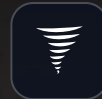


FOR MICROSOFT FLIGHT SIMULATOR 2024



STORM CHASING ADD-ON

TornadoAlley

PILOT'S MANUAL

Fly beside the tornadoes that made history, chase the warnings that are out there right now, and feel the funnel take hold of your aircraft.

VERSION 0.94 · OCTOBER 2026

GCS

PC & XBOX

For the storm chasers, spotters and forecasters who drive toward the weather so the rest of us know when to get away from it.

DEDICATION

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HOW TO READ THIS MANUAL



Numbered markers on a picture match the numbered list next to it.

SPAWN

Words in a frame are exactly what you see on the panel's buttons and labels.



Tips make your flights easier or prettier.



Warnings tell you what to watch out for.

01 WELCOME ABOARD

WELCOME

TornadoAlley puts real tornadoes in your sky. Not a static model in a field, but a funnel that drops out of the cloud base, travels with the storm, changes shape, throws dust and debris at its feet and grabs your aircraft if you fly too close.

Everything is driven from one panel in the simulator's toolbar. Pick a tornado, press a button, and TornadoAlley builds the storm sky around it, places the funnel and keeps it moving. While it's on the ground you can change it live: speed, tilt, strength, debris and more.

WHAT MAKES TORNADOALLEY DIFFERENT



17 historic tornadoes

Moore, Joplin, Jarrell, Tri-State and more, on their real paths, at their real speed, with the winds of that day.



Real tornado warnings

REAL TIME reads the US National Weather Service warnings and puts the tornado where the storm is, right now.



Shapes that change

A thin rope that grows into a wedge, a wedge that shrinks into a cone: some tornadoes evolve just like they did.



A storm sky for each one

Weather presets built for every tornado, with the cloud base sitting on top of the funnel, and supercells.



Physics on your aircraft

Get close and it pulls you in, spins you around the core and throws you out the top. Turn it off any time.



Chaos mode

Two to six tornadoes on the ground at once, spread across the storm in front of you.



Change it live

Speed, tilt, strength, suction, debris and ground type, all while the tornado is on the ground.



Runs inside the sim

No extra program to start. TornadoAlley lives entirely in the simulator, on PC and on Xbox.



A supercell over the Plains at sunset. Every tornado comes with a storm sky made for it.

02 BEFORE YOU FLY GETTING STARTED

Installing



From the Marketplace

Buy TornadoAlley in the simulator's Marketplace and let it download. That's all: there is nothing else to install, on PC or on Xbox. The panel appears in the toolbar the next time you fly.



From the website (PC)

Close the simulator, run the TornadoAlley Setup you downloaded and follow the steps. It finds your Community folder for you. Start the simulator and the panel is in the toolbar.

You need Microsoft Flight Simulator 2024. An internet connection is needed for the REAL TIME tab (it reads the live tornado warnings).

Opening the panel



The TornadoAlley icon

1

Start any flight

Free flight is perfect. TornadoAlley works with any aircraft.

2

Open the toolbar

Move the mouse to the top of the screen (or use your toolbar shortcut).

3

Click the white tornado

The TornadoAlley panel opens at the top right of the screen.

Moving and resizing

The panel sits in a normal simulator window. **Drag it by its title bar** to move it, **drag an edge or corner** to resize it, and close it with the **X** in the title bar. The simulator remembers where you left it.



KEEP IT OPEN DURING A CHASE

The simulator pauses a panel while it's closed. TornadoAlley keeps working, but a few things only happen with the panel open: answering the EFB's **REQUEST FROM AVIONICS** with the chase route, and watching over the supercell weather. Shrink it and leave it open.

Good to know before your first flight

- **Fly over the Plains.** Tornadoes look and feel right over flat open country: Oklahoma, Kansas, Texas, Nebraska.
- **Leave Auto weather ON** (OPTIONS tab). It gives each tornado the storm sky made for it.
- **Altitude:** 2,000 to 4,000 ft above the ground gives the best view under the cloud base.
- **Parked on the ground?** When a tornado needs to take you somewhere, TornadoAlley puts you in the air already flying, at a safe speed.

TUTORIAL

03

YOUR FIRST TORNADO
IN 60 SECONDS

- 1

Take off

Start a free flight anywhere and climb a couple of thousand feet. Any aircraft will do.
- 2

Open TornadoAlley

Click the white tornado in the toolbar. The panel opens on the **STORM** tab.
- 3

Check Auto weather

In **OPTIONS**, make sure **Auto weather** is **ON**.
- 4

Press SPAWN

Back on **STORM**, press **SPAWN** under **Big tornado**.
- 5

Look ahead

The Big tornado lives under a supercell somewhere in Tornado Alley. TornadoAlley takes you there, already flying, facing the storm. The funnel comes down out of the cloud in front of you.
- 6

Play with it

The **LIVE** tab opens by itself. Slide **Speed** and **Tilt**, change the **Strength**, and watch the distance in **FROM YOU**.
- 7

Done?

Press **DISSIPATE THE TORNADO** at the bottom of LIVE (or **REMOVE** at the top). It rises back into the clouds.



Touchdown. A funnel coming down from the cloud ahead of you.

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WANT IT NEARER HOME?

Use the **MODELS** tab: every model, the Big too (without its supercell), is born right ahead of you, wherever you are.

!

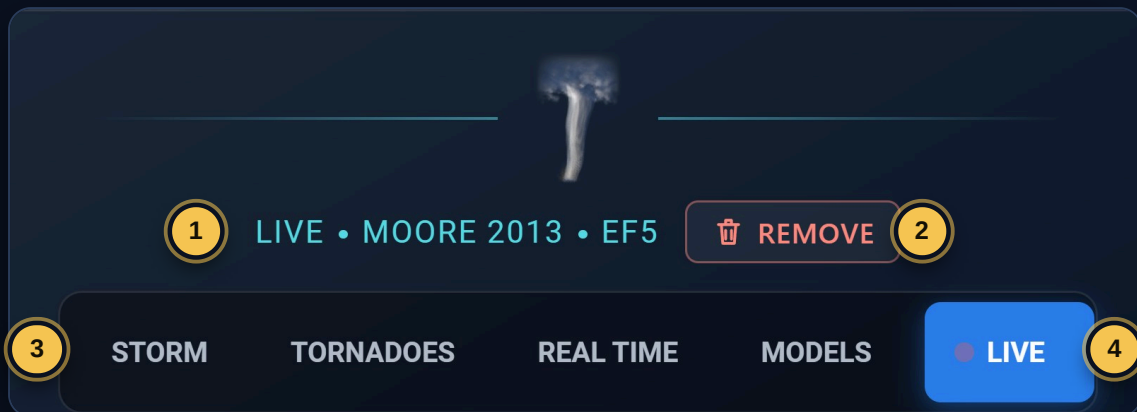
HOLD ON TIGHT

Physics are on by default. Fly into the funnel and it will take your aircraft for a ride. To fly through it calmly, set **Suction on the aircraft** to **OFF** in the LIVE tab.

Which button do I press?

I WANT...	GO TO	PRESS
A tornado right now, right where I am	MODELS	CREATE
The big show, under a supercell	STORM	SPAWN (Big tornado)
Many tornadoes at once	STORM	START (Chaos mode)
A famous tornado, here and now	TORNADOES	SPAWN IN FRONT OF ME
A real chase, on the real track	TORNADOES	FOLLOW ITS PATH
The tornado happening in the US right now	REAL TIME	GO TO THE STORM

04 ORIENTATION THE PANEL AT A GLANCE



1 Status line

What is happening right now. Always readable, whatever tab you are on.

2 REMOVE

Appears while a tornado is up. Sends it back into the clouds.

3 Tabs

Five places to start a tornado or set things up.

4 LIVE

Takes the place of OPTIONS while a tornado is up, with a red dot.

The tabs

STORM

P. 7

Choose where the storm comes from, spawn the Big tornado or start Chaos mode.

TORNADOES

P. 9

The historic tornadoes. Spawn one in front of you or chase it on its real path.

REAL TIME

P. 12

Tornado warnings in the US right now, plus the last 30 days. Glows purple while one is in force.

MODELS

P. 13

Six tornadoes of different sizes, born right ahead of you.

OPTIONS

P. 16

Strength, particles, physics and weather for the next tornado.

• LIVE

P. 14

Everything about the tornado on the ground, and its live controls.

Reading the status line

YOU SEE	IT MEANS
NO STORM · SPAWN ONE BELOW	Nothing is up. Pick a tornado in any tab.
STARTING · BIG TORNADO	TornadoAlley is preparing the tornado and its weather.
LIVE · MOORE 2013 · EF5	A tornado is on the ground: its name and rating.
FOLLOW ITS PATH · FORMS IN 2:54	A chase mission is on: time until touchdown and miles to go.
DISSIPATING	The tornado is lifting back into the cloud.

05 TAB STORM



The home tab. Set the direction of the storm, then spawn the Big tornado or several tornadoes at once.

- 1 **Status line**
Shows **NO STORM** until you spawn something.
- 2 **Compass**
Click or drag anywhere on it to choose where the storm comes from. The blue arrow sits on that side and points the way the wind blows. Tornadoes travel with it.
- 3 **Heading and source**
The chosen direction in degrees. **SIM WIND** means the tornado follows the wind the simulator already has; **YOUR WIND** means you picked it. To go back, press **USE SIM WIND** under the number.
- 4 **Speed line**
The wind the clouds really have at the moment, in degrees and knots. Tornadoes move at this speed. With a tornado up, a small badge tells you if the clouds already follow your direction (next page).
- 5 **Big tornado**
A 13,100 ft EF3 monster under its own supercell. **SPAWN** takes you to it, flying.
- 6 **Chaos mode**
Pick how many tornadoes (2 to 6) and press **START**. They appear spread across the storm ahead of you.

i AUTO WEATHER

With Auto weather ON, choosing a direction also turns the clouds to it, so the sky and the tornado move together.

From SPAWN to the end

Every tornado goes through the same four stages. The LIVE card tells you which one it's in.



CREATING

Loading the tornado and setting its weather. A few seconds.



FORMING

The funnel comes down from the clouds and touches the ground.



LIVE NOW

On the ground and moving. Everything in LIVE works.



DISSIPATING

Going back up into the clouds, at the end of its path or when you remove it.

The compass in depth

Once a tornado is up, the compass shows two arrows. The **blue arrow** is the direction you asked for. The thin **cyan arrow** is where the clouds are really coming from right now. When the two line up, sky and tornado travel together.

1 Clouds arrow

The real wind of the clouds, updated continuously.

2 Locked

Some tornadoes must move the real way, so the compass is locked and flashes when you click it:

REAL PATH (LOCKED) a historic tornado on its real track (FOLLOW ITS PATH) or a real warning (REAL TIME);

SUPERCCELL WIND (LOCKED) a tornado under a supercell, which follows the wind of the supercell's preset.

3 Clouds now

The direction and speed of the clouds at the tornado.

4 Badge

How the clouds are doing (table below).



BADGE	WHAT IT MEANS
MATCHES	The clouds already come from the direction you chose.
CHANGING	The simulator is turning the clouds. Give it a moment.
NOT APPLIED	The simulator didn't take the change. Choose a weather preset in the simulator's Weather panel and try again.
SUPERCCELL WIND	The tornado moves with the supercell's own wind. Your direction isn't used.

Chaos mode

Chaos mode fills the storm ahead of you with **2 to 6 Giant tornadoes**, the Big's shape at 20,000 ft. They are spread over the area about 9 miles (14 km) in front of your aircraft, never closer than about 4 miles, and about a mile and a half apart when there is room.

With Auto weather ON, Chaos mode brings its own sky: a dark storm deck with the cloud base at **12,000 ft**.



PERFORMANCE

Six tornadoes with debris is heavy work. On a lower-end PC or on Xbox, start with 2 or 3, or set Particles to LOW in OPTIONS.

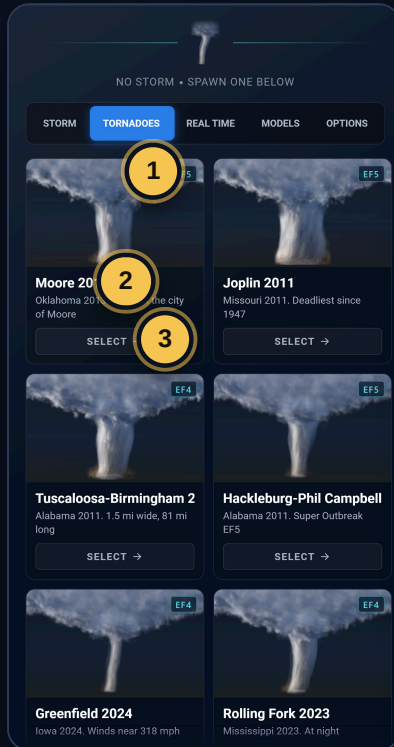


CLEAR THE SKY

REMOVE, at the top of the panel, sends the whole batch back into the clouds.

06 TAB TORNADOES

Seventeen tornadoes that made history, rebuilt from damage surveys, storm records and the weather balloon soundings of their day. El Reno 2013 is coming soon.



The gallery. Scroll down for all of them.



A tornado's page. After SELECT.

- 1 **Rating**
Its rating on the EF scale.
- 2 **Name**
And the story in one line.
- 3 **SELECT**
Opens its page.
- 4 **All tornadoes**
Back to the gallery.
- 5 **The facts**
Winds, shape, how it moved, path length and time on the ground.
- 6 **Changes shape**
Only for the ones that did.
- 7 **Spawn in front of me**
Right where you are.
- 8 **Follow its path**
The chase mission.

Two ways to meet a legend

● SPAWN IN FRONT OF ME

WHERE

Right ahead of you, wherever you are flying.

WEATHER

Its own storm sky, without a supercell.

YOUR FLIGHT

Carries on. Nothing reloads.

DIRECTION

Yours to choose with the compass.

BEST FOR

A quick look, anywhere in the world.

● FOLLOW ITS PATH

WHERE

On its real track: real touchdown point, direction and speed.

WEATHER

The storm of that day (with a supercell on the shorter tracks).

YOUR FLIGHT

Starts on the runway of a nearby airport.

DIRECTION

Locked to the real path.

BEST FOR

A real chase. Step by step on the next page.

06 TUTORIAL CHASE MOORE 2013

- 1 **Pick the tornado**
TORNADOES → Moore 2013 → **SELECT** → **FOLLOW ITS PATH**.
- 2 **Confirm**
Press **RESET AND START** 1. Your flight reloads on the runway of an airport near the tornado, in the storm of that day, with a loading screen.
- 3 **Lower-end PC?**
Choose **TELEPORT ONLY** 2 instead: no reload, no loading screen. Your aircraft is simply moved to the runway.
- 4 **Take off**
The banner counts down: *"Take off! The tornado forms in..."*. LIVE shows the time, the path and how far you are.
- 5 **Get the route**
Open the EFB, go to the Flight Planner and press **REQUEST FROM AVIONICS** with the TornadoAlley panel open. The route runs from your airport to the tornado and on to the next airport.
- 6 **Close in**
Within about 13 miles the banner says *"You're close!"* and **FORM IT NOW** appears: press it for an instant touchdown, or wait for the clock.
- 7 **Catch it**
The funnel touches down where it really did and moves along its real path. The banner now reads *"Catch it! It dissipates in..."*.
- 8 **The end**
At the end of its path, the tornado lifts back into the storm, just like that day.



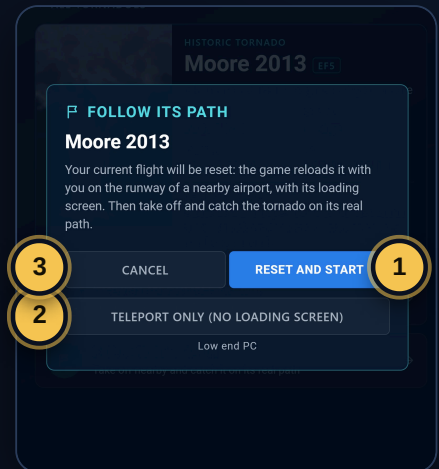
RESET AND START RESTARTS YOUR FLIGHT

Anything you were doing in the current flight is lost: the simulator loads a new one at the airport. The tornado's weather comes with it.

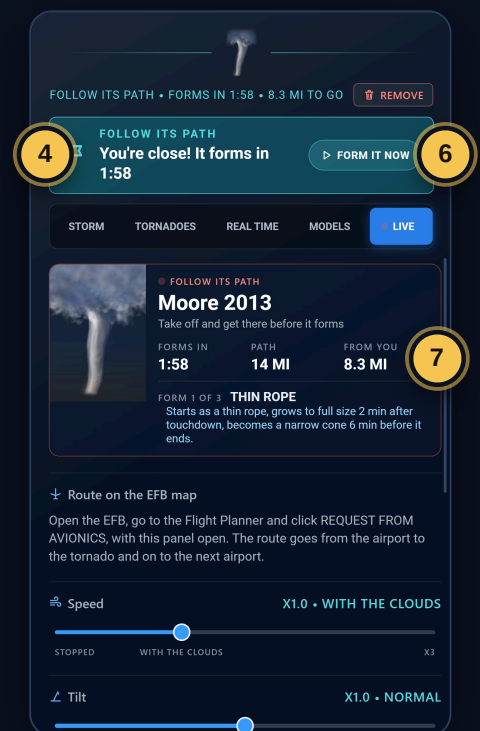


PICK YOUR AIRCRAFT FIRST

The chase keeps the aircraft you are flying. Something quick helps on the long tracks, where the tornado forms far from the airport.



The confirmation. 3 CANCEL leaves your flight as it is.



4 Countdown 6 Form it now 7
Time, path, distance

The historic tornadoes

TORNADO	WHERE	RATING	PATH	ON THE GROUND	ITS STORY
Moore 2013	Oklahoma	EF5	14 mi	39 min	Through the city of Moore SHAPE
Joplin 2011	Missouri	EF5	22 mi	38 min	Deadliest since 1947
Tuscaloosa-Birmingham 2011	Alabama	EF4	81 mi	91 min	1.5 mi wide, 81 mi long SHAPE
Hackleburg-Phil Campbell 2011	Alabama	EF5	132 mi	2 h 16	Super Outbreak EF5
Greenfield 2024	Iowa	EF4	44 mi	46 min	Winds near 318 mph
Rolling Fork 2023	Mississippi	EF4	59 mi	71 min	At night
Mayfield 2021	Kentucky	EF4	166 mi	2 h 54	Long night track
Bridge Creek-Moore 1999	Oklahoma	EF5	37 mi	85 min	Strongest wind measured
Jarrell 1997	Texas	EF5	5 mi	13 min	A rope that turned into a monster SHAPE
Greensburg 2007	Kansas	EF5	29 mi	62 min	Wider than the town SHAPE
Xenia 1974	Ohio	EF5	31 mi	39 min	Super Outbreak F5 SHAPE
Flint-Beecher 1953	Michigan	EF5	19 mi	32 min	Deadliest in the state
Woodward 1947	Oklahoma	EF5	106 mi	2 h 18	At night
Tupelo 1936	Mississippi	EF5	15 mi	34 min	4th deadliest
Gainesville 1936	Georgia	EF4	7 mi	16 min	5th deadliest
Tri-State 1925	Missouri	EF5	219 mi	3 h 45	Deadliest in US history SHAPE
Natchez 1840	Mississippi	EF5	35 mi	78 min	2nd deadliest
El Reno 2013	Oklahoma	EF5	16 mi	40 min	Widest ever, 2.6 mi. <i>Coming soon</i>

Ratings before 1973 are estimates on today's EF scale. Path and time are what TornadoAlley flies; they follow the official records.

Tornadoes that change shape [SHAPE](#)

Some tornadoes didn't keep one look. TornadoAlley follows what they did: **Jarrell** starts as a thin rope and becomes the monster four minutes after touchdown. **Moore** grows from a rope to full size and narrows into a cone near the end. **Tri-State** starts as a small funnel and needs 45 minutes to reach full size.

The tornado's page tells you when each change comes, and in LIVE the line **FORM 1 OF 3** shows the shape now and the time to the next one.

07 TAB REAL TIME



Tornado warnings issued by the US National Weather Service, live. When a real storm is producing a tornado, you can be there.

- 1 Warnings in force**
How many, and when the NWS was last checked (about every minute).
- 2 Size**
The tornado TornadoAlley will put there (table below).
- 3 Details**
Radar indicated or observed, where it's heading, its speed and when the warning ends.
- 4 GO TO THE STORM**
Takes you next to it, now.
- 5 Filters**
ALL, NOW (in force), EF2+, 24 H, 7 DAYS.
- 6 Recent warnings**
Up to the last 30 days, with how long ago each one ended.
- 7 REPLAY**
Brings back the tornado of an ended warning.

GO TO THE STORM

Takes you beside the storm, just off to the side of its path and facing it. TornadoAlley puts a storm sky over the tornado and the local time of now, and moves it the way the warning says. Each update of the warning moves it again. When the warning ends, the tornado dissipates.

REPLAY

For warnings that already ended. The tornado appears at the last place the warning put it, now, moving the way it was moving, under its own storm sky. A great way to fly last night's storms.

THE WARNING SAYS

Tornado Emergency

Considerable damage threat

Observed (seen by spotters)

Radar indicated

YOU GET

Big tornado **EF4**, under a dark deck at 6,500 ft

Cone tornado **EF3**

Thin tornado **EF2**

Thin tornado **EF1**

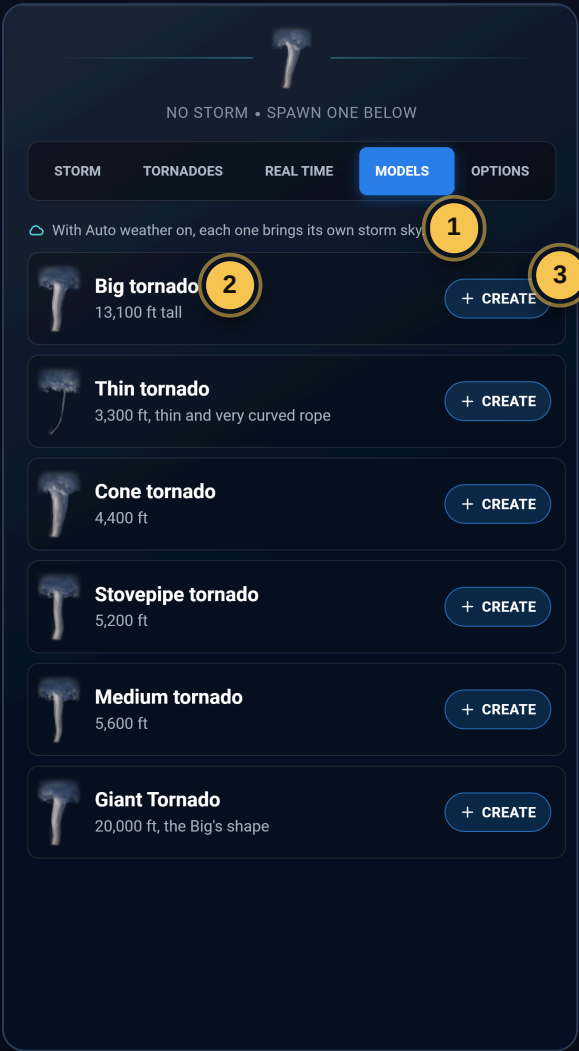
! JUST FOR FUN

REAL TIME is a simulation. Never use TornadoAlley to make safety decisions. If you are in a warned area, follow your local weather service and emergency officials.

08

TAB

MODELS



Six tornadoes, from a thin rope to a 20,000 ft giant. Press CREATE and it's born ahead of you, wherever you are.

- 1

Weather note
With Auto weather ON, each one brings its own storm sky. With it OFF, it uses the sky you have.
- 2

The model
Name and height.
- 3

CREATE
Spawns it at least 3.7 miles (6 km) ahead of your aircraft. The LIVE tab opens.

i

STRENGTH
Models use the Intensity set in OPTIONS (AUTO gives each one its own rating). Change it later in LIVE.

i

ANYWHERE IN THE WORLD
Models don't need the Plains: over the sea, the mountains or your home airport, they work wherever you fly.

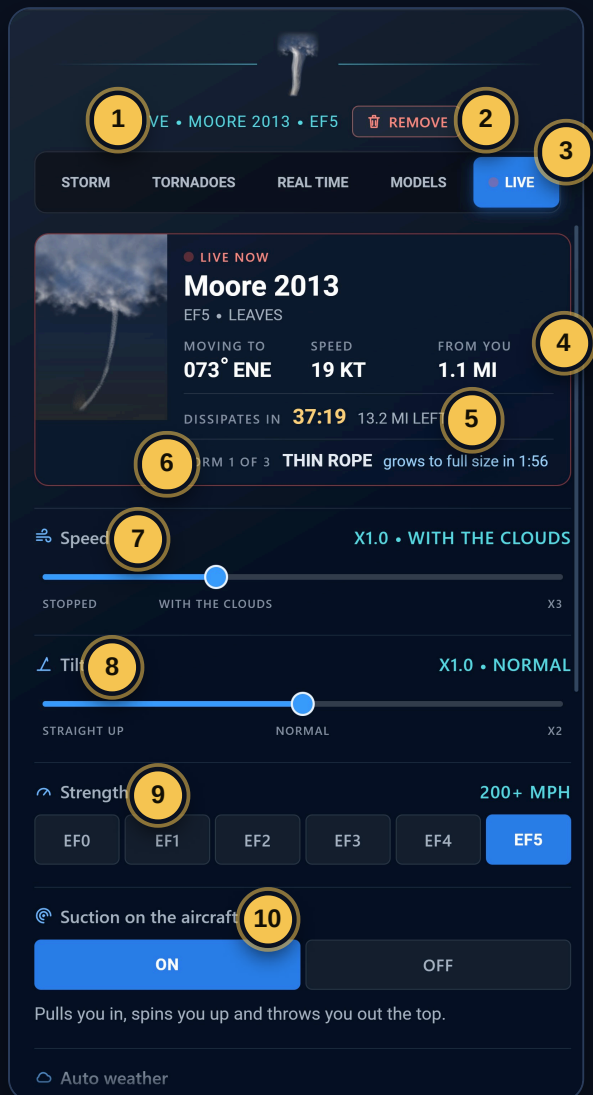
The six models

MODEL	HEIGHT	LOOK
Big tornado	13,100 ft	The star, without its supercell: born ahead of you like the others (SPAWN in STORM brings the supercell)
Thin tornado	3,300 ft	A thin, very curved rope
Cone tornado	4,400 ft	The classic cone
Stovepipe tornado	5,200 ft	Straight, narrow column
Medium tornado	5,600 ft	A curved, mid-size funnel
Giant Tornado	20,000 ft	The Big's shape, scaled up

09

TAB

● LIVE



LIVE appears the moment a tornado starts, and opens by itself. Everything here changes **this** tornado, right now.

- 1 Status**
Name and rating of the tornado on the ground.
- 2 REMOVE**
Sends it back into the clouds.
- 3 The LIVE tab**
With a red dot while a tornado is up.
- 4 Moving to, speed, from you**
Its heading, its speed over the ground and your distance to it.
- 5 Dissipates in**
For historic and real tornadoes: time and miles left on its path.
- 6 Form**
Its shape now and the next change, for tornadoes that change shape.
- 7 Speed**
From **STOPPED** through **WITH THE CLOUDS** (the storm's speed) to **X3**.
- 8 Tilt**
From **STRAIGHT UP** to **X2**. Above x1, with Auto weather, the clouds come down with the funnel.
- 9 Strength**
EF0 to EF5. Sets its winds and how hard it grabs your aircraft.
- 10 Suction on the aircraft**
ON: it pulls you in, spins you up and throws you out the top. OFF: fly through it.



INSTANT

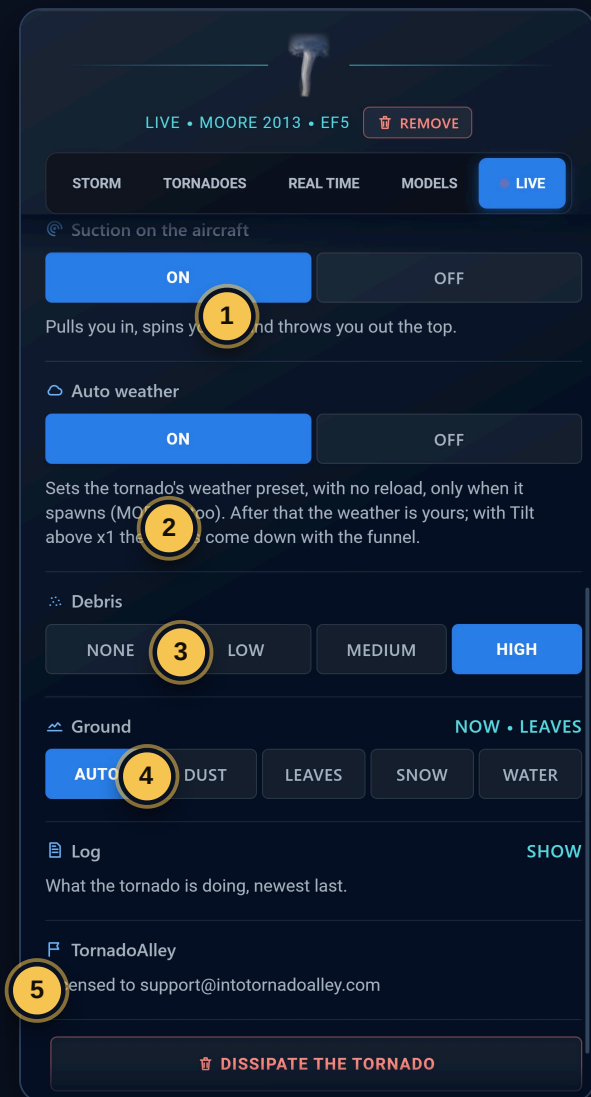
Every change in LIVE happens at once, on the tornado that's on the ground. Nothing reloads.



SAME AGAIN NEXT TIME?

LIVE changes only this tornado. To start the next one the same way, set it in OPTIONS.

Further down the LIVE tab



1 Auto weather

The same switch as in OPTIONS. It acts when a tornado spawns, and when Tilt brings the clouds down.

2 Debris

NONE, LOW, MEDIUM or HIGH: the dust and debris cloud at the base. Wide tornadoes use LOW at most.

3 Ground

AUTO picks what the tornado lifts from what's under it, and says what it picked (**NOW • LEAVES**). Or force DUST, LEAVES, SNOW or WATER.

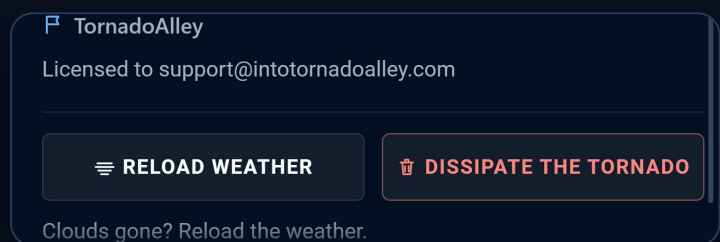
4 Log

Press **SHOW** for a running account of what the tornado is doing, newest last.

5 Dissipate the tornado

Ends it: the funnel lifts back into the cloud.

RELOAD WEATHER



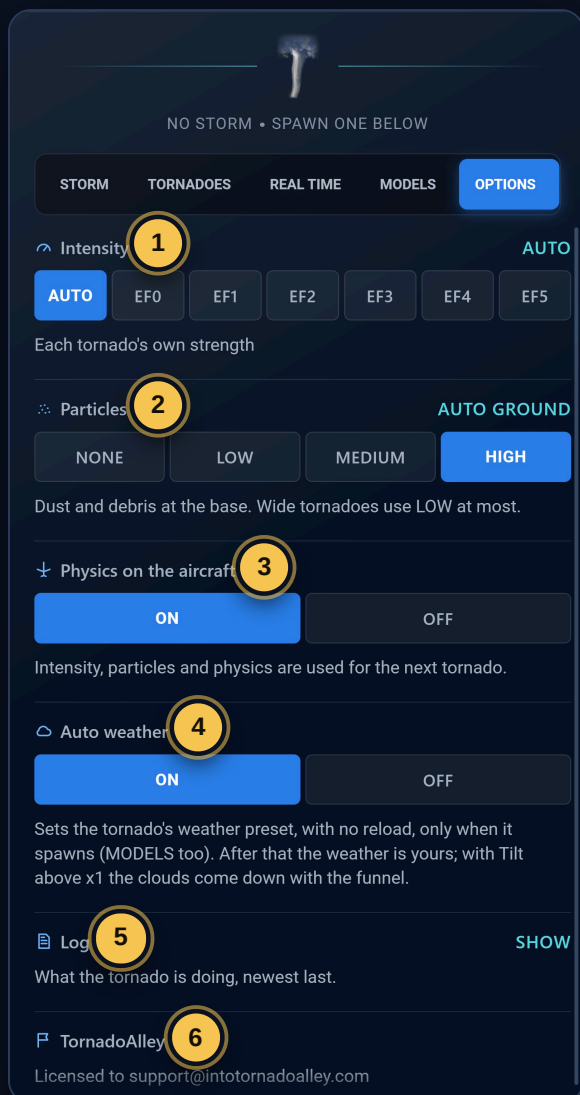
With a supercell in the sky, a **RELOAD WEATHER** button appears next to DISSIPATE. If the clouds or the supercell disappear, press it and the sky is rebuilt.

Outside a chase mission, the tornado is reborn in the same place. For the Big tornado's supercell, the simulator may reload the flight right where you are, with a short loading screen. More in chapter 11.



Ground: WATER. Over the sea, the base throws spray instead of dust.

10 ^{TAB} OPTIONS



Your defaults. They are used for the **next** tornado you spawn. To change the one on the ground, use LIVE.

1 Intensity

AUTO gives every tornado its own rating (Moore is EF5, the Big is EF3...). Or force EF0 to EF5 for all of them.

2 Particles

Dust and debris at the base, from NONE to HIGH. The label on the right shows what will be used. Wide tornadoes use LOW at most.

3 Physics on the aircraft

ON: tornadoes act on your aircraft. OFF: you can fly through them.

4 Auto weather

ON: when a tornado spawns, TornadoAlley sets the weather preset made for it, without reloading the flight. After that the weather is yours. OFF: TornadoAlley never touches the weather.

5 Log

What the tornado is doing, newest last.

6 About

TornadoAlley and who the copy is licensed to.



SMOOTHER FRAME RATE

Particles is the setting that costs the most. On a lower-end PC or on Xbox, try LOW.

Recommended settings

IF YOU WANT...	SET
The full experience	Intensity AUTO · Physics ON · Auto weather ON · Particles HIGH
Lower-end PC or Xbox	Particles LOW · Chaos mode with 2 or 3 tornadoes
Sightseeing and filming	Physics OFF · Auto weather ON · Tilt a little above x1 in LIVE
Your own sky	Auto weather OFF , with the cloud base above the top of the funnel

11

UNDER THE HOOD

WEATHER & SUPERCELLS



Storm sky. The cloud deck sits right on top of the funnel.

Storm skies

Every tornado has a weather preset made for it: a cloud deck whose base sits just above the top of the funnel, the winds of its day and rain where there was rain. With **Auto weather ON**, TornadoAlley sets it when the tornado spawns, without reloading your flight. After that the weather is yours.

The presets are in the simulator's own Weather panel, by name (*Moore 2013*, *Chaos mode*, *Big supercell - Kansas...*). Pick one yourself to fly in that sky without a tornado.

Supercells

A supercell is the rotating thunderstorm that breeds the strongest tornadoes. In the simulator it exists only inside a weather preset, anchored to one spot. You meet one:

- **With the Big tornado**, at one of four spots in Tornado Alley: Texas, Oklahoma, Kansas or Nebraska.
- **In FOLLOW ITS PATH**, for historic tornadoes with shorter tracks (*Moore*, *Joplin*, *Jarrell*, *Greensburg...*). Long-track ones like *Tri-State* use a storm sky without a fixed supercell, because they would leave it behind.

Keeping the supercell

Changing the weather by hand turns the preset into a *custom* one, and a custom preset has no supercell. That's why the compass is locked while a supercell is up.



PAUSING AND SLEW

Pausing with ESC, or moving with slew mode, can make the simulator rebuild the sky. Keep the TornadoAlley panel open: it watches the weather and puts it back. If the clouds still go, press **RELOAD WEATHER** in LIVE.

Clouds that follow the funnel

Push **Tilt** above x1 and the funnel leans further: with Auto weather ON, the cloud base comes down with it, so the funnel never hangs out of a clear sky.



YOUR OWN WEATHER

Prefer your own sky? Turn Auto weather OFF. TornadoAlley won't change anything; set the clouds high enough for the tornado you pick.

12 PHYSICS FLYING INTO A TORNADO

TornadoAlley's tornadoes act on your aircraft. The closer you get, the harder they pull. Here is what to expect, zone by zone.



Seen from above. Not to scale.

1 **Calm**

Several funnel widths away, nothing happens. Watch and film in peace.

2 **Turbulence**

Closer in, the air gets rough, and it gets rough fast the nearer you are.

3 **Suction**

Near the wall the tornado pulls you in and carries you around the core, climbing as you go.

4 **Thrown out the top**

Near the top of the funnel you are flung upward and out. Expect an unusual attitude: recover and fly away.

Fast aircraft that blast past the funnel get a hard shake rather than a ride. The **Strength** (EF0 to EF5) sets how violent all of this is.

Chase tips



Into the wall. Close enough for the funnel to take hold.

◆ **Come in from the side**

Never fly into its path head-on. Approach from the side or from behind and match its speed.

◆ **Watch FROM YOU**

LIVE shows your distance. Two to three miles is a great spot to watch it.

◆ **Want the ride?**

Fly into the wall at moderate speed with Suction ON, and be ready for the exit at the top.

◆ **Just sightseeing?**

Set Suction OFF in LIVE (or Physics OFF in OPTIONS) and fly right through the funnel.

13 HELP TROUBLESHOOTING & FAQ

Q I can't find the panel.

Open the toolbar at the top of the screen and look for the white tornado. If it isn't there, check that TornadoAlley is installed (Marketplace: your library; website version: the Community folder) and restart the simulator.

Q I pressed SPAWN and see nothing.

The funnel takes a few seconds to come down from the cloud (the LIVE card says *Coming down from the clouds*). It is born ahead of you: check MOVING TO and FROM YOU in LIVE and look that way.

Q The clouds or the supercell vanished.

Press RELOAD WEATHER in LIVE. Avoid changing the weather by hand while a supercell is up: a changed preset loses it. Keep the panel open during supercell flights.

Q FOLLOW ITS PATH hangs on the loading screen.

Some PCs struggle with the flight reload. Use TELEPORT ONLY (NO LOADING SCREEN) in the confirmation: it moves your aircraft to the runway instead.

Q The route doesn't show in the EFB.

Press REQUEST FROM AVIONICS in the EFB's Flight Planner while the TornadoAlley panel is open. The simulator pauses the panel while it's closed.

Q The compass won't turn.

It is locked (REAL PATH or SUPERCELL WIND): that tornado has to move the real way. It flashes to tell you.

Q The clouds don't follow my direction.

Check Auto weather is ON. If the badge says NOT APPLIED, choose a weather preset in the simulator's Weather panel and set the direction again.

Q REAL TIME is empty.

Good news: no tornado warnings in that window. Try ALL or 7 DAYS. REAL TIME needs an internet connection.

Q My frame rate drops near the tornado.

Lower Particles (OPTIONS) or Debris (LIVE) to LOW or NONE, and use fewer tornadoes in Chaos mode.

Q The panel is too small or cut off.

Drag its edge or corner to resize it. Each tab scrolls when the content is taller than the window.

Q The panel says LICENSE NEEDED.

Website version only: TornadoAlley checks your license online when the simulator starts. Make sure you are connected, then restart the simulator. Still stuck? Write to support@intotornadoalley.com.

Q Does it work with any aircraft?

Yes. The physics act on whatever you fly, from a glider to an airliner. A chase mission keeps the aircraft you are flying.

Q Can I spawn tornadoes outside the US?

Yes. STORM, MODELS and SPAWN IN FRONT OF ME work anywhere in the world. FOLLOW ITS PATH and REAL TIME take you to the US.

Q Do tornadoes damage the scenery?

No. The simulator doesn't let add-ons destroy buildings or trees. The dust and debris at the base are visual.

Q Does ESC pause the tornado?

No: the simulator keeps running behind the menu, and so does the tornado. With a supercell up, check the sky when you come back.

Q Can I fly my own weather?

Yes. Turn Auto weather OFF and TornadoAlley won't touch the sky. Keep the cloud base above the top of the funnel for the best look.

14 REFERENCE

GLOSSARY, CREDITS & LEGAL

The Enhanced Fujita (EF) scale

RATING	ESTIMATED WIND	TYPICAL DAMAGE
EF0	65 – 85 mph	Shingles and branches torn off
EF1	86 – 110 mph	Roofs stripped, mobile homes overturned
EF2	111 – 135 mph	Roofs torn off houses, large trees snapped
EF3	136 – 165 mph	Whole stories of houses destroyed
EF4	166 – 200 mph	Well-built houses leveled
EF5	200+ mph	Strong buildings swept away

Glossary

Funnel: the visible column of condensation and debris.

Cone: wide at the cloud, narrow at the ground.

Stovepipe: a straight, narrow column.

Cloud base: the bottom of the cloud deck, where the funnel starts.

Radar indicated: the radar sees strong rotation; nobody has confirmed a tornado yet.

Rope: a thin, often curved tornado, usually young or dying.

Wedge: a tornado wider than it looks tall.

Supercell: a rotating thunderstorm; the strongest tornadoes come from them.

Tornado warning: issued when a tornado is seen or indicated by radar.

Tornado emergency: the rarest warning, for a violent tornado heading for a town.

Credits & data

TornadoAlley is made by **GCS**. Tornado warnings: US National Weather Service (NOAA), api.weather.gov. Warnings archive: Iowa Environmental Mesonet, Iowa State University. Historic tornadoes: NWS damage surveys, NOAA Storm Prediction Center and Storm Events Database, upper-air soundings and published research.

Legal

Microsoft Flight Simulator is a trademark of the Microsoft group of companies. TornadoAlley is an independent add-on and is not endorsed by Microsoft or by NOAA. REAL TIME is provided for entertainment only and must never be used for safety decisions. Historic tornadoes are recreated for education and remembrance, with respect for everyone they affected.



FLY SAFE, CHASE HARD

Thank you for flying TornadoAlley. See you under the storm.