEFORE TAKEOFF

1. Brake normally to a stop
2. Flaps - retract/set to 10°
3. Carb heat - Off
4. Trim - Takeoff

P. 4

ROUGH-RUNNING ENGINE (no indication of engine damage)

1. Mixture – ADJUST
(If still rough, magneto or magneto timing may be a problem...)
2. Ignition – SELECT EACH MAGNETO INDIVIDUALLY
3. If roughness disappears, leave ignition on that magneto
4. Land as soon as practical

GRADUAL LOSS OF POWER (usually carburetor ice)

1. Carburetor heat – FULLY ON
2. Mixture – ADJUST

SUDDEN LOSS OF POWER (usually fuel starvation)

1. Fuel selector valve – LEFT or RIGHT for 1 min., then switch to opposite side
2. Mixture – RICH

ENGINE FAILURE DURING FLIGHT

1. Pitch – SET FOR 86 MPH and TRIM
2. Carburetor Heat – FULLY ON
3. Fuel Selector Valve – LEFT or RIGHT for 1 min., then switch to opposite side
4. Mixture – RICH
5. Primer – IN and LOCKED
6. Landing field – SELECT and MANEUVER TOWARD IT
7. Ignition switch – BOTH (or START if propeller is stopped)
8. If power not restored – EXECUTE FORCED LANDING [below]

FORCED LANDING (without power)

1. Transponder – 7700
2. Radio – 121.5 MAYDAY
3. Passengers – BRIEF
 - a. Seat belts – TIGHTEN
 - b. Doors – OPEN and LOCKED (handles forward)
4. Mixture – FULL LEAN
5. Fuel Selector Valve – OFF
6. Ignition switch – OFF
7. Flaps – AS REQUIRED (maneuvering)
8. Final approach speed – 70 to 75 MPH
9. Flaps – 30°
10. Master Switch – OFF
11. Touchdown – as slowly (near stall) as possible
12. Yoke – FULL AFT
13. Brakes – AS REQUIRED

P. 9

BASIC IN-FLIGHT EMERGENCY PROCEDURES

P. 8

1. MAINTAIN AIRCRAFT CONTROL
2. ANALYZE THE SITUATION AND TAKE PROPER ACTION
3. LAND AS SOON AS PRACTICAL

ENGINE FIRE DURING START ON THE GROUND

1. Ignition – START (continuing cranking pulls flames into engine)

If engine starts:

2. Power – 1700 RPM for a few minutes
3. Engine – SHUTDOWN and inspect for damage

If engine fails to start:

4. Throttle – FULL OPEN
5. Mixture – FULL LEAN
6. Ignition – START (continuing cranking for another 30 seconds)
7. Engine – SECURE
 - a. Fuel selector valve – OFF
 - b. Ignition switch – OFF
8. Radio – CALL FOR ASSISTANCE
9. Master switch – OFF
10. Aircraft – EVACUATE
11. Fire extinguisher – USE TO EXTINGUISH FIRE
12. Aircraft – INSPECT for fire damage (*repair damage or replace damaged components or wiring before attempting another flight*)

ENGINE FAILURE DURING TAKEOFF RUN

1. Throttle – IDLE
2. Brakes – APPLY
3. Wing Flaps – RETRACT (if stopping distance critical)
4. Mixture – FULL LEAN
5. Ignition Switch – OFF
6. Radio – Inform tower/CTAF of aborted takeoff
7. Master switch – OFF (if departing runway surface)

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. Lower nose – maintain 70 to 81 MPH flaps down, 77 to 86 if up
2. Choose landing site STRAIGHT AHEAD
3. Mixture – FULL LEAN
4. Fuel Selector Valve – OFF
5. Ignition switch – OFF
6. Doors – OPEN and LOCKED (handles forward)
7. Wing Flaps – AS REQUIRED
8. Radio – Make MAYDAY call if able
9. Master Switch – OFF
10. Approach – 70 to 81 MPH

BEFORE TAKEOFF (MULTIPLE PATTERNS)

P. 5

1. Fuel selector valve - Both
2. Trim - Takeoff; Flaps - 10°
3. Mixture - Full rich
4. Carb heat - Off
5. Cabin window - Closed and locked

SHORT-FIELD TAKEOFF

1. Flaps - 10°
2. Brakes - Hold
3. Throttle - smoothly (2-3 sec) to full open (approx. 2350 rpm); at higher elevations lean for max rpm
4. Brakes - Release
5. Yoke - lift nosewheel at 50 mph (light) or 55 mph (heavy)
6. Set pitch for 60 mph (light)/65 mph (hvy) til obstacles cleared
7. Flaps - retract at 70 mph
8. Set pitch for normal V_y (89 mph) or cruise (90-97 mph) climb

SHORT-FIELD LANDING

1. Airspeed - 60 mph (light weight) to 65 mph (max weight)
2. Flaps - 30°
3. At touchdown - lower nosewheel to ground, retract flaps
4. Yoke - bring to full aft as you apply heavy braking as required

SOFT-FIELD TAKEOFF

1. Flaps - 10° (prior to entering takeoff surface)
2. Yoke - full aft and hold it there until nosewheel lifts off
3. Taxi onto airstrip and align without stopping
4. Throttle - smoothly (2-3 sec) to full open (approx. 2350 rpm)
5. Aircraft will fly off at min airspeed (below 40 mph)
6. Yoke - ease forward to level off in ground effect
7. Accelerate to 60 mph and begin normal climb
8. At 70 mph retract flaps and set pitch for normal climb speed

SOFT-FIELD LANDING

1. Airspeed - 60 mph (light weight) to 65 mph (max weight)
2. Flaps - 30°
3. Make a gentle touchdown with a little power
4. Yoke - bring to full aft
5. Flaps - leave down
6. Throttle - as necessary to keep aircraft rolling

NO-FLAP LANDING

P. 6

1. Base airspeed - 75 mph (light weight) to 80 mph (max wt.)
2. Final airspeed - 70 mph (light weight) to 75 mph (max wt.)
3. Braking - as necessary (do not plan to use normal turn-off)

SIMULATED ENGINE-OUT (S.E.O.) LANDING

ABEAM TOUCHDOWN POINT

1. Carb heat - fully on
2. Throttle - idle
3. Flaps - 10°
4. Trim for 85-mph glide

BASE

1. Fly tighter base to insure making runway
2. Airspeed - 75 mph to 80 mph
3. Flaps - use judiciously to control airspeed and glidepath

FINAL

1. Airspeed - 65 mph (light weight) to 70 mph (max weight)
2. Flaps - as required; do not select 30° until landing assured

AFTER LANDING (clear of runway)

1. Flaps - Retract
2. Carb heat - Off
3. Pitot heat - Off
4. Landing light - Off
5. Spot tracker (last landing) - \sqrt OK button until green light on
6. Flight plan (if applicable) - Close

ENGINE SHUTDOWN

1. Throttle - Idle
2. Avionics switch - Off
3. Ignition switch - L, then R, then Off, then back to Both (mag grounding check)
4. Mixture - Full lean
5. Ignition switch - Off (after prop stops turning)
6. Master switch - Off
7. Key - remove from ignition
8. Spot tracker - Off

DRAGGING A FIELD

P. 7

Assess the field suitability with **Wind LASSO**

Wind (strength and direction)

L - Length

A - Altitude (elevation to figure pattern altitude, density altitude)

S - Slope (upslope/downslope and sideslope)

S - Surface condition (grass [length], dirt, gravel, sand, ruts, etc.)

O - Obstructions (rocks, stumps, etc. on the field; also

obstructions on the final approach and departure corridors)

1. Overfly the field along its length at a safe altitude
2. If the field is on a slope, fly from uphill to downhill
3. Airspeed - approximately (but not slower than) 70 mph IAS
4. Flaps - 20°
5. Estimate length of field (100 ft/sec times number of seconds):
 - a. Fly GPS groundspeed of 60 kts (in calm or headwind)
 - b. Time the pass over the field in seconds, multiply by 100
 - c. The product is the approximate length of the field in feet
 - d. If 60 kts GS is less than 70 mph IAS (in tailwind), fly 90 kt GS and use 150 ft/sec times number of seconds
6. Make low pass(es) at approx. 50' AGL to assess field slope, surface condition, and obstructions