OE-KLJ | C172 S
Emergency / Abnormal

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SPEEDS

Never exceed speed		V_{NE}	163	KIAS
Maximum structural cruising speed		V_{NO}	129	KIAS
Maneuvering speed 2550 pounds		V_A	105	KIAS
Maximum flaps extended speed	10°	V_{FE}	110	KIAS
	20°	V_{FE}	85	KIAS
	30°	V_{FE}	85	KIAS
Rotating speed		V_R	55	KIAS
Take off safety speed		V_x	65	KIAS
Take off safety speed		V_y	75	KIAS
Approach speed Flaps up		$V_{ref + 10}$	75	KIAS
Approach speed Flaps 30° position		V_{ref}	65	KIAS
Stall speed clean configuration		V_S	44	KIAS
Stall speed T/O configuration		V_{S1}	36	KIAS
Stall speed LDG configuration		V_{S0}	33	KIAS
Maximum Glide		V_G	68	KIAS

MASS

Empty Mass	790,98 KG	1.743,85 LBS
Maximum Take-off Mass (MTOM)	1.156,66 KG	2.550,00 LBS
Maximum Landing Mass (MLM)	1.156,66 KG	2.550,00 LBS
Maximum in baggage compartment on & aft wheel well	77,11 KG	170,00 LBS

FUEL

Total fuel	211,98 GAL	56 GAL	336 LBS
Usable fuel both tanks	200,62 GAL	53 GAL	318 LBS

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EMERGENCY CHECKLISTS

ENGINE FAILURE DURING TAKEOFF ROLL

1. THROTTLE CONTROL..... IDLE (PULL FULL OUT)
2. BRAKES..... APPLY
3. WING FLAPS..... RETRACT
4. MIXTURE CONTROL..... IDLE CUTOFF
5. MAGNETOS SWITCH ..... OFF
6. STBY BATT SWITCH ..... OFF
7. MASTER SWITCH (ALT AND BAT)..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. AIRSPEED ..... CHECK

   70 KIAS Flaps UP | 65 KIAS Flaps 10° - FULL

2. MIXTURE CONTROL..... IDLE CUTOFF
3. FUEL SHUTOFF VALVE ..... OFF (PULL FULL OUT) .....
4. MAGNETOS SWITCH ..... OFF.....
5. WING FLAPS..... FULL RECOMMENDED
6. STBY BATT SWITCH ..... OFF.....
7. MASTER SWITCH (ALT AND BAT)..... OFF.....
8. CABIN DOOR ..... UNLATCH .....
9. LAND ..... STRAIGHT AHEAD.....

ENGINE FAILURE DURING FLIGHT (RESTART PROCEDURES)

1. AIRSPEED..... 68 KIAS (BEST GLIDE SPEED)
2. FUEL SHUTOFF VALVE ..... ON (PUSH FULL IN)
3. FUEL SELECTOR VALVE ..... BOTH
4. FUEL PUMP SWITCH..... ON
5. MIXTURE CONTROL..... RICH

   if restart has not occurred

6. MAGNETOS SWITCH..... BOTH

   or START if propeller is stopped

   If the propeller is windmilling, engine will restart automatically within a few seconds. If propeller has stopped (possible at low speeds), turn MAGNETOS switch to START, advance throttle slowly from idle and lean the mixture from full rich as required to obtain smooth operation.

7. FUEL PUMP SWITCH..... OFF

   If the indicated fuel flow (FFLOW GPH) immediately drops to zero, a sign of failure of the engine-driven fuel pump, return the FUEL PUMP switch to the ON position.

EMERGENCY LANDING WITHOUT ENGINE POWER

1. PILOT AND PASSENGER SEAT BACKS ..... MOST UPRIGHT POSITION
2. SEATS AND SEAT BELTS ..... SECURE
3. AIRSPEED..... CHECK

   70 KIAS flaps up | 65 KIAS flaps 10° - full

4. MIXTURE CONTROL..... IDLE CUTOFF (PULL FULL OUT)
5. FUEL SHUTOFF VALVE ..... OFF
6. MAGNETOS SWITCH..... OFF
7. WING FLAPS ..... AS REQUIRED

   FULL recommended

8. SBY BATT SWITCH ..... OFF
9. MASTER SWITCH (ALT AND BAT)..... OFF (WHEN LANDING ASSURED)
10. DOORS ..... UNLATCHED PRIOR TOUCHDOWN
11. TOUCHDOWN ..... SLIGHTLY TAIL LOW
12. BRAKES..... APPLY HEAVILY

PRECAUTIONARY LANDING WITH ENGINE POWER

1. PILOT AND PASSENGER SEAT BACKS..... MOST UPRIGHT POSITION
2. SEATS AND SEAT BELTS..... SECURE
3. AIRSPEED ..... 65 KIAS
4. WING FLAPS..... 20°
5. SELECTED FIELD ..... FLY OVER, NOTING TERRAIN AND OBSTRUCTIONS
6. WING FLAPS..... FULL (ON FINAL APPROACH)
7. AIRSPEED ..... 65 KIAS
8. STBY BATT SWITCH ..... OFF
9. MASTER SWITCH (ALT AND BAT)..... OFF (WHEN LANDING ASSURED)
10. DOORS ..... UNLATCHED PRIOR TO TOUCHDOWN
11. TOUCHDOWN ..... SLIGHTLY TAIL LOW
12. MIXTURE CONTROL..... IDLE CUTOFF (PULL FULL OUT)
13. MAGNETOS SWITCH ..... OFF
14. BRAKES..... APPLY HEAVILY

DITCHING

1. RADIO..... TRANSMIT MAYDAY ON 121,50 MHZ (LOC POS TX 7700)
2. HEAVY OBJECTS..... SECURE OR JETTISON (IF POSSIBLE)
3. PILOT AND PASSENGER SEAT BACKS ..... MOST UPRIGHT POSITION
4. SEATS AND SEAT BELTS ..... SECURE
5. WING FLAPS ..... 20° - FULL
6. POWER..... ESTABLISH

   300 FT/MIN DESCENT AT 55 KIAS.

7. APPROACH ..... CHECK WIND AND SEA .....

   High winds, heavy seas INTO THE WIND | light winds, heavy swells PARALLEL TO SWELLS

8. CABIN DOORS..... UNLATCH
9. TOUCHDOWN ..... LEVEL ATTITUDE

   At established ROD.

10. FACE ..... CUSHION AT TOUCHDOWN

    With folded coat.

11. ELT..... ACTIVATE
12. AIRPLANE ..... EVACUATE

    If necessary, open window and flood cabin to equalize pressure so doors can be opened

13. LIFE VESTS AND RAFT ..... INFLATE

    When clear of airplane.

ENGINE FIRE DURING START ON GROUND

1. MAGNETOS SWITCH ..... START

   continue cranking to start the engine. If engine STARTS

2. POWER..... 1800 RPM FOR A FEW MINUTES
3. ENGINE ..... SHUTDOWN

   If engine FAILS TO START

4. THROTTLE CONTROL..... FULL (PUSH FULL IN)
5. MIXTURE CONTROL..... IDLE CUTOFF (PULL FULL OUT)
6. MAGNETOS SWITCH ..... START (CONTINUE CRANKING).....
7. FUEL SHUTOFF VALVE ..... OFF (PULL FULL OUT)
8. FUEL PUMP SWITCH ..... OFF
9. MAGNETOS SWITCH ..... OFF
10. STBY BATT SWITCH ..... OFF
11. ALT AND BAT..... OFF
12. ENGINE ..... SECURE
13. PARKING BRAKE ..... RELEASE
14. FIRE EXTINGUISHER..... OBTAIN
15. AIRPLANE ..... EVACUATE
16. FIRE ..... EXTINGUISH
17. FIRE DAMAGE ..... INSPECT

ENGINE FIRE IN FLIGHT

1. MIXTURE CONTROL..... IDLE CUTOFF (PULL FULL OUT)
2. FUEL SHUTOFF VALVE ..... OFF (PULL FULL OUT)
3. FUEL PUMP SWITCH..... OFF
4. MASTER SWITCH (ALT AND BAT)..... OFF
5. CABIN HEAT AND AIR ..... OFF (EXCEPT OVERHEAD VENTS)
6. AIRSPEED..... 100 KIAS

   If fire is not extinguished, increase glide speed to find an airspeed, within airspeed limitations, which will provide an incombustible mixture

7. FORCED LANDING ..... EXECUTE

   ->

   EMERGENCY LANDING WITHOUT ENGINE POWER

ELECTRICAL FIRE IN FLIGHT

1. STBY BATT SWITCH..... OFF
2. MASTER SWITCH (ALT AND BAT)..... OFF
3. VENTS/CABIN AIR/HEAT ..... CLOSED
4. FIRE EXTINGUISHER..... ACTIVATE (IF AVAILABLE)
5. AVIONICS SWITCH (BUS 1 AND BUS 2) ..... OFF
6. ALL SWITCHES (EXCEPT MAGNETOS) ..... OFF

   WARNING
   After the fire extinguisher has been used, make sure that the fire is extinguished before exterior air is used to remove smoke from the cabin.

7. VENTS/CABIN AIR/HEAT ..... OPEN

   If fire has been extinguished and electrical power is necessary for continued flight to nearest suitable airport or landing area

8. CIRCUIT BREAKERS ..... CHECK FOR OPEN CIRCUIT(S), DO NOT RESET
9. MASTER SWITCH (ALT AND BAT)..... ON
10. STBY BATT SWITCH ..... ON
11. AVIONICS SWITCH (BUS 1) ..... ON
12. AVIONICS SWITCH (BUS 2) ..... ON

CABIN FIRE

1. STBY BATT SWITCH ..... OFF
2. MASTER SWITCH (ALT AND BAT)..... OFF
3. VENTS/CABIN AIR/HEAT ..... CLOSED (TO AVOID DRAFTS)
4. FIRE EXTINGUISHER..... ACTIVATE (IF AVAILABLE)

   WARNING
   After the fire extinguisher has been used, make sure that the fire is extinguished before exterior air is used to remove smoke from the cabin

5. VENTS/CABIN AIR/HEAT ..... OPEN

   when sure fire is completely extinguished

6. LAND THE AIRPLANE ..... AS SOON AS POSSIBLE

WING FIRE

1. LAND AND TAXI LIGHT SWITCHES ..... OFF
2. NAV LIGHT SWITCH ..... OFF
3. PITOT HEAT SWITCH ..... OFF

   Perform a sideslip to keep the flames away from the fuel tank and cabin. Land as soon as possible using flaps only as required for final approach and touchdown.

INADVERTENT ICING ENCOUNTER DURING FLIGHT

1. PITOT HEAT SWITCH ..... ON

   Turn back or change altitude to obtain an outside air temperature that is less conductive to icing.

Pull cabin heat control full out and open defroster outlets to obtain maximum windshield defroster airflog. Adjust cabin air control to get maximum defroster heat and airflow.

Watch for signs of induction air filter icing. A loss of engine RPM could be caused by ice blocking the air intake filter. Adjust the throttle as necessary to hold engine RPM. Adjust mixture, as necessary, for any change in power settings.

Plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable "off airport" landing site.

With an ice accumulation of 0.25 inch or more on the wing leading edges, pe prepared for significantly higher power requirements, higher approach and stall speeds, and a longer landing roll.

Leave wing flaps retracted. With a severe ice build-up on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.

Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.

Perform a landing approach using a forward slip, if necessary, for improved visibility.

Approach at 65 to 75 KIAS depending upon the amount of the ice accumulation.

Perform a landing in level attitude.

Missed approaches should be avoided whenever possible because of severely reduced climb capability.

STATIC SOURCE BLOCKAGE

1. ALT STATIC AIR VALVE ..... PULL ON
2. CABIN HT AND CABIN AIR KNOBS..... PULL ON
3. VENTS..... CLOSED
4. AIRSPEED..... OBSERVE

Refer to Section 5, Figure 5-1 of the AFM / POH

FUEL FLOW STABILIZATION PROCEDURES

If flow fluctuation of 1 GPH or more, or power surges occur.

1. FUEL PUMP SWITCH..... ON
2. MIXTURE CONTROL..... ADJUST

as necessary for smooth engine operation

3. FUEL SELECTOR VALVE ..... SELECT OPPOSITE TANK

   if vapour symptoms continue

4. FUEL PUMP SWITCH ..... OFF

   after fuel flow has stabilized

LANDING WITH A FLAT MAIN TIRE

1. APPROACH ..... NORMAL
2. WING FLAPS ..... FULL
3. TOUCHDOWN ..... GOOD MAIN TIRE FIRST

   Hold airplane off flat tire as long as possible with aileron control

4. DIRECTIONAL CONTROL ..... MAINTAIN

   using brake on good wheel as required

LANDING WITH A FLAT NOSE TIRE

1. APPROACH ..... NORMAL
2. WING FLAPS ..... AS REQUIRED

   85 to 110 KIAS flaps UP – 10° | below 85 KIAS flaps 10° - FULL

3. TOUCHDOWN ..... ON MAINS

   Hold nosewheel off the ground as long as possible. When nosewheel touches down, maintain full up elevator as airplane slows to stop

HIGH VOLTS ANNUNCIATOR OR M BAT AMPS MORE THAN 40

1. MASTER SWITCH (ALT ONLY) ..... OFF
2. ELECTRICAL LOAD ..... REDUCE IMMEDIATELY
3. AVIONICS SWITCH (BUS 1) ..... OFF
4. PITOT HEAT ..... OFF
5. BEACON LIGHT ..... OFF
6. LAND LIGHT ..... OFF
7. TAXI LIGHT ..... OFF
8. NAV LIGHTS ..... OFF
9. STROBE LIGHTS ..... OFF
10. CABIN PWR 12V ..... OFF

The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts, the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.

Select COM1 MIC and NAV1 on the audio panel and tune to the active frequency before setting AVIONICS BUS 2 to OFF. If COM 2 MIC and NAV2 are selected when AVIONICS BUS 2 is set to off, the COM and NAV radios cannot be tuned.

11. COM1 AND NAV 1 ..... TUNE TO ACTIVE FREQUENCY
12. COM1 MIC AND NAV1 ..... SELECT

Note
When AVIONICS BUS 2 is set to OFF, the following items will not operate: KAP 140 Autopilot, GMA 1347 Audio Panel, COMM 2, NAV 2, GTX 33 Transponder, GDU 1040 MFD

13. AVIONICS SWITCH (BUS 2) ..... OFF (KEEP ON IF IN CLOUDS)
14. LAND ..... AS SOON AS PRACTICAL

Note
Make sure a successful landing is possible before extending flaps. The flap motor is a large electrical load during operation.

LOW VOLTS ANNUNCIATOR COMES ON BELOW 1000 RPM

1. THROTTLE CONTROL ..... 1000 RPM
2. LOW VOLTAGE ANNUNCIATOR (LOW VOLTS) . CHECK OFF

If LOW VOLTS annunciator remains on at 1000 RPM authorized maintenance personnel must do electrical system inspection prior to next flight.

LOW VOLTS ANNUNCIATOR COMES ON OR DOES NOT GO OFF AT HIGHER RPM

1. MASTER SWITCH (ALT ONLY) ..... OFF
2. ALTERNATOR CICUIT BREAKER (ALT FIELD) ..... CHECK IN
3. MASTER SWITCH (ALT AND BAT)..... ON
4. LOW VOLTAGE ANNUNCIATOR (LOW VOLTS) . CHECK OFF
5. M BUS VOLTS ..... CHECK 27.5 V MINIMUM
6. M BAT AMPS ..... CHECK CHARGING (+)

If LOW VOLTS annunciator remains on.

7. MASTER SWITCH (ALT ONLY) ..... OFF
8. ELECTRICAL LOAD..... REDUCE IMMEDIATELY
9. AVIONICS SWITCH (BUS 1) ..... OFF
10. PITOT HEAT ..... OFF
11. BEACON LIGHT ..... OFF
12. LAND LIGHT..... OFF
13. TAXI LIGHT..... OFF
14. NAV LIGHTS..... OFF
15. STROBE LIGHTS ..... OFF
16. CABIN PWR 12V ..... OFF

The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts, the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.

Select COM1 MIC and NAV1 on the audio panel and tune to the active frequency before setting AVIONICS BUS 2 to OFF. If COM 2 MIC and NAV2 are selected when AVIONICS BUS 2 is set to off, the COM and NAV radios cannot be tuned.

17. COM1 AND NAV 1 ..... TUNE TO ACTIVE FREQUENCY
18. COM1 MIC AND NAV1..... SELECT

Note
When AVIONICS BUS 2 is set to OFF, the following items will not operate: KAP 140 Autopilot, GMA 1347 Audio Panel, COMM 2, NAV 2, GTX 33 Transponder, GDU 1040 MFD

19. AVIONICS SWITCH (BUS 2) ..... OFF (KEEP ON IF IN CLOUDS)
20. LAND ..... AS SOON AS PRACTICAL

Note
Make sure a successful landing is possible before extending flaps. The flap motor is a large electrical load during operation.

RED X – PFD AIRSPEED INDICATOR

1. ADC/AHRS CIRCUIT BREAKERS ..... CHECK IN

ESS BUS and AVN BUS 1. If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. STANDBY AIRSPEED INDICATOR ..... USE FOR AIRSPEED INFORMATION

RED X – PFD ALTITUDE INDICATOR

1. ADC/AHRS CIRCUIT BREAKERS ..... CHECK IN

ESS BUS and AVN BUS 1. If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. STANDBY ALTIMETER ..... CHECK
3. CURRENT BAROMETRIC PRESSURE ..... SET AND USE

RED X – PFD ATTITUDE INDICATOR

1. ADC/AHRS CIRCUIT BREAKERS ..... CHECK IN

   ESS BUS and AVN BUS 1. If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. STANDBY ATTITUDE INDICATOR..... USE FOR ATTITUDE INFORMATION

RED X – HORIZONTAL SITUATION INDICATOR (HSI)

1. ADC/AHRS CIRCUIT BREAKERS ..... CHECK IN

   ESS BUS and AVN BUS 1. If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. NON-STABILIZED MAGNETIC COMPASS ..... USE FOR HEADING INFORMATION

PFD1 COOLING OR MFD1 COOLING ANNUNCIATOR(S)

1. CABIN HEAT (CABIN HT) ..... REDUCE (MINIMUM PREFERRED)
2. FORWARD AVIONICS FAN ..... CHECK

   Feel for airflow from screen on glareshield

   If forward avionics fan has failed

3. STBY BATT SWITCH..... OFF

   Unless needed for emergency power. If PFD1 or MFD1 cooling annunciator does not go off within 3 minutes or if both PFD1 cooling or MFD1 cooling annunciators come on

4. STBY BATT SWITCH..... OFF

   Land as soon as practical.

LOW VACUUM ANNUNCIATOR COMES ON

1. VACUUM INDICATOR (VAC) ..... CHECK

   Caution
   If vacuum pointer is out of the green arc during flight or the gyro flag is shown on the standby attitude indicator, the standby attitude indicator must not be used for attitude information

CO LVL HIGH ANNUNCIATOR COMES ON

1. CABIN HT KNOB ..... OFF
2. CABIN AIR KNOB..... ON
3. CABIN VENTS..... OPEN
4. CBIN WINDOWS..... OPEN

   163 KIAS maximum windows open speed.

   If CO LVL HIGH annunciator remains on:

5. LAND ..... AS SOON AS PRACTICAL

COMMENTS AND NOTES