

**PREFLIGHT CHECK**

External Inspection	1. LANDING GEAR	DOWN
	2. WHEEL CHOCKS	PLACED
	3. AUX INTAKE DOORS	CLOSED
	4. ARRESTING HOOK	UP
	5. DRAG CHUTE	STOWED
	6. PYLON ORDNANCE	AS REQUIRED
	7. RETRACTABLE STEPS	STOWED
Left Console Panel	1. CIRCUIT BREAKERS	CHECK
	2. CHAFF and FLARES	RESET and OFF
	3. PITCH and YAW DAMPERS	OFF
	4. RUDDER TRIM	CENTRED
	5. RADAR MODE SELECTOR	OFF
	6. FLAP LEVER	THUMB SW
	7. THROTTLES	OFF
	8. SPEED BRAKE SWITCH	NEUTRAL
	9. FLAP THUMB SWITCH	UP
	10. NOSE STRUT SWITCH	RETRACT
Left Vertical Panel	1. FUEL SHUTOFF SWITCHES	LEFT and RIGHT, GUARDS CLOSED
	2. ARMAMENT LIGHT CONTROL KNOB	AS REQUIRED
	3. LANDING & TAXI LIGHT SWITCH	OFF
	4. LANDING GEAR ALTERNATE RELEASE HANDLE	FULLY STOWED
	5. AIM-9 MISSILE VOLUME CONTROL	FULLY OFF (CCW)
	6. ARMAMENT and JETTISON SWITCHES	OFF and SAFE
Instrument Panel	1. LANDING GEAR LEVER	DOWN
	2. DRAG CHUTE HANDLE	IN
	3. FLIGHT INSTRUMENTS	CHECK and SET
	4. OPTICAL SIGHT MODE SELECTOR	AS REQUIRED
	5. FILM CAMERA EXPOSURE	SET
	6. AUX INTAKE DOORS INDICATOR	BARBER POLE
Pedestal Panel	1. UHF RADIO	AS REQUIRED
	2. TACAN	AS REQUIRED
	3. ANTENNA SWITCH	AS REQUIRED

**PREFLIGHT CHECK**

Pedestal Panel (cont)	<b>4. NAV MODE SWITCH</b>	<b>AS REQUIRED</b>
	<b>5. RUDDER PEDALS</b>	<b>ADJUST</b>
	<b>6. BRAKES</b>	<b>CHECK</b>
	<b>7. CIRCUIT BREAKERS</b>	<b>CHECK</b>
Right Vertical Panel	<b>1. COCKPIT PRESSURISATION and TEMPERATURE CONTROLS</b>	<b>AS REQUIRED</b>
	<b>2. ANTI-ICE SWITCHES</b>	<b>OFF</b>
	<b>3. EXTERNAL FUEL TRANSFER SWITCHES</b>	<b>OFF</b>
	<b>4. FUEL BOOST PUMP SWITCHES</b>	<b>RIGHT and LEFT</b>
	<b>5. CROSSFEED SWITCH</b>	<b>OFF</b>
	<b>6. AUTO BALANCE SWITCH</b>	<b>CENTRED</b>
	<b>7. CANOPY JETTISON T-HANDLE</b>	<b>IN</b>
	<b>8. BATTERY SWITCH</b>	<b>BATT</b>
	<b>9. AUX INTAKE DOORS INDICATOR</b>	<b>CLOSE</b>
	<b>10. GENERATOR SWITCHES</b>	<b>L GEN and R GEN</b>
Right Console Panel	<b>1. OXYGEN SYSTEM</b> - Supply Pressure Gauge - Quantity Indicator - Hoses and Connections	<b>CHECK</b> 65–110 PSI Check Check
	<b>▲ WARNING</b> It is possible for the oxygen supply lever to stop in an intermediate position between OFF and ON. Push the lever fully ON and check the flow indicator blinkers for proper functioning.	
	<b>2. OXYGEN OPERATION</b> - Supply Lever - Diluter Lever - Emergency Lever - Oxygen and Communication Leads - Mask on and Check Blinker	<b>CHECK</b> ON NORMAL NORMAL Connected Check
	<b>3. IFF/SIF</b>	<b>STANDBY</b>
	<b>4. FUEL &amp; OXYGEN CHECK SWITCH</b>	<b>GAGE TEST and QTY CHECK</b>
	<b>5. COMPASS SWITCH</b>	<b>AS REQUIRED</b>
	<b>6. INTERIOR LIGHTS</b>	<b>AS REQUIRED</b>
	<b>7. EXTERIOR LIGHTS</b>	<b>AS REQUIRED</b>
	<b>8. ROTATING BEACON</b>	<b>AS REQUIRED</b>
	<b>9. LIGHT WARNING TEST SWITCH</b>	<b>TEST</b>
<b>END</b>		

**WEAPONS DELIVERY PREFLIGHT CHECK**

Left Vertical Panel	<b>1. BOMBS ARM SWITCH</b>	<b>SAFE</b>
	<b>2. GUNS MSL &amp; CAMR SWITCH</b>	<b>OFF and GUARDED</b>
	<b>3. EXTERNAL STORES SELECTOR</b>	<b>SAFE</b>
	<b>4. ARMAMENT POSITION SELECTOR SWITCHES (7)</b>	<b>OFF</b>
	<b>5. SELECT JETTISON SWITCH</b>	<b>OFF</b>
Circuit Breaker Panels	<b>1. LEFT CONSOLE PANEL ARMAMENT CIRCUIT BREAKERS</b> - Left and Right AIM-9 Power - Left and Right Gun Firing	<b>CHECK</b>  In In
	<b>2. PEDESTAL PANEL ARMAMENT CIRCUIT BREAKERS</b> - Wpn Pwr Left Inbd, Left Outbd, Center Line - Wpn Pwr Right Inbd, and Right Outbd - Jettison Control - Emergency All Jettison - Wpn Release - Left and Right AIM-9 Cont - Wpn Mode Sel & AIM-9-Inter	<b>CHECK</b>  In In In In In In In
	<b>3. MISSION ORDNANCE</b>	<b>INSTALLED</b>
	<b>4. EXTERNAL POWER</b>	<b>AS REQUIRED</b>

**NOTE**

If external power is used, the Before Taxi Weapons Delivery Checks may be completed before engine start.

Store	Station Nr.	Wing Positions			Center
		Tip	Outer	Inner	Line
		7 + 1	6 + 2	5 + 3	4
AIM-9P / AIM-9P5 / CAP-9M		●			
AN/ASQ-750 TCTS Pod		●			
BDU-33			●	●	●
BDU-50HD / BDU-50LD			●	●	●
CBU-52B			●	●	●
F-5 150Gal Fuel tank / F-5 275Gal Fuel Tank				●	●
GAR-8		●			
GBU-12 / BDU-50LGB			●	●	
LAU-3 - 19×2.75' Rockets / LAU-3 - 19×FFAR			●	●	
LAU-68 - 7×2.75' Rockets / LAU-68 - 7×FFAR			●	●	
M117			●	●	●
Mk-82 / Mk-82 Snakeye			●	●	● <sup>⑤</sup>
Mk-83				●	●
Mk-84					●
MXU-648 Travel Pod				●	●
Smokewinder		●			
SUU-25, 8×LLU-2 Flares			●		

**END**

**BEFORE STARTING ENGINES CHECK**

**1. EXTERNAL POWER**

**CONNECT**

If needed.

**2. SEAT**

**ADJUST**

If AC power on.

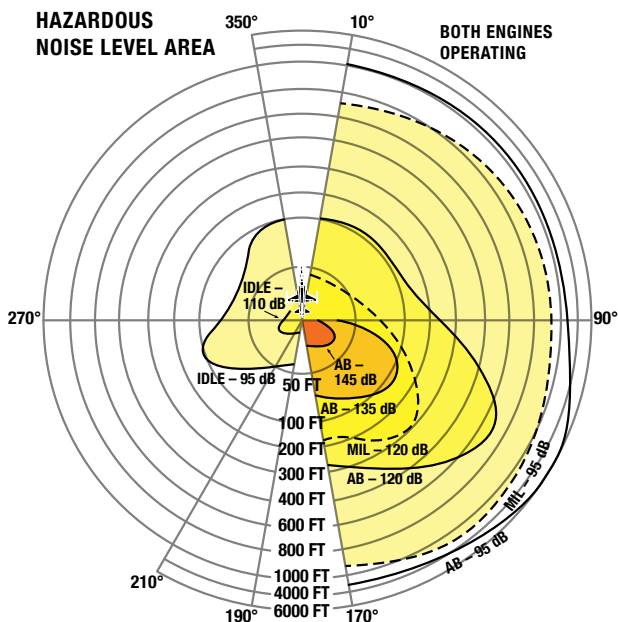
**3. DANGER AREAS FORE and AFT**

**CLEAR**

**DANGER AREAS**

NOISE PROTECTION REQUIREMENTS

DECIBELS	REQUIRED EAR PROTECTION
0-95 dB	No Protection Required
95-120 dB	Ear Muffs or Ear Plugs Required
120-135 dB	Ear Muffs and Ear Plugs Required
135-145 dB	Ear Muffs and Ear Plugs Required Limited Time Exposure
Above 145 dB	Prohibited



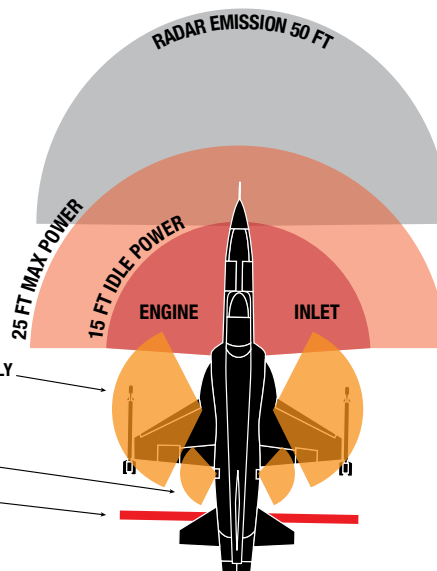
NOTE

- Noise level areas identical on each side of aircraft.
- Contours may be altered by surrounding obstacles.

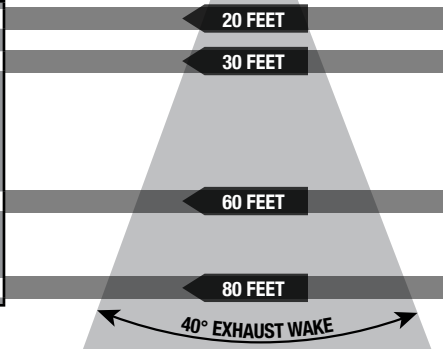
**TIRE AVOIDANCE AREA**  
AVOID AREA FOR 45 TO 60 MINUTES AFTER AIRCRAFT HAS STOPPED. IF NECESSARY TO APPROACH, DO SO FROM FRONT OR REAR ONLY

**AUXILIARY AIR INTAKE DOORS AREA**  
5-FOOT RADIUS

**ENGINE AREA**  
ROTATING PLANE OF ENGINE TURBINES



ENGINE EXHAUST TEMPERATURES AND VELOCITY								
MAX POWER			MIL POWER			IDLE POWER		
TEMP °F	TEMP °C	VELOCITY (MPH)	TEMP °F	TEMP °C	VELOCITY (MPH)	TEMP °F	TEMP °C	VELOCITY (MPH)
877	466	644	430	211	491	175	79	48
620	327	464	305	152	300	143	62	24
290	143	205	180	104	140	80	27	Neg
210	99	153	158	70	99	Neg	Neg	Neg



**END**

### STARTING ENGINES

Left Engine	<b>1. EXTERNAL AIR</b>	<b>APPLY</b>	
	<b>2. AT 10% RPM, START BUTTON</b>	<b>PUSH</b>	
	<b>3. THROTTLE</b>	<b>IDLE</b>	
<p><b>⊘ CAUTION</b></p> <p>If lightoff does not occur within 5 seconds, retard throttle to OFF and continue motoring for at least 1 minute to purge engine before attempting another start. If EGT reaches 845°C, retard throttle to off, continue motoring for 1 minute to cool engine.</p>			
<p><b>NOTE</b></p> <p>An EGT of less than 200°C cannot be read with the EHU-31A/A indicator; therefore, the ON position will be used as the minimum needle position.</p>			
Right Engine	<b>4. ENGINE INSTRUMENTS</b> - Engine RPM - EGT - Nozzle Position - Oil Pressure	<b>CHECK WITHIN LIMITS</b> 49%–52% Indication 70%–80% 5–20 psi	
	<b>5. HYDRAULIC PRESSURE</b>	<b>2800–3200 PSI</b>	
	<b>6. GENERATOR CAUTION LIGHT</b>	<b>OUT</b>	
	<p><b>NOTE</b></p> <p>If light is on, check idle rpm. If idle rpm is low, advance throttle in an attempt to get generator on line before generator reset.</p>		
	<b>7. AUX INTAKE DOORS INDICATOR</b>	<b>BARBER POLE</b>	
	<p><b>NOTE</b></p> <p>Omit this procedure if crossbleed start is to be used.</p>		
Crossbleed Start	<b>1. SAME AS LEFT ENGINE</b>		
	<b>2. AUX INTAKE DOORS INDICATOR</b>	<b>OPEN</b>	
	<b>1. ENGINE POWER and AIR</b>	<b>DISCONNECT</b>	
	<b>2. L ENGINE RPM</b>	<b>95%</b>	
	<p><b>⚠ WARNING</b></p> <p>Extreme care should be taken to avoid injury to ramp personnel caused by exhaust gasses or blowing equipment since left engine is operating near military power. It is recommended that this procedure be used only in isolated areas.</p>		
	<b>3. R ENGINE START BUTTON</b>	<b>PUSH</b>	
	<b>4. AT 10% RPM, R THROTTLE</b>	<b>IDLE</b>	
	<b>5. ENGINE INSTRUMENTS</b>	<b>CHECK WITHIN LIMITS</b>	
	<b>6. L THROTTLE</b> After R engine is at idle RPM (49–52%).	<b>IDLE</b>	
	<b>7. GENERATOR CAUTION LIGHTS</b>	<b>OUT</b>	
<b>8. AUX INTAKE DOOR INDICATOR</b>	<b>OPEN</b>		
<b>9. HYDRAULIC PRESSURE</b>	<b>2800–3200 PSI</b>		
<p><b>END</b></p>			

**BEFORE TAXI CHECKS**

Left Console, Throttle, and Stick

**1. EXTERNAL POWER and AIR**

**DISCONNECT**

**2. CIRCUIT BREAKERS**

**CHECK**

**3. RADAR MODE SELECTOR**

**OFF**

**⚠ WARNING**

Ensure that radar is OFF or in STBY to avoid danger to personnel.

**4. SPEED BRAKE**

**IN**

Check that speed brake retracts and horizontal tail moves trailing edge up; this indicates proper speed brake and horizontal tail interconnect.

**⚠ WARNING**

To avoid injury, ensure ground personnel clear before actuating controls

**5. FLAP THUMB SWITCH**

**AUTO**

Flaps should extend to full. Verify that horizontal tail moves trailing edge down as flaps extend.

**6. DAMPER SWITCHES**

**YAW and PITCH**

**7. PITCH DAMPER CUTOFF SWITCH**

- Pitch Damper Cutoff switch
- Pitch Damper switch

**CHECK**

Actuate  
Moves to OFF

**8. PITCH DAMPER SWITCH**

**PITCH**

If the horizontal tail moves when pitch damper is reengaged, a malfunctioning damper is indicated. Disengage pitch damper.

**9. FLIGHT CONTROLS**

**CHECK**

Instrument Panel, Seat, and Stick

**1. PITCH TRIM**

**CHECK and SET**

PITCH TRIM INCREMENTS FOR OPTIMUM TAKEOFF PERFORMANCE

% MAC	Increments	Approximate configuration
Aft of 18	6	Without gun ammo, without stores
14 to 18	7	Fuel tanks, ammo, missiles
10 to 14	8	Fuel tanks, ammo, missiles, bombs, rockets
Fwd of 10	9	Gun ammo, missiles, bombs, rockets, containers

**2. AILERON TRIM**

**CHECK and SET**

**3. ALTIMETER**

**ELECT**

After setting the current field barometric pressure, place the function switch momentarily at PNEU. Check that PNEU flag is visible and that indicated altitude is with  $\pm 75$  feet of field elevation. Place the function switch momentarily at ELECT. Check that PNEU flag is not visible and that the indicated altitude is within  $\pm$  feet of field elevation. The altitudes indicated by the PNEU and ELECT must be within 75 feet of each other.

**⚠ CAUTION**

Do not rotate the barometric set knob at a rapid rate or exert force to overcome momentary binding. If binding occurs, rotate the setting knob a full turn in the opposite direction and approach the desired setting carefully.

**4. STANDBY ATTITUDE INDICATOR**

**CHECK, SET and UNCAGE**

**5. CANOPY and SEAT SAFETY PINS**

**REMOVED**

**BEFORE TAXI CHECKS**

Instrument Panel, Seat, and Stick (cont.)	<b>6. ARRESTING HOOK SAFETY PIN</b>	<b>CHECK REMOVED</b>
	<b>7. WHEEL BRAKES</b>	<b>APPLY HEAVY PRESSURE</b>
	Heavy pressure application to both brake pedals will set automatic brake adjusters and maintain minimum pedal travel for proper braking efficiency.	
	<b>8. NOSEWHEEL STEERING</b>	<b>ENGAGE</b> Apply L and R rudder, and hold each for 5 seconds.
<b>NOTE</b> This action applies maximum output torque to the nosewheel steering system. Dependent on factors such as ramp surface texture, tire friction, and gross weight, the nosewheel may not deflect fully. After test, ensure nosewheel steering is operable during normal taxi.		
<b>END</b>		

**BEFORE TAXI WEAPONS DELIVERY CHECKS**

KB,26A Camera	<b>1. CAMERA</b> Camera Run switch (Advances film to first frame will be clear when required.)	<b>CHECK</b> Press and hold (1s)
AN/APQ-159(M)-3 Radar	<b>1. RADAR MODE SELECTOR</b> - FAIL light	<b>OFF</b> Out
	<b>⚠ CAUTION</b> If FAIL light comes on, waveguide pressurization of radar is not sufficient for operation.	
	<b>2. RADAR INDICATOR CONTROLS</b> - SCALE knob - VIDEO knob - CURSOR knob - PER knob - BRIGHT knob - PITCH knob	<b>SET</b> Fully Counterclockwise Fully Counterclockwise Fully Clockwise Fully Clockwise Fully Clockwise Set at Index Mark
	<b>3. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>PRESS (RESUME)</b>
	<b>4. RADAR MODE SELECTOR</b>	<b>STBY</b>
	<b>5. RANGE SELECTOR</b>	<b>20</b>
	Horizon bar and elevation cursor should appear on the radar scope within 60 seconds.	
	<b>NOTE</b> No acquisition symbol display in 40-mile range.	
	<b>⚠ WARNING</b> Radar emission area (90 degrees each side of aircraft nose and extending to 50 feet) should be clear of personnel.	
	<b>⚠ CAUTION</b> During ground operations, do not leave the radar in OPER, STBY, or TEST for more than 10 minutes to prevent radar malfunction from overheat. If necessary, turn radar OFF until immediately prior to takeoff.  If FAIL light comes on anytime during check, cycle mode selector to OFF and back to mode being tested. If FAIL light remains on, turn radar off.	

**BEFORE TAXI WEAPONS DELIVERY CHECKS**

AN/APQ-159(v)-3 Radar (cont.)

<b>6. SIGHT MODE SELECTOR</b>	<b>MSL</b>
<b>7. RADAR INDICATOR CONTROLS</b> - SCALE knob - PITCH knob - CURSOR knob - BRIGHT knob	<b>SET</b> Clockwise until grid is visible Horizon 2° above ARL Mark Optimum view of symbols Optimum brightness
<b>8. RADAR MODE SELECTOR</b> - FAIL light	<b>OPER</b> Out
The search phase can be activated after a 3- to 5-minute warmup in STBY or after 3 to 5 minutes after going directly from OFF to OPER.	
<b>9. RADAR INDICATOR CONTROLS</b> - PER knob - VIDEO knob	<b>SET</b> Obtain elevation cursor steps Optimum video noise
<b>10. B-SWEEP</b> - Azimuth - Left - Right - Elevation Cursor	<b>CHECK</b> ±42° 3° Down 3° Up Indicating 3° step.
<b>11. ELEV CONTROL</b> - Up - Down - Set	<b>CHECK</b> +30° -30° At 0
<b>12. RADAR MODE SELECTOR</b>	<b>TEST</b>

**NOTE**

The full functionality of the AN/APQ-159(V)-3 test mode is not simulated. The mode can still be used for sight checks.

The sight BIT check procedures determine go/no-go status for each mode of operation by correct reticle display indicators.

Sight Mode	BIT selected	Function(s) tested
MAN	BIT1	Range bar, azimuth and elevation servos, and manual depression sin/cos computer.
	BIT2	In-range, min range and g-limit indicators (markers).
A/A1-GUNS A/A2	BIT1	Range bar, azimuth and elevation servos.
	BIT2	Gyro lead angle, mag and procession current and reference voltage.
MSL	BIT1	Range bar, azimuth and elevation servos, and wing twist computer.
	BIT2	R <sub>max</sub> , A <sub>N</sub> Max, and reference voltage.

AN/ASG-31 LCOSS

<b>1. MODE SELECTOR</b>	<b>MAN</b>
<b>2. RET INT KNOB</b>	<b>ADJUST INTENSITY</b>
<b>3. BIT SWITCH; BIT1, BIT2</b>	<b>CHECK RETICLE</b>
<b>4. RET DEPR KNOB</b>	<b>ADJUST</b>
Align pipper with line of sight between top of camera periscope and junction of pitot boom and radome. Readout window should read approximately 182±8 mils.	
<b>5. SIGHT CAGE SWITCH</b>	<b>PRESS and HOLD</b>
Reticle should move up to ARL, return to position selected in step 10 as the switch is released.	
<b>6. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>AFT (DG)</b>
Reticle should move up to near ARL.	



**BEFORE TAXI WEAPONS DELIVERY CHECKS**

AN/ASG-31 LCOSS (cont.)	<b>7. BIT SWITCH; BIT1, BIT2</b>	<b>CHECK RETICLE</b>
	<b>8. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>FORWARD (DM)</b>
	Reticle should move down slightly below ARL.	
	<b>9. RET DEPR KNOB</b>	<b>SET TO 000</b>
	<b>10. MODE SELECTOR</b>	<b>A/A2</b>
	<b>11. BIT SWITCH; BIT1, BIT2</b>	<b>CHECK RETICLE</b>
	<b>12. MODE SELECTOR</b>	<b>A/A1</b>
	<b>13. BIT SWITCH; BIT1, BIT2</b>	<b>CHECK RETICLE</b>
	<b>14. MODE SELECTOR</b>	<b>MSL</b>
	<b>15. BIT SWITCH; BIT1, BIT2</b>	<b>CHECK RETICLE</b>
	<b>16. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>CENTER (RESUME)</b>
	<b>17. SIGHT MODE SELECTOR</b>	<b>MSL</b>
	<b>18. RADAR MODE SELECTOR</b>	<b>OFF</b>
	<b>END</b>	

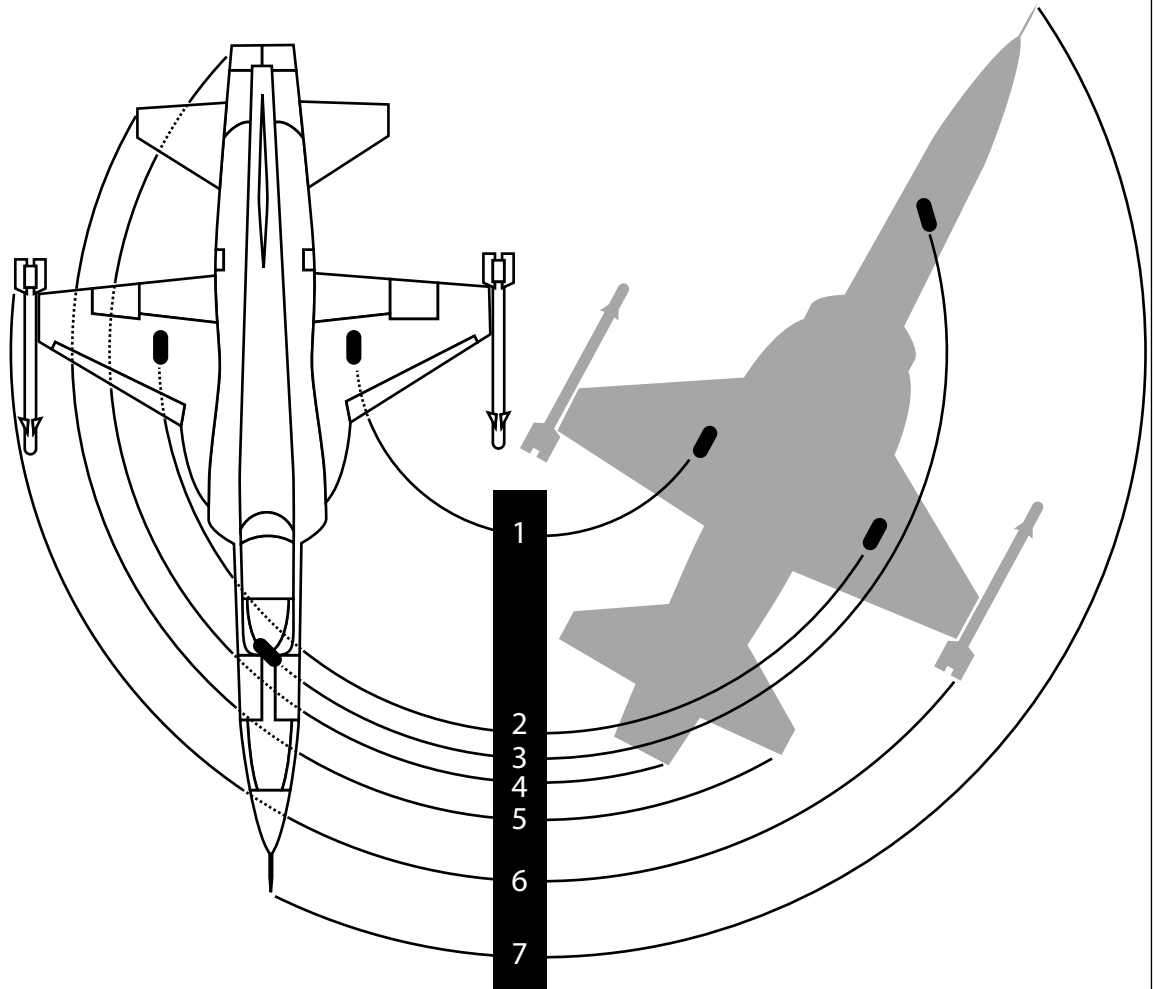
**GENERAL GROUND OPERATIONS**

<p><b>⊘ CAUTION</b></p> <p>Ensure that radar is OFF or in STBY to avoid danger to personnel.</p> <p>Do not leave the radar in OPER, STBY, or TEST for more than 10 minutes to prevent radar malfunction from overheat. If necessary, turn radar OFF until immediately prior to takeoff.</p>	
<b>1. ENGINE RPM</b>	<b>57% WHEN TAXIING</b>
<b>2. TAXI ROUTE</b>	<b>CLEAR</b>
<b>3. DANGER AREAS FORE and AFT</b>	<b>CLEAR</b>
<p><b>⊘ CAUTION</b></p> <p>Do not exceed 65 knots with nosewheel steering engaged.</p> <p>Throttles and main wheel brakes should be used to control speed so as to avoid roll-over during steering. Be aware of tail, wing, and nose swing during turns. Be aware of ground clearance when manoeuvring over uneven ground or near lights and markings set into the ground.</p> <p>If taxiing with open canopy, ensure that speed does not exceed 50 knots.</p>	
Cold weather	<p><b>NOTE</b></p> <p>Nosewheel steering effectiveness is reduced when taxiing on ice and hard packed snow. A combination of nosewheel steering and wheel braking should be used for directional control. The nosewheel will skid sideways easily, increasing the possibility of tire damage. If conditions permit, taxi with one engine idle and the other at high RPM (70% to 80%) to provide more heat for the cockpit and for canopy and windshield defrosting. However, reduced speeds will generally be necessary when taxiing over the uneven snow and ice covered surfaces common in low temperature environments.</p>
	<p><b>⚠ WARNING</b></p> <p>Make sure all instruments have warmed up sufficiently to ensure normal operation. Check for sluggish instruments while taxiing.</p>

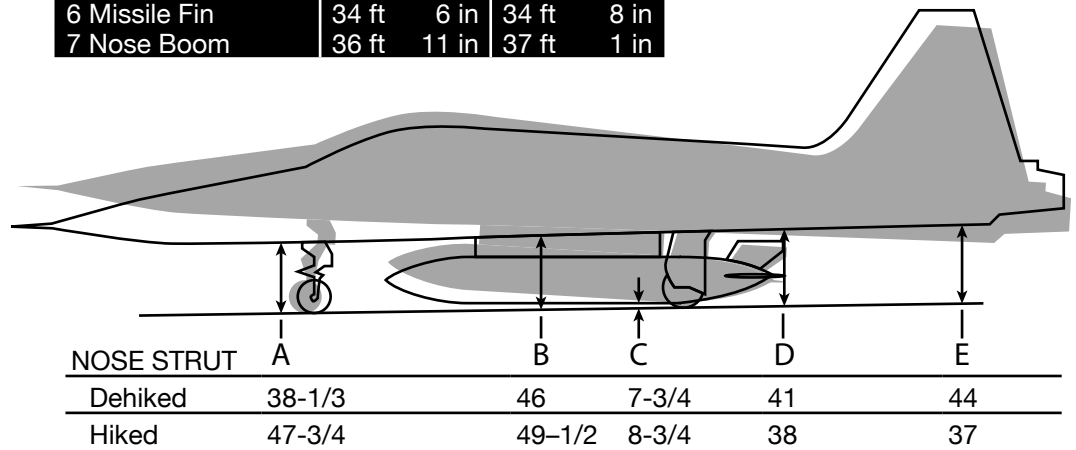
## GENERAL GROUND OPERATIONS

### TURNING RADIUS/GROUND CLEARANCE

Maximum nosewheel Steering deflection



NOSE STRUT:	DEHIKED		HIKED	
1 Left Main Gear	13 ft	8 in	13 ft	11 in
2 Right Main Gear	26 ft	5 in	26 ft	7 in
3 Nose Gear	26 ft	10 in	27 ft	0 in
4 Tailpipe	27 ft	10 in	28 ft	0 in
5 Horizontal tail	30 ft	7 in	30 ft	10 in
6 Missile Fin	34 ft	6 in	34 ft	8 in
7 Nose Boom	36 ft	11 in	37 ft	1 in



**END**

**TAXI CHECKS**

<b>1. WHEEL CHOCKS</b>	<b>REMOVED</b>
<b>2. PERMISSION TO TAXI</b>	<b>REQUESTED</b>
<b>3. LDG &amp; TAXI LIGHT SWITCH</b>	<b>ON</b>
<b>4. WHEEL BRAKES</b>	<b>RELEASE</b>
<b>5. NOSEWHEEL STEERING</b>	<b>ENGAGE</b>
Check operation at slow taxi speed. Ensure steering mode is terminated when nosewheel steering button is disengaged.	
<b>NOTE</b> If taxi route and conditions permit, momentarily releasing the nosewheel steering button may allow an operational check of the shimmy damper.	
<b>▲ WARNING</b> If nosewheel steering does not function properly, takeoff should not be attempted, as shimmy damping may not be available. Undamped nosewheel shimmy can induce structural failure of the nose gear strut.	
<b>6. FLIGHT INSTRUMENTS</b>	<b>CHECK</b>
<b>7. NAVIGATION EQUIPMENT</b>	<b>CHECK</b>
<b>END</b>	

**BEFORE TAKEOFF CHECKS**

Left Panel Console	<b>1. NOSE STRUT</b>	<b>EXTEND</b>
	<b>▲ WARNING</b> Failure of nose gear to extend (hike) may indicate a nose gear malfunction and takeoff should not be attempted. If takeoff is made with nose gear dehiiked, expect up to 25% increase in airspeed for rotation, and up to 50% increase in takeoff roll.	
RVP	<b>2. RADAR</b>	<b>AS REQUIRED</b>
	<b>3. PINS, BELT, and SHOULDER HARNESS</b>	<b>CHECK</b>
	<b>4. ANTI-ICE SWITCHES</b>	<b>AS REQUIRED</b>
Right Console Panel	<b>5. IFF/SIF</b>	<b>AS REQUIRED</b>
	<b>6. FLIGHT CONTROLS</b>	<b>CHECK</b>
	<b>7. CANOPY</b>	<b>CLOSED</b>
	<b>8. CANOPY LIGHT</b>	<b>OUT</b>
	<b>9. CAUTION and WARNING LIGHTS</b>	<b>OUT</b>
<b>NOTE</b> ENGINE ANTI-ICE ON light will be on if engine anti-ice switch is at ENGINE.		
	<b>10. PERMISSION TO TAKEOFF</b>	<b>REQUESTED</b>
<b>END</b>		

**TAKEOFF****▲ WARNING**

Avoid wake turbulence. Allow a minimum of 2 minutes before takeoff behind a large multi-engine aircraft or helicopter. Extend the interval to 4 minutes behind an extremely large aircraft. With effective crosswinds of 5 knots or above, the interval may be reduced, but attempt to remain above and upwind of the preceding aircraft's flight path.

**1. WHEEL BRAKES****APPLY****2. THROTTLES****MIL****NOTE**

On icy or wet runways, the aircraft may skid during MIL power runup even though the brakes are locked. It may be necessary to run up one engine at a time, and to start the takeoff roll at less than MIL power.

**3. ENGINE INSTRUMENTS**

- Engine RPM
- EGT
- Nozzle position
- Acceleration time

**CHECK**

101±2%  
665–675°C  
0–16%  
Acceleration within 7s;  
stabilized within 10s.

**4. WHEEL BRAKES****RELEASE****5. NOSEWHEEL STEERING****AS REQUIRED****⊘ CAUTION**

Do not exceed 65 knots with nosewheel steering engaged.

**▲ WARNING**

If nosewheel shimmy occurs, takeoff should be aborted if conditions permit.

**6. THROTTLES****AS REQUIRED**

If selected, AB lightoff should occur within approximately 5 seconds.

**7. AFT STICK****AT 10 KNOTS BELOW  
TAKEOFF SPEED**

If aft stick is applied earlier, rotation will not be immediate. Increased drag due to horizontal tail deflection will reduce acceleration and extend takeoff roll. If aft stick is delayed or if aft movement exceeds 1 second, a longer takeoff roll will also result. The shortest takeoff result when rotation occurs just prior to reaching takeoff speed.

**NOTE**

- Takeoff speed and full aft stick should be reached before aborting for nonrotation.
- During takeoff with heavyweight CL store, a noticeable hesitation may occur between nose strut extension and takeoff.

**TAKEOFF PERFORMANCE**

Takeoff weight	Approximate configuration	% MAC	Liftoff Speed, KIAS
15,000	None	18–17	143–145
15,500–16,000	Gun ammo, missiles	14–13	153–155
17,000–18,000	Central fuel tank, gun ammo, missiles	12–11	164–168
19,000	3×Fuel tanks 150, gun ammo, missiles	15–14	166–168
19,000–21,000	Bombs, rockets, center fuel tank, gun ammo, missiles	15–14	168–175
22,000	3×Fuel tanks 275, gun ammo, missiles	15–13	178–180
23,000 and more	Bombs, rockets, gun ammo, missiles	15–14	185–190

**END**

**AFTER TAKEOFF CHECK**

<b>1. GEAR</b>	<b>UP</b>
<b>NOTE</b> A high-pitched whine may occur as the nose gear starts up.	
<b>2. LDG &amp; TAXI LIGHT SWITCH</b>	<b>OFF</b>
<b>3. PITCH TRIM</b>	<b>AS REQUIRED</b>
<b>4. FLAPS THUMB SWITCH</b>	<b>AS REQUIRED</b>
<b>5. AUX INTAKE DOORS INDICATOR</b> Approximately 255±10 KIAS or 0.4 mach.	<b>CHECK CLOSE</b>
<b>END</b>	

**CLIMB CHECK**

<b>NOTE</b> It is recommended to climb at speed not less than 300 KIAS	
<b>1. EXTERNAL FUEL/AUTOBALANCE</b>	<b>AS REQUIRED</b>
<b>2. OXYGEN</b>	<b>NORMAL</b>
<b>3. COCKPIT PRESSURIZATION</b>	<b>CHECK</b>
<b>END</b>	

**FUEL BALANCING CHECKS**

General	<b>⚠ WARNING</b> Ensure that proper switches for fuel balancing have been selected, because an aggravated fuel imbalance may occur, resulting in out-of-limit cg.	
	<b>NOTE</b> <ul style="list-style-type: none"> <li>• Fuel balancing should be delayed until external fuel transfer is complete.</li> <li>• The aft (right) system contains approximately 550 lb (85 gal) more fuel than the forward (left) system. The two systems should be balanced as soon after takeoff as possible to prevent aft cg shift.</li> <li>• The fuel quantity indicator should be monitored to maintain the two systems within 200 lb of each other to ensure that the cg remains within limits.</li> </ul>	
Auto balancing	<b>1. AUTO BALANCE SWITCH</b>	<b>LEFT LOW or RIGHT LOW AS APPLICABLE</b>
	<b>NOTE</b> Switch will automatically return to centre position when systems are balanced.	
Manual Balancing	<b>1. CROSSFEED SWITCH</b>	<b>CROSSFEED</b>
	<b>2. FUEL BOOST PUMP SWITCH (ON LOW SIDE)</b>	<b>OFF</b>
	<b>3. BOOST PUMP SWITCH (WHEN BALANCED)</b>	<b>LEFT or RIGHT</b>
	<b>NOTE</b> After extended climbs, turn the boost pump on for a minimum of 2 minutes prior to turning crossfeed switch OFF to avoid vapor lock and possible engine flameout.	
	<b>4. CROSSFEED SWITCH</b>	<b>OFF</b>
<b>END</b>		

**CRUISE CHECK**

Perform level-off and operational checks, and check altimeter.

**⊘ CAUTION**

If the altitude indications of the primary and standby modes vary more than 200 feet below 10,000 feet or 600 feet above 10,000 feet, fly the standby mode only for the remainder of the flight.

**NOTE**

If the altimeter reverts to standby operation in flight, try to return to the primary mode by placing the function switch momentarily to ELECT. If the altimeter will not reset or reverts to standby mode after a few seconds, continue in the standby mode.

**END****DESCENT CHECK****1. ARMAMENT SAFETY CHECK****COMPLETE****2. CANOPY DEFOG, ENGINE ANTI-ICE, and PITOT HEAT SWITCHES****AS REQUIRED**

Canopy and windshield defogging should be initiated before descent from altitude in sufficient time to allow heating of transparent surfaces. Failure to do so will allow fogging of these surfaces at lower altitude. Engine anti-ice and pitot heat should be applied for descent into known or suspected icing conditions.

**3. OXYGEN****CHECK****4. ALTIMETER****CHECK and SET****⚠ WARNING**

Recheck altimeter in primary and standby modes in level flight prior to commencing descent. In normal conditions prior to penetration (300 KIAS, 20,000 feet), the maximum allowable error is 300 feet. If differences are exceeded, use standby mode for descent.

If the altimeter internal vibrator is inoperative due to instrument failure or dc power failure, the 100-foot pointer may stick or hang up momentarily when passing through 0 (12-o'clock position). If the vibrator has failed, the hangup may be cleared by tapping the altimeter case.

**END****BEFORE APPROACH CHECK****1. ALTIMETER****CHECK and SET****2. CROSSFEED****DISCONTINUE****3. HYDRAULIC SYSTEMS**

- Pressure

**CHECK**

2800–3200 psi

**4. FLAP LEVER****THUMB SW****5. FLAP THUMB SWITCH****AUTO****6. FLIGHT PROFILE**- Speed  
- Altitude**CHECK**<300 KIAS  
<3000 ft**7. AUX INTAKE DOOR INDICATOR****CHECK OPEN****END**

**APPROACH CHECK**

Pattern Flight	<b>1. LANDING PERMISSION</b>	<b>REQUESTED</b>								
	<b>2. PATTERN ALTITUDE PARAMETERS</b> - Speed - Altitude	<b>CHECK</b> 300 KIAS 1500 ft								
	<b>3. FLAP THUMB SWITCH</b>	<b>AUTO</b>								
	<b>4. DOWNWIND LEG PARAMETERS</b> - Speed - Altitude	<b>CHECK</b> 260 KIAS 1500 ft								
	<b>5. GEAR</b>	<b>DOWN</b>								
	<b>6. LDG &amp; TAXI LIGHT SWITCH</b>	<b>ON</b>								
<p><b>⚠ WARNING</b></p> <p>Avoid wake turbulence. Allow a minimum of 2 minutes separation before landing behind a large multiengine aircraft or helicopter. The time should be extended to a minimum of 4 minutes behind extremely large aircraft. With an effective crosswind of more than 5 knots, the interval may be reduced, but attempt to stay above and upwind of the preceding aircrafts' flight path. Wake turbulence is most dangerous during the approach and flare prior to touchdown with calm or light crosswinds.</p>										
Approach Regimes	<p><b>NORMAL APPROACH</b> Use AOA as the primary attitude/airspeed reference throughout the final approach. If AOA is inoperative, maintain 145 KIAS plus weight correction. To offer easier thrust balancing and facilitate rapid power-on in case of a go-around decision, leave speed brakes out at approximately 40% .</p>									
	<p><b>CROSSWIND APPROACH</b> Counteract drift by crabbing into the wind, maintaining flight path alignment with the runway. The crab should be held through touchdown. The wings must be level at touchdown.</p>									
	<p><b>HEAVYWEIGHT APPROACH</b> Fly a slightly wider than normal traffic pattern. Control the sink rate to touchdown, using power as necessary. Full stall landings are not recommended at any gross weight.</p>									
Final Approach	<p><b>NOTE</b> Approach speed with weight correction is estimated as follows:</p> <table border="1"> <thead> <tr> <th>Base speed</th> <th>Ammo weight</th> <th>Fuel weight</th> <th>Wind</th> </tr> </thead> <tbody> <tr> <td>145 KIAS</td> <td>+5 kts if carrying full gun ammo</td> <td>+1 kt for each 200 lb of fuel above 1000 lb, up to 14,000 lb gross weight.</td> <td>+1/2 the wind gust increment</td> </tr> </tbody> </table>		Base speed	Ammo weight	Fuel weight	Wind	145 KIAS	+5 kts if carrying full gun ammo	+1 kt for each 200 lb of fuel above 1000 lb, up to 14,000 lb gross weight.	+1/2 the wind gust increment
	Base speed	Ammo weight	Fuel weight	Wind						
145 KIAS	+5 kts if carrying full gun ammo	+1 kt for each 200 lb of fuel above 1000 lb, up to 14,000 lb gross weight.	+1/2 the wind gust increment							
<b>1. FINAL APPROACH PARAMETERS</b> - Speed brakes - Speed - Descent rate - Flaps indicator - AoA indexer	<b>CHECK</b> 40% 145 + wt. corr. KIAS 1000 ft/min Full On speed									
<b>2. GO-AROUND DECISION</b>	<b>AS EARLY AS POSSIBLE</b>									
<p><b>END</b></p>										

**GO-AROUND**

**1. THROTTLES**

**MIL/MAX**  
If necessary.

**2. SPEED BRAKES**

**IN**

**3. GEAR**

**UP**  
When positive rate of climb confirmed

**4. FLAPS**

**AS REQUIRED**

**END**

**LANDING CHECK**

Landing Regimes

**NORMAL LANDING**

Accomplish a normal flare to touchdown. If runway length and conditions permit, aerodynamic braking may be used to conserve brakes and tires. Aerodynamic braking is achieved by easing the stick back gradually while in the flare to hold the nosewheel off the ground until desired pitch attitude is attained (approximately 12 degrees nose-up).

**⊘ CAUTION**

Do not exceed 12 degrees pitch. The tailpipe will contact the runway at 15 degrees pitch.

**CROSSWIND LANDING**

The wings must be level at touchdown. After touchdown, maintain directional control of the aircraft with rudder. Use care when lowering the nose after touchdown, as premature lowering of the nose can result in compression of the downwind strut, causing a turn toward the compressed strut. Use of aileron into the wind throughout the landing phase will minimize the strut compression tendency.

**MINIMUM RUN LANDING**

To accomplish a minimum run landing (shortest obtainable stopping distance) execute a normal approach and touchdown, then immediately lower nosewheel, deploy the drag chute, and apply maximum wheel braking without skidding tires.

**WET or SLIPPERY RUNWAY**

Normal landing procedures should be used. Landing ground roll distances are significantly increased on wet and slippery runway. After nosewheel is lowered, apply brakes carefully. Avoid locking the brakes. Hydroplaning and/or tire skidding on wet or icy runway will increase stopping distance and can easily result in loss of directional control.

**⊘ CAUTION**

Painted areas of runways, taxiways, and ramps are significantly more slippery than unpainted areas. When conditions of snow and ice exist, approach ends of runways are usually more slippery than other areas due to the melting and refreezing of ice and snow at these locations.

**HYDROPLANING FACTORS**

Hydroplaning is a phenomenon with many factors. If hydroplaning is expected during landing, use drag chute or aerodynamic braking to slow down aircraft as much as possible before applying wheel brakes. Hydroplaning may occur above 85 KIAS.

**COLD WEATHER OPERATIONS**

Use minimum run landing techniques. When landing on runways that have patches of dry surface, avoid locking the wheels. If the aircraft starts to skid, release brakes until recovery from skid is accomplished.

**⊘ CAUTION**

After touchdown and deployment of drag chute, prepare for tendency of aircraft to veer toward either side of runway. In cold environments, main landing gear struts may not compress equal amounts, causing aircraft to track to side of lower strut. Nosewheel steering will be ineffective during high-speed portion of landing roll on icy runway.



**LANDING CHECK**

Landing	<b>1. FLARE and TOUCHDOWN PARAMETERS</b> - Speed - AoA indicator - AoA indexer - Pitch	<b>CHECK</b> 145 + wt. corr. KIAS 3 o'clock On speed <12°
	<b>2. NOSEWHEEL, AFTER TOUCHDOWN</b>	<b>LOWER TO GROUND</b> Takes approx. 3 seconds
	<b>3. DRAG CHUTE</b>	<b>OUT</b>
	<b>4. FLAP THUMB SWITCH</b>	<b>UP</b>
	<b>5. WHEEL BRAKES</b>	<b>STEADY INCREASE</b>
<p>Take advantage of all available runway to stop the aircraft. To prevent skidding, extreme care must be exercised when applying wheel brakes immediately after touchdown at high landing speeds and/or heavy gross weights, or whenever there is considerable lift on the wings. Heavy brake pressures will lock the wheels more easily under these conditions. A locked wheel may result in a blown tire.</p>		
<p><b>⊘ CAUTION</b> To prevent wheel lockup and skidding, do not pump brakes.</p>		
<p><b>NOTE</b> Do not stop on runway with drag chute deployed, as taxiing may be impossible.</p>		
<p><b>END</b></p>		

**AFTER LANDING – CLEAR OF RUNWAY CHECK**

<b>1. DRAG CHUTE</b>	<b>JETTISON</b>
<p><b>⊘ CAUTION</b> DO not allow the chute to collapse as the risers will be burned while resting on the hot tail section.</p>	
<b>2. CABIN PRESSURE ALTIMETER</b>	<b>CHECK</b>
<b>3. PRESSURIZATION SWITCH</b> If cabin pressure reading is below field elevation.	<b>RAM DUMP</b>
<b>4. FLAP THUMB SWITCH</b>	<b>UP</b>
<b>5. SPEED BRAKES</b>	<b>OUT</b>
<b>6. RADAR MODE SELECTOR</b>	<b>OFF</b>
<p><b>⚠ WARNING</b> Ensure radar is OFF or in STBY to avoid radiation danger to personnel.</p>	
<b>7. PITOT HEAT and ENGINE ANTI-ICE SWITCHES</b>	<b>OFF</b>
<b>8. IFF/SIF</b>	<b>OFF</b>
<b>9. ROTATING BEACON</b>	<b>AS REQUIRED</b>
<p><b>END</b></p>	

**ENGINE SHUTDOWN CHECK**

Cockpit	<b>1. CANOPY</b>	<b>OPEN</b>
	<p><b>⊘ CAUTION</b>            The canopy seal will remain inflated if engines are shut down with canopy locked. Attempts to open canopy with seals inflated may result in damage to canopy drive mechanism.</p>	
	<b>2. WHEEL BRAKES</b>	<b>HOLD</b> Until chocks in place.
	<b>3. WHEEL CHOCKS</b>	<b>REQUESTED</b>
LCP	<b>1. CHAFF and FLARE SWITCHES</b>	<b>OFF</b>
	<b>2. PITCH and YAW DAMPER SWITCHES</b>	<b>OFF</b>
	<b>3. SPEED BRAKES</b>	<b>OUT</b>
LVP	<b>1. LANDING GEAR ALTERNATE RELEASE HANDLE</b>	<b>FULLY STOWED</b>
	<b>2. ARMAMENT and JETTISON SWITCHES</b>	<b>OFF and STOWED</b>
Instrument Panel	<b>1. STANDBY ATTITUDE INDICATOR</b>	<b>CAGED and LOCKED</b>
	<b>2. OPTICAL SIGHT MODE SELECTOR</b>	<b>OFF</b>
	<b>3. RADAR WARNING RECEIVER</b>	<b>OFF</b>
PP	<b>1. UHF RADIO and TACAN</b>	<b>OFF</b>
Right Vertical Panel	<b>1. CABIN PRESSURIZATION SWITCH</b>	<b>NORMAL</b>
	<b>2. TEMPERATURE CONTROLS</b>	<b>AS REQUIRED</b>
	<b>3. PITOT HEAT and ENGINE ANTI-ICE SWITCHES</b>	<b>OFF</b>
	<b>4. EXTERNAL FUEL TRANSFER SWITCHES</b>	<b>OFF</b>
	<b>5. CROSSFEED SWITCH</b>	<b>OFF</b>
	<b>6. AUTO BALANCE SWITCH</b>	<b>CENTRED</b>
	<b>7. OXYGEN SUPPLY LEVER</b>	<b>OFF</b>
	<b>8. DILUTER LEVER</b>	<b>NORMAL</b>
	<b>9. EMERGENCY LEVER</b>	<b>NORMAL</b>
THR	<b>1. THROTTLES</b>	<b>OFF</b>
	Allow engine RPM to stabilise for 5 to 10 seconds.	
RVP	<b>1. GENERATOR SWITCHES</b>	<b>OFF</b>
	<b>2. FUEL BOOST PUMP SWITCHES</b>	<b>OFF</b>
RCP	<b>1. INTERIOR and EXTERIOR LIGHTS</b> Including BEACON, as well as LDG & TAXI LIGHTS and ARMT LIGHT CONTROL on Left Vertical Panel.	<b>OFF</b>
RVP	<b>1. BATTERY SWITCH</b>	<b>OFF</b>
<b>END</b>		

**IN-FLIGHT FCR BEFORE MISSILE/GUN ATTACK CHECK**

<b>1. RADAR MODE SELECTOR</b>	<b>OPER</b>
<p><b>⊘ CAUTION</b>                  If FAIL light comes on in flight, turn radar mode selector OFF. If light goes out, return to STBY or OPER. If FAIL light remains on turn radar off for duration of flight.</p>	
<b>2. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>CENTER (RESUME)</b>
<b>3. RANGE SELECTOR</b>	<b>AS REQUIRED</b>
<b>4. VIDEO KNOB</b>	<b>OPTIMUM BRIGHT.</b>
<b>END</b>	

**GUNS, AIR-TO-AIR CHECK**

Before Firing	<b>1. SIGHT MODE SELECTOR</b>	<b>A/A1 or A/A2</b>
	<b>2. RADAR MODE SELECTOR</b>	<b>OPER</b>
	<b>3. ACQ BUTTON</b>	<b>PRESS</b>
	<b>4. DOGFIGHT/RESUME SEARCH BUTTON</b>	<b>AFT (DG)</b> If necessary
<p><b>NOTE</b>                  Selecting the dogfight gun mode will case the sight to function in the A/A1 mode.</p>		
	<b>5. GUNS MSL &amp; CAMR SWITCH</b>	<b>GUNS MSL &amp; CAMR</b>
Firing	<b>1. TRIGGER</b>	<b>SQUEEZE</b> (Second detent)
	<p><b>NOTE</b>                  Firing burst should be limited to no more than 3 seconds (approximately 75 rounds) with a 1-minute cooling period between bursts.</p>	
<b>END</b>		

**GUNS, AIR-TO-GROUND CHECK**

Before Firing	<b>1. SIGHT MODE SELECTOR</b>	<b>MAN</b>	
	<b>2. SIGHT DEPRESSION</b>	<b>SET</b>	
	<b>3. GUNS MSL &amp; CAMR SWITCH</b>	<b>GUNS MSL &amp; CAMR</b>	
Firing	<b>1. TRIGGER</b>	<b>SQUEEZE</b> (Second detent)	
	<p><b>▲ WARNING</b>                  To avoid possible engine and aircraft FOD from HEI detonation, slant ranges sufficient to permit flyover of fragmentation could at above 300 feet AGL are mandatory.</p>		
	<p><b>NOTE</b>                  Firing burst should be limited to no more than 3 seconds (approximately 75 rounds) with a 1-minute cooling period between bursts.</p>		
<b>END</b>			

**MISSILE (AIM-9) CHECK**

Target Search and Ranging	1. SIGHT MODE SELECTOR	MSL
	2. RADAR MODE SELECTOR	OPER
	3. RANGE SELECTOR	AS REQUIRED
	4. TDC BUTTON	POSITION SYMBOL OVER TARGET
	5. ACQ BUTTON	PRESS
	6. LK ON LIGHT	ON
Before Launch	1. ARMAMENT POSITION SWITCH(ES)	AS REQUIRED
	For sequence firing of the left wing-tip weapon followed by the right weapon, both wingtip armament position selector switches must be in the up position.	
	2. GUNS MSL & CAMR SWITCH	GUNS MSL & CAMR
	3. EXTERNAL STORES SELECTOR	SAFE (DETENT)
	4. DOGFIGHT/RESUME SEARCH BUTTON	FORWARD (DM) If necessary
	5. SELECT JETTISON SWITCH	OFF
	6. MISSILE UNCAGE SWITCH	PRESS and HOLD
	7. MISSILE AUDIO TONE	CHECKED
Adjust volume control until background tone of selected missile is barely audible. If time and circumstances permit, boresight each missile and check that tone intensity and volume vary with changes in infrared radiation in the seeker gyro field of view.		
<p><b>NOTE</b></p> <p>To obtain the right missile audio tone, place left wingtip armament position selector switch OFF and right wingtip armament switch at up position.</p>		
Launch	1. IN-RANGE LIGHT	ON
	<p><b>NOTE</b></p> <p>Track target long enough to check missile tone for contrast between background and target radiation to ensure that target is within the field of view of the seeker gyro.</p>	
	2. EXCESS-G LIGHT	OUT
	3. MISSILE UNCAGE SWITCH	PRESS and HOLD
	4. BOMB-ROCKET BUTTON	PRESS
	Keep bomb-rocket button pressed until missile has left launcher rail.	
<p><b>NOTE</b></p> <p>If the bomb-rocket button is not held pressed until the missile has left the launcher rail the possibility exists of activating the guidance and control unit without igniting the rocket motor. If this occurs, that missile cannot be subsequently fired. If this occurs on the left wingtip missile, when the bomb-rocket button is released, the firing circuit automatically transfers to the right wingtip launcher, provided the right wingtip armament position selector switch is up. If it is determined that an installed missile should not be fired due to a malfunction (e.g., no missile tone), use the wingtip armament position selector switches to transfer the firing circuits to the good missile.</p>		
<p><b>END</b></p>		

### BOMBS DELIVERY CHECK

Before Release	<b>1. DOGFIGHT/RESUME SEARCH BUTTON</b>						<b>CENTER (RESUME)</b>
	<b>2. SIGHT MODE SELECTOR</b>						<b>MAN</b>
	<b>3. SIGHT DEPRESSION</b>						<b>SET</b>
	<b>4. BOMBS ARM SWITCH</b>						<b>AS REQUIRED</b>
		Bombs arm switch position					
Bomb	Fuze		Safe	Nose	Nose & Tail	Tail	
Mk-82, Mk-83, Mk-84, M117	M904	N	Dud	Armed	Armed	Dud	
	M905	T	Dud	Dud	Armed	Armed	
Mk-82 Snakeye	M904	N	LD Dud	Armed	Armed	HD Dud	
	FMU-54	T	LD Dud	LD Armed	Armed	HD Dud	
GBU-12	M904	N	UG Dud	Armed	Armed	Dud	
	FMU-81	T	UG Dud	UG Armed	Armed	Dud	
CBU-54	M907	N	Dud	Armed	Armed	Dud	
<b>5. ARMAMENT POSITION SWITCH(ES)</b>						<b>AS REQUIRED</b>	
<b>6. EXTERNAL STORES SELECTOR</b>						<b>BOMB</b>	
<b>7. SELECT JETTISON SWITCH</b>						<b>OFF</b>	
Release	<b>1. BOMB-ROCKET BUTTON</b>						<b>PRESS</b>
	<p><b>⚠ WARNING</b> (Mk-82 Snakeye)</p> <p>To provide a margin of safety in the event of retarding fin failure resulting in a low-drag bomb trajectory, a 4.0 G pullup or a 4.0 G banked turn escape maneuver should be executed immediately after bomb release.</p>						
<p><b>⚠ CAUTION</b></p> <p>Speed brakes should be IN for release of stores from the CL position.</p>							
<p><b>END</b></p>							

### ROCKET LAUNCHERS (LAU-3, -60) CHECK

Before Firing	<b>1. DOGFIGHT/RESUME SEARCH BUTTON</b>						<b>CENTER (RESUME)</b>
	<b>2. SIGHT MODE SELECTOR</b>						<b>MAN</b>
	<b>3. SIGHT DEPRESSION</b>						<b>SET</b>
	<b>4. ARMAMENT POSITION SWITCH(ES)</b>						<b>AS REQUIRED</b>
	<b>5. EXTERNAL STORES SELECTOR</b>						<b>RKT/DISP</b>
	<b>6. SELECT JETTISON SWITCH</b>						<b>OFF</b>
<p><b>⚠ WARNING</b></p> <p>Until visual inspection confirms otherwise, all rocket launchers should be considered as still containing armed rockets.</p>							
Firing	<b>1. BOMB-ROCKET BUTTON</b>						<b>PRESS</b>
	When rockets are ripple fired, the bomb-rocket button must be pressed for ½ second to ensure fire-out of all rockets.						
<p><b>END</b></p>							

**ARMAMENT SAFETY CHECK**

<b>1. GUNS MSL &amp; CAMR SWITCH</b>	<b>OFF and GUARDED</b>
<b>2. BOMBS ARM SWITCH</b>	<b>SAFE</b>
<b>3. ARMAMENT POSITION SWITCHES</b>	<b>OFF</b>
<b>4. EXTERNAL STORES SELECTOR</b>	<b>SAFE</b>
<b>5. SIGHT MODE SELECTOR</b>	<b>OFF</b>
<b>6. MISSILE VOLUME KNOB</b>	<b>FULLY CCW</b>
<b>END</b>	

### MK-82 and GBU-12 500 LBS GP and LGB BOMB TABLES

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
0	500	360	159	20	3000	360	214	30	6500	400	233
		560	103			560	119			560	153
	1000	360	219		3500	360	234		7000	400	244
		560	143			560	132			560	161
	1500	480	231		4000	400	223		7500	400	253
		560	173			560	125			560	168
	2000	560	199		4500	400	239		8000	440	236
						560	157			560	176
15	1000	360	126		5000	440	227		8500	440	244
		560	67			560	168			560	183
	1500	360	161		5500	440	241		9000	480	228
		560	87			560	179			560	190
	2000	360	192		6000	480	229		9500	480	235
		560	106			560	190			560	197
	2500	360	219		6500	520	218		10000	480	243
		560	124			560	200			560	204
	3000	400	244	30	1500	360	107	45	2500	360	102
		560	140			480	69			440	76
	3500	400	235		2000	360	128		3000	360	115
		560	155			560	66			480	76
	4000	440	227		2500	360	148		3500	360	127
		560	169			560	78			520	74
	4500	480	220		3000	360	166		4000	360	137
		560	182			560	88			560	73
	5000	520	213		3500	360	183		4500	360	148
		560	195			560	99			560	79
	5500	520	225		4000	360	199		5000	360	158
		560	207			560	109			560	85
20	1000	360	108		4500	360	213		5500	360	167
		560	56			560	118			560	91
	1500	360	139		5000	360	227		6000	360	176
		560	73			560	127			560	97
	2000	360	167		5500	360	240		6500	360	184
		560	89			560	136			560	103
	2500	360	192		6000	360	252		7000	360	192
		560	105			560	144			560	108

**MK-82 and GBU-12 500 LBS GP and LGB BOMB TABLES (CONT.)**

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
45	7500	360	199	60	4000	360	91	60	7500	360	130
		560	113			440	69			560	73
	8000	360	207		4500	360	97		8000	360	135
	560	119	440		74	560	77				
	8500	360	214		5000	360	104		8500	360	140
8500	360	560	124	5000	360	480	70	8500	360	560	80
		9000	360			220	5500			360	109
	560	129	520		66	560	83				
9500	360	560	134	6000	360	560	63	9500	360	560	86
		10000	360			233	6500			360	120
	560	139	560		67	560	89				
60	3500	360	84	7000	360	560	70	7000	360	560	70
		400	73			560	70				

**MK-82 SNAKEYE I and MK-36 BOMB TABLES**

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
0	100	360	90	10	400	360	110	20	1000	360	162
		560	62			560	61			560	90
0	125	360	101	10	500	360	133	20	1100	360	178
		560	70			560	76			560	102
0	150	360	111	10	600	360	155	20	1200	360	195
		560	78			560	92			560	114
0	200	360	130	10	700	360	178	30	1200	360	136
		560	92			560	109			400	117
0	250	360	148	10	800	360	200	30	1300	360	148
		560	106			560	126			440	112
0	300	360	165	10	900	360	221	30	1400	360	160
		560	120			560	144			440	123
0	400	360	197	10	1000	360	242	30	1500	360	172
		560	145			560	161			480	119
0	500	360	227	20	700	360	114	30	1600	360	185
		560	170			440	96			480	129
0	600	400	230	20	800	360	130	30	1800	360	210
		560	193			480	87			520	135
0	700	480	235	20	900	360	146	30	2000	360	234
		560	215			520	88			560	142



### MK-83 1000 LBS GP BOMB TABLES

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
0	500	360	158	15	2500	360	217	25	3000	360	186
		560	102			560	122			560	100
	1000	360	217		3000	360	241		3500	360	205
		560	141			560	138			560	112
5	1000	360	178		3500	400	232		4000	360	222
		560	105			560	152			560	123
	1500	360	220		4000	440	224		4500	360	237
		560	133			560	166			560	133
	2000	440	206		4500	480	217		5000	360	252
		560	157			560	179			560	143
	2500	480	211		5000	480	231		5500	400	235
		560	178			560	191			560	153
	3000	520	214		5500	520	222		6000	400	248
		560	197			560	203			560	162
10	1000	360	147	20	5500	440	237		6500	440	232
		560	81			560	176			560	171
	1500	400	167		6000	480	225		7000	440	242
		560	106			560	186			560	180
	2000	480	220		6500	480	236		7500	440	227
		560	127			560	196			560	188
	2500	400	221		7000	520	224		8000	440	236
		560	146			560	206			560	196
	3000	440	219		7500	520	234		8500	520	223
		560	164			560	215			560	204
	3500	480	216		8000	560	223		9000	520	230
		560	183			560	232			560	212
	4000	520	213		8500	560	232		9500	520	238
		560	195			560	232			560	219
	4500	560	209	25	1000	360	92		10000	560	226
		440	68			440	68			440	68
15	1000	360	124		1500	360	120	30	1000	360	81
		560	65			560	62			560	62
	1500	360	159		2000	360	144		1500	360	105
		560	86			560	75			480	68
	2000	360	190		2500	360	166		2000	360	127
		560	105			560	88			560	65

## MK-83 1000 LBS GP BOMB TABLES (CONT.)

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
30	2500	360	146	30	8500	440	240	40	5500	360	186
		560	76			560	179			560	102
	3000	360	164		9000	440	248		6000	360	196
		560	87			560	186			560	109
	3500	360	181		9500	480	232		6500	360	205
		560	97			560	193			560	115
	4000	360	196		10000	480	239		7000	360	214
		560	107			560	200			560	121
	4500	360	211	40	1500	360	82		7500	360	223
		560	116							560	127
	5000	360	224		2000	360	99		8000	360	231
		560	125			440	73			560	133
	5500	360	237		2500	360	114		8500	360	238
		560	133			480	74			560	138
	6000	360	249		3000	360	128		9000	360	246
		560	142			560	66			560	144
	6500	360	260		3500	360	141		9500	360	253
		560	150			560	74			560	149
	7000	400	240		4000	360	154		10000	360	260
		560	158			560	81			560	155
	7500	400	250		4500	360	165				
		560	165			560	89				
	8000	440	232		5000	360	176				
		560	172			560	95				

## MK-84 2000 LBS GP BOMB TABLES

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
0	500	360	158	15	1000	360	124	15	4000	440	224
		560	102			560	66			560	165
	1000	360	217		1500	360	160		4500	440	240
		560	141			560	86			560	178
	1500	440	216		2000	360	190		5000	480	230
		560	171			560	105			560	190
	2000	520	210		2500	360	217		5500	520	221
		560	196			560	122			560	202
	2500	560	218		3000	400	212		6000	520	233
						560	137			560	213

**MK-84 2000 LBS GP BOMB TABLES (CONT.)**

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
15	6500	560	224	30	2000	360	127	45	2500	360	125
						560	65			440	75
20	1000	360	106		2500	360	146		3000	360	113
		560	55			560	76			480	74
	1500	360	138		3000	360	164		3500	360	125
		560	72			560	87			520	73
	2000	360	165		3500	360	181		4000	360	135
		560	86			560	97			560	71
	2500	360	189		4000	360	196		4500	360	146
		560	103			560	106			560	77
	3000	360	211		4500	360	211		5000	360	155
		560	117			560	115			560	83
	3500	360	232		5000	360	224		5500	360	164
		560	130			560	124			560	89
	4000	400	220		5500	360	237		6000	360	173
		560	142			560	133			560	95
	4500	400	236		6000	400	219		6500	360	181
		560	153			560	141			560	100
	5000	440	224		6500	400	230		7000	360	189
		560	164			560	149			560	105
	5500	440	224		7000	400	240		7500	360	196
		560	164			560	156			560	110
	6000	480	225		7500	440	223		8000	360	204
		560	185			560	164			560	115
	6500	480	236		8000	440	232		8500	360	210
		560	195			560	171			560	120
	7000	520	224		8500	440	240		9000	360	217
		560	204			560	178			560	125
	7500	520	233		9000	480	224		9500	360	223
		560	213			560	185			560	130
	8000	560	222		9500	480	231		10000	360	229
						560	191			560	134
30	1000	360	88		10000	480	238				
						560	198				
	1500	360	105	45	2000	360	88				
		480	87								

### M117 750 LBS GP BOMB TABLES

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)		
0	500	360	159	15	1500	360	162	30	5000	360	227		
	560	103	560			88	560			128			
	1000	360	219			2000	360			192	5500	360	240
	560	143	560			107	560			136			
1500	440	218	2500	360	219	6000	360	252					
	560	173		560	124		560	145					
2000	520	214	3000	360	244	6500	400	234					
	560	199		560	140		560	153					
5	1000	360	180	3500	400	236	7000	400	244				
	560	107	560		155	560		161					
1500	360	223	4000	440	228	7500	400	254					
	560	135		560	169		560	169					
2000	440	209	4500	480	220	8000	440	236					
	560	159		560	183		560	177					
2500	480	214	5000	520	213	8500	440	245					
	560	181		560	195		560	184					
3000	520	217	5500	520	226	9000	480	228					
	560	200		560	207		560	191					
10	1000	360	149	6000	560	219	10000	480	243				
	560	83	560		205	560		205					
1500	360	189	30	1000	360	83	45	4000	360	138			
	560	107		560	73	560		73					
2000	360	222	1500	360	107	4500	360	148					
	560	129		480	69		560	79					
2500	400	223	2000	360	129	5000	360	158					
	560	149		560	67		560	85					
3000	440	222	2500	360	148	5500	360	167					
	560	167		560	78		560	91					
3500	480	220	3000	360	167	6000	360	176					
	560	183		560	89		560	97					
4000	520	216	3500	360	183	6500	360	184					
	560	199		560	99		560	103					
4500	560	213	4000	360	199	7000	360	192					
	560	109		560	109		560	109					
15	1000	360	126	4500	360	214	7500	360	206				
560	67	560	118	560	114								

**2.75 INCH FFAR FROM LAU-3 and LAU-68 LAUNCHERS**

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
10	900	360	47	30	2750	360	40	45	7000	360	37
		560	16			560	11			560	6
	1250	360	51		3000	360	41		8000	360	40
		560	20			560	12			560	7
15	1250	360	45		3500	360	43	60	6500	360	18
		560	15			560	12			560	-5
	1500	360	47		4000	360	45		7000	360	19
		560	17			560	13			560	-5
	1750	360	49		4500	360	47		7500	360	19
		560	18			560	15			560	-5
20	1500	360	43		5000	360	50		8000	360	20
		560	13			560	16			560	-5
	1750	360	44	45	4000	360	30		8500	360	21
		560	15			560	4			560	-5
	2000	360	46		4500	360	31		9000	360	21
		560	16			560	4			560	-5
30	2000	360	37		5000	360	32		10000	360	23
		560	10			560	5			560	-5
	2250	360	38		5500	360	33		11000	360	24
		560	10			560	6			560	-5
	2500	360	39		6000	360	34		12000	360	26
		560	11			560	6			560	-6

**M39 GUN/20MM HEI FIRING TABLES**

DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)	DIVE ANGLE	ALT. (FT)	IAS (KTS)	SIGHT DEP. (MILS)
10	600	360	6	15	1500	360	14	30	2200	360	8
		480	4			560	3			560	-1
	800	360	10	20	1250	360	8		2400	360	9
		560	0			480	4			560	-1
	1000	360	15		1400	360	9		2600	360	10
		560	2			560	-1			560	0
15	900	360	8		1600	360	10		2800	360	11
		480	4			560	0			560	1
	1000	360	9		1800	360	12		3000	360	13
		560	-1			560	1			560	1
	1250	360	11		2000	360	14		3500	360	16
		560	1			560	2			560	4