WW FLYERS

QUICK START

← Download page Watch the video Ways to play Install Bomber Escort World War II Controls Cannon gunner Reading the HUD Scoring Multiplayer Hosting

Watch the intro first: Classic Dogfight, Bomber Escort and Cannon Gunner in about a minute. Full HD version (84 MB)

WAYS TO PLAY

WW Flyers is arcade air combat in two wars - **World War I** and **World War II** - with three ways to fight and a public server that mixes them all. Everything runs on one battlefield: two armies of infantry, tanks, artillery and supply trucks fight below you, and every unit can be hit.

Mode	What you do

Classic Dogfight	Two sides, Allies against Central Powers (Axis in WWII). Fly a fighter, shoot down enemy aircraft, strafe infantry, bomb tanks and guns. First side to **4000 points**, or the higher score when the **10-minute** clock ends, wins.
Bomber Escort	Everybody flies for the Allies and guards a stream of heavy bombers (airships in WWI, B-17s in WWII) across a long battlefield to a German city defended by flak. Keep the bombers alive, shoot down the fighters hunting them, and share in the bombing run. No timer, no losing - just points. Details
Cannon Gunner	Stay on the ground and man a field cannon: look through the binoculars, judge the range, fire, and ride the shell all the way to its target. Pilots and gunners fight the same battle. Details
Spectate	Watch the battle from a free camera or follow any pilot. Join in whenever you like.

Play **Single Player** against bots, **Host** a game for friends, or **Join** the public server **3wcircus.com** (UDP port 7778). The public server runs all four combinations - Classic and Bomber Escort, in World War I and II - and moves on to a different one each round. At the end of every round the game tells you what is coming next, and anyone can call a vote to skip to it (press `V`, then `Y` or `N`).

New in this edition.

- **Roads and caves.** Three winding dirt roads cross the battlefield, a different set every round. Trucks, halftracks (with a squad riding in the back) and armed cars roll out of rock caves at the road ends and drive toward the enemy; armour turns to face its target and goes round other vehicles instead of through them.
- **Blue hit-point numbers.** A blue **-N** pops up over any plane, tank or gun when it is hit, so you can see every hit land (switch it off in Settings if you prefer).
- **Red crosshair.** When an enemy is in range and in your line of fire the crosshair turns bold red - that is the moment to shoot.
- **Sound that follows distance.** Engines, guns, flak and explosions are loud close up and fade with distance; bullet sounds are only heard from the craft you are flying or watching.

- **Bomber Escort upgrades.** A team order, **Defend the Bombers** (the default), keeps your bot wingmen at the bombers' wingtips; crews and pilots bail out by **parachute** from shot-down planes; downed aircraft glide to earth in flames; flak bursts in black puffs.
- **Controllers.** The triggers can set your speed, there is a **SET UP TRIGGERS** button and a **Controller sensitivity** slider in Settings, and the cannon has its own trigger controls. Controls
- **Mute and Boss.** Two small checkboxes in the top-right corner of every screen: **MUTE** silences everything, **BOSS** (or `F12`) mutes, minimizes the window and puts a dull spreadsheet over the game. Throwback.
- **Live server rotation.** Between rounds on a server there is a short window to pick a new aircraft when the war or the kind of round changes; anyone who does not pick gets a random plane.

1. INSTALL

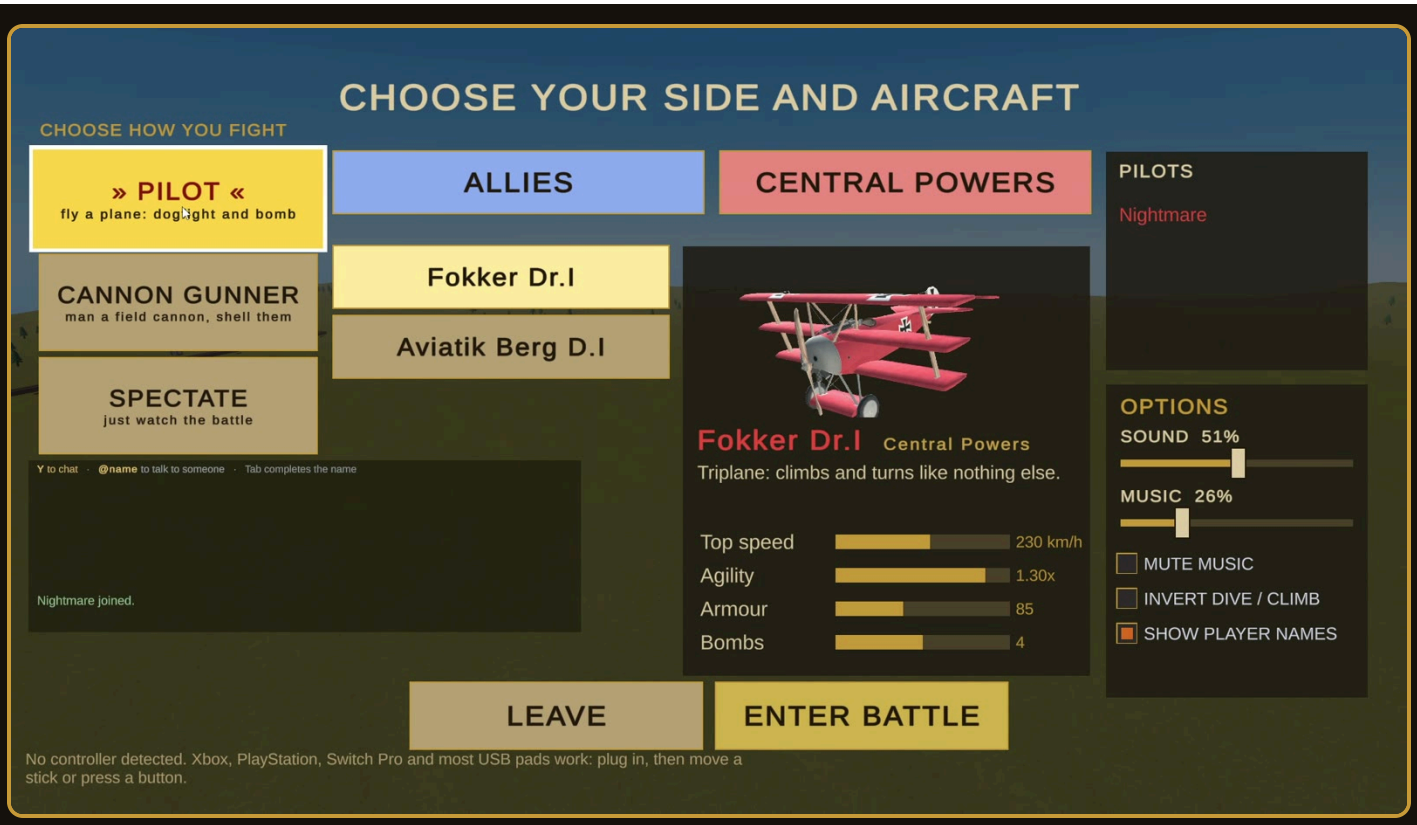
Run **WWFlyers-Setup.exe** (Windows 10 / 11). It installs just for you - no administrator prompt - and adds a Start Menu entry and an optional desktop shortcut. If Windows SmartScreen appears, choose **More info → Run anyway**; the installer is code-signed. To remove the game use Windows *Settings → Apps*.

Mac: download **WWFlyers-Mac.zip** (works on Intel and Apple Silicon Macs) and double-click it to unzip. Drag **WWFlyers.app** into your Applications folder, then **right-click it and choose Open** the first time - the Mac app is not notarized by Apple yet, so a plain double-click says it cannot verify the developer. Choose **Open** again in the dialog and it starts normally from then on (if there is no Open button, use *System Settings → Privacy & Security → Open Anyway*). If macOS asks whether to allow incoming network connections, click **Allow**. To remove the game, drag the app to the Trash.

2. YOUR FIRST FLIGHT

1. Choose **Single Player**, pick a side (**Allies** or **Central Powers** - **Axis** in World War II) and an aircraft - the preview turns so you can see it, and the bars compare speed, agility, armour and bomb load - then **Take Off**.

2. You start high over your own trench line, heading for the enemy. Push the mouse to steer - the plane follows where you point.
3. Hold the left mouse button to fire the guns (they are fixed: rounds always leave straight down the nose, so point the plane at what you want to hit - only heavy bombers have turrets that fire in other directions); right-click to drop a bomb. Bombs fall *forward* of where you release them, so let go a little early. A dropped bomb whistles on the way down - you will hear other pilots' bombs coming too.
4. Damage shows: the more a plane or tank is hit, the more it smokes - a faint wisp at first, thick black smoke when badly hurt, and flames when nearly gone. Planes are tough and can take a lot of hits - but two aircraft that collide are both destroyed, so keep your distance in a dogfight. Tanks are tough too: they smoke first and go up in a huge explosion when finally destroyed. Use it to spot who is about to go down - yours included.
5. **Throttle.** You always take off at full power. Ease off with `Ctrl` / `F` (D-pad down on a pad) only when you need to - to keep pace with slower aircraft such as the bombers in Bomber Escort - and open up again with `Shift` / `R` (D-pad up). The **POWER** figure in the left panel shows where you are. In Bomber Escort a fighter can throttle right back to about 50 km/h; the bombers cruise at 55-70 km/h.
6. Shoot down enemy aircraft, strafe infantry, bomb tanks and artillery. Every kill scores for your side.
7. The ground is not flat: rolling hills and gullies run across no-man's-land, so you can hug the terrain to hide your approach - and tanks and infantry use it too. Soldiers and tanks walk round rocks, trees, bunkers and barricades, and when they are under fire they slip behind the nearest rock, bunker or barricade and fight from there, so they are harder to hit once they find shelter.
8. Watch the ground (tanks fire slowly, but every shell counts; armour and guns shoot back at each other as well as at infantry): tanks and artillery fire flashing, smoking shells at clusters of infantry. You can follow the smoke trail back to the gun, and each shell lands in a huge fireball that kills every soldier in range and throws them into the air. Each kind of blast looks different so you can read the battlefield: plane bombs burst yellow-orange, tank shells land in a napalm fireball, and artillery shells go up in the biggest orange fireball. A tank or gun destroyed by a bomb goes up in a giant napalm-style blast. Keep your altitude up over enemy tanks. Every artillery piece has a gunner standing beside it.



BOMBER ESCORT MODE

A different kind of round: instead of two armies, you and your wingmen are all on the Allied side, escorting a stream of heavy bombers across the map to a German city. In World War I the bombers are **airships**; in World War II they are **B-17 Fortresses**.

Starting it. In **Single Player** use the **MODE** button on the side and aircraft screen; when you **Host** a game use the **MODE** button on the host screen. In both you can let **bots fill the empty seats** and choose how many escort pilots (2 to 8, people and bots together). There are always **two bombers per escort pilot**. A public server can run classic battles, Bomber Escort, or one after the other.

1. The bombers fly one straight line, side by side across the whole battlefield, at three different heights. They do not turn and they do not fly home: **keeping the bombers alive is your job**.
2. German fighters (at least twice as many as there are escort pilots) take off from the city end and go straight for the bombers. Shoot them down - each kill scores for you. Your bot wingmen each guard a bomber, flying in tight at its wingtip, and only break away for a plane that is actually shooting at them or at their bomber. Press T for the team orders: **7 - Defend the bombers** is the default, and you can send the bots after planes, tanks, cannons, troops or transports instead.
3. The bombers carry their own guns and fire on fighters that attack them. An airship has a single gun in its gondola and **cannot fire upward**.
4. As the stream nears the city an **air-raid siren** sounds. The city is defended by **anti-aircraft cannons**, in front of it and among the streets. Each is worked by a gunner: kill the gunner and it falls silent until a replacement walks up; destroy the cannon and a new one is rolled in. Machine-gun fire or a bomb destroys a cannon (and scores for you).
5. Over the city the bombers unleash a **massive bombing run**, flattening it block by block - the escorts can bomb the city too once the bombers are over it. Buildings burn for minutes afterwards. When the bombers have cleared the map the round is over.
6. The ground war carries on below you, with supply trucks and armed cars driving the roads. When a bomber is shot down its crew may bail out, and now and then a bot pilot leaves a stricken fighter: **paratroopers** drift down under the canopy (nobody can shoot them on the way down) and, once landed, fight on as ordinary soldiers.

Scoring. Only the Allies score. Everybody's own points are the kills they made (fighters, cannons, gunners). The joint **mission bonus** is **buildings destroyed x bombers**

surviving, shared evenly between all escort pilots and added to their points at the end. There is no timer and no way to lose: the end screen ranks every pilot, shows your best score so far and what the next round will be, then the next round starts by itself after a spoken 3-2-1 (spectators stay spectators).

WORLD WAR II MODE

WW Flyers fights two wars. Besides the Great War there is a full **World War II** edition: new aircraft, new armies and a few new tricks. Everything in this guide applies to both wars; this section covers what is different.

Choosing the war. On the title screen and the host screen click the **WAR: WORLD WAR I / WORLD WAR II** button to switch (it is also on the side and aircraft screen in single player). The choice is remembered. In a hosted or public game the *server* decides the war and every player follows it. A server can run **WW I**, **WW II**, or **random** (a fresh roll every round) - see Host your own game.

Side	Aircraft	What it is
Allies	**Spitfire**	Nimble and elegant: out-turns almost anything.
Allies	**P-51 Mustang**	Fast, tough long-range fighter with a rack of bombs.
Allies	**P-38 Lightning**	Twin-boom, twin-engine fighter: fast, sturdy and heavy-hitting, with a rack of bombs.
Axis	**Bf 109**	The Luftwaffe workhorse: quick to climb and dive.
Axis	**A6M Zero**	Feather-light and fast to turn, but it will not take a hit.
Axis	**Me 262**	The first jet fighter: blistering speed, wide turns. Two thin vapour trails stream from its engines.

- **The sides.** The Great War's Allies and Central Powers become the **Allies** (American-led) and the **Axis**. Controls, scoring and the minimap work exactly as before. Your propeller spins, and so does every other plane's.

- **The armies.** Allied infantry and tanks are American (Sherman, Pershing and Chaffee tanks); the Axis field German infantry and a mixed armoured force (Panzer IV, Sturmtiger, SdKfz 222 armoured car, Wespe). Field guns are **Howitzers** - the barrel rises and falls with the elevation of each shot, for bots and human gunners alike (this is true in the Great War too).
- **Wrecks.** A destroyed tank or gun is no longer a box: it is the same vehicle, charred black and burning - a tank has its turret blown off, a gun its barrel dropped to the ground.
- **Heavy bombers.** Any plane with a big bomb load (the Royal Biplane in the Great War, and the B-17 bombers you escort in World War II) carries **tail, top and belly gun turrets** as well as its nose guns. When you press fire *every* gun fires: the nose guns ahead, the tail gunner behind, the top turret up and the belly turret down. The turrets also shoot on their own at any enemy plane that comes into their field of fire. Bot bombers hunt guns, tanks and troops - not aircraft - and when a fighter lines up on them they **jink and climb** while their gunners fight back.
- **Names and chat.** The bot pilots fit their aircraft: Allied bots sound American, German pilots in Messerschmitts have German names and talk Luftwaffe, and pilots in Zeros have Japanese names and Japanese phrases. Chat them and they answer in character.
- **Random skies.** Every round (in both wars) starts under a different sky - overcast, cold sunset, glorious pink, blue sunset or a clear cartoon blue.
- **First-person view.** Scroll the mouse wheel *in* past the closest chase view and the camera glides up to your plane's nose and hides your own aircraft, leaving just your crosshair - like flying the missile. Scroll back out to return. `Z` still switches to the cockpit view.

3. CONTROLS

Action	Keyboard + mouse	Gamepad
Pitch / turn	Mouse aim, or `W` `S` and `A` `D` (or the arrow keys): left and right simply turn the plane	Left stick

Flight-stick style: push forward (`W` / mouse up / stick up) = **nose down**, pull back (`S` / mouse down / stick back) = **climb**. Prefer the opposite? Tick **Invert dive / climb** on the aircraft screen or in the `Esc` menu.		
Yaw (rudder)	`Q` / `E`	Shoulder buttons
Throttle (more / less power)	`Shift` or `R` up, `Ctrl` or `F` down	**Right trigger** = faster (full speed), **left trigger** = slow down, **neither** = average speed. D-pad up / down and the right stick also work. If your triggers do nothing, open *Settings* and press **SET UP TRIGGERS**, then pull the right and the left trigger when asked.
Machine guns	Left click or `Space`	X
Bomb	Right click or `B`	A (or B)
Camera (behind / cockpit)	`Z` (or `C`)	Y button
Zoom the view	Mouse wheel (scroll in all the way for first person from the nose)	
Help card	`H` (arrow keys turn the pages)	
Scoreboard	Hold `Tab`	
Team orders for your bots	`T`, then `1`-`7` (`0` = hunt freely)	T menu, d-pad
Vote to skip the round	`V`, then `Y` / `N` (hosted and server games)	
Mute everything /	The two checkboxes top right, or `F12` for	

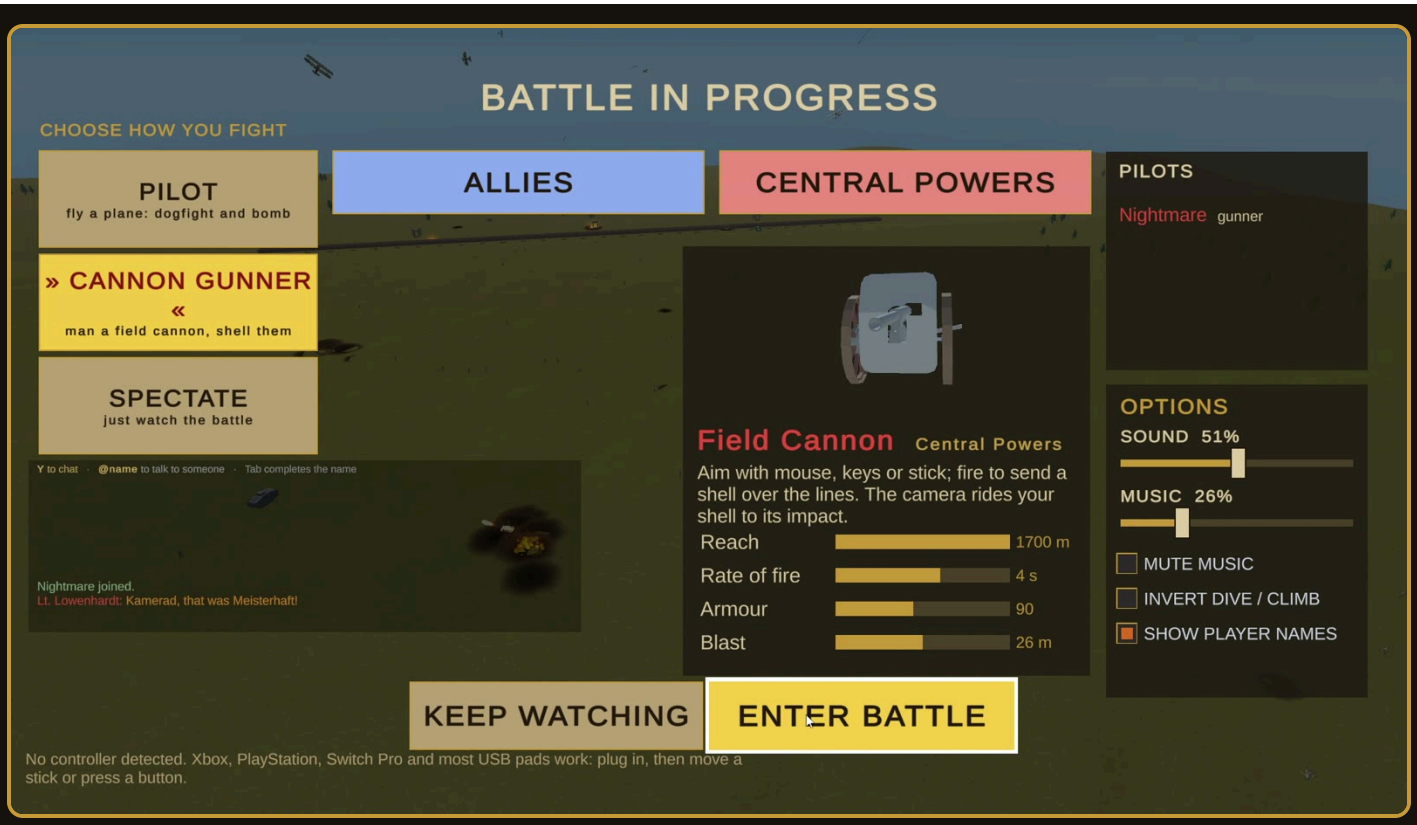
Boss screen	Boss	
Chat	`Y` to type, `Enter` sends, `Esc` cancels, `Tab` completes an **@name**	
Menu / pause	`Esc`	Start

Controller settings. *Settings* (title screen or `Esc` menu) has a **Controller** slider: below 100% the stick is eased and smoothed so a quick flick does not throw the plane about in a dogfight; above 100% it is twitchier. Every button, key and trigger can be rebound there: click a box, then press the key or pull the trigger you want.

Tips. Dive to gain speed and climb to shed it; stall and your nose drops. Keep an eye on the altitude readout - the ground kills. Bombs only release with your belly toward the ground: nothing drops while you are upside down or on your side. Leaving the map gives you 8 seconds to turn back before you are shot down.

4. CANNON GUNNER

Prefer artillery to aircraft? On the side screen, under **Choose how you fight**, click **Cannon Gunner** instead of **Pilot** (**Spectate** just watches the battle). Pick your side, then press **Man the Cannon** in single player or a hosted game, or **Enter Battle** on the public server. It works in single player, in a hosted game and on the public server. You take over a field cannon on your side's artillery line and there is no plane to fly. Pilots and gunners fight in the same match.



Action	Keyboard + mouse	Gamepad
Traverse and elevate the barrel	Mouse, or `W` `A` `S` `D` / arrow keys (hold `Shift` for fine aim)	Left stick or D-pad
Fire	Left click or `Space`	A
Raise the binoculars (then zoom)	`B`, `X` / `Z` zoom	Right trigger raises them and zooms in; left trigger zooms in too, left shoulder zooms out
Back to the cannon from the shell camera	Right click or `C`	B

- **Aiming.** A yellow arc previews the shell's flight and a marker shows where it will land, with the range. The panel at bottom left shows traverse (degrees left or right of straight ahead), elevation, range and reload. Shell power is fixed, so range comes from elevation: about 1,700 m at 45 degrees. The barrel moves from 5 to 80 degrees up and 85 degrees either side.
- **Shell camera.** When you fire, the camera rides the shell all the way down, then stays at the crater for a few seconds so you can see what it hit. You can keep aiming while it flies; fire again and the camera follows the new shell. Right click (or `C`) goes straight back to the cannon.
- **Hitting things.** The cannon reloads for 4 seconds. A shell's blast kills every soldier within about 26 m and hurts tanks, guns and aircraft near it. A shell takes many seconds to land, so lead anything that is moving.
- **Staying alive.** Enemy tanks and guns shoot back at your cannon, which can take 90 points of damage. If it is destroyed you respawn at a fresh one after a few seconds. Your kills score for your side exactly like a pilot's - see the scoring table.

5. READING THE HUD

- **Blue = friends**, **red = enemies**, always from *your* point of view, whichever side you picked.
- **Tags** float over aircraft with a name and distance. Red tags are enemy planes (and enemy tanks that are close).
- **Minimap** (bottom right): your side is always at the bottom. Yellow is you; enemy aircraft pulse when they get within 400 m. Tiny dots are infantry; solid squares are tanks; small tan diamonds are supply vehicles; larger diamonds are artillery; big amber blips are bombers. The thin lines are the roads.
- **Top bar**: your side's score, the clock, and the enemy score. **Left panel**: speed, altitude, power, bombs, hull and your kills.
- **Kill feed** (top left) lists aircraft kills and crashes.

6. SCORING AND WINNING

Target	Points
Enemy aircraft	100
Tank	150
Artillery gun	120
Infantry	10
Shooting a friendly (only if friendly fire is on)	-5

How the score works. Every kill adds its value to *your side's* total - whether you, a bot pilot, a tank or the infantry made it - and your own kills and points show on the left panel and as a **+150 TANK** popup under the crosshair. Bombs are the best way to earn big points on the ground; guns are best against aircraft.

How a round is won. The first side to reach **4000 points** wins at once; otherwise the side with the higher total when the **10-minute** clock runs out wins (equal scores = stalemate).

Shot down? You respawn after a few seconds. **Friendly fire is off by default**; switch it on from the single-player screen, the host screen or the pause menu.

THE ESC MENU AND THE HELP CARD

- The `Esc` menu is laid out like in You Are the Missile: **Enter Game** (only while you are watching), **Leave Game**, **Spectate**, **Quit to Desktop**, sound and music sliders, and tick boxes for **Mute Music**, **Show Player Names**, **Invert Dive / Climb** and **Friendly Fire**. In single player it also pauses the game.
- Press `H` at any time (menus, cockpit, spectating) for the help card: six pages covering the match, getting in, every key, the cannon gunner, the armies and scoring, and the server. `←` `→` or the page numbers turn the pages; `H` or `Esc` closes it.

DISPLAY AND SOUND

- **Full screen**: the game starts full screen. `F11` or `Alt`+`Enter` switches between full screen and a window, and the `Esc` menu has a Display button too.
- **Sound**: the `Esc` menu has an **Audio** panel with a **Music** slider, a **Sound Effects** slider and **Mute Music**. Settings are remembered. Explosions are loud close up and fade with distance, and are quieter while you are spectating. The title screen plays "Fate of a Generation"; each match starts a different random track.

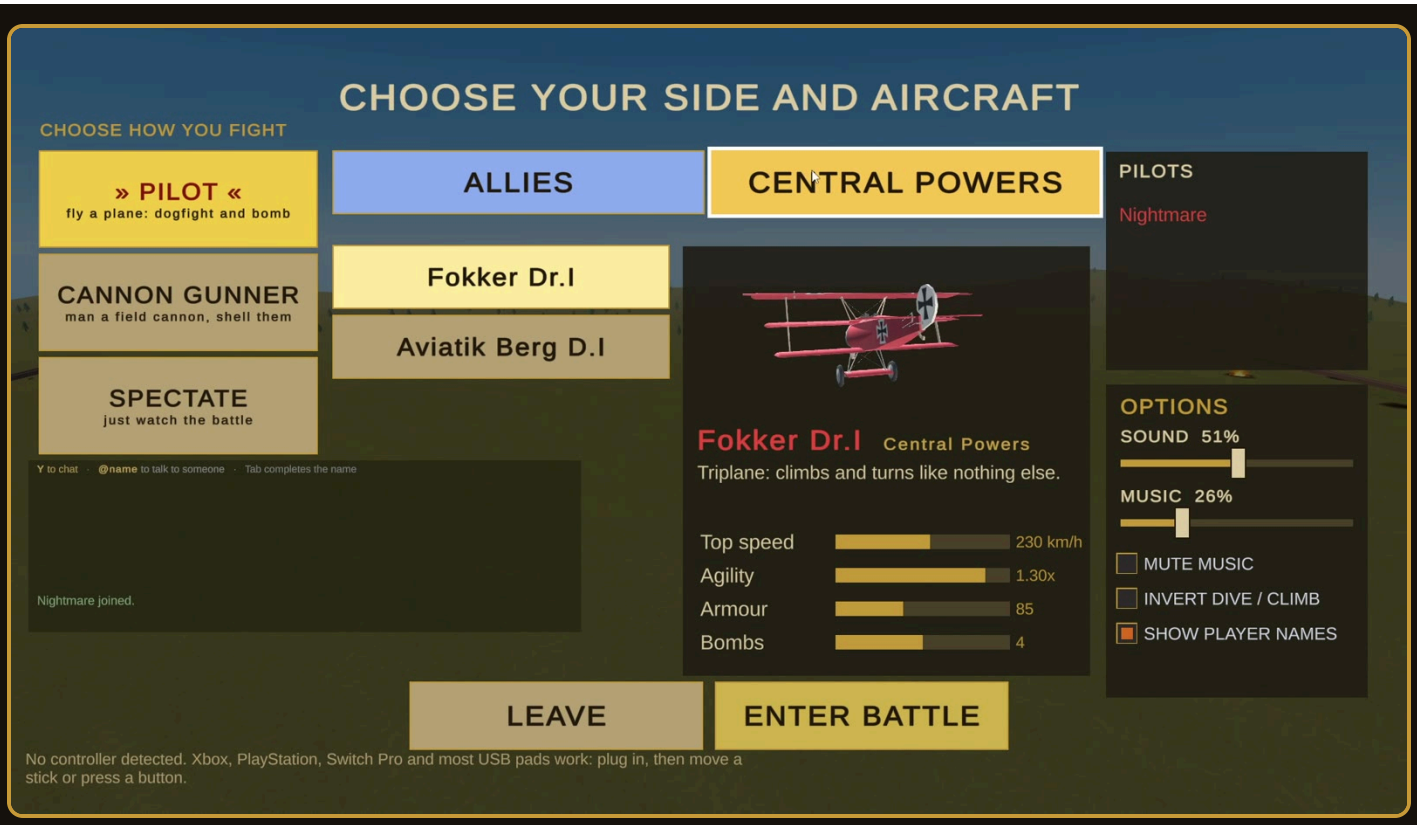
7. MULTIPLAYER

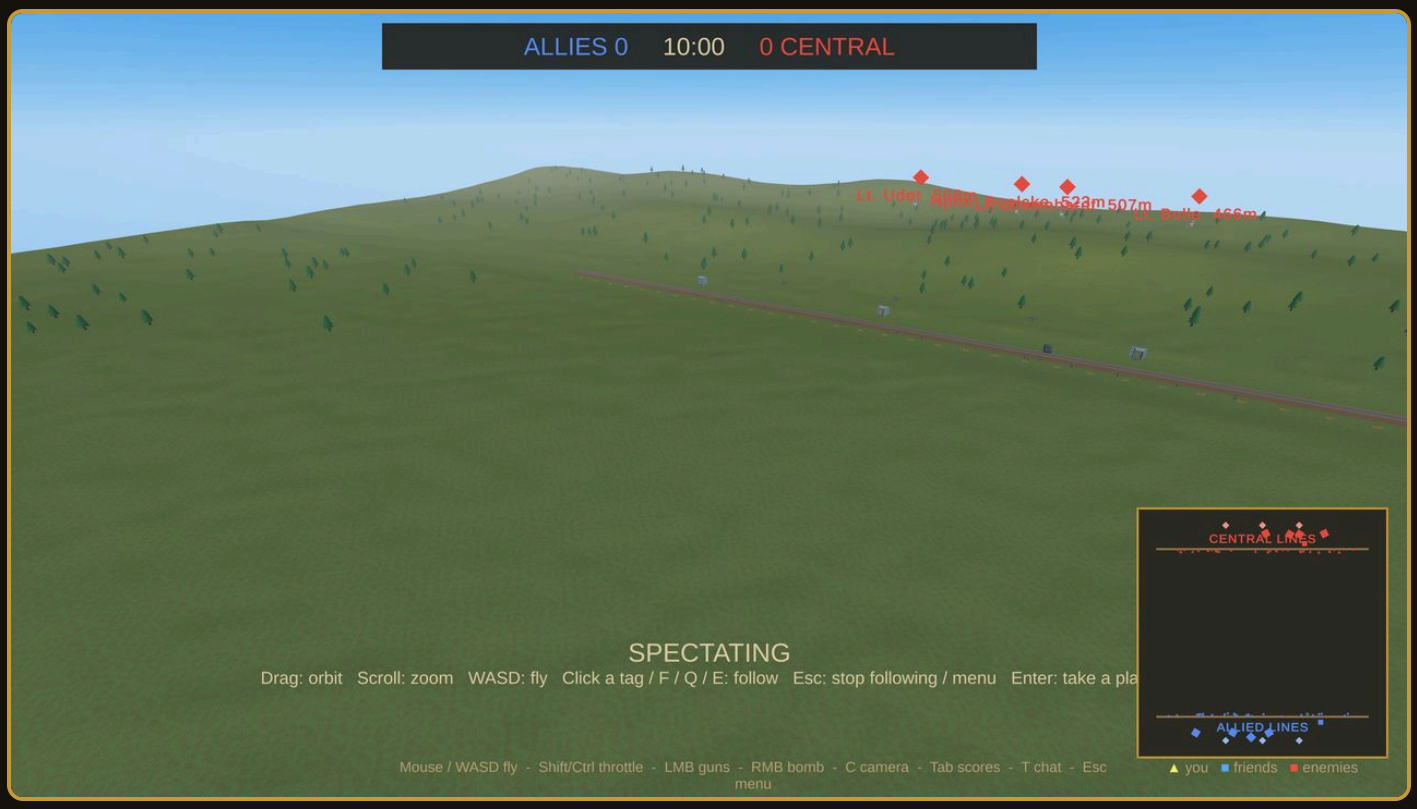
Public server: choose **Join Game** and enter `3wcircus.com` (port 7778 is the default). You can join at any time. You arrive as a **spectator** watching the battle; press `Enter` (or **Enter Battle**) when you are ready, pick a side and aircraft, and you are in. Bots fill the empty seats, so there is always a fight.

- **Lobby**: pick side and aircraft - or choose **Cannon Gunner** under *Choose how you fight* - see who is connected (gunners are marked) and chat.
- **Spectate**: press `Esc` → Spectate (or choose it in the lobby). Drag to look, scroll to zoom, `W` `A` `S` `D` fly the camera (`Shift` faster). `F` is the only key that picks players: the first press follows the best score, each further press moves to the next player. The

top of the screen shows who you are following with their score, kills and hull. `Esc` stops following (a second `Esc` opens the menu); to fly, press `Esc` then **Enter Game**. Choosing **Spectate** on the side and aircraft screen takes you straight into watching - no need to press Enter Battle. If you are still watching when a battle ends, you start the next one watching too.

- **Chat**: `Y` anywhere in a match or the lobby. Messages fade out slowly; **@name** talks to someone (the line turns gold on their screen). The bot pilots trash-talk, congratulate and answer back - in single player too.





8. HOST YOUR OWN GAME

1. **Host Game** from the title screen, enter your name, optionally switch friendly fire on, then **Open Lobby**.
2. Friends use **Join Game** and your address. On a home network they need your IP; for internet play forward **UDP port 7778** on your router to your PC.
3. When everyone is in, press **Start Match**. Latecomers can still join mid-match.

Run a dedicated server (Windows or Linux): launch the game with `-batchmode -nographics -server` and optionally `-port 7778 -teamsize 4 -matchlength 600 -friendlyfire -era ww2`. Put a `server.cfg` next to the program to set the options permanently:

```
# server.cfg
port = 7778
team_size = 4          # pilots per side; bots fill the rest
match_length = 600     # seconds per round
score_limit = 4000
era = ww1              # ww1 / ww2 / random (a fresh war every round)
mode = random          # random (a fresh war and kind of round every round) / rotate (clas
escort_slots = 6       # Bomber Escort: escort pilots in total (people + bots), 2 to 8
escort_fill = on       # Bomber Escort: bots fill the empty escort seats
friendly_fire = off    # on / off
respawn_delay = 4
```

TROUBLESHOOTING

- **Can't connect**: check the address and that UDP port 7778 is open (firewall / router). The server is also unreachable if a match crashed - try again in a minute.
- **Controller not working**: the menus show a line at the bottom left naming every controller the game can see ("No controller detected" if none). Xbox, PlayStation, Switch Pro and most USB pads work; plug it in *before* starting the game or move a stick / press a button, and use the d-pad or left stick to move around the menus. If it still says none, tell us the controller model.
- **Choppy frame rate**: close other heavy programs; the game is light, but a hosting PC runs the whole simulation.
- Something broken? Tell us what you were doing and roughly when - the game keeps a log at `%USERPROFILE%\AppData\LocalLow\3wcircus\WW Flyers\Player.log` on Windows, `~/Library/Logs/Unity/Player.log` on a Mac.

← Back to the download page