NORMAL PROCEDURES

section II

TABLE OF CONTENTS

INTRODUCTION.

CODING.

To simplify coding within procedures, the following coding, preceding the text to which it applies, is used:

- [D] F-100D Airplanes
- [F] F-100F Airplanes
- [†] F-100F front cockpit only

PREPARATION FOR FLIGHT.

FLIGHT RESTRICTIONS.

Refer to section V for detailed airplane and engine limitations.

FLIGHT PLANNING.

Refer to T.O. 1F-100C(I)-1-1.

TAKEOFF AND LANDING DATA CARDS.

Refer to T.O. 1F-100C(I)-1-1.

WEIGHT AND BALANCE.

Refer to section V for weight and balance limitations. For loading information, refer to Weight and Balance Technical Manual, T.O. 1-1B-40. Before each flight, check takeoff and anticipated landing gross weight. The Form 365F is the weight and balance clearance. Make sure that airplane is properly loaded (bombs, drop tanks, and ammunition) for intended mission.

CHECKLISTS.

Refer to page iv for additional information on this subject. Refer to applicable Air Force regulations concerning use of checklist.

ENTRANCE.

The cockpit can be entered from either side. A ladder hooks over the cockpit ledge for normal entry. There are kick-in steps and handgrips on the left side of the fuselage for leaving the cockpit if a ladder is not available.

PREFLIGHT CHECK – GROUND ALERT COCKING.

Operational requirement may dictate the airplane be placed "cocked" in a short-reaction ground alert posture for a conventional nuclear, or air defense mission. When "cocking" an airplane, all preflight inspection items and airplane system checks, including "Before Taxiing," should be performed unless the airplane has just returned from a mission and the pilot cocking the airplane is assured all systems are operational. Wing flaps should be in the up position before engine shutdown to allow access to the single-point refueling receptacle. After the engine has been shut down, the procedure under "Cockpit Check (All Flights)" should be reaccomplished; repositioning the switches necessary to "cock" the airplane in a short-reaction status. Refer to "Scramble/Launch From Cocked Posture" in this section.

BEFORE EXTERIOR INSPECTION.

1. Form 781 – Check.

2. AWRS programmer – Check. Make sure that the AWRS programmer is installed or that the programmer bypass adapter has been connected.

3. ⊞ All electrical power – Check OFF.

4. ⊞ Pylon loading selector switches – Check. Make sure pylon loading selector switches are at the correct position for the particular external load configurations.

WARNING

Do not change setting of pylon loading selector switches, because loads may release when switches are reset. If selector switch setting does not correspond to the load on the respective station, maintenance personnel must make a check of applicable electrical circuits before the selector switches are repositioned.

5. ⊞ Armament switches – OFF or SAFE.

6. ⊡ Station selector switches* – SAFE.

7. Circuit breakers – In. All circuit breakers in unless otherwise directed.

8. Oxygen quantity – Check.

9. Map case – Check. Make sure necessary publications are in airplane.

When weapons are loaded, refer to appropriate Weapon Delivery Manuals for additional information.

*Some airplanes

EJECTION SEAT AND CANOPY CHECK.

Before entering cockpit, check canopy and ejection seat as follows:

1. Parachute – Check correct type for ejection seat. BA-22 parachute shall be used with airplanes that do not have the DART seat (airplanes not changed by T.O. 1F-100-1056). The Stencel parachute shall be used with airplanes with the DART seat (airplanes changed by T.O. 1F-100-1056).

WARNING

Seat/parachute entanglement may occur during ejection if incorrect parachute is used with the ejection seat.

2. Handgrips – Check. Both seat handgrips must be full down and latched, and red stripes aligned.

3. Pilot-seat separator – Check. Check that webbing is properly routed.

4. Safety pins – Check. The single ground safety pin must be installed through the right handgrip and the ground safety pin must be installed in the canopy alternate emergency jettison handle. Make sure all maintenance safety pins are removed.

WARNING

If any ejection system *maintenance* safety pin is installed, do not remove it until you have checked the status of the ejection system with maintenance personnel.

5. Tubing and hose fittings – Check. Check tubing and hose fittings from initiators to canopy remover and seat ejection catapult.

6. [F] Ballistic-powered inertial reel quick-disconnect – Pull-check. Apply a slight downward pull to the lower disconnect hose to make sure that the disconnect is positively engaged. (If the quick-disconnect is not properly engaged, a red ring should be visible at the separation point.)

7. [F] Canopy remover lock – Check OPEN.

8. Canopy external emergency release handles – Check closed and latched.

EXTERIOR INSPECTION.

Perform exterior inspection as outlined in figure 2-1. Refer to appropriate Weapon Delivery Manuals for additional procedures applicable to the stores loaded.

NOTE

Check with the crew chief to determine whether a cartridge has been installed in the starter unit. If a cartridge has been installed, a cartridge start must be made or the cartridge removed before a pneumatic start is attempted.

[F] REAR COCKPIT CHECK (SOLO FLIGHTS).

For solo flight, the following inspection of the rear cockpit must be made before the airplane is entered.

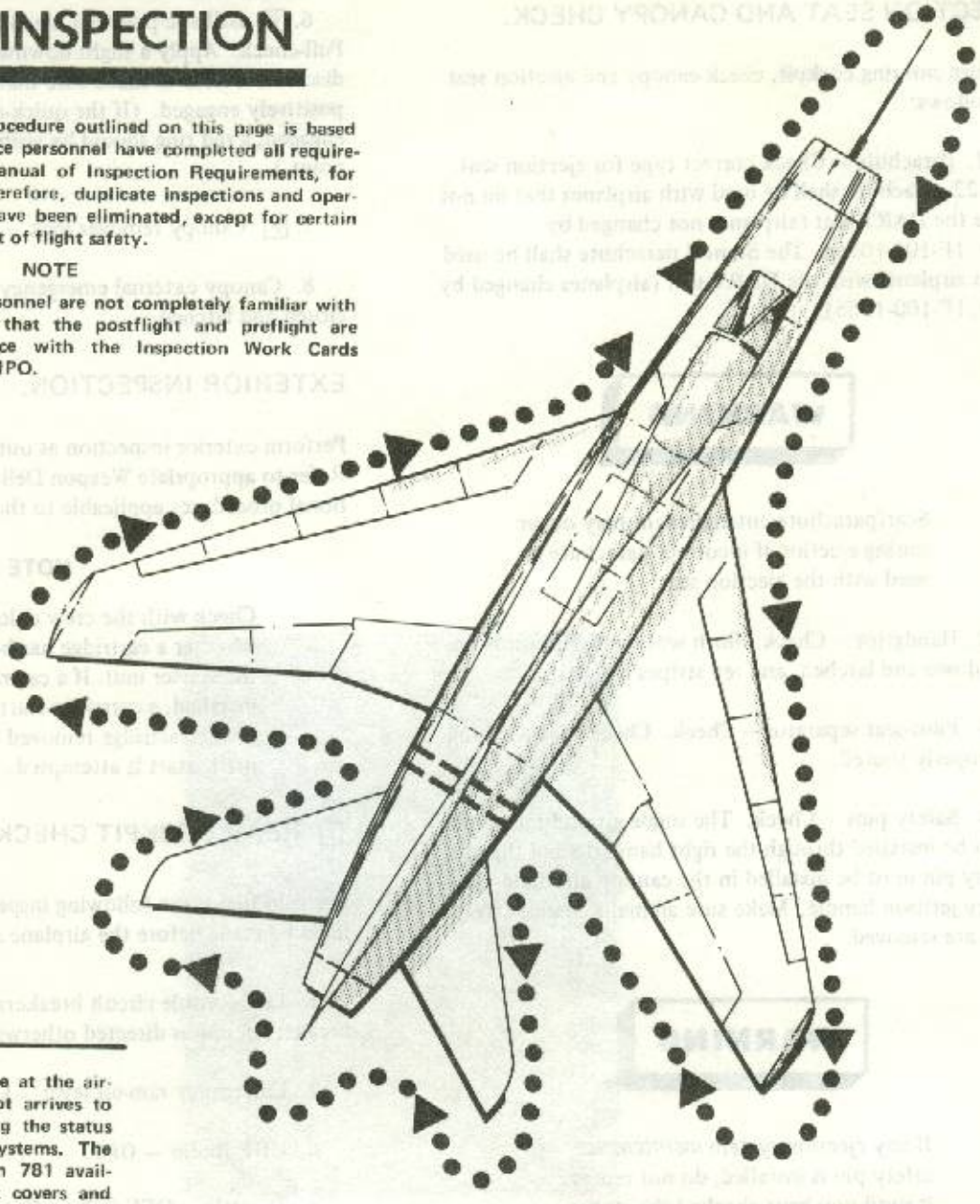
1. Left console circuit breakers – Check. All circuit breakers in unless directed otherwise.
2. Emergency ram-air lever – CLOSED.
3. UHF Radio – OFF.
4. Throttle – OFF (inboard).
5. Wing flap emergency switch – NORMAL.
6. Fuel regulator selector switch – NORM.
7. Air start switch – OFF.
8. Engine master switch – Safetied ON.

EXTERIOR INSPECTION

The exterior inspection procedure outlined on this page is based on the fact that maintenance personnel have completed all requirements of the Technical Manual of Inspection Requirements, for preflight and postflight; therefore, duplicate inspections and operational check of systems have been eliminated, except for certain items required in the interest of flight safety.

NOTE

At bases where ground personnel are not completely familiar with your airplane, make sure that the postflight and preflight are accomplished in accordance with the Inspection Work Cards 1F-100D-WC6-1PRPO and -1PO.



The ground crew should be at the airplane at the time the pilot arrives to answer questions concerning the status of the airplane and its systems. The crew chief will have Form 781 available for the pilot, all dust covers and plugs removed, and the hydraulic systems depressurized.

NOTE

Drag chute latch handle must not be bent; handle doors, and release plunger should be flush with bottom of fuselage.

AIRPLANE SAFETY CHECKS

1. Nose gear ground safety pin — Installed.
2. Nose gear torque link pivot pin — Seated.
3. Intake duct — Clear of foreign objects.
4. Drag chute and cable stowed, doors locked, latch handle flush and not bent, and maintenance safety pin removed.
5. Tires — Check for general condition.
6. External loads — Mounted securely, and safety pins installed.

CAUTION

Do not store miscellaneous items of clothing or equipment in the forward electronic compartment, as electronic equipment can be damaged. Items of clothing or equipment placed in the aft electronic equipment bay can become lodged in the flight control system.

Figure 2-1

9. Fuel system shutoff switch – Safetied ON.

10. Left console airflow knob* – DECREASE.

11. Landing gear handle – DOWN.

12. Landing and taxi light switch – OFF.

13. Drag chute handle – IN (stowed).

14. AC generator switch – Safetied ON.

15. DC generator switch – Safetied ON.

16. Battery switch – Safetied ON.

17. Standby instrument inverter switch – Safetied OFF.

18. Oxygen – NORMAL.

19. Right console airflow knob* – DECREASE.

20. Intercom volume control – Full volume.

21. Cockpit lights – OFF.

22. Radio compass controls – COMP., full volume.

23. Bleed-air emergency switch – NORM.*

24. Right console circuit breakers – Check. All circuit breakers in unless directed otherwise.

25. All loose items – Secured. Secure personal equipment leads, safety belt, and shoulder harness. The safety belt is to be snug over the survival kit. Thread the free end of the survival kit retaining strap down through the right foot brace, across the cockpit floor, and up through the left foot brace. Wrap the strap around the safety belt, with one turn on the left and one turn on the right side of the shoulder harness. Thread the free end of the strap through the strap buckle and pull the strap snug.

NOTE

Place the buckle end of the strap to the right of the shoulder harness to prevent streamer contact with the throttle.

Stow the retainer strap in the right-hand seat storage container.

COCKPIT CHECK (ALL FLIGHTS).

General.

1. Wheel brake emergency hydraulic pump operation – Check. Pump brake pedals one at a time to determine whether electrically driven pump is operating. The pump can be heard from the cockpit if the area is relatively quiet. Have crew chief listen for pump if noise level is too high to hear from cockpit.

2. Personal equipment – Connected. Survival equipment, ventilated suit, anti-G suit and oxygen/radio leads. Route airplane anti-G suit hose under the leg and ensure it does not interfere with armrest handle. Route all personal equipment leads under safety belt.

3. Safety belt and shoulder harness – Fasten and adjust.

WARNING

Make sure automatic-opening safety belt is properly fastened and chute arming lanyard is properly attached to safety belt latching mechanism.

- Check that loose ends of shoulder harness are tucked under webbing, and other loose ends are secured, to avert entanglement during ejection.

NOTE

To prevent possible interference caused by the position of the initiator hose leading to the automatic-opening safety belt, the hose length can be varied by pushing or pulling the hose through the clamp on the side of the ejection seat.

- If desired, a preflight operational check of the inertial locking feature of the shoulder harness inertia reel can be made after the handle has been set in the UNLOCKED (aft) position. Then pull rapidly on harness. The reel should lock. To make sure reel has not fully extended, move handle forward to LOCKED and then return it to the aft position. This should release the harness and it should be capable of further extension.

*Some airplanes

4. Zero-delay lanyard hook* – Attach to parachute ripcord handle. Utilize zero-delay lanyard for all takeoffs and landings unless Stencel parachute is used.

Left Side.

1. Speed brake emergency dump lever – OFF (aft).

2. Emergency ram-air lever* – CLOSED.

3. Wing flap handle – UP (INTERMEDIATE for cocking).

4. Wing flap emergency switch – NORMAL.

5. Throttle – OFF (inboard).

6. Speed brake switch – OFF (center).

7. UHF control switch – OFF.

8. Ground fire switch – SAFE (safetied).

9. Antiskid switch – OFF.

10. Fuel regulator switch – NORM.

11. Drop tank fuel selector switch – As required.

WARNING

Refer to "Drop Tank Fuel Sequencing Limitations" in section V.

12. Air refueling switch – OFF.

13. G-limiter switch – ON (safetied).

14. Air start switch – OFF.

15. Engine master switch – ON.

16. Fuel system shutoff switch – Safetied ON.

17. Landing gear handle – DOWN.

18. Landing and taxi light switch – OFF.

Front.

1. A-4 sight mechanical caging lever – CAGED.

2. Trigger safety switch – CAMERA.

3. Gun-missile switch – SAFE.

4. Clock – set and running; test stop watch.

5. External load emergency jettison handle – IN (clip on).

6. Special store unlock handle – IN.

7. Foot warmer* – As desired.

Right Side.

1. AC generator switch – ON (rear – safetied ON).

2. DC generator switch – ON (rear – safetied ON).

3. Standby instrument inverter switch – OFF (rear – safetied OFF).

4. Interphone – As desired. Set the interphone control panel switches as desired.

5. NAV aids – OFF (as desired for cocking).

6. IFF – STDBY (NORM for cocking).

7. AIMS controls – As required.

8. J-4 directional indicator function selector switch – MAG.

9. Pitot heat – ON. On F-100F-20 airplanes, the pitot heat should not be turned ON if extended ground operation is required.

10. Engine guide vane anti-ice switch – AUTO.

11. Windshield exterior air switch – OFF.

*Some airplanes

12. ⊞ Cockpit pressures selector switch – As desired.

13. ⊞ Cockpit temperature master switch – AUTO.

14. Bleed-air emergency switch* – NORM.

NOTE

The AN/APN 102 bleed air switch has been DEACTIVATED by T.O. 1F-100-996D*.

15. Cockpit temp – Toward HOT.

16. Canopy and windshield defrost lever – Toward INCREASE (set as desired).

17. Console airflow lever (or knobs) – Desired air distribution.

NOTE

For steps 15, 16, and 17, refer to "Normal Operation of Air Conditioning, Pressurization, Defrosting, Anti-icing, and Rain Removal System" in section IV.

18. ⊞ QRC controls – OFF (STBY if required).

19. ⊞ Emergency hydraulic pump lever (RAT) – OFF.

OXYGEN SYSTEM PREFLIGHT CHECK.

WARNING

If airplane is to be operated on the ground under conditions of possible carbon monoxide contamination (downwind or behind another jet engine), set diluter lever to 100% oxygen.

Before takeoff, the oxygen system should be checked with mask on and connected to the aircraft oxygen supply hose, then proceed as follows:

1. Oxygen supply lever – Safetied ON.

2. Oxygen pressure gage – Check at 55 to 145 psi.

3. Liquid quantity gage – Check at 4 liters minimum.

NOTE

For training and special type flights only, the minimum quantity of oxygen may be 2-1/2 liters (the sum of 2-1/2 liters per crew member on F-100F airplanes), to avoid undue delay in turn-around time.

4. Diluter lever – 100%.

5. Breathe normally for a minimum of three cycles. The flow blinker should show alternately black and white.

6. Emergency lever to EMERGENCY position.

7. Hold breath. A white blinker indicates a leak.

8. Emergency lever – Return to center position, positive pressure should cease.

9. Diluter lever – NORMAL. Blinker should remain black. White blinker indicates a leak.

NOTE

It is possible for the white blinker to show by movement of the crew members head with respect to the regulator. Therefore, leaks should be detected by the movement of the blinker in relation to its "at rest" position.

10. Breathe normally for a minimum of three cycles. The flow blinker should show alternately black and white.

CAUTION

Do not leave the emergency lever at either positive pressure setting for more than 5 to 10 seconds unless the oxygen mask is attached, because the continuous flow of oxygen through the regulator will subject it to severe frosting conditions and possible permanent damage.

11. Diluter lever – As required.

*Some airplanes

[T] Electrical Power On.

1. DC external power – ON, if available.
2. Battery switch – ON.

CAUTION

If immediate start is not anticipated with dc external power connected, delay turning the battery switch ON until just before making the start. This will prevent possible excessive charging or damage to the battery by the external power unit.

3. Engine master switch – ON.

CAUTION

To reduce the possibility of MM-3 indicator failure caused by improper voltage and frequency output from the standby instrument inverter, allow a minimum of 30 seconds after dc power is applied before moving engine master switch to ON.

4. UHF control switch – BOTH.
5. Caution and warning lights – Check on. In addition to the master caution light being on, the canopy-not-locked warning light and the antiskid off, flight system fail, fuel boost pump inop, ac generator off, and dc generator off caution lights should also be on. To extinguish the master caution light, press all illuminated caution and warning lights.
6. Special store unlocked indicator light – Check.
7. Fire- and overheat-warning lights – Test (bright/dim).
8. Fuel quantity gages – Check. Check fuel quantity and test fuel quantity gage operation.
9. [F] Radio control transfer switch – Check.
10. Indicator, caution, and warning lights – Test (bright/dim) or press-to-test, as applicable.
11. Interior and exterior lights – As required.
    a. Instrument lights – As desired.

NOTE

On some airplanes, the instrument indirect lights are powered by the 3-phase instrument bus. During a cartridge start on these airplanes, the instrument indirect lights should be OFF until external power is applied or the engine is running. With a low-battery condition, these lights sometimes cause the standby inverter instrument inverter to require power sufficient to "pop" the inverter circuit breaker.

    b. Thunderstorm lights – As desired.
    c. Indicator light dimmer switch – As desired.
    d. Console lights – As desired.
    e. Magnetic compass light – As desired.
    f. Position lights – As required.
    g. Exterior floodlights* – As desired.
    h. Air refueling probe light switch – OFF.

BEFORE STARTING ENGINE.

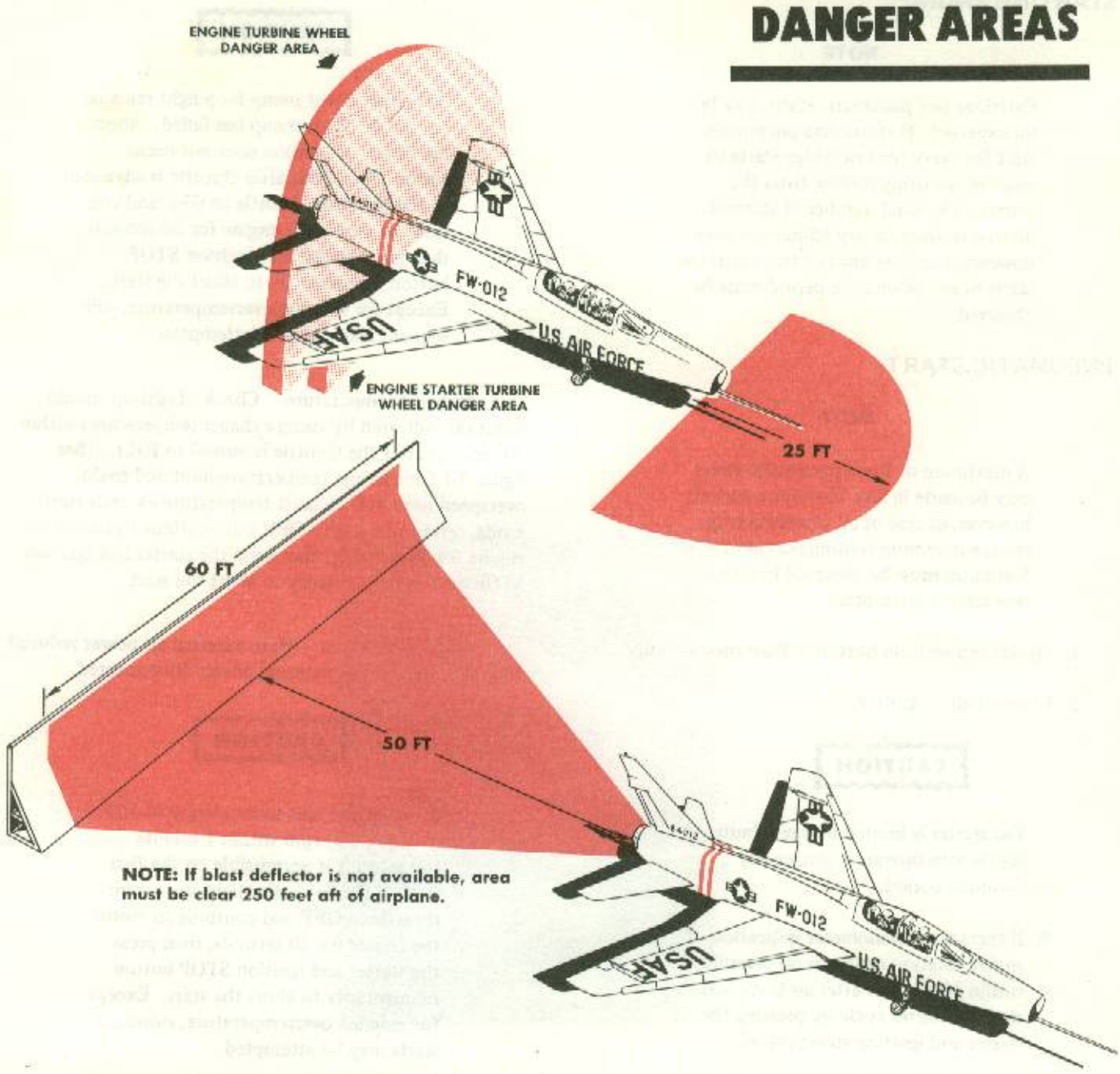
See figure 2-2 for danger areas.

WARNING

If the landing gear wheelwell doors are open, make sure personnel are clear. The gear doors close as soon as hydraulic pressure is available during engine start.

*Some airplanes

DANGER AREAS



DISTANCE AFT OF TAIL PIPE (FEET)	0	25	50	75	100	125	150
IDLE THRUST (DURING TAXIING)	238°C (400°F) 225	82°C (180°F) 105	52°C (125°F) 35				
MILITARY THRUST	590°C (1100°F) 1325	179°C (355°F) 530	107°C (225°F) 260	71°C (160°F) 135	43°C (110°F) 75	27°C (80°F) 15	15°C (60°F) 0
AFTERBURNER THRUST	1590°C (2900°F) 2050	704°C (1300°F) 1200	385°C (725°F) 580	260°C (500°F) 325	193°C (380°F) 205	154°C (310°F) 135	135°C (275°F) 115

Exhaust temperature in BLACK FIGURES
Exhaust velocity (mph) in RED FIGURES

F-100F-1-73-17C

Figure 2-2

STARTING ENGINE.

NOTE

Cartridge and pneumatic starts may be interspersed. Perform one pneumatic start for every four cartridge starts to assist in removing residue from the starter. The total number of starts is limited to three in any 15-minute period; however, the time limit of two cartridge starts in any 60-minute period must be observed.

PNEUMATIC START.

NOTE

A maximum of three pneumatic starts may be made in any 15-minute period; however, in case of an unsatisfactory start, a minimum waiting period of 5 minutes must be observed before a new start is attempted.

1. Starter and ignition button – Press momentarily.

2. External air – APPLY.

CAUTION

The starter is limited to one minute of continuous operation during any 5-minute period.

- If there is no tachometer indication of engine rotation or rise in oil pressure within 10 seconds after air is applied, stop the starter cycle by pressing the starter and ignition stop button.

3. Throttle – IDLE at 12% to 16% rpm. Check ignition indicator light-on, a fuel flow indication and fuel boost pump inop light-out.

CAUTION

If the fuel boost pump inop light remains on, the dc boost pump has failed. Abort the flight. If ignition does not occur within 20 seconds after throttle is advanced to IDLE, return throttle to OFF and continue to motor the engine for 30 seconds; then press starter and ignition STOP button momentarily to abort the start. Except for exhaust overtemperature, subsequent starts may be attempted.

4. Exhaust temperature – Check. Light-up should occur (as indicated by rising exhaust temperature) within 20 seconds after the throttle is moved to IDLE. (See figure 5-1 for exhaust temperature limit and engine overspeed limit.) If exhaust temperature exceeds start limits, return throttle to OFF and continue to motor the engine for 30 seconds; then press the starter and ignition STOP button momentarily to abort the start.

5. 40% to 45% rpm – Have external air power reduced and disconnected; dc external power disconnected.

CAUTION

If the engine fails to accelerate to 55% to 60% (idle) rpm within 1 minute (80 seconds is permissible on the first start of the day) after light-up, return throttle to OFF and continue to motor the engine for 30 seconds; then press the starter and ignition STOP button momentarily to abort the start. Except for exhaust overtemperature, subsequent starts may be attempted.

6. Idle rpm – Engine instruments checked. Engine rpm should increase steadily, with the throttle at IDLE, to 55% to 60%, and oil pressure should increase

steadily to a minimum of 40 psi; then check all engine instruments for proper indication.

CAUTION

If the ignition-on light fails to go out after idle rpm is obtained, the starter centrifugal cutout switch has failed and the starter and ignition STOP button must be pressed momentarily to shut down the starter and de-energize the ignition circuit.

CARTRIDGE START.

WARNING

Do not press the starter and ignition button until the crew chief signals that the starter exhaust area is clear of personnel.

- When a misfire or hang fire occurs the cartridge must be removed before a pneumatic start is attempted. The engine must not be started nor the aircraft flown with a live cartridge remaining in the starter breech.
- To avoid possible inhalation of toxic fumes during cartridge start, put oxygen mask in place and use 100% oxygen during starting cycle.
- When a misfire, or hangfire, is encountered during an attempted engine start, the breech of the starter will not be opened until a 5-minute time period has elapsed, and then only if no smoke can be observed emitting from the starter exhaust.

NOTE

The minimum interval between cartridge starts is 5 minutes; however, no more than two cartridge starts can be made in any 60-minute period, regardless of the interval between starts. Perform one pneumatic start for every four cartridge starts to assist in removing cartridge residue from the starter.

- If external dc power is not available, place radio switch at OFF until start is completed.

1. Starter and ignition button – Press momentarily.

CAUTION

If there is no tachometer indication of engine rotation or rise in oil pressure within 10 seconds after starter and ignition button is pressed, stop the starting cycle (ignition) by pressing the starter and ignition STOP button momentarily. Refer to "Engine Starter Cartridge Malfunctions" in section VII.

2. Throttle – IDLE at 2% to 4% rpm. Check ignition indicator light-on, a fuel flow indication and fuel boost pump inop light-out.

CAUTION

If the fuel boost pump inop light remains on, the DC boost pump has failed. Abort the flight.

3. Exhaust temperature – Check. Light-up should occur (as indicated by rising exhaust temperature) within 8 to 10 seconds after the throttle is moved to IDLE. (Cartridge burnout time is approximately 18 to 20 seconds.) (See figure 5-1 for exhaust temperature limit and engine overspeed limit.)

CAUTION

If engine fails to accelerate to 55% to 60% (idle) rpm within 1 minute after light-up, or if exhaust temperature exceeds start limits, return throttle to OFF and allow engine to unwind; then press starter and ignition STOP button to abort start. Except for exhaust overtemperature, another start may be attempted.

- If the ignition-on light fails to go out after idle rpm is obtained, the starter centrifugal cutout switch has failed and the starter and ignition STOP button must be pressed momentarily to de-energize the ignition circuit.

4. Idle rpm – Engine instruments checked. Engine rpm should increase steadily, with the throttle at IDLE, 55% to 60%, and oil pressure should increase steadily to a minimum of 40 psi; then check all engine instruments for proper indication.

CLEARING ENGINE.

To clear engine of trapped fuel during ground operation, check that battery switch is ON or external power is connected; then motor engine above 12% rpm for 30 seconds with throttle off and external air connected. Allow engine rotation to stop completely before attempting another start.

GROUND OPERATION.

CAUTION

If the throttle is inadvertently retarded to OFF, a flame-out occurs immediately. Do not reopen throttle, because relight is impossible and resultant flow of unburned fuel into engine can create a fire hazard in afterburner section of tail pipe during ground operation.

FLIGHT CONTROL HYDRAULIC SYSTEM CHECK.

To ensure that the flight control systems are operating properly, perform the following checks with the throttle at IDLE.

1. Speed brake – UP.

2. Trim airplane for takeoff.

3. Flight control hydraulic system servicing – Have ground crewman check. Ground personnel must check servicing before first flight of the day. If, for any flight, the flight control hydraulic pressure failure caution light remains on after engine start, either or both flight control hydraulic system compensating reservoirs may be below refill level. Have systems checked before flight.

NOTE

During the servicing check of the flight control hydraulic system, it will be necessary to assist the crew chief by operating the control stick. On a signal from the crew chief, bleed system No. 1 pressure down to 1500 psi and maintain this pressure until the crew chief signals that both system No. 1 and No. 2 compensator pins have been checked. After servicing check is completed, proceed with the remainder of the flight control system check.

4. Hydraulic pressure failure caution light – Check light OUT. If light fails to go out after servicing and pressure is above 650 psi, a blocked system or run-around condition is indicated. Performance of steps 5 and 6 determines which system has malfunctioned. This condition must be corrected before flight.

5. Hydraulic pressure gage selector switch – SYS 1.

a. Move stick slowly full aft, check for freedom of movement, and visually check control surface for proper movement. Visually check ailerons neutral; after pressure stabilizes, release stick completely and allow to return to trim. Pressure must drop at least 500 psi from stabilized pressure. Check for a smooth rapid pressure build-up.

b. Move stick slowly full right, check for freedom of movement and visually check control surfaces for proper movement. After pressure has stabilized, release stick completely and allow to return to trim. Pressure must drop at least 500 psi from stabilized pressure. Check for a smooth, rapid pressure build-up.

NOTE

Momentary pressure drops below 1500 psi are permissible while step 5 is being performed. The amount of pressure drop varies with outside air temperature and from airplane to airplane.

6. Hydraulic pressure gage selector switch – SYS 2.

a. Move stick slowly full forward, check for freedom of movement, and visually check control surfaces for proper movement. Visually check ailerons neutral; after pressure stabilizes, release stick completely and allow to return to trim. A noticeable pressure drop must occur. Check for a smooth, rapid pressure build-up.

b. Move stick slowly full left, check for freedom of movement, and visually check control surfaces for proper movement. After pressure has stabilized, release stick completely and allow to return to trim. A noticeable pressure drop must occur. Check for a smooth, rapid pressure build-up.

NOTE

Normally the flight control hydraulic pressure failure caution light will not come on during preceding steps. If light does illuminate, stop all control movement and see if both system pressures return to 2800-3200 psi before proceeding with further checks.

- Momentary overshoot above 3200 psi is allowed when pressure is building up.

- In steps 5 and 6, if no pressure drop is observed, the system is not functioning correctly or is connected improperly.

RUDDER HYDRAULIC SYSTEM CHECK.

CAUTION

Ensure that all ground personnel are clear of saddle-back area before commencing check, to prevent injury in the event the ram-air turbine door is operated.

To ensure that rudder system is operating properly, proceed as follows:

1. Hydraulic pressure gage selector switch – UTILITY. Move rudder pedals through full travel. Check rudder operation. Slight drop in hydraulic pressure should be noted during rudder movement.

2. Hydraulic pressure gage selector switch – RUD,ALT. While slowly moving rudder pedals, pressure must be at or below 200 psi.

3. Rudder hydraulic system test switch – ALTERNATE RUDDER. Check pressure and operation. Move rudder pedals through full travel. Pressure should build up to 2800 psi or more. Release pedals to neutral. A slight drop in hydraulic pressure should be noted during rudder movement. Release test switch to NORM. Pressure should return to less than 500 psi. Move rudder pedals to ensure that system is operating.

4. Hydraulic pressure gage selector switch – UTILITY.

AC AND DC GENERATOR/FUEL BOOST PUMP CHECK.

If the ac generator has not come on the line after the engine has idled for 1 minute and to insure that the fuel boost pumps operation is properly checked, the following procedures should be followed:

1. DC boost pump test switch – OFF and hold. (Check boost pump INOP light – ON.)

CAUTION

If the centrifugal element of the engine driven fuel pump has failed, failing the DC boost pump with the AC generator off the line may cause a flameout. If the engine flames out, do not release the test switch until the throttle is moved to OFF.

2. Throttle – Advance until ac generator cuts in (72% RPM maximum). After the ac generator cuts in, the fuel boost pump INOP light should go OUT.

CAUTION

If the boost pump INOP light remains on, the ac pumps are unable to supply the engine with 5 psi fuel pressure and the flight should be aborted.

- If the ac generator caution light does not go out as engine reaches 72%, return throttle to IDLE and move ac generator switch momentarily OFF, RESET, then to ON, to ensure that generator is on. Readvance throttle to ac generator cut-in speed. If the ac generator caution light still remains on, shut down engine at once, because generator drive unit is not functioning properly.

- Generator control unit may be damaged if the ac generator switch is held longer than momentarily in the RESET position.

3. DC boost pump switch – RELEASE.

4. AC generator and instrument ac power caution light – OUT.

5. Loadmeters (ac and dc) – CHECK. Check loadmeter for proper readings – maximum 0.75.

6. Standby instrument inverter switch – OFF.

If the ac generator comes on the line before or at IDLE RPM, the following procedures should be followed:

1. DC boost pump test switch – OFF and hold for 3 seconds. (Check boost pump INOP light – OUT.) Holding the dc boost pump switch to OFF will shut down the dc boost pump. If the boost pump INOP light remains OUT, fuel pressure to the engine is 5 psi or more.

CAUTION

Illumination of the boost pump INOP light indicates that the ac boost pumps are unable to supply the engine with 5 psi fuel pressure and the flight should be aborted.

NOTE

The dc boost pump test switch has been wired through the nose gear OLEO strut switch to deactivate the test function during flight.

2. Proceed with steps 3 through 6 above.

AIR START SYSTEM AND TRANSFORMER – RECTIFIER CHECK.

To ensure that the air start ignition system and transformer-rectifier unit are operating properly, the following check should be made:

1. Throttle – IDLE. AC generator power "on the line."

2. Mode selector switch – MANUAL.

3. Air start switch – ON. Move air start switch to ON and check that ignition-on indicator light is on. The dc generator caution light and master caution light should come on. The dc loadmeter does not go to zero since it indicates load on the transformer-rectifier unit. The instrument ac power-off caution light should come on momentarily and then go out as the standby instrument inverter comes up to speed and the ac loadmeter shows an increase.

4. Battery switch – OFF. The transformer-rectifier unit should now power the primary and secondary bus. Check for the fixed gun sight reticle. This shows that the secondary bus is operating. The instrument ac power-off caution light should remain off, with the ac loadmeter showing a slight increase. If the sight is inoperative, place the radio compass function switch at LOOP and observe pointer movement corresponding to loop switch positioning.

CAUTION

If these indications are not noted when the air start switch is ON and the battery switch is OFF, the air start switch, the secondary bus tie in relay or the transformer rectifier is inoperative and the mission should be aborted.

5. Air start switch – OFF. Return air start switch to OFF, to prevent damage to ignition units. The dc generator should then come back to normal, and the dc generator and master caution lights should go out. The dc loadmeter reading should also return to normal. (A lockout relay prevents the transformer-rectifier from powering the dc busses when the dc generator is "on the line.")

6. Battery switch – ON.

7. Mode selector switch – As desired.

8. NAV aids – ON.

9. Camera shutter selector switch – As desired.

EMERGENCY FUEL SYSTEM CHECK.

Test the emergency fuel control system as follows:

1. Fuel regulator selector switch – EMER. Move fuel regulator selector switch to EMER at idle rpm. The emergency fuel regulator-on indicator light should be on, indicating transfer from the normal to the emergency system.

2. Fuel regulator selector switch – NORM. Return fuel regulator selector switch to NORM; a slight fluctuation of fuel flow should be noted.

UTILITY HYDRAULIC SYSTEM CHECK.

To ensure that utility hydraulic system is operating correctly, proceed as follows:

1. Hydraulic pressure gage selector switch – UTILITY. Check pressure indication on gage.

2. Antiskid switch – ON. Wheel brakes – Check. Antiskid switch – OFF. Have crew chief check for proper brake action. If no brake action is indicated, return antiskid switch to OFF and abort the flight unless operational requirements dictate otherwise.

3. Speed brake – DOWN. Have ground crew check for proper operation. With pressure stabilized, move switch to in, note hydraulic pressure drop. The time required for the speed brake to close should not exceed 7 seconds. If pressure drops below 1300 psi the mission should be aborted because the priority valve in the speed brake hydraulic line may be faulty. Then move switch to OFF (center) position. However, if the speed brake required more than 7 seconds to close with engine operation at 60%, the utility pump is not operating properly and the aircraft should not be flown.

4. Wing flap handle – Cycle; then INTERMEDIATE. Have ground crew check for proper operation of the flaps through full up and down cycle and that horizontal stabilizer repositions as necessary during flap operation. Set flaps at INTERMEDIATE.

YAW AND PITCH DAMPER GROUND CHECK.

1. Move yaw-pitch damper switch to ENGAGE. The switch should remain at ENGAGE when released. There should be no stabilizer movement. A slow rudder movement is normal.

2. Move control stick left. The rudder should follow left, then return to neutral.

3. Move control stick right. The rudder should follow right, then return to neutral.

4. Press damper emergency disconnect switch lever to disengage dampers. The yaw-pitch damper switch should move to OFF.

5. Move control stick left and right. There should be no corresponding rudder movement.

WARNING

If the damper remains engaged after the emergency disconnect has been activated, do not fly the aircraft.

TRIM SYSTEM CHECK.

To ensure that trim system is operating properly, proceed as follows:

1. Trim operation – Check. Hold lateral and longitudinal trim switch on stick grip at each operative position, and hold rudder trim switch at RIGHT and LEFT to obtain full trim travel on all trim systems. Note that control and corresponding surface movement are correct. After completing full trim check in both directions, release trim switches with stick in a full trim position.

WARNING

The trim switch may be subject to occasional sticking in an actuated position, resulting in application of extreme trim. When this condition occurs in flight, the trim switch must be returned manually to OFF (center), after the desired amount of trim is obtained. If this is noted during preflight check, an entry should be made in Form 781 with a red cross. Do not fly the airplane.

NOTE

On F-100F-11 airplanes AF 56-3785 through 3919 and F-100F-16 and later airplanes, the aileron trim travel to the left is reduced by half to permit carrying certain wing stores.

2. Trim for takeoff – Check. Hold takeoff trim button depressed until takeoff trim indicator light remains on steadily for a minimum of 2 seconds. Determine ability to obtain takeoff trim from either the full nose-down or nose-up position. Observe control centering and have ground crew check proper setting of horizontal stabilizer and rudder.

NOTE

The trim for takeoff light will not come on when the flap handle is full down.

- The ground crew check of the horizontal stabilizer setting is facilitated by a white triangle painted on the left side of the fuselage. When the stabilizer is at the proper takeoff trim setting, the leading edge is aligned within ±5/16 inch of the aft apex of the triangle.

SCRAMBLE/LAUNCH FROM COCKED POSTURE.

1. Personal equipment – Connected. Survival equipment, anti-G suit, ventilated suit and oxygen/radio leads.

2. Safety belt and shoulder harness – Fasten and adjust.

3. Battery switch – ON (dc external power connected if available).

4. Standby instrument inverter switch – ON.

5. Engine start.

6. Throttle – Advance until ac generator cuts in (72% rpm maximum).

7. Standby instrument inverter switch – OFF.

8. Safety pins – Remove, display to ground crew and stow.

9. Oxygen – 100%.

10. Engine pressure ratio gage – Set.

11. Altimeter – Set and check. Reset vs STBY.

12. Nose wheel steering – Engage and check. Press nose wheel steering button and move rudder pedals slightly. Check for airplane response.

13. Canopy – Check; then as desired.

14. Chocks – Removed.

BEFORE TAXIING.

NOTE

Before taxiing, be sure there is proper clearance for the airplane. See figure 2-3 for minimum turning radius and ground clearance.

1. Safety pins - REMOVE ground safety pins from right hand grip of ejection seat and from canopy alternate emergency jettison handle. On F-100F airplanes, remove wind screen safety pin. Signal ground crewman

crewman should then show or present pins to pilot. In the cockpit, remove ground safety pins from right handgrip of ejection seat and from canopy alternate emergency jettison handle. On F-100F airplanes, remove wind-screen safety pin.

WARNING

After the ground safety pin is removed from the handgrip, the seat and canopy ejection systems are fully armed.

- After ground safety pin is removed from canopy alternate emergency jettison handle, the handle is armed, and if pulled, jettisons the canopy.

2. Navigation aids – Check.

3. Oxygen – 100%.

4. Engine pressure ratio gage – Set. Set engine pressure ratio gage takeoff index marker according to outside air temperature. (See figure 2-4.)

5. Altimeter — Set and check. The maximum allowable difference between the RESET and STBY mode is 75 feet.

WARNING

A careful cross-check of counters, drum, and pointer should be made on AAU-21 and AAU-19 altimeters since the 1,000-foot counter can be incorrectly adjusted.

- When operating aircraft with two AAU-19/A, one should be operated in the STBY mode. Frequent altimeter crosschecks between cockpits must be made.

6. Windshield exterior air – as required to eliminate moisture.

7. Nose wheel steering – Engage and check. Nose wheel steering button – press and move rudder pedals slightly. Check for airplane response to nose wheel steering.

8. Canopy – Check; then as desired. Check that canopy closes and locks and that cockpit pressurizes; then position canopy as desired. During taxiing, when the canopy is open, the canopy should not be set within 6 inches of either full open or full close position. This prevents damage to the canopy mechanism and canopy seal as a result of bouncing. During taxiing, when the canopy is closed, it should be fully closed and locked to prevent possible damage to the canopy seal.

WARNING

Do not place hands or arms on the canopy rail at anytime the canopy is in the open position. If the canopy should suddenly fall closed, serious injury would result.

9. Chocks – Removed.

NOTE

If engine run-up is made, be sure main wheels are securely chocked, and hold wheel brakes on. The wheel brakes will not hold the airplane when the afterburner is operating.

TAXIING.

Observe the following instructions for taxiing:

CAUTION

To prevent damage to canopy or engine, maintain a minimum distance of 150 feet from the exhaust blast of any other airplane.

- To minimize the combined side and vertical loads on the nose gear assembly, do not use hard, unsymmetrical braking for directional control during taxiing.

1. Brakes – Check.

2. Flight instruments – Check. Perform operational check of all flight instruments during taxiing. Check heading indicator for incorrect or sluggish operation.

3. Antiskid switch – ON. While taxiing in a clear area, move antiskid switch to ON and test brake operation. If no brake action is received, return antiskid switch to OFF and abort the flight.

TURNING RADIUS AND GROUND CLEARANCE

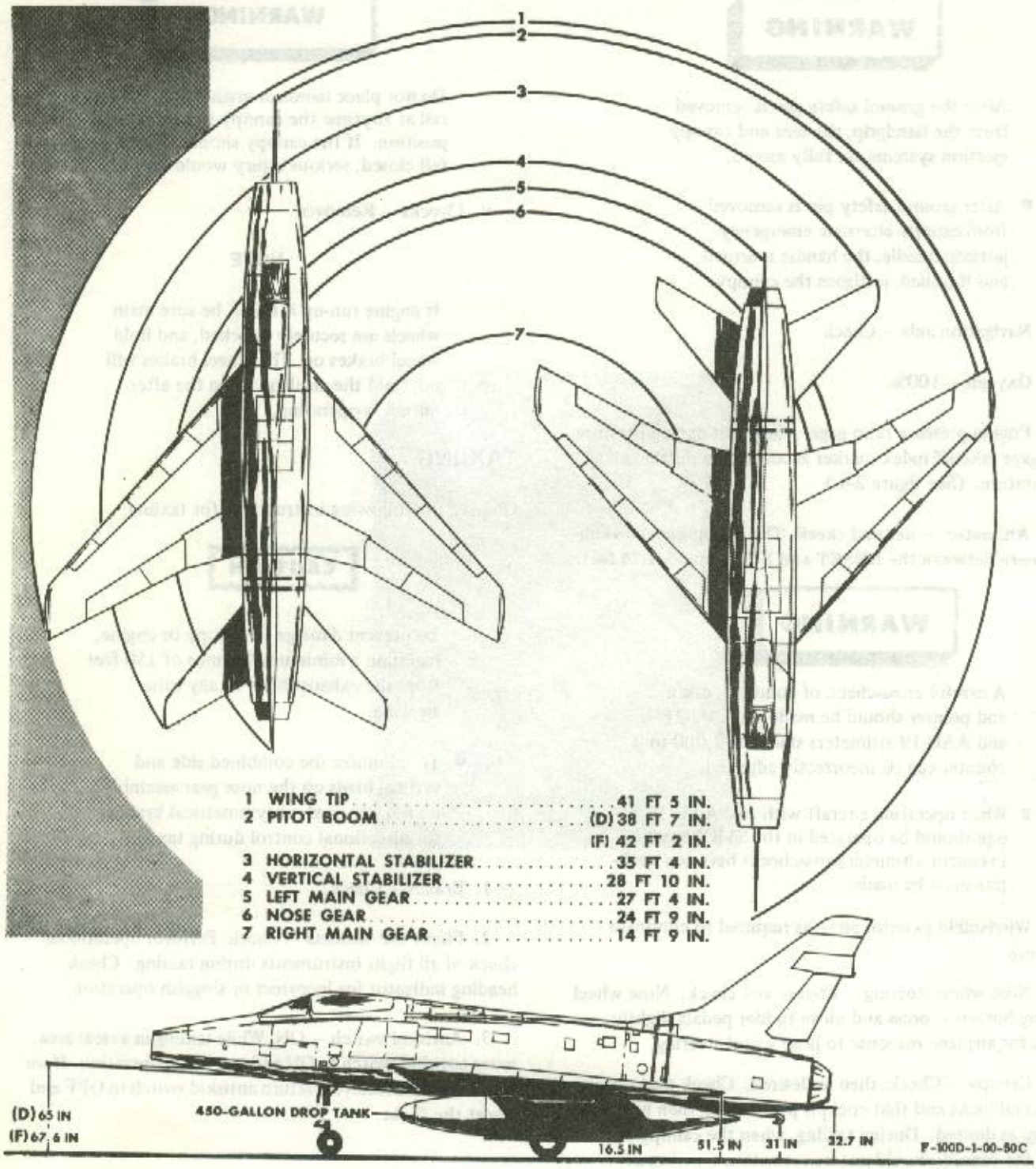


Figure 2-3

12' 7" main to main

EPR GAGE SETTING

D INDEX SETTING		OUTSIDE AIR TEMPERATURE		F INDEX SETTING	
-21	-23	°F	°C	-21	-23
1.82	1.79	122	50	1.80	1.76
1.84	1.80	118	48	1.82	1.78
1.85	1.82	115	46	1.83	1.79
1.86	1.83	111	44	1.84	1.81
1.87	1.85	108	42	1.85	1.83
1.88	1.86	104	40	1.86	1.84
1.89	1.88	100	38	1.87	1.86
1.90	1.89	97	36	1.88	1.88
1.91	1.91	93	34	1.89	1.89
1.92	1.93	90	32	1.90	1.91
1.93	1.94	86	30	1.91	1.92
1.94	1.96	82	28	1.93	1.94
1.96	1.97	79	26	1.94	1.95
1.97	1.99	75	24	1.95	1.97
1.98	2.00	72	22	1.96	1.98
1.99	2.02	68	20	1.97	2.00
2.01	2.03	64	18	1.99	2.01
2.02	2.05	61	16	2.00	2.03
2.03	2.06	57	14	2.01	2.04
2.04	2.08	54	12	2.02	2.06
2.05	2.09	50	10	2.03	2.07
2.06	2.10	46	8	2.04	2.09
2.07	2.12	43	6	2.05	2.10
2.09	2.13	39	4	2.07	2.11
2.10	2.15	36	2	2.08	2.13
2.11	2.16	32	0	2.09	2.14
2.13	2.17	28	-2	2.11	2.16
2.14	2.19	25	-4	2.12	2.17
2.16	2.20	21	-6	2.14	2.18
2.17	2.21	18	-8	2.15	2.20
2.18	2.23	14	-10	2.16	2.21
2.20	2.24	10	-12	2.17	2.22
2.21	2.26	7	-14	2.19	2.24
2.22	2.27	3	-16	2.20	2.25
2.23	2.28	0	-18	2.21	2.26
2.25	2.29	-4	-20	2.22	2.27
2.27	2.30	-8	-22	2.24	2.29
2.28	2.31	-11	-24	2.25	2.30
2.29	2.32	-15	-26	2.26	2.31
2.30	2.33	-18	-28	2.27	2.32
2.32	2.34	-22	-30	2.29	2.33
2.34	2.35	-26	-32	2.32	2.34
2.36	2.36	-29	-34	2.33	2.35
2.37	2.37	-33	-36	2.35	2.36

Figure 2-4

BEFORE TAKEOFF.

PREFLIGHT AIRPLANE CHECK.

After taxiing to takeoff area, complete the following checks:

1. Zero-delay lanyard hook – Check attached (if applicable).

2. Hydraulic pressure gage selector switch – UTILITY.

3. Speed brake switch – IN, then OFF (center). Check speed brake UP; then move switch to OFF (center) position.

4. Flaps – INTERMEDIATE.

5. Takeoff trim – Recheck.

6. Special store unlock handle – UNLOCK, if required. If an inert special store training shape or an empty Type VII or VIIA pylon is installed and no special store is carried, unlock the special store unlock handle before takeoff. The handle must be in and safetied when the SUU-21/A dispenser is carried.

NOTE

The special store unlock handle should be pulled to the full stop position (about 2-3/4 inches). The special store unlocked indicator light should come on just before the full stop position is reached.

7. Pitot heat – ON.

8. IFF/SIF/AIMS – As required.

9. Canopy – Closed and locked. Hold switch at CLOSE for an additional 2 or 3 seconds after the canopy-not-locked warning light goes out, to ensure tight sealing. Make sure canopy-not-locked warning light goes out when canopy is closed and manual canopy lock handle* is pushed to the locked position.

10. Anti-collision light – ON. (As required.)

PREFLIGHT ENGINE CHECK.

1. Throttle – Military Thrust.

NOTE

Engine acceleration time from IDLE to Military Thrust should not exceed 15 seconds.

2. Flight controls – Check pressures and full travel.

*F-100F Airplanes

3. Engine instruments – Check. Check engine instruments for proper reading at Military Thrust.

a. Oil pressure – 40 psi minimum.

b. Exhaust temperature – 540°C minimum. Refer to section V.

CAUTION

The temperature and duration of any engine operation during which any exhaust limit temperature is exceeded should be entered in Form 781. If 680°C is exceeded, shut down engine immediately. Over-temperature operation requires engine inspection.

- Should engine rpm reach or exceed overspeed limit either with or without over-temperature conditions, shut down engine immediately. The engine must be inspected for malfunction and possible damage when overspeed occurs.

NOTE

Minimum exhaust temperature for takeoff is 540°C. Lower EGT is permissible if maintenance has checked the EGT and EPR system for proper calibration, and the engine for proper trim.

c. Engine pressure ratio gage – Check and reset. When engine speed (rpm) has stabilized, the pointer on the gage should fall within the entire arc (arc and triangle) of the takeoff index marker. If Military Thrust check results in an acceptable reading and afterburner takeoff is to be made, readjust takeoff marker while engine is operating at Miltiary Thrust, so that lower edge of triangle of index marker aligns with gage indicating pointer.

WARNING

If the gage pointer does not fall within the prescribed limits, the thrust output is not correct and takeoff should not be made.

NOTE

Avoid making engine preflight check in jet wash of a preceding airplane; otherwise, a slightly low pressure ratio gage reading may occur.

4. Adjust heat and vent – As required.

WARNING

The cockpit temperature should be maintained at the highest possible heat consistent with pilot comfort during takeoff, to prevent sudden fog or snow in the cockpit.

TAKEOFF.

NORMAL TAKEOFF.

NOTE

Takeoff at Military Thrust is not recommended.

For normal takeoff with or without external load, proceed as follows:

1. Brakes – Release.

2. Throttle – AFTERBURNER. Afterburner should be selected immediately. Ignition should occur within 2 seconds and is indicated by a definite increase in thrust. The exhaust temperature should not exceed the acceleration limits outlined in section V.

WARNING

Takeoff should be aborted immediately if any directional change is noted when the afterburner is ignited. A directional change at this time could indicate possible afterburner nozzle malfunction which could cause side forces to be applied to the extent that rudder would be insufficient to control the airplane immediately after leaving the ground.

NOTE

The BOOST PUMP INOP light may flicker on when lighting the afterburner. If the light comes on or is flickering during takeoff roll before the normal acceleration check, abort the takeoff. If the light comes on or begins flickering during the takeoff roll after the normal acceleration check, the decision to continue the takeoff or abort is left to the pilot's discretion. Gravity flow of fuel to the engine driven fuel pump is adequate for afterburner operation during takeoff.

CAUTION

If the exhaust nozzle fails to open when the afterburner is selected, a loud explosion and violent surging occur, accompanied by an rpm reduction and an increase in exhaust temperature. If these conditions are noted, shut down afterburner immediately to prevent possible damage to engine and exhaust nozzle, and abort the takeoff.

NOTE

If afterburner does not light on first attempt, takeoff should be aborted.

3. Engine pressure ratio gage – Check. Immediately following afterburner light-up, recheck engine pressure ratio gage. The pointer should be within the arc of the takeoff index marker. Takeoff should be aborted if the pressure ratio is not correct. It is important to check the gage before takeoff roll has progressed too far, because the pointer will continue to rise as the airspeed increases.

NOTE

During takeoff run, nose wheel steering should be used for directional control at speeds up to at least 100 knots, at which time rudder control is effective. If weight of airplane is on nose wheel, disengage nose wheel steering, with button on control stick. Avoid using brakes if possible, because excessive takeoff distances will result.

4. Acceleration – Check.

5. Nose rotation. At the computed rotation speed for the gross weight and configuration, apply back stick pressure and begin to rotate the airplane. The rotation rate should be such that the airplane will assume the pitch angle (8° to 10°) required for lift-off at the recommended takeoff speed.

WARNING

Premature nose wheel lift-off can result in excessive ground roll. Care must be taken to ensure that the airplane is not rotated to an excessively nose-high attitude. (In case of overrotation, reduce angle of attack and assume the proper takeoff attitude.)

- Allowing airspeed to build up above recommended speeds before pulling back on the stick increases the takeoff run considerably.

6. Takeoff. Maintain the takeoff attitude after breaking ground until sufficient airspeed and altitude is attained, to prevent settling back onto the runway.

CROSS-WIND TAKEOFF.

In addition to the procedures used in a normal takeoff, be prepared to exert rudder pressure after releasing nose wheel steering, to keep airplane on a straight path until airborne. Also, be prepared to counteract drift after breaking ground, by lowering wing into wind or by crabbing. To compute the effective cross-wind during takeoff, refer to wind component chart in T.O. 1F-100C(I)-1-1. There is no cross-wind limit for the airplane.

When takeoff is accomplished in the presence of gusty winds or strong cross winds, rotation speeds must be increased to provide additional control margin. When winds are gusty, regardless of direction, add one-half the gust factor. In addition, rotation speed should be increased by one-half the velocity of direct crosswind component. This will provide the control margin necessary and reduce any tendency for "airplane skip". For example, if the wind were 45 degrees off runway heading at 10, gusting to 20 knots, rotation speed should be increased 9 knots. Any resulting increase in takeoff speed will produce a proportionate increase in takeoff distance.

TAKEOFF WITH ASYMMETRICAL LOADS.

Refer to "Flight With External Loads" in section VI.

AFTER TAKEOFF – CLIMB.

When airplane is definitely airborne, and there is no possibility of settling back onto the runway, proceed as follows:

1. Gear – UP. Check gear position indicators.

CAUTION

Landing gear and doors should be completely up and locked before gear-down limit speed is reached; otherwise, excessive air loads may damage the doors and gear operating mechanism, and prevent subsequent operation.

2. Flaps – UP.

CAUTION

The higher drag and higher gross weight possible when carrying external loading configurations which include stores on TER's result in poor climbout performance after takeoff. To obtain normal climb performance, do not raise the wing flaps until an airspeed of 210 to 220 knots IAS is attained.

3. Throttle – As desired. As soon as added thrust is no longer needed, shut off afterburner by moving throttle inboard.

NOTE

Maximum thrust should be maintained until approximately 300 knots IAS is attained.

4. Climb speed – Establish. Accelerate to best climb speed while maintaining a shallow climb.

NOTE

Slats become fully closed at about 290 knots IAS, with or without external loads.

5. Climb check (2000 to 5000 feet AGL).

a. Oxygen regulator diluter lever – NORMAL.

b. Special store unlock handle – LOCK, if unlocked.

c. Damper switches – As required.

d. Drop tank selector switch – As required. Move drop tank fuel selector switch as required when the drop-tank-empty indicator light comes on. (For proper fuel sequencing, refer to Drop Tank Fuel Sequencing Limitations in section V.)

NOTE

The drop-tank empty indicator light may blink before the selected tanks are completely empty. To ensure complete use of drop tank fuel, the selector switch should not be repositioned until the light stays on steadily for about 2 minutes.

- When all drop tanks are empty, the drop tank selector switch should be moved to INTERM. Moving the drop tank selector switch to OFF will allow fuel to drain back into the intermediate drop tanks. The drop-tank-empty indicator light will remain on until the wing scavenge pumps start to feed at about 4000 pounds total fuel remaining. Scavenge pump operation is indicated until the light comes on again with about 1500 pounds total fuel remaining. The light will go out when the selector switch is at OFF.

- When drop tank fuel is used before internal fuel, the total internal fuel quantity gage shows a continuous decrease in fuel supply only after the drop tanks have been emptied and the engine begins to use fuel from the internal tanks.

6. Throttle – Adjust for climb. Adjust throttle setting as necessary, to prevent engine overtemperature during climb.

TAKE OFF AND INITIAL CLIMB (TYPICAL)

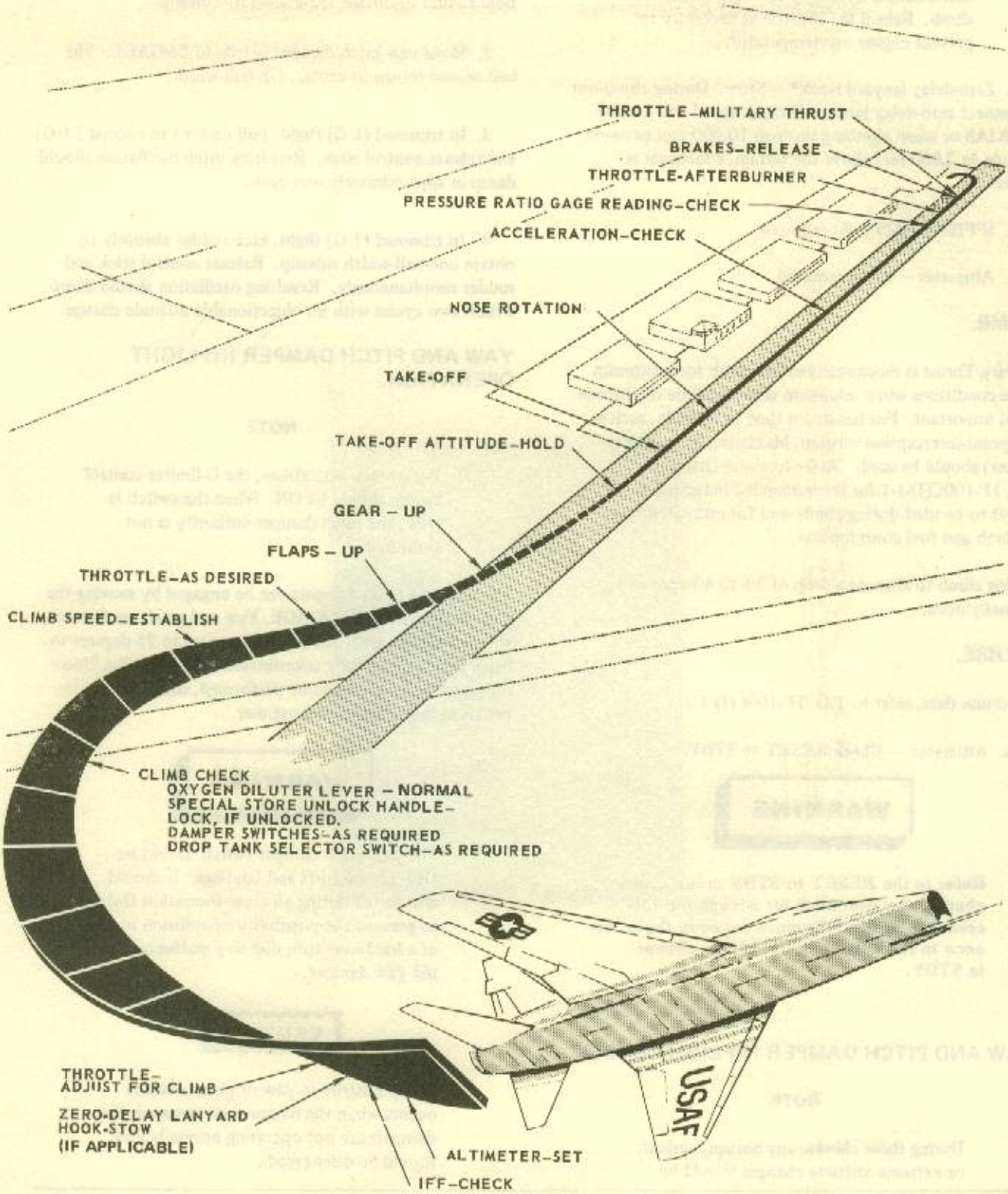


Figure 2-5

CAUTION

Careful attention to exhaust temperature indications is necessary throughout the climb. Retard the throttle as necessary to prevent engine overtemperature.

7. Zero-delay lanyard hook* – Stow. During climb-out, disconnect zero-delay lanyard if climb speed will exceed 350 KIAS or when climbing through 10,000 feet pressure altitude or 2,000 feet above the terrain, whichever is higher.

8. IFF/SIF/AIMS – As required.

9. Altimeter – Set as required.

CLIMB.

Military Thrust is recommended for climb for maximum range conditions when minimum climbing time to altitude is not important. For minimum time to altitude, such as in a point-interception mission, Maximum Thrust (afterburner) should be used. Refer to climb charts in T.O. 1F-100C(I)-1-1 for recommended indicated airspeeds to be used during climb, and for estimated rates of climb and fuel consumption.

During climb to altitude a drop of 2% to 4% rpm will normally occur.

CRUISE.

For cruise data, refer to T.O. 1F-100C(I)-1-1.

1. Altimeter — Check RESET vs STBY.

WARNING

Refer to the RESET to STBY cross check chart in the checklist for acceptable tolerances. If the difference exceeds the tolerance in the checklist, leave the altimer in STBY.

YAW AND PITCH DAMPER INFLIGHT CHECK.

NOTE

During these checks, any abrupt, violent, or extreme attitude changes should be recorded and the flight check should be discontinued.

1. With yaw-pitch damper switch at OFF, deflect and hold rudder to obtain 1/2-ball-width sideslip.

2. Move yaw-pitch damper switch to ENGAGE. The ball should return to center, 1/8-ball-width.

3. In trimmed (1 G) flight, pull up (not to exceed 2.0 G) and release control stick. Resulting pitch oscillation should damp in approximately one cycle.

4. In trimmed (1 G) flight, kick rudder abruptly to obtain one-ball-width sideslip. Release control stick and rudder simultaneously. Resulting oscillation should damp within two cycles with no objectionable attitude change.

YAW AND PITCH DAMPER INFLIGHT OPERATION.

NOTE

For normal operations, the G-limiter control switch should be ON. When the switch is OFF, the pitch damper authority is not G-limited.

The yaw and pitch dampers can be engaged by moving the yaw-pitch switch to ENGAGE. Yaw and pitch oscillations will be well damped, and rolling turns up to 75 degrees to bank angle will be fully coordinated automatically. Uncoordinated maneuvers can be performed, using the rudder pedals in the conventional manner.

WARNING

The yaw-pitch damper switch should be OFF for takeoffs and landings. It should also be off during all close-formation flights to prevent the possibility of collision in case of a hard-over turn due to a malfunction of the yaw damper.

CAUTION

If any mistrim in yaw or pitch attitude occurs when the dampers are engaged, the dampers are not operating normally and should be disengaged.

*Some airplanes

NOTE

As the bank angle approaches 90 degrees, damping of the rudder and stabilizer becomes less effective and dampers will not fully coordinate turns.

AFTERBURNER (AB) OPERATION DURING FLIGHT.

NOTE

During AB operation at low altitudes, the fuel transfer rate from the drop tanks may not be sufficient to maintain a constant level in the internal tanks, and use of internal fuel may occur before drop tank fuel is exhausted.

- The manual afterburner shutoff is designed to provide increased nonafterburning thrust for operation following certain failures affecting the engine afterburner system.

The AB can be operated at any engine speed between that obtained at Military Thrust and 89% ±2%. During AB operation, the least fuel consumption per pound of thrust output is obtained when the engine is operating at a maximum rpm. A momentary drop in pressure ratio when the throttle is moved outboard into AB indicates that the exhaust nozzle is open. However, if AB ignition occurs before the exhaust nozzle opens, a momentary increase in pressure ratio will occur. If AB light-up is not obtained within 2 seconds at sea level (5 seconds at altitude) after throttle is moved into AB, the throttle should be moved inboard and then, after 3 to 5 seconds, returned outboard to recycle the AB igniter.

1. Throttle – Outboard into AFTERBURNER range. Select AB at full-throttle position and then retard throttle slightly. This will minimize the possibility of engine overtemperature, hard lights, and compressor stalls. An increase in thrust indicates AB light-up. During light-up rapid acceleration may cause inadvertent aft pull on the stick, causing mild longitudinal porpoising. The AB ignition, fuel metering, and flame holder incorporated in the J57-21A engines provide satisfactory AB ignition above 45,000 feet, and blowout-free operation up to the service ceiling of the airplane.

CAUTION

If the exhaust nozzle fails to open when the AB is selected, a loud explosion and violent surge will probably occur, accompanied by an rpm reduction and an increase in exhaust temperature. If these conditions appear, shut down AB immediately to prevent possible damage.

2. Throttle – Inboard, to shut down AB.

CAUTION

[F] A slight outboard pressure on the throttle by the rear cockpit occupant may make it impossible for the pilot in the front cockpit to shut down the afterburner manually. Verbally check with rear cockpit pilot that throttle is clear.

FLIGHT CHARACTERISTICS.

Refer to section VI for information regarding flight characteristics.

DESCENT.

The windshield and canopy defrosting systems should be operated through the flight at the highest flow possible (as consistent with pilot comfort) so that a sufficiently high temperature is maintained to preheat certain canopy and windshield areas to keep the glass temperature above cockpit dew point. It is necessary that preheating be done because there is not enough time during rapid descents to heat these areas to temperatures which prevent the formation of frost and fog. Engine speed should be at, or above, 83% rpm.

1. Pitot heat* – ON.
2. Canopy and windshield defrost lever – As required.
3. IFF/SIF/AIMS – Set as required.

*Some airplanes

4. Altimeter – Set and check RESET vs STBY.

5. Zero-delay lanyard hook* – Connect. For instrument descents, connect the zero-delay lanyard before initial penetration. For other descents, the lanyard must be connected at 10,000 feet pressure altitude or 2000 feet above the terrain, whichever is higher.

6. Damper switches – STANDBY (OFF).

7. Oxygen – As required.

8. Fuel quantity – Check.

9. Special store unlock handle – UNLOCK, if required. If an empty Type VII or VIIA pylon is installed and no special store is carried, unlock the special store unlock handle before landing.

NOTE

The special store unlock handle should be pulled to the full stop position (about 2-3/4 inches). The special store unlock indicator light should come on just before the full stop position is reached.

BEFORE LANDING.

During approach to the field, make the following checks:

1. Hydraulic pressures – Check. Monitor utility system during approach and landing.

2. Safety belt and shoulder harness – Tightened.

3. Anti-skid – ON.

4. Speed brake – As desired.

5. Gear – DOWN. Lower gear and check for a down-and-locked indication.

6. Flaps – DOWN. Flaps alone provide sufficient drag. However, speed brake may be used during landing.

LANDING.

NORMAL LANDING.

1. Throttle – IDLE. Retard throttle to IDLE during flare or at touchdown.

2. Touchdown.

3. Flaps – UP.

4. Nose wheel steering – Engage.

CAUTION

If the nose wheel steering system malfunctions, disengage and maintain directional control with rudder and differential brakings.

- If rudder pedals are not at neutral when button is pressed, the steering may or may not engage (depending on engagement of clutch in steering unit). If the steering does not engage, the pedals must be moved in the direction of the nose wheel setting to obtain steering.

NOTE

To prevent disengagement of nose wheel steering because of pitching, which could occur on a rough runway, hold forward stick pressure during landing roll.

5. Drag chute – Deploy.

CAUTION

Care should be taken not to rotate the drag chute handle to the jettison position. "Snapping" the drag chute handle out sometimes causes accidental chute jettisoning. Deploying the drag chute with the palm up will decrease the chance of inadvertant jettisoning.

*Some airplanes

6. Employ normal braking technique.

7. Speed brake UP.

NORMAL LANDING TECHNIQUE.

sume that the landing gross weight is 25,000 pounds. speeds quoted will vary with gross weight.) Below 230 KIAS on downwind, lower the landing gear and wing flaps. Fly the base leg at 20 knots above final approach speed. This will require about 83% to 87% rpm. Plan rolling out of turn so as to arrive on final with 166 knots IAS for this landing gross weight. At this time, distance from the end of the runway is approximately one nautical mile and altitude is approximately 300 feet AGL. This will result in a glide path between 2 and 3 degrees that intercepts the overrun slightly short of the end of the runway. This approach path should be maintained until the flare is initiated. On final to make small adjustments in airspeed, use pitch as primary control and for small adjustments in rate of descent use throttle. Larger adjustments may dictate use of a combination of both and/or speed brakes. Precise airspeed control on final is essential to properly flare and touchdown on speed at the desired touchdown point; therefore, adjust speed, thrust, and rate of descent as necessary to arrive at touchdown point at desired speed. Reduce thrust to idle as necessary prior to at touchdown.

CAUTION

Arresting cables can severely damage the tail skid and aft section if contacted with the nose wheel off the runway. The touchdown point should be planned to avoid landing directly on the arresting gear or rolling over it with the nose in the air.

NOTE

As a rule of thumb, 10 knots too fast at touchdown means approximately an additional 1000 feet of ground roll.

Speed Brake Operation.

If the speed brake is used during the landing approach in conjunction with the flaps or alone, the airplane buffet level is increased. The flaps alone provide sufficient drag for a flat approach at relatively high powers so that the use of the speed brake in the approach is not necessary except as a speed control; therefore, speed brake use is left to the pilot's discretion.

Flap Technique.

Raising the flaps immediately after touchdown will increase the load on the landing gear, allowing the brakes to develop more torque before the tires skid, which in turn allows more effective operation of the braking system and provides a higher airplane deceleration.

Braking Technique.

Be prepared to start braking immediately after touchdown. This eliminates any time lag in decelerating the airplane if the drag chute fails. The brakes should, of course, be used as necessary. Maximum braking is achieved by smoothly applying brake pressure until antiskid cycling is felt and then relaxing pedal pressure slightly. The maximum pressure that does not result in antiskid cycling should then be held until the airplane is stopped. This requires an increase in brake pedal pressure as speed decreases. When practicable the full length of the runway should be used during landing roll to reduce brake heating and wear.

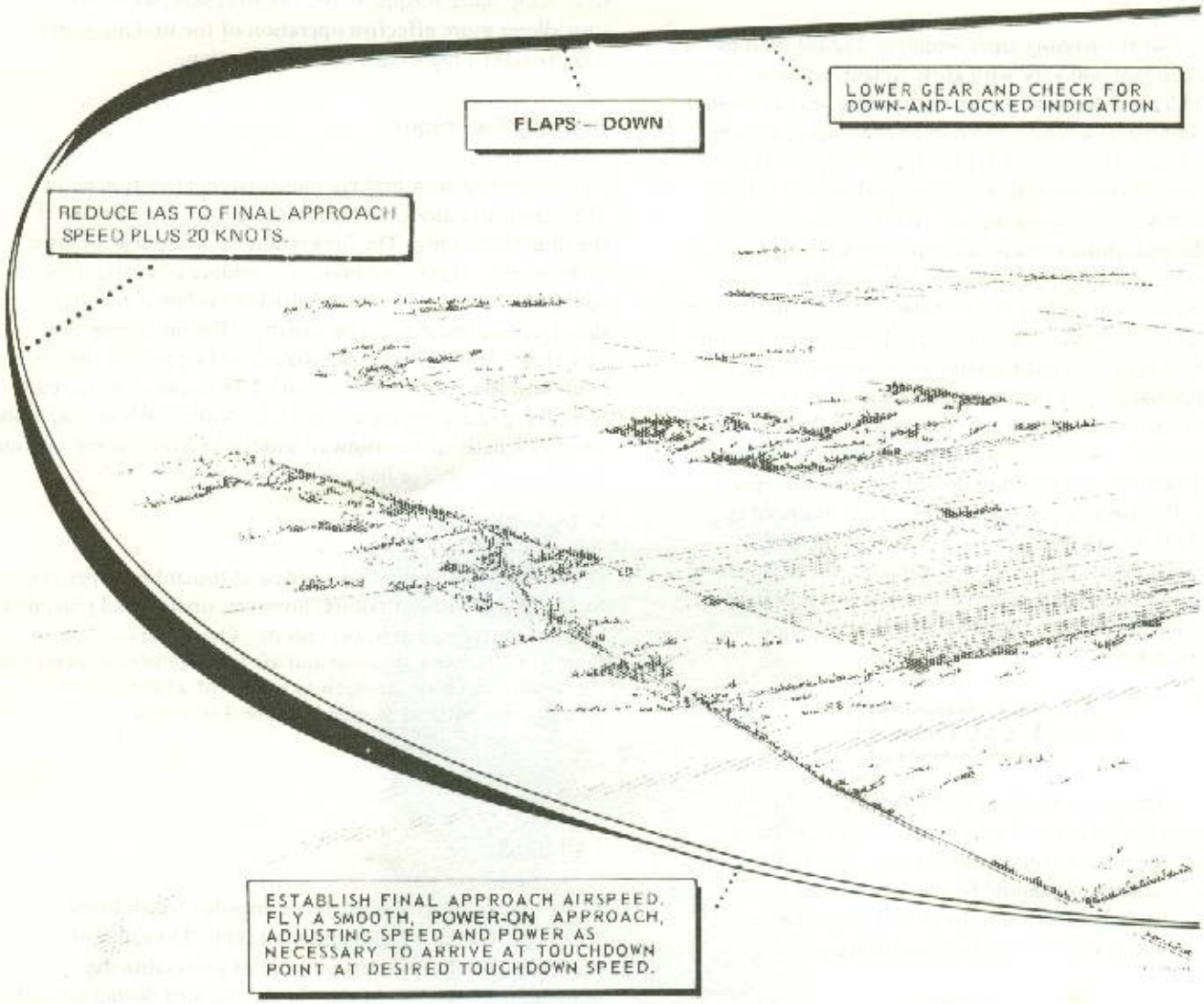
Drag Chute Operation.

Drag chutes have been flight-tested at touchdown speeds up to 180 knots without failure; however, operational reliability is greatly increased at lower speeds. The effects of service usage (i.e., runway abrasion and aft fuselage heat effects) can lower the chute strength to the point where failures may be encountered at speeds below 180 knots.

Tail Skid.

Some pilots hesitate to use recommended touchdown speeds for fear of touching the tail skid. The tail skid is installed for the express purpose of protecting the airplane from serious damage in the tail area during normal landing. Occasional contact of the tail skid is to be expected when the airplane is operated in the prescribed manner. However, the tail skid is not expected to protect the airplane from damage during landings which involve excessively high sink rates.

LANDING PATTERN (TYPICAL)



NOTE

- To avoid stick force lightening during turn on to base and final, do not exceed a 50-degree bank turn or 1.6 G at recommended speed.
- Control rate of descent with power to less than 1000 feet per minute before flare. Do not exceed 1500 feet per minute on final approach.
- Use caution during the flare in the presence of gusty winds or jet wash. These factors can cause stick force lightening.
- The drag chute may be deployed up to 180 knots IAS; however, operational reliability is greatly increased at lower speeds.
- Yaw can occur immediately after deploying drag chute. Counteract yaw with rudder, nose wheel steering, and brakes.
- If drag chute fails, additional braking will be needed to stop.

Figure 2-6 (Sheet 1 of 2)

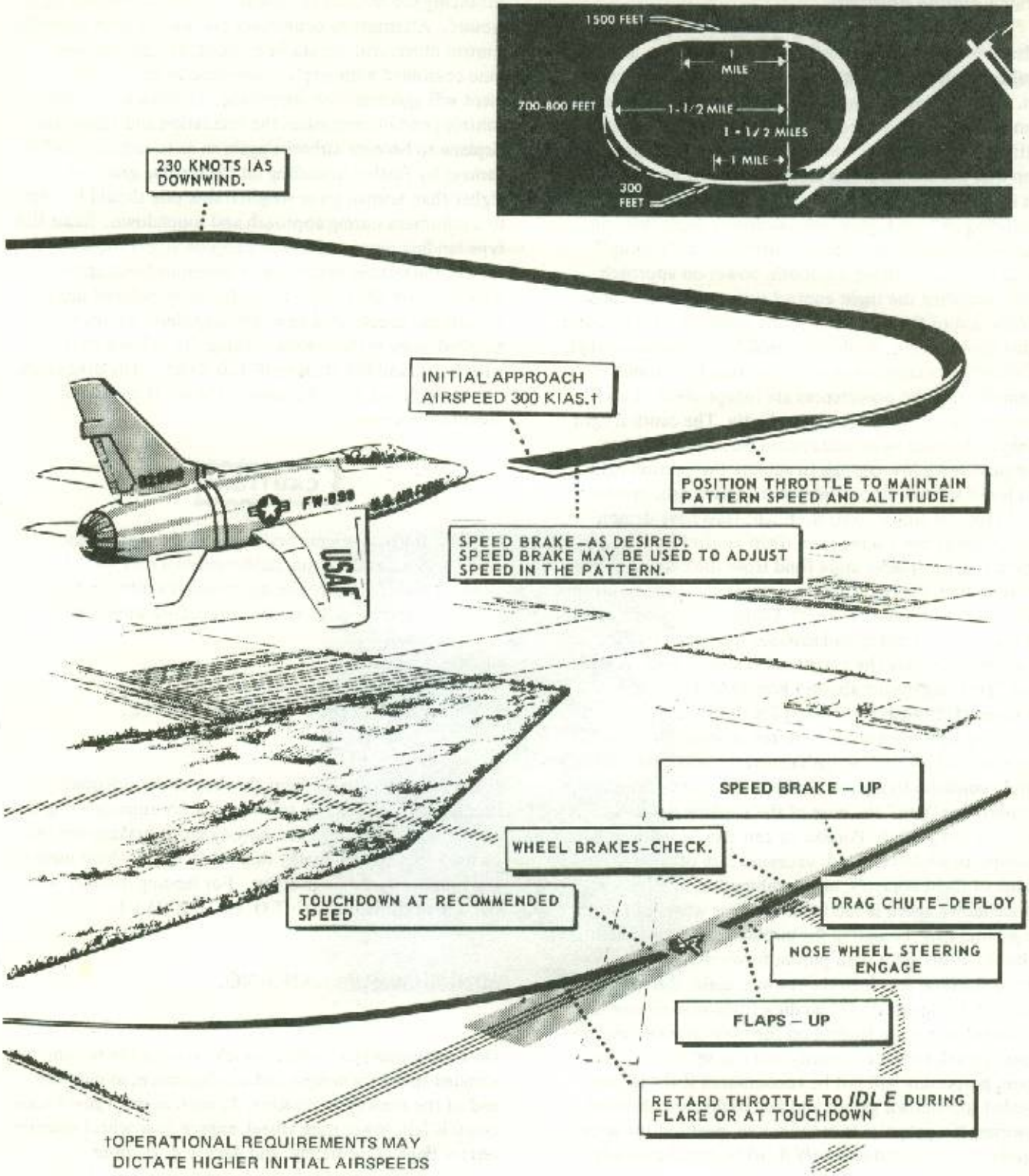


Figure 2-6 (Sheet 2 of 2)

Other Landing Pointers.

At landing airspeeds, airplane response is sluggish, and more stabilizer deflection is required for the same airplane reaction. When an instantaneous demand is higher than maximum available rate, the control stick feels as though it "stiffens" or "locks up" momentarily. This does not mean that the stabilizer has stopped moving, but rather that it is moving at maximum rate and yet the pilot is demanding an even higher rate. Recovery from this condition is instantaneous. "Stick stiffening" or "lockup" can be avoided by flying a smooth, power-on approach. Over-controlling the flight control systems can also cause illumination of the flight control hydraulic system pressure failure caution light. While it is possible to experience stick stiffening and illumination of the caution light simultaneously, the two occurrences are independent of each other and can also occur independently. The caution light comes on because hydraulic system No. 1 pressure has been bled down low enough to actuate the caution light. This is not serious, since flight control hydraulic system No. 2 provides ample control. Flight tests have demonstrated that at low engine rpm, flight control hydraulic system No. 2 displaces more fluid from the control surface actuators than the No. 1 pump is supplying. This results in system No. 1 pressure bleed-off. Under these conditions, the system No. 2 pump still supplies the necessary flow and pressures to provide the maximum stabilizer rate. A stick-force lightening occurs about 5 knots IAS below the recommended touchdown speed for the 1G condition. If stick-force lightening is encountered, normal flying techniques should be used, as the occurrence is not dangerous. Simply continue flying the airplane. Do not under any circumstance "jam" the nose of the airplane down, as this can cause porpoising. Porpoising can also be induced by excessive touchdown speed, excessive rate of descent, misuse of flight controls, or a combination of all three. If touchdown speed is too high, the nose wheel can strike the ground first, bounding the airplane into a nose-high attitude. If the pilot then pushes forward abruptly, driving the nose gear into the runway again, the entire cycle will be repeated. On landing from an excessive rate of descent, a bounce landing on the main gear can change airplane pitch attitude abruptly and can set off a porpoise. Again, porpoising will not be encountered if the recommended touchdown speeds and techniques are observed. However, if a porpoise is encountered, position the stick slightly aft of neutral and *hold it*, while simultaneously advancing the throttle to Military Thrust, to execute a go-around. Attempts to counteract the bounce with opposite control movement should be avoided, as pilot reaction time combined with airplane response to control movement will aggravate the porpoising. Holding a constant control position minimizes the oscillation and allows the airplane to become airborne again so as to reduce possible damage by further bounding on the landing gear. At higher than normal gross weights, sink rate should be kept to a minimum during approach and touchdown. Since this type landing requires increased approach and touchdown speeds, the normal technique of trimming/holding forward stick pressure after touchdown should be delayed until the aircraft has decelerated to a safe drag chute deployment airspeed using aerodynamic braking (by holding nose wheels off, and full flaps until 120 KIAS). The drag chute can be deployed with the nose in the air, if crosswind conditions permit.

CAUTION

If aerodynamic braking is used during cross-wind conditions, rudder control may be insufficient to prevent weather vaning and the cross-wind landing procedure should be used.

LANDING WITHOUT DRAG CHUTE.

If a landing is made without the drag chute, adequate braking will be available to stop on a dry runway using the normal landing technique. Aerodynamic braking can also be used to dissipate energy down to a speed where mechanical braking becomes effective. For landing distance without a drag chute, refer to T.O. 1F-100C(I)-1-1.

MINIMUM-RUN LANDING.

On a minimum-run landing, touch down at the recommended speed for weight and configuration, as near the end of the runway as possible. As soon as main gear touchdown is felt, lower nose wheel, engage nose wheel steering, retract flaps immediately, and deploy drag chute.

NOTE

When flaps are down, the weight on the landing gear at touchdown is about one-third of what it is when flaps are up. Therefore, the antiskid system does not operate as effectively when the flaps are down.

Use brakes as required by applying a steady, light force on pedals and increase force slowly as airplane slows down. Do this until flaps are fully retracted (10 to 15 seconds) or until the airplane has slowed to 110 knots, whichever occurs first. Then, fairly heavy braking may be used, attempting to remain just short of the brake pressure which causes the antiskid to cycle. This will require an increasing brake pressure as the airplane slows down. If antiskid does cycle, brake pressure should be decreased slightly.

NOTE

Cycling of the antiskid can be recognized by slight changes in longitudinal deceleration. No harm is done by the cycling of the antiskid; however, stopping distance will be increased about 10 percent by cycling.

- With antiskid on, if full brakes are held until a complete stop is reached, abrupt pitching of the airplane may be encountered just before stopping. When pitching occurs, decrease pedal pressure.

SLIPPERY-RUNWAY LANDING.

On a slippery runway (wet or icy), braking effectiveness varies greatly. When the runway condition reading is reported less than 12, it is imperative that immediate antiskid and aerodynamic braking be used and that the drag chute be deployed (while the nose gear is held off). Rudder should be used for directional control, as brakes and nose wheel steering are relatively ineffective. Rudder control will be effective to about 60 knots IAS on a slippery runway. The rudder deflection required when asymmetrical loads are carried reduces the available control.

HYDROPLANING.

Hydroplaning, in its meaning here, is a condition where the tires of the airplane are separated from the runway surface by a fluid. Under conditions of total hydroplaning, the hydrodynamic pressures between the tire and runway lift the tires off the runway to the extent that wheel rotation slows and actually stops. The major factors in determining when an airplane will hydroplane are forward speed and tire pressure. To a lesser degree, the airplane gross weight, depth of water on the surface, texture of the surface, type of tire used, and condition of the tires influence the total hydroplaning speed. Total hydroplaning in this airplane with recommended tire pressures and 1/8 to 1/4 inch of water or slush on the runway can be expected at approximately 115 knots IAS for the nose gear tires and 145 knots IAS for the main gear tires. Hydroplaning is aggravated in landings with a tail-wind component, because of increased ground speeds. Partial hydroplaning occurs to varying degrees below these speeds.

Whenever an airplane is subjected to hydroplaning to any degree, directional control becomes difficult. Under total hydroplaning conditions, nose wheel steering is ineffective and wheel braking is nonexistent.

The adverse effects of hydroplaning can be minimized by consideration and application of the following:

1. Smooth tires tend to hydroplane with as little as 1/10 inch of water and possibly at slightly lower speeds. Ribbed tires tend to release hydrodynamic pressures and will not hydroplane until water depth is 2/10 to 3/10 inch.

2. Takeoffs with extreme cross-winds and water-covered runways should be made with caution. When lift-off speed is greater than hydroplaning speed, the airplane is subjected to the effects of the cross-wind while hydroplaning.

3. An aborted takeoff on a wet runway initiated at or near hydroplaning speed will require considerably more runway than one aborted on a dry runway.

Recommended precautions to follow when faced with possible hydroplaning:

1. Avoid making formation takeoffs or landing for obvious reasons.

2. Use normal approach and touch down speed. A fast landing only encourages the onset of hydroplaning.

3. Plan to land on the upwind side of the runway to provide maximum runway width as protection against a downwind drift.

4. With a crosswind, be especially careful in attempting aerodynamic braking and drag chute operation.

5. When the runway and wind condition look questionable consider a barrier arrestment.

6. Use the anti-skid system throughout the landing roll.

7. Keep in mind that sometimes the best course is to proceed to your preplanned alternate.

LANDING WITH ASYMMETRICAL LOADS.

Refer to "Flight With External Loads and TER Carriage Characteristics" in section VI.

LANDING IN TURBULENCE/CROSSWIND.

For landing in turbulence or jet wash, approach and touchdown speeds should be increased to provide additional control margin. When winds are gusty, regardless of direction, add one-half the gust factor. In addition, speeds should be increased by one-half the velocity of direct crosswind component. For example, if the wind were 45 degrees off runway heading at 10, gusting to 20 knots, approach and touchdown speeds should be increased 9 knots.

In addition to the procedures used for a normal landing, the following steps should be accomplished: on final approach, crab or drop wing to keep lined up with runway. However, if crabbing, the airplane must be aligned with the runway just before touchdown. When the direct crosswind component exceeds 25 knots, a no-flap landing should be made. At touchdown, lower nose wheel to runway as soon as possible.

WARNING

With a loaded TER at one inboard station only, the asymmetric drag is more pronounced than for other approved asymmetric loading configurations, resulting in larger rudder angles required for trim. Rudder trim requirements may become critical if landing in a cross-wind.

After nose wheels touch down and nose wheel steering is engaged, deploy drag chute. Because of the weather-vaning tendencies of the airplane with the drag chute deployed, care must be taken to ensure that nose wheel steering is engaged and operating before the drag chute is deployed on a cross-wind landing. However, if weather-vaning is encountered to the point that directional control is lost, the drag chute should be jettisoned and directional control should be maintained with nose wheel steering and brakes.

CAUTION

If rudder pedals are not at neutral when button is pressed, the steering may or may not engage (depending on engagement of clutch in steering unit) and move the nose wheels to agree with the pedal position. If the steering does not engage, the pedals must be moved in the direction of the nose wheel setting to obtain steering.

TOUCH-AND-GO LANDING.

Touch-and-go landings may be practiced when authorized using the procedures outlined for a normal landing followed by a go-around. For touch-and-go landings, proceed as follows:

1. Normal touchdown.

2. Throttle – Military Thrust.

3. Speed brake – UP.

4. Flaps – INTERMEDIATE.

CAUTION

Care should be exercised when moving the flap handle to INTERMEDIATE.

5. Trim. Trim airplane for approximate takeoff attitude with the stick grip trim switch.

6. Nose rotation. At computed nose rotation speed for the gross weight and configuration, begin to slowly rotate the airplane at such a rate that the airplane will assume the pitch angle required for lift-off at the recommended take-off speed.

WARNING

Make certain proper airspeed has been attained before rotating the airplane to takeoff attitude. Care must be taken to ensure that the airplane is not rotated to an excessively nose-high attitude. (In case of overrotation, reduce angle of attack and assume the proper takeoff attitude.)

7. Takeoff. Maintain the takeoff attitude after breaking ground until sufficient airspeed and altitude is attained to prevent settling back onto the runway.

8. Gear – UP.

9. Flaps – UP. Increase pitch angle during flap retraction, to prevent settling.

GO-AROUND.

For making a go-around, see figure 2-7 for complete procedure.

CAUTION

Jettison drag chute when taxiing in cross winds greater than 15 knots, to prevent collapsing and dragging chute where exhaust may burn the shroud lines.

AFTER LANDING.

The following procedures will be accomplished after departing the runway.

CAUTION

Do not stop during taxiing, or the nylon riser will be severely damaged by exhaust heat. Use extreme care when taxiing for long distances with drag chute deployed, to prevent it from dragging on the ground or touching the hot exhaust nozzle area.

1. Anti-skid switch – OFF.

2. IFF/AIMS and navigation aids – OFF.

3. AIMS Mode 4 Code Select Switch – Hold (if mode 4 codes are to be retained).

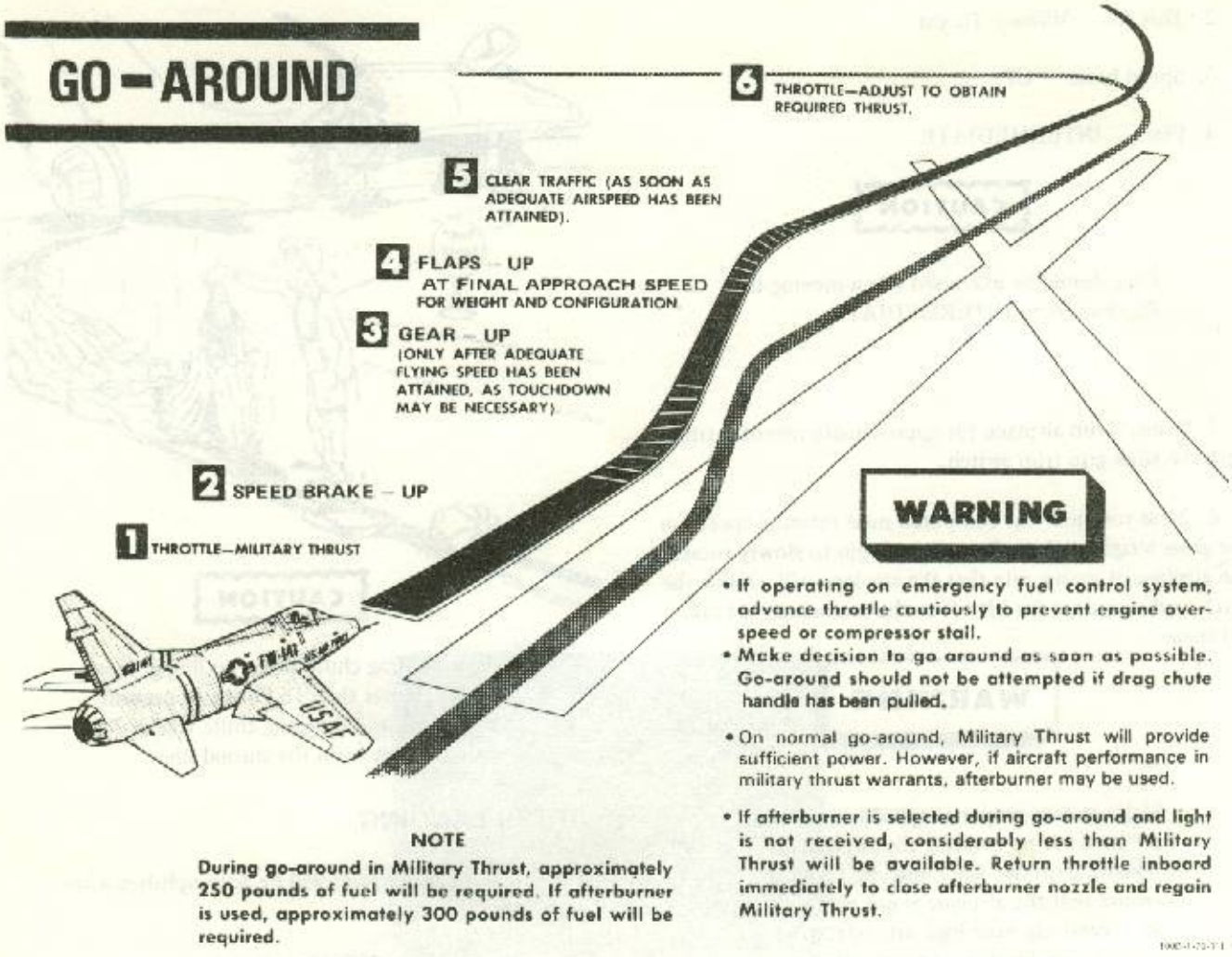


Figure 2-7

4. Canopy – As desired.

5. Drag chute – Jettison. To obtain the best drag chute service life, it is recommended that the drag chute be jettisoned immediately after taxiing off the runway onto the taxiway at the lowest possible taxi speed with the drag chute still inflated.

6. Safety pins – Installed. Install ground safety pin through right handgrip of ejection seat, in canopy alternate emergency jettison handle, and, on F-100F airplanes, in windscreen.

7. Trim airplane for takeoff.

8. Special store unlock handle – LOCK, if unlocked.

9. Station selector switches* – SAFE.

10. Pitot heat – OFF.

11. Windshield exterior air – OFF.

12. Anti-Collision lights – OFF.

13. Position lights – As required.

14. Taxi light – As required.

ENGINE SHUTDOWN.

The engine must be operated for 5 minutes below 85% rpm before shutdown, to stabilize engine temperatures. (Taxi

*Airplanes changed by T.O. 1F-100D-632.

time below 85% rpm may be included.) When the engine has been operated above 85% rpm for periods exceeding one minute during the last 5 minutes before shutdown, it must be operated at IDLE for 5 minutes. At parking area, proceed as follows:

1. Brakes – Hold.

2. Standby inverter – ON.

3. Throttle – 72% for at least 30 seconds.

NOTE

T.O. 1F-100A-6 requires the crew chief to perform certain airplane checks while the engine is operating.

- A scavenging run just before shutdown is necessary to ensure that oil in the sumps has been returned to the oil tank.

4. Speed brake switch – As desired.

5. Nose gear ground safety pin – Installed.

6. Throttle – OFF. Make sure throttle is moved fully aft and then inboard to OFF.

7. Engine master switch – OFF.

8. Standby inverter – OFF.

9. Battery switch – OFF.

NOTE

Check that engine decelerates freely, and listen for any unusual engine noises during shutdown.

- Do not place battery switch off until the DC generator is off the line.

10. Control stick – Rotate. Immediately after engine has stopped turning, check that areas around control surfaces are clear; then rotate stick to bleed off flight control hydraulic system pressure.

11. Landing gear doors – Open (closed for cocking). Pull landing gear emergency lowering handle to open landing gear wheel well doors.

CAUTION

Make sure ground personnel are clear of door area before pulling emergency lowering handle.

RAM-AIR TURBINE AUTOMATIC STARTING SYSTEM TEST.

During engine shutdown on the last flight of the day, an operational check of the ram-air turbine-driven flight control emergency hydraulic pump should be made. Have ground crew member press and hold the ram-air turbine test button in. (The button is flush-mounted on the left side of the fuselage, above the wing.)

NOTE

When engine speed drops to about 46% to 34% rpm, the ram-air turbine door opens and the pump starts. The emergency pump lever in the cockpit moves forward automatically to the ON position.

After the ground crew member has determined that operation is satisfactory, he will signal the pilot to place the emergency hydraulic pump lever to OFF.

BEFORE LEAVING AIRPLANE.

Make following checks before leaving airplane:

1. Chocks – In place.

2. Electrical switches – OFF. All electrical switches off, except ac and dc generator switches and pressurization controls.

3. Seat handgrips – Check. Check that seat handgrips are full down and latched, by applying a moderate downward force on each handgrip.

4. Deleted.

5. Parachute arming lanyard key – Snap in retainer.

6. Form 781 – Complete.

CAUTION

Make appropriate entries in the Form 781 covering any limits in the Flight Manual that have been exceeded during the flight. Entries *must* also be made if the airplane has been operated in visible moisture, when unusual strains are encountered during air refueling, cartridge starts and/or if any *in-flight* engine compressor stalls or severe compressor stalls during taxiing were encountered. (Refer to "Compressor Stall" in section VII.) Entries must also be made when, in the pilot's judgment, the airplane has been exposed to unusual or excessive operations such as hard landings, refueling drogue has contacted the canopy, excessive braking action during aborted takeoffs, long and fast landings, and long taxi runs at high speeds, etc.

COCKING AFTER SHUTDOWN.

If the airplane is taxied to the alert area or if the engine is started for preflighting the airplane before going on alert, the following should be performed after engine shutdown to "cock" the airplane. (Refer to "Scramble/Launch From Cocked Posture" in this section.)

1. Wing flap handle – INTERMEDIATE.
2. Engine master switch – ON.
3. Fuel System shutoff switch – Safetied ON.
4. IFF/SIF/AIMS and NAV aids – As required.
5. Pitot heat – ON.
6. Interior and exterior lights – As required.

CAUTION

After the airplane has been cocked, external power must not be applied and/or the battery switch turned ON until immediately before engine start. Primary bus power will open the fuel shutoff valve and operate the flap control motor.

TRANSFER OF FUEL FROM PARTIALLY FULL DROP TANKS.

Takeoff with partial fuel in the baffled 450-gallon drop tanks, 335-gallon drop tanks or the type III 275-gallon drop tanks is permissible providing the store index number is adjusted prior to flight. Unbaffled 450-gallon drop tanks must be full or empty for takeoff. (Refer to section V.) Partial fuel load must be transferred out of the drop tanks before takeoff. To transfer fuel in the least possible time and without unnecessarily depleting the internal system fuel, do the following:

NOTE

If internal fuel system has been "topped off" before flight, or advancing the throttle in the start area will jeopardize personnel or equipment, or if extended taxi time will be required, do steps 1 through 7 during taxiing and before beginning the preflight airplane check.

1. Drop tank fuel selector switch – Check at INTERM.

2. Standby instrument inverter switch – ON. This will provide ac power to the fuel quantity indicating system.

3. AC generator switch – OFF. Aft and intermediate tank transfer pumps will be inoperative, preventing transfer of fuel from these tanks to the forward tank.

4. Throttle – Advance. Advance throttle to obtain 75% to 80% engine rpm. This will accelerate transfer of drop tank fuel.

5. Drop tank empty indicator light – Check. When drop tank empty indicator light comes on, the drop tanks are empty. Then proceed to step 6.

NOTE

Cross-check drop tank fuel quantity gages (450-gallon tanks) for empty indication.

6. AC generator switch – ON.

7. Standby instrument inverter switch – OFF.

STRANGE-FIELD PROCEDURE.

NOTE

At bases where ground personnel are not completely familiar with your airplane, make sure that postflight and preflight inspections are accomplished in accordance with the Technical Manual of Inspection Requirements, T.O. 1F-100C(I)-6WC-1, and -1PO.

LOADING CARTRIDGE STARTER.

See figure 2-8 for the procedure for loading the cartridge starter.

BLEEDING WING FLAP ACCUMULATOR.

The wing flap accumulator is serviced from the top of the airplane, aft of the ram-air turbine door. To bleed wing flap accumulator pressure, proceed as follows:

1. Remove access door F71A for F-100D airplanes, or F-58A for F-100F airplanes.

2. Hold flap accumulator dump valve open until hydraulic pressure is discharged.

3. Indicated pressure on accumulator-gage should be 1050 (±50) psi at 70°F. If service is not needed, install access door.

BLEEDING RAM-AIR TURBINE ACCUMULATOR.

The ram-air turbine accumulator is serviced from the left side of the fuselage. To bleed ram-air turbine accumulator pressure, proceed as follows:

1. Remove access door F68 for F-100D airplanes or F53 for F-100F airplanes.

2. Hold ram-air turbine door accumulator dump valve open until hydraulic pressure is discharged.

3. Indicated pressure on accumulator gage should be 1800 (±50) psi at 70°F. If service is not needed, install access door.

ABBREVIATED CHECKLIST.

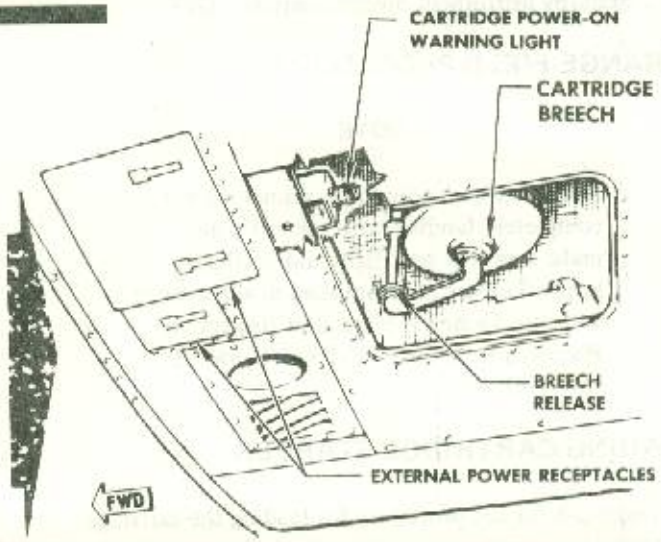
Your abbreviated checklist is in T.O. 1F-100D(I)-1CL-1.

LOADING CARTRIDGE STARTER

1. Remove access door and check cartridge power-on warning light out.
2. Remove cartridge breech from starter by squeezing breech release and rotating breech clockwise.

WARNING

- Do not remove cartridge breech from starter if a start has been made within 5 minutes, as injury could occur.
- Asbestos gloves and a plastic face shield should be worn when a cartridge that has been recently fired is being removed.

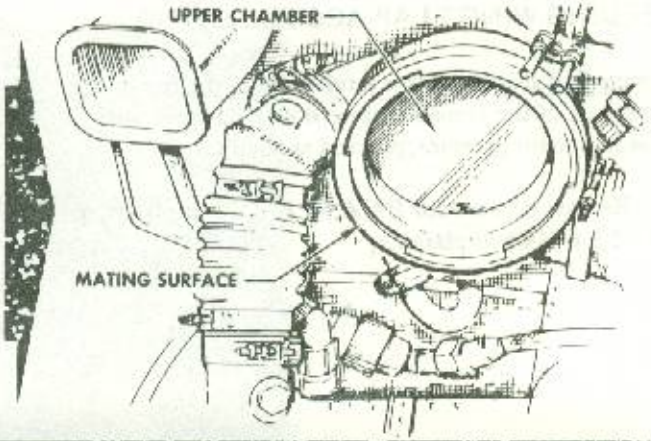


3. Clean deposits from upper cartridge chamber and around mating surface of chamber.
4. Remove cartridge from breech and clean inside of breech.

NOTE

Clean and inspect the dome of breech cap to ensure good electrical contact with grounding clip of cartridge.

5. Remove cartridge from can.



6. Remove safety clip from grounding clip. Bend grounding clip up about 30 degrees and insert into breech. Force cartridge against surface of breech cap dome and rotate about 90 degrees.
7. Test cartridge power-on warning light; then check OUT.

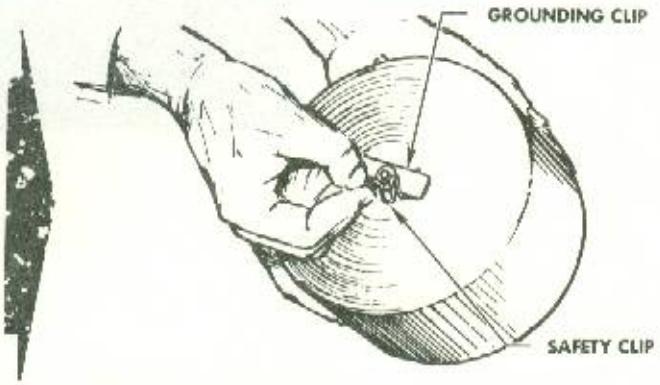
WARNING

During loading of the starter, the engine master and battery switches must be off and external electrical power disconnected.

NOTE

The starter exhaust port area must be clear of fuel, oil, and foreign objects.

8. Install breech into breech cap, engage locking threads, squeeze breech release, rotate breech counterclockwise until seated, and allow breech to seat.



9. During start, have fire guard stand by just forward of the horizontal stabilizer, about 6 feet out from the left side.

F-100D-1-A40-2A

Figure 2-8