

TAKEOFF REFERENCE	
NORMAL	V _R 50 V _X 65 V _Y 78
SHORT FIELD :	SOFT FIELD :
- No flaps	- Flaps 10, yoke back
- Brake, full throttle	- No stop taxi roll
- Clear obs. @ 56	- Roll nose up
- Trans to V _Y	- Speed in gnd. effect

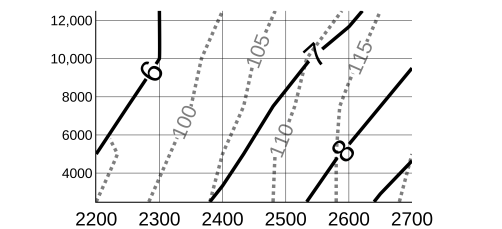
HOLDING SHORT	
Fuel selector	both
Elevator trim	takeoff
Carburetor heat	off
Pitot heat	as required
Mixture	full rich, or lean for DA
Flaps	0° to 10° (soft field)
Radios	set TWR, ready DEP
Doors / windows / belts	secure
Runway	correct & clear
TIME	NOTE

I WILL LOSE THE ENGINE,
I WILL PUSH IMMEDIATELY!

ROLLING ONTO RUNWAY	
Lights	strobe, landing & pitot
Camera	H.I. / rwy hdg correct
Action	Full Throttle > 2270 RPM

CLIMB	
Flaps	raise at safe altitude
Climb-out (V _Y)	78 KIAS
Flaps	raise at safe altitude
Landing light	off, as needed
VFR flight plan	open

CRUISE	
Throttle	2200-2700 RPM
Elevator trim	adjust to cruise speed
Fuel selector	both
Mixture	lean above 3,000 ft
Circuit breakers	in
Pitot heat	as required
Engine instruments	in green
Instruments	X-check, H.I. to comp.



BEFORE APPROACH	
Weather	review dest. & alternate
Altimeter	set to ATIS
Marker beacons	test
Radios & nav aids	set & identify
Instruments	H.I. to compass
Course	set final or next appr.
Entry type	review
Altitudes	review FAF, DA & MDA
Time	ready FAF to MAP
Missed approach proc.	review / brief
Mixture	as required
Carburetor heat	as required
Pitot heat	as required

BEFORE LANDING – GUMPFS	
Approach mode	correct
Seat belts	adjust & secure
Fuel selector	both
Landing light	on
Carburetor heat	on
Mixture	full rich below 3,000 ft
Flaps	as required
DMMS	68 KIAS
Short final	flaps, 60 KIAS

GO-AROUND	
Throttle	full open
Carburetor heat	off
Flaps	retract to 20°
Airspeed	55 KIAS
Flaps	10° until obstacles cleared

CLEAR OF RUNWAY	
Flaps	up
Carburetor heat	off
Mixture	lean for taxi
Elevator trim	takeoff
Pitot heat	off
Lights	strobe & landing off

ENGINE SHUTOFF	
TIME	NOTE
Lights (except beacon)	off
Avionics master switch	off
Mixture	cut-off
Ignition switch	off, remove key
Master switch	off
Fuel selector	left or right
Control lock	install
Pitot cover	install

FIRE DURING START	
CRANKING	continue
ENGINE STARTS:	
- power	1700 RPM a few seconds
- engine	shutdown, check damage
ENGINE FAILS TO START:	
- cranking	continue
- fire extinguisher	obtain
- engine	shutdown
- fire extinguisher	use

FIRE DURING FLIGHT	
- fuel Selector	off
- mixture	cut - off
- master switch	off
- vents / cabin air / heat	off
- airspeed	100 KIAS

ELECTRICAL FIRE	
- master switch	off
- all electrical switches	off
- vents / cabin air / heat	off
- fire extinguisher	use

If fire appears out, and electrical power is necessary to continue flight:

- master switch
- circuit breakers
- elec. switches

with delay after each until short is isolated

ENGINE POWER LOSS	
(A) AVIATE – BEST GLIDE:	
- best glide speed	65 KIAS
(B) BEST PLACE TO LAND:	
- select field – 1.5 NM ≈ 1000 ft	
- turn towards area	
- select best approach for wind	
- use NEAREST	
(C) CHECK LIST – RESTART:	
- fuel selector	on
- mixture	full rich
- carburetor heat	on
- ignition switch	both
- primer	in & locked
(D) DISTRESS CALL:	
- transponder	7700
- tune	current ATC, 121.5, or 122.2
- announce	aircraft id, position
	problem, intentions
SETUP APPROACH:	
- downwind abeam	1,500 ft AGL
- plan soft-field, power-off approach	
SECURE AIRCRAFT:	
- fuel Selector	off
- mixture	cut-off
- ignition	off
- flaps	as required
- master switch	off
- doors	unlatch
- touchdown	slightly tail low
- brakes	apply heavily

BEFORE TAXIING (CON'T)	
Weather	GO / NO-GO, route and altitude
Airports	review diagrams, lighting, approach plates, DPs, SIDs, STARs
Airplane	perf., rwy cond., W&B
Alternates	± 1 hr / 2,000 ft C / 3 SM V
IFR flight plan	filed
Clearance	obtained
Avionics	set
Taxi	request

DURING TAXI	
Brakes	test (pilot and co-pilot)
Attitude indicator	stable, < ± 5° error
Turn coordinator	correct movement
Heading indicator	correct movement
Magnetic compass	correct movement

BEFORE RUN-UP	
Airspeed indicator	“0” or wind
Attitude indicator	adjust reference
Altimeter	set to ATIS
Turn coordinator	level & ball centered
Heading indicator	mag. compass
Vertical speed indicator	“0”
Alternate air	VSI “jump”

MAXIMUM GLIDE				
RANGE in NM @ 65 KIAS, FLAPS UP				
AGL	Zero Wind	20 kt. Headwind	40 kt. Headwind	
10,000	15	11	6.4	
9000	13.5	9.9	5.8	
8000	12	8.8	5.1	
7000	10.5	7.7	4.5	
6000	9	6.6	3.9	
5000	7.5	5.5	3.2	
4000	6	4.4	2.6	
3000	4.5	3.3	1.9	
2000	3	2.2	1.3	
1000	1.5	1.1	0.6	

RUN-UP	
Controls	free & correct
Fuel selector	both
Elevator trim	takeoff
Mixture	full rich
RUN - UP :	
– Primer	in & locked
– Oil pressure / temp	in green, warm
– Brakes	apply
– Throttle	1700 RPM
– Suction gauge	in green, 5 psi
– Ammeter	positive load
– Magnetos	125 drop / 50 diff.
– Carburetor heat	100 drop
– Throttle	< 1000 RPM
– Throttle friction	tighten
Mixture	lean for Density Alt (full throttle & lean)

DEPARTURE BRIEFING	
VFR flight plan	open (Leidos)
PAX emergency briefing	complete
Doors / windows / belts	secure
Rejected take-off	reference point
Loss of thrust, < 600 AGL	loc. & turn dir.
Loss of thrust, > 600 AGL	loc. & turn dir.
GO TO “HOLDING SHORT”	

OTHER EMERGENCY		
EXCESSIVE RATE OF CHARGE: turn both sides of master switch OFF, then ON. If light comes on again, terminate flight.		
INSUFFICIENT RATE OF CHARGE: Nonessential electric OFF. Terminate flight.		
RADIO OUT: Check circuit breakers & VOLUME. Recycle alternator switch. If in B, C, or D airspace, squawk 7600. Terminate flight.		
TWR SIGNALS	ON GROUND	IN FLIGHT
Steady Green	Cleared To Takeoff	Cleared To Land
Flashing Green	Cleared To Taxi	Return For Landing
Steady Red	STOP	Yield & Continue Circling
Flashing Red	Taxi Clear of Landing Area	Airport Unsafe – Do Not Land
Flashing White	Return To Starting Point	–
Alternating Red & Green	Use Extreme Caution	Use Extreme Caution

PREFLIGHT — CABIN	
Pitot cover	remove
Papers (AROW, AVIATES)	valid
Control lock	remove
Ignition switch	off, keys on dash
Avionics master & elec.	off
Circuit breakers	in
Master switch	on
Gyros	no unusual noise
Fuel gauges	note level
Flaps	lower in stages
Avionics master switch	on
Navigational instruments (IFR) :	
– Marker beacons	test hi / low
– VOR	test
– GPS	DB valid / self test OK
– Transponder	test, set ALT + 1200
Radios	copy ATIS
Avionics master switch	off
Pitot	verify cover off
Pitot heat	on, test, off
Lights (beacon, strobe, nav)	all working
Master switch	off
ADHRS	mount, secure battery
EFB (inc. phone)	mount, secure battery, reset ADHRS level, update weather from Internet display taxi diagram
Windshield	clean

PREFLIGHT — NOSE	
Spinner	check for security, no cracks
Propeller	check for nicks, max. 1/8“
Cooling air intake	free of restrictions
Carburetor air filter	free of restrictions
Muffler	check for security
Landing light(s)	check condition & clean
Nose wheel strut	inspect & check inflation
Tire	check wear & inflation
Static source opening	check for stoppage

PREFLIGHT — LEFT WING	
Fuel tank	check quantity & secure cap
Tire	inspect for wear & inflation
Brakes	inspect for leaks & pad wear
Pitot tube	check intakes (2) clear
Fuel vent	clear
Tie down	remove
Wingtip	check lights, rivet line & shake
Aileron	check hinges, pushrod, counterweights & movement
Flaps	check pushrod & movement
Fuel drain	check fuel quality

PREFLIGHT — EMPENNAGE	
Fuselage	no structural damage
Elevator	hinges, links & counterweights
Rudder	hinges, links & counterweights
Antennae	no damage
Tie down	remove

PREFLIGHT — RIGHT WING	
Fuel drain	check fuel, paper napkin test
Flaps	hinge, pushrod & movement
Aileron	hinge, pushrod & counterweight
Wingtip	lights, rivet line & shake wing
Tie down	remove
Tire	inspect for wear & inflation
Brakes	inspect for leaks & pad wear
Fuel tank	check quantity & secure cap

PREFLIGHT — NOSE RIGHT	
Oil level	no less than 6 quarts
Fuel strainer	check fuel quality
Airplane	free to roll & no bald-spots
Overall	FINAL WALK-AROUND, no openings, no forgotten objects

BEFORE STARTING ENGINE	
Preflight inspection	complete
PAX cockpit briefing	complete
Seat & seat belts	secure
Fuel selector	both
Avionics master switch	off
Circuit breakers	in
Brakes	test and set

STARTING ENGINE	
Mixture	full rich
Carburetor heat	off
Prime	as required (< 3 strokes)
Primer	in & locked
Throttle	open 1/8 inch
Rotating beacon	on
Master switch	on
Brakes	set
Propeller area	“CLEAR”
Ignition	start (30s, 2m intervals)
Throttle	< 1000 RPM
Oil pressure	green in 30 sec, or stop

TIME	NOTE
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BEFORE TAXIING	
Mixture	lean for taxi
Flaps	retract in stages
Heading indicator (H.I.)	mag. compass
Avionics master switch	on

GO TO “BEFORE TAXIING (CON'T)”	
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