

# S&S AVIATION



## Cessna 172 I Checklist

### Airspeeds (KIAS)

V <sub>R</sub> -----	52
V <sub>X</sub> -----	59
V <sub>Y</sub> (Sea Level) -----	71
V <sub>S1</sub> -----	50
V <sub>S0</sub> -----	43
V <sub>FE</sub> -----	87
V <sub>A</sub> -----	106
Short field takeoff --- TRANSITION FROM V <sub>R</sub> TO V <sub>X</sub> (FLAPS 10°)	
V <sub>NO</sub> -----	121
V <sub>NE</sub> -----	151
Normal approach -----	56-65 (FLAPS 40°)
	61-70 (FLAPS 0°)
Short field approach -----	60 (FLAPS 40°)
Best glide (prop windmilling) -----	70
Maximum crosswind -----	15

### Weight Limits

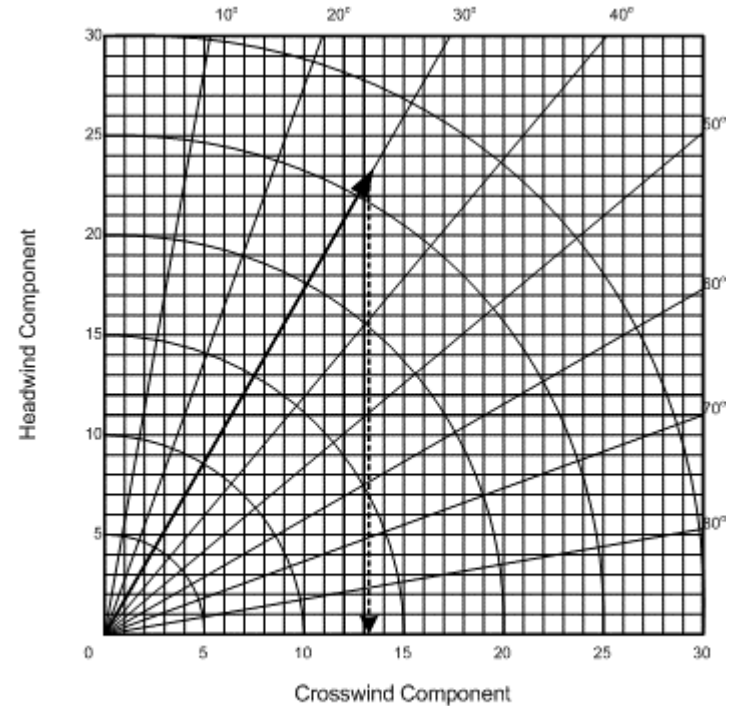
Maximum takeoff -----	2,300 lbs.
Maximum landing -----	2,300 lbs.

### Fuel Limits

Total fuel -----	42 gal.
Usable fuel -----	38 gal.

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### Crosswind Chart



Example: The winds are 30° off the runway heading at 27 KTS. The crosswind component is approximately 13 KTS.

### Transponder Codes:

- 7500 – Hijacking
- 7600 – Lost Comms
- 7700 – Emergency

### Light Gun Signals

Signal	On Ground	In Flight
Steady Green	Clear for Takeoff	Clear to Land
Flashing Green	Clear to Taxi	Return to Land
Steady Red	Stop	Give Way
Flashing Red	Taxi Clear of Rwy	Do Not Land
Flashing White	Return to Ramp	-
Alternating Red & Green	Exercise Extreme Caution	
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## Local Airport Data

Airport	Frequencies	Bearing / Range from FDW	Pattern	Runways Available
Fairfield (KFDW)	AWOS-3: 119.075 APPR: 133.4 (CAE) CTAF: 123.05	000°M 0 NM	1,400' Left	04 / 22
Columbia Metro (KCAE)	ATIS: 120.15 APPR 110-289: 124.15 APPR 290-109: 133.4 Tower: 119.5 Ground: 121.9	188°M 23 NM	1,300' As directed	05 / 23 & 11 / 29
Columbia Owens (KCUB)	ASOS: 118.675 APPR: 133.4 (CAE) CTAF: 123.075	172°M 21 NM	1,000' Rwy13: Right Rwy31: Left	13 / 31
Woodward Field (KCDN)	AWOS-3: 119.975 APPR: 125.4 (SSC) CTAF: 123.0	102°M 27 NM	1,300' Left	06 / 24 & 14 / 32
Chester (KDCM)	AWOS-3: 120.975 APPR: 120.05 (CLT) CTAF: 122.7	006°M 29 NM	1,800' Rwy05: Right Rwy23: Left Rwy17: Right Rwy35: Left	05 / 23 & 17 / 35
Newberry (KEOE)	AWOS-3: 124.275 APPR: 133.4 (CAE) CTAF: 122.8	276°M 26 NM	1,600' Rwy04: Left Rwy22: Right	04 / 22
Union (35A)	Weather: None APPR: 1194 (GMU) CTAF: 122.7	322°M 35 NM	1,600' Left	05 / 23
Greenwood (KGRD)	ASOS: 121.125 APPR: 120.6 (GMU) CTAF: 122.975	272°M 52 NM	1,600' Left	05 / 23 09 / 27

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## PREFLIGHT INSPECTION

### CABIN

TACH/HOBBS Time ----- RECORD  
A.R.O.W. ----- ON BOARD  
Gust lock ----- REMOVE  
Ignition switch ----- OFF  
Avionics power switch ----- OFF  
Master switch ----- ON  
Fuel quantity ----- CHECK  
Flaps ----- 20°  
Fuel selector valve ----- BOTH  
Exterior lights ----- CHECK  
Master switch ----- OFF  
Windshield ----- CLEAN  
Cargo door ----- CLOSED

### EMPENNAGE

Horizontal stabilizer ----- INSPECT  
Elevator ----- CHECK MOVEMENT  
Trim tab ----- INSPECT  
Vertical stabilizer ----- INSPECT  
Rudder ----- INSPECT  
Tail tie down ----- REMOVE

### RIGHT WING

Flap ----- INSPECT  
Aileron ----- CHECK MOVEMENT  
Wing tip ----- INSPECT TIP & NAV LIGHT  
Leading edge ----- INSPECT  
Wing tie down ----- REMOVE  
Main wheel tire ----- INSPECT  
Fuel sample ----- INSPECT  
(IMPURITIES/COLOR)  
Fuel quantity ----- VISUALLY INSPECT  
Fuel cap ----- SECURE

### NOSE

Engine oil level ----- MIN 6 QUARTS  
Fuel sample ----- INSPECT  
(IMPURITIES/COLOR)  
Prop & spinner ----- INSPECT  
Alternator belt ----- SECURE  
Carburetor air filter ----- INSPECT  
Nose wheel tire ----- INSPECT  
Nose wheel strut ----- INSPECT  
Static port ----- CLEAR

### LEFT WING

Fuel ----- VISUALLY INSPECT  
Fuel cap ----- SECURE  
Pitot tube ----- STOW COVER & INSPECT  
Fuel vent ----- CLEAR  
Stall horn ----- CLEAR  
Landing light ----- INSPECT  
Leading edge ----- INSPECT  
Wing tie down ----- REMOVE  
Wing tip ----- INSPECT TIP & NAV LIGHT  
Aileron ----- CHECK MOVEMENT  
Flap ----- INSPECT  
Main wheel tire ----- INSPECT  
Fuel sample ----- INSPECT  
(IMPURITIES/COLOR)

### OTHER

Pilot ----- EXPERIENCE, REGENCY, &  
PHYSICAL CONDITION  
Aircraft ----- FUEL, PERFORMANCE,  
& EQUIPMENT  
Environment ----- AIRPORT  
CONDITIONS & WEATHER  
I'M SAFE ----- ILLNESS, MEDICATION,  
STRESS, ALCOHOL,  
FATIGUE, EATING

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## BEFORE START

Preflight inspection ----- COMPLETE  
Passenger briefing ----- COMPLETE  
Seats & seatbelts ----- ADJUSTED  
Fuel selector valve ----- BOTH  
Avionics power switch ----- OFF  
Circuit breakers ----- CHECK IN

## STARTING ENGINE

Mixture ----- RICH  
Throttle ----- OPEN 1/8 INCH  
Carburetor heat ----- OFF  
Beacon ----- ON  
Primer ----- AS REQUIRED, IN & LOCKED

If you are wearing a jacket, it is probably cold enough to prime. Prime no more than twice, then continue with the next step in the checklist. If the aircraft does not start in 8-10 secs, turn off the master switch, wait 30 secs, reprime once, then try again. If it still fails to start, wait 30 secs, do not prime, and try one more time. If it fails to start again, contact maintenance.

Master switch ----- ON  
Propeller area ----- CLEAR  
Ignition switch ----- START (8-10 SECS)  
Oil pressure ----- CHECK  
Throttle ----- 1,000 RPM

## AFTER START

Flaps ----- RETRACT  
Avionics power switch ----- ON  
Navigation lights ----- ON (IF REQUIRED)  
ATIS/ASOS/AWOS ----- OBTAIN  
Flight instruments ----- CHECK  
Avionics ----- SET  
Transponder ----- ALT  
Taxi ----- CLEARANCE/ANNOUNCE  
Throttle ----- AS REQUIRED  
Brakes ----- TEST

## BEFORE TAKEOFF

Throttle ----- 1,000 RPM  
Flight controls ----- FREE & CORRECT  
Fuel selector valve ----- BOTH  
Elevator trim ----- TAKEOFF  
Mixture ----- RICH  
Throttle ----- 1,700  
RPM engine gauge ----- CHECK  
Ammeter ----- CHECK  
Magnetos ----- CHECK (125 RPM/50 RPM LOSS)  
Carburetor heat ----- ON  
Throttle ----- IDLE  
Carburetor heat ----- OFF  
Throttle ----- 1,000 RPM  
Flight instruments & radios ----- CHECK & SET  
Transponder ----- ALT  
Takeoff briefing ----- COMPLETE  
Doors & windows ----- CLOSED  
Takeoff time ----- NOTE

## FINAL ITEMS

Fuel selector valve ----- BOTH  
Mixture ----- RICH

## TAKEOFF

Throttle ----- MAX  
Rotate ----- 52 KIAS  
Centerline ----- MAINTAIN  
Climb speed ----- 65-74 KIAS

## SHORT FIELD TAKEOFF

Flaps<sup>2</sup> ----- 10°  
Carburetor heat ----- OFF  
Brakes ----- APPLY  
Throttle ----- MAX  
Engine gauges ----- CHECK  
Brakes ----- RELEASE  
Airplane attitude ----- SLIGHTLY TAIL LOW  
Rotate ----- 52 KIAS  
Climb speed ----- 59 KIAS (UNTIL OBSTACLES CLEARED)  
Flaps ----- RETRACT (WHEN AIRSPEED ALLOWS)

## SOFT FIELD TAKEOFF (SIMULATED ONLY)

Flaps ----- 10°  
Yoke ----- FULL AFT  
Taxi ----- KEEP OFF BRAKES  
Nose wheel ----- OFF RUNWAY  
Rotate ----- AS SOON AS PRACTICAL  
Accelerate to  $V_x$  or  $V_y$  ----- IN GROUND EFFECT  
Clear of obstacles ----- CLIMB AT  $V_y$  (71 KIAS)  
Flaps ----- RETRACT (WHEN AIRSPEED ALLOWS)

## ENROUTE CLIMB

Throttle ----- MAX  
Airspeed ----- 70–78 KIAS  
Mixture ----- RICH (LEAN ABOVE 3,000 FEET)  
Landing light ----- OFF  
Flight plan ----- OPEN (IF REQUIRED)

## CRUISE

Throttle ----- CRUISE THROTTLE SETTING  
Trim ----- SET  
Mixture ----- LEAN

## DESCENT

Mixture ----- ADJUST  
Throttle ----- AS REQUIRED  
**CAUTION: AVOID RAPID DESCENTS AT LOW POWER SETTINGS**  
Carburetor heat ----- AS REQUIRED  
ATIS/ASOS/AWOS ----- OBTAIN  
Airport information ----- REVIEW

## BEFORE LANDING

Fuel selector valve ----- BOTH  
Mixture ----- RICH  
Carburetor heat ----- AS REQUIRED  
Seat belts ----- SECURE  
Landing light ----- AS REQUIRED

## LANDING

Airspeed ----- 56–65 KIAS (FLAPS 40°)  
----- 61-70 KIAS (FLAPS 0°)  
Flaps ----- 40° (OR AS REQUIRED)  
Touchdown ----- MAIN WHEELS FIRST  
Landing roll ----- LOWER NOSE WHEEL GENTLY  
Braking ----- MINIMUM

## SHORT FIELD LANDING

Flaps ----- 40°  
Airspeed ----- 61 KIAS  
Touchdown ----- MAX BRAKING ONLY IF REQUIRED  
----- SIMULATE BY SAYING "MAX BRAKING"  
Flaps ----- RETRACT<sup>1</sup>

## SOFT FIELD LANDING (SIMULATED ONLY)

Flaps ----- 40°  
Airspeed ----- 56–65 KIAS  
Touchdown ----- SLIGHTLY NOSE HIGH  
Nose wheel ----- OFF RUNWAY  
Braking ----- MINIMAL

## GO AROUND

Throttle ----- MAX  
Carburetor heat ----- OFF  
Flaps ----- 20°  
Climb speed ----- 56 KIAS  
Flaps ----- 20° (UNTIL OBSTACLES CLEARED)  
Flaps retract ----- CLEAR OF OBSTACLES, SAFE ALTITUDE, & 70-80 KIAS

## AFTER LANDING

Runway clear ----- ANNOUNCE  
Flaps ----- 0°  
Carburetor heat ----- OFF  
Transponder ----- ALT  
Landing/taxi light ----- AS REQUIRED

## PARKING

Landing/taxi light ----- OFF  
Avionics power switch ----- OFF  
Navigation lights ----- OFF  
Throttle ----- 1,000 RPM  
Mixture ----- IDLE CUT-OFF  
Ignition switch ----- OFF  
Master switch ----- OFF

## SECURING AIRPLANE

TACH/HOBBS meters ----- RECORD  
Control lock ----- INSTALL  
Pitot tube cover ----- INSTALL  
Trash ----- REMOVE  
Tie downs ----- SECURE  
Doors/windows ----- CLOSED & LOCKED  
Flight plan ----- CLOSE

## FOOTNOTES

Footnote 1: Immediately after touchdown, lower the nose wheel and apply heavy braking as required. For max brake effectiveness, retract the flaps, hold the control wheel full aft, and apply max brake pressure without sliding the tires.

Footnote 2: The POH recommends that normal and obstacle clearance takeoffs are performed with flaps at 0°. Using 10° flaps on takeoffs shortens the ground run by ~10%; however, the advantage is lost in a climb to a 50' obstacle.

Footnote 3: All bold face items in the emergency procedures checklists are critical action procedures (CAPs). All pilots should commit these CAPs to memory to maximize the likelihood of a safe outcome of an emergency.

## ENGINE FAILURE DURING TAKEOFF RUN

Throttle ----- **IDLE**  
Brakes ----- **AS NEEDED**  
Flaps ----- **RETRACT**  
Mixture ----- **IDLE CUT-OFF**  
Ignition switch ----- **OFF**  
Master switch ----- **OFF**

## ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

Airspeed ----- **BEST GLIDE 70/60 KIAS (FLAPS 0°/40°)**  
Best landing field ----- **SELECT**  
Mixture ----- **IDLE CUT-OFF**  
Fuel selector valve ----- **OFF**  
Flaps ----- **AS REQUIRED**  
Master switch ----- **OFF**  
Doors ----- **UNLATCH PRIOR TO TOUCHDOWN**

## ENGINE FAILURE DURING FLIGHT

Airspeed ----- **BEST GLIDE (70 KIAS)**  
Best landing field ----- **SELECT**  
Carburetor heat ----- **ON**  
Selector valve ----- **BOTH**  
Mixture ----- **RICH**  
Ignition switch ----- **BOTH (START IF PROPELLER STOPPED)**  
Primer ----- **IN & LOCKED**

## ROUGH ENGINE OPS / LOSS OF POWER

### GRADUAL LOSS OF RPM; TROUBLESHOOT FOR: CARB ICING OR FOULED PLUGS

Possible carburetor icing ----- **APPLY FULL THROTTLE**  
Carburetor heat ----- **ON**  
Wait ----- **UNTIL ENGINE RUNS SMOOTHLY**  
IF ENGINE RUNS SMOOTHLY: Carburetor heat ----- **OFF**  
Note: If continued use of carburetor heat is required for cruise flight, use the minimum amount of carburetor heat required & lean the mixture for smoothest possible engine operation.

IF ENGINE STILL RUNNING ROUGH: POSS SPARK PLUG FOULING  
Ignition ----- **QUICKLY SWITCH FROM BOTH TO LEFT TO BOTH**  
Ignition ----- **QUICKLY SWITCH FROM BOTH TO RIGHT TO BOTH**  
If a power loss was noted ----- **LEAN MIXTURE FOR CRUISE**

IF ROUGH ENGINE OPS PERSIST AFTER SEVERAL MINUTES  
Mixture ----- **RICH**  
Ignition ----- **BOTH**  
Land ----- **AS SOON AS PRACTICAL**

### SUDDEN LOSS OF RPM; TROUBLESHOOT FOR: LOW OIL PRESSURE OR MAGNETO MALFUNCTION

Check ----- **OIL PRESSURE**  
If oil pressure within limits ----- **TROUBLESHOOT MAGNETO**  
If low oil pressure ----- **CHECK OIL TEMP**  
If oil temp is normal ----- **LAND AS SOON AS PRACTICAL**  
Inspect ----- **FOR OIL LEAK**  
If oil temp is high ----- **PREPARE FOR FORCED LANDING**  
Engine power ----- **REDUCE & KEEP LOW FOR APPROACH**  
Forced landing ----- **EXECUTE**

TROUBLESHOOT MAGNETO  
Ignition ----- **QUICKLY SWITCH FROM BOTH TO LEFT TO BOTH**  
Ignition ----- **QUICKLY SWITCH FROM BOTH TO RIGHT TO BOTH**  
Note ----- **WHICH MAGNETO LOST POWER**  
Change ----- **POWER SETTINGS**  
Mixture ----- **RICH**  
Determine ----- **IF FLIGHT WITH BOTH MAGNETOS PRACTICABLE**  
If no ----- **SWITCH TO THE GOOD MAGNETO**  
Land ----- **AS SOON AS PRACTICAL**

## FORCED LANDING: EMERGENCY LANDING WITHOUT ENGINE POWER

Airspeed ----- FLAPS 0° - 61-70 KIAS  
FLAPS 40° - 56-65 KIAS  
Radios ----- 121.5 & SQUAWK 7700 (IF ALTITUDE PERMITS)  
Mixture ----- IDLE CUT-OFF  
Fuel selector valve ----- OFF  
Ignition switch ----- OFF  
Avionics power switch ----- OFF  
Flaps ----- AS REQUIRED  
Master switch ----- OFF  
Doors ----- UNLATCH PRIOR TO TOUCHDOWN  
Touchdown ----- SLIGHTLY TAIL LOW  
Brakes ----- APPLY HEAVILY  
Yoke ----- FULL AFT

## FORCED LANDING: PRECAUTIONARY LANDING WITH ENGINE POWER

Flaps ----- 20°  
Airspeed ----- 61 KIAS  
Selected field ----- OVERFLY, NOTE TERRAIN & OBSTACLES,  
RETRACT FLAPS AT SAFE ALTITUDE & AIRSPEED  
On downwind, avionics power switch ----- OFF  
Flaps ----- 40° ON FINAL APPROACH  
Airspeed ----- 61 KIAS  
Doors ----- UNLATCH PRIOR TO TOUCHDOWN  
Before touchdown ----- IGNITION & MASTER SWITCH OFF  
Touchdown ----- SLIGHTLY TAIL LOW

## FORCED LANDING: DITCHING

Radio ----- TRANSMIT MAYDAY ON 121.5 & SQUAWK 7700  
Heavy objects in baggage area ----- SECURE OR JETTISON  
Approach ----- HIGH WINDS, HEAVY SEAS – INTO THE WIND LIGHT  
WINDS, HEAVY SWELLS – PARALLEL TO SWELLS  
Flaps ----- 40°  
Power ----- ESTABLISH 300FT/MIN DESCENT AT 61 KIAS  
Cabin doors ----- UNLATCH  
Touchdown ----- LEVEL ATTITUDE AT ESTABLISHED DESCENT RATE  
Face ----- CUSHION AT TOUCHDOWN  
Airplane ----- EVACUATE  
Life vests & raft ----- INFLATE

## STATIC SOURCE BLOCKAGE

Alternate static source valve ----- PULL ON  
Airspeed ----- CONSULT POH CALIBRATION TABLES

## LANDING WITH A FLAT MAIN TIRE

Approach ----- NORMAL  
Touchdown --- GOOD TIRE FIRST, HOLD OFF FLAT TIRE AS LONG AS POSSIBLE

## FIRE DURING START ON GROUND

Cranking ----- CONTINUE TO GET A START

### If engine starts:

Power ----- 1,700 RPM FOR A FEW MINUTES  
Engine ----- SHUTDOWN & INSPECT FOR DAMAGE

### If engine fails to start after 2-3 minutes:

Throttle ----- FULL OPEN  
Cranking ----- CONTINUE  
Fire extinguisher --- OBTAIN (CALL FOR GROUND ATTENDANT SUPPORT)  
When support arrives ----- RELEASE STARTER SWITCH  
Master switch ----- OFF  
Ignition switch ----- OFF  
Fuel selector valve ----- OFF  
Fire ----- EXTINGUISH  
Fire damage ----- INSPECT



## ENGINE FIRE IN FLIGHT

Mixture ----- IDLE CUT-OFF  
Fuel selector valve ----- OFF  
Master switch ----- OFF  
\* IF FIRE CONTINUES  
Cabin heat & air ----- OFF (EXCEPT OVERHEAD VENTS)  
Airspeed ----- 100-110 KIAS  
If fire is not extinguished ----- INCREASE GLIDE SPEED TO FIND AN  
AIRSPEED WHICH WILL PROVIDE AN INCOMBUSTIBLE MIXTURE  
Forced landing ----- EXECUTE

## CABIN FIRE

Master switch ----- OFF  
Vents/cabin air/heat ----- CLOSED  
Fire extinguisher ----- ACTIVATE (IF AVAILABLE)

### WARNING

After discharging an extinguisher within a closed cabin, ventilate the cabin.

Land ----- AS SOON AS POSSIBLE

## WING FIRE

Landing/taxi light switches ----- OFF  
Navigation light switch ----- OFF  
Pitot heat switch ----- OFF  
Sideslip ----- PERFORM (TO KEEP FLAMES  
AWAY FROM CABIN AND FUEL TANK)

## ELECTRICAL FIRE IN FLIGHT

Master switch ----- OFF  
Avionics power switch ----- OFF  
All other switches (except ignition switch) ----- OFF  
Vents/cabin air/heat ----- CLOSED  
Fire extinguisher ----- ACTIVATE (IF AVAILABLE)

### WARNING

After discharging an extinguisher within a closed cabin, ventilate the cabin.

If fire appears out and electrical power is necessary for continuance of flight:

Master switch ----- ON  
Circuit breakers ----- CHECK FOR FAULTY CIRCUIT, DO NOT RESET  
Radio switches ----- OFF  
Avionics power switch ----- ON  
Radio/electrical switched ----- ON ONE AT A TIME, WITH DELAY AFTER  
EACH UNTIL SHORT CIRCUIT LOCALIZED  
Vents/cabin air/heat ----- OPEN IF FIRE COMPLETELY EXTINGUISHED

## INADVERTENT ICING ENCOUNTER

Pitot heat ----- ON  
Altitude/heading ----- CHANGE TO LEAVE ICING CONDITIONS  
Cabin heat & defroster ----- MAX  
Throttle ----- INCREASE TO MINIMIZE ICE BUILDUP ON PROP  
Carburetor heat ----- AS NEEDED  
Mixture ----- LEAN FOR PEAK RPM  
Find - EMERGENCY LANDING FIELD (IF FORCED LANDING NECESSARY)  
Approach speed ----- INCREASE  
Flaps ----- LEAVE RETRACTED  
Landing ----- PERFORM FORWARD SLIP FOR IMPROVED VISIBILITY  
Approach speed ----- 65 TO 74 KIAS  
Avoid ----- STEEP TURNS  
Landing ----- PERFORM AT A LEVEL ATTITUDE



## AMMETER SHOWS EXCESSIVE RATE OF CHARGE AFTER 30-MINS IN CRUISE FLIGHT

Overvoltage sensor ----- AUTO TRIPS AT 16 VOLTS  
Switch master switch and alternator switch ----- OFF  
Switch master switch and alternator switch ----- ON  
Warning light ----- SHOULD EXTINGUISH

If not, or the excessive rate of charge light comes back on

Nonessential electrical equipment ----- OFF  
Flight ----- TERMINATE AS SOON AS PRACTICAL

## LOW-VOLTAGE LIGHT ILLUMINATES DURING FLIGHT

Alternator switch ----- OFF  
Nonessential radio & electrical equipment ----- OFF  
Flight ----- TERMINATE AS SOON AS PRACTICAL

## DISORIENTATION IN THE CLOUDS

Transition to ----- INSTRUMENTS  
Perform ----- 180° STANDARD RATE TURN TO EXIT CLOUDS

### IF STILL DISORIENTED IN THE CLOUDS

Contact ----- ATC (USE 121.5 IF NECESSARY)  
Request ----- VECTORS TO BETTER WEATHER, SAFE ALTITUDE,  
CLOSEST EMERGENCY LANDING FIELD, OR OTHER OPTIONS  
Prepare for ----- OFF FIELD LANDING

## SPIN RECOVERY

Power ----- THROTTLE TO IDLE  
Ailerons ----- NEUTRAL  
Rudder ----- FULL OPPOSITE SPIN DIRECTION & HOLD  
Elevator ----- YOKE FULL FORWARD & HOLD UNTIL ROTATION STOPS  
When rotation stops ----- RECOVER FROM DIVE

