SECOND EDITION MANUAL; BUILD 1.2



Wittman Tailwind Collection

By Lionheart Creations Ltd.

WITTMAN TAILWIND OPERATIONS MANUAL

INTRODUCTION



This is the famed Wittman Tailwind, renowned for its inexpensive cost to construct and outrageous speed capabilities. This radical little aircraft was born from the mind of famous air racer pilot and race plane designer 'Steve Wittman' of Oshkosh Wisconsin. Having made history in small air racers through the early 1930's and later by designing his own planes, Steve became well known in the aviation world as a key figure in the General Aviation and air racing. The Tailwind series was launched in blueprint form in 1954 with the Tailwind 'W-8' series. A small and simple design that incorporated a steel framework fuselage that was covered with fabric, that featured a fiberglass (composite) cowling, aluminum doors, and some radical, sleek wings that featured no rivets or seem lines, as they were covered with thin, high quality Japanese or Spanish plywood skins, making them very smooth after finishing. The result was a small, straight sided, flat top fuselage that from a front view looked square, but was in actuality a lifting body shape. Viewed from the side, you instantly see that the fuselage was indeed shaped like a wing and along its top, creates a moderate amount of lift. With this, Steve Wittman was able to reduce the amount of wing surface, pulling in the wings to a mere 22 feet wingspan. Steve went a step further and designed the wing profile to be a high speed wing, low in drag. He added flaps which helped bring down the landing speed of the little Speedster. What one ended up with was a sporty little plane that could get up to 160 to 180 MPH in quick order.

Steve later updated the Tailwind series with a new model, the W-10. This version added more refinements and improvements and the Tailwind again gained even faster speeds. Now owners and builders were claiming speeds of up to 180 to 200 MPH, with 160 to 180 MPH 'cruise' which was utterly phenomenal for such a plane weighing in at only 750 pounds.

Soon, Tailwinds were being built all over the world, not just in the United States, but in England, Canada, Spain, Germany, Italy, Australia, South Africa. With its simple construction methods and basic materials, the Tailwind is a project of choice in some remote countries that do not have access to exotic, costly materials. Some builders have had much luck in finding really good deals on parts and were able to construct their Tailwinds for around $12,000.00 USD. A good, super immaculate Tailwind with a top notch paint job and nice instruments and engine will probably cost one about $25,000.00 USD or more, but even that is far far less expensive then alot of todays new homebuilts.

Note that many versions of the Tailwind exist, and many builders change certain parts of the aircrafts design to meet their own tastes. Some will have different sized windows, missing rear quarter windows, a different rudder shape, etc. But all of these were made from either of two sets of plans; the W-8 and the W-10 models of the Tailwind series.

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This is a dual pack of two models of aircraft; the Wittman Tailwind W-8, and the Tailwind W-10. Both are unique unto themselves. Each has a different rudder, different instrument panel and gauges layouts, each perform differently from each other. The W-8 cruises smoothly along at 150 MPH, while the W-10 can easily cruise along at 180 MPH.

Features of this package include;

* High detail instrument panels; 2 versions; basic and deluxe
* High detail instruments and gauge graphics
* New Avionics with MX series NAV-COM, Autopilot, and Transponder
* New LHC FS Sound System features custom sounds for switches, toggles, icebox and other elements in the package
* Custom sound file
* Mini Gauges in center of panel feature custom hotrod chrome bezel rims
* Fully animated control surfaces, landing gear, doors
* Custom GPS
* Disappearing and appearing elements based on engine running or stopped, (disappearing pilot, appearing gear on tarmac, etc).
* Animated pilot that scans the sky and the instrument panel
* Toggle-able sun cover (old navigation air-chart) that covers instrument panel when shutting your plane down
* W-8 series has a roof cover for the pilot. (The W8 series has an all plexi roof).
* Extreme graphics for high realism through out the aircraft. Only a select few textures are in high realism to preserve high performance in your Flight Simulator

Graphics for FSX model are in DDS format for faster performance. Minimal use of high resolution textures to provide highest computer performance as possible.

The aircraft handling is designed to be fun to fly. It was also created based on reports of how actual Tailwinds handle. For instance, pilots say these aircraft absolutely will do from 180 MPH to 200 MPH (depending on engine used).

Exterior paint schemes

















Interior Themes





Themes of Interiors;

* Black leather
* Black textured cloth
* Rustic brown leather
* Retro vintage wood interior

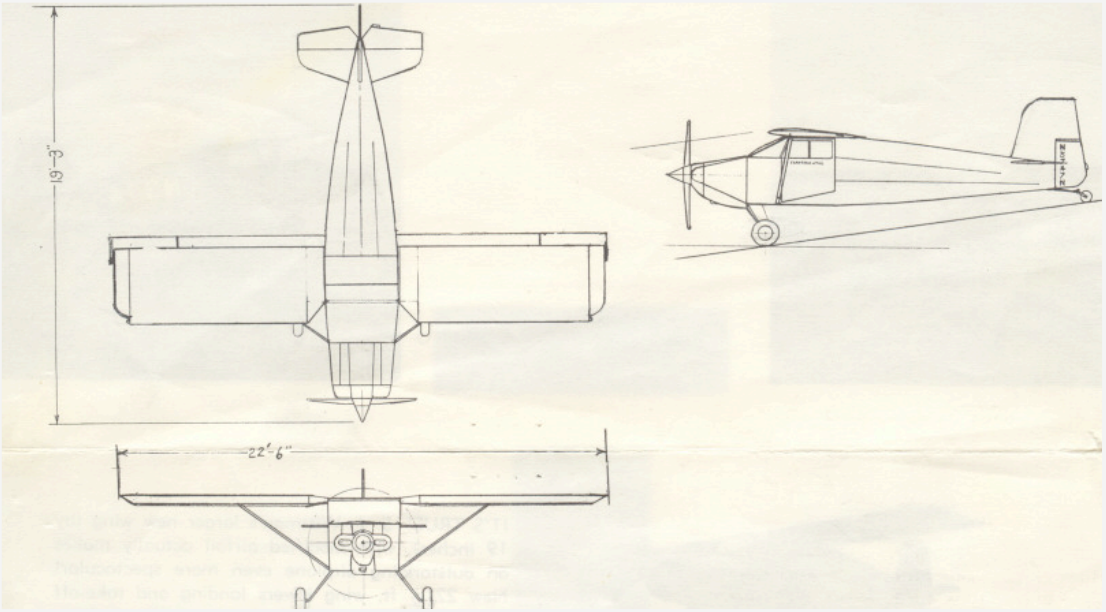




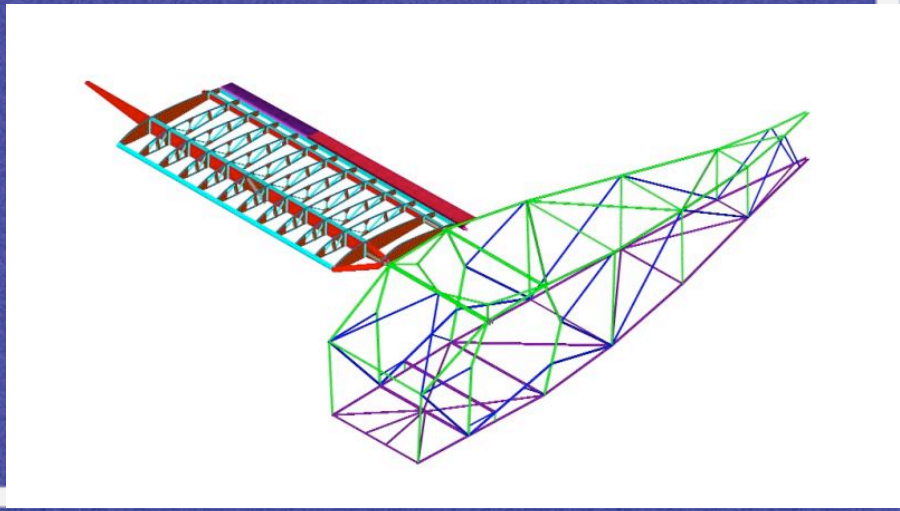
PERFORMANCE

The Wittman Tailwind is basically a mixture of a lite Sport aircraft and an air racer. Designed to use basic materials, ultra lightweight construction, extreme aerodynamics, and a large powerplant. The end result is a small, two place aircraft that is more like a little race car with wings.

Length.....19 Feet 3 Inches
Wingspan.....22 Feet 6 Inches
Wing area.....90 Sq. Feet
Empty weight.....700 to 750 US Pounds
Gross weight.....1,300 US Pounds
Baggage.....60 US Pounds
Cruising Speed.....160 to 180 MPH (not Knots)
Maximum Speed.....W-8 at 180 MPH, W-10 at 200 MPH
Rate of Climb.....900 FPM fully laden
Take Off Run.....800 Feet
Landing Speed with Flaps.....55 MPH
Landing Speed without Flaps.....65 MPH
Cieling .....16,000 Feet
Glide Ration.....9 to 1
Velocity Never Exceed (VNE).....230 MPH
Fuel Capacity .....25 US Gallons
Range.....600 Miles



AN EARLY DRAWING OF THE W-8 TAILWIND



AVIONICS

The W-10 series in this collection comes with an Avionics stack, consisting of an MX12 NAV-COM Radio, one Transponder, and one Autopilot.

SUB DECIMAL SELECTIONS KNOB

ABOVE DECIMAL SELECTIONS KNOB

FREQ SWAP BUTTONS

MX 12 NAV COM

NAV - COM CONTROLS SWITCH OVER BUTTON

TRANSPONDER

AUTOPILOT

HEADING SELECTOR

VERTICAL SPEED SELECTOR



The Auto Pilot features basic ‘select and lock’ controls. For instance, select ‘ALT’ with AP Power ‘on’ and your Altitude is locked in place. You can dial in your Altitude and set VSI.

FEATURES

W-8 TAILWIND COM RADIO



UNIT IS IN THE W-8 AIRCRAFT ONLY

ATMO-SPHERE CUSTOM GPS



ENTRIES CENTER IS BASICALLY IDENTICAL TO THE GARMIN 500 IN FLIGHT SIMULATOR

UNIT IS IN THE W-10 AIRCRAFT ONLY

W-10 HSI



HEADING KNOB FOR AUTO PILOT

VOR DIR SETTING KNOB

ON USING THE ABOVE GPS, MEARLY IMAGINE IT BEING THE SAME STOCK GPS UNIT AS COMES WITH FLIGHT SIMULATOR ONLY WITH A DIFFERENT EXTERIOR PACKAGE.

W-10 SERIES INSTRUMENT PANEL



The Hide Strut option allows people that do not have cockpit movements, to be able to hide the cross brace struts that are in front of the pilot

W-8 SERIES INSTRUMENT PANEL



The Hide Strut option allows people that do not have cockpit movements, to be able to hide the cross brace struts that are in front of the pilot

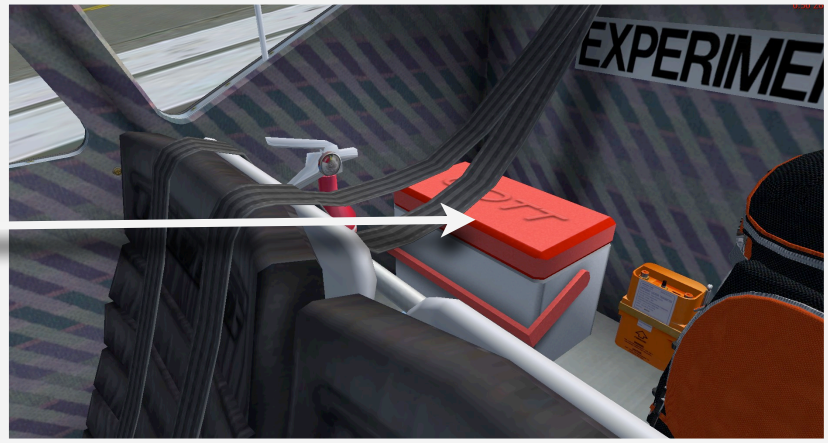
REAR INTERIOR FEATURE

Upon getting into your brand new, freshly finished Tailwind Homebuilt, you will notice behind you in the little cargo nook, an ice chest for some water and snacks on your long journey, and also your nap sack back-pack with your traveling things, camera and all.

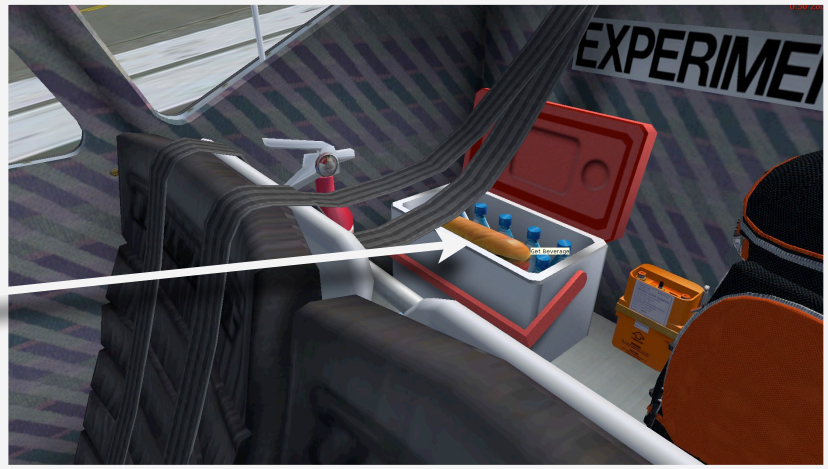
If you note, the top of the ice cooler can be clicked on. Tapping that will open the ice box. Then feel around in the ice box for clickable objects. I am sure you can get a bottle of ice cold water and a freshly made sub sandwich to pop out and lite gently upon the co-pilots seat.

Please be careful with the mustard. Dont get any on your new seats! ;)

A. Click on ice chest



B. Click on sandwich and bottled water



C. Items fly to seat



FLYING THE TAILWIND



The Tailwind in Flight Simulator is much like a small rocket. The aircraft is extremely lite weight and well powered, so accelleration on starting your takeoff run will be moderate. You can slowly give throttle to the engine to slow down your accelleration.

As you are accellerating, the tail will rise at about 45 MPH. At 90 to 100 MPH your plane is ready to climb. You can use one notch of flaps for take-offs that have short runways. This is required on actual Tailwinds as they have little lift at slower speeds.

If you are flying with just your own weight selected, you will have excellent climbout rates. The stock weight setting is for one pilot only, no luggage.

As you climb, remember to lean the Mixture slightly. (Red mixture knob beside the black throttle knob). This aircraft does not have automatic altitude mixture setting, so you will lose power at higher altitudes if you do not lean out the fuel.

Note; You are equipped with an aerobatic style carburetor which can do inverted flight manuvers.

LANDING THE TAILWIND

Landing this little Rocket is a bit tricky at first. You have to really concentrate on your airspeed. 65 MPH is your danger zone when flaps are up. So if you are doing a fast landing, do not let your airspeed go under 65 MPH, and higher speeds if at high altitude airports such as Aspen Colorado or some of the more famous Swiss mountain airstrips, in which you will want at least one notch of flaps.

Recommended Airspeeds for flaps are as follows;

* One Notch Flaps.....108 MPH or slower
* Two Notches of Flaps.....80 MPH or slower

The flaps will not cause excessive pitch, but will create a fair amount of lift as you pull the lever, after which, simply adjust your attitude. Drag induced by the flaps will be a fair amount, so add power to compensate. Remember, these are acting like Spoilers (air brakes) as well, so you will need more power when your flaps are extended.



Minimum airspeed with full flaps (stall point) will be under 45 MPH. Best to keep your little homebuilt at a safe 50 MPH, and again, much

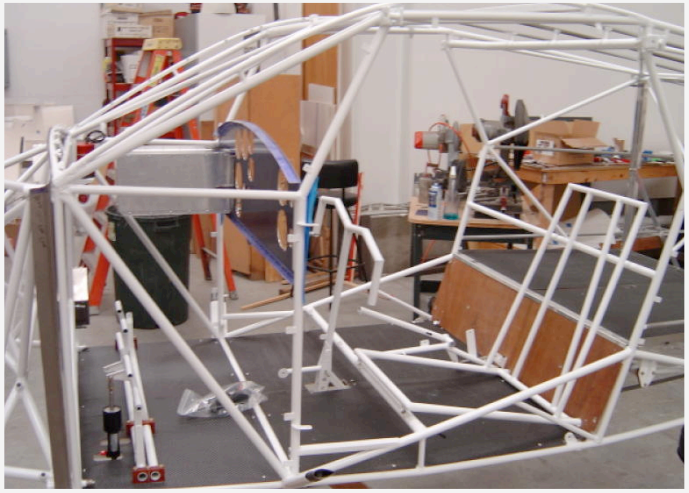
BUILDING A TAILWIND

Steve Wittman designed his Tailwinds to be made by simple materials. A steel frame covered with fabric, with basic, flat aluminum doors made up the fuselage. The wings were created from all wood materials, much similar to a Bellanca or Piper J3 Cub of that era. One only need to learn working with welding, covering fabric, and wood working to build a Tailwind. Some have become very elaborate, improving some area's with their own special touches, such as aluminum wings, larger instrument panels with full IFR Avionics, plush interiors, etc. Other Tailwind builders only want speed, and will leave out anything they can such as electrics, interior fabrics, etc, making the Tailwind as lite as possible, adding to its top out speed and handling.

Here, the aluminum front cabin sides and doors are fitted to the steel frame



Controls and panel components being fitted to the fuselage frame assembly



Here is the fuselage being skinned with fabric. The green zones are special fabric glue



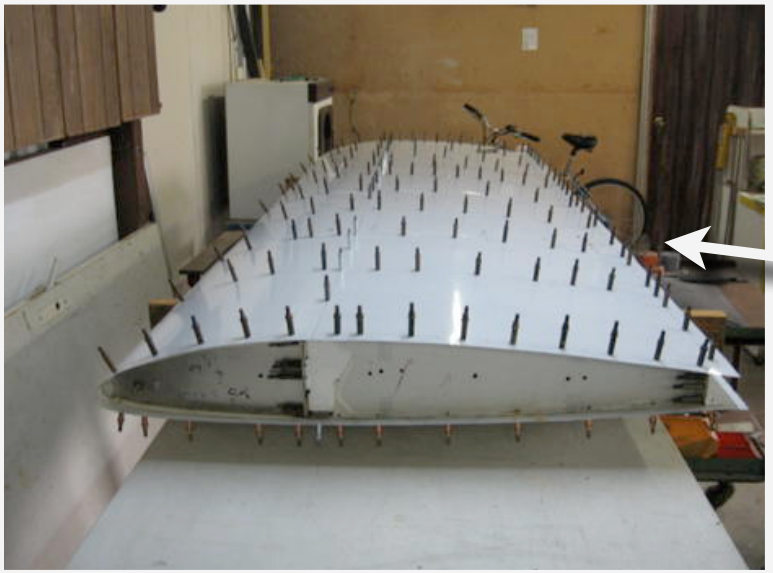
BUILDING A TAILWIND

Here you see the wings coming together. These are created using mostly wood, using wooden Spars, wood rib assemblies made on Jigs so that each rib is identical in dimension. Then when all the inner assemblies are finished, you cover the wings with a fine Japanese or Spanish veneered wood. This provides an utterly seamless finish with no rivets or panel lines. Seal and paint to a high gloss texture.

Note: On the bottom picture, this wing is fitted with wing tanks which is becoming popular with Tailwind builders. Some in Australia are now making their wings of aluminum, which can be very lite weight.



Wood skins adhered to rib assembly, awaiting paint and finishing



aluminum wing



Rare wingtanks fitted in wood wing assembly

BUILDING A TAILWIND



Here you can see the engine has been installed and now the cowling is being delicately fitted and prepped for its fittings that will hold the cowling onto the framework.



Voila! A finished Tailwind with a fresh coat of white paint, waiting for some stripes and an N-number registry.

Note the sleek little side windows like that of a Porsche speedster, the way the plexi-glass runs over the top of the fuselage, creating an extra area of lift like that of a lifting body or wing.

The Tailwind is one sleek little plane.



ORDERING BLUEPRINTS

Aircraft Spruce & Specialty Co.

If you should be interested in ordering a set of blue prints for building a Wittman Tailwind, please go to Aircraft Spruce and Specialty. They are now the proud and dedicated owners of the Tailwind enterprise and can help you with building your aircraft, ordering of supplies, and also provide some parts and pre-assembled parts for builders.

GO TO www.aircraftspruce.com FOR MORE INFORMATION.

REAL PLANE FEATURES

Steve Wittman was a ingenious designer. His background involved the design and creation of many successful air racer aircraft. This involved many innovative features that he would come up with to make award winning aircraft.

One such idea is his control yoke or joystick.

To get into the tight fitting little Tailwind, one bows down under the wing and slips into the seat. Imagine though if you had a standard joystick there. You would need to squirm a leg over the top or around via the seat to get into position. But Steve figured a way to make a single centrally located joystick with a cross-top that came over and back down for the hand grip. This enabled a pilot to get into his Tailwind without bumping his legs on the control stick and its still located right in front.



OTHER AIRCRAFT FOR FLIGHT SIMULATOR

Here are several other aircraft produced by Lionheart Creations Ltd.

The Quest Kodiak, 10 place turboprop, bush plane of the future with new STOL technology.





The Epic LT / Dynasty
An executive turboprop dream come true featuring incredible speeds and luxury with beautiful lines like a Ferrari.





The Classic Bellanca Super Viking, featuring its world reknown 250 MPH speed, well appointed interior and instrument panels.





The European star, the Socata Trinidad and Tobago dual package, featuring an outrageously detailed virtual cockpit with tons of special animations.





For more information; please go to
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www.pcaviator.com
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