



Savage Norden

Zlin Aviation



FLIGHT MANUAL

Microsoft **Flight Simulator**

FOR SIMULATION USE ONLY - DESIGNED FOR SINGLE-PILOT OPERATIONS:

This aircraft has been developed for single pilot operations and has been adapted in such a way to better represent the simulated environment. It has been produced using multiple real-world data points and manuals from various dates and sources with modifications to various components to make them more manageable in Microsoft Flight Simulator.

PHOTOSENSITIVE SEIZURE WARNING:

A very small percentage of people may experience a seizure when exposed to certain visual images, including flashing lights or patterns that may appear in video games. Even people who have no history of seizures or epilepsy may have an undiagnosed condition that can cause these “photosensitive epileptic seizures” while playing video games.

Immediately stop playing and consult a doctor if you experience any symptoms.

These seizures may have a variety of symptoms, including light-headedness, altered vision, eye or face twitching, jerking, or shaking of arms or legs, disorientation, confusion, or momentary loss of awareness. Seizures may also cause loss of consciousness or convulsions that can lead to injury from falling or striking nearby objects.

Parents should watch for or ask their children about the above symptoms. Children and teenagers are more likely than adults to experience these seizures.

You may reduce the risk of photosensitive epileptic seizures by taking the following precautions:

- Play in a well-lit room.
- Do not play if you are drowsy or fatigued.

If you or any of your relatives have a history of seizures or epilepsy, consult a doctor before playing video games.

FLIGHT MANUAL INFORMATION:

This flight manual has been written to aid in both Microsoft Flight Simulator 2020 and Microsoft Flight Simulator 2024 gameplay. Although some images and information may be directed towards a specific simulator, most of the information is shared between both simulators. If you find discrepancies in this manual that differ between either, please contact the Got Friends team at gotfriends.marketing@gmail.com and we will do our best to address these issues and forward the changes to Microsoft for future manual releases. Thank you for your patience in advance and we look forward to receiving your feedback.

COPYRIGHT NOTICE:

Official Logo of Microsoft Flight Simulator 2020 Copyright © The Microsoft Corporation, All Rights Reserved.

Official Logo of Microsoft Flight Simulator 2024 Copyright © The Microsoft Corporation, All Rights Reserved.

Base Imagery of Aircraft Copyright © The Microsoft Corporation, All Rights Reserved.

Official Logo of Got Friends © Got Friends LLC, All Rights Reserved.

Flight Manual Copyright © Got Friends LLC, All Rights Reserved.



INTRODUCTION

Presenting the Savage Norden by Zlin Aviation, an exciting aircraft developed by Got Friends in collaboration with Zlin Aviation and Microsoft. This project reflects our dedication to meticulous work, extensive research, and ongoing enhancements in simulated bush flying. The Savage Norden, celebrated for its rugged performance and STOL (Short Takeoff and Landing) capabilities, is tailor-made for adventure enthusiasts and bush pilots who excel in challenging environments.

Our unwavering commitment to authenticity and innovation ensures that this aircraft offers a truly enjoyable and immersive experience for flight simulation enthusiasts. We would like to extend our heartfelt gratitude to the community for their continuous support of our previous backcountry projects and recognize the invaluable contributions of our collaborators who have been integral to our journey. Special thanks to Zlin Aviation and Microsoft for making it possible to bring this exceptional aircraft to life in Microsoft Flight Simulator. This launch not only showcases the Savage Norden's versatility and thrill but also honors Zlin Aviation's pioneering spirit, sparking renewed interest and celebrating their notable legacy in aviation history.



The Savage Norden is a two-seat, single-engine short take-off and landing (STOL) light sport aircraft developed and manufactured by Zlin Aviation of the Czech Republic. The company, renowned for their rugged, high-performance designs, created the Savage Norden to be a functional synthesis of an adventure aircraft and a touring airplane, naming its purpose “adventouring.” The Savage Norden took its maiden flight in April of 2020 and it was introduced in 2021.

Engineers at Zlin Aviation developed the Savage Norden based on nearly a quarter century of experience innovating STOL adventure airplanes. This included reviewing extensive feedback from its global customer base. Previous offerings from the company include the Shock Cub and the Shock Ultra, both legends in the world of backcountry and adventure flying. With the Savage Norden, Zlin sought exceptional STOL capability fused with speed, extended range, and stable cruising performance—a difficult combination. From the very first flights, the Savage Norden has exceeded all expectations.

Zlin achieved their goals by designing an innovative wing that merges several aerodynamic subsystems. It is an all-aluminum design with an advanced airfoil optimized for cruising. It additionally features double-slotted aluminum fowler flaps that can be extended to 70 degrees, and electrically actuated leading-edge slats for extreme low-speed control. This combination allows pilots to take-off and land in short distances, fly low and slow, and then cruise efficiently at high speed.

Zlin merged the wing with a new fuselage that boasts a roomy tandem seating design. Refined controls allow aviators to fly with utmost precision, and advanced instrumentation and avionics deliver optimized cockpit situational awareness.

The Savage Norden measures 23 feet, 2 inches in length, stands 6 feet, 8 inches tall, and has a wingspan of 29 feet, 8 inches. It is powered by a Rotax 916iS 4-cylinder piston engine that delivers up to 160 horsepower and turns a constant-speed, 5-blade composite propeller.

The aircraft has a range of up to 850 miles, a service ceiling of 15,000 feet above sea level, and it climbs at up to 2,000 feet per minute. It cruises at 122 miles per hour, has a maximum speed of 134 mph, and has a stall speed of just 34 mph with full flaps and slats extended.



SPECIFICATIONS

- ❖ Highly Detailed 3D Model with 4K HD Textures
- ❖ Accurate Flight Model with Custom Ground Handling Simulation
- ❖ 8 Hand-Crafted Liveries with Manufacturer Favorites and Multiple Livery Styles
- ❖ Custom Rotax 916iS WWISE Sound Pack with optional Headphone Simulation
- ❖ Working Title G3X Compatibility with Custom Airspeed, Altimeter and Trim Gauges
- ❖ Fully Functioning Checklist with Locators, Cameras, Auto Complete and Evaluation Modes
- ❖ Functional Door, Windows, Sleeping Setup, and Removable Engine Cowling
- ❖ Option to Fly with a Visible Co-Pilot while in the Virtual Cockpit
- ❖ Customizable Registration Decals
- ❖ Deeply Simulated Lighting System with Custom Wig-Wag Lights
- ❖ MSFS 2024 Only: Banner Towing Variant and Equipment



SPECIFICATIONS

General Characteristics:

<i>Capacity:</i>	Pilot + One Passenger
<i>Wingspan:</i>	29.626 ft / 9.03 m
<i>Wing Area:</i>	155 sqft / 14.4 sqm
<i>Length:</i>	23.2 ft / 7.1 m
<i>Max Gross Weight:</i>	1,322 lbs / 600 kg
<i>Empty Weight:</i>	860 lbs / 390 kg
<i>Flaps:</i>	0° / 20° / 40° / 60° (High-Sink 70°, Held Position Only)
<i>Slats:</i>	Electric

Powerplant:

<i>Brand:</i>	Rotax
<i>Model:</i>	916iS
<i>Horsepower:</i>	160 at 5800RPM
<i>Cooling:</i>	Liquid
<i>Configuration:</i>	Horizontally Opposed Four-Cylinder

Propeller:

<i>Blades:</i>	5
<i>Diameter:</i>	6.8 ft / 207 cm
<i>Type:</i>	Auto Constant Speed

Fuel Capacity:

<i>Tanks:</i>	2 x 18.5 US Gallons / 2 x 140 Liters
---------------	--------------------------------------

V-Speeds:

<i>Never Exceed (VNE):</i>	122 kts / 227 kph / 141 mph
<i>Cruise Speed (VC):</i>	100 kts / 185 kph / 115 mph
<i>Takeoff Speed (VS):</i>	39 kts / 72 kph / 45 mph
<i>Best Climb Speed (VY):</i>	61 kts / 113 kph / 70 mph
<i>Best Angle Climb Speed (VX):</i>	52 kts / 96 kph / 60 mph
<i>Best Glide (VBG):</i>	61 kts / 113 kph / 70 mph
<i>Approach Speed (VREF):</i>	48 kts / 89 kph / 55 mph
<i>Stall Speed Full Flaps (VS0):</i>	24 kts / 45 kph / 28 mph
<i>Stall Speed Flaps Up (VS):</i>	39 kts / 72 kph / 45 mph
<i>Max Flaps Extended (VF):</i>	65 kts / 121 kph / 75 mph



VIRTUAL COCKPIT

AIRLOAF COCKPIT



1. Panel Lights Switch
2. Airspeed-Combination Breaker
3. Airspeed-Combination Gauge
4. Backup Battery Switch
5. Fuel Pump #2 Switch
6. Fuel Pump #1 Switch
7. Emergency Locator Transmitter Panel
8. Fuel Pump #1 Protective Cover
9. Emergency Locator Transmitter Breaker
10. Working Title G3X Touch System
11. Digital Trim Indicator Breaker
12. Digital Trim Indicator
13. ECU A Switch
14. ECU B Switch
15. Momentary Switch
16. Altimeter Calibration Knob
17. Digital Altimeter Gauge
18. Digital Altimeter Breaker
19. Autopilot Arming Switch
20. Cabin Heater Lever
21. Working Title G3X Touch Breaker
22. Attitude & Heading Ref. System Breaker
23. GMU11 Magnetometer Breaker
24. ADS-B Breaker
25. Starter Push Button
26. Landing Lights 3-Way Switch
27. Navigation Lights Switch
28. Strobe Lights Switch
29. Avionics Master Switch
30. Master Battery Switch
31. Pitot Heat Breaker
32. 12VT Breaker (Inoperable)
33. Navigation Lights / Strobe Lights Breaker
34. Landing Lights Breaker
35. Autopilot Breaker
36. Electric Slats Breaker
37. COM1 Breaker
38. NAV1 Breaker
39. GPS1 Breaker
40. Transponder Breaker



VIRTUAL COCKPIT

AIRCRAFT COCKPIT



1. Throttle Lever (Pilot)
2. Notepad Options (Active/Stowed)
3. Fuel Shutoff Valve
4. Parking Brake Lever
5. Electric Trim Switch
6. Elevator Trim Down Button
7. Elevator Trim Up Button
8. Door Handle
 - ❖ MSFS 2024: Triggers Aircraft Enter/Exit





1. Left Fuel Tank Indicator
 - ❖ Right Fuel Tank Indicator on Right Side
2. Throttle Lever (Copilot)
3. Flaps Lever
4. Window Lock



1. Lantern Light





Notepad Options:

1. **Dash Vibration:** Activates or Deactivates Dashboard Vibration. This option is available for users that may experience motion sickness from vibration effects derived from Engine, G-Forces, and Ground Roll.
2. **Front Seatbelt:** Hides or Shows the Pilot Seatbelt. This option is available for users that may want to fly from the rear copilot seat and prefer not to have the front seat belt blocking their dashboard view.
3. **Sleeping Setup:** Installs or Removes the Sleeping Platform, Sleeping Bag and Lantern from the Aircraft. This option is available for users that may want to simulate a backcountry overnight adventure.
4. **Engine Cowling:** Installs or Removes the Front Engine Cowling. This option is available for users that may want to remove the engine cowling for engine inspection or visual aesthetics. The engine cowling can also be removed during any phase of flight and is multiplayer compatible for unique viewing.
5. **Smoke Generator:** Turns on or off smoke generation and requires engine combustion to emit smoke. This option is also tied to the "Logo Lights" hotkey so users can activate smoke without opening the Notepad Options. This option is multiplayer compatible for unique viewing and coordinated flights.
6. **Headphones:** Turns on or off headphone simulation. This option is available to users that want to decrease the ambient volume of the aircraft while flying in the cockpit through headphone dampening.
7. **Copilot Visibility:** This option is only available in MSFS 2020. Enables or Disables Copilot Visibility while in Cockpit Camera Mode. Note: Co-Pilot will always be shown in External Camera Mode when a Co-Pilot is onboard. This option has been removed in MSFS 2024 and is managed via the new EFB System.
8. **Livery Styles:** This option allows the user to customize their livery style during any phase of flight. Users can select from four styles (including none) to change the visual look of their currently selected livery. This option is multiplayer compatible for unique viewing and user customizability.



LIVERY STYLE EXAMPLES

ΓΙΛΕΚΑ ΣΤΙΛΕ ΕΧΑΜΒΓΕΣ



Livery Style #1 with Engine Cowling Installed



Livery Style #2 with Engine Cowling Installed



Livery Style #3 with Engine Cowling Removed



CHECKLISTS (MSFS 2020)

CHECKLISTS (MSFS 2020)

The Savage Norden has been developed to fully utilize Microsoft Flight Simulator 2020's In-Game Checklist System. If you would like an in-depth walk-through during any phase of flight, you can select the Checklist Pop-Up Menu and get started. The checklists have been designed to assist with locations of each item, Co-Pilot autocompletion and evaluations. If you would like deeper checklist functionality, please consider turning "ON" the Assisted Checklists Option from Microsoft Flight Simulator's Assistance Options Menu. This will allow "Auto Completion" features like automated brake checks, engine warm-ups, and magneto checks when triggered.



CHECKLISTS (MSFS 2024)

CHECKLISTS (MSFS 2024)

The Savage Norden in Microsoft Flight Simulator 2024 is designed to fully utilize the simulator's integrated Electronic Flight Bag (EFB) checklist system. This feature provides in-depth, interactive checklists accessible at any phase of flight, guiding you through procedures and highlighting the location of each item. The system also allows you to track your progress, ensuring a comprehensive and user-friendly experience.

