Preflight Fluids Magnetos OFF **CHECK VISUALLY** Fuel quantity Fuel sumps DRAIN Left wing, right wing, fuel strainer. Inspect for contamination. Fuel filler caps **SECURE** Engine oil level CHECK Minimum 6 quarts Cabin Pitot cover **REMOVE** POH **VERIFY PRESENT** Master ON Flaps **EXTEND** Fuel gauges **CHECK QUANTITY** Lights CHECK Tach time **RECORD** Pitot heat **TEST** Master OFF Fire extinguisher **SECURE** Control lock REMOVE Empennage Rudder aust lock **REMOVE** Control surfaces **CHECK** Freedom of movement and security Right Main wheel tire **CHECK INFLATION** CHECK Aileron Freedom of movement and security Nose Propeller, spinner CHECK For nicks and security Landing light **CHECK CLEAR** Air filter CHECK CLEAR Nosewheel & strut CHECK INFLATED Static source CHECK CLEAR Left Main wheel tire CHECK INFLATION

Preflight (continued)		
Fuel tank vent	CHECK CLEAR	
Pitot tube	CHECK CLEAR	
Stall warning	TEST	
Aileron	CHECK	
Freedom of movement and security		
Final		
Flight Circle	DISPATCH	
Tach, Hobbs times	RECORD	
Baggage door	LOCK	
Chocks	REMOVE	
Tie-downs	REMOVE	

Securing	
Control lock	INSTALL
Tie-downs, chocks	APPLY
Vents, windows	CLOSE
Pitot cover	APPLY
Tach, Hobbs times	RECORD
Flight Circle	CHECK IN
Doors	LOCK

Speeds		·
		KIAS
Best glide (V _G)		65
Best angle of climb (V _x)	Sea level 10,000 ft	64 62
Best rate of climb (V _Y)	Sea level 10,000 ft	78 68
Landing approach	Flaps up Flaps 40	60-70 55-65
Normal takeoff climb		70-80
Short-field takeoff climb	Flaps up Flaps 10	59 55
Normal enroute climb	Sea level 10,000 ft	80-90 70-80
Design maneuvering speed (V _A)	2300 lbs 1950 lbs 1600 lbs	97 89 80

Light Gun Signals Aircraft on the Ground Aircraft in Flight Cleared for takeoff Cleared to land Return for landing (to be followed Cleared for taxi by steady green at the proper time) Give way to other aircraft and STOP continue circling Taxi clear of the runway in use Airport unsafe, do not land Return to starting point on airport \(\square\) \(\square\) Not applicable Exercise extreme caution Exercise extreme caution

Operating Checklists

Start

Before Start		
Preflight inspection	COMPLETE	
Passenger briefing	COMPLETE	
Brakes	TEST and SET	
Seats, belts, harnesses	SECURE	
Fuel valve	BOTH	
Radios, electrical equipmen	nt OFF	
Circuit breakers	CHECK IN	
Beacon switch	ON	
Engine Start		
Mixture	RICH	
Carburetor heat	COLD	
Prime	AS REQUIRED	
Throttle	OPEN 1/8 INCH	
Master	ON	
Propeller area	CLEAR	
Ignition switch	START	
Release when engine starts		
Oil pressure	CHECK	
If no pressure in 30 seco	nds, shutdown	
Mixture	GROUND LEAN	
Before Taxi		
Avionics	ON	
Headset	ON	
Flaps	RETRACT	
Transponder	VERIFY ALT	
Weather	OBTAIN	
Altimeter	SET	
EFB Setup	AS DESIRED	
Navigation, landing lights	ON	

Run-up	
Instruments	CHECK and SET
VOR check	IF NEEDED
Brakes	SET
Doors and windows	CLOSED, LOCKED
Flight controls	FREE and CORRECT
Fuel valve	BOTH
Mixture R	ICH (below 3000 feet)
Throttle	1700 RPM
Magnetos	CHECK
Max drop 125 F	RPM, max diff. 50 RPM
Engine gauges, am	meter CHECK
Vacuum gauge	CHECK
Gyroscopic instrum	ents CHECK
Carburetor heat	TEST
Idle	TEST
Mixture	GROUND LEAN
Throttle friction	ADJUST

Before Takeoff		·
Radios, navigation	n, instruments	SETUP
Takeoff briefing	COI	MPLETE
Beacon, navigation	n, landing lights	ON
Carburetor heat	AS REC	QUIRED
Flaps		0-10°
Trim	TA	AKEOFF
Fuel valve		BOTH
Fuel quantity		CHECK
Mixture	RICH (below 300	00 feet)

Climb	
Airspeed	70-90 KIAS
Throttle	FULL
Mixture	RICH (lean above 3000 feet)

Cruise	
Power	2200-2700 RPM (≤75%)
Trim	ADJUST
Mixture	LEAN (for max RPM)

Descent	
Mixture	RICH
Power	AS DESIRED
Carburetor heat	AS REQUIRED

Before Landin	g
Fuel valve	ВОТН
Mixture	RICH
Carburetor heat	ON
Airspeed	60-70 KIAS (flaps UP)
Flaps	AS DESIRED
Airspeed	55-65 KIAS (flaps DOWN)

Balked Landing	
Throttle	FULL
Carburetor heat	COLD
Flaps	20°
Flaps Airspeed	55 KIAS
Flaps	RETRACT slowly

After Landing	`
Flaps	UP
Caburetor heat	OFF
Mixture	GROUND LEAN

Shutdown	
Brakes	SET
Tach time	RECORD
Radios, electrical equipment	OFF
Mixture	CUT-OFF
Magnetos	OFF
Master	OFF

Version 1 PR 69

Engine Failures, Forced Landings

OFF

Engine Failure During Takeoff Run		
Throttle	IDLE	
Brakes	APPLY	
Flaps Mixture	RETRACT	
Mixture	CUT-OFF	
Magnetos	OFF	

Engine Failure Shortly After Takeoff Airspeed Flaps up: 65 KIAS Flaps down: 60 KIAS Mixture CUT-OFF Fuel valve OFF Magnetos OFF Flaps AS REQUIRED

Master

Engine Failure During Flight Airspeed 65 KIAS Carburetor heat ON Fuel valve BOTH Mixture RICH Magnetos BOTH (START if prop stopped) Primer IN and LOCKED

Forced Landing	With Engine Failure
Airspeed	Flaps up: 65 KIAS
	Flaps down: 60 KIAS
Mixture	CUT-OFF
Fuel valve	OFF
Magnetos	OFF
Flaps	AS REQUIRED
	40° recommended
Master	OFF
Doors UNLATCH	BEFORE TOUCHDOWN
Touchdown	SLIGHTLY TAIL LOW
Brakes	APPLY HEAVILY

Precautionary Landing			
Flaps	20°		
Airspeed	60 KIAS		
Selected field	FLY OVER		
Note	terrain/obstructions.		
Retra	act flaps upon reaching		
a saf	e altitude and airspeed.		
Radios, electrical switches OFF			
Flaps	40° (on final approach)		
Airspeed	60 KIAS		
Master	OFF		
Doors UNLATCH	H BEFORE TOUCHDOWN		
Touchdown	SLIGHTLY TAIL LOW		
Magnetos	OFF		
Brakes	APPLY HEAVILY		

Ditching			
Radio	MAYDAY on 121.5 MHz		
	Give location, intentions		
Heavy objects	SECURE or JETTISON		
Flaps	20°-40°		
Power 300 FT	/MIN DESCENT AT 55 KIAS		
If no power	r available, approach		
flaps up 65	KIAS or flaps 10° 60 KIAS		
Strong wind, h	eavy seas:		
LAND INTO \	WIND		
Light wind, he	avy swells:		
LAND PARALLEL TO SWELLS			
Doors	UNLATCH		
Touchdown	LEVEL ATTITUDE		
at established rate of descent			
Face CUSHIC	ON at touchdown with coat		
Airplane EVACUATE			
Life vests/raft	INFLATE		

Fires, Icing, Flat Tire, Electrical

Wing Fire

Cranking		CONTINUE	
If engine starts			
Power	1700 RPM fo	r a few minutes	
Engine		SHUTDOWN	
If engine fails to start:			
Throttle		FULL OPEN	
Mixture		CUT-OFF	
Cranking	CONTINUE	for 2-3 minutes	
Fire extinguis	her	OBTAIN	
Master		OFF	
Magnetos		OFF	
Fuel valve		OFF	
Fire		EXTINGUISH	
Use fire extinguisher, seat cushion, wool blanket, or dirt. If practical, try to remove air filter if it is ablaze			

Engine Fire During Start On Ground

Engine Fire in Flight		
Mixture	CUT-OFF	
Fuel valve	OFF	
Master	OFF	
Cabin heat & air O		
(except ov	verhead vents)	
Airspeed	100 KIAS	
If fire is not extinguished, increase		
glide speed to find an airspeed which		
will provide an incombustible mixture		
Forced Landing With	EXECUTE	
Engine Failure checklist		

Both cases: inspect and repair damage before conducting another flight.

Master	OFF
All other switches (except magnetos)	OFF
Vents/cabin air/heat	CLOSE
Fire extinguisher	USE
If fire appears out and electrical power is	
necessary to continue flight:	
Master	ON
Circuit breakers	CHECK
(do not reset faulty	circuit)
Radio/electrical switches	ON
One at a time with delay after	
each until short circuit is lo	calized
Vents/cabin air/heat	OPEN

Electrical Fire in Flight

Cabin Fire	
Master	OFF
Vents/cabin air/heat	CLOSED
	(to avoid drafts)
Fire extinguisher USE	
WARNING: After discharging extinguisher	
within a closed cabin, ventilate cabin	

Land ASAP, inspect for damage

(when fire completely extinguished)

Nav lights	OF
Pitot heat	OF
NOTE: Sideslip to keep flames away from	n
fuel tanks and cabin. Land ASAP using fl	aps
only as required.	
·	

Inadvertent Icing End	ounter	
Pitot heat	ON	
Turn back or change alti	tude to obtain an	
OAT less conducive to ic	ing.	
Cabin heat	FULL ON	
Defroster	OPEN	
Cabin air	ADJUST	
Maximize defro	ster heat and airflow	
Throttle	OPEN	
Carburetor/air filter icing	g MONITOR	
Apply carb heat as re	equired, lean mixture	
for maximum RPM if	used continuously	
Land NEAREST AIRPORT		
With very rap	id ice build-up, select	
	rport landing site	
With $\geq 1/4$ inch ice on t		
prepare for significantly	9	
Flaps	LEAVE RETRACTED	
Open left window and se	•	
windshield, if necessary for visibility		
Forward slip if necessar	,	
Approach speed	65-75 KIAS	
' '	level of accumulation	
Landing Per	form in level attitude	

Death Country Diotika	90	
Alternate static source	valve	PULL ON
Airspeed	Use calib	ration table
	in POH se	ection 5

Static Source Blockage

Landing with a riat Main Tire		
Approach	NORMAL	
Touchdown	GOOD TIRE FIRST	
Hold flat tire off ground	as long as possible	

Over-voitage Light mummates				
Master	OFF (both sides)			
Master	ON			
If over-voltage light illuminates again:				
Flight	TERMINATE ASAP			

Ammeter Shows Discharge			
Alternator		OFF	
Nonessentia	I electrical equipment	OFF	
Fliaht	TERMINATE as soon a	s practical	