F-86F Sabre



QUICKSTART MANUAL









HEALTH WARNING!

Please read before using this computer game or allowing your children to use it.

A very small proportion of people may experience a seizure or loss of consciousness when exposed to certain visual images, including flashing lights or light patterns that can occur in computer games. This may happen even with people who have no medical history of seizures, epilepsy, or "photosensitive epileptic seizures" while playing computer games.

These seizures have a variety of symptoms, including light-headedness, dizziness, disorientation, blurred vision, eye or face twitching, loss of consciousness or awareness even if momentarily.

Immediately stop playing and consult your doctor if you or your children experience any of the above symptoms.

The risk of seizures can be reduced if the following precautions are taken, (as well as a general health advice for playing computer games):

- Do not play when you are drowsy or tired.
- Play in a well-lit room.
- Rest for at least 10 minutes per hour when playing the computer game.

INSTALLATION AND LAUNCH

Place the Setup.exe file and all .bin files in the same folder and double click on the Setup.exe file to begin installation. Then follow the on-screen instructions.

Note: You will need to be logged into Windows with Administrator rights in order to install the game.

Launching DCS: F-86F

After installation, you will have two icons on your desktop, DCS World and DCS World Multiplayer.



DCS World is the PC simulation environment that the F-86F simulation operates within. When you run DCS World, you in turn launch DCS: F-86F.

The DCS World icon starts the game in single-player mode, and the DCS World Multiplayer starts the DCS multiplayer interface.

As part of DCS World, the Su-25T Frogfoot attack aircraft and TF-51 training aircraft is also included for free.

After executing the DCS World icon on your desktop, the DCS World Main Menu page is opened. From the Main Menu, you can read DCS news, change your wallpaper by selecting either the F-86F or Su-25T Frogfoot icons at the bottom of the page, or select any of the options along the right side of the page. To get started quickly, you can select Instant Action and play any of the missions listed in the F-86F tab.

Game Problems

If you encounter a problem, particularly with controls, we suggest you back up and then delete your *Saved Games\User Name\DCS\Config* folder, which is created by DCS on your operating system drive at first launch. Restart the game and this folder will be rebuilt automatically with default settings, including all of the controller input profiles.

If problems persist, we suggest consulting our online technical support forums at http://forums.eagle.ru/forumdisplay.php?f=251

Game Manuals

Additional documentation for DCS: F-86F, including the complete Flight Manual and a key commands guide can be found in the *Wods\aircrafts\F-86F\Doc* folder of the game installation directory.

Useful Links

DCS Homepage:

http://www.digitalcombatsimulator.com/

DCS: F-86F forum:

http://forums.eagle.ru/forumdisplay.php?f=251

DCS Wiki:

http://en.wiki.eagle.ru/wiki/Main_Page

ACTIVATION AND DEACTIVATION

Using the activation number provided (on back of Quick Start Guide or provided by online store), you will be required to activate your game purchase prior to flying a mission. During the Activation process, the copy protection system will create a hardware profile of your system and compare that to your current system each time you start the game. If there has been a significant change to your computer, like replacing significant hardware items or changing your Operating System, you may be required to reactivate your purchase.

Each game license (disk) has 10 activations and 10 deactivations. You can activate your game up to 10 times. The number of installations is unlimited!

This game also allows Activations Automatically ("AAA") technology that enables you to create a new activation once every 31 days. This ensures that you can still play the game, even if Eagle Dynamics no longer exists someday. This function is enabled after all 10 default activations have been used.

If the copy protection system detects changes to your computer hardware/software as described below, an activation will be required. It's important to note that deactivations are utilized to save your activations when altering your PC hardware/software. Before conducting a PC upgrade/OS reinstall, you can deactivate the product and when complete, reactivate without a loss of activations. Again though, you can install the game as much as you wish.

http://www.star-force.com/support/users/deactivate/

An activation will be required if the hardware/software changes exceed 12 points as rated below:

CPU ID: 13

Windows PID: 3

Computer Name: 3

Hard drive volume serial number: 3

MAC address: 6
RAM amount: 6

If you just uninstall the game and then reinstall it again on the same PC **without** reinstalling your operating system or changing hardware, you do not need to use a deactivation.

For further details on the copy protection system, please see the StarForce FAO:

http://www.star-force.com/support/users/group2.php

In addition, a step-by-step (de)activation guide is available below: http://www.star-force.com/support/users/group4.php#6

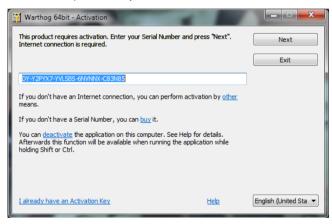
Automatic Activation

The Automatic Activation method is the preferred method; an Internet connection is necessary.

Install the game to your computer. Launch it and fly a mission.

The Activation window will be displayed. Please follow the directions.

Enter your Activation Number which is printed on the DVD Quick Start Guide sticker or was provided to you via e-mail. Press the **Next** button.



The Automatic Activation is now complete.

Other Activation Methods

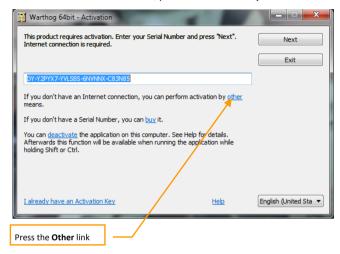
If the automatic process fails, you may use one of two other activation means (Internet connection is necessary for both):

Activation via E-mail. Using this activation, you will be provided a hardware code that can be sent to the provided e-mail address for activation.

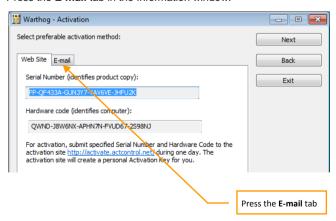
Activation via ProActive Web-site. A hardware code will be entered into the ProActive Web-site for activation.

Activation via E-mail

If the automatic activation fails, press the Other link just below the edit-box.

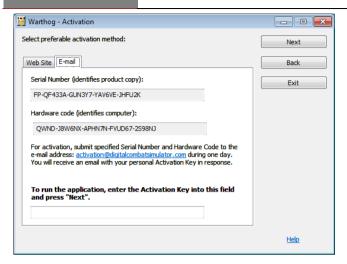


Press the **E-mail** tab in the Information window.



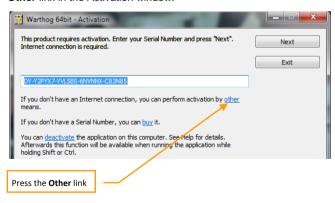
If you cannot send an e-mail now, copy your Serial Number, Hardware Code, and e-mail address shown in the Information window.

ACTIVATION AND DEACTIVATION

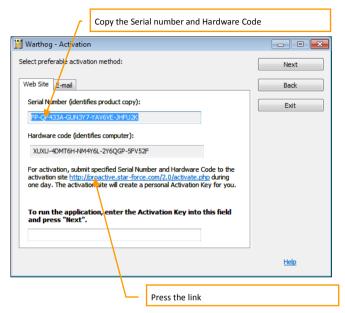


When convenient, open your e-mail and send your Serial Number and Hardware Code to the indicated e-mail address. You will be sent an Activation Key shortly afterwards. Enter your Activation Key to the Activation field and press the **Next** button. Activation by e-mail will now be complete.

Activation via ProActive Web-site. If the automatic activation fails, press the **Other** link in the Activation window.

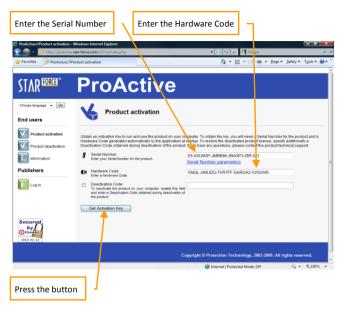


Your Hardware Code is then displayed in the Activation window. Copy the Serial number and Hardware Code and save them to a safe location.



Press the <u>proactive.star-force.com/2.0/activate.php</u> link in the Activation window. In case your computer is not connected to the Internet, you can save your Serial Number and Hardware Code and go to the link using another computer.

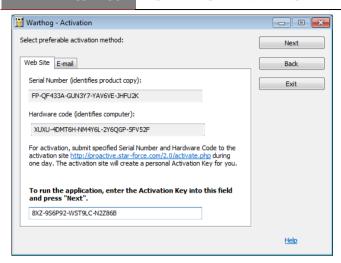
Enter the Serial Number and the Hardware Code to the corresponding fields of the ProActive Web-site and press the **Get Activation Key** button.



You will then be provided your Activation Key. Copy it to a safe location.



Enter the Activation Key to the Activation field and press the **Next** button.



Activation via ProActive Web-site is now complete. If restrictions on game usage have been implemented, the Activation window will display the details. Press Ok to launch the game.

Deactivation

To avoid using a product Activation, you may first Deactivate your installed game, make your changes, and then Activate again. You are provided 10 Deactivations.

You can launch the deactivation procedure by one of the two means:

The Automatic Deactivation

Deactivation via ProActive Web-site

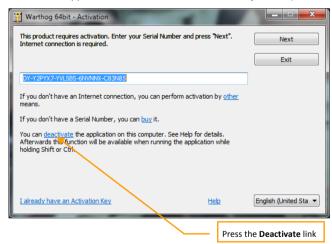
The Automatic Deactivation

Run the **<aircraft name>_protect.exe** file, which is located in associated aircraft folder into DCS World\Mods\aircraft folder. For example, the P-51D Mustang: DCS World\Mods\aircrafts\P-51D\bin\x86_6\p51_protect.exe

Select the **Activate or deactivate application** command as displayed in the window, then press the **Next** button.



Press the **Deactivate** link in the displayed window (the Serial Number used to Activate the application is indicated in this window by default).



After pressing the **deactivate** link a window requesting deactivation confirmation is displayed.



Press the **Deactivate** button; the following message is then displayed.



Press Yes button to begin the deactivation process.

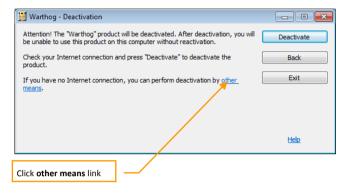


Confirm the application deactivation with the **OK** button.

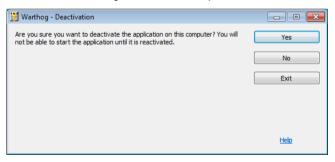
The Automatic Deactivation is now complete.

Deactivation via ProActive Web-site

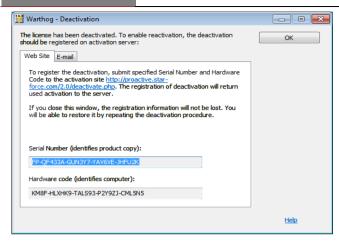
If automatic deactivation failed, or your computer is not connected to the Internet, a window suggesting deactivation appears. You click **other means** link in the Deactivation window.



Press Yes button to begin the deactivation process.



In the next window you should click http://proactive.star-force.com/2.0/deactivate.php link to go to ProActive Web-site.

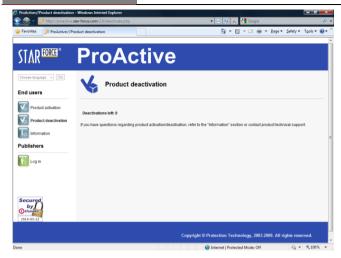


Copy your Serial Number and Hardware Code shown in the window. When you get to the ProActive Web-site enter the indicated Serial Number and Hardware Code in the corresponding fields of the ProActive Web-site. And press the Deactivate button.



After that the following window with deactivation information will be displayed.

ACTIVATION AND DEACTIVATION



Deactivation via ProActive Web-site is now complete.

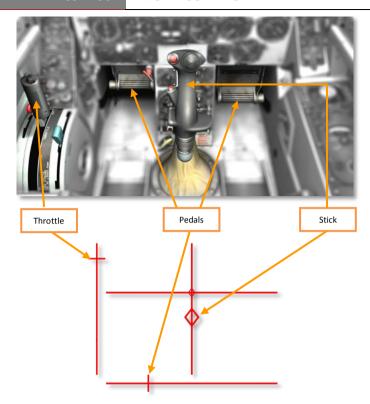
LAN and Internet play require Internet Authorization

FLIGHT CONTROL

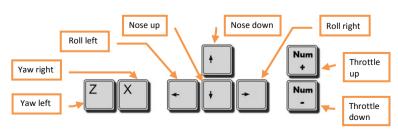
Primary aircraft flight controls include the **flight control stick**, **throttle**, and **rudder pedals**. The stick is used to **roll** the aircraft left and right to perform turns and **pitch** the nose up and down to climb or descend. The throttle is used to control engine power and resulting airspeed. The pedals are used to **yaw** the airplane left and right using the rudder (like a boat). Pedal use in flight is limited to eliminating sideslip and helping to coordinate smooth turns, but they are also used on the ground to **turn the nose wheel** when taxiing.



When flying from the cockpit, you can toggle the Controls Indicator display by pressing RCTRL+ENTER to see a visual reference of the positions of your flight controls.

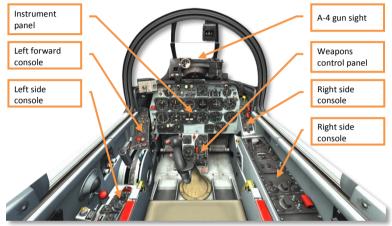


If you are flying on keyboard only, the primary flight control keys will be: **arrow keys** to control roll and pitch, **Numpad+** and **Numpad-** to control throttle, and **I** / **X** to control pedals. If you do have a joystick, it may be equipped with a throttle handle and/or a twist grip, which will allow you to control the pedals.



COCKPIT

The F-86F features a conventional cockpit layout. The flight controls are conventional, with a centrally mounted control stick, left-handed throttle handle, and foot-operated rudder pedals. The forward cockpit is dominated by the instrument panel and the A-4 gun sight positioned above it. The side panels house various aircraft systems controls and indicators.



Instrument Panel

The instrument panel includes a variety of flight instruments and indicators. The primary flight indicators are grouped together in the center of the console and include the airspeed indicator (1), heading indicator (2), attitude indicator (3), altitude indicator (4), and vertical velocity indicator (5). In addition, you should note the engine RPM indicator (6) on the right side of the panel and the landing gear control handle (7) on the left side.



The airspeed indicator shows airspeed in knots.
 The yellow index on the dial indicates maximum gear/flap extension airspeed. The red arrow and red index show maximum allowable airspeeds (true and indicated). In this example, the airspeed shown is 328 knots



 The heading indicator is a navigation device and shows current aircraft heading from 0 to 360 degrees. In this example, the heading shown is approximately 226 degrees.



3. The **attitude indicator** shows the aircraft's pitch and roll position relative to the horizon.



4. The altitude indicator uses a short needle to point to thousands of feet of altitude and the long needle to point to hundreds of feet. In this example, the altitude shown is 2,840 feet. The altimeter reads air pressure altitude and may not indicate altitude above actual terrain beneath the aircraft.



 The vertical velocity indicator shows rate of climb/descent in thousands of feet per minute.
 This indicator is especially useful to help maintain level flight and safe descent rates when landing (no more than 1,500 ft/min).



 The engine RPM indicator also uses two needles: the short inner dial indicating 0 – 50% RPM, the larger outer dial indicating from 50% upward.



 The landing gear control handle is used to raise and lower the landing gear. This can be done either by mouse-clicking over the handle or pressing G.



PROCEDURES

Cold Start

The automatic start-up procedure can be activated by pressing LWIN + HOME
Automatic shut down can be activated by pressing LWIN + END.

- 1. Contact the ground crew for electrical power:
 - Open radio menu \
 - Select ground crew F8
 - Select electrical power F2
 - Request electrical power ON F1
- 2. Start the engine:
 - Throttle position OFF END.
 - Engine master switch ON
 - Battery starter switch STARTER (momentarily); then BATTERY



- 3% RPM throttle outboard **HOME** (1st press)
- At 6% throttle to IDLE **HOME** (2nd press)
 - o Check rising fuel flow and exhaust gas temperature

- If 23% RPM not reached within 1 minute, press STOP STARTER to abort the start
- 3. Contact the ground crew to disengage electrical power:
 - Open radio menu \(
 \)
 - Select ground crew F8
 - Select electrical power F2
 - Request electrical power OFF F2
- 4. Close the canopy LCTRL + C

Taxi

- 1. Press LSHIFT + F to lower the flaps.
- 2. Press Numpad+ / Numpad- to manage engine power. Increase engine power to approximately 65% RPM to begin moving forward, then reduce RPM back down to maintain a slow taxi speed.

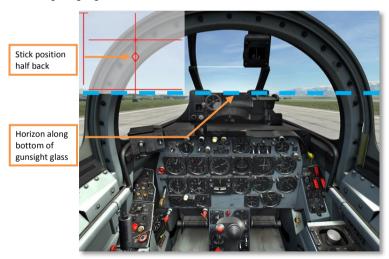


- 3. Test and apply the wheel brakes as needed. W
- 4. To turn while taxing on the ground, engage nose wheel steering. To do so, press and HOLD the nose wheel steering button . While holding down the nose wheel steering button, use the pedals . While holding down the wheel steering button, use the pedals . To turn the nose wheel. When nose wheel steering is not engaged (button released), the nose wheel is self-orienting and cannot be controlled by the pilot.

To perform turns while taxiing, press and HOLD the nose wheel steering button $\[\]$ while using the pedals to turn the nose wheel $\[\]$ / $\[\]$.

Takeoff

- 1. Enter the runway and line up along the centerline.
- 2. Increase engine power to full Numpad+.
- 3. Maintain directional control with slight adjustments in pedal control Z / X. In the initial roll prior to reaching 50 knots, use nose wheel steering for directional control by holding down the nose wheel steering key S. Once above 50 knots, release nose wheel steering to use the rudder and avoid sudden changes in direction.
- 4. When passing 100 knots, pull the stick approximately halfway back using the joystick or by pressing to lift the nose. As the nose begins to rise, reduce stick pull to prevent pulling the nose too high, striking the tail, and crashing. The horizon should be approximately level along the bottom of the gunsight glass.



Cockpit picture as the nose lifts off the ground during takeoff. Note the position of the horizon and the control stick.

5. Once safely off the ground and climbing, raise the landing gear G.

- 6. Once above 100-150 feet of altitude and **140** knots, raise the flaps **F**.
- Maintain a climb angle such that both airspeed and altitude continue to increase.

Landing

- 1. Decrease engine power Numpad- and use the airbrake B to reduce airspeed to 185 knots or less.
- 2. When at **185** knots or less, press **F** to lower the flaps and **G** to lower the landing gear.
- Perform the final approach at approximately 140 knots. Be careful not to reduce engine power too low and lose too much airspeed. Speeds approaching 120 knots and less may lead to a stall, loss of control, and crash. On final approach, the horizon should be approximately level along the top of the gunsight glass.

Horizon along top of gunsight glass

Runway threshold

Airspeed 130-140 kts

Descent rate less than 1500 ft/min

Cockpit picture on final approach. Note the position of the horizon, the airspeed, and descent rate.

Airspeed below 120 knots may lead to a stall, loss of control, and crash!

PROCEDURES

- While passing the runway threshold, reduce the rate of descent by carefully pulling back on the stick and reduce engine power to idle Numpad.
- 5. Aim for a touchdown speed of approximately **115** knots.
- 6. After touchdown, use the rudder for directional control Z / X. Once below 50 knots, use nose wheel steering by pressing and HOLDING the nose wheel steering key S while carefully turning using the Z / X keys.
- 7. Use the wheel brakes **W** as necessary to reduce the landing roll distance.
- 8. Taxi off the runway. Raise the flaps **F** and retract the airbrake if necessary **B**.

Shut down

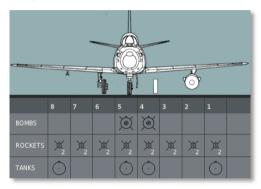
- 1. Set throttle to OFF END.
- 2. Once engine RPM is below 10%, set the ENGINE MASTER SWITCH to OFF.

WEAPONS EMPLOYMENT

The armament of the F-86F consists of:

- 6 internal .50-caliber M4 machine guns mounted in the forward fuselage and loaded with 300 rounds each
- 8 underwing weapon stations, which can be loaded with two freefalling bombs or up to 16 unguided rockets

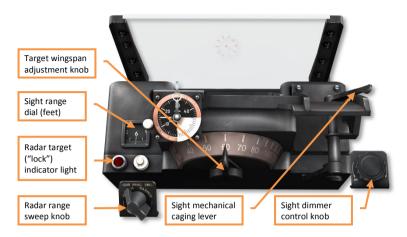
Up to four fuel drop tanks can be carried as well.



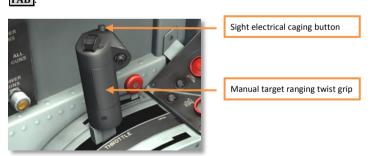
When external weapons are carried, pressing D will cycle between guns and external stores.

A-4 Gun-Bomb-Rocket Sight

Weapons aiming is accomplished using the **A-4 gun-bomb-rocket sight**. For air to air combat, accurate target range is automatically fed to the sight by the AN/APG-30 range-finding radar mounted in the nose. In case the radar malfunctions or provides poor results, aiming can be accomplished by manually entering target range and wingspan data. The A-4 sight also provides computed aiming against ground targets when employing bombs and rockets.



The A-4 sight uses a complex system of gyroscopes to calculate aim. These are sensitive to aircraft maneuvering, which can damage the equipment or build errors into the calculations. To prevent this, the sight is "caged" at all times other than an active target attack. Prior to entering the combat area, the sight is caged *mechanically* using the **Sight Mechanical Caging Lever** located on the sight itself. Once in the combat area, the sight is uncaged mechanically so it is ready for combat use, however until an actual attack is initiated, remains caged *electrically* using the **Sight Electrical Caging Button** on the throttle handle



When caged, the reticle remains in a **fixed** position on the reflector glass and does not provide a computed aiming solution. When uncaged, the reticle appears to "**float**" on the reflector glass in response to aircraft maneuvers and provides a computed aiming solution.

Weapons Control Panel

The weapons control panel is located on the center console below the instrument panel. This panel includes a number of important controls for configuring weapons for fire.



- Gun-missile safety switch. Must be set to GUNS for any weapons to fire.
- Bomb release selector switch. Sets bombs for AUTO or MANUAL RELEASE mode. In manual release mode, bombs are released when the pilot presses the bomb-rocket release button on the control stick. In automatic release mode, the A-4 sight automatically provides a release signal when the calculated release point is reached after the bomb-rocket release button is pressed and HELD down RALT + SPACE.
- Bomb sequence selector switch. Sets the release sequence of bombs between: LEFT, RIGHT, or BOTH.
- Function selector lever. Sets the gunsight aiming mode based on selected weapon platform (GUN, BOMB, ROCKET) D.

Air to Air

- Preparation for combat:
 - Gun-missile safety switch GUNS
 - Function selector lever GUN
 - Sight mechanical caging lever UNCAGE (right)
 - Sight electrical caging button CAGE (if not caged already) TAB. Check reticle to be fixed on the reflector glass (caged).
 - Target wingspan adjustment knob set to correspond to anticipated target 7 / ... Note: the wingspan is set primarily as a precaution in case the ranging radar fails during combat.

2. Engagement:

Once a target is successfully locked by the ranging radar, the radar target indicator ("lock") light will light and the target range will be displayed on the sight ranging dial. To reset the radar to search for a new target, press the radar target selector button ENTER. Do not uncage the sight until ready to attack the target.

Sight electrically caged (reticle fixed)

Target range displayed on range dial

Radar target indicator light ON



wingspan set

- Maintain the sight caged until settled on the attack run with the fixed reticle placed on the target.
- Uncage the reticle using the sight electrical caging button TAB. The reticle will now "float" on the reflector glass in response to aircraft maneuvering. Place the reticle over the target, track the target for at least one second, then press SPACE to fire the guns.



The ranging radar may suffer from ground interference when operating at low altitudes (below 6,000 ft). If so, try turning down the radar range using the radar range sweep knob of the gunsight control box.

If the ranging radar is ineffective/inoperable, estimated target range must be continuously adjusted by the pilot using the throttle twist grip . / . If the target wingspan is set correctly for the sight, accurate range setting occurs when the target's wingtips are just within the diamonds of the reticle when viewed from behind

Air to Ground - Guns

When attacking ground targets with guns, the A-4 gunsight is **caged** and the reticle is used as a fixed 100-mil aiming reticle. To set the reticle to 100 mils, cage the sight and set the target wingspan to **60** feet $\sqrt{}$



100-mil **fixed** reticle

Sight mechanically caged

Target wingspan set to **60** feet to provide 100mil reticle

1. Preparation for combat:

- Gun-missile safety switch GUNS
- Function selector lever GUN D
- Sight mechanical caging lever CAGE (left). Check reticle to be fixed on the reflector glass (caged)
- Target wingspan adjustment knob set to 60 feet // / ... Note: the wingspan is set to 60 feet in order to display a 100-mil reticle with the gun sight caged.

2. Engagement:

 The caged reticle does not provide a computed aiming solution. Estimate the impact point considering bullet fall. Fire a short burst to check the aiming error, readjust aim as needed, and fire the full burst for effect on target. The 50-caliber machine guns have a limited maximum effective range of about 1,000 yards.

Air to Ground - Rockets

Rockets are powerful, but unguided munitions. They are best used against area targets (in particular concentrated groups of lightly armored vehicles) at close range for maximum accuracy.

Rocket attacks are best performed in a dive of at least -30°. This requires the attack to be planned and executed well with sufficient altitude to perform the dive, aim, fire, and turn away from the target at a safe distance. For best results, begin the attack at an altitude of at least 3,000 feet above the target. Complete the attack and turn off the target at an altitude of no less than 1,500 feet.

Horizon position

Dive angle

Altitude 2,000 ft

Function selector lever set to ROCKET



Preparation for combat:

- Gun-missile safety switch GUNS
- Function selector lever ROCKET D
- Sight mechanical caging lever UNCAGE (right)
- Sight electrical caging button CAGE (if not caged already)
 TAB. Check reticle to be fixed on the reflector glass (caged).

2. Engagement:

 Maintain the sight caged until settled on the attack dive with the fixed reticle placed on the target.

WEAPONS EMPLOYMENT

Uncage the reticle using the sight electrical caging button TAB.
 The reticle will now "float" on the reflector glass in response to aircraft maneuvering. Place the reticle over the target, track the target for about three seconds, then press R.ALT + SPACE to fire the rockets.

Air to Ground - Bombs

Like rockets, bombs are unguided munitions. Using them effectively takes practice, especially given the Sabre's limited payload of only two bombs, which can be dropped simultaneously or individually.

Accurate bombing results are best achieved using steep dive angles of -45° or greater. This requires plenty of starting altitude to take time to set up the dive, take the required time to aim and release the bombs, and then pull out of the dive safely. For best results, begin the attack at an altitude of at least 10,000 feet above the target. Complete the attack and turn off the target at an altitude of no less than 4,000 feet.



Function selector lever set to BOMB

Dive angle -45°

Altitude 8.000 ft.

1. Preparation for combat:

- Gun-missile safety switch GUNS
- Function selector lever BOMB D
- Bomb sequence selector switch set to LEFT, RIGHT or BOTH as desired.
- Sight mechanical caging lever UNCAGE (right)
- Sight electrical caging button CAGE (if not caged already)
 TAB. Check reticle to be fixed on the reflector glass (caged).

2. Engagement:

- Approach the target in level flight from your starting altitude.
 Position the target at approximately your 3 or 9 o'clock position (directly to your right or left).
- Maintain the sight caged until settled on the attack dive with the fixed reticle placed on the target.
- Uncage the reticle using the sight electrical caging button TAB.

 The reticle will now "float" on the reflector glass in response to aircraft maneuvering. Place the reticle over the target, track the target for about three seconds, then press RALT + SPACE to release the bombs. If AUTOMATIC bomb release mode is selected on the bomb release selector switch, press and HOLD RALT + SPACE while maintaining the reticle over the target until the A-4 sight automatically commands the bomb release at the correct moment.
- Close the speed brakes B while recovering from the dive.

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