

Zenith CH701 STOL



ISWS

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1. ABOUT THE AIRCRAFT

First introduced in 1986, the STOL CH 701 aircraft was developed as an off-airport, short take-off and landing kit aircraft, to fulfill the demanding requirements of both sport pilots and first-time builders. With the STOL CH 701, designer Chris Heintz combined the features and advantages of a “real” airplane with the short-field capabilities of an “ultralight” aircraft. The aircraft features fixed leading-edge slats for high lift, full-span flaperons (both ailerons and flaps), an all-flying rudder, and durable all-metal construction. While the basic design has remained the same, many significant improvements have been introduced over the years, including a higher useful load, easier and quicker build kits, and more detailed drawings and step-by-step assembly instructions.

Short-field performance is where the STOL CH 701 aircraft truly excels: It is airborne in less than 120 feet of unprepared grass, or 90 feet of hard surface, at gross weight. Rotation is possible by the time full throttle setting is applied, and lift-off can begin at 25 mph (in ground effect, with no wind) – all within less than four seconds from stand still. Of course, any headwind shortens the time and distance required for take off.

The STOL CH 701 was not designed to be just another ‘pretty’ light aircraft, but was engineered to offer outstanding short take-off and landing performance, all-metal durability, and unparalleled ease of construction. With form following function, the STOL CH701 looks like a ‘Sky Jeep’, as it is often called by its owners. Popular since 1986, there are hundreds of STOL CH 701 aircraft flying around the world! Not many of the more than 500 STOL CH 701’s flying today can be found at airports – most are operated from short off-airport grass fields, in backyard fields and in remote areas. The aircraft’s all-metal construction makes it suitable for continuous outdoor storage – providing their owners with continuous cost savings (no hanger or tie-down fees).



2. TEAM

The Zenith 701 was made possible because of the hard work of the development team. A lot of time has been devoted to fine-tuning the aircraft's visuals and performance to make the most we can out of Microsoft Flight Simulator's engine.

- Kevin "Gibbage" Miller: 3D modelling, textures, audio recordings
- Pam Booker: Flight dynamics
- Alex Vletsas: Aircraft animations and coding, scenery development, bush trip creation

3. PRODUCT FEATURES

This product features the Zenith 701 in a wheeled configuration. The 3D model has been created to the highest precision possible using factory drawings and flight model, verified by two active pilots, flies exceptionally close to the real envelope. The package features:

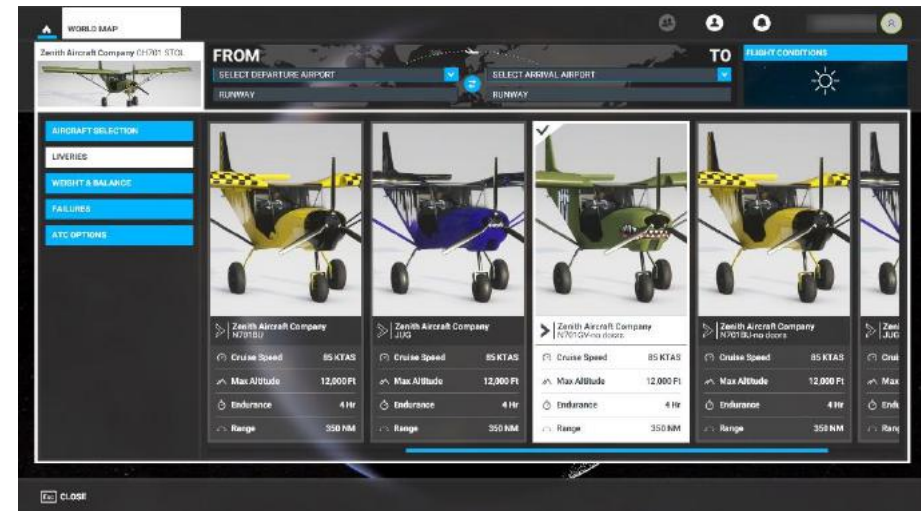
- Wheeled version of the 701 in two versions: with doors and without
- Four high detail liveries making use of the full potential of MSFS features
- Copilot and baggage controlled by weight
- Authentic sounds recorded from the real 701
- Accurate flight model verified by active 701 pilots
- Custom checklists
- Opening doors by clicking on the handle
- A bush trip flying you through New York state
- Lufker/Spadaro airfield scenery improvement
- Sky Acres airport scenery improvement
- Roxbury runway airstrip enhancement



3.1 SELECTING AIRCRAFT VARIATIONS

The 701 comes with four main variants: gear variant with and without doors, ski and amphibian. To select an aircraft variation in free flight, after selecting the 701 click on Liveries. There are four repaints across the four variants:

- **N6128Q** – Factory demonstrator
- **N701GV** – Known as Seven-Oh-Fun, operated out of Seattle
- **N701BU** – Used in our NY bush trip, this 701 flies out of Spadaro/Lufker in Long Island, NY
- **ZK-JUG** – Flown out of Canterbury, New Zealand, the JUG won a STOL competition taking off within 16.3m and landing in 27.1m!



3.2 PAYLOAD

Payload is controlled using the ingame weight menu and allows you to control visibility of the copilot and baggage in the back. The copilot will show up if you put 140lbs or more weight in that station.

Baggage gradually appears behind the seats, starting with 6lbs for the Medkit and topping up at 24lbs for the duffel bag.



3.3 RAIN AND ICING EFFECTS

The aircraft makes use of the simulator's rain and icing effects, although you don't really want to fly into the latter situation.



3.4 BUSH TRIP

The package includes a short bush trip that will take you from Lufker airport to Roxbury, NY.

We have improved three out of the four airports with custom scenery objects and improved ground textures to improve your experience and give you some launch pads to explore the state!



4. AIRCRAFT DATA SHEET

Weight	
Empty weight:	621lbs
Fuel:	10lbs left, 10lbs right
Max cockpit weight:	300lbs
Max baggage weight:	40lbs
Max total weight:	1150lbs

Speeds	
Rotate:	40mph
Climb:	50mph
Cruise:	90mph
Approach:	60-70mph w/o flaps
Never exceed:	110mph

Speeds (cont.)	
Stall:	18mph
Manoeuvring:	78mph
Max flap extension:	65mpg
Best angle climb:	35mph
Best rate climb:	60mph

Flaps	
Positions:	4
Flaps 0:	0 degrees
Flaps 1:	15 degrees
Flaps 2:	37 degrees
Flaps 3:	55 degrees

Engine	
Max RPM (no more than 60"):	5800
Max continuous RPM:	5500
Operating temperature:	208°F after 5'
Oil temperature:	58°F
Oil pressure:	65psi at 58°F

Fuel consumption at sea level	
5100RPM/82mph	3.5gph
5200RPM/85mph	4.0gph
5400RPM/86mph	5.0gph

WARNING: EXTENDING THE FLAPS AT AIRSPEEDS BEYOND 65MPH WILL RESULT IN THE FLAPS BEING RETRACTED DUE TO AERODYNAMIC FORCES AND PERMANENT FLAP DAMAGE.

Note: use of full flaps will result in a nose-down attitude. Avoid over-compensating on pitch as it will result in bleeding airspeed. Full flaps are intended for going "Steep In – Steep Out".

Did you know that pilots in STOL competitions often "blink" their flaps to position 1 when taking off to get a quick jump in their climb rate?

5. COCKPIT

OVERVIEW

The cockpit of the Zenith 701 varies depending on the builder's preference in instrumentation. The SWS version of the 701 is built after N701GV which features an analogue cockpit. The general layout is as follows:

1. Yoke
2. Flap lever
3. Rudder pedals & brakes
4. Throttle lever
5. Trim switch and indicator lights
6. Fuel selector
7. Choke lever
8. Attitude-Direction Indicator (ADI)
9. Airspeed indicator
10. Pressure altimeter
11. Vertical speed indicator
12. Magnetic compass
13. Radio stack & GPS
14. RPM indicator
15. Oil pressure indicator
16. Oil temperature indicator
17. Left & right fuel tank level gauges
18. Engine temperature indicator
19. Volt meter
20. Magneto switch
21. Switches
22. Engine hour meter
23. Door latch



5.2 INSTRUMENTATION

ATTITUDE-DIRECTION INDICATOR



1. Artificial horizon
2. Aircraft figure adjustment knob: allows you to move the plane figure up/down
3. Caging knob: pulling the knob will cage the artificial horizon to a straight and level position. Pushing will uncage the ADI and allow it to continue from a straight and level position.

CAUTION: ONLY UNCAGE THE ADI WHEN YOU ARE IN STRAIGHT, LEVEL AND UNACCELERATED FLIGHT, OTHERWISE THE ADI INDICATION WILL BE ERRONEOUS.

AIRSPEED INDICATOR



Indicates airspeed in statute miles per hour. The instrument is graduated from 20 to 140 mph.

VERTICAL SPEED INDICATOR



Indicates the aircraft's vertical speed in feet per minute. The instrument is graduated from 0 to ± 2000 fpm.

ALTIMETER



The altimeter indicates the aircraft's altitude above Mean Sea Level in feet. The instrument dial consists of:

1. 10,000ft needle
2. 1,000ft needle
3. 100ft needle
4. Kollsman pressure window: indicates the reference pressure that the altimeter uses to calculate aircraft height. Indicated in inches of Mercury (inHg)
5. Pressure setting knob: used to input the reference pressure in the altimeter

ENGINE RPM INDICATOR



The engine RPM indicator gauge indicates revolutions per minute of the engine. It is graduated from 0-6000 rpm, indicated as 0-60 in multiples of 100.

OIL PRESSURE INDICATOR



Indicates oil pressure in Pounds per Square Inch (psi). Normal indication is 65psi at 58°F and will drop to 58psi after the oil warms up. Pressure will drop as temperature increases and vice versa.

OIL TEMPERATURE INDICATOR



Indicates oil temperature in degrees Fahrenheit. The instrument is graduated from 120 to 300°F.

Operating temperatures:

Minimum:	122°F
Normal:	194-230°F
Caution:	230-284°F
Maximum:	284°F

FUEL INDICATOR



Two fuel indicators are installed in the cockpit, one for the left and one for the right fuel tank.

The gauge indicates percentage of fuel, with full quantity corresponding to 10 gallons in each tank.

ENGINE TEMPERATURE INDICATOR



The engine temperature indicator (labeled WATER) indicates temperature in degrees Fahrenheit (°F). The instrument is graduated from 100 to 250°F.

Normal operating temperature is 208°F which is reached after approximately 5 minutes from engine startup, depending on ambient temperature conditions.

Engine temperature will vary with RPM.

GMA340



The GMA340 allows you to manage the aircraft radios.

1. Marker lights
2. COM1/2/3 buttons: allows you to listen to transmissions from the respective COM channel
3. COM1/2/3MIC: activates the microphone for the respective COM channel
4. NAV1/2/ DME/ADF: toggles morse code identification for the station tuned to the NAV radio
5. COM1/2 switch: allows concurrent listening from two COM channels.

Radios are turned off using the volume knobs on the GNS530.

GNS530 GPS



The GNS530 GPS unit uses the default MSFS functions.

The unit allows for full COM and NAV radio management as well as flight planning functions.

GTX330 TRANSPONDER



The GTX330 transponder uses the default MSFS functions.

SWITCHES & BREAKERS



1. Master battery switch
2. Panel lights switch
3. Landing light switch
4. Navigation lights switch
5. Strobe lights switch
6. Radios power switch
7. Fuel pump switch
8. Avionics circuit breaker
9. Instruments circuit breaker
10. Transponder circuit breaker
11. Navigation lights circuit breaker
12. Strobe lights circuit breaker
13. Radios circuit breaker
14. Trim circuit breaker (INOP)

HOUR METER



The hour meter indicates total engine running time.

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