



**Javron Aviation builds our Experimental Super Cub kits using original Piper PA-18 drawings.**

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**We can build a kit to your specifications, from original “factory” to the most tricked out Alaskan machine.**

Improvements we have made to our kit aircraft compared to the original Piper Super Cub include the popular “Alaska” mods as standard. They are solutions to the problems people have found while fixing and repairing Super Cubs over the last 60 years.

**These improvements include:**

- 1. All 4130 Tubing.** About 70% of the original Piper PA-18 fuselage is made of 1025 mild steel tubing. 4130 has a much higher tensile strength and by replacing all the mild steel with 4130 we are adding strength without adding weight.
- 2. The Wide Body Fuselage** (standard width also available): This fuselage is 4 inches wider than a stock Piper fuselage and provides much more room for bulky winter flying gear and entering and exiting for the not as limber as I was when I was 20 pilots. Customers order this fuselage 9 out of 10 times.
- 3. ¾” Longeron Tubing:** The original fuselages used 5/8” tubing from the firewall to the first station back on the top and bottom longerons, We use one length of ¾” tubing all the way from the tailpost to the firewall, this strengthens the front of the fuselage for the 180 Hp engine install.
- 4. Firewall support tube:** We install a 5/8” tube from the lower firewall corners at the engine mount attach spools up to the cluster on the upper longerons at the instrument panel attach area. This helps prevent the lower firewall from collapsing on your feet in the event of a crash.
- 5. Overhead X Bracing:** Overhead X bracing is one of the major improvements on the Super Cub. It gives more strength to the upper fuselage structure to help prevent damage in the event of a wing strike.
- 6. Extended Baggage:** Extending the baggage compartment and reversing the dogleg support structure gives you about three times the storage space and is standard on our airframes.
- 7. Upper Baggage Compartment:** You can also utilize the space in the upper rear of the fuselage for storage and light baggage.

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**8. Baggage Doors:** Baggage doors were not that necessary on the original Super Cub because of the small baggage compartment. But with the larger baggage area that comes standard it is now necessary to get your baggage in and out of the back.

**9. Firewall Screws:** We have replaced the three screws that are welded facing forward to the firewall bulkhead to hold the firewall in place when the engine mount is removed with three tabs that are drilled to install nut plates. This way you can install the screw from the front and not have that sharp original screw cutting your hand when doing maintenance on the back of the engine.

**10. Aft Fuselage Metal Belly Panel:** There are several tabs drilled for nut plates on the last three feet of the belly to install a metal panel to make it easier to access the horizontal stabilizer and trim system parts in the tail. We can also install these tabs on the entire length of the fuselage bottom for a full metal belly.

**11. 3/8 Tubing In the Aft Fuselage:** All the 3/8" tubing that is required for the gross weight increase package on a stock Super Cub is a standard item on every fuselage we make. (This can be left out optionally to save weight on lower HP planes.)

**12. Shoulder Harness Mounts:** Shoulder harness mounts front and rear are welded to the airframe instead of the bolt on ones normally installed in a stock frame. Cross tubes are welded in the upper frame structure to bring the shoulder belts over your shoulders in a safe comfortable manner.

**13. Tail Spring Mount:** The front tail spring mount square tube is usually distorted from years of abuse on original Super Cubs. To fix this we weld a bushing inside this tube to keep it from crushing when the bolt is tightened. We also use a heavier wall square tube for extra strength in this area.

**14. Lower Tail Brace Wire Attach:** In order to eliminate the AD on the stock Super Cub lower tail brace wire attach point, a much heavier one piece bracket is used that runs from one side to the other instead of the two individual brackets as found in the original.

**15. Overhead Manual Trim System:** The trim handle can be located overhead in ball bearings for a very smooth feel or in the original location on the left side of the cockpit.  
*(An optional Electric Trim System can be installed with an electric gear motor coupled to the stock jackscrew and activated with a switch on the panel or control stick.)*

**16. Front Seat Belt Brackets:** Front lap belt attach points are also welded to the fuselage just behind the lower seat frame, this is much better than having the lap belt attached to the seat frame like an original PA-18.

**17. Lift Ring Bushings:** We weld a bushing in the tube cluster inboard of the front wing attach fittings to install a lift ring on each side to lift the aircraft off the ground when changing from landing gear to floats. A small hole is drilled in the skylight just above the bushing to install a



threaded 3/8" shanked lift ring with a loop on the end. Once you have changed the gear the lift rings can be removed and a small rubber plug fits in the hole in the skylight to seal it and is nearly invisible.

**18. Motor Mount tubing:** The stock PA-18 engine mount is made from .035 wall 1025 mild steel tubing, not good enough for today's 180 HP plus machines. All our mounts are made from .049 wall 4130 tubing and can be ordered with the stock thrust angle or the modified raised thrust angle for improved short field capabilities.

**19. Tail Lift Handles:** Oversized lift handles are installed on both sides of the tail on the top or bottom longerons depending on your preference.

**20. Landing Gear:** We offer several different gear leg configurations depending on the purpose of your mission; from stock gear legs built from Piper drawings to our heavy duty extended gear with 1 1/2" x .058 wall front tubes and heavy wall 1 1/2" axels and large gear leg to axel gussets on front and rear tubes. For those who prefer traditional covered gear, the upper fabric channel that usually bends under fabric tension has been replaced with a 1/2" x .035 wall tube for added gear leg strength and a straight fabric line.

**21. Nose Bowl:** With the use of the new light weight-starters and the oil cooler being moved to the rear of the baffling, we have eliminated the openings in the nose bowl to give the cowling a smoother look.

**22. Firewall:** Our firewalls are made from semi-polished stainless steel instead of galvanized sheet metal like the original, this gives the engine bay a much more refined look.

## **Fuselage options include:**

**A. Weld on Float Fittings:** Our optional weld-on float fittings are much stronger than the bolt on fittings which normally crush the tube cluster from years of abuse and over tightening. Water rudder cable pulley brackets are also welded to the lower longerons for improved strength.

**B. Left Side Door:** The left side door is a popular feature for seaplanes and makes docking on the left side much easier.

## **Wings:**

**1. Square Tip Wing:** Our square tip wing has the same span as the original Cub but carries the full airfoil profile all the way to the end of the wing where the tip bow used to be. A composite wing tip is added to reduce drag and finish the tip for strobe light mounts. The outboard end of the aileron has been extended out to the wing tip and the flap has been



lengthened to 90” by moving the inboard end of the aileron outboard and bringing the flap all the way up against the fuselage at the inboard end to close the gap between the flap and fuselage, this also eliminates the wing root fairing in the flap bay area for a cleaner installation and greater flap authority.

An additional hinge is used on the flap and the actuator is moved to the center hinge in order to spread the load over the flap symmetrically to reduce stress. The leading edge skins are made from .020 thick material which greatly improves their ability to resist dings and dents often seen on the stock .016 thick skins.

**2. No Header Tanks:** A headerless fuel system is used which eliminates the front and rear header tanks in the stock fuel system in the cockpit, this greatly reduces potential problems with spilled fuel.

**3. Extra Fuel:** Our standard Super Cub kit comes with two eighteen gallon fuel tanks for customers with easy access to fuel or concerns about empty weight but optional twenty four gallon tanks can be installed giving you an extra twelve gallons or 48 total.

**4. Auxiliary Tanks:** If you need extra fuel we offer an optional ten-gallon outboard tank in each wing giving you a possible total of sixty-eight gallons. This is a nice option if you fly long distances in remote areas or need the ability to easily offload fuel at the cabin or camp but comes with a weight penalty.

**5. Bow Tip:** The original wood tip bows have been replaced on the round tip wing with aluminum formed tubing to eliminate cracked, broken, or distorted tip bows from fabric tension and age, this also helps prevent damage if you get too pushy trying to break your skis loose on a cold day.

**6. Ribs:** Our ribs are made from a laser cut hydro-formed and heat treated three piece assembly consisting of a nose, center, and tail section that interlocks over the front and rear spar and rivets together to form one rib assembly, this allows you to repair damage to the leading or trailing edge without completely disassembling the wing panel. These ribs weight approximately ½ oz. more than a stock Piper PA-18 rib and have been tested to FAA Part 23 destructive test standards to 2200 lbs. gross. This makes for a wing that weighs nearly the same as a stock Piper wing but with a higher gross weight rating. We feel this is a very important part of providing a safe, light aircraft with great flight characteristics. The airfoil is the same shape as the original Piper wing and the rib flanges will allow rib stitching or riveting if you chose.

**7. Landing and Taxi Lights:** A flush mounted landing taxi light lens kit covers an adjustable standard bulb mounting system which will hold standard or LED bulbs. You can even get them in both wings if you want to use a wig-wag system.

**8. Wing Bracing:** We use standard wire bracing in the wings like the original Super Cubs. This eliminates the extra weight of the tube only system and the chance of the wing getting loose



in the event of a tube bolt wearing since they are taking compression and tension loads. The single tube in the gas tank bay has ends that are designed to take compression and tension loads that are shared with the tank bay lid on top of the wing just like the original wing. This system works very well and is used in nearly every fabric covered wing built including high G aerobatic aircraft such as the Pitts and Stearman biplane.

These are just some of the major improvements that are included in our airframe kits, there are many other smaller ones like rear upper deck former X brace, rear tail X brace support, weld in cargo hooks, composite honeycomb floorboards, and many others that will let you build an airplane that will do everything you want it to do and fit your needs.