

THE BISMARCK

The infamous *Bismarck* was one of the largest and most powerful fighting ships ever built for the German Navy.

It was first launched on February 14, 1939. But months of outfitting, trial runs, and finishing touches were needed before the *Bismarck* was finally completed in March, 1941. By then it had become a very powerful and extremely dangerous warship.

Its crew consisted of over 2,300 officers and men.

Vital Statistics

Length 823 feet

Beam 118 feet

Planes 4 float planes for reconnaissance and combat

Armament Eight 15-inch guns in four double turrets with a maximum range of 26 miles
Twelve 5.9-inch guns in six double turrets with a maximum range of 14 miles
A host of anti-aircraft weapons with a range of up to 11 miles

Armor Side armor up to 12.6 inches thick
Decks up to 4.7 inches thick
8.7 inch thick barbettes (armored protective cylinders around the gun turrets)
14.1 inch thick main turrets
3.9 inch thick secondary turrets
A conning tower up to 13.8 inches thick

DIVE BOMBER™



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Instruction Manual



REVENGE OF THE AVENGER

The Facts

The date: May 24, 1941.

The place: The Denmark Strait between Iceland and Greenland.

The circumstances: World War II.

The event: The mighty German battleship, *Bismarck*, sinks HMS *Hood*. Within minutes, nearly 1,400 British seamen are sent to a watery death.

The Revenge

Suddenly the Allied control of the North Atlantic is severed by the world's most powerful fighting ship. And the British Admiralty wants revenge. It rallies every available warship in the North Atlantic—including the aircraft carrier *Ark Royal*.

The Fantasy

In the middle of the night on May 26, under cover of darkness, a U.S. Navy prototype torpedo plane is secretly rushed to the *Ark Royal*. All hope rests on the prowess of this new secret weapon from America. The name of the flying fighter? The Grumman *Avenger*—soon to become the world's best-known torpedo bomber.

The *Avenger* sneaks up on the mighty *Bismarck* before dawn. Within a few hours, it knocks out the *Bismarck's* two main forward gun turrets as well as the two aft turrets. The *Bismarck* quickly becomes a sitting target and begins sinking into the icy North Atlantic. At 1016 hours the British order a cease fire. At 1040 hours the *Bismarck* capsizes and sinks.

The Mission

Pure revenge. Sink the ship that sunk our ship. Sink the *Bismarck* with your *Avenger*. Or go down trying!

Note: **Dive Bomber** is part history, part fantasy. Historically, the *Avenger* did not take part in the sinking of the *Bismarck*. * **Dive Bomber** lets you experience what would have happened if one of the world's greatest torpedo bombers, the *Avenger*, had taken part in one of the most important events of WWII: the sinking of the *Bismarck*.

GETTING STARTED IBM PC and Compatibles

1. Set up your system as described in the owner's manual..If you're going to use a joystick, plug it in.
2. Insert your DOS disk into drive A and turn on the system.
3. When DOS is loaded, insert the **Dive Bomber** disk into drive A, label side up. If your system boots from a floppy drive, type DIVEBOMB and press Enter. If your system boots from a hard drive, type A: and press **Enter**. Then type DIVEBOMB and press **Enter** again.
4. Watch and listen as the **Dive Bomber** program loads. (Or press **Enter** to bypass the opening screens.)

FLIGHT TRAINING

In 1941, the *Avenger* was only a prototype. Even the most experienced pilots needed to familiarize themselves with its controls.

Before you venture into the war zone, it's a good idea to practice flying the *Avenger*. On the selection screens that appear, choose an option by pointing to it and pressing the fire button. (On the Amiga and ST, you must make these selections with the mouse.) Then use the controls to practice your take-offs, landings, and torpedo runs on the *Bismarck*.

Note: If your mouse or joystick fails to respond, press M, which toggles between mouse and joystick control.





The Controls

Note: With an Amiga or ST, you can use a mouse or joystick to control the *Avenger*. For mouse control, roll the mouse when this manual tells you to move the joystick handle. Press the left mouse button in place of the joystick fire button. Press the right mouse button in place of the Spacebar. Press M on the keyboard to toggle between mouse and joystick control.

Ascend.	Pull joystick handle back.
Descend.	Push joystick handle forward.
Bank right.	Push joystick handle right.
Bankleft.	Push joystick handle left.
Brake.	Press K.
Reset a control.	With the joystick handle, move the cursor across the control panel until it's pointing to a switch. Then press the fire button.
Display Pilot's screen.	Press 1.
Display Engineer's screen.	Press 2.
Display Navigator's screen.	Press 3.
Display Tail Gunner's screen.	Press 4.
Switch between gun cursor and yoke.	Press Spacebar.
Fire machine gun.	Press the fire button.
Drop a torpedo.	Press L twice (once to get it ready, once to let it go).
Pause.	Press P.
Display status screen.	Press S.
Return to selection screens.	Press Esc (or <— on the Commodore).

To ensure a successful take-off, follow these steps:

1. Press 2 to view the Engineer's screen.
2. Turn on the light by pointing to the light switch and pressing the fire button.
3. Lock your wings by pointing to the wing lock control and pressing the fire button. The switch moves to L (lock).
4. Set the arrester to U (up) position.
5. Select a fuel tank by clicking on tank 1, 2, or 3.
6. Set your fuel mixture to 2/3 rich.
7. Set the throttle switch to 3/4 full.
8. Start the engine by clicking on the ignition switch.
9. Press 1 to display the Pilot's screen.
10. Press K to release the brake.
11. Nose up gently by pulling back on the joystick handle. The yoke should follow the handle. If the yoke fails to move, press Spacebar to toggle into yoke control. Check your ascent by watching your artificial horizon.
12. Once you've cleared the deck, press 2 to display the Engineer's screen. Set the fuel mixture and throttle to medium values. Set your landing gear and tail wheel to the U (up) position. The *Avenger* should stabilize in the air.

Note: See Pilot's Screen and Engineer's Screen later in this manual for illustrations and full details on using the controls.



Landing

When you get close to the *Ark Royal*, follow these steps for a successful landing:

1. Press 2 to view the Engineer's screen.
2. Set the landing lights switch to On. This turns on the landing lights on the *Ark Royal*.
3. Put the tail wheel in the D (down) position.
4. Put the arrester in the D (down) position.
5. Put your landing gear in the D (down) position.
6. Reduce your airspeed to under 175 mph by reducing the throttle.
7. Press 1 to view the Pilot's screen. (Check your airspeed. It should be under 175 mph. If not, return to the Engineer's screen and reset your throttle.)
8. Make sure your altimeter reads between 50 and 100 feet.
9. Keep your descent (vertical) speed at four feet per second or less,
10. Adjust your nose to level or slightly up for touchdown. Watch your artificial horizon to monitor your descent.

Note: See **Pilot's Screen** and **Engineer's Screen** later in this manual for illustrations and full details on using the controls.

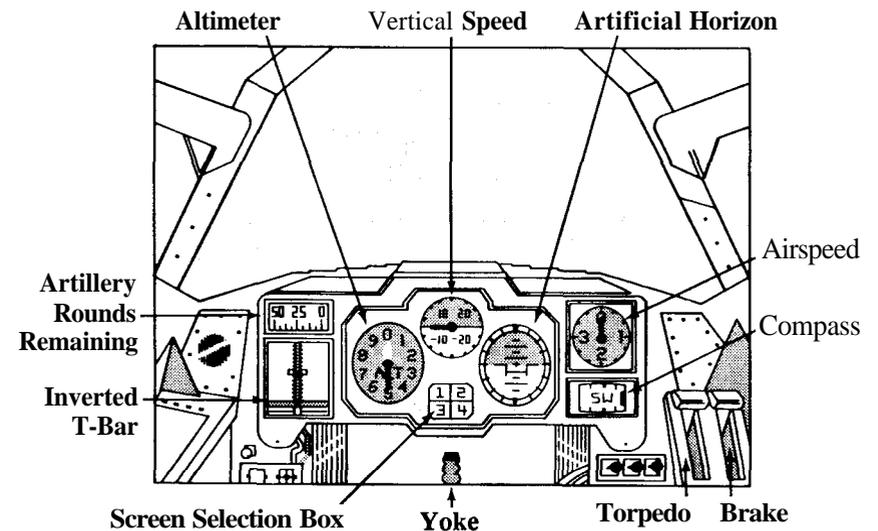
THE REAL THING

Now that you've had some flying practice, you're ready for real combat. And the German Navy is ready to protect the *Bismarck*—with *Dornier* aircraft, mines, E-boats, even U-boats.

On the *Ark Royal* the captain has you pick straws. Each straw is a different mission. The short straw is the most difficult mission. You can either accept your mission or reject it and choose another straw. Once you accept a mission, get ready to take on the German naval forces. Be sure you know what you're doing when you choose to attack the *Bismarck*. You only get one chance to torpedo the ship. And if you fail, the game ends.

Pilot's Screen

The Pilot's screen is the cockpit. Here you actually fly the plane. You can also shoot down the enemy with machine-gun fire and drop a torpedo on the *Bismarck* from this screen.





Airspeed Your airspeed is shown in hundreds of miles per hour. To increase or decrease airspeed, display the Engineer's screen and adjust the throttle and fuel mixture settings.

Altimeter Red needle indicates altitude in tens of feet. Grey needle indicates altitude in hundreds of feet. White needle indicates altitude in thousands of feet.

Artificial Horizon Shows your altitude and the angle of your wings relative to the fixed horizon. This is especially valuable when flying at night, in clouds, or in other low-visibility situations.

Artillery Rounds Remaining Shows how much ammunition you have left. When the indicator reaches zero, you've run out of fire power. To fire, press Spacebar to toggle into gun control. A gunsight appears in your windshield. With the joystick handle, move the gunsight to aim, then press the fire button to fire on enemy aircraft, E-boats, U-boats, and mines. Press Spacebar again to toggle back into yoke control.

Brake Stops the *Avenger* on the runway. During take-off, release the brake by pressing K.

Compass Shows your direction of flight.

Inverted T-Bar Gives the position of your ailerons (wing flaps) and rudder, reflecting how far up or down and right or left the yoke is set.

Screen Selection Box Flashes when you're needed at another position. On the keyboard, press the number that's flashing to display the position.

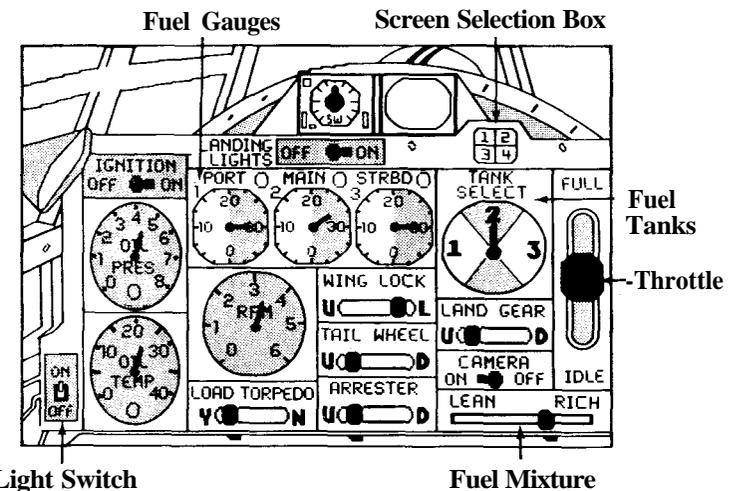
Torpedo When the lever is forward, a torpedo is waiting. To ready the torpedo, move the lever to the middle by pressing L. To drop the torpedo, press L again.

Vertical Speed Numbers indicate up or down speed in tens of feet.

Yoke Steers the plane. To ascend, pull the joystick handle back. To descend, push the joystick handle forward. To bank, push the joystick handle right or left. The yoke follows the joystick handle.

Engineer's Screen

The Engineer's screen is where you prepare *your Avenger* for take-off and landing. It is also where you make sure all systems are in order. When your plane is damaged you can continue flying, but the risks are high. Your best bet is to return to the *Ark Royal* for repairs.



Arrestor This hook dangles from the rear of your plane and catches the landing cables on the *Ark Royal's* runway. Be sure it is down during a landing.

Camera Switch the camera to On before dropping a torpedo. When it's all over you'll see a playback of your attack on the *Bismarck*.

Fuel Gauges Measure the fuel level of their respective tanks.



Fuel Mixture Adjusts your fuel and air ratio. Use a richer mixture for take-offs and fast get-aways. Use a leaner mixture for cruising.

Fuel Tanks The three numbered quadrants represent your three fuel tanks. When one tank is empty (watch your fuel gauge), switch to another tank. Main tank 2 holds three times as much fuel as wing tanks 1 and 3. When a tank is almost empty the engine starts to stall out. Immediately switch to a full tank and the engine will restart itself automatically.

Ignition Starts your engine. Never turn off your ignition during flight.

Landing Lights Controls the lights on the runway of the *Ark Royal*. Unless the lights are on, you can't land. Once they are on, the *Ark Royal* will orient itself to you for a successful landing.

Light Switch Turns the Engineer's light on and off. Always turn off the light before leaving the Engineer's screen since your lights make it easier for the enemy to spot you.

Oil Pressure/Oil Temperature Indicate the condition of your engine. If the oil pressure gets too low, the engine fails. If the oil temperature gets too high, the engine overheats. Either circumstance is perilous. Ditch the plane before it crashes. (See **Survival** in this manual for instructions.)

RPM Your engine's rotations per minute. To adjust the RPMs, move the throttle up or down. Avoid overrevving the engine (high RPMs). Redline (danger) is 5,000 RPM.

Screen Selection Box Flashes when you're needed at another position. On the keyboard, press the number that's flashing to display the position.

Tail Wheel and Landing Gear For landing, switch both of these levers to the down position. Otherwise, keep them up during flight.

Throttle Controls your engine speed. During flight it should usually be set at medium.

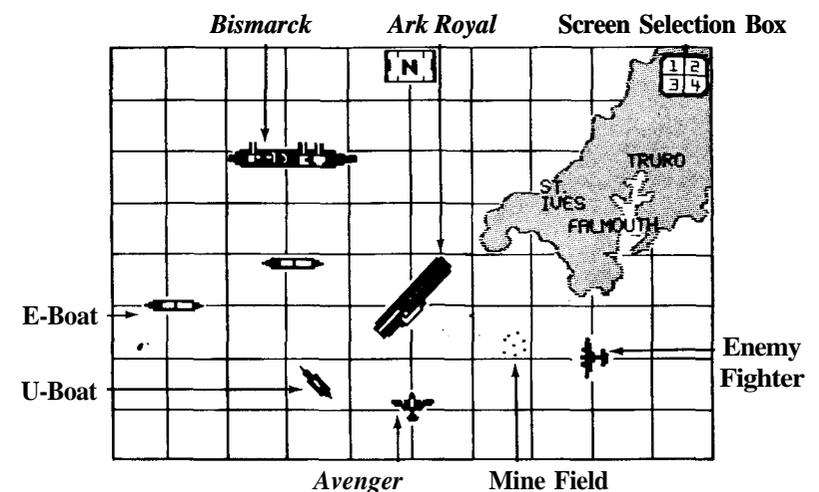
Torpedo If you are planning to attack the *Bismarck*, carry a torpedo. Otherwise, it's added baggage that weighs down your *Avenger*. To load the torpedo, flick the torpedo switch to Y (yes) before take-off.

Wing Lock Always set the wings to the L (locked) position during take-off and flight.

Navigator's Screen

From the Navigator's screen you'll create flight plans and monitor reports of enemy locations. The Navigator's screen has four views, or quadrants, making up a complete map. To move from quadrant to quadrant, push your cursor against any edge of the screen.

To set a flight pattern from the Navigator's screen, move to a quadrant. Position the cursor in the quadrant and press the fire button. A destination cursor drops onto the map. To set a flight pattern from the Pilot's screen, fly in the direction indicated by the vertical red bar on the compass.





Ark Royal The British aircraft carrier that is your home base.

Avenger The United States Navy torpedo bomber you are flying.

Bismarck Your ultimate target—the queen mother of all the battleships of World War II. She has a crew of over 2,300 men and carries 15-inch guns. You have one opportunity to sink the *Bismarck*. If you fail, the game ends.

E-Boats Carrying deadly anti-aircraft guns, these are Germany's answer to U.S. PT class boats. Each boat represents a group of from one to five boats.

Enemy Fighters Advance radar sightings of enemy *Dornier* aircraft. Each plane represents a group of from one to ten planes.

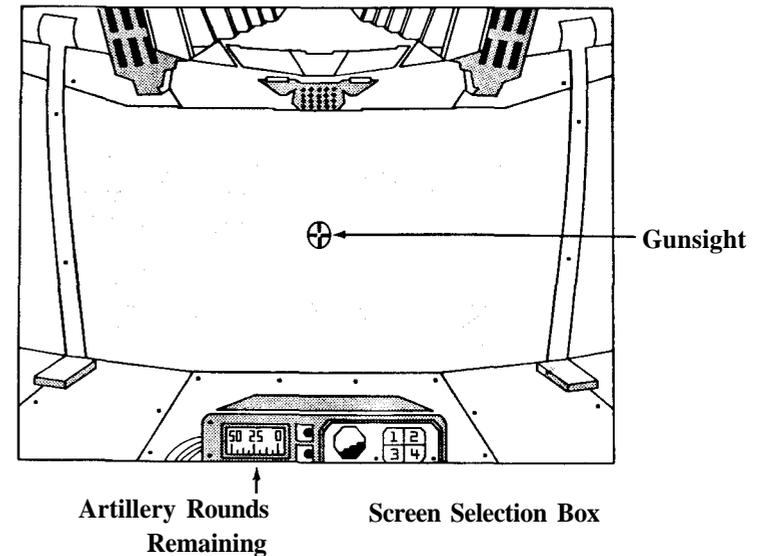
Mines Contact-sensitive explosives planted in the waters. Shoot and destroy them before they destroy the *Ark Royal*.

Screen Selection Box Flashes when you're needed at another position. On the keyboard, press the number that's flashing to display the position.

U-Boats German submarines carrying anti-aircraft guns and torpedoes. Each submarine represents one to five subs sailing together. You can only see them when they surface.

Tail Gunner's Screen

From the Tail Gunner's screen you'll be firing at the enemy—especially at targets you may miss from the Pilot's screen.



Artillery Rounds Remaining Shows how much ammunition you have left. When the indicator reaches zero, you've run out of fire power.

Gunsight Use the joystick handle to move the gunsight and aim your gunfire at the enemy. Press the fire button to fire.

Screen Selection Box Flashes when you're needed at another position. On the keyboard, press the number that's flashing to display the position.



SURVIVAL

Return to the *Ark Royal* frequently. This will give you a chance to refuel your tanks and restock your ammunition. Also, any damage done to your plane will be repaired.

Fly trial runs to see how far a full load of fuel will take you. This will give you an idea of how long you can stay out before returning to the *Ark Royal*.

When landing, keep the nose of the *Avenger* up, keep your airspeed under 175 mph, and keep your vertical descent at less than four feet per second.

Don't worry about your direction when coming in for a landing. As soon as you turn on the landing lights the *Ark Royal* will orient itself to your position.

Regularly check your status screen (press S) to see the extent of damage inflicted on the *Ark Royal* and on your *Avenger*.

If you run out of fuel or if your plane experiences engine failure, ditch your *Avenger* in the ocean. To ditch, land very softly at the lowest possible speed (under 100 mph) with your landing gear up. Once you hit the water, switch off the engine immediately and wait for the rescue team.

You can only drop a torpedo on the *Bismarck*. When releasing a torpedo, fly very low (about 100 feet). Drop the torpedo when you are close to the *Bismarck*. The torpedo will skim the water, increasing your chances for a perfect hit.

Fly under 2,000 feet as often as possible to avoid being picked up on enemy radar. This is a valuable tactic when attacking the *Bismarck*. If a spotlight is tracking you, lose it by changing direction quickly.

Keep your engine lights off except when direly needed. Enemy flak increases when the Germans can see you.

Eliminate as many enemy U-boats and E-boats as you can before trying to torpedo the *Bismarck*. Otherwise the *Ark Royal* will be in danger when you're not there to defend it.

Keep your eye on the *Bismarck*. If it sails off the map you may not be able to raise it again and complete your mission. If you fail to hit the *Bismarck* with a torpedo, the game ends.

Protect the *Ark Royal* at all costs. If it's destroyed you have nowhere to go for repairs and refueling.



THE AVENGER

The Grumman *Avenger* (codenamed *Blackhawk*), earned a reputation as the most deadly torpedo bomber developed during World War II. It quickly became the standard torpedo bomber for the entire U.S. Navy and was produced in larger numbers than any other torpedo bomber in history.

The *Avenger* carried a crew of three men: a pilot, a gunner, and a navigator/radio operator who also manned the lower guns in some models.

Avengers were built for the Battle of Midway, June, 1942. They also battled the Japanese at Rabaul, New Britain in the fall of 1943. In February, 1944, *Avengers* destroyed more than 250 Japanese aircraft on the ground in the Truk Islands.

An integral force in both the Atlantic and Pacific naval campaigns, *Avengers* also engaged in anti-submarine operations carried out from small escort carriers, beginning in February, 1943. By the spring of 1944 they had helped eliminate enemy submarines from all major shipping lanes.

Vital Statistics

Wingspan	54 feet, 2 inches
Engines	Wright double row R-2600 Cyclone
Maximum horsepower	1600
Top speed	300 mph
Carryingcapacity	2,000 pounds of bombs or a standard torpedo
Other armament	.50 caliber machine gun in front cowl .50 caliber machine gun in the power-operated ball turret