

Basket-Case Basics

Search carefully before you decide to bring a derelect in out of the cold

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So you're looking to buy an airplane. You have the choices down to maybe a few different models. You've researched the values using NADA, Vref, or one of the other services and know pretty much how much you'll have to spend to get a decent one, and now you're beginning the hunt.

Good planes are scarce, however, and you'll admit to a little bit of sticker shock. Frustration is setting in when a friend calls: "Hey, Jeff, there's a nice-looking plane on the ramp at my airport that just went up for sale. I can't remember the last time I saw it fly. I'm sure that you could get it for a song."

So you head down to the airport to have a look. "Nice" appears to be a relative term. The tires are flat, the paint is dull, and there's a bird's nest in the cowl. It's been out of annual for, well, a while. Nevertheless, you find out the engine is low-time and the price seems too good to be true. Perhaps a "project plane" is the answer to your quest.

With all the money you'll save on the purchase, you can bring it back to life with your own custom touches, right? Well, maybe.

If an aircraft is properly preserved and prepared for long-term storage, the cost of bringing it back to airworthy condition should be reasonable. Unfortunately, an owner often doesn't plan to put an aircraft into "long-term storage." There is a big distance between "storage" and "abandonment," and when it comes to these types of aircraft, I like to classify them in one of three categories: preserved, neglected, and abandoned.

Finding a great deal on a preserved aircraft is rare. To begin with, there aren't many of them out there. Properly preserving an aircraft takes time and money. If someone doesn't plan on flying in the foreseeable future, they would need to be fairly attached to the aircraft to warrant the trouble of properly preparing it for indefinite storage versus selling it. However, it does occasionally happen. In some cases, it is because the aircraft is a rare or valuable type. In other cases, the owner knows he or she will be unable to fly the airplane for an extended period of time but wants to return to the air after the hiatus.

In either case, you won't find one of these planes sitting



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Evaluate every opportunity carefully. Some projects are closer to rebuilding than repair.



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Older aircraft can make especially attractive projects due to their simplicity.

out on the ramp. You'll find them safely tucked away in a hangar. It will take diligence, lots of patience, and maybe a smattering of luck to find what you're looking for.

Neglected and abandoned aircraft are far more common. Neglected aircraft are typically out of annual by a few months or a few years and have a number of problems the owner may or may not be aware of. Many of these items can be difficult to spot during a cursory inspection. AD compliance is generally poor, lubrication has been neglected, and internal engine corrosion is common.

Abandoned aircraft are true "basket cases." These are the planes left tied down on flat tires for years, growing weeds around them and serving as housing for the local wildlife. These aircraft are in a class by themselves. Finding the owner and getting a clean title can be a chore unto itself. Unless the aircraft is a rare or valuable type, it's unlikely that a complete restoration will be cost-effective unless you invest major sweat equity yourself—and maybe not even then.

Paperwork

The best place to start is with the aircraft's paperwork. During a normal aircraft prepurchase inspection, the logbooks are scrutinized, looking for lapses in maintenance, airworthiness directive (ADs) compliance, damage history, and legal documentation for all modifications and repairs. When evaluating a neglected aircraft, it's easy to gloss over these details, since you're not expecting a perfect plane. However, the details contained in the logbooks can be critical. The logs should be your starting place when evaluating the cost of making the aircraft airworthy again.

General maintenance history—We all know aircraft are at their best when they fly regularly. However, we've already accepted that most neglected aircraft have not flown much recently. That being said, it's the long-term history that's most important. The best-case scenario is one in which the aircraft was routinely flown and diligently maintained until some recent date, when it all came to a halt.

This is not as uncommon as you might imagine. Aircraft stop flying because their owners stop flying, and a lost medical tops the list of reasons. Losing a medical can be a very traumatic experience for a pilot. It's quite

common for someone to wait a long time before coming to terms with the situation and deciding to sell the airplane.

Unfortunately, few aircraft are maintained during this period of time. If the aircraft was well maintained before the situation began, it stands a better chance of becoming airworthy again with a minimum of headache.

AD history—Before evaluating any aircraft, it is important to become familiar with all ADs that apply. If you find lapses of compliance, be sure to dig further. For example, many ADs call for inspections of aircraft components for excessive wear. Complying with these ADs in a timely manner helps reduce the cost of any necessary repairs. If they've been repeatedly ignored, you may be in for a costly fix.

Beware of any aircraft with incomplete or missing maintenance logs. Missing logs can dramatically reduce the value of the aircraft. Lost records of AD compliance, STC documentation, and repair history can be very costly to sort out legally. If your IA can't verify from the paperwork that inspections and repairs were properly done, every item will need to be checked for compliance before the proper entries can be made in the books.

Component history—Almost every aircraft component has inspection, lubrication, overhaul, or replacement requirements based on time in service. Most owners are familiar with the basics, such as hours since major overhaul for the engine. But, there are many other item histories that matter.

Flexible hoses, intake and vacuum system filters, fuel filters, vacuum pumps, belts, and propellers are only a few of the many items you need to know histories for. Flexible hoses should be less than 5 years old, and most filters should be replaced annually. If you don't know the age of components such as the vacuum pump or magnetos, you shouldn't be relying on them.

All aircraft should have logbooks for the airframe, engine, and propeller. Even a fixed-pitch propeller requires a logbook. Fixed-pitch propellers are life-limited in the amount of pitch change they can accept. Without proper documentation, you will not be able to legally repitch the prop.



Restoring complex aircraft such as this Mooney can be an expensive proposition. Every system needs to be evaluated before jumping in.

best place to start. Most engines that have not run in a year or more are beyond simple repair. It's best to count on an engine overhaul as a starting point for these situations.

However, the cost of an engine overhaul can easily be dwarfed by the cost of avionics replacement, landing gear and structural repairs, and electrical system rewiring. Every system needs to be carefully evaluated, and it pays to be realistic and conservative about what you'll likely need to do to the aircraft. If the avionics and instruments are old but seem to be working, assume that they won't stay that way for long.

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Physical Inspection

If you're happy with what you see in the logs, it's time to move on to the physical inspection of the aircraft. Finding the right inspector is the first step. You need someone who is intimately familiar with the aircraft model. If you were buying an aircraft that was in annual and is flying regularly, you could rely on a typical prepurchase inspection. However, when inspecting a neglected aircraft, you already know there are at least a few problems. The real purpose for the inspection is to go way beneath the surface and to document everything that needs work. You'll need as much information as possible in order to estimate the cost of repairs and make a plan.

This means you'll need to invest more money up front than you would on a well-maintained aircraft. For example, rather than relying on a simple compression check, you might want to pull one of the cylinders so that the crank and camshaft can be inspected for corrosion and wear.

Aircraft Killers

Corrosion and oxidation are the prime killers of aircraft. Exposure to salt and moisture destroys metal structures, while oxygen and UV rays kill off the softer items such as windows, hoses, avionics, paint, and interiors. This is why the military's aircraft "boneyard" is out in the desert. Windows and tires can be protected from the sun, but only the desert's dry air can slow the progress of corrosion.

In the case of most neglected aircraft, the engine is the

Making a Plan

There are really only two reasons to purchase a basket case: to save money or to restore a rare aircraft. The key to reaching either goal successfully is to know exactly what you're getting into before you start. Getting an accurate analysis of the scope, timeline, and cost of the project can be challenging. However, every hour and dollar you spend at the planning stage will pay off tenfold down the road.

Setting your benchmark is the first step. For instance, let's say you would like to have a topnotch Piper Warrior, but you haven't been able to afford it. Then you find one that needs work but can be had for a very low price.

You need to begin by figuring out exactly what it would cost you to buy one that's already in great shape. Once you have that number, you can begin working out the cost of refurbishment while comparing it to this benchmark.


During your prepurchase inspection, assume the worst for every item you cannot fully test or inspect. Get multiple cost estimates for the repair work. If you've really found a good deal, you'll find that even the worst-case scenarios will keep you well under your benchmark price. Other times, you'll find that what looks like a great price doesn't seem so attractive when you add in the cost of repairs. This is particularly true if you are unable or unwilling to do much of the work yourself.

Taking on a project plane can be very rewarding.



Three flat tires are the first sure sign of a neglected aircraft.

Refurbishing the different systems on the aircraft can be an outstanding learning experience, and you'll know exactly what you have when you're done. Your sweat equity can pay off, as long as you do your homework.

Besides, working on aircraft can be addictive. Who knows? Once you finish this project, you might just be ready for that new kit plane. 

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