



TAKEOFF

Runway

1. Increase throttle to full afterburner – 110% RPM. (**Pg Up** [incremental] or Keypad **+** [smoothly])
2. Rotate (lift off runway) by easing back on the stick at about 250-300 km/hr.
3. When established in a positive rate of climb raise landing gear. (**G**)
4. Continue to climb and accelerate until cruise speed and altitude are reached.

Carrier

Do Not Attempt a Carrier Takeoff at Max Takeoff Weight

1. Increase throttle to full afterburner – 110% RPM. (**Pg Up** [incremental] or Keypad **+** [smoothly])
2. Deck restraints will release automatically at around 105% RPM.
3. Raise landing gear immediately upon clearing the bow. (**G**)
4. Ease back on the stick as you clear the bow of the ship.
5. Maintain a positive rate of climb.
6. Continue to climb and accelerate until cruise speed and altitude are reached.

LANDING

Runway

1. Set HUD to RETURN mode: **HAB – BO3B** { NAV – RTN } (Toggle **1**).
2. Select desired airfield on MFD (**~**).
3. Fly to Initial Approach Beacon (IAB) using the HUD Flight Path Marker. (If HUD is inoperative, utilize Indicators and arrows on ADI and HSI.)
4. Upon reaching IAB, the HUD will automatically switch to LANDING mode: **HAB – ПОС** {NAV – LNDG} (be within 300m altitude and 2km of IAB for automatic switch to occur).
5. Deploy airbrake (**B**).
6. Reduce airspeed to 350 km/h using throttle (**Pg Dn**) or Keypad **-**).
7. Lower landing gear (**G**) and flaps (**Shift** + **F** or **F**).
8. Follow Instrument Landing cues adjusting speed and pitch to remain on glide path and in proper alignment with runway. Control speed with pitch and altitude with power.
9. Begin final flare for landing at 10 meters altitude and an airspeed of 250 km/h.
10. Reduce throttle to idle. (**Pg Dn** [incremental] or Keypad **-** [smoothly])
11. Release drogue chutes (**P**) (Note: Su-27 only.)
12. Steer with rudders (**Z** and **X**) as required to stay on runway during rollout.
13. Engage wheel brakes (**W**).
14. Retract air brake (**Ctrl** - **B** or **B**).
15. Raise flaps (**Ctrl** - **F** or **F**).
16. Taxi off of active runway to ramp.

continues...

Front



Carrier

Only the Su-33 is to be used for carrier operations

1. Set HUD to RETURN mode: **HAB – BO3B** { NAV – RTN } (Toggle **1**).
2. Select carrier on MFD (**~**).
3. Fly to Initial Approach Beacon (IAB) using the HUD Flight Path.
4. Upon reaching IAB, the HUD will automatically switch to LANDING mode: **HAB – ПОС** {NAV – LNDG} (be within 300m altitude and 2km of IAB for automatic switch to occur).
5. Reduce airspeed to 350 kph using throttle (**Pg Dn**) or Keypad **-**).
6. Deploy airbrake (**Shift** + **B** or **B**).
7. Deploy tailhook (**Ctrl** - **G**).
8. Lower landing gear (**G**) and flaps (**Shift** + **F** or **F**).
9. Follow Instrument Landing cues and Glide Path indicator lights on the left side of the HUD. Maintain proper decent rate by keeping center indicator lit.
10. Adjust speed and pitch to remain on glide path and properly alignment with carrier. Control speed with pitch and altitude with power.
11. Touchdown on landing area at 280 km/h.
12. Upon touchdown immediately power up to 100% in case tailhook misses arrestor cable.
13. Reduce throttle to idle. (**Pg Dn**) or Keypad **-**) once tailhook has secured a cable.
14. Retract air brake (**Ctrl** - **B** or **B**).
15. Raise flaps (**Ctrl** - **F** or **F**).
16. Fold wings (**Ctrl** - **P**).
17. Taxi to parking area.

Back



BEYOND VISUAL RANGE SUBMODES

AWACS

1. Switch to **ДВБ** mode (**[1]**).
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. View MFD for contacts.
4. Adjust range on MFD and HUD (**[-]** or **[+]**).
5. Cycle through contacts on MFD using the **[~]** key.
6. Lock on target using the **[Tab]** key.
7. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when launch parameters are met.
8. Fire missile using the **[Spacebar]** or joystick trigger.

Scan & Track While Scan

1. Switch to **ДВБ** mode (**[2]**).
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. Select either the Electro-Optical System (EOS) using the **[O]** key or the Radar using the **[I]** key.
4. Adjust range on MFD and HUD (**[-]** or **[+]**).
5. Adjust EOS/Radar scan cone (**[Shift] - [.]**, **[Shift] - [;]**, **[Shift] - [']**, or **[Shift] - [/]**); contacts (up to 24) will appear on HUD as dashes.
6. Steer the HUD target designator box over the desired contact (**[.]**, **[;]**, **[']**, or **[/]**, or using the joystick coolie hat).
7. Designate contact to Track While Scan by using the **[Tab]** key; the contact will now appear on MFD and change to a triangle on the HUD. Repeat for each contact you to be track (up to 8); to select up to 8 contacts to TWS simultaneously, press the **[2]** key again.
8. Steer the HUD target designator box over the desired tracked contact (triangles) (**[.]**, **[;]**, **[']**, or **[/]**, or using the joystick coolie hat.)
9. Lock on target using the **[Tab]** key. System will switch to Attack mode (**АТК**).
10. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when launch parameters are met.
11. Fire missile using the **[Spacebar]** or joystick trigger.

CLOSE AIR COMBAT SUBMODES

Vertical Scan

1. Switch to **БВБ - ВС** submode by pressing the **[3]** key.
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. Select either the Electro-Optical System (EOS) using the **[O]** key or the Radar using the **[I]** key.
4. Adjust EOS/Radar scan cone (**[.]**, **[/]**). Left and right only.
5. Maneuver to place enemy aircraft within the boundries of the vertical scan bar displayed on the HUD.
6. With enemy aircraft inside the scan bar, lock on target using the **[Tab]** key.
7. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when launch parameters are met.
8. Fire missile using the **[Spacebar]** or joystick trigger.

continues...

Front



Radar Bore Site

1. Switch to **БВБ - СТР** submode by pressing the **[4]** key.
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. Select either the Electro-Optical System (EOS) using the **[O]** key or the Radar using the **[I]** key.
4. Adjust EOS/Radar bore site circle using the keyboard commands **[.]**, **[;]**, **[']**, or **[/]**, or using the joystick coolie hat.
5. With enemy aircraft inside the circle, lock on target using the **[Tab]** key.
6. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when launch parameters are met.
7. Fire missile using the **[Spacebar]** or joystick trigger.

Helmet Mode

1. Switch to **БВБ - ШЛЕМ** submode by pressing the **[5]** key.
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. Select either the Electro-Optical System (EOS) using the **[O]** key or the Radar using the **[I]** key.
4. Move the Helmet Mounted Targeting Device circle onto an enemy aircraft using the keyboard commands **[.]**, **[;]**, **[']**, or **[/]**, or using the joystick coolie hat.
5. With enemy aircraft inside the circle, lock on target using the **[Tab]** key.
6. Wait for Launch Authorization cue (**ПР**) to appear on the HUD when launch parameters are met.
7. Fire missile using the **[Spacebar]** or joystick trigger.

Longitudinal Missile Aiming

1. Switch to **БВБ - СТР** submode by pressing the **[6]** key.
2. Select desired missile using the **[D]** key. Weapon type will be displayed on HUD.
3. Maneuver to place enemy aircraft within the weapon sensor circle displayed on the HUD.
4. With enemy aircraft inside the circle, lock on target using the **[Tab]** key.
5. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when launch parameters are met.
6. Fire missile using the **[Spacebar]** or joystick trigger.

Cannon

The GSh-301 cannon may be used to engage air targets with or without the target being in autotrack (locked up).

1. Lock up target using either of the Close Air Combat submodes.
2. Enable cannon by pressing the **[C]** key. Number of cannon rounds remaining will appear on left side of HUD.
3. Maneuver you aircraft to place the aiming crosshairs on the target.
4. Wait for Launch Authorization (**ПР** or **ЛА**) to appear on the HUD when firing parameters are met.
5. Fire the cannon using the **[Spacebar]** or joystick trigger. Short bursts should be used as ammo is limited.

Back



■ BOMBING

Unguided

1. Switch to **ЗЕМЛЯ** submode by pressing the [7] key.
2. Select unguided bomb type using the [D] key. Weapon type will be displayed on HUD.
3. Acquire target either visually or by using the ground search radar.
4. Fly toward the target until the CCIP 'pipper' (circle with dot) is on the target and the release authorization cue (**ПР** or **ЛА**) appears on the HUD when the release parameters are met.
5. Release bomb by pressing [Spacebar] or joystick trigger.

Guided

1. Switch to **ЗЕМЛЯ** submode by pressing the [7] key.
2. Select guided bomb type using the [D] key. Weapon type will be displayed on HUD.
3. Acquire target either with weapon TV/IR seeker or by using the ground search radar ([I] key to turn on radar; [O] key to turn on weapon TV seeker).
4. Start Search in Wide Area mode on MFD. Switch to Search in Narrow Area mode ([N]).
5. Once target is acquired, switch to targeting cursor by pressing the [C] key.
6. Move targeting cursor onto the target using the keyboard commands [Left], [Right], [Up], [Down], or [F], or using the joystick coolie hat.
7. Lock on target using [Tab] key.
8. Fly toward the target until the Release Authorization cue (**ПР** or **ЛА**) appears on the HUD when the release parameters are met.
9. Release bomb by pressing [Spacebar] or joystick trigger.

■ STRAFING

1. Switch to **ЗЕМЛЯ** submode by pressing the [7] key.
2. Select cannon using the [C] key or choose rocket type by using the [D] key. Weapon type will be displayed on HUD.
3. Maneuver to place aiming circle on target.
4. Continue to close to target until the Release Authorization cue (**ПР** or **ЛА**) appears on the HUD when the release parameters are met.
5. Fire cannon or rockets by pressing [Spacebar] or joystick trigger.

continues...

Front



■ MISSILES

Air-to-Ground & Anti-Ship

1. Switch to **ЗЕМЛЯ** submode by pressing the [7] key.
2. Select missile type using the [D] key. Weapon type will be displayed on HUD.
3. Acquire target either with weapon TV/IR seeker or by using the ground search radar ([I] key to turn on radar; [O] key to turn on weapon TV seeker).
4. Start Search in Wide Area mode on MFD. Switch to Search in Narrow Area mode ([N]).
5. Once target is acquired, switch to targeting cursor by pressing the [C] key.
6. Move targeting cursor onto the target using the keyboard commands [Left], [Right], [Up], [Down], or [F], or using the joystick coolie hat.
7. Lock on target using [Tab] key.
8. Fly toward the target until the Launch Authorization cue (**ПР** or **ЛА**) appears on the HUD when the launch parameters are met.
9. Launch missile by pressing [Spacebar] or joystick trigger.

Anti-radar

1. Switch to **ЗЕМЛЯ** submode by pressing the [7] key.
2. Select anti-radar missile type using the [D] key. Weapon type will be displayed on HUD.
3. Maneuver aircraft towards radar source as displayed on the Threat Warning Display and on MFD.
4. Lock on target using [Tab] key.
5. Fly toward the target until the Launch Authorization cue (**ПР** or **ЛА**) appears on the HUD when the launch parameters are met.
6. Launch missile by pressing [Spacebar] or joystick trigger.

Back



ENGINE FAILURE

1. If single engine failure, do not use afterburner, throttle up to 100% RPM and compensate yaw by using rudders in the opposite direction or the yaw. Use slip indicator ball to coordinate rudder use.
2. Establish and maintain best glide airspeed of 200 km/h.
3. Jettison ordnance by pressing **[Ctrl] - [W]** (repeat each set of ordnance is dropped).
4. Jettison fuel by pressing down and holding the **[L]** key.
5. Switch to : **HAB – ПНОС** (NAV – LNDG) mode by pressing the **[1]** key.
6. Select the nearest friendly airfield by using the **[~]** key.
7. Steer to airfield making gentle turns and line up for final approach.
8. Lower landing gear while on short final.
9. Land normally.

RECOVERY FROM A STALL AND SPIN

1. Place the stick and rudders (**[Z]** and **[X]** keys) in the neutral position and wait until the Angle of Attack starts to drop.
2. Set the throttle to idle (**[Pg Dn]** or Keypad **[~]**).
3. Use opposite rudder (**[Z]** and **[X]** keys) to the opposite direction of the spin. (slip ball to right = right rudder input). Slightly push the stick forward.
4. Maintain opposite rudder until rotation stops.
5. If the rotation does not ease within 5-6 seconds, position the stick in the direction of the spin.
6. As a final solution to a spin, position the stick all of the way back.
7. As soon as the rotation slows, which may take 5-10 seconds, release the rudder pedals and the stick to neutral positions at once. Any delay may overcompensate and cause a spin in the opposite direction. Maintain forward pressure on the stick to decrease the angle of attack.
8. After the Angle of Attack drops below the maximum operational value, wait until the aircraft accelerates to 350-400 km/h, power up, and level off.
9. If unrecoverable below 1500 meters, eject (**[Ctrl] - [E]**, **[E]**, **[E]**).

Front

▼ PROGRAM CONTROL

- [Ctrl] - [A]** Accelerate program speed by 2 times.
[Ctrl] - [Q] Quit program from Main Menu, also ends mission
[Alt] - [X] Quit Mission Editor and return to Main Menu
[Ctrl] - [S] Toggle Sound On or Off
[Shift] - [M] Reset Audible Warnings
[S] Toggle Pause/Resume normal speed
[Esc] Allows user to take control of aircraft while viewing a track file playback
[0] (Not Keypad zero) Turns on microphone for recording mission playback
[Ctrl] - [N] Starts network play game from Mission Editor
[Ctrl] - [M] Chat feature for multi-player network games

▼ FLIGHT CONTROL

- [↓]** Nose up (without joystick)
[↑] Nose down (without joystick)
[←] Bank left (without joystick)
[→] Bank right (without joystick)
[Ctrl] - [.] Trim up
[Ctrl] - [;] Trim down
[Ctrl] - ['] Trim left
[Ctrl] - [/] Trim right
[Ctrl] - [T] Cancel Trim Settings
[Z] Rudder left (in flight), left turn (taxi)
[X] Rudder right (in flight), right turn (taxi)
[Ctrl] - [Z] Trim left rudder
[Ctrl] - [X] Trim right rudder
[A] Toggle autopilot
[H] Toggle altitude stabilization mode
[J] Toggle auto-throttle
[K] Execute "Pugachev's Cobra"

▼ THROTTLE CONTROL

- [Pg Up]** Increase Throttle in increments (without Thrust option enabled)
[Pg Dn] Decrease Throttle in increments (without Thrust option enabled)
Keypad **[+]** Increase Throttle smoothly (without Thrust option enabled)
Keypad **[~]** Decrease Throttle smoothly (without Thrust option enabled)

▼ NAVIGATION

- [~]** Select next waypoint or airfield
[1] Toggle to set Navigation (NAV) submodes

continues...

Back



▼ MECHANICAL SYSTEMS CONTROL

- [B] Toggle airbrake
- [Shift] - [B] Airbrake out
- [Ctrl] - [B] Airbrake in
- [Ctrl] - [E], [E], [E] Eject (Note: hold down Ctrl key and hit E three times)
- [E] Toggle active jamming (requires ECM pods in loadout)
- [F] Toggle flaps up/down
- [Shift] - [F] Flaps down
- [Ctrl] - [F] Flaps up
- [G] Toggle landing gear up/down
- [Ctrl] - [G] Toggle arrestor hook down or up (Note: Su-33 only, not Su-27)
- [P] Release drogue chute (Note: Su-27 only, not Su-33)
- [Ctrl] - [P] Toggle folding wings (Note: Su-33 only, not Su-27)
- [L] Dump fuel (in flight) or refuel (ground) (Note: Hold down key)
- [W] Engage wheel brakes (ground) (Note: Hold down key)
- [T] Toggle wingtip smoke
- [Shift] - [M] Reset Current Audible Warning

▼ RADAR & ELECTRO-OPTICAL SYSTEMS

- [I] Toggle radar illumination on or off
- [O] Toggle Electro-Optical System (EOS) or weapon TV seeker on or off
- [Ctrl] - [I] Center radar antenna/Infra-Red Scan and Track(ISRT) ball
- [=] Multi-Functional Display (MFD) zoom in
- [+] Multi-Functional Display zoom out
- [Ctrl] - [V] Toggle Salvo mode on or off

• BVR MODE:

- [Shift] - [↓] Move radar/EOS scan zone DOWN while in BVR
- [Shift] - [←] Move radar/EOS scan zone LEFT while in BVR
- [Shift] - [↑] Move radar/EOS scan zone UP while in BVR
- [Shift] - [→] Move radar/EOS scan zone RIGHT while in BVR
- [↓] Move HUD target designator Box DOWN (BVR only)
- [←] Move HUD target designator Box LEFT (BVR only)
- [↑] Move HUD target designator Box UP (BVR only)
- [→] Move HUD target designator Box RIGHT (BVR only)

• CAC MODE

- [↑] Move radar/EOS scan zone UP while in CAC
- [←] Move radar/EOS scan zone LEFT while in CAC
- [↓] Move radar/EOS scan zone DOWN while in CAC
- [→] Move radar/EOS scan zone RIGHT while in CAC

• GROUND MODE

- [↓] Move radar/TV seeker scan zone DOWN
- [←] Move radar/ TV seeker scan zone LEFT
- [↑] Move radar/ TV seeker scan zone UP
- [→] Move radar/ TV seeker scan zone RIGHT

continues...

Front



▼ COMBAT MODES

- [2] Toggle to set Beyond Visual Range (BVR/DVB) submodes
- [3] Select Close Air Combat – Vertical Scan (CAC/BVB – VS) submode
- [4] Select Close Air Combat – Bore (CAC/BVB – BORE/STR) submode
- [5] Select Close Air Combat – Helmet-Mounted Target Designator (CAC/BVB – HMTD/SHLEM) mode
- [6] Select Longitudinal Missile Aiming (LNGT/FIO) mode
- [7] Select Air-to-ground (GND/ZEMLYA) mode
- [~] Cycle through targets on MFD in AWACS and Ground Attack Modes
- [Tab] Place designated contact in Track While Scan from BVR Scan Submode
- [Ctrl] - [Tab] Remove tracked contact from Track While Scan
- [Tab] Lock tracked target to Attack Mode
- [Tab] Lock/unlock target to Attack Mode in CAC submodes
- [Ctrl] - [H] Cycle through Heads Up Display (HUD) intensities

▼ WEAPONS

- [D] Cycle through weapons selection
- [C] Toggle cannon
- [Q] Dispense chaff & flare
- [Shift] - [Q] Continuously dispense chaff & flares (Note: until supply is exhausted)
- [Spacebar] Fire current weapon
- [Ctrl] + [W] Jettison weapons in pairs while airborne, reloads weapons while on the ground

▼ WINGMAN COMMANDS

- [End] Dispatch wingman on mission & allow him to return to base afterwards
- [Delete] Dispatch wingman on mission. On mission completion, join up
- [Home] Join up in formation
- [Ins] Toggle tight formation or loose formation
- [I] Attack my target
- [J] Cover my six o'clock (rear) position

▼ COCKPIT VIEW CONTROL

- Keypad [1] Move head down and left
- Keypad [2] Move head down
- Keypad [3] Move head down and right
- Keypad [4] Move head left
- Keypad [5] Front View
- Keypad [6] Move head right
- Keypad [7] Move head up and left
- Keypad [8] Move head up
- Keypad [9] Move head up and right
- Keypad [Delete] Toggle Padlock View (Note: Must be in Cockpit View and in visual range of contact)
- [M] Move head to view right mirror
- [N] Move head to view left mirror

continues...

Back



▼ VIEW SELECTION

[F1]	Cockpit View
[Ctrl] - [F1]	Natural Head Movement View
Keypad [Delete]	Toggle Padlock View (Note: Must be in Cockpit View and in visual range of contact)
[F2]	External View – All Aircraft
[F3]	Fly-By View
[F4]	Chase View
[F5]	Air Combat View
[F6]	Weapons View
[F7]	Active Ground Objects View
[F8]	Target View
[Ctrl] - [F8]	Target View – Target to Your Aircraft
[Shift] - [F8]	Target View – Your Aircraft to Target
[F9]	Ship View
[Alt] - [F9]	Landing Signal Officer (LSO) View
[F10]	Theater View
[F11]	Tower & Terrain View
[Ctrl] - Keypad [5]	Returns to Tower & Terrain View starting point or ends Padlock View
[F12]	Static Objects View

• VIEW MODIFIERS

[Ctrl] - [Home]	Places external views to Friendly only
[Ctrl] - [End]	Places external views to Enemy only
[Ctrl] - [Delete]	Places external views to All
[Ctrl] - [Ins]	Places external views to Unknown (non-aligned) only
Keypad [Delete]	Toggle Padlock View (Note: for Alt-F9 LSO View & F11 Tower View only)
[Ctrl] - Keypad [+]	Switch to Weapons Release and Track View for F2 External, F4 Chase, F7 Active Ground Targets, and F9 Ship Views only
[Y]	External View Information Display Toggle

▼ EXTERNAL VIEW CONTROL

[Alt] - Keypad [*]	Starts moving camera forward (F11 Tower & Terrain View only)
[Alt] - Keypad [/]	Starts moving camera backward (F11 Tower & Terrain View only)
[Shift] - (all view keys)	Moves viewpoints at a faster rate (Note: Hold down Shift and key)
Keypad [1]	Move viewpoint down and left
Keypad [2]	Move viewpoint down
Keypad [3]	Move viewpoint down and right
Keypad [4]	Move viewpoint left
Keypad [5]	Centers view (Stops moving camera in F11 Tower & Terrain View)
[Ctrl] - Keypad [5]	Returns to starting point (F11 Tower & Terrain View only)
Keypad [6]	Move viewpoint right
Keypad [7]	Move view up and left
Keypad [8]	Move viewpoint up
Keypad [9]	Move view up and right
Keypad [0]	Jump to head-down cockpit view and back (Note: Hold down then release)
Keypad [*]	Zoom in
Keypad [/]	Zoom out

continues...

Front



▼ MISSION EDITOR

• FILE

[Ctrl] - [N]	Create new mission file
[Ctrl] - [O]	Open mission file
[Ctrl] - [A]	Save mission file
[Alt] - [X]	Exit Mission Editor and return to Main Menu

• EDIT

[Ctrl] - [Z]	Undo last action
[Ctrl] - [Y]	Redo last action (cancel previous Undo)
[Delete]	Delete selected object

• VIEW

[Ctrl] - [H]	Hide objects
[Ctrl] - [1]	Crimean view

• FLIGHT

[Ctrl] - [B]	Display Briefing
[Ctrl] - [F]	Start Mission
[Ctrl] - [L]	Network Play
[Ctrl] - [M]	Chat in Network Play
[Ctrl] - [R]	Record Track File

▼ CAMPAIGN

[Alt] - [Z]	Remove objects from Condition
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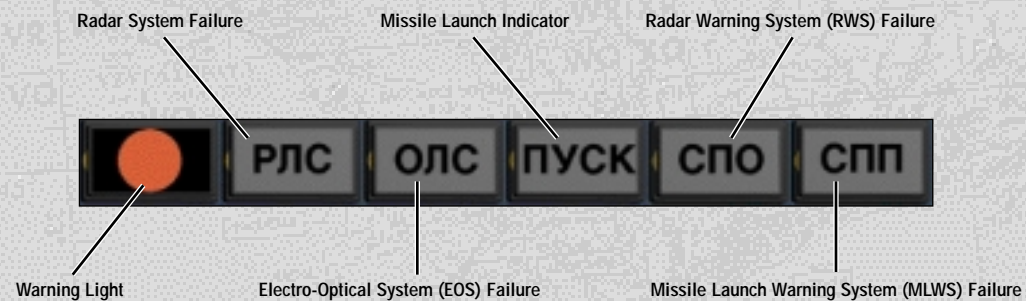
Back



COCKPIT LAYOUT



Master Warning System Layout

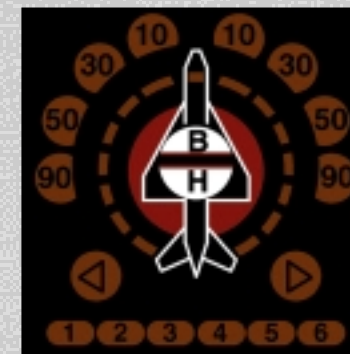


continues...

Front



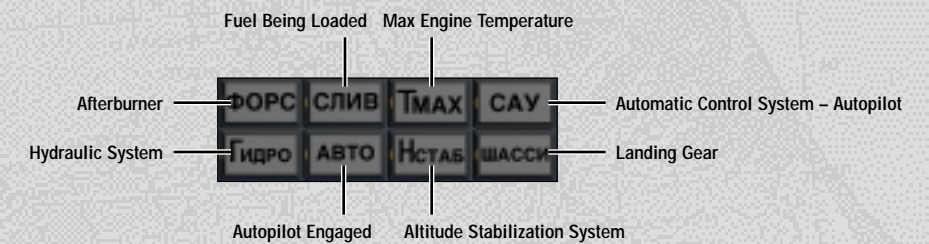
Threat Warning Display Layout



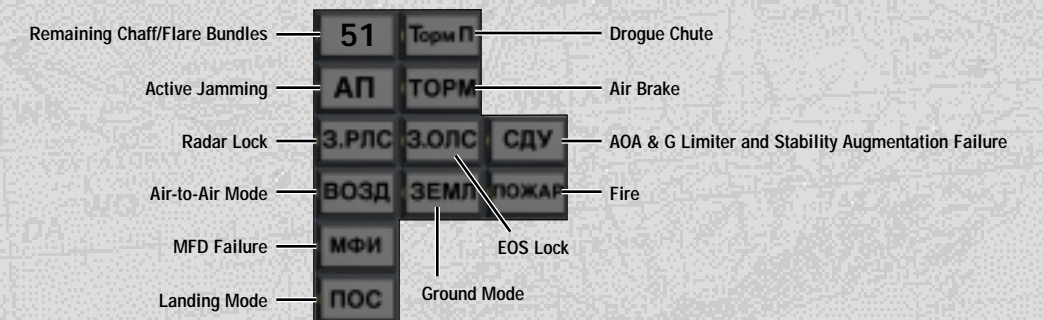
B indicates source is being detected from upper receivers.
H indicates source is being received from lower receivers.
Bearing in degrees to source (10°, 30°, 50° or 90°).
Triangles (◁ ▷) indicate direction of aft source.

- 1 = Air-to-air threat
- 2 = Long Range SAM
- 3 = Medium Range SAM
- 4 = Short Range SAM
- 5 = Ground Early Warning
- 6 = Airborne Early Warning

Individual Indicator Lights



Status Panel Layout

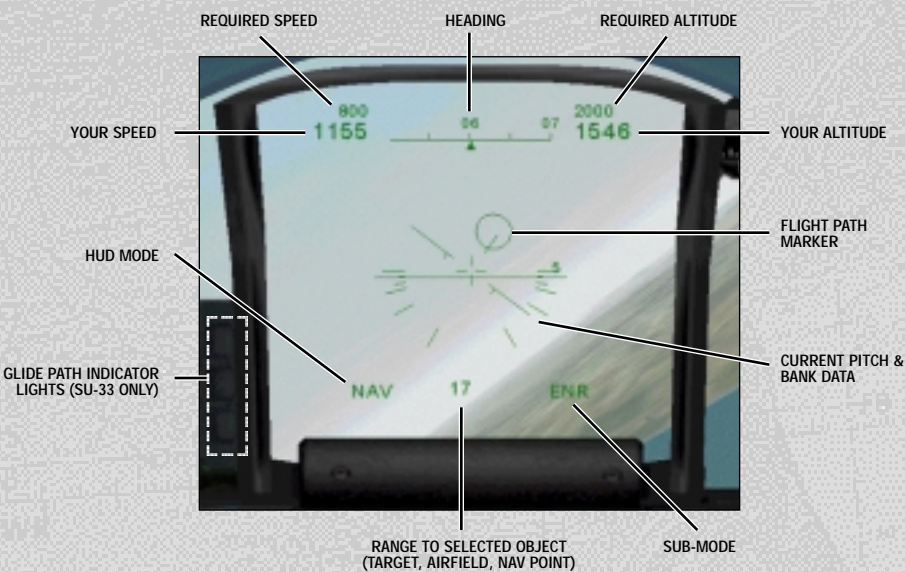


Back





■ BASIC HEADS UP DISPLAY LAYOUT



HUD Designations

▼ NAVIGATION SUBMODES

RUSSIAN DESIGNATIONS	ENGLISH DESIGNATIONS
НАВ (NAV)	NAV (Navigation)
Submodes:	Submodes:
НАВ - МАРШ (MARSH)	NAV - ENR (En-route)
НАВ - ВОЗВ (VOZV)	NAV - RTN (Return)
НАВ - ПОС (POS)	NAV - LNDG (Landing)

▼ AIR-TO-AIR COMBAT – BEYOND VISUAL RANGE

RUSSIAN DESIGNATIONS	ENGLISH DESIGNATIONS
ДВБ (DVB)	BVR (Beyond Visual Range)
Submodes:	Submodes:
ДВБ - ОБЗ (OBZ)	BVR - SCAN (Scan)
ДВБ - СНП (SNP)	BVR - TWS (Track While Scan)
ДВБ - АТК (ATK)	BVR - ATK (Attack)

continues...



▼ AIR-TO-AIR COMBAT – CLOSE AIR COMBAT

RUSSIAN HUD DESIGNATIONS	ENGLISH HUD DESIGNATIONS
БВБ (BVB) - ВС (VS)	CAC (Close Air Combat) - VS (Vertical Scan)
БВБ - СТР (STR)	CAC - BORE (Radar Bore Site)
БВБ - ШЛЕМ (SHLEM)	CAC - HMTD (Helmet-Mounted Target Designator)
БВБ - АТК (ATK)	CAC - ATK (Attack)

▼ AIR-TO-AIR COMBAT – LONGITUDINAL

RUSSIAN HUD DESIGNATIONS	ENGLISH HUD DESIGNATIONS
ФЛО - (FLO)	LNGT (Longitudinal missile aiming)
ФЛО - АТК (ATK)	LNGT - ATK (Attack)

▼ AIR-TO-GROUND COMBAT

RUSSIAN HUD DESIGNATIONS	ENGLISH HUD DESIGNATIONS
ЗЕМЛЯ (ZEMLYA)	GND (Ground Attack)
Weapon Type: Unguided	Weapon Type: Unguided
ЗЕМЛЯ - ПИ (PI)	GND - IP (Impact Point)
Weapon Type: Guided/TV	Weapon Type: Guided/TV
ЗЕМЛЯ - ТВ (TV)	GND - TV (Television)
Weapon Type: Guided/Radar	Weapon Type: Guided/Radar
ЗЕМЛЯ - Р (R)	GND - R (Radar)
Weapon Type: Guided/Anti-Radar	Weapon Type: Guided/Anti-Radar
ЗЕМЛЯ - АР (AR)	GND - AR (Anti-Radar)
ЗЕМЛЯ - АТК (ATK)	GND - ATK (Attack)

▼ ADDITIONAL HUD INDICATORS

ПР (PR)	LA (Launch Authorized)	Authorized to fire weapon.
ОТВ (OTV)	NO LA (Launch not authorized)	Not authorized to fire.
А (A)	A (Autotrack)	Autotrack System is active.
Т (T)	T (Thermal)	Electro-Optical System is active.
И (I)	I (Illuminate)	Radar system active and scanning.