

# SUPER CUB KIT COMPARISON

We look at how these stalwart Cub variants stack up in terms of capability, design, cost and performance.

BY DAVE PRIZIO





**In an age** of 300-knot homebuilts and fast-glass certified airplanes that seem to practically fly themselves, there remains a deep and abiding interest in unadorned, basic aviation—flying low and slow to places that are not served by large paved runways, or even any runways at all. Such aviating is the province of the Super Cub and its ilk. It is no wonder that a host of airplane kits are available to meet this demand.

We previously looked at the LSA-eligible Cub kits (KITPLANES®, May 2011, “STOL Brothers”), so this time we’ll compare the Super Cub kits and those that provide similar features. These are heavier planes with gross weights ranging from 2000 to 2400 pounds and typically 180 horsepower

*A ski-equipped Dakota Super 18 sends up a spray of snow as it prepares to take flight. Fat tires, floats and skis let Super Cubs go where few other planes can follow.*

Backcountry Cubs makes a very traditional Super Cub complete with rounded wingtips. This serves as the foundation for the highly modified Mackey SQ2 and a number of possible iterations in between, depending on what options the builder selects.

engines. They do not struggle to carry two good-size adults and meager fuel, with no payload left for so much as a toothbrush. These aircraft carry a half-ton of fuel, gear and people to remote places with names like Kantishna, Cold Foot and Johnson Creek. With only one exception, these planes are recognizable as Super Cub variants, and they have all grown out of the hard-working Super Cubs that continue to ply the backcountry of the world as they have for the last 60 years.

After an extensive search, we found these kits worth considering for the would-be Super Cub builder. Backcountry Super Cubs has two models: a PA-18 clone and the Mackey SQ2. Bearhawk has its new Patrol, the least Cub-like of the group. The CubCrafters Carbon

Cub EX can do double duty as a Light Sport Aircraft or a full-size Super Cub, depending on gross weight used. Custom Flight Ltd. makes the North Star Bushplane, a PA-18 clone with its own improvements. Dakota Cubs also has two models, the Super 18-160 and the Super 18-180. Javron Inc. makes a PA-18 clone, in addition to a number of other Cub-clone models.

As Javron builder Bill Rusk says, “There must be a lot of interest in building your own Super Cub, because there sure are a lot of people making kits for them.” Indeed there are. With all these choices, which one is right for you? Why should you consider one over another? And why is there so much difference in the cost of the kits? All good questions. We hope to answer them for you.

## Backcountry Super Cubs

Backcountry Super Cubs traces its origins to the Smith Cub kits, which then became Turbine Cubs of Wyoming and later Backcountry Cubs. So in one sense it is a new company, but its roots go deep. Through the various name changes they have produced some 260 Super Cub kits, about 200 of which are flying. Their PA-18 look-alike is a classic Super Cub with a group of improvements that have come to be known as Alaska mods, which include 3-inch longer gear legs, some added bracing to the fuselage, increased gross weight and a larger baggage area, among others. The wingtips are also squared off, which allows the installation of longer flaps and ailerons than would be possible with the standard round wingtips of the original Super Cub. A 4-inch wider fuselage is also available as an option, as are leading edge slats for the wings, which come standard on the SQ2.

The Mackey SQ2 incorporates many more modifications to the original design. A wide fuselage and leading edge slats are standard, as is a carbon-fiber cowl with a lowered inline-thrust motor mount. The gross weight gets bumped up to 2400 pounds and the baggage area is increased even more. Backcountry's claim to fame is its castering leading edge slats that actually move as the angle of attack of the wings changes.



Flying into grass strips and pitching a tent makes the Super Cub experience complete. Here a standard Backcountry Super Cub is being used for just that purpose.

This produces what the company calls an “unstallable” wing and gives the SQ2 a reported minimum-control airspeed of 20 mph, about half of the original Super Cub’s 43-mph stall speed. This is standard on the SQ2 and optional on its Super Cub.

The Backcountry kits include most of the items you need to assemble your plane, except for the engine, prop and firewall-forward accessories. They also do not include tires, upholstery or rear seat controls, and like most of these kits, the fuselage and other steel parts



A closer look at Backcountry's castering slat, which changes position with the angle of attack of the wing to achieve impressively low minimum speeds. This is standard on the Mackey SQ2 and optional on its standard Super Cub. These slatted wings are also available for installation on certificated Super Cubs.



The Backcountry Mackey SQ2 is the high-performance version of the Backcountry Cub. Note the sloping engine cowl made possible by the lowered engine mount. This permits better visibility when flying at low speeds and high angles of attack.



Note the leading-edge slats on the Mackey SQ2's wings. The company calls the wing “unstallable.”

are not painted or powder-coated. Fabric covering materials and paint are also not included, as is typical for all of these kits except the Carbon Cub. The wings do come pre-assembled, which is a real time-saving feature, and a number of options are available at extra cost, such as a one-piece, left-side cabin door, auxiliary fuel tanks and rear-seat controls. Backcountry has a detailed assembly manual posted on its web site, and it is constantly being updated. The company also hosts a builders forum where customers can ask questions and share information ([www.supercub.com/builderscommunity/forums.html](http://www.supercub.com/builderscommunity/forums.html)).

The base kit for the Super Cub is \$49,540, and \$54,725 for the Mackey SQ2. The extra cost of the SQ2 comes from the slotted wings and the carbon-fiber cowl. Backcountry will cover and paint your plane for an additional \$20,000, if you come to the factory and do a minimal amount of assembly work necessary to offset the 51%-rule credit needed to make the FAA happy.

### Bearhawk Patrol

The Patrol is the least Cub-like of these kits, but its basic size, layout and performance make it a reasonable choice for someone who wants to build a tandem two-place utility airplane. The fuselage is tube and fabric just like a Cub, but the wings are all-metal with aluminum skins. It also is the only one in this group that does not use the original Super Cub USA 35B airfoil. The flush-riveted wings and modern aerodynamics give the Patrol the best cruise speed of the group at 140 mph. With this cruise speed it still manages a respectable 35-mph landing speed, which bests a stock Super Cub but trails most others in this group with their many high-performance modifications. With an empty weight of 950 pounds for a minimally equipped example and a 2000-pound gross weight, its huge 32-inch-wide cabin will haul a respectable load.

The Patrol kit generally includes all of the parts you need that are distinctively Bearhawk, but it does not include most off-the-shelf parts readily

available from Aircraft Spruce or Wicks. One exception to this general rule is the windshield, which is listed as an option even though it is obviously required and uniquely Bearhawk. The company also does not offer a swing-out engine mount or auxiliary fuel tanks, even though most of the other kit manufacturers do. The standard fuel tanks are very generous at 55 gallons total, and most people manage to live without swing-out engine mounts, so these will be minor issues for most builders.

The four-place Bearhawk has been around for some time, but its smaller brother, the Patrol, is fairly new, at least in kit form. For this reason, only about 10 kits have been sold with one complete, plus two that were scratch-built

from plans. The Patrol kit comes with both plans and a manual that is almost complete, but early builders have relied heavily on the manual, which is available on the company's web site, for the four-place Bearhawk. Builders can get extra support from Yahoo groups dedicated to each type of Bearhawk kit.

Patrol kits are available either as a quickbuild with the fuselage completely welded (\$37,105) or as a basic kit with some welding still left to do (\$30,825). Both include wings that are substantially complete except for installing fuel tanks, wiring and closing out. National Kit Evaluation Team (NKET) approval as an amateur-built kit is pending, awaiting completion of the assembly manual (as of this writing).



A Bearhawk Patrol ready to cover. It is usually much easier to run as many of the internal systems as possible before covering the fuselage with fabric. Unlike the other kits considered, the Patrol has metal-covered wings.



A large door makes it easy to access the ample cargo area of the Bearhawk Patrol.



Who knows what adventures are in store for Bearhawk Patrol builder Ferguson Aldridge. Parked on a farm strip, his new plane awaits its pilot.

### CubCrafters Carbon Cub EX

We looked at the Carbon Cub EX when we previously compared Light Sport-eligible Cub kits. In that comparison it was at the top of the class in this field with its outstanding quality and impressive performance, but it achieved that at the cost of being the heaviest plane in a group that already fights empty weight at every turn. At a gross weight of 1320 pounds the Carbon Cub became something of a super single-seater. However, with no changes to the airplane except some paperwork, the gross weight can be raised to 1865 pounds, at which point the Carbon Cub becomes a contender with the somewhat larger Super Cub derivatives. Using a realistic minimum empty weight of 910 pounds, it sacrifices about 100 pounds or so of useful load compared to some of the competition, but many builders may find that its good points outweigh this small deficiency. Certainly there are some distinct advantages to being 300 to 400 pounds lighter, while hauling almost the same payload.

The Carbon Cub kit is by far the most complete kit of the group, including virtually every part you need to build the airplane, even fabric covering, and the engine and propeller, if you choose. Prewired instrument panels are also offered in various forms, if you so desire. The only thing not included is paint.

Two things set the Carbon Cub apart from the competition: the completeness of the kit and the price. The three sub kits cost \$21,660 each and provide all of the parts for the wings, the fuselage and what the company calls a finishing kit. After that you can purchase a firewall-forward installation kit for \$8490, a special lightweight CC340 engine that makes 180 horsepower for \$27,500, and a Catto composite propeller for \$2050. Finally, a VFR instrument panel and the related wiring come in at \$14,990, and you get a grand total of \$118,010. After you spring for a nice paint job and deal with your state's tax man you only need to add several hundred hours of your own labor to be flying the plane of your dreams.



Although factory-built (SLSA) Carbon Cubs far outnumber customer-built Experimentals, CubCrafters is dedicated to making the best Cub kit possible. Shown here is a homebuilt Carbon Cub EX.



CubCrafters' impressive 180-hp CC340 engine plays an important role in the company's quest to make the Carbon Cub as light as possible. Cooling is provided by a slick looking carbon-fiber plenum that forces the maximum possible amount of air over the custom-built engine.



Another view of a customer-built Carbon Cub.

At first that price seems like a real jaw-dropper, but you are not likely to build any of these kits with the same features and a new engine for much under \$100,000, no matter how good of a bargain hunter you are. For instance, Amy Gesch, director of marketing for Dakota Cubs, estimates that the company's Super 18 kit will cost about \$98,400 to complete with a used engine, no radios and no paint. The real advantage with the Carbon Cub is that you do not have to shop for anything. You just open the box and the assembly manual and get to work. The disadvantage is that there is not much flexibility in how you put the plane together, except for the radios, the size of the tires you use and the color of the paint. Many people will like that, but others will not.

The Carbon Cub comes with a 28-inch-wide fuselage (4 inches wider than a stock Super Cub), and its adjustable seats will fit almost any size pilot. (Jim Richmond, the owner of

CubCrafters, is a big guy, so he made sure his planes will fit just about anyone.) The stall speed is listed at 33 mph, and the maximum cruise speed at 125 mph. The kit comes with a detailed assembly manual.

### Custom Flight Ltd. North Star Bushplane

Custom Flight Ltd. of Ontario, Canada, makes the North Star Bushplane and has for 20 years. This is a low-key operation that appeals to experienced Super Cub pilots. What owner Morgan Williams lacks in flash and salesmanship, he makes up for with quality workmanship and dedication. He sticks pretty close to the basic Super Cub formula, but does make a few distinctive changes. The North Star fuselage is 2.5 inches wider than standard, and the top of the fuselage is flat instead of ridged like a standard PA-18. The ailerons and flaps are also larger than stock, which is typical of this group. The North Star comes with



A North Star Bushplane sporting small tires approaches to land on pavement. While it is not the preferred venue for the North Star, this design will handle it with aplomb. No doubt this builder is just getting in some practice while awaiting the arrival of some "real" tires.

52-gallon fuel tanks standard, with no option for extras.

The North Star empty will come in at 1170 to 1250 pounds, depending



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Many North Stars end up on floats. Rigging the floats and running the cables and hydraulic lines before covering the plane make this work much easier, but then the floats and wings must come off for covering and paint.

on options and gross weight selected, which can be 2000 or 2200 pounds. The higher gross weight requires some extra reinforcing. Stall speed is 35 mph, and Williams lists the cruise speed at 98 mph with a climb prop and 31-inch tires. These speeds are pretty typical for the PA-18 lookalikes in this group that do not use slatted or slotted wings.

One place where the North Star really shines is in the assembly instructions. In addition to a manual and assembly drawings, the kit comes with

videos to walk the builder through each step of the building process. The wing video alone runs six hours. So far 34 North Star kits have been sold, with 30 completed.

The North Star kit is \$49,500, and excludes readily available hardware items. The NKET has not evaluated this kit for amateur-built compliance, but there is no reason to believe that the FAA would not accept it as amateur-built. It just makes for some extra work to prove it.



The Dakota Cub Super 18.

### Dakota Cub Aircraft

Dakota Cub has two models of its Super 18, one dubbed the Super 18-160, the other the Super 18-180. They use the 160- and 180-hp Lycoming engines, respectively, and have different empty and gross weights. The 160 weighs about 1150 pounds empty with a gross weight of 2050 pounds, and the 180 is about 100 pounds heavier with a gross weight of 2300 pounds. Extra fuselage bracing and more heavily reinforced wings allow for the added weight in the 180.

Dakota Cubs distinguish themselves from the others in this group with their slotted wings. These slots near the leading edges of the wings allow the Dakotas to be flown at outrageously high

**Leading Edge Slot Technology - VS - Vortex Generator Technology**

As the angle of attack increases, the "Separation Point" moves down and back, decreasing the airflow over the wing's top surface. This results in the onset of boundary layer air separation, or "Stall", at the trailing edge.

As the angle of attack is increased, the "Separation Point" continues to move aft until the wing is completely "Stalled".

As the angle of attack is increased on the "Leading Edge Slot Wing", the "Separation Point" moves into the slot opening. As this air passes through the slot, it is compressed and exits the slot with increased velocity, which "re-energizes" the boundary layer air and delays the onset of "Stall". This allows the aircraft to be flown at very high angles of attack on takeoff with good wing stability. Additionally, the "Leading Edge Slot Wing" is VERY resistant to power-off spins; and resistant to power-on spins. This added benefit greatly increases the SAFETY of the aircraft, especially the type of bush flying done in Alaska!!

"Stall Warning" in a standard wing cub is marginal at best, and many highly modified Alaskan Cubs exhibit marginal or "non-existent" stall warning. The "Leading Edge Slot Wing" provides for increased stall warning. With the extremely high angles of attack possible with this wing, the tail stalls significantly ahead of the wing. This condition introduces a definite control stick shake that is easily detected. This stick indication increases the margin of safety before the wing reaches a fully stalled condition.

**Sine-Wave Pattern as Viewed from Trailing Edge**

There are areas of boundary layer air behind each VG which do not receive any benefit from the vortices. This is due to the small size of the vortices as they are induced, and also to their increasing diameter as they move aft. There is also an area directly behind each pair of VG's which remains unaffected by the controlled vortices.

"W" width of unattached boundary layer air increases as airspeed decreases.

The "Critical Stall Area" between lines A and B dictates that airspeed be increased, angle of attack decreased, or HP increased.

Vortex Generator manufacturers state on their STC's: If more than 5 vortex generators are missing, the aircraft is "NOT AIRWORTHY".



A Dakota Super 18 on 26-inch Alaskan Bushwheels shows off its patriotic paint job.

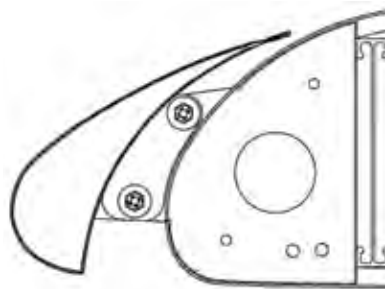


The Dakota Cub's massive flaps combined with the leading-edge slot setup make for impressive STOL capability.

angles of attack, and thus very low speeds. Landings at 30 mph are possible with the Dakota Cubs, but extremely low speeds do need a fair bit of power to control the sink rate. These Cubs are derived from certified airplanes, so every part is covered by an FAA parts manufacturing authority (PMA) or type design. This ensures a level of quality control and documentation that Experimental-only manufacturers are not required to meet.

Cruise speeds fall in the 100- to 120-mph range depending on the tires and prop installed. Fuselages come 4 inches wider than Super Cub standard, and the landing gear is 3 inches longer than standard. Other typical Alaska mods can also be found on the Dakota Cubs. The company also now makes a Light Sport-eligible version of its Super Cub, which was not yet available when the previous comparison article ran. It is now ready to sell to builders looking for a 1320-pound gross weight Cub.

So far Dakota Cubs has sold one Super 18-160, which has been completed, and six Super 18-180s, all of which are now flying. In addition, it has sold a number of certified planes and a large number of parts for use on certified Super Cubs. In fact, selling its slotted wings to Piper



This diagram shows the leading-edge slot that makes the Dakota Cub wing such a great performer. Unlike the Backcountry casting slot, the Dakota slot is fixed. Wings with this slot have become popular retrofit items on certificated Super Cubs, and they are now available to amateur builders as well.



The Dakota Cub Super 18-160 sports the economical Lycoming O-320 engine making 160 horsepower. Many Super Cub drivers prefer the lighter 160 over the more powerful but heavier 180-hp Lycoming.



A Dakota Cub with the Alpha Omega Suspension System (AOSS). It was developed by Burl's Aircraft in Chugiak, Alaska, and features low-rebound polyurethane "pucks" inside the canister. The system is designed to soak up the bumps of landing on a rough strip, enabling bush pilots to get on the brakes quicker and reduce the abuse the landing gear takes. AOSS is an option on Dakota Cub kits.



The Dakota Cub has a cavernous cargo area that extends well aft of what is found in the standard Super Cub.



## Super Cub Kit Comparison *continued*

owners has been the mainstay of its business for some time, with its foray into the kit business being much more recent. Dakota kits come with a detailed assembly manual, plus supplemental materials developed from the wing sales program. Kits cost \$67,985 for the 160 and \$68,680 for the 180.

### Javron Inc.

Javron builds Cub components for others and has for some time, so it was fairly easy to transition into the complete kit market, which it has just recently done. Its focus is on reproducing the Super Cub in its purest form. Owner Jay DeRosier incorporates some of the popular modifications, but believes that the original Super Cub is a pretty good airplane just as it is. This approach allows him to produce a very light and original looking and flying airplane. The Javron Cub comes with a gross weight of 2200 pounds and an empty weight of 1050 or 1080 pounds, depending on whether the builder chooses the standard 24-inch cabin width or the 28-inch width so popular with Experimental Cub builders now. A bit more weight can be saved by going with the lighter 160-hp Lycoming O-320 engine. He also offers a choice of traditional rounded wingtips or squared-off wingtips, which allow for larger flaps and ailerons resulting in a somewhat slower landing speed.

Javron's attention to maintaining original PA-18 standards makes for a plane that flies as much as possible just like a Piper Super Cub. This means some in this group will fly slower and land shorter, but the performance of the original Super Cub has a long history of being up to the task of bush flying all over the world. The Javron certainly matches that performance with a package that solves many of the minor deficiencies of the original design, and its focus on keeping things light has an advantage that is not completely reflected in advertised speed numbers. Given the same horsepower, a lighter plane will accelerate and decelerate more readily, but even if a heavier plane



Javron owner Jay DeRosier reports that Jay Hansen of Iowa has his Super Cub replica just about ready to fly. He used a Turbine Cub's fuselage (manufactured by Javron) and many other Javron parts to put his project together. Other, more completely Javron Super Cubs are progressing, but are not as far along as Hansen's "almost-Javron" airplane.



Javron's DeRosier is first and foremost a machinist, so his machined parts are things of beauty. Here he shows off some special lightweight aluminum pulleys.



This Javron Super Cub fuselage gets a final once-over by the welder before going out to a customer. The fuselages are available in standard 24-inch width or the more popular 28-inch width.



Six Javron fuselages, all welded and painted, sit on the pavement outside DeRosier's shop ready to ship to customers. Builders will soon be using them to put together Javron Super Cubs.



A pair of Javron wings is ready to ship to a builder. These sport the traditional Super Cub round wingtips. There are a lot of parts in these wings, so having them pre-assembled in factory jigs saves the builder a lot of time.

has a lower stall speed, its weight may negate some if not all of the benefit of that lower stall speed. In other words, it

may take just as much room to take off and land as the lighter plane with the somewhat higher stall speed.

The Javron kit sells for \$40,500, with a number of options available, such as squared-off wingtips, a choice of door and window configurations, extra fuel and even a cargo pod. Like most kits, off-the-shelf items are mostly excluded. Javron has sold 10 kits, with six more on order. In addition, Javron made components for Smith Cubs for many years and can borrow from some of that much longer history for itself. Javron is working on developing an assembly manual, but for now builders need to rely on widely available Super Cub drawings and Javron's detailed hardware diagrams. Final NKET approval will have to wait for the completion of the assembly manual.

### What's Not in the Kit?

With the exception of the Carbon Cub EX, no other kit manufacturers offer their customers engines or props. Cub-Crafters does because its lightweight engine is such an integral part of the company's overall strategy to keep



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weight at an absolute minimum. Available engines run the gamut from O-320 and O-360 Lycoming Thunderbolt engines to custom engines by vendors such as Mattituck, Barrett Precision Engines and Aero Sport Power. Used Lycomings will run anywhere from \$10,000 to \$15,000 or so, depending on their time in service and general condition. It is worth noting that buying a used engine is not for the impatient or faint of heart. It is hard to get a really good used engine and easy to get a really

bad, used-up engine. That said, you can save some serious money if you know what you are doing or have a knowledgeable friend who can help you.

New engines in this size range will run from the mid-\$20,000s to about \$30,000. Some good examples at the low end are the 150-hp Aero Sport Power O-320-D2A at \$24,500, built with mostly ECi parts. At the high end you'll find the Lycoming Thunderbolt YO-360-A1A with roller tappets at \$29,250. Custom modifications and fuel injection will add to those prices. A popular choice with the Backcountry Cub folks

is the Aero Sport Power O-375 engine making 195 hp for \$26,700. These are just a few examples, though. Shop around and see what suits your budget and flying requirements.

Again, only CubCrafters offers a prop with the kit, so with anyone else you will need to buy one. The available offerings range from wood and composite fixed props by Catto and other small vendors, starting at about \$2000, to Sensenich fixed metal props at about \$3000, up to a constant-speed propeller by Hartzell or some nice but pricier models from WhirlWind or MT-Propeller. Expect to pay \$6000 to \$7000 for a new Hartzell prop and upwards of \$10,000 or so for the composite props by MT or WhirlWind.

Hardware and miscellaneous items can range from near zero for the Carbon Cub to thousands of dollars for the other kits. Engine accessories such as oil coolers, baffles, cabin heat valves and fuel lines will cost several thousand dollars more. And you don't want to forget things like instruments, strobes, upholstery and a battery. This is where that \$100,000+ completed price comes from; it adds up fast. In each case it is important to determine what's included and what's not before making a final decision. A low kit price does not necessarily result in a low final price.

## How Do They Perform?

Given the company numbers, all of these planes perform admirably. At worst they match the performance of a standard Super Cub, a plane that has set the standard for bush flying for a very long time. They will all land in some pretty tight places. In fact, the problem typically is not getting them *into* a tight place but rather getting them *back out* again. For this purpose, having plenty of power and keeping the plane light are the keys.

All of these planes will cruise at about 125 miles per hour with small tires, but most Cubs don't have small tires, so that doesn't mean much. With 29- or 31-inch Alaskan Bushwheels you should expect cruise speeds closer to 100 mph or a little less. The exception is the Bearhawk Patrol, which benefits from its cleaner aerodynamics to do about 15 mph better. Big climb props that optimize takeoff performance also hinder cruise speeds.

These planes are made for low landing speeds. Standard Super Cubs can be slowed to around 40 mph, but most of these planes will do better than that by at least 5 mph due to their squared-off wingtips and larger flaps. The Carbon Cub will shave a few more off of that due to its lighter wing loading. For even slower landing speeds you need to look at the slotted-wing Dakota Cubs or the Backcountry SQ2 with its castoring leading edges. These planes will slow to 30 mph or less. However, exploring the extreme edges of their flight envelopes can induce some unnervingly high angles of attack. In all cases a pre-purchase test flight makes for a more well-informed decision with fewer regrets later.

—D.P.

## Comparing Features

Reducing these planes to numbers on a chart is at once too tempting to avoid and too misleading to let stand without comment. Gross weight is a useful number when you need to legally cram a

Make and Model	Gross Weight	Empty Weight	Min. Speed	Fuel Capacity Std./Opt.	Kits Sold/Completed	NKET Approved
Backcountry PA-18	2200 lb.	1150 to 1200 lb.	29 mph	48 gal. std./82 opt.	260/200	Yes
Backcountry Mackey SQ2	2400 lb.	1100 lb.	20 mph	48 gal./82 opt.	18/8	Yes
Bearhawk Patrol	2000 lb.	950+ lb.	35 mph	55 gal. std.	10/3	Pending
Carbon Cub EX	1865 lb.	910 to 950 lb.	33 mph	25 gal. std./43 gal. opt.	28/8	Yes
Dakota Super 18-160	1150 lb.	2050 lb.	30 mph	36 gal. std./46 gal. opt.	1/1	Yes
Dakota Super 18-180	1250 lb.	2300 lb.	30 mph	36 gal. std./46 gal. opt.	6/6	Yes
Javron PA-18	2200 lb.	1050 to 1080 lb.	35 mph	36 gal. std./48 gal. opt.	16/0	Pending
North Star Bushplane	2000 or 2200 lb.	1170 to 1250 lb.	35 mph	52 gal. std.	34/30	No

large amount of gear into your plane and survive a ramp check, but an impressive gross weight number does not get your plane off a sand bar in the afternoon as the river starts to rise; a low actual weight and a low takeoff speed do.

Empty weight varies more from plane to plane depending on your equipment

and attention to detail as you build than the differences between most of these kit manufacturers. Minimum speed is a tough number to compare, because it is not measured to any standard. How slow you can fly depends on the aerodynamics of each plane to be sure, but it also depends on weight, power and pilot

technique. However, everyone likes to talk about it, so we list it here.

Fuel capacity is useful if you need to fly somewhere with no fuel and get back again in unpredictable weather, but to be honest, topping off your tanks when you can carry 82 gallons of fuel is something you would seldom do. Kits sold and completed tells you something about how long a company has been around. It also gives you some idea of how much help you can count on from other builders. Lastly, NKET approval means the FAA has approved the kit as complying with the majority amateur-built rule (51% rule). This approval makes getting an Experimental/Amateur-Built airworthiness certificate easier. Without this approval you can still get through the process, but you will have to do some extra work, because you will have to make the case for amateur-built status on your own.

All of these numbers come from the respective manufacturers, and they have not been independently verified. They can serve as a good starting guideline, but before making a purchase as substantial as this, it would be wise to check things out for yourself. †

## What Do They Really Cost?

The cost of the kit is one thing, but the cost of the completed, ready-to-fly plane is the really important number. To make a valid comparison among all the kits we need to add in the missing parts. This is not an absolutely precise process, so please allow some leeway with these numbers. These are the specifications for our completed airplanes comparison. All airplanes will have the Aero Sport Power (Eci) O-360-A1A engine making 180 hp, except the Carbon Cub, which will use its CC340 engine and the Dakota Super 18-160, which will use an O-320-D2A also from Aero Sport Power. All planes will use the Catto fixed-pitch composite prop. All planes will have minimal engine and VFR flight instruments and lights for night flying, and they will also include basic avionics consisting of a Garmin aera 560, a Garmin SL40 com, a Garmin GTX 327 transponder with encoder and an AKC 406 ELT. The planes will be complete and ready to fly, except for finish paint and whatever sales tax you may owe to your state.

Make and Model	Kit Price	Engine and Prop	Items not in Kit	Complete Price
Backcountry PA-18	\$49,540	\$26,950	\$28,338	\$104,828
Backcountry SQ2	\$54,725	\$26,950	\$28,338	\$110,013
Bearhawk Patrol	\$37,105 <sup>1</sup>	\$26,950	\$29,957	\$94,012
Carbon Cub EX	\$73,470 <sup>2</sup>	\$29,550	None	\$118,010
Dakota Super 18-160	\$67,985	\$26,550	\$20,718	\$115,253
Dakota Super 18-180	\$68,680	\$26,950	\$20,718	\$116,348
Javron PA-18	\$40,500	\$26,950	\$28,540	\$95,990
North Star Bushplane	\$49,500	\$26,950	\$34,083	\$110,533

<sup>1</sup> Quickbuild kit, no welding required; <sup>2</sup> Includes \$8490 firewall-forward kit.

Can you build for less? Definitely, if you are willing to do things like buy a used engine or eliminate the radios. The radios are worth about \$5,500, not counting the ELT, and a used engine could save you \$10,000 or more. Beyond that you may be able to scrounge a few things, but don't forget, we haven't even included a paint job, which will cost at least \$1,000 just for material. About \$80,000 is the rock bottom price for the least expensive of these kits, up to \$100,000 or so for the pricier ones. However, with a new Top Cub or certified Dakota Cub starting at around \$200,000, you would still get a pretty good deal however you decide to go.

If you want to build a Super Cub for yourself, there certainly should be something in this group to interest you. If not, you can always build a fuselage from scratch and select components from one of more of these kit manufacturers to create your own plane. It is just a matter of how much work you want to do and how much money you have to spend.

—D.P.

## RESOURCES

Backcountry Super Cubs  
800/862-1276  
[www.supercub.com](http://www.supercub.com)

Bearhawk Aircraft  
877/528-4776  
[www.bearhawkaircraft.com](http://www.bearhawkaircraft.com)

CubCrafters  
509/248-9491  
[www.cubcrafters.com](http://www.cubcrafters.com)

Dakota Cub Aircraft  
605/757-6628  
[www.dakotacub.com](http://www.dakotacub.com)

Javron, Inc.  
218/829-9320  
[www.javroninc.com](http://www.javroninc.com)

North Star Bushplane  
705/526-9626  
[www.customflighttd.com](http://www.customflighttd.com)