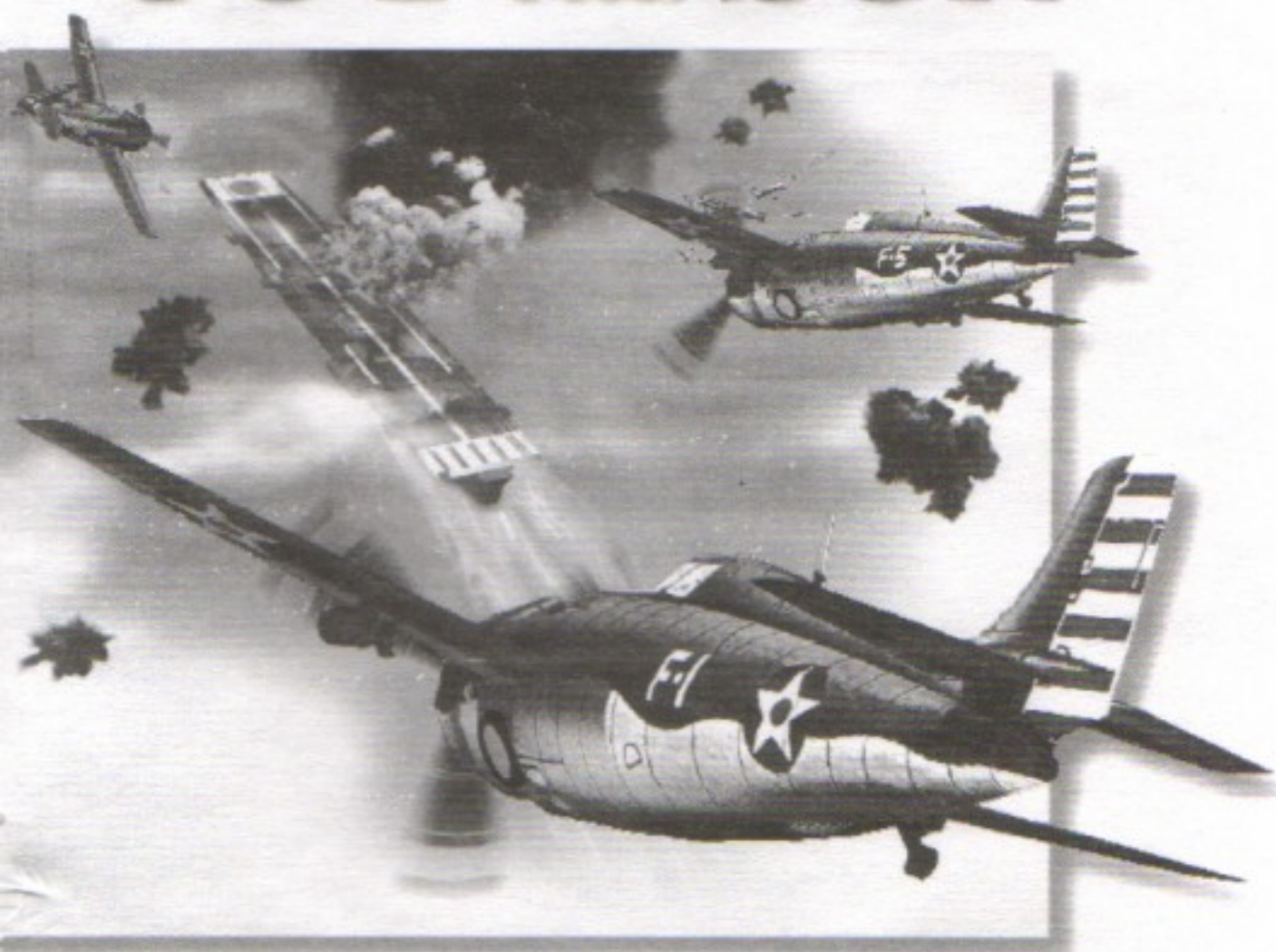


*OPERATIONS MANUAL*

# OUT OF THE SUN



DOMARK

EIDOS  
INTERACTIVE

OPERATIONS MANUAL

OUTLINE



EIDOS

ED(MARK)



# OUT OF THE SUN

## Table Of Contents

|  |           |
|--|-----------|
| <b>Foreword</b>                            | <b>4</b>  |
| <b>Chapter I:<br/>Quick Start</b>          | <b>5</b>  |
| <b>Chapter II:<br/>Starting the War</b>    | <b>9</b>  |
| <b>Chapter III:<br/>Mission Briefings</b>  | <b>15</b> |
| <b>Chapter IV:<br/>Flight School</b>       | <b>37</b> |
| <b>Chapter V:<br/>Three Great Battles</b>  | <b>59</b> |
| <b>Chapter VI:<br/>Aircraft of the Era</b> | <b>73</b> |
| <b>Tech Support</b>                        | <b>91</b> |

# OUT OF THE SUN

## Foreword

As the Producer for Out of the Sun, I wanted to personally thank you for your purchase. Our development team worked very hard to provide a game that was realistic, challenging, and fun. We hope that the week-ends, late nights, and "spirited discussions" we invested show through in the quality of the game. After all, we designed it with you in mind!



Bryan Walker  
Simulations Producer,  
Domark



*Bryan Walker's previous life. Bryan is a Gulf War veteran Apache pilot and gunner, and now lead Producer for flight simulations for Eidos Interactive.*

## CREDITS

Producer:

Programming:

Mac/Power Mac Programming:

3D Objects:

Graphic Artists:

D-Day Scenarios:

Kursk Scenarios:

Midway Scenarios:

Interface Design:

Box Design:

Manual:

Manual Layout:

Testing:

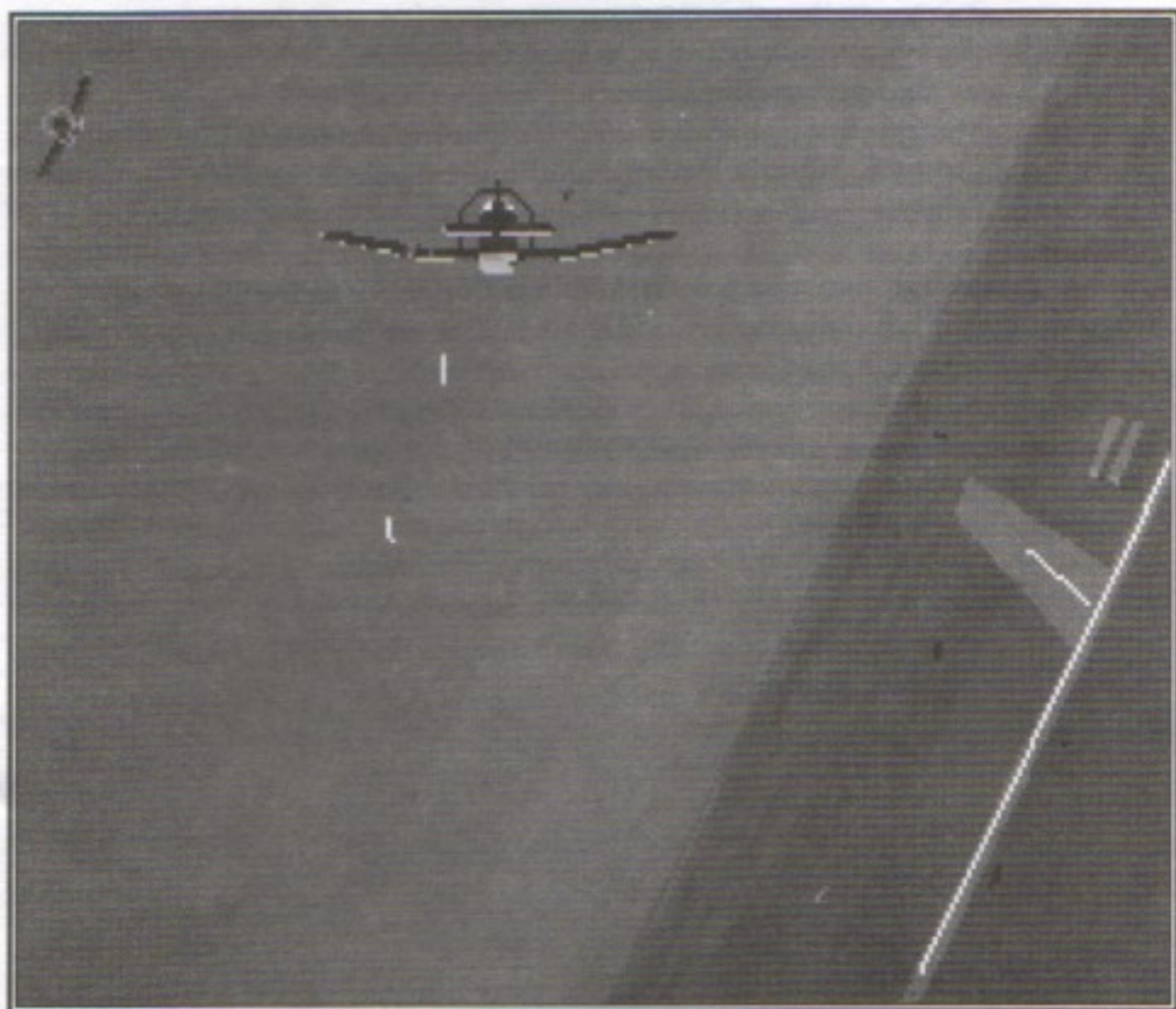
Research:

Bryan Walker  
Dave Payne and Jonathan  
Newth at SIMIS, Colin Boswell  
Colin Boswell, Michael Kelly  
Alan Tomkins, Andrew Osiow,  
Dee Lee  
Melissa Piccone, Rebecca  
Shearin  
Bryan Walker  
Alan Tomkins, Bryan Walker  
Matt Miller  
Melissa Piccone, Colin Boswell,  
Michael Kelly  
LOUIS SAEKOW DESIGNS  
and Andrew Osiow  
Matt Miller, Alan Tomkins, & Bryan  
Walker  
Matt Miller  
Jeff Cushenberry, Jason Ridge,  
Bryan Walker, Stewart Leber  
Andrew Osiow, Bryan Walker, Alan  
Tomkins, Melissa Piccone



# OUT OF THE SUN

## Chapter I Installation & Quickstart



**OUT OF THE SUN**

# OUT OF THE SUN

---

## INSTALLATION

Out Of The Sun requires System 7.0.X or greater to run. You will also need 3500 K of memory available on your computer. Out Of The Sun will run better with more memory allocated to it. If you don't plan on running other programs with Out Of The Sun, you may wish to allocate more memory to the program. You can do this by single-clicking on the OOTS icon (after installation), highlighting it, and pressing ⌘-I. This will bring up the Get Info screen. Here you can change the Preferred size of the program to whatever our computer can handle.

### CD-ROM

- Turn on your Macintosh. After your system boots, insert the CD into the CD-Rom drive.

- An Out Of The Sun CD Icon will appear on your desktop.

- Double click on this icon to open up the CD.

- To start the game, double click on the OOTS icon.

- The game plays direct from CD, saving you Hard Disk space with a sacrifice in loading speed. If you have enough Hard Disk space (about 14 megabytes), you may wish to transfer the files onto your Hard Drive.

- To do this, select FINDER from the chooser menu and then press ⌘-N. This will create an Untitled Folder on the desktop, rename this folder Out Of The Sun.

- Copy the contents of the CD into the Out Of The Sun folder you've just created. Do this by highlighting all the files on the Out Of The Sun CD and drag them (click and hold, then move the mouse) into the folder.



## QUICK START

- Install Out of the Sun following the enclosed directions. To begin Out of the Sun, double click on the OOTS Icon in the Out of the Sun folder on your desktop.
- When the Select Theatre screen appears, click on the ARENA button in the lower right hand corner.
- You will then be asked "Which Theatre" to fly in, choose PACIFIC, then click OK.
- Now you will be asked what plane you wish to fly in. Choose "P-51 MUSTANG" under the United States heading. This is one of the easiest aircraft to fly in Out Of The Sun.
- Now go up to the Menu Bar at the top of the screen. Click and hold on DISPLAY, and select the highest resolution available to you. Resolutions that can not be displayed on your size monitor will be grayed out, and not available for use.
- You will probably want to choose what controller type you are using in the CONTROLS menu. This can be keyboard, mouse, or any one of several types of Joysticks.
- We will also want to make sure that the skill level is set correctly, so click and hold on the SIMULATION item, and select ARCADE.
- We will also want to eliminate the effects of G's pulled by your pilot, so you don't black out in the first turn you make. Please make sure that G-L.O.C. is not checked in the SIMULATION menu item.
- With all the menu selections made, we now need to select what we are going to battle. Click on OK.
- If you haven't changed your resolution or your skill level yet, click on GO BACK to move to the previous screen and follow the previous steps again.
- We will want a pretty easy enemy to start you off with, so lets face off against 1 Devastator. Click on the 0 in the box next to the Devastator in the menu and hold. Drag the cursor over the 1 and release. This will have you going up against only 1 Devastator.
- With your opponent select, you will be able to click on the OK button



and jump into the sim.

- You will be in the air heading straight on to a Devastator in your sights.

For control of your aircraft just remember these easy tips:

- World War II Era craft were nowhere near as maneuverable as modern fighter aircraft, and are a lot less forgiving. Watch your airspeed in a hard bank or climb, and don't let it fall into the red area on the air-speed dial, as you will stall.

- The sight for your guns only tells you the point in front of your plane where your bullets harmonize. This means that to hit targets not directly in front of you, you will need to "lead" them with your guns. In other words, fire where they are going to be, not where they are.

- A complete list of Keyboard Commands can be found on a reference card inside of the box that Out Of The Sun came in.

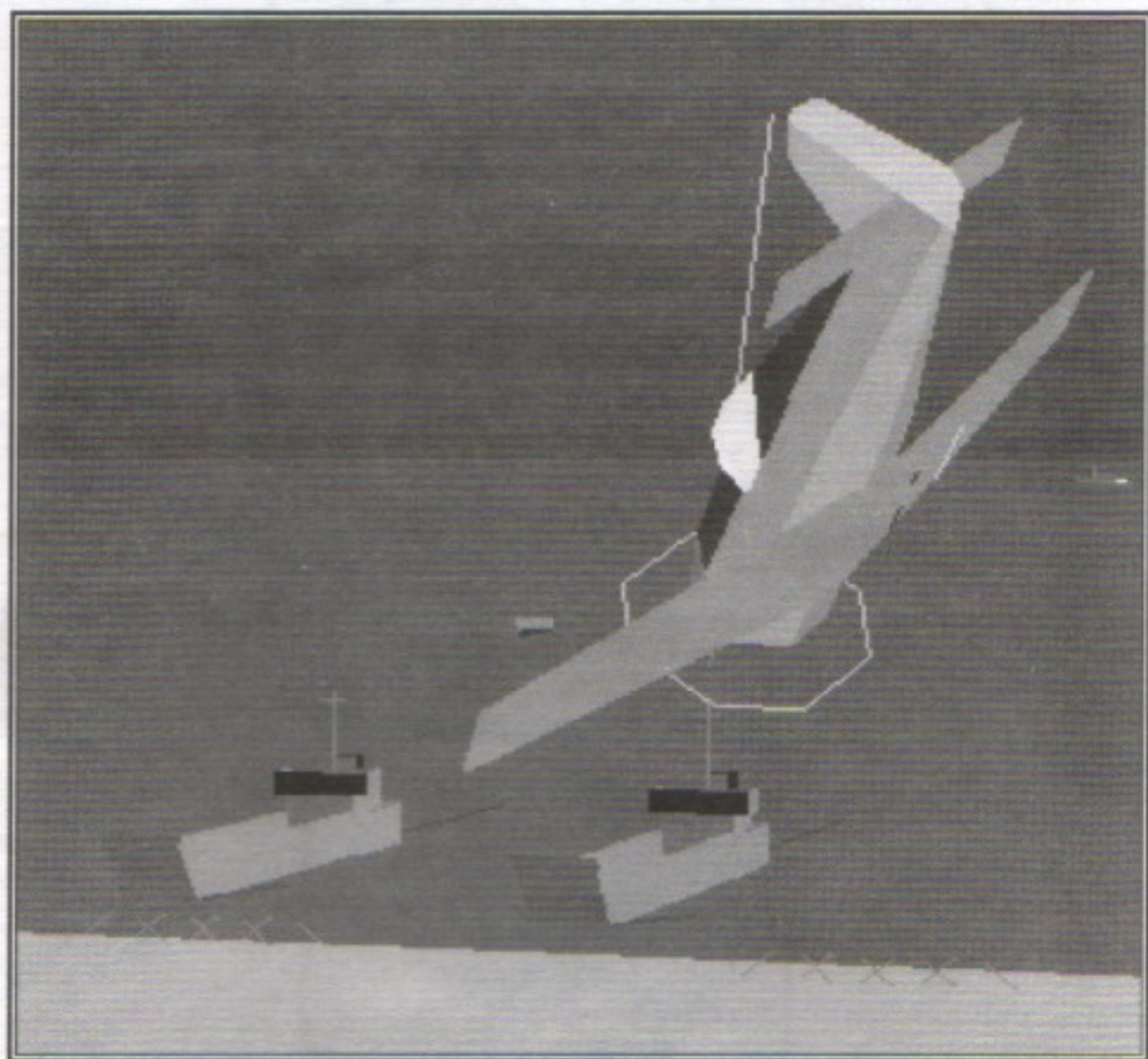
- Here are some tips for people who have a hard time when taking off from a runway or carrier deck:

- 1] Throttle up to 100% (hit the number 0 on the keyboard).
- 2] As you travel down the runway, pitch the nose down slightly. This will get the tail wheel off the ground in taildragger aircraft.
- 3] Put your flaps down to 10°, by pressing "J" once. This will help the wings produce more lift.
- 4] When you reach the edge of the runway or deck, pitch the nose up by pulling back on the stick.
- 5] Once in the air, quickly retract the landing gear ("G") and put the flaps back to 0° ("V").
- 6] Fly at about a 10° climb until your speed gets up over 150 knots. Maneuver towards your expected targets and get your altitude up (about 1000-3000 feet).
- 7] You are now ready for whatever mission you have chosen to undertake.



# OUT OF THE SUN

## Chapter II Starting A War



OUT OF THE SUN



## For God and Country

In Out Of The Sun (OOTS), we allow the player to fly as a pilot for any of the major Axis or Allied nations. This enables him to see the conflict from both sides, and share in the victories of all the countries.

### Starting The Game

Double Click on the OOTS Icon to bring up the game. OOTS only runs in 256 color mode, and if your machine is not in that mode, then you will be asked to switch it automatically. The game will switch back automatically to whatever you had previously when you quit OOTS.

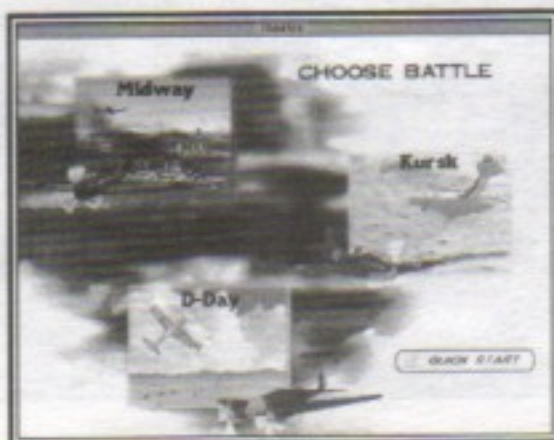
You must have system 7.0 or greater to run the game. If the game is not loading properly, you may have other programs running in the background that are interfering with the execution of OOTS. These programs are called Extensions, and they can be disabled by holding down the SHIFT key while your computer restarts or first boots up. If you are having problems running OOTS, try restarting your computer with the extensions disabled.

One note is that the driver that operates your CD-ROM is also an extension, so you can't circumvent the extensions this way with the CD-ROM version of OOTS. See the Troubleshooting section for more info.

When the game finishes loading, you will be presented with the Choose Theatre screen.

### Choose Theatre

Here you will decide what battle you wish to participate in. OOTS gives you access to three major battles of WWII, Midway, D-Day, and Kursk. Pick which Theatre of Conflict you want to participate in.





## Choose Mission

You will then be presented with a newspaper proclaiming the exploits of that particular battle. The articles are actually mission descriptions. Move the magnifying glass over a particular headline, and the highlighted article will appear on the side. Click on OK with an article chosen to move on to the next selection screen.



## Select Side

You will be asked here which country you want to fly for. This will effect what aircraft you can choose from, and the aircraft all have different sub-missions in the main goal of the scenario you are playing out.

A brief description of the battle you have chosen is in the right hand column of the screen.

On this screen you can flip to a map of the conflict area by clicking on the folded up edge of the photo.







## **Menu Bar**

Pressing ESC or ~ while in the sim will pause the game and bring up the Menu Bar.

### **File**

#### **RETURN TO FLIGHT SIM**

This option will put you back in control of your aircraft.

#### **EXIT FLIGHT SIM**

This will bring you back to the Mission Selection Screen, aborting the current mission.

#### **SHOW HIGH SCORES**

This will display the list of the Top 10 pilots in Out Of The Sun.

#### **QUIT**

Exits the current game.

## **Display**

### **SCREEN RESOLUTION**

You can pick from the following resolutions. (Resolutions your monitor can not display will be grayed out): 320x240, 480x300, 512x380, 640x480, 800x600, 1024x768.

### **HORIZON SHADING**

The gradient horizon can be shut off to speed up gameplay.

### **GROUND SHADING**

The distance hazing can be shut off in order to speed up gameplay.

### **SMOKE**

The smoke that pours from damaged aircraft can greatly reduce the speed of the game on slower (030) based machines. Turn off this option if you want faster frame rates in dogfights.

### **HIGH DETAIL**

With this option on, your computer will put the most detail possible into the objects in OOTS. Slower machines will want this shut off.

### **CULTURAL ITEMS**

Several items on the battlefield are for "show" and have no effect on the outcome of any battle. These can be shut off with this option.



## Controls

### KEYBOARD

This will give you control of the aircraft using the Arrow keys on your keyboard, or the Numeric Keypad.

### MOUSE

This will put control of the Joystick style functions onto the mouse. Control this way can be more natural than keyboards.

### JOYSTICK

Any brand of joystick will give you excellent control of the sim.

### THRUSTMASTER JOYSTICK

These joysticks offer many keyboard functions duplicated on the buttons on the stick itself, see the command summary card for a full list of functions.

### FLIGHTSTICK PRO

This stick also has functions assigned to the extra buttons, which are explained on the Command Summary Card.

## Simulation

### SKILL LEVEL

- **Arcade:** You will be in a "souped-up" plane with your enemies in poor-performing aircraft. You will be able to easily outperform most aircraft in this mode.

- **Training:** Here you will be in your high-performance aircraft, while your enemy will be flying better planes. It's going to be more of a challenge.

- **Combat:** Your plane will now have the same performance that our WWII vets had to tackle. These planes will give you of a feeling to what the pilots had to go through. The computer enemy is going to be in the hindered aircraft that they were flying in the Arcade mode.

- **Veteran:** Here your aircraft will use the same flight model that you became familiar with in the Combat level (accurate flight models). However, the computer will be flying planes with the same level of performance as you, making this the toughest of the skill levels.

### G-L.O.C.

This affects whether or not the sim displays the effect of G-L.O.C. (Gravity-Induced -Loss Of Consciousness). With this checked, you will see Blackouts (from too many G forces) and Redouts (from too many negative G forces) graphically displayed in the simulator.



# OUT OF THE SUN

## Chapter III Mission Briefings



OUT OF THE SUN



## ***Air Combat Arena***

In the Arena you will go head to head in any aircraft in Out Of The Sun against up to four of all the other aircraft available.

Do you want to know if you could handle a Mustang against a Spitfire? Or how about seeing who is better at the delicate controls of the Zero, you or your Macintosh?

Select the Arena button in the Choose Theatre screen. This will enable you to dogfight the computer every aircraft in the game.

You will first be asked **Which Theatre?** The choices are either Pacific or European. The Battle map is actually a small scale map of the world, and your starting point (and that of your enemies) will be determined by the Theatre you choose.

All the aircraft will start in their Geopolitically correct locations. Some liberties were taken however in inserting Japanese aircraft into Europe and German planes in the Pacific.

Choose the aircraft you wish to fly in by clicking on the aircraft's name.

Now you must decide what sort of opposing force you are going up against. You can choose any aircraft (even the one you are flying) by giving it a value of 1 to 4 (as to the number that must be shot down before the end of the mission).

Yes, it is possible to choose four of every aircraft in the game.

Click OK to enter the sim.

You will start in the air at full throttle. You must keep you eyes peeled as the enemy is at hand.

The enemy aircraft will be in the air soon, and tracking them down can be tough. Press M on the keyboard to get the in game map and look for the Red dots. These are the bandits you are being asked to down.

The Bandits should be heading right towards you.

As soon as they have a visual on you, the Bandits will break and engage you in air-to-air combat.



As a special bonus, we have included a trio of Me-262's circling off the west coast of Africa.

There is also plenty of scenery to look at around the globe, a few examples are the Kremlin, Eiffel Tower, or the English Parliament Building.

## MIDWAY: The Game

### *Dawn Air Raid*

The Japanese launch a major strike against the island defenses of Midway.

Since the Japanese played the largest role in this part of the operation, you can play any of the three Japanese aircraft in the battle. The Americans were able to raise a small flight of Wildcats and Buffalos to take on the initial force, but they were hopelessly outclassed, and out-gunned by the Japanese.

**ZERO:** You have a vital role to play in this action. Not only must you protect the bombers from the Yanks, but you should also try to make the Island as defense-free as possible for the dive bombers as well.

Your primary mission will be to protect the Kates and Vals from the American Fighters. They're tough, but the bomber's tailgunners will help you out.

Your secondary mission is to do as much damage as possible to Midway Island herself. Try to eliminate the AA Guns for the bombers. Follow a heading of 090 (due East) and watch out for enemy fighters. Midway Islands should be in visual range in 5 minutes.

**VAL & KATE:** You will face some tough times ahead as the American Wildcats try to take you out before reaching the Island. Follow a heading of 090 (due East) and watch out for enemy fighters. Midway Islands should be in visual range in 5 minutes. Ignore these fighters, and let your tail gunner take out any planes that get behind you. When you reach the island, climb to an altitude of 6,000 to 15,000 feet.

Your primary mission is to Dive Bomb Midway Island. Attempt to do as much damage as possible. There are two targets that will ensure success in the mission, the Hospital and the Headquarters. The Hospital is located on the Eastern Island, and the HQ on the west one.

**WILDCAT:** You are hopelessly outclassed here. Zeros can fly circles around your bird. Concentrate on the bombers (Vals and Kates). Fly a heading of 270 (due West), until you see the flight of Japanese aircraft.



---

## ***Retaliation***

The Americans have learned the location of the Japanese carriers, and Midway Island defenses are launched to take it out. American Dauntlesses, Devastators, and Wildcats are launched to attempt to sink the carriers.

Zeroes were launched for protection of the carriers, and the fleet was heavily defended with AA gun fire that was so tight, you could nearly walk on it.

**DAUNTLESS:** Launch from Midway Island and fly head at a bearing of 270 (due West). Your primary objective is the carriers, so concentrate on locating them within the fleet.

When you reach the fleet, climb to an altitude of 6,000 to 15,000 feet to dive bomb the decks. The easiest way to do so would be to aim for the rising sun the Japanese painted on the decks of their carriers. Use this as your target.

With the carriers destroyed, or when you are out of bombs, head back to Midway at 090 (due East) and debrief.

**DEVASTATOR:** Brush up on your Torpedo skills, as this will be your first true test.

Take off from Midway and follow your flight group to the fleet. The heading is 270 (due West). You should arrive in about 5 minutes.

Your primary target is the carriers. You have one torpedo (two in Arcade and Training modes) so make your shot(s) count. Remember, fly under 100 feet and under 100 Knots in order for your torpedo to arm correctly.

Upon completion, fly back to the Yorktown at a bearing of 045 (North East).

**ZERO:** Give your plane a good systems check and launch off the deck. Circle the fleet in a Combat Air Patrol.

Use your Map and pinpoint the location of the American forces. When they reach visual range, break your circle pattern and engage the bombers. You've got a lot of Zeros in the air, and history is on your side. You won this engagement once, it's time to do it again...



## ***The Tide Turns***

The Soryu, the Kaga and the Akagi, three of the Japanese's mightiest carriers, fall prey to the torpedoes and bombs of the squadrons of the U.S.S. Yorktown. More American planes take place in this mission, so it can get very one sided quickly.

**DAUNTLESS:** Launch from the Yorktown and head at a bearing of 225 (South-West). Your primary objective is the carriers, so concentrate on locating them within the fleet.

When you reach the fleet, climb to an altitude of 6,000 to 15,000 feet to dive bomb the decks. Aim again for the rising sun on the decks. There will be less opposition here then there was previously, so you may have an easier time at this than originally thought.

When the carriers are destroyed, or when you are out of bombs, head back to the Yorktown at 045 (North-East) and debrief.

**DEVASTATOR:** More Torpedo action is in store! Since Midway's defenses couldn't take out the carriers, it's up to you to sink these ships.

You'll start in the air over the Yorktown, so follow your flight group to the fleet. The heading is 225 (South-West). You should arrive in about 5 minutes. Your primary target is the carriers. You have one torpedo (two in Arcade and Training modes) so make your shot(s) count.

Remember, fly under 100 feet and under 100 Knots or your fish won't arm correctly. Upon mission completion, fly back to the Yorktown at a bearing of 045 (North East).

**ZERO:** Give your plane a good systems check and launch off the deck. Circle the fleet in a Combat Air Patrol.

Use your Map to pinpoint the location of the American forces. When they reach visual range, break your circle pattern and engage the bombers. Your carrier is your life, so don't let them fall. If you do you have no place to land!

Every new attack by the Americans seems to weaken the defenses a little bit more. You will have less wingmen available to help you on this mission than you've had previously. Good luck.



## ***Battle For Honor***

In retaliation for the sinking of the Akagi and Soryu, the Hiryu launches Kate and Val torpedo planes and bombers against the U.S.S. Yorktown.

**VAL:** Launch from the deck of the Hiryu and come to a bearing of 090 (due East). You should see your flight group in the air ahead of you.

Link up with the group and fly for about 3 minutes. You should get a good visual on the Yorktown. This accomplished, you will need to climb up to an altitude of 6,000 to 15,000 feet.

Get ready to dive-bomb the deck of the Yorktown. There are a LOT of Wildcats patrolling the area, and the AA fire will be thick. This mission is not going to be a cakewalk.

Once you have dropped all of your bombs, return to the Hiryu at a bearing of 270 (due West) for refueling and rearming. Chances are the Yorktown will be a tough target!

**KATE:** You'll start in the air over your fleet. The main body of your strike force will be with you on your run.

Fly a bearing of 090 (due East) until you get a visual on the carrier. Drop your altitude to under 100 feet and your speed to under 100 knots. This is tricky! Release your torpedo, and make the shot count!

There will be heavy CAP (Combat Air Patrol) cover, so you had better link up with a Zero on your way in to take out any Wildcats you encounter.

**WILDCAT:** Check your plane and launch off the deck. Circle the fleet in a Combat Air Patrol.

Use your Map and pinpoint the location of the Japanese forces. When you get a visual, break your circle pattern and engage the bombers. Don't lose your carrier, or you will have no place to land your aircraft.



## ***Honor Regained!***

The U.S.S. Yorktown is the only carrier the Japanese scouts have spotted so far. The Hiryu however remains hidden East of the American fleet. Now the Japanese will use their stealth to deliver a fatal blow to the pride of the American fleet.

**VAL:** Launch from the deck of the Hiryu and turn to a bearing of 125 (South East). You should see your flight group in the air ahead of you.

Link up with the group and fly for about 3 minutes. You'll soon be able to identify the Yorktown. This accomplished, you will need to get up to an altitude of 6,000 to 15,000 feet.

Get ready to Dive Bomb the deck of the Yorktown. There are less Wildcats in the air, and the AA fire will be of a lesser magnitude.

Go for the kill! The loss of the Soryu, Akagi, and Kaga must be avenged! Return to the Hiryu at a bearing of 270 (due West) for your medal!

**KATE:** You'll start in the air over your fleet. The main body of your strike force will be with you on your run.

Fly a bearing of 090 (due East) until you get a visual on the carrier. Drop your altitude to under 100 feet and your speed to under 100 knots. Hopefully you have practiced enough by now to get this right! You only get one torpedo, so make the shot count!

There will be moderate CAP (Combat Air Patrol) cover, so you had better link up with a Zero on your way in to take out any Wildcats you encounter.

**WILDCAT:** Check your plane and launch off the deck. Circle the fleet in a Combat Air Patrol.

Pinpoint the Japanese air forces using the Map function. When they come within visual range, break and attack.

If your carrier is destroyed, your mission will be a failure as you have no other place to land.

The Yorktown was the U.S. forces biggest loss of the battle. This is your attempt to alter history.



---

## ***The Final Blow***

The battle concluded with a final strike against the Hiryu by the American carriers Enterprise and Hornet. History credits the Americans with four carriers in one day. Can you be as successful?

**DAUNTLESS:** Launch from the Enterprise and fly on a bearing of 270 (due West). Your primary objective is the carrier, so concentrate on locating her within the fleet.

When you reach the fleet, climb to an altitude of 6,000 to 15,000 feet to dive bomb the decks. Aim again for the rising sun on the decks. There will be less opposition here than before, so you should have an easier time at this than originally thought. In reality, the Japanese only launched three Zeros to stave off this attack.

The carrier's destroyed, or when you're out of bombs, head back to the Enterprise at 090 (due East) and debrief.

**DEVASTATOR:** Your final torpedo run is underway! You get the best shot at sinking the fourth Japanese carrier, an outstanding victory that will be remembered for years to come!

You'll start on the Hornet, so launch right away and follow your flight group to the fleet. The heading is 270 (due West). You should arrive in about 3 minutes. Your primary target is the carrier. You have one torpedo (two in Arcade and Training modes) so make your shot(s) count.

Remember, fly under 100 feet and under 100 Knots or your torp won't arm correctly. Upon mission completion, fly back to the Hornet at a bearing of 090 (due East).

**ZERO:** Give your plane a good systems check and launch off the deck. Circle the fleet in a Combat Air Patrol.

Use your Map to pinpoint the location of the American forces. When they reach visual range, break your circle pattern and engage the bombers.

It's you and three wingmen against the entire air mass of TWO American carriers. Things look pretty grim here, but then none of the Americans are flying the Rei-Sen!



## D-Day: The Game

### Operation "Overlord"

The D-Day scenario takes place as Operation Overlord begins, with Level bombers attacking hardened German positions and German aircraft doing their best to stave off the Allied Invasion:

### *Low-Level Escort*

Flying over 1,000 sorties on the first day of the invasion, Allied planes literally filled the skies over the beaches. Bombers and close-attack aircraft played particularly crucial roles, attacking German positions and supporting the battle on the ground. In reality, the Luftwaffe had offered almost no resistance to the onslaught. However, this mission examines the possibilities of a stronger Luftwaffe interceptor force ready to face off against the waves of Allied bombers.

**SPITFIRE:** Originally briefed to watch for for any marauding Luftwaffe aircraft approaching the beaches, your flight of new Spitfire pilots get a desperate call for help from a flight of B-25s. The linkup with their escorts didn't happen, and German fighters are attacking!



You're about 30 seconds behind the flight of B-25s, with your rookie wingmen near the bombers. Follow the bombers as they deliver their ordnance on a forward command post, keeping the attacking fighters at bay. At least half of the B-25s must survive.

**FW-190:** In the chaos of the invasion, you've become separated from your wingmen. Attempting to locate them, you instead find a flight of unescorted Allied medium bombers off your nose! No sooner do you key the nitrous injection than the glint of sunlight reveals a flight of Spitfires behind the bombers. If only your wingmen were here to help!

You'll start this mission with the bombers coming into sight off your nose. You're badly outnumbered, and the B-25s are tough opponents even without escorting fighters. Even so, you must destroy at least two of the bombers.



## **Air Superiority**

Controlling the airspace over the beaches was an absolute necessity for the invasion of Normandy to succeed. In this mission, seasoned P-51 pilots face a frantic German attempt to gain air superiority, and attack the landing forces.

**MUSTANG:** Your loose formation of P-51s is approaching the beaches at full throttle. You're here to make CERTAIN that the skies are clear of German fighters. Suddenly, you see something approaching at incredible speed. Just as your wingmen report Fw-190s strafing the beaches, you realize you're facing an Me-262. If you attack the jet, soldiers on the beach could die. Focus on the Fw-190s, and you'll be vulnerable to the jet's cannons.

You'll start this mission about a minute north of the beaches. Your wingmen will immediately attack. Bag at least two Fw-190s, while defending your wingmen. There are dozens of other missions going on, so don't be surprised by unexpected arrivals.

**BF-109:** Thrown into your aircraft with almost no warning, you're told to head north to the beaches and engage any enemy aircraft you see. Looking to your right, you see other pilots scrambling into their Fw-190s, loaded for ground attack.

Once airborne, you turn northeast and see several other friendlies heading towards the invasion force in a ragged formation. Joining up as best as you can, you realize that you don't even know which radio frequency to use! Scanning for enemy fighters, you quietly steel yourself as the enormous invasion force comes into view.

Take off immediately, and turn to the northeast. Follow the other aircraft and defend those strafing the invaders. Downing two enemy aircraft and landing back at your airfield will be your goal.

**FW-190:** The invasion has begun! Told only to fly to the beaches and shoot every target you see, you silently curse this chaos...

Take off and immediately turn northeast. Try to join up with the formation as it approaches the beaches. Focus on any high-value targets, particularly landing craft disembarking vehicles. Destroying six targets and landing back at your airfield will be your goal.



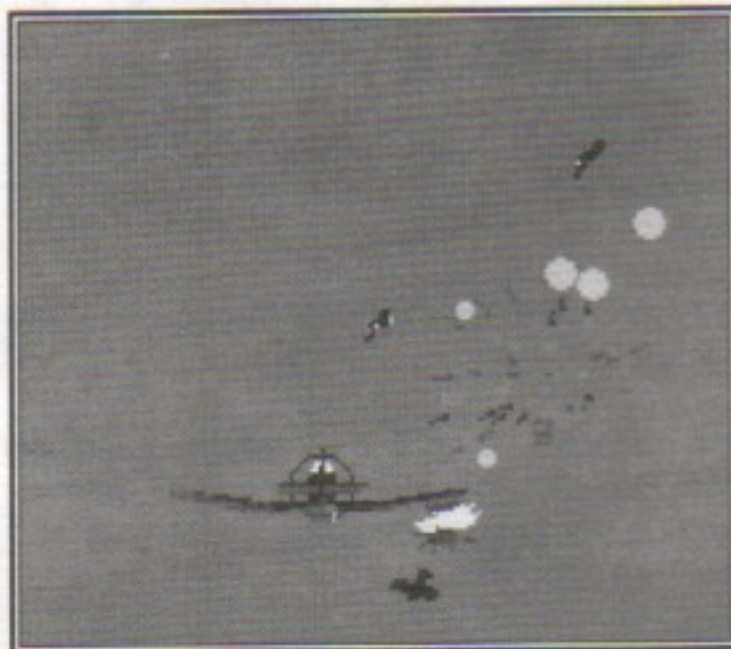
## ***Search and Destroy***

While not as glamorous as the air superiority missions, the success of close-attack sorties was particularly vital to the Allied strategy. While most Luftwaffe airfields near the beaches had been pounded to rubble, this mission focuses on an Allied raid against a functional and well-defended airfield near the coast.

**TYPHOON:** One of five Typhoons sent to level an airfield that survived intense high-altitude bombing, your flight heads south at tree-top level. As the airfield quickly comes into view, you see precisely what you didn't want to see: Enemy fighters just taking off! Counting four bandits, you hope that the two P-51s escorting you are up to the task. Heavy anti-aircraft fire suddenly opens up, leaving you to wonder if the high-altitude bombing had any effect at all! Nonetheless, you're determined to accomplish the mission.

Continue south and attack the airfield off your nose. Destroy at least six ground targets with rockets, cannons, or your single 250-pound bomb. Be prepared to defend your wingmen if the P-51s run into trouble.

**Bf-109:** The bad weather has protected your forward air bases from intense bombing. However, a panicked observer has reported attack aircraft heading towards your western base. There are only three Bf-109s available at your field, but your wingmen are seasoned veterans! Radio traffic from the western base says that four Fw-190s are being scrambled, but you know that these pilots are barely more than children. The day lies in your hands!



Take off immediately, and head west towards the airbase under attack. Your wingmen are aces, and will provide valuable support. Even though you seem to have the edge, press the attack against the Typhoons strafing the airfield. The parked He-177 must be protected. Destroy any enemy aircraft you encounter, and land at either airfield.



## ***The Wolfpack***

Waiting for the right moment, the Luftwaffe has sprung a trap! Six of the fast Ju-188 bombers have been sent on a low-level mission against the vulnerable landing craft and transports along the beaches. Unfortunately for the Ju-188s, their route has taken them into the middle of a swirling dogfight!

**JU-188:** Fully loaded with bombs, your flight of Ju-188s skims the beaches in search of targets. The Allied landing craft must be prevented from reaching the shore! The formation begins to loosen as each bomber chooses its targets. Suddenly, a speck in the distance tells you that enemy fighters are in the area. Knowing your chances of survival are slim, you nonetheless carry on. Even if you don't make it back, destroying these landing craft will still make you a hero.

You'll start this mission heading east, behind the loose formation of other Ju-188s. Follow the flight along the beaches, and destroy as many ships as possible. After crossing the final beach, continue east and land at the small airfield with the remaining bombers. You must destroy at least three vessels.

**FW-190:** Originally briefed to attack the invaders along the beaches, you see a flight of bombers, new Ju-188s, being harried by Spitfires. These bombers need help! Gunning your engine and dumping your bombs, you speed towards the Spitfires.

You will start this mission alone, heading west along the beaches. Locate and defend the flight of Ju-188s attacking the Allied forces. Escort them all the way to their distant eastern airfield. At least two Ju-188s must survive, or three Spitfires shot down.

**SPITFIRE:** Expecting a dull patrol, you're suddenly caught in the middle of the entire Luftwaffe, guns blazing! Not only are you outnumbered, but a flight of German bombers is attacking the Allied landing boats! The bombers have to be stopped, but the German fighters are intent on stopping you! Your briefing was clear: Protect the troops at all costs!

You will start the mission heading south towards the beaches. You must locate and engage the Ju-188s approaching from the west, shooting down at least two.



## *Escort Flying Boat*

The German espionage efforts against Operation Overlord were intense. Spies, double-agents, and other intelligence-gathering efforts were focused on the Allies' invasion plans. Rumors of a high-ranking British official working as a German double agent persisted well after the invasion. This official was said to have been extracted from England during the invasion by a clandestine rendezvous of a U-boat and Do-18 flying boat.

This mission simulates this rumored extraction.

**BF-109:** Though you can't believe your superiors saw fit to spare four fighters during this invasion, your orders came directly from an SS Colonel. The only details you were given was when and where to meet a Do-18 amphibious plane. Ordered to defend this plane at all costs, your flight approaches the rendezvous point over the Channel. Watching the plane take off, you're almost surprised by a flight of Typhoons and Spitfires who have stumbled on the rendezvous! Cursing your luck, your outnumbered flight turns to face the diving enemy.

You will start this mission flying north, one minute away from the rendezvous point. The Do-18's survival is your only goal. Escort it until it lands in the river inlet.

**TYPHOON:** Enroute to the beaches from your English base, your flight was lucky enough to stumble on not only a U-boat, but a German flying boat, as well! Two of your wingmen peel off to strike the U-boat, while you grin in anticipation of using your rockets on the clumsy flying boat.

This is too easy.... You quickly scan the skies. Sure enough, Messerschmitts closing fast! And the Spitfire pilots were complaining about not seeing any action!

You'll start this mission heading south, approximately one minute out of the rendezvous point. Attack all targets at will. Downing the Do-18 is the primary goal. Continue on to the beaches and the original ground-support mission if you have sufficient ammunition remaining.





---

## ***The Super-Weapons***

Though a remarkable advance, the Me-262 wasn't produced in sufficient numbers to make an impact on the course of the war. While a number of serious weaknesses limited its effectiveness as a fighter, the Me-262 was a feared bomber interceptor.

The Me-262's greatest weakness was its slow acceleration. The jet was extremely vulnerable on takeoff, something that the Allies took advantage of. Posting fighters near Luftwaffe airfields, the jets were attacked as soon as they tried to take off. Though they were usually protected by escorting prop fighters, many Me-262s were lost.

**TYPHOON:** Your flight of Typhoons has been loitering near an airfield waiting for any Me-262s to attempt intercepting an inbound B-17 formation. With the 'Forts in sight, you see activity on the airbase. Bf-109s taking off! These specialized escorts are a sure sign that jets are preparing to scramble! Skimming the ground, your flight approaches the airfield at full throttle. Anti-aircraft fire opens up immediately, as the Bf-109s turn towards you. Suddenly, you catch a glimpse of a jet taxiing out of a camouflaged shelter. If you don't get it now, you won't get it at all!

You'll start about one minute north of the airbase, with Bf-109 escorts on patrol. Destroying the active Me-262 is the primary mission objective. In addition, you must destroy all of the parked jets.

**BF-109:** When the scramble siren sounded, your flight was the first in the air. Since the bureaucrats have decided that the wonder-planes are the only aircraft that can win the war, you've got to protect them. Now, you're a circling babysitter, with the jet pilots still trying to start their engines. You can almost hear the B-17 crews laughing overhead.

The view of red spinners coming in from the north reminds you that you're on patrol for a reason. Allied fighters have ambushed many jets on the runway, but not with you in the air! How many will you claim this day?

Your flight is maintaining a circular patrol pattern around the airbase, while the Me-262s are trying to take off. Intercept the incoming fighters, and prevent them from destroying any jets. Land back at the airfield when all Allied fighters have been destroyed.



## The Battle of Kursk

### Operation "Citadel"

#### *Red Dawn*

Attempting to cripple the Luftwaffe from the outset, the Soviet Air Force launched a massive bomber strike against German airfields near Kharkov. German fighters intercepted the inbound raids, resulting in one of the largest dogfights in history.

**Bf-109:** Expecting to escort your own bombers on strikes against German positions later today, you're startled to hear air raid sirens at sunrise. Dashing out to your plane, you see the ground crew frantically readying it for action. Russian bombers are striking airfields everywhere, and several formations are heading your way!

Immediately take off and attempt to intercept the Pe-2 and IL-2 formations approaching your airfield from the north. If possible, defend the airfields near yours, as well. Shoot down at least two bombers, and land at your airfield.

**YAK-3:** Though your Yak-3 is more than a match for the German fighters, the bomber force you're escorting hopes to catch the Luftwaffe on the ground. The airfield you're approaching is a small one, but you know it's heavily defended. As a result, you're not surprised to see the yellow spinners of Bf-109s vectoring towards your bombers. So much for a surprise at dawn!

You start the mission approximately one minute north of a small German airfield. Two other Yak-3s will also be escorting the bomber force. Engage the Bf-109s attempting to attack the bombers. Down at least two German fighters, and support the other strikes at the Luftwaffe airbases to the north, if possible.

**IL-2:** German fighter pilots call the Sturmovik the "Concrete Airplane," and with good reason! Its armor has saved your life many times! Today, your mission is to suppress the anti-aircraft guns surrounding a small Luftwaffe base. The Pe-2 formations behind you will be coming in at low level, so destroying those guns is critical! While you have confidence in the escorting Yak-3 pilots, you know that any German fighters will only make your mission that much more difficult.

You will start this mission with three other IL-2s, approximately one minute north of a small German airfield. Destroy at least two anti-aircraft guns, and any additional targets of opportunity you encounter. Support the airstrikes at surrounding airfields if possible. Use your rockets to engage the anti-aircraft guns from longer ranges.



## **Eagles Over Kursk**

The Soviet's dawn bombing raid was unable to accomplish its objective, and left the Luftwaffe at nearly full strength as Operation Citadel began in earnest. The Germans promptly gained air superiority, and constantly hammered the Soviet defensive positions in support of the enormous panzer assault. The Soviet Air Force responded, but their effort was feeble in comparison to the Luftwaffe's onslaught.

**FW-190:** The chaos at dawn now over, you ready your plane for action against the Soviet defenses. Though intelligence boldly claims that Soviet air power will provide little resistance, you have a strange feeling you'll meet your counterparts today. They're too brave, or foolish, to let this morning's setback stop them. Nonetheless, your mission is to support the ground forces, and use your bombs against any enemy units you encounter.

Take off from your airfield, and fly due north to the front lines. Several panzer units will be engaging the defensive positions on their drive northwards. Engage any enemy unit you encounter. Use your bombs on heavily-armored targets such as pillboxes and tanks. Destroy at least one enemy ground unit, and one enemy aircraft. Return to your airfield, if possible.

**JU-87G2:** The Communists had their chance this morning. Now, it's your turn to show them how airstrikes should be carried out! Your Stuka has been equipped with 37mm cannons expressly for the purpose of killing the tanks. It's your job to support the offensive by strafing any Soviet positions blocking the advance. Radio traffic has said a unit of Su-152 assault guns is giving the panzers fits, so locating and destroying these monsters is critical!

Take off and fly north to the front lines. Attempt to locate the heaviest fighting, and engage the enemy forces blocking the advance. If necessary, return to your base, land, and shut down your engine. Your Stuka will then be rearmed and refueled. Destroy at least three vehicles or positions.

**LA-5:** Though morale is low after the morning's ineffective bombing raids, your unit has been tasked to immediately fly to the front and defend the comrades being harassed by the Luftwaffe. Only a few of your planes are airworthy, and it's unlikely that you'll return. If you do return, you swear not to do so with ammunition remaining in your guns!

Take off, and pick up a westerly heading towards the fighting. Other friendly aircraft will be enroute to this area, as well. Shoot down every enemy aircraft you encounter, particularly the Ju-87s and Hs-129s strafing the defenses. You must down at least 4 aircraft, and return to your airfield.



## ***Meyer Makes History***

With the dense concentration of armored vehicles, specialized anti-tank aircraft scored an astonishing numbers of kills. One of the most devastating anti-tank planes of the Eastern Front was the Henschel Hs-129. The Henschel's heavy armor and tremendous firepower allowed German pilot Bruno Meyer to make history. His flight completely destroyed a column of Soviet T-34 tanks, the first time that an armored force, was destroyed solely by air power.

**HS-129:** Roaming behind the enemy's lines, your flight has found a large formation of T-34 tanks enroute to reinforce the front! With Fw-190s providing cover against enemy fighters, you roll onto the column, tracers flying up at you. Just when you thought this would be easy, the glimpse of red in the distance announces the arrival of Russian fighters! If your escorts aren't up to the task, your flight of predators will become the prey!

You will start this mission flying northeast, with three other Hs-129s and two Fw-190s. Locate and engage the column of vehicles off your nose. The entire column must be destroyed, or you must personally destroy four vehicles in the event the column can't be eliminated.

**FW-190:** Though you hate following the sluggish Henschels, there's no doubt in your mind as to their effectiveness. Watching them rip into the armored column, you feel something akin to pity for the poor men inside those tanks. Movement off your left snaps you back to the matters at hand, as you see Russian fighters streaking towards the Hs-129s at high speed. As fearsome as the Henschels are, the Russian fighters will tear them to shreds!

You will start this mission flying northeast, with two wingmen. The Henschels will be ahead, flying at low level. Protect them by destroying all of the enemy fighters. Strafing any anti-aircraft vehicles is a secondary goal.

**YAK-3:** Originally briefed to head towards the front, your flight catches sight of a formation of German strike aircraft attacking friendly vehicles. Though the Hs-129s are easy to hit, your Yak's light armament takes a long time to punch through their armor. Even worse, Fw-190 escorts have spotted you! Attack the Henschels, and the Focke-Wulfs have you. Attack the Fw-190s, and the tanks will be an easy meal.

You begin this mission heading southeast with a single wingman. Locate and engage the enemy aircraft immediately. You must destroy at least two Hs-129s.



---

## ***The Battle for Ponyri***

The Russian town of Ponyri was the objective of a major German assault during Operation Citadel. Perhaps the fiercest engagement of the war, each side deployed over 1,000 tanks and 3,000 heavy guns along a 6-mile front. Dug-in Soviet T-34s and German Tigers were the primary combatants. However, air strikes from Stukas and Sturmoviks were not only incessant, but exceptionally deadly.

**IL-2:** The news of the coming battle at Ponyri sent chills down your spine, as this town is your home. Even though you know that the defenses surrounding the town are unbelievably dense, you can't bear the thought of it falling into German hands! Your gunner senses your feelings, and has said little as you climb into your battle-scarred Sturmovik on the most important mission of your life. No man fights so hard as one defending his home!

Your flight of 6 IL-2s is flying east towards the German lines facing Ponyri. You will be fully armed with cannon and rockets. The advancing panzer columns are the primary target, particularly the Tigers. You must destroy at least 6 tanks or gun positions. In addition, no enemy vehicle must make it into Ponyri. If necessary, return to your airfield and rearm.

**JU-87G2:** Having seen the retreat from Moscow, you can't believe that so many lives are being wasted to take an insignificant town like Ponyri. Even so, these same lives are depending on the support of your flight of Stukas to eliminate the entrenched positions surrounding the town. You don't make the decisions, but perhaps this day you can make a difference!

You will start this mission heading north towards the city of Ponyri. Engage and destroy as many enemy units as possible. The stationary T-34s on the east side of the city are priority targets. You must destroy at least 6 tanks or gun positions. In addition, at least one German vehicle must enter Ponyri. If necessary return to your airfield and rearm.



## ***The Defense of Kursk***

During Operation Citadel, the Germans launched several large bomber strikes against Kursk and the surrounding towns. In one of these missions, 60 Ju-88 medium bombers and their Bf-109 escorts were intercepted by 8 Yak-3s. Amazingly, several German aircraft were shot down without a single Yak lost.

**YAK-3:** As weary as you are, the air raid alarm only causes you to raise your eyebrows. Expecting a single strafing pass from an Fw-190, the word of a large bomber strike approaching Kursk catches you off-guard, if only for a moment. Suddenly energized, you join your comrades in dashing out to your waiting fighters.

Once airborne, the German bombers come into view. Your flight is badly outnumbered, with Bf-109 escorts diving towards you. By now, however, you're too tired to be afraid. Almost calmly, you bring your guns to bear on the lead bomber...

You will start this mission approaching the bomber force head-on. Destroy at least three bombers before they can hit any targets around Kursk. Continue to fight as long as you have ammunition.

**BF-109:** Expecting fierce resistance, your flight of six Bf-109s was surprised to see only eight Soviet fighters approaching the Ju-88s. Closing with the interceptors, you see that you're facing new Yak-3s. To your horror, one of the Soviet fighters skillfully blasts the entire nose off a Ju-88 in a single pass, sending the bomber tumbling earthwards. The pilots you face are veterans! Your stomach tightens as you wonder if your flight can stop them...

You will start this mission slightly above and behind the Ju-88 formation. Immediately attack the Yak-3s. Shoot down 4 Yaks, or lose no more than 4 Ju-88s.



---

## ***Red Star Rising***

Up until the Battle of Kursk, the Luftwaffe had dominated the skies of the Eastern Front. The arrival of improved aircraft and the increasing skill of the Soviet pilots gave them the ability to wrest control of the air away from the Germans. While the skills and exploits of some Soviet pilots were no doubt the products of propaganda efforts, surviving Luftwaffe aces readily confirm the rapid improvement in the Soviet pilots. This improvement was particularly evident in the Battle of Kursk, where the Luftwaffe was finally bested.

**YAK-3:** This was supposed to be a routine ferry mission, with your entire squadron relocating to a new airfield. Routine, until the huge formation of German fighters came into view! The surprise seems to be mutual, as you see the Bf-109s break towards your flight in a reckless, unorganized mob. Eager new pilots, or anxious veterans quickly taking the initiative? No matter, the fight's begun!

Your flight will start this mission flying due south. Continue fighting until all German aircraft have been destroyed. You must shoot down at least 4 fighters. Continue south to your new airfield if possible.

**BF-109:** With a handful of veterans acting as mentors, your large flight of Bf-109s is taking a roundabout flight path to the front to help orient a large group of new pilots to the area. Many of these pilots are barely more than children, straight out of training.

A high-pitched voice over the radio calls out enemy fighters below! Sure enough, a large formation of Yak-3s is heading towards you. You think about telling your new pilots to simply go to full throttle and dash away, until you look over your shoulder and see them peel off in droves. These eager pups think the propaganda about stupid, cowardly Russians is true. If they survive this fight, they'll learn never to trust propaganda again!

Your formation of Bf-109s will start this mission with the Yak-3s dead ahead and below. Survival will be your primary goal. Shoot down three Yaks, and protect the new pilots if possible. At least half your fighters must survive.



THE NEW YORK TIMES

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...

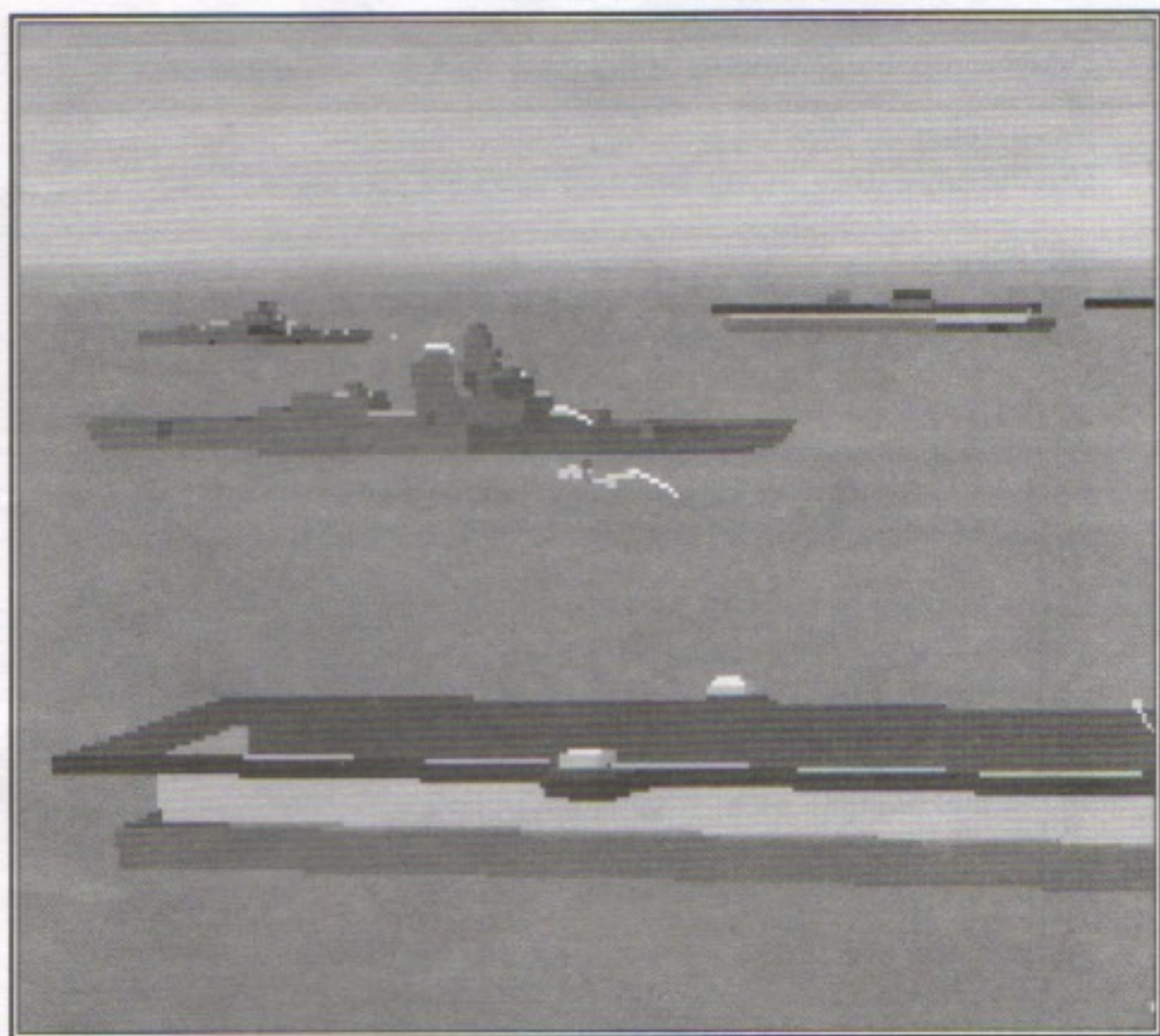
...the ... of the ...  
...the ... of the ...  
...the ... of the ...  
...the ... of the ...



# OUT OF THE SUN

## Chapter IV

### Flight School



OUT OF THE SUN



## The Wonderful World of Flight Simulators

Once you have gotten OOTS installed onto your hard disk, or have the CD-ROM up and spinning, you will probably want to take one of these vintage aircraft out for a test-fly.

Go ahead, we won't mind. Just come back to this section when you have finished or have any questions.

### Controller Set Up

The first thing you will want to do when flying these aircraft is get the control of the plane set up for your computer.

OOTS is capable of handling any of three input devices. These are:

#### KEYBOARD:

Use the Arrow Keys on your keyboard to control your plane.

#### MOUSE:

Use the mouse like a joystick. A Mouse Blip can be inserted over the Gunsight to help you better center the "stick".

#### JOYSTICK:

We most recommend that you use a joystick with OOTS or any other flight simulator on your computer. Nothing beats the realistic feel of a joystick when pulling breakneck maneuvers and avoiding enemy AA fire!

OOTS handles all sorts of specialty joysticks as well. The game fully supports the CH Products® Flightstick Pro™, Gravis® Mousestick II™ (the stick set will install automatically with a Full Installation), or the Thrustmaster® line of joysticks.

OOTS also supports other peripherals as well. The Thrustmaster WCS (Weapons Control System) is a throttle style device with even more buttons on it to save even more keyboard hunting.

Thrustmaster also makes a device known as the RCS or Rudder Control System. This is a joystick for your feet, that simulates the rudder controls found on actual aircraft. As WWII air combat veterans can tell you, you simply can't win without utilizing your rudders. (These are also controllable from the keyboard or a second joystick).



You can select your input device on the CONTROLLERS menu item when in the Flight Sim. To access this menu, press ESC when in the plane. See the Menu Items list (page 42).



## Keyboard Command List

On the back of this manual is a Keyboard Command List outlining the controls for OOTS. A brief explanation of each follows.

### THROTTLE

#### SET THROTTLE - 1-9,0

Your throttle is set in 10% increments up to 100% power. You set the throttle by entering the 1 through 0 on the keyboard. Most fighters may want to stay near 90% and 100% most of the time, but bombers will want to slow down to better place their munitions.

#### THROTTLE UP/DOWN - =, -

This will increase/decrease the throttle in increments of 1%

### ENGINE - E

The Engine can be toggled on and off with the "E" key. To finish a mission, you need to be on the deck or runway with wheel brakes applied and your engine off.

### FLIGHT CONTROLS

#### CENTER STICK - Z

To center your stick press the "Z" key (when using the mouse, this button will come in real handy).

#### RUDDERS - , & .

To utilize your Rudders (if you don't own a second stick or the Thrustmaster RCS), press the "," or "." keys to go left or right. You can easily figure this out by looking at the keys. The "," key has the Less Than sign on it, "<", pointing to the left and the "." has the Greater Than sign, ">", pointing right.

#### PITCH TRIM - Keypad + or { , Keypad - or } , | (SHIFT-\)

Adjust the fine pitch control using the Keypad + (on non enhanced keyboards use "{") for up and the Keypad - (non enhanced keyboards use "}"). To zero your pitch trim press "|".





## **WEAPON SELECT**

### **CYCLE WEAPONS - DELETE**

Press Delete on the keyboard to cycle your weapons. An indicator appears in the view telling you which weapon is currently selected and how much ammo you have remaining for it. If you are out of ammo for a current weapon, it will not be available to cycle through.

### **LAUNCH / FIRE WEAPON - SPACE**

To use the current weapon press the Spacebar.

## **HYDRAULICS**

### **LANDING GEAR - G**

To raise your undercarriage, press "G" on the keyboard. With your gear up, you will be able to read: WHEELS: UP on your instrument panel. This will reduce a lot of drag on your aircraft making it easier to maneuver. Some aircraft (such as the Japanese "Val") had under carriages that were permanently down. You are not able to retract this type of landing gear.

### **DIVE BRAKES - B**

To set your dive brakes, press "B" this will slow your plane down considerably, and is very useful in dive bombing attacks on enemy installations and carriers.

### **FLAPS- [ , ] , \**

The Flaps are raised in 10 degree increments by pressing "[", and lowered by pressing "]". To reset the flap angle to 0°, press "\". At 0°, the flaps have no effect. When set to 10° or 20°, you will increase lift on your plane, but increase drag. The plane will slow down, but stay aloft easier. Use about 20° flaps for takeoff from carriers. 30° flaps will add a lot of lift, but also induce a lot of drag. 30° flaps are used for landing your plane onto the short carriers used in WWII, or when making low altitude Torpedo runs.

### **WHEEL BRAKES - W**

When landing on carriers, you will also want to set your wheel brakes so you don't skid over the edge of the deck! These are set by pressing "W" on the keyboard. To complete a mission, you must be on the deck with your engine off (the E key toggles your engine on or off), and your wheel brakes on.



## VIEWS

**VARIOUS VIEWS - F1 to F10 or ⌘-1 to ⌘-0**

**LOOK BACK - SHIFT F1 or ⌘-SHIFT-1**

**OUTSIDE VIEW - V**

Various views are available to the player when playing OOTS. The most basic are on the Function Keys or if you are using a smaller keyboard, you can simulate a Function key by using a combination of the ⌘ Key and a number. Other views are the Outside View (accessed by pressing the V key). This gives you a chase plane view of your aircraft. You can then cycle other views (on the function keys) around this viewpoint. To return to the cockpit press V again.

**FLYBY VIEW - O**

In addition, you also have the Flyby View (accessed by pressing "O"). This view will follow the player's aircraft wherever it goes. We nicknamed this view the "Radio Controlled Airplane View", as you always keep the plane in the field of view no matter how far away it gets.

**PADLOCK VIEW - OPTION-P**

You also have what fighter pilots term the Padlock View. Padlock works best from the Outside view and is turned on and off by pressing Option - P. This view will keep you and the nearest enemy plane in view at all times. It's an easy way to find out if a bandit is on your tail.

**MUNITIONS VIEW - OPTION-M**

A muntions-eye view can be gained by pressed by pressing the combination of Option and M. This will mount a camera on whatever munition you just launched. This is very handy for tracking Torpedoes in the water.

**ZOOM IN/OUT - Page Up or ; , Page Down or '**

To increase magnification of the view, press Page Up (or ";" on no enhanced keyboards. To decrease the zoom level, press Page Down (or "'" on non-enhanced keyboards).





## **SIMULATION CONTROLS**

### **SOUND CONTROL- ⌘-N & ⌘-Option-N**

⌘-N will turn on and off all sounds in the game, while ⌘-Option-N will only affect engine sounds.

### **PAUSE GAME - P**

To pause the game at any time, press the P key, or hit ESC. Hitting ESC pauses the game and makes it possible to access the Menu Bar at the top of the screen. To return to the game just select the RETURN TO GAME option in the File Menu.

### **OVERHEAD MAP - M**

To access the In-Game map and get an idea where the enemy installations are, press M. You will be represented as a white dot, and Americans will be Blue in Midway, and Red in D-Day. British, Russian, and Japanese are Red, Germans are Blue in both D-Day and Kursk.

### **FAST TIME - OPTION-Z**

To accelerate time (to cover long distances faster than real time) press Option and Z together. This will set you up in Fast Time and get you to your target zone quicker.

### **QUIT SIMULATOR- ⌘-X**

To quit the simulator and get back to the Main Menu option, press ⌘ and X. This will put you back into the Main Menu window. You can also select QUIT on the file menu for this function.

### **QUIT GAME- ⌘-Q**

This will close the OOTS application.





## Menu Items

Pressing ESC or ~ while in the sim will pause the game and bring up the Menu Bar.

### File

#### RETURN TO FLIGHT SIM

This option will put you back in control of your aircraft.

#### EXIT FLIGHT SIM

This will bring you back to the Mission Selection Screen, aborting the current mission.

#### SHOW HIGH SCORES

This will display the list of the Top 10 pilots in Out Of The Sun.

#### QUIT

Exits the current game.

### Display

#### SCREEN RESOLUTION

You can pick from the following resolutions. (Resolutions your monitor can not display will be grayed out): 320x240, 480x300, 512x380, 640x480, 800x600, 1024x768.

#### HORIZON SHADING

The gradient horizon can be shut off to speed up gameplay.

#### GROUND SHADING

The distance hazing can be shut off in order to speed up gameplay.

#### SMOKE

The smoke that pours from damaged aircraft can greatly reduce the speed of the game on slower (030) based machines. Turn off this option if you want faster frame rate in dogfights.

#### HIGH DETAIL

With this option on, your computer will put the most detail possible into the objects in OOTS. Slower machines will want this shut off.

#### CULTURAL ITEMS

Several items on the battlefield are for "show" and have no effect on the outcome of any battle. These can be shut off with this option.



## Controls

### KEYBOARD

This will give you control of the aircraft using the Arrow keys on your keyboard, or the Numeric Keypad.

### MOUSE

This will put control of the Joystick style functions onto the mouse. Control this way can be more natural than keyboards.

### JOYSTICK

Any brand of joystick will give you excellent control of the sim.

### THRUSTMASTER JOYSTICK

These joysticks offer many keyboard functions duplicated on the buttons on the stick itself, see the command summary card for a full list of functions.

### FLIGHTSTICK PRO

This stick also has functions assigned to the extra buttons, which are explained on the Command Summary Card.

## Simulation

### SKILL LEVEL

- **Arcade:** Control of your aircraft will be easier as the flight models have been adjusted to a lower level of difficulty. The enemy aircraft will be flying a hindered flight model, giving you an advantage in air-to-air combat.

- **Training:** Here you will be in your high-performance aircraft, while the enemies' hindrance will not be as great. It's going to be more of a challenge.

- **Combat:** Your plane will now be the same performance aircraft that our WWII vets had to tackle. These planes will give you of a feeling to what the pilots had to go through. Your opponent however is going to be in the hindered aircraft that they were flying in the Arcade mode.

- **Veteran:** This is it! The ultimate test. We put you behind an accurate flight model, and your enemy will perform just as well as you do! Only the bravest, toughest, and smartest pilots can truly call themselves Veterans.

### G-L.O.C.

This affects whether or not the sim displays the effect of G-L.O.C. (Gravity-Induced Loss Of Consciousness). With this checked, you will see Blackouts and Redouts graphically displayed in the simulator.



## Air Combat

Air combat is the refined art of putting bullets into your enemy's aircraft.

To help pilots out, a primitive "HUD" was installed on WWII aircraft that showed the pilot the Harmonization Point of his plane's cannons and machineguns. The harmonization point is the point where the aircraft's guns ammunition "link up" into a steady stream of bullets. This point was usually several hundred feet in front of the aircraft, but some pilots adjusted their cannons to shorter or longer harmonization points.

To score a "kill" you need to lead the enemy aircraft. This is done by mentally predicting the path of the Bandit (an enemy aircraft) and aiming the guns in front of him, so that your bullets reach the same point in space that the Bandit does at the same time.

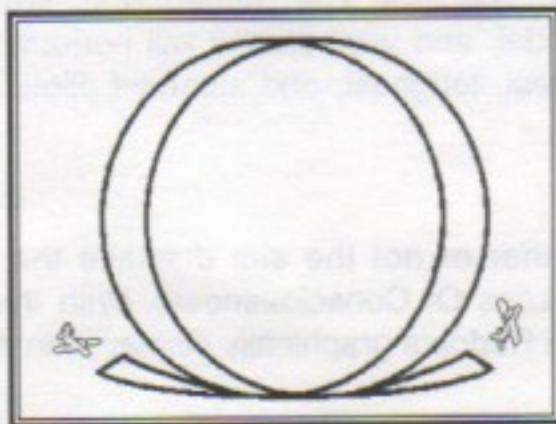
Planes are also not downed with just one shot (usually). Several hits are required on a bandit before he can be considered a "kill". Fewer hits will damage an opponents aircraft however, making those final shots easier, as he may have lost engine power or aileron control. Smoke will pour from damaged aircraft to give you an idea of his status, but this side-effect may even end up hurting you, as you may lose sight of your enemy in the billowing smoke.

## Maneuvers

Throughout history, pilots have been perfecting the "art" of dogfighting through the creation and implementation of various "maneuvers" performed to gain an advantage (or take one away) from an enemy pilot.

### VERTICAL LOOP

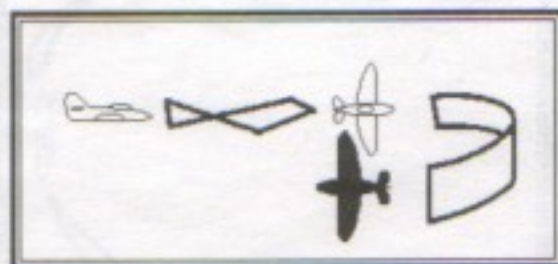
You can use this to get inexperienced pilots off of your tail. Start by gaining speed from a dive. Pull back sharply on the stick and hold it there. You will enter a steep climb. Hold this until you go over the top. With luck on your side, your opponent will not prevent you from coming down on his tail.





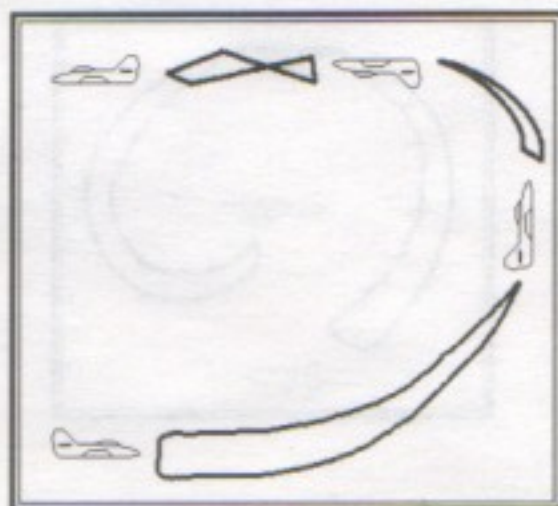
## BREAK TURN

When pilots yell, "Break, break!" over the radio to another pilot in war movies, they are warning their wingmen that an enemy aircraft is on his tail, and suggesting that he fly a break turn. The maneuver involves rolling 90° right or left, making the wings vertical to the horizon. Then pull back sharply on the stick pulling a high G turn. You will lose a bit of altitude and some airspeed when doing this maneuver. One compensation is to kick the rudder in the opposite direction of the turn.



## IMMELMAN

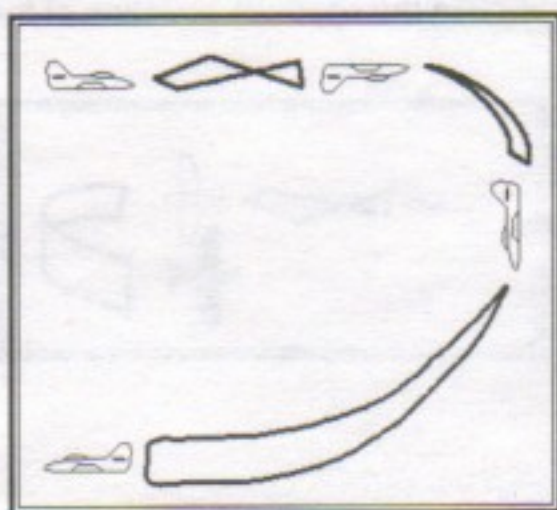
An Immelman Turn is basically half of a Vertical Loop. Start the Immelman by pulling back on the stick until the horizon comes into view again. You will be inverted (upside down) so once you have levelled yourself to the horizon roll your aircraft 180° and get the ground and sky straightened out again. Make sure you have enough airspeed before you begin this maneuver as it will bleed enormous amounts of speed in the climb.





## SPLIT-S

A Split-S is, basically, an inverted Immelman. Start level (and at a high altitude) and roll your aircraft  $180^\circ$ . Now pull the stick back and pull half of a Vertical Loop towards the ground. At the apex of the loop you should be flying straight and level in the opposite direction you started.



## BARREL ROLL

If you are having trouble shaking a pursuer, try a Barrel Roll. Pull back on the stick and enter a shallow climb (about  $30^\circ$ ). Push the stick hard over to the left or right and full back. You will lose altitude and, hopefully, your pursuer.



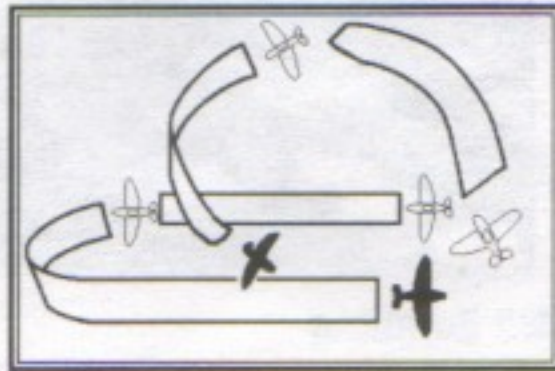


## Turning Battles

If you find yourself in a "Turning Battle" with an enemy aircraft, where both of you are pulling Break Turns to get onto one another's tails, there are a couple of options you have instead of just hoping your plane was built better.

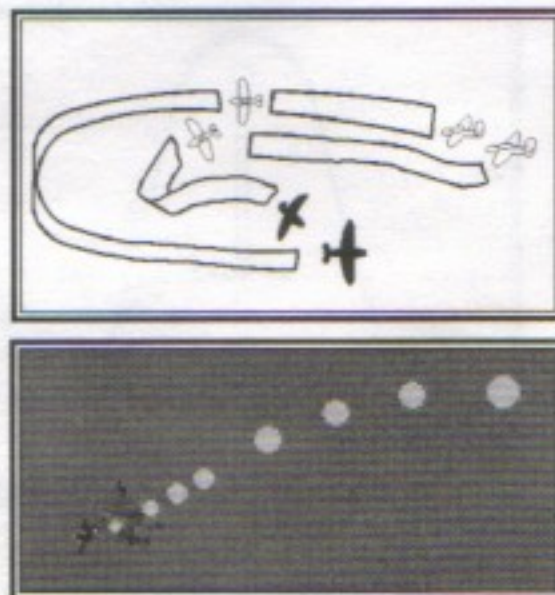
### HI YO-YO

Here you take a turning battle into three dimensions. You want to bleed speed by gaining altitude. This gives you an advantage in height and energy, allowing you to turn tighter on your enemy.



### LOW YO-YO

If you are having difficulty catching a faster opponent, try performing a Low Yo-Yo. Here you perform a shallow dive to gain airspeed, then perform a quarter-roll. Next pull back up from within your opponent's turning circle. With skill and a bit of luck, this should put your opponent just off the nose of your aircraft.





## Air to Ground Tactics

### Strafing Run - Cannon and Rockets

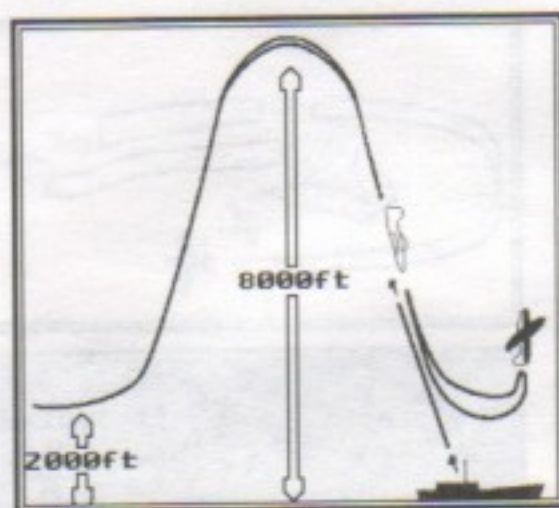
This is the simplest attacking maneuver and is normally carried out with cannon or unguided rockets. Strafing from a height of 500 to 1,000 feet and a position a mile or so out from the target, push the nose down to bring the gunsight to bear on the target. Now open fire. If you don't get a "kill", pull up before you get dangerously low. You could try circling around and making another run if you feel that you can make it out alive. A good tactic is to take out all the AA guns first so you are free to take out the other ground targets.



### Low Altitude Dive Bombing

If flying at low altitude, pull up to at least 6,000 feet. When you are about a mile out from the target, go into a dive bomb towards it. Line up the sight and release the bombs from an altitude of 2,000 to 3,000 feet. If you release too late, then you risk being caught the explosion of your target. Pull up as soon as your bombs are released.

If you miss your target or want another pass, an easy way back into the fight is to pull an Immelman turn (see page 45) after your first pass, this will put you at a good altitude to make another bomb pass.



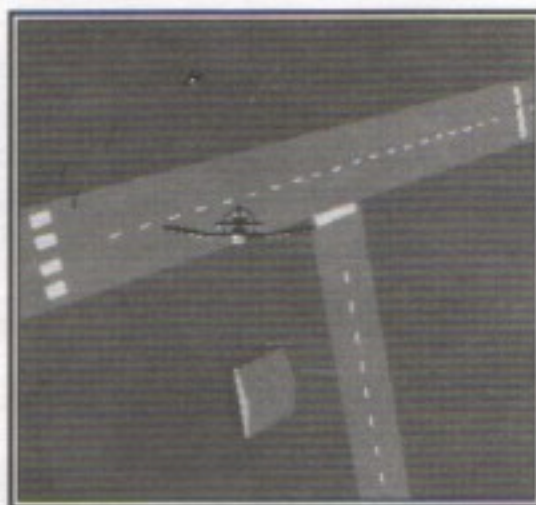


## High Altitude Dive Bombing

Start your bomb run at between 8,000 and 15,000 feet. Dive towards your target at an angle of 70° to 90°. At this steep of a dive, you will be able to place your bombs more accurately.

Apply your Dive Brakes (hit the "B" key). This will make your approach more manageable. You will also want to throttle back all the way to avoid going too fast.

Release your munitions around 3,000 feet, as it will take you about 1,500 feet to pull out. Pull back on your stick and turn off your dive brakes, while punching your throttle up to 100%.



## Torpedo Runs

One of the deadliest pieces of munitions that were carried into WWII was the Torpedo. Torps would cruise through the water and slam into ships just below the waterline, where one solid hit could do severe damage to the boat.

Start your Torpedo run by lining up on the broadside of the carrier. The front section is heavily armored below the waterline in case of mines, and the rear part, near the screw, is armored to prevent damage to the engines.

The run should start a mile out. Cut your engine, to about 40% throttle, and apply full flaps (30°). If your bird has dive brakes, set them as well. Your torpedo is not a 100% reliable weapon, but following these instructions will get you a good ratio of armed torpedoes.

Drop your altitude to about 100 feet. Any higher and the torpedo can damage itself on impact on the water, or be pointing straight down when it hits, rendering the shot useless.



Your bird's speed also plays a factor. Torpedoes, unlike iron bombs, have working mechanics in the munition. Therefore, you can not slam the fish into the water at a speed of over 100 Knots.

These two restrictions, 100 feet and 100 knots, make employing torpedoes dangerous. Fortunately Torpedo Bombers all had rear firing machine guns to keep enemy fighters off of your tail.

Once you drop your fish, raise the Dive Brakes, and throttle up to 100%. When your speed gets up around 160 or so, then bring your flaps back to 0°. Do not check your torpedo's status until your plane is safely away from the water.

To check your torpedo's status press  $\mathbb{M}$ -M on the keyboard. This gives you a "Torpedo's eye view" of the battle. If you lined up perfectly on the carrier, then you should see it's form getting bigger and bigger in this view. Arcade and Training missions give you two Torpedoes to play with while Combat and Veteran only give you one.





## Fighter Cockpit



## Cockpits

There are two different style cockpits included in OOTS. One is specifically designed for fighters and one is designed for bombers. Each cockpit will share the same instruments, but is laid out differently. The Fighter cockpit has a larger view area for dogfighting, while the bomber cockpit has a more refined sight, for better bombing accuracy.

### 1. HARMONIZATION POINT

This crystal display shows you where your bullet path is most effective. This is usually the point in front of an aircraft that the bullets from the side cannons merge, or "harmonzine" in the air.

### 2. AIRSPEED

Your airspeed is shown in Knots. KIAS stands for Knots Indicated Airspeed. This is the flow of air over the wings (thus what is keeping you aloft), not your true speed. Pilot's rarely need to know their true speed, so IAS is shown instead. The red area of the dial is below your stall speed, so, when airborne, keep the Airspeed above that mark.

### 3. RUDDER COORDINATION INDICATOR

This is an indication of your sideslip speed or turn coordination.



## 4. COMPASS

A small compass is located in your cockpit. The needle points in the direction you are currently heading in.

## 5. ALTITUDE

Your altitude in feet is shown here. The smaller needle points to your altitude times 1000 feet while the larger needle is showing the altitude times 100 feet. These are read together, for example if the small needle points to 4 and the large one points to 7, you are travelling at 4,700 feet.

## 6. ENGINE RPM

This is an indicator to tell you where you have your throttle set.

## 7. FUEL

This gauge shows you how much fuel your plane has. When the gauge dips into the red area, disengage and return to base immediately.

## 8. ARTIFICIAL HORIZON

The biggest mistake many pilots face is when they confuse the sea for the sky when doing aerobatic maneuvers. The artificial horizon ball can help you keep the two straight.

## 9. FLAP ANGLE

This instrument will show you what angle your flaps are currently deployed at, 10°, 20°, 30° or 0°. Use 10° and 20° for take off from runways and carriers, 30° for carrier landings and torpedo runs, and 0° for dogfighting and cruising.

## 10. INDICATOR LIGHTS

A bank of lights here give you an "at a glance" indication of certain systems:

- **GEAR:** When lit, the gear is in the down position, inducing drag and slowing down the plane. Some craft are unable to raise the gear (the Japanese Val).
- **BRAKES:** When lit your wheel brakes will be set. Set these whenever you are about to land, especially on a carrier.
- **DIVE BRAKES:** When dive bombing and need to bleed speed quickly, set these brakes and special flaps will deploy from the wings.



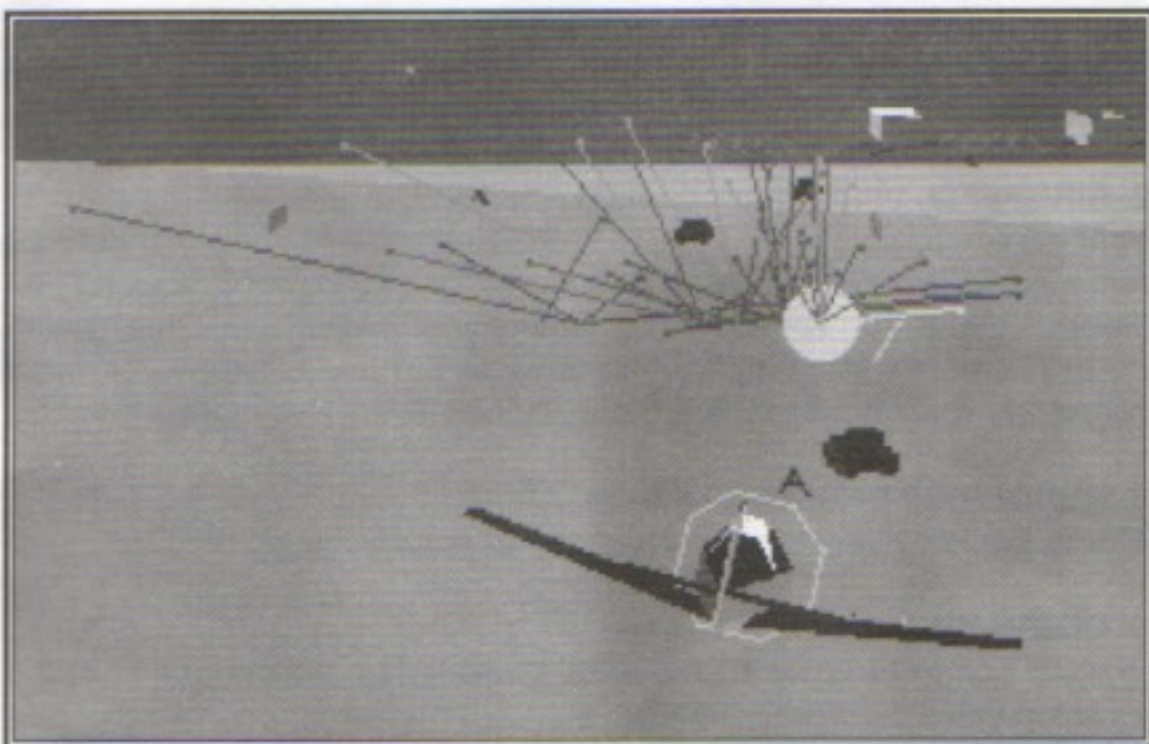
## 11. WARNING LIGHTS

A bank of warning lights has been installed to notify you of any dangerous situations.

- **STALL WARNING:** When your aircraft goes into a stall, this will light and you will hear a buzzer in the cockpit go off.
- **HYDRAULICS FAIL:** Damage to the hydraulics system can be disastrous, gear and flaps will no longer function.
- **ENGINE FAIL:** If the engine takes enough damage, it will stop functioning, reducing you to glider status. Return to your base if you can!
- **FUEL:** When this light comes on, return to base immediately. It is not very reliable, so watch your Fuel gauge as well.

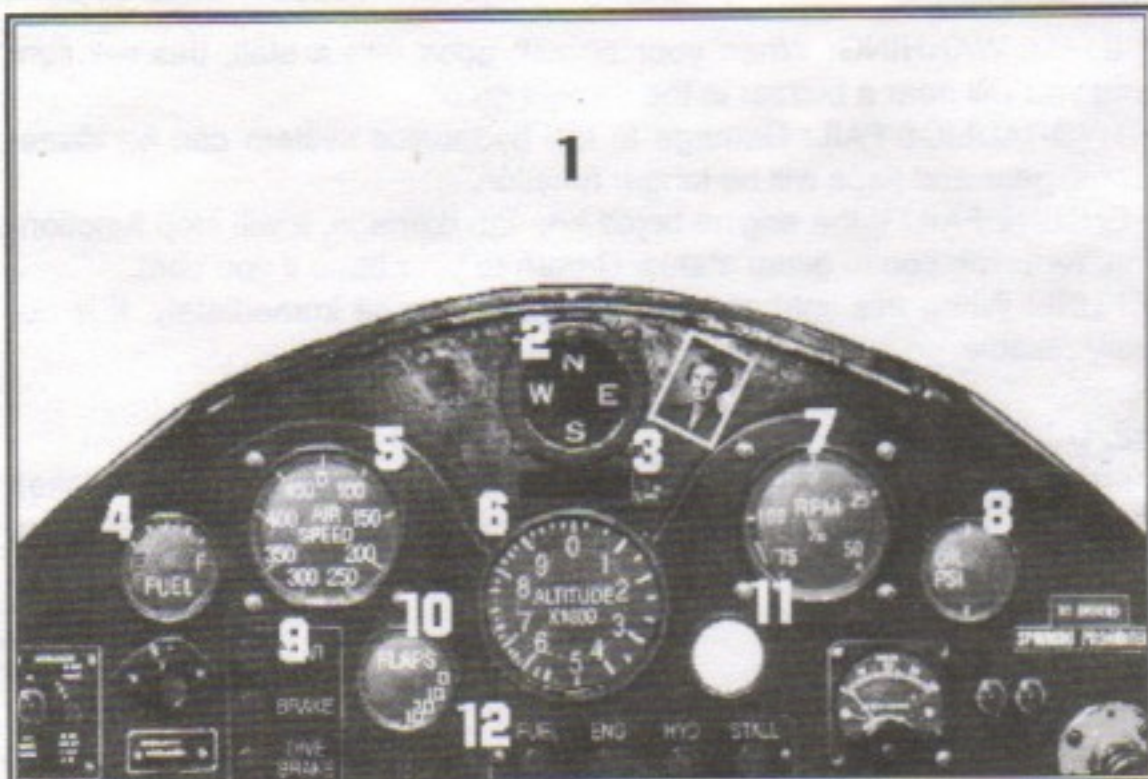
## 12. OIL PRESSURE

Your engine can only take so much punishment. As your plane takes damage, the oil pressure in the engine will drop, when it reaches zero, your plane will be powerless.





## Bomber Cockpit



(The instruments are identical to the Fighter Cockpit, but the descriptions are repeated).

### 1. HARMONIZATION POINT

This crystal display shows you where your bullet path is most effective. This is usually the point in front of an aircraft that the bullets from the side cannons merge in the air, thereby "harmonizing", hence the name.

### 2. AIRSPEED

Your airspeed is shown in Knots. KIAS stands for Knots Indicated Airspeed. This is the flow of air over the wings (thus what is keeping you aloft), not your true speed. Pilot's rarely need to know their true speed, so IAS is shown instead. The red area of the dial is below your stall speed, so, when airborne, keep the Airspeed above that mark.

### 3. RUDDER COORDINATION INDICATOR

This is an indication of your sideslip speed or turn coordination.

### 4. COMPASS

A small compass is located in your cockpit. The needle points in the direction you are currently heading in.

### 5. ALTITUDE

Your altitude in feet is shown here. The smaller needle points to your altitude times 1000 feet while the larger needle is showing the altitude times



100 feet. These are read together, for example if the small needle points to 4 and the large one points to 7, you are travelling at 4,700 feet.

## 6. ENGINE RPM

This is an indicator to tell you where you have your throttle set.

## 7. FUEL

This gauge shows you how much fuel you are carrying. When the gauge dips into the red area, disengage and return to base immediately.

## 8. ARTIFICIAL HORIZON

The biggest mistake many pilots face is when they confuse the sea for the sky when doing aerobatic maneuvers. The artificial horizon ball can help you keep the two straight, as it won't lie to you.

## 9. FLAP ANGLE

This instrument will show you what angle your flaps are currently deployed at, 10°, 20°, 30° or 0°. Use 10° and 20° for take off from runways and carriers, 30° for carrier landings and torpedo runs, and 0° for dogfighting and cruising.

## 10. INDICATOR LIGHTS

A bank of lights here give you an "at a glance" indication of certain systems:

- GEAR: When lit, the gear is in the down position, inducing drag and slowing down the plane. Some craft are unable to raise the gear (the Japanese Val).
- BRAKES: When lit your wheel brakes will be set. Set these whenever you are about to land, especially on a carrier.
- DIVE BRAKES: When dive bombing and need to bleed speed quickly, set these brakes and special flaps will deploy from the wings.





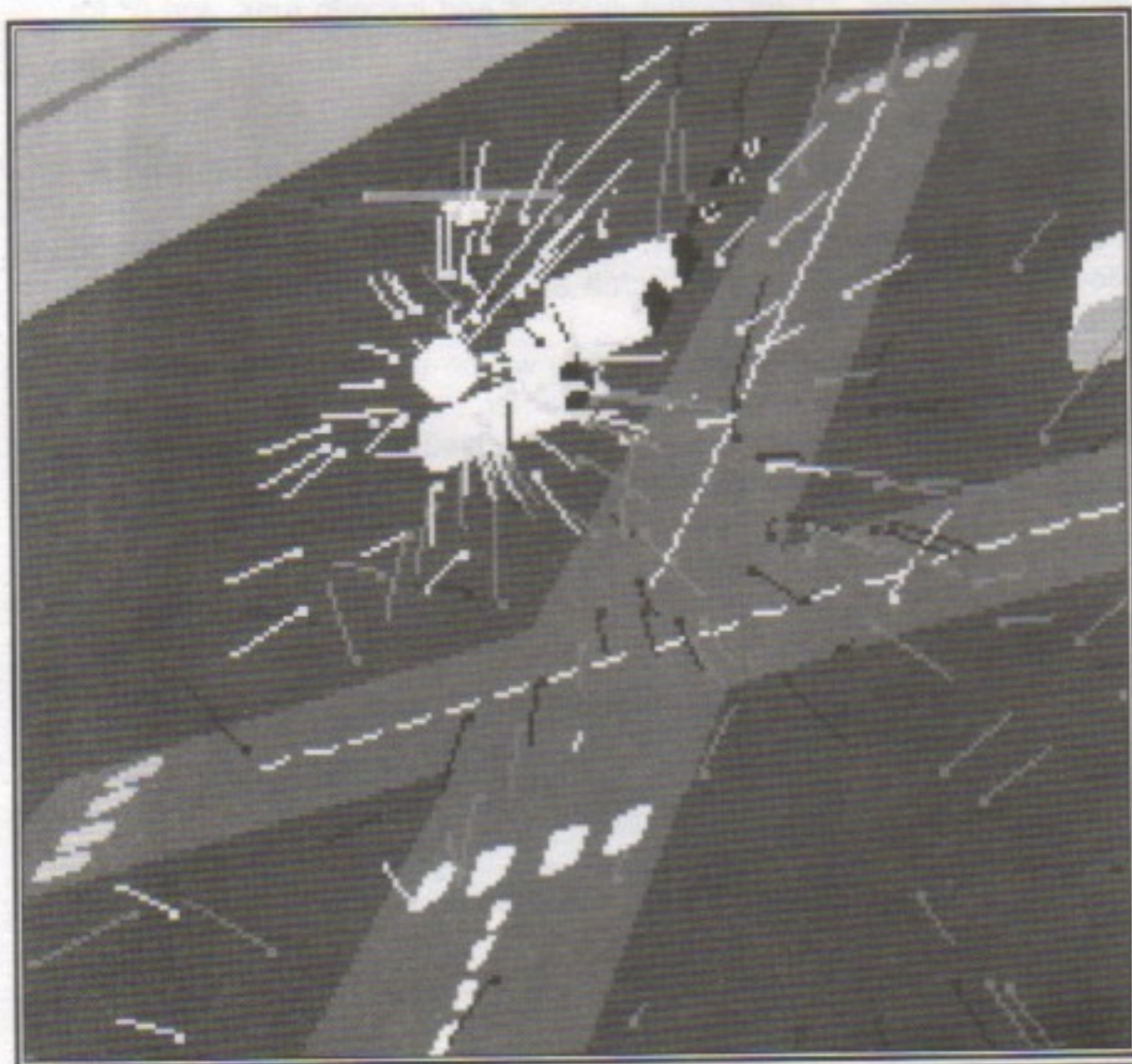
## 11. WARNING LIGHTS

A bank of warning lights has been installed to notify you of any dangerous situations.

- **STALL WARNING:** When your aircraft goes into a stall, this will light and you will hear a buzzer in the cockpit go off.
- **HYDRAULICS FAIL:** Damage to the hydraulics system can be disastrous, gear and flaps will no longer function.
- **ENGINE FAIL:** If the engine takes enough damage, it will stop functioning, reducing you to glider status. Return to your base if you can!
- **FUEL:** When this light comes on, return to base immediately. It is not very reliable, so watch your Fuel gauge as well.

## 12. OIL PRESSURE

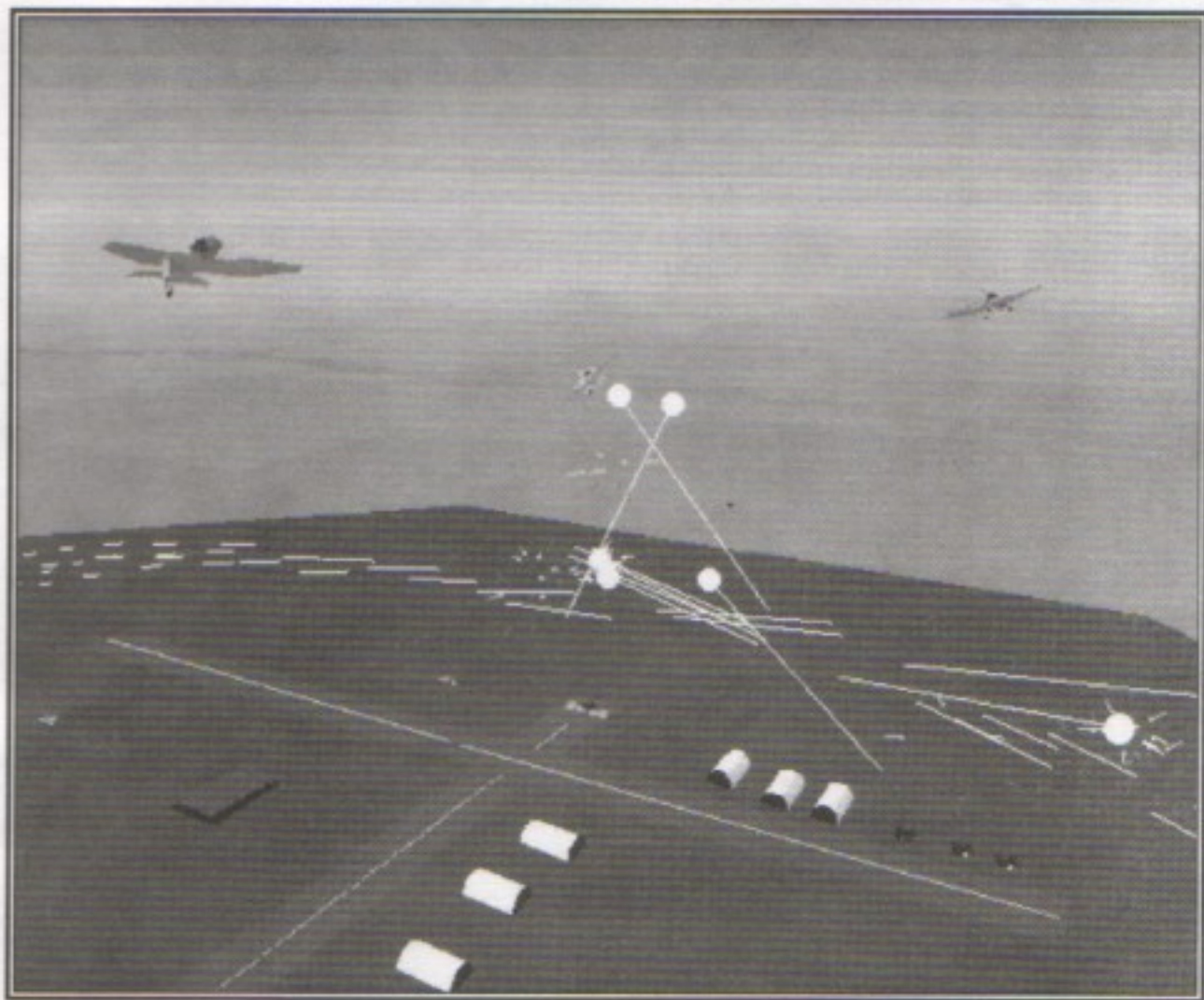
Your engine can only take so much punishment. As your plane takes damage, the oil pressure in the engine will drop, when it reaches zero, your plane will be powerless. Try to land at a friendly airfield if possible, for repairs.





# OUT OF THE SUN

## Chapter V Three Great Battles



OUT OF THE SUN



## THREE GREATEST BATTLES

In Out Of The Sun, we will take a good look at three of the greatest battles of World War II, one from the Pacific Theatre: The Battle of Midway, and two from the European theatre: Operation Overlord (D-Day) and The Battle of Kursk.

The Battle of Midway saw the outnumbered forces of the U.S. Navy and Marines score one of the most incredible victories of the war .

D-Day, the Invasion of Normandy, was the largest amphibious assault ever mounted. Code-named Operation Overlord, this assault was perhaps the pinnacle of Allied cooperation. Air, land, and sea forces from several countries combined to overcome the determined resistance of the Nazi defenses.

The largest armored conflict in history, the Battle of Kursk also saw some of the fiercest dogfights of the war. Air power played a pivotal role in the outcome of the battle, which saw the Luftwaffe finally lose control of the skies over the Eastern Front.



**June 4, 1942**

## **The Battle of Midway**

### **United States vs. Japan**

On the 4th of June, 1942, the Battle of Midway first got underway. After months of planning, the Japanese were making a daring attempt to seize control of a vital American airbase in the Pacific.

The United States knew that the Japanese were planning some sort of major attack. On a hunch, Admiral Nimitz decided to heavily defend the Midway Islands, by sending three American carriers, *Enterprise*, *Hornet*, and the *Yorktown*, still damaged from the Battle of Coral Sea.

These three carriers sailed to a point northwest of Midway to avoid Japanese reconnaissance planes. This area was nicknamed "Point Luck."

The Japanese fleet was split into two groups, the Strike Force and the Invasion Force. The Strike Force consisted of four carriers, the *Akagi*, *Kaga*, *Soryu* and *Hiryu*, while the Invasion force had the carrier *Zuiho* for "mop-up" duty.

The Japanese carriers were the U.S. force's primary targets. Without airpower, the enemy's invasion of Midway would fail. Several flights of scout aircraft were sent from Midway searching for the Japanese fleet. An early American strike against the carriers could have averted any damage to Midway's forces.

At 4:30 am on June 4th, 1942, the Japanese initial strike on Midway Islands got underway. The Carriers *Akagi*, *Kaga*, and *Soryu* launched Val, Kate and Zero aircraft against Midway. Moments earlier, an american scout plane spotted the fleet, and radioed back to Midway that they had spotted the "Main Body." Just before 6:00, the Japanese planes were spotted by another US scout plane. F-4 Wildcats and obsolesent F-2A3 Buffalos were launched to intercept the Japanese bombers.

The inexperienced American pilots on Midway valiantly engaged the Japanese aircraft, but were quickly overcome and routed by greater numbers and the superior "Zero" fighter.

At 6:15, the American fleet launched Dauntless dive bombers. against the enemy carriers. Fifteen minutes later, anti-aircraft guns on Sand



Island opened fire as Vals and Kates began their attacks. The Hangars and Runways were hit several times, as Sand Island was attacked. By the time the initial raid was over the Hospital and Hangar were ablaze. The wing leader of the Japanese strike confidently reported said that there was need for a second attack.

At 7:00am, the USS *Hornet* and USS *Enterprise* at Point Luck (the American rendezvous point), launched Wildcats, Dauntlesses and Devastators to bomb the Japanese fleet. At this time the Japanese had thought that they had caught the American's completely by surprise. So much, in fact, that the planes that were armed with torpedoes were being rearmed with bombs for another strike at the island. This strike would never come to pass. In the meantime, Midway's own Vindicator bombers struck at the Japanese fleet, but achieved little effect.

About an hour later, the Bombers from *Enterprise* and *Hornet* attacked the Japanese fleet. This strike was also ineffectual, as several torpedoes and bombs missed. At 8:38 am, the *Yorktown* launched her fighters and bombers, and over an hour and a half later engaged the enemy fleet.

The *Kaga* is dive-bombed and hit several times by *Yorktown's* strike. The *Akagi* avoids several torpedoes, but the *Soryu* is hit twice by dive bombers. With the *Kaga* in flames, the *Akagi* is attacked again, this time suffering two hits. The bombs ignite several planes on the *Akagi's* deck.

At 10:50am, Japanese radio reports have the *Kaga*, *Soryu*, and *Akagi* on fire. The *Hiryu* launches her fighters and bombers in an attack against the *Yorktown*. At noon, AA guns in the destroyers around the *Yorktown* open fire on the Japanese bombers. Despite the withering fire, some of the Japanese bombers are able to strike their targets. The *Yorktown* is hit and damaged.

Bouyed by the success of the initial attack on the *Yorktown*, the *Hiryu* strikes again. This time, the Japanese bombers seal the *Yorktown's* fate and force her crew to abandon ship. Defiant to the last, the *Yorktown* herself doesn't sink until June 7th, after taking a hit from a Japanese submarine.

Meanwhile, the *Enterprise* launches all of her dive bombers against the *Hiryu*. Over an hour later, the dive bombers successfully strike the carrier, severely damaging her.

As the Battle of Midway came to a close, the confidence of the Imperial Navy was horribly shaken. Losing the *Soryu*, *Kaga*, *Akagi*, and *Hiryu* to an outnumbered and inexperienced American force not only gave the

---



Japanese a grim portent of the future of the war in the Pacific, but dispelled any contempt the Imperial Navy held about the American fighting spirit. The future struggles would be terrible, but the Imperial Navy's shift to the defensive had begun.





## **June 6th, 1944 D-Day** **Operation "Overlord"** **The Beaches of Normandy** **Allies vs. Germany**

### **THE ALLIED AIR FORCES**

In the ten weeks that led up to D-Day, the RAF 2nd Tactical Air Force, and US 9th Air Force carried out bomber attacks against road and rail targets, destroying 1,500 of the 2,000 locomotives in Northern France and Belgium. The Bombers of the US 9th Air Force pounded road, beach, and command targets. Thirty-six Luftwaffe airfields in France, Holland, and Belgium were also heavily damaged. Strikes against the 24 bridges over the River Seine destroyed all but 6, drastically hindering the German resupply and reinforcement efforts. Mosquitoes, Spitfires, and Typhoons of 2nd Tactical Air Force destroyed 76 of the 92 German radar sites along the French coast, leaving the Germans little radar coverage for the invasion.

On June 5th, the Allied Air Forces had assembled 2,800 heavy bombers and 1,500 medium and light bombers. This air armada was also bolstered by forces from the British Commonwealth, including Canada, South Africa, Australia, India, New Zealand, and Rhodesia. Refugee pilots from Nazi-occupied countries such as Poland, France, Norway, Czechoslovakia, Belgium, Greece, Holland, and Yugoslavia also served gallantly.





The anti-submarine patrols of RAF Coastal Command flew around the clock. Halifaxes and Liberators combined with naval forces to sink 6 and damage 5 of the 16 U-Boats that had been ordered into the channel. Nearly 1000 Lancasters, Halifaxes, and Mosquitos of the RAF Bomber Command pounded the coastal batteries guarding Normandy.

Now came the turn of the airborne divisions. Over 2500 gliders, towed by a combined force of over 1500 C-47s and converted bombers, delivered troops behind the German lines. As the fleet came into view of the French coast, Boston bombers of RAF No. 342 (French) and No. 88 Squadrons laid a smoke screen to shield the fleet from German gunners. P-38 Lightnings of the 8th and 9th USAAF flew air cover patrols over the fleet, relieving the RAF night fighters. Mustangs, Spitfires, and Thunderbolts, ranged far and wide across Normandy, searching for any Luftwaffe planes attempting to attack the landing force.

Just before the first troops hit the beaches, 1,077 B-17 Flying Fortresses and B-24 Liberators heavily bombed the shoreline. Eighteen squadrons of RAF Typhoons dive-bombed strong points on the British-held beaches, then flew 'cab rank' patrols over and behind the front lines, hitting any German targets they encountered. On the American beaches, 45 P-47 Thunderbolts of the 366th Fighter Group dive-bombed targets and provided close air support.

The air operations of D-Day marked a high point in aviation history. Not only was the level of cooperation between so many countries a remarkable achievement, Operation Overlord saw the highest number of sorties ever flown in a single day.

## **The Luftwaffe**

In April of 1944, the Luftwaffe controlled 1,675 aircraft in Western Europe. However, only 135 were stationed in Northern France and Belgium. These aircraft were facing the Combined might of the 8th and 15th USAAF, not to mention the RAF. Gen Maj. Dietrich Pelz commanded Fliegerkorps IX in France and the Low Countries. This force was reinforced by an additional Kampfgruppen taken from Italy; giving it a total strength of 380 bombers.

On June 5th 1944 Luftflotte 3 could muster only 815 aircraft, of which 170 were fighters, 130 bombers, and 200 anti-shipping aircraft. On June 6th, it managed to fly only 100 fighter, and 175 bomber sorties, compared to 14,674 by the Allies.



Of the Luftwaffe aircraft trying to fight their way through to the beaches, the Fw-190s of JG.26 Commander Josef "Pips" Priller and his wing man, Unteroffizier Heinz Wodarczyk, were two of the few who succeeded. Even so, their strafing of Sword Beach was ineffectual, marking the impotence of the once-proud Luftwaffe. While Allied planes usually had little to fear from German interceptors, Bf.109s downed three Typhoons of 183 Squadron in a rare show of resistance to the Allied air forces.

The Luftwaffe, already attrited by the Allied strikes in the months prior to D-Day, suffered heavy losses. Fewer sorties were flown each day until, finally, five Jagdgruppen were withdrawn to Germany for re-fit 10 days after the Invasion. The End of the Reich had begun.

## THE BEACHES

### Utah Beach

With over 400 yards of sand between the shoreline and the low-tide mark, Utah was the easiest to stage an amphibious landing upon. The shoreline stretched up to a row of sand dunes, along which the Germans had built a low concrete wall. The beach was defended by 29 batteries of the 919th Grenadier Regiment, 709 Infantry Division. Bad weather reports had lulled the Germans into complacency, expecting Allied aircraft to wait for better conditions. However, at 40 minutes past midnight, the first paratroopers of the American 101st Airborne Division began to descend.

As could be expected with such a huge airborne assault taking place at night, casualties were high. Commanders found their soldiers scattered for miles, with many men killed while trying to regroup.

The men of the 82nd Airborne Division also suffered from widespread scattering, with some units of the 505th Parachute Regiment dropping straight into the center of Sainte-Mere-Eglise. After a brief fight with a German Anti Aircraft unit occupying the town, the Allies had achieved their first liberation on Mainland Europe.

The Allied heavy bombers now began to pound the German beach defenses, with the fighter-bombers following up with cannons and rockets. German Strong Point W5 was pulverized, with only a 35-mm, and 88-mm gun remaining after the assault. Shelling from the British cruisers *Enterprise* and *Hawkins* finished off these last two guns, sweeping the German artillery from the beach.

Last but not least came the landing craft, with their men and Sherman



tanks. German infantry opened up with their remaining machine guns but were methodically overrun by the superior Allied forces. With Strong Point W5 taken, the Americans began the push inland.

## **Omaha Beach**

Attempts by the French Resistance to notify the Allies of the arrival of German reinforcements in France had failed. This left the Allies believing that only a low-grade coastal battery defended the Omaha Beach sector. In fact, battle-hardened veterans of Germany's 352nd Infantry Regiment manned the defenses.

Even worse, support from the battleship *Arkansas* and aerial bombing as off-target, leaving the formidable German defenses virtually intact. Facing tremendous resistance, the first wave of Allied landing craft were wrecked, their tanks littering the low water line. As the second wave came in, there was no room for them to maneuver around the hulks. The tide was also rising during this time, causing landing craft to hit the mines on the beach. A few men made the shore, but were pinned down by German artillery, and small-arms fire.

After several hours, two destroyers came in close to the shore, furiously shelling the German gun positions. With the additional fire support of two large landing craft, armored bulldozers, broke through the sand dunes, and filled in the anti-tank ditches. Finally able to maneuver, infantry and armored forces moved inland, overrunning the German defenses. Tragically, however, not before 2000 Americans were killed in the attempt.

## **Gold Beach**

Like Omaha, Gold beach was also defended by the German 352nd Infantry Regiment. However, the British 79th Armored Division's mine-clearing tanks were the difference. Under fire from German guns, these tanks cleared the beach for the second wave. Within 40 minutes, the first units of the British 50th Infantry Division were clear of the beach and marching inland.

## **Juno Beach**

Utah, Omaha and Gold had all been sandy beaches, but Juno Beach consisted of hard, rocky shoals. This meant that the Canadian 3rd Infantry Division had to wait 20 minutes for the tide to carry their landing craft over the rocks, giving the defenders precious time to prepare.



The Juno sector contained the two well-defended towns of Courseulles and Berniers at each end, plus a large sea wall in between. Many of the Canadians were veterans of the Dieppe landings, and stormed the beach with their modified Sherman tanks leading the way. These tanks had flotation skirts that were removed once on the beach. These amphibious Shermans threw the Germans into confusion, though they still laid down withering fire from 88mm cannons and small arms. The Canadians dashed ashore with relative ease, overrunning the German 736th Infantry Regiment. By nightfall, the Canadians held the main road between Caen, and Bayeux.

## **Sword Beach**

The Allied assault on Sword Beach was preceded by the British 6th Airborne Division covering the right flank. Facing other elements of the German 736th Infantry Regiment, the British mine-clearing tanks again proved their worth by clearing the way for the British 3rd Infantry Division. Taking the landing area easily, the Allied forces made their way up the beach.

Once past the beachhead, German resistance was very stiff. At Ouistreham, the 6th Brigade fought a savage house-to-house battle. A German gun battery at La Harve proved very deadly before finally being silenced by the guns of the British battleship *HMS Warspite*.

By midnight, the British were off the beaches, but short off their objective of Caen. The only real success for the Germans was the 21st Panzer Division, which managed to deploy six tanks to the beach between Juno and Sword. However, German indecisiveness caused the panzers to become bogged down fighting the Paratroops at the Orne River crossings. By the time the Germans received orders to proceed to the "real" targets on the beaches, it was too late.

## **Overview**

Like Midway, D-Day has been reviewed and dissected since the war concluded. Hindsight always being 20-20, D-Day's Operation Overlord poses thousands of "what if" questions: What if Rommel had his way, and deployed his armored forces in Northern France? What if Hitler relinquished his incompetent and smothering control of the military? What if the Allies didn't enjoy such a huge advantage of numbers during the invasion? Regardless of the questions and debates, June 6th, 1944 opened the final chapter of the terrible war in Europe. Fortunately for the Allies, the successful Operation Overlord was the bold stroke required to spell the end of the Third Reich.



---

## **July 5th - 13th, 1943**

### **The Battle of Kursk**

### **Germany Vs. Russia**

The largest tank battle of WWII, the Battle of Kursk was a brutal confirmation of the decline of Hitler's Third Reich. When the fighting finally concluded, the entire military and political balance of power in Europe had changed forever.

"Barbarossa," the codename for Hitler's invasion of Russia, was an optimistic plan to bore through the Soviet defenses and capture Moscow in blitzkrieg fashion. However, the Red Army proved to be more than the "simple peasants" Hitler assumed. The brutal Russian winters, overextended supply lines, and strategic bombing of Germany's industrial capacity also contributed to slow the momentum of "Barbarossa." After initial defeats, the Soviets regrouped, stopped the Germans short of Moscow, and slowly began to wear the invaders down in a dreadful war of attrition.

With the early gains of "Barbarossa" endangered by increasing Soviet might, Hitler ordered a spring counteroffensive, code-named "Citadel." Like many of Hitler's strategic plans during WWII, "Citadel" was strongly opposed by influential military leaders. General Hanz Guderian, the Inspector-General of Armored Troops at the time, clearly saw "Citadel's" weaknesses and voiced his reservations to Hitler. Despite the objections, Hitler felt that the risks involved in "Citadel" were outweighed by a need to reassure the Axis members, bring new allies into the fold, and retake the momentum with a decisive victory over the Red Army.

Much of Hitler's confidence rested on the might of his Luftwaffe, which had easily bested Soviet air power throughout "Barbarossa." Many of WWII's highest-scoring aces were Luftwaffe pilots such as Erich Hartmann, who padded their kill totals against pathetic early Soviet aircraft and inexperienced pilots. The infamous Ju-87 Stuka dive-bomber, painfully vulnerable in the West, gained a second life and deadly reputation attacking Soviet tanks. The Bf-109 and Fw-190 held absolute air superiority over the crude Yak-1, MiG-1, and Polikarpov I-16 fighters. Sadly, only the obsolescent "lend-lease" P-39 Aircobras from America gave the Soviet pilots any confidence in the early stages of the war. While the German pilots often admired the astonishing bravery of their enemies, Soviet air power had offered only token resistance.



Both the Germans and Soviets had made intense preparations for the coming offensive.

Having learned how vulnerable their older panzers were against the mass-produced Soviet T-34, the Germans rushed hundreds of the new Panther tanks to the front expressly for "Citadel." Hitler hoped that the combined might of the superior Tigers and still-teething Panthers would overwhelm the Soviet armored forces. The heavily-armored "Ferdinand" 88mm assault gun and new "Brumbar" 150mm self-propelled gun were also deployed in significant numbers. All told, in excess of 2,600 panzers and assault guns trained their barrels on "Citadel's" 60-mile wide front. Considering that "Barbarossa's" front was over 900 miles across and involved just over 3,300 panzers, this concentration of armored vehicles was nothing short of incredible. Adding to this massive armored buildup, over 23 divisions of infantry were deployed for the offensive.

The Luftwaffe mustered over 1,800 aircraft to support this immense ground force, their veteran pilots again ready to again rule the skies. Large numbers of Fw-190s, Ju-87s, and heavily-armed Henschel Hs-129s were prepared to perform ground-attack missions, softening up the Red Army's defenses in advance of the panzer assault. The effectiveness of these planes would be particularly important, as the Red Army's 27,000-piece artillery force outnumbered the Germans by a 2:1 ratio before the battle. The Luftwaffe was aware that this deficit of dedicated artillery would place an incredible burden upon their ground-attack resources.

Aware of the massive German buildup facing the city of Kursk, the Red Army prepared the largest and most elaborate defensive force in history. Over 100 miles deep, the Soviet strategy involved 8 "belts" designed to attrit the German forces while giving very little ground. In addition to the huge numbers of artillery trained on the German positions, the Soviets laid very dense mine fields along the front. Dedicated anti-tank forces were positioned in concert with these minefields to channel, attack, and "bleed white" advancing panzer units. The entire Soviet 16th Air Army, comprising nearly 3,000 aircraft, prepared to support the defense. The new Yak-3 fighter received its baptism by fire at Kursk, much to the chagrin of the Luftwaffe. Well over 4,000 tanks, including the devastating new Su-152 assault gun, were also ready to face the onslaught. The speed and numerical superiority of the T-34 was particularly critical, as their guns were much less powerful than those of the Tiger and Panther. In the open fields surrounding Kursk, the T-34s' best hope was to close on the panzers at full throttle and fire at close range. In many instances, several T-34s had to score multiple hits at close range to destroy a single Tiger. Had the new Panther not been seriously plagued by drive-



train problems, the battle's outcome could have been markedly different. "Lend-lease" M3 and Churchill tanks also comprised the Soviet armored forces, but they were markedly inferior to the T-34 and loathed by their crews. Estimates vary widely on the number of Soviet infantry involved in the battle, but some claim as many as 75 divisions manned the defenses.

The Battle for Kursk began on the 5th of July at 2:20am as Soviet artillery began pounding German units positioning for the beginning of "Citadel," actually scheduled for 3:30am. The German artillery replied with a tremendous barrage, expending more ammunition than the entire Polish and French campaigns combined! At first light, the fighting began in earnest as soldiers, panzers, and pilots could see the enemy. Just after dawn, Bf-109s and Fw-190s intercepted a huge preemptive bombing raid on the Luftwaffe airfields surrounding Kharkov. The resulting dogfight, involving over 500 aircraft within sight of each other, has been called the largest of the WWII. The Soviet raid was eventually repulsed, allowing the Luftwaffe to achieve air superiority and fly over 2,000 sorties the first day.

The intensity of the fighting was astonishing. The smoke and dust of some tank battles became so dense that vehicles often collided and overturned each other in the confusion. Early air superiority allowed the Germans to make initial penetrations into the Soviet defenses. However, they paid dearly in men and material. Already outnumbered in so many areas, each loss the Germans suffered was very expensive. The unprecedented concentration of forces resulted in the battle rapidly degenerating into a chaotic meat-grinder, as the better-trained German forces flung themselves against the well-prepared and bravely-defended Soviet lines. In one engagement alone, a total of 700 tanks from both sides were destroyed in the space of four hours.

The Battle of Kursk was particularly notable for the contributions of air power. The fair weather that prevailed during most the fighting allowed both sides to make maximum use of their aircraft. The close-air support planes made the greatest impact, literally feasting on tanks time after time. During one attack, a flight of the brutish German Hs-129s used their 30mm cannons to wipe out a large formation of T-34s, while accompanying Fw-190s bombed the dismounting troops. This was the first time in history an armored formation was destroyed entirely by air power, and signaled the end of the tank's battlefield dominance. Hans-Erich Rudel, perhaps the greatest tank-killer of the war, used his Stuka's 37mm cannons like scalpels, focusing his fire on the engine decks of T-34s to ensure a kill. The Soviet IL-2 Sturmovik also mounted 37mm cannons, and proved to be a devastating tank-killer in its own right.



Nicknamed "The Concrete Airplane" by German fighter pilots, the heavily-armored Sturmovik was virtually impossible to bring down with small-arms fire. As the Soviets began to control the skies over Kursk, Sturmoviks ranged deeper behind the German lines to destroy the precious supply convoys that "Citadel" desperately required.

As devastating as the ground-attack planes were, it was still a fighter's job to protect them, or shoot them down. During the Battle of Kursk, the Luftwaffe's fighters encountered resistance unlike any they had ever seen. Aggravating matters, Fw-190s desperately needed to defend Ju-87 and Hs-129 formations were often forced to serve as bombers themselves. Bf-109s attempting to attack low-flying Sturmoviks often found themselves in the sights of the nimble new Soviet fighters, the La-5 and Yak-3. Though lightly armed, these aircraft could decisively outmaneuver Bf-109s and Fw-190s in the low-altitude combat that was the norm. The Soviet pilots now had the equipment and crucial skills to defeat the Luftwaffe's finest. During one engagement, 8 Yak-3s attacked a formation of 60 Ju-88s and their Bf-109 escorts. Several German aircraft were downed without a single Yak-3 lost. In another melee that same day, 18 Yaks faced off against 30 Bf-109s, downing half of the Messerschmitts to the loss of a single Yak. No longer "simple peasants," Soviet pilots now ranked among the best in the world.

Despite constant attacks in several different sectors, the Germans were unable to make and hold significant penetrations into the Soviet lines. Because of "Citadel's" minimal gains and appalling losses, Hitler himself suspended the offensive on July 13, 1943. Truly disturbed by the Allied landing in Sicily on the 10th of July, he intended to cut his losses, and begin shifting his forces to face this new threat. As the battle ended, fully half the Red Army's tanks lay destroyed, while the outnumbered Germans lost nearly a third of their armored vehicles. Though some historians have dwelled on these morbid figures as an indicator of the German force's superiority, the strategic and political victory rested with the Soviets. They turned away Hitler's most focused offensive of the war, and held the city of Kursk. Just as significant, Soviet air power had recovered from the its pathetic past, as well as the battle's first failed bombing raid to finally defeat the hated Luftwaffe. Kursk, like Midway, was a crucial turning point.



# OUT OF THE SUN

## Chapter VI Aircraft Of The Era



OUT OF THE SUN



# F4F WILDCAT

### Dimensions:

Span: 38'

Length: 29'

### Engine:

One Wright R-1820-86 1,200 hp radial

### Weights:

Empty: 5,758 lbs.

Loaded: 7,406 lbs.

### Performance:

Max Speed: 318 MPH

Range: 1,310 miles

### Armament:

Six .50 caliber machine guns

### Description:

Though it was thoroughly outclassed by the Zero, the Wildcat's firepower and exceptional durability gave the American pilots some hope when facing the Japanese fighter. Clever tactics such as the "Thach Weave" allowed the American pilots to hold their own against the Zero. Trying to outmaneuver a Zero with a Wildcat is simply futile, however. Players should use diving attacks whenever possible, and try to destroy the flimsy Zeroes with a single burst.





# P-51 MUSTANG

**Dimensions:**

Span: 37'

Length: 13.6'

**Engine:**

Packard Merlin V-1650-7 1,720 hp inline.

**Weights:**

Empty: 9,765 lbs.

Loaded: 11,814 lbs.

**Performance:**

Max Speed: 437 MPH

Range: 950 miles

**Armament:**

Four wing mounted 0.5" machine guns

Two Fuselage mounted 0.5" machine guns

Two 500 lb. bombs

**Description:**

The symbolic champion of American fighters in WWII, the Mustang has developed a mystique beyond its true capabilities. Though very fast, the Mustang was not particularly maneuverable. Excellent in the high-altitude, long-range escort role, the P-51 was most effective protecting strategic bombing strikes. Although the P-51's agility compared well with the German fighters, players should take advantage of the Mustang's speed to dictate the terms of the dogfight!





## SBD DAUNTLESS

AMERICAN

### Dimensions:

Span: 41.5'

Length: 33'

### Engine:

One Wright R-1820-52 1,000 hp radial

### Weights:

Empty: 6,675 lbs.

Loaded: 10,855 lbs.

### Performance:

Max Speed: 245 MPH

Range: 1,100 miles

### Armament:

Six .50 cal machine guns

Two 500 lb. bombs

Eight rockets

### Description:

Though sluggish in comparison to a fighter, the Dauntless was actually a very well-mannered and sturdy dive bomber that compiled an excellent service record. Easy to fly and control in a dive, Dauntlesses were responsible for most of the Japanese carrier losses in the Battle of Midway.





# TBD DEVASTATOR

**Dimensions:**

Span: 50.3'

Length: 35'

**Engine:**

One 900 hp. Pratt and Whitney R-1830-64 Twin Wasp Radial

**Weights:**

Empty: 6,180 lbs

Loaded: 9,862 lbs

**Performance:**

Max Speed: 206 MPH

Range: 900 Miles

**Armament:**

One .50 caliber machine gun (Nose)

One .50 cal or two .30 cal machine gun (Rear)

One Torpedo or 1000 lbs. of bombs

**Description:**

Painfully slow, extremely sluggish, and difficult to control in the low-speed profile necessary for torpedo delivery, the Devastator was obsolete even before the war. Nonetheless, TBD pilots scored several hits on Japanese ships during Midway, a true testament to their skill and courage! In the game, players will find even taking off requires finesse and judicious use of flaps to coax the Devastator off the carrier deck!





## SUPERMARINE SPITFIRE

### Dimensions:

Span: 31.9'

Length: 31'

### Engine:

Rolls Royce Merlin 61 1720 hp in-line

### Weights:

Empty: 5,800 lbs.

Loaded: 7,500 lbs.

### Performance:

Max Speed: 405 MPH

Range: 430 miles

### Armament:

Two 20mm cannons

Four 3.03" machine guns

OR

Two 20mm cannons

Two 0.5" Machine guns

Two 250 lb. bombs or four 60 lb. rockets.

### Description:

The hero of the battle of Britain, the Spitfire was modified constantly through the war. The "Clip-Wing" Mk. XIV variant in the D-Day scenarios was one of the fastest models, but lacked the maneuverability of the earlier Mk. IX. Regardless, the Spitfire is the best pure dogfighter of the D-Day aircraft, and will easily out-turn any other fighter it faces.





# TYPHOON

**Dimensions:**

Span: 41.6'

Length: 32'

**Engine:**

One Napier-Sabre II 2180hp liquid-cooled H-24.

**Weights:**

Empty: 8,800 lbs.

Loaded: 13,980 lbs.

**Performance:**

Max Speed: 405 MPH

Range: 510 miles

**Armament:**

Four 20mm Cannon

Two 1000lb. bombs or

Eight 60 lb. rockets

**Description:**

Though plagued by engine problems, the Typhoon was a superb ground-attack plane and low-level fighter. Fast, durable, and more agile than the German fighters, players will find the Typhoon a forgiving aircraft. Its stability made it particularly well-suited for attacking tactical targets such as vehicles and airfields. The Typhoon's speed and firepower also made it an excellent weapon against jets and "Buzz Bombs."





## FOCKE-WULF FW-190

### Dimensions:

Span: 34.4'

Length: 29.7'

### Engine:

One BMW 139 1,700 hp radial

### Weights:

Empty: 5,900 lbs.

Loaded: 7,500 lbs.

### Performance:

Max Speed: 408 MPH

Range: 942 miles

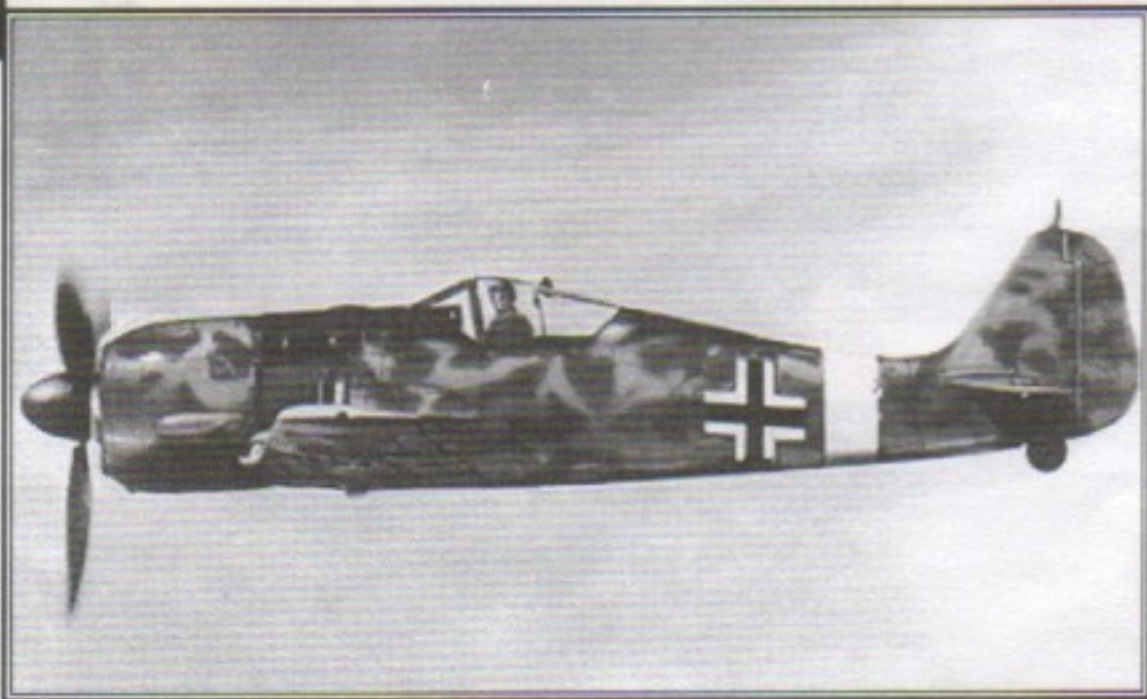
### Armament:

Two MG 131 machine guns

Up to four 20mm MG 151 cannon

### Description:

Durable and versatile, the Fw-190 still suffered in performance comparisons to the newer Allied fighters. Though possessing a higher roll rate than the Spitfire, its turning performance was mediocre. The Fw-190's speed, firepower, stability, climb performance, and robust construction still made it a dangerous opponent up to the end of the war. Players should avoid turning duels with Spitfires if at all possible!





# HENSCHEL HS-129 B2

## Dimensions:

Span: 46' 7"

Length: 32'

## Engine:

Two 14-cylinder radial, air-cooled, 700 hp, Gnome-Rhone engines.

## Weights:

Empty: 11,574 lbs.

Loaded: 13,254 lbs.

## Performance:

Max Speed: 253 MPH

Range: 428 miles

## Armament:

Two 20mm cannons

One 30mm cannon

Six machine guns.

## Description:

Perhaps the most heavily-armored ground-attack aircraft of WWII, the Hs-129 was a demanding plane to use effectively. Though more capable in the anti-tank role than the Stuka, the lack of a tail gun was one of several factors that made it very vulnerable to fighter aircraft.





## JUNKERS JU-87G

### Dimensions:

Span: 49' 3"

Length: 37' 9"

### Engine:

One 12-cylinder V, liquid cooled, 1,400 hp, Junkers Jumo 211J.

### Weights:

Empty: 14,569 lbs.

Loaded: 16,254 lbs.

### Performance:

Max Speed: 195 MPH

Range: 198 miles

### Armament:

Two 37mm Cannons

One machine gun

### Description:

A fearsome weapon during the French and Polish campaigns, the Stuka became very vulnerable as the Luftwaffe began to lose air superiority. Though slow and sluggish, it was a stable and reliable dive-bomber that gained new life in the anti-tank role against Russian armor.

GERMAN





# JUNKERS JU-188

**Dimensions:**

Span: 72.1'

Length: 48'

**Engine:**

Two BMW 801ML 1,300hp air-cooled radials

**Weights:**

Empty: 25,374 lbs.

Loaded: 31,989 lbs.

**Performance:**

Max Speed: 310MPH

Range: 1,210 miles

**Armament:**

One 20mm cannon

One 13 mm machine gun

6,615 lbs. bombs

**Description:**

Designed as a torpedo-bombing modification to the Ju-88, this medium bomber served in a variety of roles until the end of the war. Fast, durable, and stable, the Ju-188 handles well for an aircraft of its size and weight. It's only drawback was nagging yaw instabilities caused by a lack of rudder authority at low speeds, and throttle problems that caused the engines to rarely operate in synchronization.





## MESSERSCHMITT BF-109

### Dimensions:

Span: 32.5'

Length: 29.7'

### Engine:

One Daimler-Benz DB-605A-1 1,475 hp inline

### Weights:

Empty: 5,900 lbs.

Loaded: 7,500 lbs.

### Performance:

Max Speed: 387 MPH

Range: 615 miles

### Armament:

One 30mm cannon

Two 13mm machine guns

### Description:

Wildly successful during the early stages of the war, the Bf-109 was later outclassed by Allied aircraft such as the Spitfire Mk. XIV, P-51 Mustang, and Yak-3. Even with dozens of modifications, the Bf-109 was probably the least effective fighter flying during Operation Overlord and the Battle of Kursk. With the exception of the Wildcat, the Bf-109 is the most difficult aircraft to use effectively in the game.

GERMAN





# AGM-2 REI-SEN "ZERO"

## Dimensions:

Span: 39.3'

Length: 29.9'

## Engine:

One 950 hp Sakae air cooled radial

## Weights:

Empty: 3704 lbs.

Loaded: 5313 lbs.

## Performance:

Max Speed: 336 MPH

Range: 1,160 miles

## Armament:

Two 20mm cannon (wings)

Two 7.7mm machine guns (nose)

Two 132 pound bombs

## Description:

One of the few truly aerobatic fighters of WWII, the maneuverability of the Zero was simply incredible. No Allied plane in the Pacific could out-turn the "Zeke," though its light construction and lack of self-sealing fuel tanks proved to be fatal weaknesses. Attacking bombers is particularly dangerous in a Zero, as the combined firepower of a formation's tailguns can do considerable damage. Players should always take advantage of the Zero's climb rate and maneuverability, and avoid "slug-ging it out" with enemy aircraft.





## BSN "KATE"

### Dimensions:

Span: 48.8'

Length: 34'

### Engine:

One 1,000 hp air cooled radial

### Weights:

Empty: 4,830 lbs.

Loaded: 8,360 lbs.

### Performance:

Max Speed: 235 MPH

Range: 634 miles

### Armament:

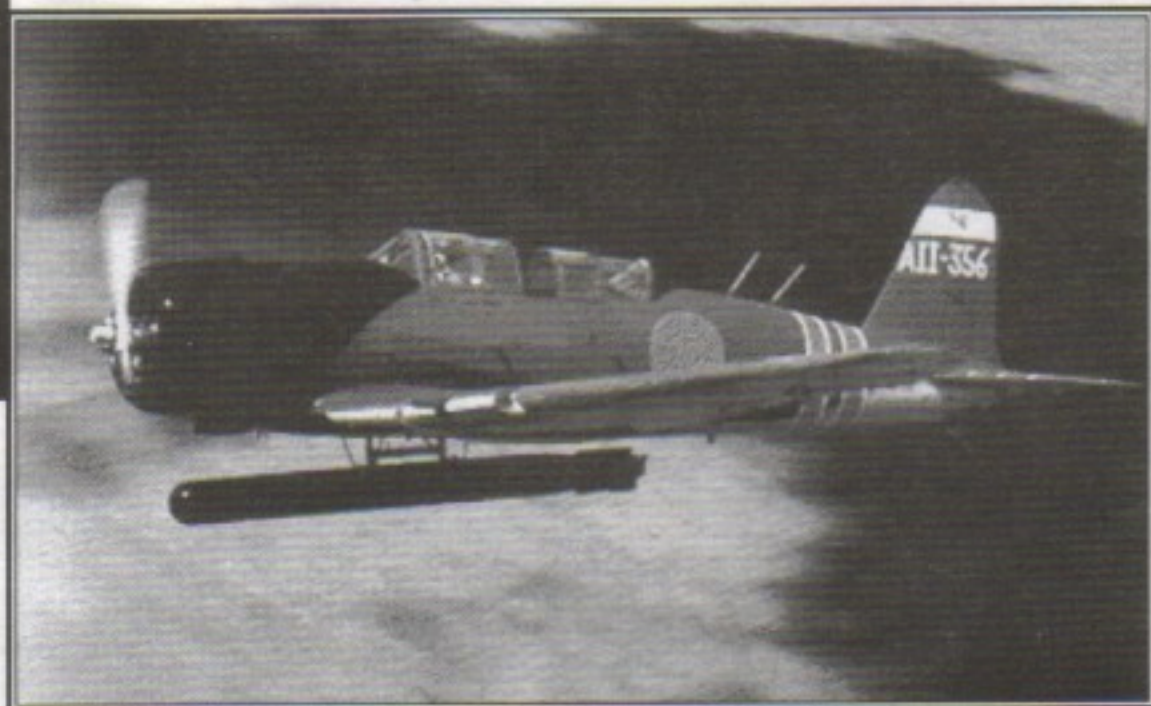
One 7.7mm machine guns

One torpedo or 1,650 pounds of bombs.

### Description:

Very similar to the Dauntless, the Kate is somewhat more responsive, but less stable. These characteristics make the Kate a far better torpedo bomber than the Devastator. The Kate was particularly instrumental in the destruction of the Yorktown at Midway.

JAPANESE





# D3A "VAL"

**Dimensions:**

Span: 47.1'

Length: 33.4'

**Engine:**

One 1,000 hp Mitsubishi Kinsei 44 radial

**Weights:**

Empty: 5,309 lbs.

Loaded: 8,047 lbs.

**Performance:**

Max Speed: 240 MPH

Range: 915 miles

**Armament:**

Two 7.7 mm machine guns (Forward)

One 7.7mm machine gun (rear)

Up to 800 lbs. of bombs

**Description:**

Surprisingly fast and agile for such an ungainly-looking plane, the Val was the primary dive-bomber used against the initial attack on the Midway islands. Lacking self-sealing fuel tanks, the Val is much more fragile than the Kate or Dauntless, however.





## ILYUSHIN IL-2 "STORMOVIK"

### Dimensions:

Span: 44' 0"

Length: 36' 4"

### Engine:

One 12-cylinder V, liquid cooled, 2000 hp, Mikulin AM-42.

### Weights:

Empty: 13,984 lbs.

Loaded: 16,254 lbs.

### Performance:

Max Speed: 329 MPH

Range: 496 miles

### Armament:

Two 23mm cannons

One 20mm cannon

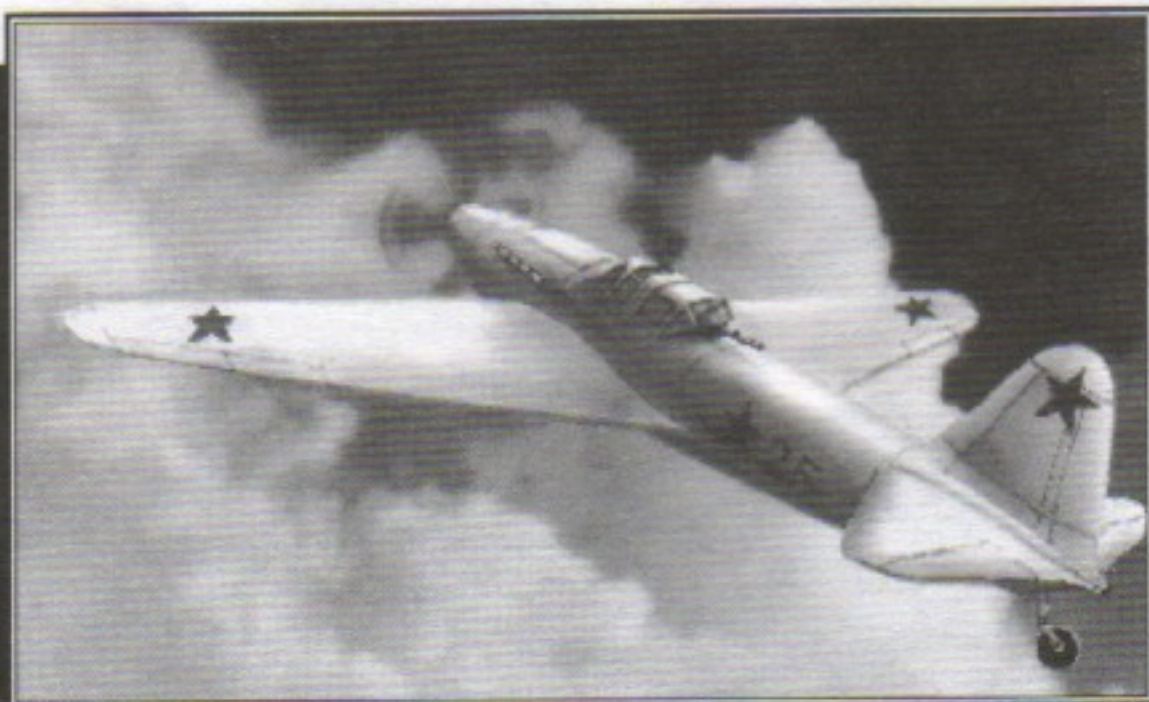
One Machine gun (rear)

2,207 lbs. of bombs

### Description:

A highly successful design, the Sturmovik was constantly upgraded throughout the war. While lacking exceptional handling, the IL-2 was still a forgiving and fast aircraft with astounding durability. In several instances, German fighters completely emptied their guns trying to bring down Sturmoviks. When equipped with 37mm cannons, the IL-2 became a tank destroyer on par with the Stuka and Hs-129.

RUSSIAN





# LAVOCHKIN LA-5

## Dimensions:

Span: 32' 2"

Length: 28' 3"

## Engine:

One 14-cylinder radial, air cooled, 1700 hp, Svetsov M.82FN.

## Weights:

Empty: 7,417 lbs.

Loaded: 8,129 lbs.

## Performance:

Max Speed: 401 MPH

Range: 475 miles

## Armament:

Two 20mm Cannons

441 lb of bombs

## Description:

The first of the Soviet fighters that could face the Bf-109 and Fw-190 on even terms, the La-5 saw extensive use during the battle of Kursk. Fast and nimble, it could decisively outmaneuver its German counterparts in the low-altitude combat typical on the Eastern Front. While effective, it was plagued by skittish handling characteristics, short range, and insufficient firepower. Many of the highest scoring Soviet aces flew the La-5.



RUSSIAN



# YAKOVLEV YAK-3

## Dimensions:

Span: 30' 3"

Length: 27' 11"

## Engine:

One 12 cylinder V, liquid cooled, 1,300 hp Klimov M-105PF-2

## Weights:

Empty: 5,871 lbs.

Loaded: 6,421 lbs.

## Performance:

Max Speed: 412 mph

Range: 558 miles

## Armament:

One 20mm cannon

Two Machine guns

## Description:

One of the best fighters of WWII, the versatile Yak-3 combined excellent handling, pilot visibility, reliability, and speed. Unfortunately, the Yak's light armament and limited ammunition capacity was a handicap against planes such as the Fw-190 and Hs-129. Definitely the best dogfighter available during the Battle of Kursk.

RUSSIAN





# OUT OF THE SUN

## Tech Support

### Chapter X

#### **Eidos Customer Service: (415) 217-4111**

If you need help with this - or any other Eidos products, please give us a call and our automated Service line will attempt to help you with your problem. You can reach a real human being to answer your question, Monday thru Friday 10am to 5pm Pacific time. We may also be reached electronically at the addresses on the Warranty Card. We will try to have your question answered within 1 working day. Also, please check out our web site at [www.eidos.com](http://www.eidos.com). Many common problems will be answered there.

#### **Before You Call:**

Are you running system 7.0.X or greater? Out Of The Sun will not run on Macintoshes running system software earlier than 7.0.X.

We have an Automated Customer Service line that is able to answer all the most commonly asked questions about the software. Our staff is very busy answering calls all day long, and still many customers would rather wait on hold for 10 to 20 minutes than listen to their problem solved automatically in under 3. If you could please help us out by trying the automated attendant first, you can shorten the wait time for yourself in the future.

When you do speak to a representative, please have the following information handy:

What kind of Mac/Power Mac you are using.

What version of the system software you are running.

How much memory your Mac/Power Mac has.

What types of peripherals you are using (Joysticks, etc.).

#### **DO YOU WANT TO BACK UP YOUR DISK?**

We know you're concerned about disk damage or failure. Please send us \$10 (U.S. Funds) and we'll send you a backup. Please include proof of purchase (a copy of the receipt for example). We can only back up floppies with floppies. We can not exchange for CD's, unless the original CD is defective. There is no difference between the CD and floppy, and therefore we do not do format exchanges.

# OUT OF THE SUN



Chapter 1

Chapter 2

Chapter 3

The first chapter of the book is a general introduction to the subject of the book. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book. The second chapter is a detailed discussion of the first chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

Chapter 4

The fourth chapter of the book is a detailed discussion of the third chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

The fifth chapter of the book is a detailed discussion of the fourth chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

The sixth chapter of the book is a detailed discussion of the fifth chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

The seventh chapter of the book is a detailed discussion of the sixth chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

The eighth chapter of the book is a detailed discussion of the seventh chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

The ninth chapter of the book is a detailed discussion of the eighth chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.

Chapter 10

The tenth chapter of the book is a detailed discussion of the ninth chapter. It discusses the importance of the subject and the scope of the book. It also discusses the author's approach to the subject and the organization of the book.



---

## **YOUR DISK CARRIES A 90 DAY WARRANTY**

Eidos warrants for a period of 90 days from the date of purchase by the original purchaser of the Software that the recording medium on which it was recorded will be free from defects in materials and workmanship. Defective media which has not been subjected to misuse, excessive wear or damage due to carelessness may be returned during the 90 day period without charge. After the 90 day period, defective material may be replaced in the United States for \$10 (U.S. Funds) (plus 8.25% sales tax if the purchaser resides in California). Make checks payable to Eidos Interactive and return to Eidos Interactive, 303 Sacramento Street, San Francisco, CA 94111. To speed up processing return only the disk(s), not other materials.

## **LICENSE AGREEMENT**

This computer software product (the 'Software') and the user manual are provided to the Customer under license from Eidos Interactive and are subject to the following terms and conditions, to which the customer agrees by opening the package of the Software and user manual and/or using the Software. Granting of this license does not transfer any right, title or interest in the Software or the user manual to the Customer except as expressly set forth in the License Agreement.

The Software and the user manual are copyrighted 1994 by Eidos Interactive. All rights reserved. Neither the software or the user manual may be duplicated or copied for any reason. The Customer may not transfer or resell the Software or the user manual. All registered trademarks and names are properties of their respective owners.

The remedies provided above are the Customer's sole and exclusive remedies. In no event shall Eidos Interactive be liable for any direct, indirect, special, incidental, or consequential damages with respect to the Software or the user manual. Except as provided, Eidos Interactive makes no warranties either expressed or implied with respect to the Software or the user manual, and expressly disclaims all implied warranties or merchantability and of fitness for a particular purpose.



## Bibliography

- Atlas of DDay and the Normandy campaign:: John Man:: Penguin
- DDay, From the normandy beaches to the liberation of france :: Steven Badsey :: Tiger 1994
- German warships of world war 2:: JC taylor :: Ian Allen1966
- German order of battle 1944:: Crown copyright 1975
- Invasion- They're coming! :: Paul Carell:: George G Harp & Co. 1962
- AFV weapons profiles:: Profiles Publications 1967-74
- Squadron signal publications, Armour series:: 1968-74
- Hitlers Luftwaffe:: Tony Wood & Bill Gunston:: Salamander 1977
- Tanks and fighting vehicles:: C.F. Foss:: Salamander 1977
- Normandy Landings:: Derek Blizard:: Hamlyn 1993
- WaffenSS, uniforms & equipment::DSV Fosten:: Almark 1971.
- Unit organisatio and history of the WaffenSS:: Roger James Bender & Hugh Page Taylor:: J R Bender 1969-75
- German fighters and Bombers of WW1&WWII Vols1-4:: Martin C Windrow:: Hylton Lacy 1968
- Caen, Anvil of victory:: Alexander Mckee:: Souvenir Press 1964
- Janes Fighting Ship WWII:: Janes Publications 1946 (1989)
- D-Day, Operation Overlord:: B.C. Nalty & R.A. Pritchard.
- Thanks to Motor books and accessories 33 St Martins Crt, Charing Cross WC2.
- Ghosts:: Philip Makanna::Thomas-Grant Incorporated 1987
- Miracle at Midway:: Gordon W. Prange::Prange Enterprises, Inc. 1982
- Kursk 1943:: Mark Healy :: Reed International Books Ltd. 1992







