

# How To Buy An Airplane

*You may already have decided on your 'dream ship', but to get the greatest satisfaction from aircraft ownership consider these points before you buy*

## THE AUTHOR

*Robert T. Smith needs little introduction to PILOT readers of the past two years. His articles, covering a broad range of general aviation topics, have appeared regularly during that time. A former Air Force bomber pilot, aeronautical engineering technician, aviation insurance man and flight instructor, he recently published a book on the history of the Staggerwing Beech.*

**H**ow do you buy an airplane? In a nutshell, you get some money, find somebody with an airplane for sale and trade him the money for the airplane. It's a quick method (provided you've got enough money to trade for the airplane), but it's not guaranteed to make you as happy with the air-

plane as you were with the money. If you made a bad deal, you'll find you liked the money a whole lot better than the airplane, and you'll wish you had the money back.

There is a way to trade your money for an airplane, and be more satisfied with the airplane than you were with the money, however. The purpose of this article is to give you some tips on buying airplanes that may help you to like airplanes better than you do money!

The first step is to determine why you want a plane; that is, what will the airplane be used for? A private owner usually buys for one of three

major uses: (1) Flying for fun, or to build time; (2) Pleasure and vacation trips; or (3) For some sort of business use. A fourth major use is some combination of the other three.

Once you know what major use your airplane will have, the next problem is to find the best airplane to do the job. General aviation single-engine aircraft can be grouped roughly into three categories—two-place fixed gear, four-place fixed gear, and four-place high-speed retractable gear.

The Cessna 150, Volaire, Champion Citabria and Piper Cherokee 140 are examples of the two-place fixed gear category airplane. Primarily designed for training, they are excellent time-builders, and have sufficient speed and baggage room for a couple to use on cross-country trips. I have flown aircraft in this class on 1,000-mile cross-

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COST OF OPERATION CHART

Type	Two-Place, Fixed Gear	Four-Place, Fixed Gear	Four-Place, High-Speed, Retractable Gear
Cost/Hour <sup>(1)</sup>	\$4.50	\$6.50	\$9.00
Insurance, Annual Premium <sup>(2)</sup>	\$560	\$750	\$1350
Hangar Rent, Per Year (Tiedown)	\$420 (\$60)	\$420 (\$60)	\$420 (\$60)
Annual Inspection	\$75	\$100	\$125
<b>TOTAL ANNUAL FIXED COSTS</b>	<b>\$1055</b> <b>(\$695)<sup>(3)</sup></b>	<b>\$1270</b> <b>(\$910)<sup>(3)</sup></b>	<b>\$1895</b> <b>(\$1535)<sup>(3)</sup></b>

## Footnotes:

<sup>(1)</sup> Cost/Hour includes Fuel, Oil, Reserve for maintenance and engine overhaul.

<sup>(2)</sup> All risks ground and flight hull, \$50/\$100,000 bodily injury liability, \$50,000 property damage liability.

<sup>(3)</sup> Total Annual Costs if aircraft tied down rather than hangared.

countries. While they are not as comfortable or fast as the high-speed retractable gear ship, they beat driving an automobile.

Four-place fixed gear planes come in various sizes, from 145 h.p. 120 m.p.h. ships up to 260 h.p. models that cruise upwards of 170 m.p.h. The lower horsepower ones are ideal for owner-training use with an eye to later using them to haul the family on vacation trips, or for almost immediate business use. They are economical enough for training, but have the seats and baggage capacity for family or business use. Actually, an airplane can be used in your business as soon as you solo it and are certified for solo cross-country. However, you must fly alone, and you cannot carry passengers or cargo for hire.

The four-place high-speed retractable gear ships range from Mooney's light, fast Mark 21 up to the Beechcraft *Bonanza* and Cessna 210. Piper offers the *Comanche* with a 260 h.p. engine, and the hot 400 h.p. model.

Price tags begin at just under \$20,000 and top \$40,000. If you need a retractable gear ship, and these prices are a little steep, check the used market. Older retractable gear ships are available at reasonable prices, and, if you are a careful buyer, are worth the money.

Of the three categories of aircraft mentioned, the most versatile are the four-place fixed gear planes. Lower horsepower ones, like Cessna's *Skyhawk* and Piper's *Cherokee C*, are excellent trainers that can double as business aircraft or family runabouts. Their low purchase price makes them attractive to fixed-base operators for rental and light charter work. Higher horsepower ships in the Cessna *Skyline* category are speedy cross-country ships, rivaling some of the retractable geared ones, and have built up a repu-

tation as topnotch bush-country airplanes.

Of interest to any prospective buyer is the cost of operation of an airplane. Manufacturers customarily furnish prospects with detailed cost of operation figures, and you should check on them for the specific airplane you plan to buy. Until you settle on a specific airplane, the accompanying cost of operation chart may prove helpful. Figures shown are representative and will vary from model to model, from manufacturer to manufacturer, and from one locality to another. The cost of operation chart gives an hourly operation cost which includes fuel, oil, and a reserve for maintenance and engine overhaul. Total yearly figures are shown for such fixed costs as insurance, storage and periodic inspection. The aircraft's purchase price is not shown on the cost of operation chart.

The chart can be used as a guide to help determine whether you should rent or buy an airplane. For example, if you plan to use a two-place ship and will fly it about 50 hours a year, the total cost would be about \$920, if you tied down outside instead of hangaring. If rental cost of such a ship in your community is \$10 an hour, the total cost for 50 hours is only \$500, which is obviously much less expensive than flying your own airplane. By using the chart in this manner, you can quickly arrive at a yearly flying figure below which it is cheaper to rent than to buy.

If buying a new airplane is a little steep for your budget, consider a used one. Federal Aviation Agency Advisory Circular AC 20-5, entitled "Plane Sense," is a small booklet outlining owner responsibilities and giving useful hints and tips for both new and used airplane buyers. We recommend it to anyone buying a new or used airplane, especially to a used aircraft customer.

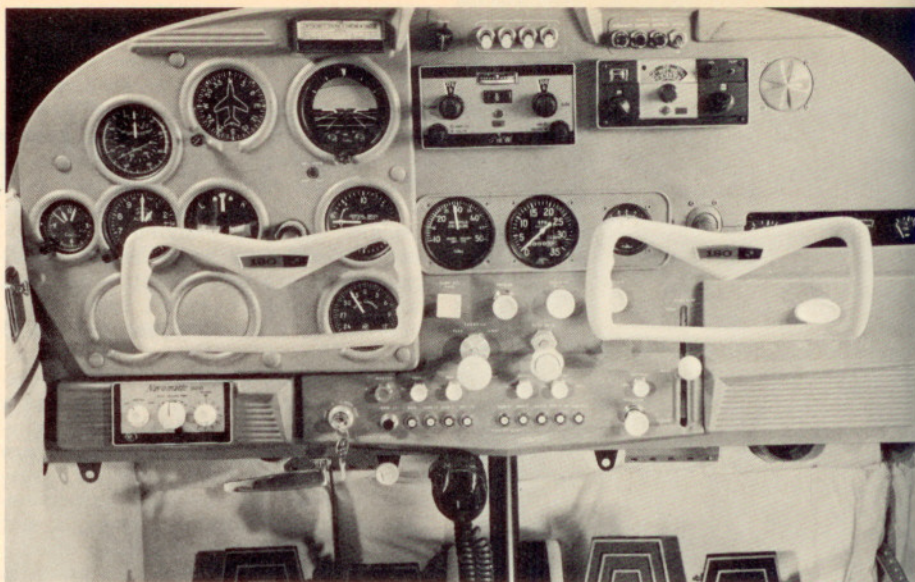
The best but most often ignored piece of advice when buying a used airplane is to have a disinterested mechanic check it *before* you buy. If the seller will not allow such an inspection, you're better off finding another airplane for sale. The small fee a mechanic will charge is good insurance that can save you much grief later.

Not long ago a student asked our advice on buying a certain two-place, used aircraft. We suggested that he have a *disinterested* A and P mechanic check it over, including such items as an engine compression check. The student ignored the advice. Less than 75 flying hours later the student was faced with a major engine overhaul, although the seller had assured him the engine had very low time since its last overhaul.

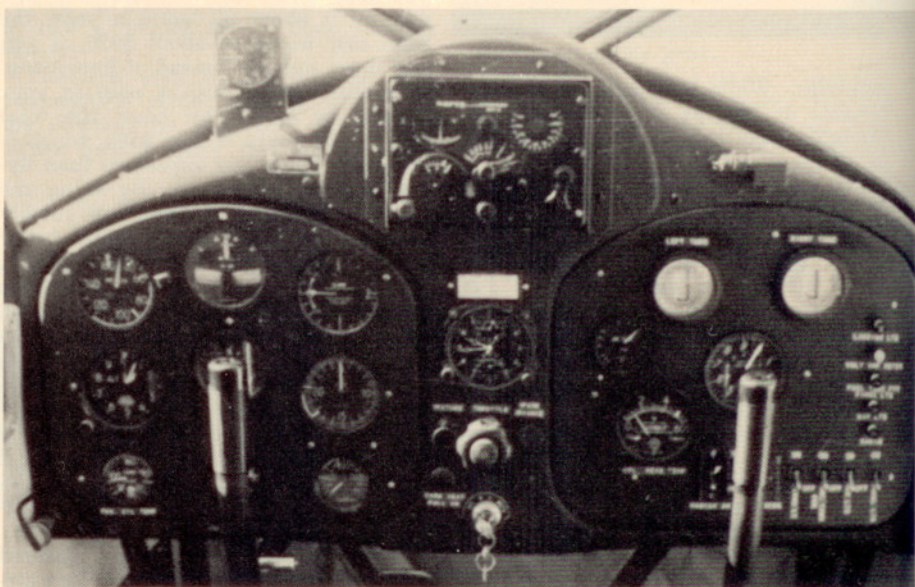
The general condition of an airplane usually is a clue to its internal state of repair. If it appears neat and well kept, chances are the inside of its engine has been equally well kept. But only a mechanic can tell for sure what condition the engine and other items of equipment are in.

Certain items of paperwork are in-





Contrast of planes and instrumentation of today and yesterday. Upper photo shows instrument panel of new Cessna 180; below is panel of a prewar Fair-



cidental to ownership of either a new or used airplane and should be in your possession at the time of purchase. They are;

1. A bill of sale (FAA Form 500-3)
2. Airworthiness Certificate (FAA Form 1362B)
3. Engine and airframe logbooks
4. List of installed equipment (radios, autopilot, etc.)
5. Weight and balance information
6. Maintenance manual, manufacturer's service letters, FAA Airworthiness Directives
7. Airplane flight manual, or set of operating limitations.

Item 6 may not be with the airplane if the manufacturer published no maintenance manual, or if the former owner lost it. A copy of all manufacturer's service letters and bulletins can normally be obtained from the manufacturer, even on older airplanes, if they are still in business. FAA Airworthi-

ness Directives applicable to the airplane (separate A.D. notes are issued on engines) can be found in the Airworthiness Directive Summary. Those complied with should be entered in the airframe or engine logbook, depending on whether the A.D. note applies to the airframe or engine. Some A.D. notes are incidental and require little action while others may require extensive rework of the airframe or engine. It pays to check into the status of A.D. notes on the airplane in some detail. An A and P mechanic can do it for you quickly and easily. The local FAA maintenance inspector can also tell you what A.D. notes may apply to the airplane you intend to buy. A mechanic can then check to see that they have been complied with.

When you buy an airplane, new or used, you'll become entangled with FAA Forms 500-1, -2 and -3, which consist of an instruction page, an original





child 24W with radio added. Modern configuration of Mooney Mark 21 is shown at upper right. Lower right is a Fairchild 24W



and carbon copy of Forms 500-1, -2 and -3. Form 500-1 is the temporary certificate of aircraft registration, Form 500-2 is the actual application for aircraft registration, and Form 500-3 is the bill of sale. Full instructions for completing the form are printed on the instruction sheet. FAA Forms 500-1, -2 and -3 must be completed each and every time an aircraft is sold.

If you pay cash for your airplane, send \$5 with the form when you mail it to FAA. If the aircraft is financed, send \$10 and a copy of the conditional sales contract. As the old saying goes, when the weight of the paperwork equals the gross weight of the aircraft, you'll be cleared to fly!

A word of caution to prospective plane owners: Don't "over-buy" either on operational costs or skill. Don't buy more airplane than you need, unless you have the money to support it. Don't buy more airplane than your pilot ex-

perience will let you handle easily, unless you plan to engage the services of a flight instructor for a checkout, transition period.

Airplanes are better than ever, and available in a wide variety of sizes, speeds, colors and price tags. The airplane of today gives us the performance we dreamed about 20 years ago. Engines are reliable to a degree most people never thought possible. Radios and autopilots are deluxe even in the "standard" models. Interiors equal or exceed the best that Detroit puts in its automobiles.

The airplane price tag is in line with its low rate of production and high quality control standards. When you buy a new airplane today you're buying a piece of machinery that was put together with the care of a watch, the strength of a bridge and the reliability of a diamond.

Happy landings!





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# USED AIRCRAFT PRIMER

While the subject of buying an aircraft has been generally covered in the preceding article, special precautions are called for in the purchase of used aircraft. The following AOPA Special Report was prepared following a survey of competent authorities throughout the general aviation industry. Copies of this Special Report are available from AOPA's Pilot Service Department.

Before buying a used aircraft:

1. Establish *your* requirements for the aircraft you want. Make a list of such things as the seating capacity you need, useful load, cruising speed, range, take-off and landing characteristics, high- or low-wing, fixed or retractable gear, price.
2. Once you have narrowed the field by matching your requirements to a few specific makes and models, determine their approximate price ranges by studying the used-aircraft advertisements in various aviation publications. Two factors that cause the greatest differences in prices for otherwise similar aircraft are the amount of time on the engine since major overhaul, and the electronic equipment installed.
3. Deal with a reputable dealer or individual and get in writing all guarantees, warranties and statements of aircraft condition and prices (see contract suggestions).
4. Have a title search made *before* you make a commitment to buy. If the title search shows any unreleased liens, be sure that releases are filed with FAA before paying any money. A supplemental title search may be necessary. Don't give serious consideration to the purchase of any used aircraft until you have contacted the AOPA, Station 18, Will Rogers World Airport, Oklahoma City, Oklahoma 73169. (Telephone 405—MU 1-4609.) Standard charge for members (one day service) is \$3.75; nonmembers \$5.50. Rush service is available at additional charge of \$1.50. Written report is airmailed; report by telephone or telegram can be made at member's expense.
5. Be sure the following documents are available for the aircraft: Bill of sale; airworthiness certificate; engine and aircraft logbooks and other maintenance

records; equipment list; weight and balance data; maintenance manual, service letters, bulletins, etc.; and aircraft flight manual or operating limitations.

6. Check the logbooks with care. Be sure all FAA airworthiness directives and manufacturers' bulletins have been complied with. If circumstances permit, ask people familiar with it if the aircraft has been properly maintained.
7. If the aircraft has been in an accident, even though it has been properly repaired, it normally should have a lower selling price than a comparable aircraft that has not had an accident.
8. Ask a reliable insurance agent if hull and liability insurance is readily available for the make and model you are thinking about buying. Some aircraft are not insurable at regular rates.
9. Beware of aircraft that are "orphans." Trying to get parts for a good buy that went out of production twenty years ago can turn your "bargain" into a liability.
10. Have a competent and reliable mechanic go over the entire aircraft. Below are some items he and the seller should cover for you:

## ENGINE

- Total time? .....  
Engine ever been overhauled? .....  
Top or major? .....  
Total time since overhaul? .....  
Engine clean? .....  
Free of rust, corrosion? .....  
Evidence of oil leaks? .....  
Checking on hose? .....  
Clamps cutting? .....  
Copper lines cutting? .....  
Chafing? .....  
Sharp bends? .....  
Metal particles in the oil screen? .....  
Does the engine turn up maximum rated r.p.m. on the ground? .....  
Have you checked the cylinders for compression? .....

## PROPELLER

- Finish in good condition? .....  
Blade sheath in good condition? .....  
Any looseness in prop? .....  
Free travel? .....  
Have all propeller bulletins been complied with? .....



## WINGS

Cuts in leading edge? .....  
Inspection plates present? .....  
Loose tape on fabric-covered plane?.....  
Sprung rivets on metal airplane? .....  
Loose bolts or struts? (Rock ship  
vigorously at wing tips) .....

## COWLING

Any fasteners missing? .....  
Sprung rivets? .....  
Cracks? .....  
Is cowling good fit? .....

## CABIN DOORS

Open easily? .....  
Latch securely? .....  
Loose or twisted hinges? .....

## CABIN INTERIOR

Upholstery clean? .....  
In good repair? .....  
Instruments adjusted properly? .....  
Condition of windshield? .....

## FABRIC COVERED AIRPLANES

What is the test strength of the  
fabric? .....  
Is finish cracking? .....  
Checking? .....  
Has airplane ever been recovered? .....  
When? .....  
Has ship always been hangared? .....

## GENERAL

Number of hours airplane flown while  
seller had it? .....  
Number of hours since last 100-hour  
inspection? .....  
Have you checked carefully for metal

corrosion inside wings and tail? .....  
Aircraft in any accidents? .....  
How many gallons of gas used per  
hour? .....  
How many quarts of oil? .....  
If equipped with instruments and/or  
radio have you flight checked them?  
.....  
Is radio transmitter FCC type-ac-  
cepted? .....

*Below are contract suggestions which  
will give you an idea of statements  
you should get in writing.*

## CONTRACT FOR THE PURCHASE OF AIRCRAFT

..... hereinafter  
called Seller, and .....  
hereinafter called Buyer, agree as  
follows:

The Seller agrees to sell, and Buyer  
agrees to buy an aircraft identified as  
follows: .....

The Seller represents that said aircraft  
is in an airworthy condition, meets all  
the requirements of the Federal Aviation  
Regulations, and will now pass  
the periodic inspection specified under  
Part 91 of the Federal Aviation Regu-  
lations.

The Seller further represents that the  
airplane, the airplane engine, all acces-  
sories and appliances have been care-  
fully and thoroughly examined and  
tested in accordance with the testing

and examination procedures used by  
first class aircraft repair stations, and  
that no defects or deficiencies have  
been disclosed except as follows:

(Describe exceptions)

Seller agrees to take all the steps  
necessary to register the aircraft in  
the name of the Buyer on the aircraft  
registration records of the FAA, and  
agrees that the Seller will deliver to  
the Buyer full title to said aircraft,  
free and clear of liens, encumbrances  
and burdens of every character.

The Seller and Buyer agree that any  
controversy, or claim, arising out of,  
or relating to this contract, or the  
breach thereof, shall be settled by  
arbitration in accordance with the  
rules then extant of the American  
Arbitration Association and a judge-  
ment upon the award rendered may be  
entered in any court of the forum, state  
or federal, having jurisdiction.

.....  
Witness

.....  
Seller

.....  
Witness

.....  
Buyer

.....  
Date