T-34B MENTOR

T-34B NORMAL PROCEDURES

PREFLIGHT

1. W_X & DENSITY ALT. . . . . DETERMINE
2. WEIGHT AND BALANCE . . . . . CALC
3. PERFORMANCE REQUIREMENTS. . CALC
4. FLIGHT PLAN / NOTAMs . . . . . FILE AS REQ / REVIEW

FRONT COCKPIT

1. AROW / FLIPS . . . . . CHECK / STOW
2. COCKPIT FOD . . . . . REMOVE
3. BOOST PUMP . . . . . OFF
4. FUEL SHUTOFF VALVE HANDLE . . OFF
5. TRIM TABS . . . . . 0°
6. THROTTLE . . . . . CLOSED
7. PROP. . . . . FULL INCREASE
8. MIXTURE . . . . . IDLE CUTOFF
9. MAGS . . . . . OFF
10. LANDING GEAR HANDLE . . . . . DOWN
11. EMERG LDG GEAR RETRACT SW . WIRED OFF
12. ACCELEROMETER . . . . . RESET
13. BATTERY . . . . . OFF
14. CONTROLS. . . . . UNLOCKED
15. AVIONICS . . . . . OFF
16. ELT . . . . . ARMED
17. RADIO MASTER . . . . . OFF
18. CIRCUIT BREAKERS . . . . . IN
19. PROP. . . . . CLEAR
20. BATTERY . . . . . ON
21. FUEL GAUGES. . . . . TRUE
22. LIGHTS . . . . . INTERIOR / EXTERIOR
23. PITOT HEAT . . . . . TEST
24. BATTERY . . . . . OFF
25. CANOPY AND WINDSHIELD . . . . . CHECK
26. CANOPY SEAL. . . . . CHECK

T-34B NORMAL PROCEDURES

REAR COCKPIT

1.	AROW / FLIPS	CHECK
2.	BOOST PUMP	OFF
3.	EMERG LANDING GEAR RETRACT SWITCH	WIRED OFF
4.	FIRST AID KIT	SECURED
5.	CANOPY AND WINDSHIELD	CHECK
6.	CANOPY SEAL	CHECK
7.	COCKPIT FOD	REMOVE

IF SOLO FLIGHT:

8.	SHLDR HARNESS, BELTS, LOOSE EQUIP	SECURED
9.	GYRO	CAGED
10.	CANOPY	CLOSED AND LOCKED

FUEL SAMPLES & ENGINE COMPARTMENT

1.	PORT ENGINE COMPARTMENT COWL	OPEN
2.	FUEL SHUTOFF VALVE HANDLE	ON
3.	BOOST PUMP	ON
4.	BATTERY	ON
5.	ENGINE FUEL DRAIN VALVE	DRAIN
6.	FUEL SUMP	DRAIN
7.	MAIN FUEL STRAINER	DRAIN
8.	FUEL VENT STANDPIPE	CHECK
9.	AUGMENTOR TUBES	CHECK
10.	BATTERY	OFF
11.	BOOST PUMP	OFF
12.	FUEL SHUTOFF VALVE HANDLE	OFF
13.	ENGINE FUEL DRAIN VALVE	CHECK CLOSED
14.	OIL LEVEL (COLD / WARM)	10-11 QTS
15.	ENGINE & ACCESSORIES	CHECK
16.	LEFT ENGINE COMPARTMENT COWL	LATCHED
17.	RIGHT ENGINE COMPARTMENT COWL	OPEN
18.	ENGINE & ACCESSORIES	CHECK
19.	RIGHT ENGINE COMPARTMENT COWL	LATCHED
20.	BATTERY	CHECK
21.	DRAIN JAR	CHECK

LEFT WING

1.	FLAP	CHECK
2.	TRIM TAB	CHECK
3.	STATIC WICK	CHECK
4.	AILERON	CHECK
5.	NAVIGATION LIGHT	CHECK
6.	STALL VANE	CHECK
7.	LANDING LIGHT	CHECK
8.	TIEDOWN	DISCONNECT
9.	PITOT TUBE	CHECK
10.	FUEL QUANTITY	CHECK VISUALLY
11.	FUEL FILLER CAP	SECURE
12.	COCKPIT AIR INTAKE SCREEN	CHECK
13.	LANDING GEAR DOORS	CHECK
14.	WHEEL WELL	CHECK

T-34B OPS LIMITS

AIRSPEEDS	**KIAS**
V_{S0}	**51**
V_R	**55**
V_{S1}	**62**
V_X	**70**
V_Y @ S/L	**81**
V_{MAX} GLIDE (**GLIDE RATIO** = 2.5 NM / 1000' AGL)	**90**
V_{FE}	**109**
$V_{LO/LE}$	**109**
V_A	**148**
V_{NO}	**152**
V_{NE}	**219**

X WIND	**KTS**
MAX DEMONSTRATED	**22**

ENGINE LIMITS	
MINIMUM WITH ENGINE RUNNING	**1500 RPM**
MAXIMUM CONTINUOUS AND TAKE OFF	**2600 RPM**
ENGINE INSPECTION	**2700 – 3200 RPM**
ENGINE CHANGE	**> 3200 RPM**
MAX OIL TEMP	**107° C**
MAX CHT	**232° C**
OIL PRESSURE MIN / MAX	**30 - 80 PSI**
FUEL PRESSURE MIN / MAX	**9 - 15 PSI**
MANIFOLD PRESSURE MIN / MAX	**15" - 29.6" Hg**

PROPELLER LIMITS	**RPM**
OVERSPEED REQUIRING INSPECTION	**3050 - 3380**
PROPELLER AND ENGINE CHANGE	**> 3380**

MAX GROSS T/O & LDG	**LBS**
MAXIMUM	**2985**

MAX ACCELERATION	**Gs**
LOAD LIMITS	**$^{+}$4.0 - $^{-}$2.0**
ROLLING PULL OUT	**$^{+}$2.5**

15. UPLOCK CABLE & SPRINGS . . . . . CHECK
16. LANDING GEAR ROLLER . . . . . CHECK
17. SHOCK STRUT . . . . . CHECK (APPROX 3")
18. HYDRAULIC FITTINGS . . . . . CHECK
19. BRAKE ASSEMBLY . . . . . CHECK
20. TIRE . . . . . CHECK (35 PSI)
21. CHOCK . . . . . REMOVE

NOSE

1. CHOCK . . . . . REMOVE
2. NOSE TIRE . . . . . CHECK (40 PSI)
3. MUD SCRAPER . . . . . CHECK
4. GROUNDING WIRE . . . . . CHECK
5. NOSE STRUT . . . . . CHECK (APPROX 5")
6. SHIMMY DAMPER . . . . . CHECK
7. NOSE GEAR CENTERING ROLLER . . . . . CHECK
8. UPLOCK MECHANISM . . . . . CHECK
9. AIR FILTER . . . . . CLEAR
10. PASSING LIGHT . . . . . CHECK
11. ENGINE AIR INLETS . . . . . CLEAR
12. PROP/SPINNER . . . . . CHECK

RIGHT WING

1. COCKPIT AIR INTAKE SCREEN . . . . . CHECK
2. FUEL QUANTITY . . . . . CHECK VISUALLY
3. FUEL FILLER CAP . . . . . SECURE
4. LANDING GEAR DOORS . . . . . CHECK
5. WHEEL WELL . . . . . CHECK
6. UPLOCK CABLE & SPRINGS . . . . . CHECK
7. LANDING GEAR ROLLER . . . . . CHECK
8. SHOCK STRUT . . . . . CHECK (APPROX 3")
9. HYDRAULIC FITTINGS . . . . . CHECK
10. BRAKE ASSEMBLY . . . . . CHECK
11. TIRE . . . . . CHECK (35 PSI)
12. CHOCK . . . . . REMOVE
13. TIEDOWN . . . . . DISCONNECT
14. LANDING LIGHT . . . . . CHECK
15. NAVIGATION LIGHT . . . . . CHECK
16. AILERON . . . . . CHECK
17. STATIC WICK . . . . . CHECK
18. TRIM TAB . . . . . CHECK
19. FLAP . . . . . CHECK

T-34B NORMAL PROCEDURES

PRESTART

1. HOBBS/TACH TIME . . . . . RECORDED
2. PASSENGER BRIEF . . . . . COMPLETE
3. SEAT AND RUDDER PEDALS . . . . . ADJUST
4. HARNESS . . . . . FASTEN
5. INERTIAL REEL LOCK . . . . . CHECK
6. WING FLAP LEVER . . . . . OFF
7. LANDING LIGHTS . . . . . OFF
8. ALTERNATE AIR . . . . . IN
9. INVERTERS . . . . . OFF
10. GENERATOR . . . . . ON
11. COCKPIT AIR HANDLES . . . . . SET
12. LDG GEAR EMER HANDCRANK . . . . . KNOB UP & LOCKED
13. ANTI-COLLISION LIGHTS . . . . . CHECK ON
14. COCKPIT LIGHTING RHEOSTATS . . . . SET
15. PITOT HEAT . . . . . OFF
16. CIRCUIT BREAKERS . . . . . IN

START

1. CANOPY . . . . . OPEN
2. MIXTURE . . . . . IDLE / CUTOFF
3. FUEL SHUTOFF VALVE HANDLE . . . . . ON
4. FUEL BOOST PUMP . . . . . ON
5. THROTTLE . . . . . SET
6. PROP . . . . . FULL FWD
7. BRAKES . . . . . HOLD
8. BATTERY . . . . . ON (OFF if external power is used)
9. FUEL PRESSURE . . . . . CHECK

PRIME IF ENGINE COLD:

   a. MIXTURE . . . . . RICH
   b. THROTTLE . . . . . OPEN 5 SEC
   c. THROTTLE . . . . . ¼" OPEN
   d. MIXTURE . . . . . IDLE CUTOFF

10. PROP AREA . . . . . CLEAR
11. MAGS . . . . . BOTH
12. STARTER . . . . . ENGAGE (10 SEC)
13. MIXTURE . . . . . SLOWLY TO RICH
14. STARTER . . . . . RELEASE (WHEN ENG FIRES)
15. THROTTLE . . . . . 1200 – 1400 RPM
16. OIL PRESSURE . . . . . CHECK (30 PSI in 10 SEC or SECURE ENGINE)
17. EXTERNAL POWER (if used) . . . . . DISCONNECT BATTERY - - ON
18. RADIO MASTER . . . . . ON

T-34B NORMAL PROCEDURES

NOTE: DO NOT EXCEED 1400 RPM UNTIL OIL TEMP IS 40°C

19. GENERATOR WARN LIGHT . . . . . OUT
20. VOLTAGE . . . . . CHECK (27.7 - 28.8V)
21. FUEL BOOST PUMP . . . . . OFF
22. MIXTURE . . . . . LEAN

PRE-TAXI

1. FLAPS . . . . . CYCLED & UP
2. TRIM TABS . . . . . SET 6° R, 3° UP, 0° AILERON
3. LANDING GEAR WARNING LIGHT . . CHECK
4. LANDING GEAR INDICATORS . . . . . DOWN
5. FUEL QUANTITY . . . . . NOTED
6. COMM / NAV / XPNDR . . . . . ON / ON / STBY
7. INVERTERS . . . . . CHECKED / MAIN
8. ATIS / AWOS . . . . . COPY
9. CLOCK . . . . . SET
10. GYROS . . . . . UNCAGED / SET
11. AIRSPEED INDICATOR . . . . . CHECK
12. VSI . . . . . CHECK
13. ALTIMETER . . . . . SET / CHECK
14. TAXI CLNC . . . . . CNTC GND
15. PARKING BRAKE . . . . . CHECK OFF
16. PNL / NAV / TAXI LIGHTS . . . . . AS REQUIRED

TAXI

1. BRAKES . . . . . TEST
2. ATTITUDE INDICATOR . . . . . CHECK
3. TURN-AND-SLIP INDICATOR . . . . . CHECK
4. HEADING INDICATOR . . . . . CHECK
5. MAGNETIC COMPASS . . . . . CHECK

T-34B NORMAL PROCEDURES

FUSELAGE & EMPENNAGE

1. RIGHT STATIC PORT . . . . . CLEAR
2. ANTENNAS . . . . . CHECK
3. LEFT ELEVATOR . . . . . CHECK
4. TIEDOWN . . . . . DISCONNECT
5. RUDDER . . . . . CHECK
6. NAVIGATION LIGHT . . . . . SECURE
7. STATIC WICKS . . . . . CHECK
8. TRIM TABS . . . . . CHECK
9. RIGHT ELEVATOR . . . . . CHECK
10. LEFT STATIC PORT . . . . . CLEAR
11. BAGGAGE DOOR . . . . . LATCHED

T-34B NORMAL PROCEDURES

RUN-UP

1. BRAKES . . . . . HOLD
2. OIL TEMP. . . . . CHECK

IF OIL TEMP < 40°C:

a. OIL BYPASS . . . . . PULL

3. PROP . . . . . FULL INCREASE
4. MIXTURE. . . . . BEST POWER

PROP GOVERNOR CHECK:

5. THROTTLE. . . . . 1800 RPM
6. PROP . . . . . CYCLE 6 TIMES (4 IF WARM)
   (DROP TO 1600 – 1650 RPM)
7. PROP . . . . . FULL INCREASE

IGNITION SYSTEM CHECK:

8. THROTTLE. . . . . 2000 RPM
9. MAGS (R & L) . . . . . CHECK
   (100 RPM MAX DROP, 50 RPM MAX DIFFERENTIAL)

CAUTION: IF MAGS ARE INADVERTENTLY TURNED OFF:
THROTTLE . . . . . CLOSE
MIXTURE . . . . . IDLE / CUTOFF
NORMAL START. . . . . PERFORM

10. ALTERNATE AIR . . . . . CHECK (APPROX ½" MP DROP)
11. THROTTLE. . . . . CHECK FOR 2475 (± 75) RPM
12. THROTTLE. . . . . 1700 RPM
13. FUEL BOOST PUMP . . . . . ON (15-20 PSI)

IDLE MIXTURE:

14. OIL PRESSURE. . . . . CHECK
15. OIL TEMPERATURE . . . . . CHECK
16. OIL BYPASS . . . . . IN
17. THROTTLE. . . . . CLOSED (600-750 RPM)

MIXTURE – RETARD TO IDLE CUTOFF, CHECK FOR 5-10 RPM RISE, CHECK FOR FALL OFF, THEN RAPIDLY TO FULL RICH

18. THROTTLE. . . . . 1000 RPM

T-34B NORMAL PROCEDURES

AIRSPEEDS KIAS

V_R **55**
V_X **70**
V_Y **81**
CRUISE CLIMB. **100**

CLEARED FOR TAKEOFF:

1. LANDING LIGHTS . . . . . ON
2. TRANSPONDER . . . . . ON / ALT
3. HEADING INDICATOR. . . . . SET
4. NOSE WHEEL. . . . . CTRD
5. TAKE OFF TIME. . . . . NOTE

OBSTACLE CLEARANCE TAKEOFF

1. FLAPS 75%
2. BRAKES . . . . . HOLD
3. THROTTLE. . . . . FULL PWR
4. A/S . . (RAPID BUT SMOOTH L/O) . 55 KIAS
5. GEAR . . . (WHEN CLR OF GND) . UP
6. CLIMB. . . . . 70 KIAS
7. OBSTACLE. . . . . CLEAR
8. ACCELERATE. . . . . 100 KIAS
9. FLAPS. . . . . RETRACT

AFTER TAKEOFF

1. LANDING GEAR. . . . . UP
2. FLAPS. . . . . UP
3. FUEL BOOST PUMP . . . . . OFF
4. FUEL CAPS . . . . . SECURE
5. ENGINE INSTS / ELEC SYS. . . . . CHECK
6. LANDING LIGHTS . . . . . AS DESIRED
7. FLIGHT PLAN . . . . . OPEN

CRUISE

1. THROTTLE . . . . . (20 – 23”) MAP
2. PROP . . . . . 2000 RPM
3. MIXTURE . . . . . AS REQ
4. ENGINE INSTS / ELEC SYS . . . . . CHECK
5. HEADING INDICATOR . . . . . SET
6. FUEL QUANTITY . . . . . CHECK
7. LOCATION . . . . . DETERMINE
8. W_X . . . . . (WHEN EN ROUTE) . . CHECK

AEROBATICS / STALLS

1. HEADING INDICATOR . . . . . CAGED
2. LOOSE GEAR . . . . . STOWED
3. FUEL BOOST PUMP . . . . . ON
4. HARNESS . . . . . LOCKED
5. THROTTLE . . . . . 23” MAP
6. PROPELLER . . . . . 2400 / FULL RPM
7. CANOPY . . . . . LOCKED
8. AREA . . . . . CLEAR

POST AERO / STALL

1. HEADING INDICATOR . . . . . UNCAGE / SET

DESCENT

1. MIXTURE . . . . . AS REQ
2. A/S . . . . . (90 / 120) KIAS
3. POWER . . . . . (OFF / 13”)
4. PITOT HEAT . . . . . AS REQ
5. ATIS / AWOS . . . . . COPY
6. ALTIMETER . . . . . SET
7. NAVAIDS . . . . . TUNED / IDENT
8. HEADING INDICATOR . . . . . SET
9. ENGINE INSTS / ELEC SYS . . . . . CHECK
10. FUEL QTY . . . . . CHECK
11. LANDING LIGHTS . . . . . ON

T-34B NORMAL PROCEDURES

PRE TAKEOFF

1. ANTI-COLLISION LIGHTS . . . . . ON
2. FUEL BOOST PUMP . . . . . ON
3. FUEL SHUTOFF VALVE HANDLE . . . . ON
4. FUEL PRESSURE . . . . . NORMAL
5. FUEL QUANTITY . . . . . CHECK
6. FUEL CAPS . . . . . LOCKED
7. FLIGHT CONTROLS . . . . . FREE & CORRECT
8. TRIM TABS . . . . . SET 6° R, 3° UP, 0° AILERON
9. ALTERNATE AIR . . . . . OFF
10. GENERATOR . . . . . OPERATING
11. INSTRUMENTS . . . . . CHECKED & SET
12. MIXTURE . . . . . BEST POWER
13. PROP . . . . . FULL INCREASE
14. MAGS . . . . . BOTH
15. FLAPS . . . . . SET (0-75%)
16. HARNESS . . . . . LOCKED
17. CANOPY:
    FRONT . . . . . OPEN / LOCKED
    REAR . . . . . LOCKED
18. COMM / NAV / XPNDR . . . . . ON / ON / SET

TAKE OFF BRIEF

1. PIC . . . . . IDENTIFY
2. XFR OF CONTROLS . . . . . POSITIVE 3 WAY
3. EMERGENCY OPS . . . . . **BRIEF**
   a. This will be a [Normal, Short or Soft Field] takeoff.
   The wind is _____, computed T/O distance is _____ FT,
   T/O PWR is 2400-2550 RPM and V_R is **55 KIAS**.
   b. Any problem before rotation, takeoff will be aborted.
   c. Engine Failure prior to _____ FT MSL, we will maintain
   90/85 KIAS (gear up/down), then land straight ahead.
   d. Engine Failure above _____ FT MSL, we will
   [discuss options] and maintain **90 KIAS**.
4. T/O CLNC . . . . . CNTC TWR

T-34B NORMAL PROCEDURES

AIRSPEEDS	KIAS
DOWNWIND	**90**
PAST ABEAM (40% FLAPS)	**80**
BASE (60% FLAPS)	**80**
FINAL (0° FLAPS)	**80**
NORMAL/SOFT-FIELD FINAL (100% FLAPS)	**70**
SHORT-FIELD FINAL (100% FLAPS)	**50 (PWR ON)**

LANDING

1. FUEL BOOST PUMP / FUEL QTY . . . . . ON / CHECK
2. MIXTURE . . . . . BEST POWER
3. ALTERNATE AIR . . . . . IN
4. HARNESS . . . . . LOCKED
5. LANDING GEAR . . . . . DOWN
6. FLAPS . . . . . AS REQUIRED
7. PROP . . . . . FULL INCREASE
8. BRAKES . . . . . PKG OFF / PUMP
9. A/S . . . . . CALC
10. LDG LTS . . . . . ON

AFTER LANDING

1. MIXTURE . . . . . LEAN
2. FLAPS . . . . . UP
3. FUEL BOOST PUMP . . . . . OFF
4. LANDING LIGHTS . . . . . OFF
5. TAXI LIGHT . . . . . AS REQ
6. PITOT HEAT . . . . . OFF
7. TRANSPONDER . . . . . STBY
8. TRIM TABS . . . . . SET 6° R, 3° UP, 0° AILERON

T-34B ABNORMAL PROCEDURES

FLOODED ENGINE (NO START AFTER 10 SEC)

1. MIXTURE . . . . . IDLE / CUTOFF
2. THROTTLE . . . . . FULL OPEN
3. FUEL BOOST PUMP . . . . . OFF
4. STARTER . . . . . ENGAGE *(10 SEC)*

NO START AFTER 2ND 10 SEC ATTEMPT

1. MIXTURE . . . . . IDLE / CUTOFF
2. FUEL BOOST PUMP . . . . . OFF
3. BATTERY . . . . . OFF
4. MAGS . . . . . OFF
5. FUEL SHUTOFF HANDLE . . . . . OFF

ALLOW STARTER TO COOL FOR 5 MINUTES, THEN REPEAT NORMAL START FROM STEP 2. IF THIS FAILS, SECURE ENGINE.

GROUND BURNOUT

1. PROP . . . . . FULL INCREASE
2. MIXTURE . . . . . RICH
3. THROTTLE . . . . . 2000 RPM
4. MIXTURE . . . . . LEAN TO 50 RPM DROP BELOW BEST POWER

AFTER 1 MINUTE:

5. MIXTURE . . . . . RICH
6. MAGS . . . . . RECHECK

RADIO FAILURE

1. VOLUME . . . . . CHECK
2. HEADSET CONNECTION . . . . . CHECK
3. AUDIO CONTROLS . . . . . CHECK
4. CIRCUIT BREAKERS . . . . . CHECK
5. FREQUENCY . . . . . SWITCH

IF IFR (OR VFR IN CLASS B, C, D AIRSPACE):

6. SQUAWK 7600

IF FAILURE OCCURS IN VFR CONDITIONS, OR VFR CONDITIONS ARE ENCOUNTERED AFTER FAILURE, CONTINUE FLIGHT UNDER VFR AND LAND AS SOON AS PRACTICABLE.

T-34B ABNORMAL PROCEDURES

VFR LANDING AT A CONTROLLED FIELD:

1. REMAIN OUTSIDE OR ABOVE CLASS D AIRSPACE UNTIL TRAFFIC FLOW DETERMINED.
2. TRANSMIT INTENTIONS "IN THE BLIND" ADVISING TOWER OF AIRCRAFT TYPE, POSITION, ALTITUDE, AND INTENTION TO LAND.
3. ENTER PATTERN, REPORT POSITION "IN THE BLIND", AND WATCH FOR LIGHT SIGNALS FROM TOWER.

IF FAILURE OCCURS IN IFR CONDITIONS, CONTINUE FLIGHT ACCORDING TO THE FOLLOWING:

ROUTE TO FLY (IN ORDER): (AVE F)

A . . . . . ASSIGNED
V . . . . . VECTORED
E . . . . . EXPECTED
F . . . . . FILED

ALTITUDE (HIGHEST OF FOR THE ROUTE SEGMENT BEING FLOWN): (MEA)

M . . . . . MINIMUM IFR ALTITUDE
E . . . . . EXPECTED AS ADVISED BY ATC
A . . . . . ASSIGNED BY ATC

DESCENT FOR APPROACH:

FROM EN ROUTE ALTITUDE UPON REACHING THE IAF BUT NOT BEFORE:

1. EXPECT-FURTHER-CLEARANCE TIME (IF GIVEN)
2. ETA AS CALCULATED FROM FILED ETE

T-34B NORMAL PROCEDURES

SHUTDOWN

1. THROTTLE . . . . . 1000 RPM
2. PNL / NAV / TAXI LTS . . . . . OFF
3. ELT . . . . . CHECK (121.5 MHZ)
4. RADIO MASTER SWITCH . . . . . OFF
5. ENG INSTS . . . . . STABLE
6. THROTTLE . . . . . CLOSE
7. MAGS . . . . . GND CHECK
8. MIXTURE . . . . . IDLE CUTOFF

NOTE: IF ENG SHOULD FAIL TO STOP
THROTTLE . . . . . OPEN SLIGHTLY
FUEL SHUTOFF VALUE . . . . . OFF

9. INVERTER . . . . . OFF
10. FUEL SHUTOFF VALVE . . . . . OFF
11. MAGS . . . . . OFF
12. BATTERY . . . . . OFF

SECURING

1. HOBBS/TACH TIME . . . . . RECORDED
2. FLIGHT CONTROLS . . . . . LOCKED
3. RUDDER PEDALS . . . . . FULL FORWARD
4. BAGGAGE DOOR . . . . . CLOSED
5. CANOPY (FRONT / REAR) . . . . . CLOSED / LOCKED

POST FLIGHT

1. FUEL . . . . . RECORD
2. WHEELS . . . . . CHOCKED
3. TIE DOWNS . . . . . SECURE
4. DISCREPANCIES . . . . . WRITE UP

CLOSE FLIGHT PLAN

EMERGENCY PROCEDURES

Items marked with an asterisk (*) are memory items.

ENGINE FIRE DURING START

* 1. Mixture . . . . . IDLE CUTOFF
* 2. Fuel shutoff valve handle . . . . . OFF
* 3. Throttle . . . . . FULL FWD
* 4. Continue cranking to clear engine, attempting a start.

If no start:

* 5. Ignition . . . . . OFF
* 6. Battery . . . . . OFF
* 7. ABANDON AIRCRAFT

ENGINE FIRE AFTER START ON GROUND

* 1. Mixture . . . . . IDLE CUTOFF
* 2. Fuel shutoff valve handle . . . . . OFF
* 3. Throttle . . . . . FULL FWD
* 4. Ignition . . . . . OFF
* 5. Battery . . . . . OFF
* 6. ABANDON AIRCRAFT

ABORTED TAKEOFF

* 1. Throttle . . . . . CLOSED
* 2. Brakes . . . . . APPLY

If unable to stop on runway:

* 3. Canopy . . . . . OPEN
* 4. Mixture . . . . . IDLE CUTOFF
* 5. Fuel shutoff valve handle . . . . . OFF
* 6. Ignition . . . . . OFF
* 7. Battery . . . . . OFF
* 8. ABANDON AIRCRAFT after it stops

LOW ALTITUDE ENGINE FAILURE

If engine fails at or below 1000 feet AGL:

* 1. Assume safe gliding attitude. 75 KIAS FLAPS DOWN
  80 KIAS FLAPS UP
* 2. Select best available landing area and turn to intercept the emergency landing pattern at the maximum altitude practicable.
* 3. Gear . . . . . AS DESIRED
* 4. Flaps . . . . . AS DESIRED
* 5. Fuel shutoff valve handle . . . . . OFF
* 6. Battery . . . . . OFF
* 7. Canopy . . . . . OPEN
* 8. Harness . . . . . LOCKED

HIGH ALTITUDE / PARTIAL ENGINE FAILURE

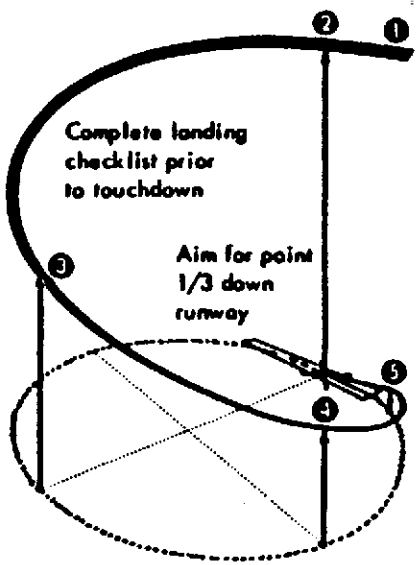
* 1. Assume safe gliding attitude. Best glide is 90 KIAS
* 2. Select best available landing area and turn to intercept the emergency landing pattern at the maximum altitude practicable. If power is available, climb to an altitude from which the aircraft can glide to a high key position.
* 3. Gear and flaps. . . . . AS DESIRED (aircraft clean will extend glide)
* 4. Fuel boost pump . . . . . ON
* 5. Fuel shutoff valve handle . . . . . ON
* 6. Mixture . . . . . FULL RICH
* 7. Propeller . . . . . FULL INCREASE
* 8. Throttle . . . . . FULL FWD
* 9. Ignition . . . . . ON, BOTH

If engine still not running:

*10. Mixture . . . . . IDLE CUTOFF
*11. Fuel shutoff valve handle . . . . . OFF
*12. Propeller . . . . . AS REQD
*13. Ignition . . . . . OFF
*14. Gear . . . . . AS REQ'D
*15. Flaps . . . . . AS DESIRED
*16. Transmit appropriate radio call.
*17. Battery . . . . . OFF
*18. Generator . . . . . OFF
*19. Canopy . . . . . OPEN
*20. Harness . . . . . LOCKED

EMERGENCY LANDING PATTERN

TO BE USED FOR:
--ENGINE FAILURE OR MALFUNCTION
--PRECAUTIONARY EMERGENCY LANDING
--SIMULATED ENGINE FAILURE



1 DESCENT

A/S - 90 KIAS
Gear – UP
Flaps - UP
Canopy - CLOSED (open prior to high key)
Prop - HIGH PITCH ++

2 HIGH KEY (1,500 FEET AGL)

90 KIAS over intended point of landing. Turn to Low Key.
Gear – DOWN, prepared surfaces. Transition to 85 KIAS.
Gear – UP, unprepared surfaces or water. Maintain 90 KIAS.

3 LOW KEY (1,000 FEET AGL)

85 KIAS (gear down), 90 KIAS (gear up), wingtip distance abeam intended point of landing.

4 90-DEGREE (500-600 FEET AGL)

Complete Landing Checklist.
Flaps – AS DESIRED. Adjust to 75 KIAS with flaps down.

5 FINAL

800 feet straightaway.
200 feet AGL
Canopy – OPEN
++ Only for actual engine failure.

ENGINE FIRE IN FLIGHT

* 1. Mixture . . . . . IDLE CUTOFF
* 2. Fuel shutoff valve handle . . . . . OFF
* 3. Throttle . . . . . CLOSED
* 4. Ignition . . . . . OFF
* 5. Battery . . . . . OFF
* 6. Generator . . . . . OFF
7. Do not attempt restart
8. Execute emergency landing

WING FIRE IN FLIGHT

A fire in the wing could be caused by fuel leakage and / or defective electrical wiring. Perform the following procedure:

* 1. Battery and generator switches . . . . . OFF
* 2. Attempt to extinguish the fire by slipping aircraft away from fire.
* 3. If fire does not extinguish or is obviously fed by fuel . . . . . LAND ASAP

FUSELAGE FIRE IN FLIGHT

* 1. Airspeed . . . . . REDUCE
* 2. Canopy . . . . . CLOSED
* 3. Cockpit air handles . . . . . FULL OUT (air shut off)
* 4. Battery and generator switches . . . . . OFF
* 5. If fire persists . . . . . LAND ASAP

ELECTRICAL FIRE IN FLIGHT

* 1. Battery . . . . . OFF
* 2. Generator . . . . . OFF
3. All circuit breakers . . . . . PULL
4. All radio / electrical equipment . . . . . OFF

If fire persists:

5. Make emergency landing

To isolate faulty circuit:

6. Generator circuit breaker . . . . . IN
7. Generator . . . . . ON
(if faulty) (OFF)
8. Battery . . . . . ON
9. Check each necessary circuit one at a time by pushing IN circuit breaker and turning ON radio / electrical equipment it services.
10. Secure unnecessary radio / electrical equipment to conserve battery if generator is secured.

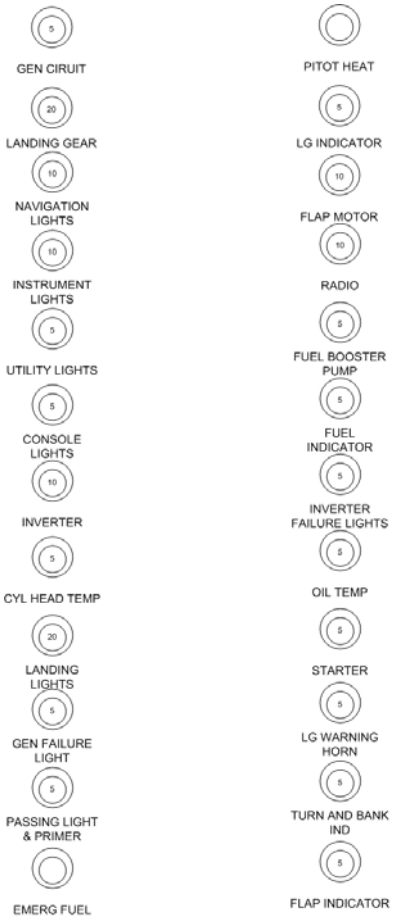
PROPELLER FAILURE

* 1. Adjust throttle to maintain safe flight while minimizing overspeed.
* 2. Climb to put load on propeller.
* 3. Manipulate propeller control in an attempt to restore governing.
* 4. Land as soon as practicable.

COCKPIT CIRCUIT BREAKERS

FORWARD COCKPIT ONLY

AFT RIGHT HAND CONSOLE



Above Right Hand Console

ELIMINATION OF SMOKE

* 1. Airspeed . . . . . REDUCE
  (to minimize spreading of possible fire)
* 2. Canopy . . . . . OPEN
* 3. Cockpit air handles . . . . . FULL OUT
  (air shut off)
  4. Determine source of smoke and execute appropriate emergency procedures.

CARBON MONOXIDE FUMES

If carbon monoxide contamination is suspected:

* 1. Canopy . . . . . OPEN
* 2. Cockpit air handles . . . . . FULL OUT
  (air shut off)

FUEL LEAK / FUEL FUMES

Check fuel system for secondary indications and proceed as follows:

* 1. Maintain present airspeed
* 2. Land as soon as practical
* 3. Canopy . . . . . OPEN
* 4. Cockpit air handles . . . . . FULL OUT
  (air shut off)
* 5. Battery and generator switches . . . . . OFF
* 6. Utilize landing gear emergency extension system.
* 7. Accomplish landing, clear runway, secure engine, and ABANDON AIRCRAFT.

DC POWER (GENERATOR) FAILURE

1. Generator . . . . . OFF
   (if warning light is on or voltage exceeds 30 volts)
2. Nonessential electrical equipment . . . OFF
   (to conserve battery)

If complete electrical system failure:

3. Generator . . . . . OFF
4. Battery . . . . . OFF

AC POWER (INVERTER) FAILURE

1. Inverter switch . . . . . SPARE
   (if inverter out light is on)

LOST PLANE

1. Confess
2. Communicate
3. Climb
4. Conserve
5. Comply with enroute procedures
6. Know any peculiar local area procedures

DAMAGED AIRCRAFT AIRBORNE

1. If aircraft is controllable, climb to at least 5000 feet.
2. Communicate – state difficulty, request visual inspection.
3. Check flight characteristics:
   a. Gear and flaps down . . . . . 85 KIAS
   b. Gear down, flaps up . . . . . 90 KIAS
4. Fly wide approach, maintaining 10 knots above minimums obtained during flight tests.

LANDING GEAR EMERGENCIES

If the gear cannot be lowered successfully, proceed with the following emergency procedures for the appropriate gear malfunction.

CAUTION

If an unsafe gear indication existed and the gear have been successfully lowered, do not attempt to raise the gear.

Raising the gear after a malfunction could cause further damage.

GEAR UP LANDING

1. Make normal approach . . . . . FULL FLAPS
2. Canopy . . . . . OPEN
3. Harness . . . . . LOCKED

After touchdown:

4. Mixture . . . . . IDLE CUTOFF
5. Fuel shutoff valve handle . . . . . OFF
6. Battery . . . . . OFF
7. ABANDON AIRCRAFT as soon as it stops.

NOSE GEAR MALFUNCTION

1. Reduce airspeed: lower gear and flaps.
2. Assume slow flight . . . . . 70 KIAS
3. Make gentle pitching oscillations (use centrifugal force to swing nose gear into down position).
4. When landing, lower nosewheel to runway gently.
5. Use forward stick to keep nosewheel firmly on runway. Avoid wheel barrowing.

NOSE GEAR RETRACTED

1. Make a normal approach
2. Canopy . . . . . OPEN
3. After touching main wheels down, hold nose up as long as possible with full nose down elevator trim and full backstick.

Before nose settles onto ground:

4. Mixture . . . . . IDLE CUTOFF
5. Fuel shutoff valve handle . . . . . OFF
6. Battery . . . . . OFF
7. ABANDON AIRCRAFT as soon as it stops.

ONE MAIN GEAR RETRACTED

1. Have gear position checked visually by another pilot or by the tower on a flyby, if possible.
2. If verified that one gear is not fully extended and an attempt to retract it is unsuccessful, execute normal approach with full flaps and power on to reduce landing speed, carrying the wing slightly lower on the down and locked side.
3. Canopy . . . . . OPEN
4. Touch down smoothly on the down and locked gear. Hold opposite wing up with aileron as long as possible after nosewheel touches down.
5. When wingtip strikes the ground, apply maximum opposite brake pressure.
6. As soon as aircraft stops:
   Mixture . . . . . IDLE CUTOFF
   Fuel shutoff valve handle . . . . . OFF
   Battery . . . . . OFF
7. ABANDON AIRCRAFT

EMERGENCY LANDING GEAR EXTENSION

1. Landing gear circuit breaker . . . . . PULL OUT
2. Landing gear handle . . . . . DOWN
3. Clutch knob . . . . . UNLOCK
4. Push clutch knob DOWN to engage crank.
5. Crank gear . . . . . DOWN
   (crank until handle will not move any further)
6. Check gear indicators . . . . . DOWN AND LOCKED

DITCHING

1. Plan to touch down before all fuel is exhausted to have power for controlled approach.
2. Make radio distress call.
3. Squawk 7700
4. Radio cords . . . . . DISCONNECT
5. Harness . . . . . LOCK
6. Canopy . . . . . OPEN
7. Landing gear . . . . . UP
8. Flaps . . . . . DOWN
9. Battery . . . . . OFF
10. Make normal approach with power, if possible. Approach stall attitude at a speed under which full control of aircraft can be maintained. Plan landing direction as follows:
    Calm sea – Into wind
    Moderate swells – Parallel to swells
    High swells (25 knots of wind or more) – Into wind, attempting to land on upwind side of swell.
11. Release safety belt ONLY after aircraft has come to a full stop.
12. ABANDON AIRCRAFT

FLAT TIRE

1. Touch down well over opposite side of runway to allow room for a swerve and hold directional control with opposite brake.
2. Avoid hard applications of brake.
3. After landing with a flat tire, perform the Secure Checklist when the aircraft comes to a complete stop and have the aircraft towed clear of the landing area.
4. Do not taxi in with a flat tire.

BRAKE FAILURE

If no brake pressure was evident during landing pattern brake check, land aircraft as short as possible using full flaps to shorten landing roll. After touchdown, secure the engine. When the aircraft comes to a complete stop, complete the remaining items on the Secure Checklist and have the aircraft towed clear of the landing area.

HARD LANDINGS

If on the runway:

1. Runway permitting, execute a full stop.
2. Do not attempt to taxi the aircraft.

If airborne:

3. Have landing gear checked visually by another pilot or by tower on a flyby, if possible.
4. If the check reveals no visible damage, execute a normal full flap landing and proceed as in steps 1 and 2.
4. If visual damage is confirmed, execute appropriate emergency procedure.

GROUND RUN TAKEOFF

ZERO FLAPS — HARD SURFACE RUNWAY

GROUND ROLL DISTANCES

		PRESSURE ALTITUDE — FEET						
	RUNWAY TEMP. °C	SEA LEVEL	1000	2000	3000	4000	6000	WIND VELOCITY
GROSS WEIGHT 2475 POUNDS	0	615	675	745	815	910	1170	0 KNOTS
	15	720	785	865	970	1085	1380	
	30	810	910	1015	1140	1270	1600	
	0	360	400	450	500	570	740	20 KNOTS
	15	425	490	550	610	695	900	
	30	495	570	655	725	820	1040	
	0	280	315	360	390	460	600	30 KNOTS
	15	345	390	425	500	565	725	
	30	395	460	530	590	650	850	
GROSS WEIGHT 2775 POUNDS	0	890	950	1025	1115	1230	1550	0 KNOTS
	15	980	1070	1170	1305	1445	1650	
	30	1105	1230	1355	1520	1695	2170	
	0	550	600	655	710	795	1010	20 KNOTS
	15	596	680	715	840	950	1210	
	30	705	800	870	990	1110	1400	
	0	440	490	540	580	630	830	30 KNOTS
	15	480	560	600	680	775	990	
	30	580	640	705	810	910	1160	
GROSS WEIGHT 2975 POUNDS	0	1060	1140	1230	1350	1490	1880	0 KNOTS
	15	1185	1290	1420	1575	1750	2240	
	30	1315	1500	1630	1840	2050	2620	
	0	655	710	780	860	970	1210	20 KNOTS
	15	730	830	935	1020	1145	1450	
	30	850	970	1070	1195	1340	1640	
	0	550	590	635	700	785	1005	30 KNOTS
	15	595	660	750	830	940	1200	
	30	690	780	875	985	1100	1370	

Ground Run Takeoff

50-FOOT OBSTACLE TAKEOFF

ZERO FLAPS — HARD SURFACE RUNWAY

DISTANCE TO CLEAR 50-FOOT OBSTACLE

	RUNWAY TEMP. °C	PRESSURE ALTITUDE — FEET: SEA LEVEL	1000	2000	3000	4000	6000	WIND VELOCITY
GROSS WEIGHT 2475 POUNDS	0	780	870	970	1180	1400	2050	0 KNOTS
	15	950	1090	1280	1520	1820	2690	
	30	1145	1375	1640	1970	2370	3480	
	0	450	550	660	740	890	1340	20 KNOTS
	15	580	680	810	970	1170	1800	
	30	725	880	1040	1300	1570	2360	
	0	330	420	520	590	720	900	30 KNOTS
	15	460	550	650	800	960	1320	
	30	570	720	850	1070	1280	1960	
GROSS WEIGHT 2775 POUNDS	0	1000	1140	1300	1540	1800	2640	0 KNOTS
	15	1220	1410	1670	1970	2350	3460	
	30	1490	1780	2110	2540	3060	4540	
	0	645	720	840	980	1170	1750	20 KNOTS
	15	770	990	1060	1310	1570	2350	
	30	970	1160	1370	1680	2030	3220	
	0	510	580	670	800	960	1440	30 KNOTS
	15	610	800	870	1060	1290	1950	
	30	785	960	1120	1380	1660	2720	
GROSS WEIGHT 2975 POUNDS	0	1180	1360	1540	1790	2080	3040	0 KNOTS
	15	1425	1640	1930	2280	2710	4030	
	30	1740	2040	2430	2920	3530	5320	
	0	740	860	990	1160	1360	2040	20 KNOTS
	15	900	1080	1250	1490	1800	2800	
	30	1125	1350	1620	1995	2370	3800	
	0	600	700	810	910	1120	1680	30 KNOTS
	15	730	880	1020	1220	1480	2320	
	30	925	1100	1320	1590	1970	3200	

50-Foot Obstacle Takeoff

EMERGENCY DESCENT

1. Throttle . . . . . IDLE
2. Propeller . . . . . FULL INCREASE
3. Landing gear . . . . . DOWN
4. Flaps . . . . . DOWN
5. Airspeed . . . . . 110 KIAS

SPIN RECOVERY

Recovery from normal spins is effected most rapidly if started at the beginning of the steep half of the turn. Recovery is equally positive in the shallow portion, but is somewhat slower.

1. Apply opposite rudder to the neutral position followed by forward stick to the neutral position.
2. When the rotation stops; level the wings. The aircraft will be in a 60-to 80 degree dive. Start a pullout immediately to keep the altitude loss to a minimum, but avoid entering an accelerated stall.
3. With gear and flaps down, make pullout tight enough to keep from exceeding 100 KIAS.

FOULED DECK ENDURANCE

CLEAN AIRPLANE

ENDURANCE CLIMB SCHEDULE	
ALTITUDE	IAS
SEA LEVEL	91
5000	85
10,000	79

LOITER AIRSPEED 70 KIAS

DESCENT 93 KIAS

FUEL ON BOARD (POUNDS)	FLIGHT ALT (FEET)	ENDURANCE (MINUTES)	DESCEND OR CLIMB TO (FEET)	DESCEND WHEN FUEL IS (POUNDS)	FUEL REMAINING AT SEA LEVEL (POUNDS)
250	SEA LEVEL	440	5000	27	23
250	5000	451	5000	27	23
250	10,000	448	5000	27	23
200	SEA LEVEL	348	5000	24	20
200	5000	360	5000	24	20
200	10,000	356	5000	24	20
150	SEA LEVEL	261	5000	22	18
150	5000	268	5000	22	18
150	10,000	265	5000	22	18

Fouled Deck Endurance

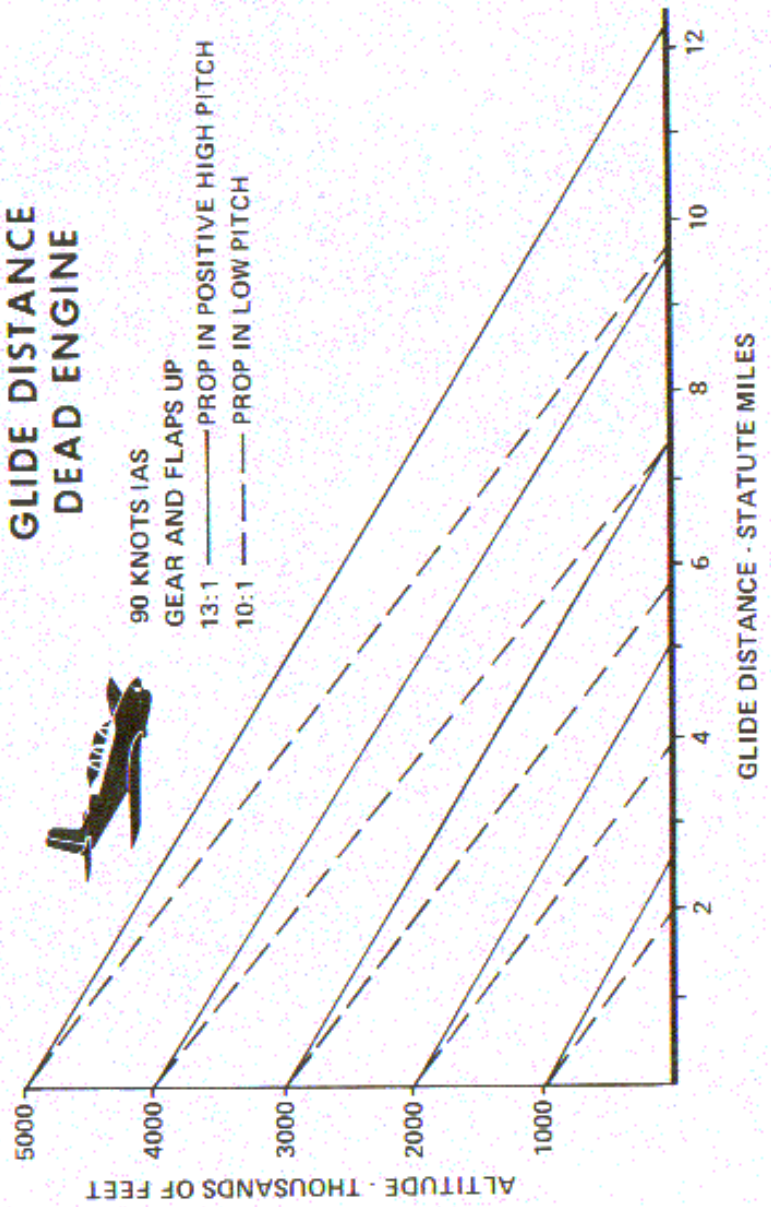
LANDING DISTANCE

FULL FLAPS — HARD SURFACE RUNWAY

GROUND ROLL DISTANCE — FEET

		HEAD-WIND VELOCITY					
	RUNWAY TEMP. °C	0 KN.	10 KN.	20 KN.	30 KN.	40 KN.	PRESSURE ALTITUDE
GROSS WEIGHT 2475 POUNDS	0	345	240	175	130	105	SEA LEVEL
	15	360	245	180	135	110	
	30	375	260	190	145	115	
	0	375	260	190	145	115	3000 FEET
	15	390	270	200	155	125	
	30	400	280	210	160	130	
	0	405	290	215	165	130	6000 FEET
	15	420	295	220	170	135	
	30	435	305	230	180	145	
GROSS WEIGHT 2775 POUNDS	0	390	270	200	155	125	SEA LEVEL
	15	400	280	210	160	130	
	30	420	295	220	170	135	
	0	420	295	220	170	135	3000 FEET
	15	435	305	230	180	145	
	30	455	325	245	190	155	
	0	460	330	250	200	160	6000 FEET
	15	475	345	260	205	165	
	30	490	355	270	210	170	
GROSS WEIGHT 2975 POUNDS	0	410	295	220	170	140	SEA LEVEL
	15	430	305	230	180	145	
	30	450	320	240	190	155	
	0	450	320	240	190	155	3000 FEET
	15	470	340	255	205	165	
	30	490	355	270	210	170	
	0	490	355	270	210	170	6000 FEET
	15	495	360	275	215	175	
	30	530	390	300	240	195	

Landing Distance



FOULED DECK RANGE

CLEAN AIRPLANE

RANGE CLIMB SCHEDULE		
ALTITUDE (FEET)	CLIMB IAS	CRUISE IAS
SEA LEVEL	91	105
5000	85	105
10,000	79	105

DESCENT AIRSPEED 115 KIAS

FLIGHT ALTITUDE (FEET)	FUEL ON BOARD (POUNDS)	DESCEND OR CLIMB TO OPTIMUM ALTITUDE (FEET)	MAXIMUM RANGE (MILES)	START DESCENT MILES FROM DESTINATION	TO ARRIVE AT SEA LEVEL WITH FUEL ON BOARD (POUNDS)
SEA LEVEL	250	5000	670	8	23
SEA LEVEL	200	5000	531	7	20
SEA LEVEL	150	5000	390	7	18
5000	250	5000	686	8	23
5000	200	5000	547	7	20
5000	150	5000	401	7	18
10,000	250	5000	682	8	23
10,000	200	5000	542	7	20
10,000	150	5000	396	7	18

Fouled Deck Range