Choosing the Right Aircraft
By Gary Goltz

Owning an aircraft is an exciting, liberating and joyful experience. It takes the stress out of travel and can be a valuable business tool giving you the flexibility and reaction time to compete in today's fast paced business environment. The joy of aircraft ownership can quickly fade if you don't go about the acquisition process correctly. The intent of this article is to give you a bird's eye view of how to properly choose an aircraft that will bring you years of usefulness, happiness, and predictability.

Hire an Experienced Aircraft Broker

Although this is admittedly self-serving since the writer is a full-time aircraft broker, you should hire an experienced aircraft broker to assist with the acquisition. The potential for a million dollar mistake is so high and the relative cost for a broker so low, that it is a practical necessity. As you read the rest of this article you will quickly understand why you need an expert to help guide you through the acquisition process from selecting the correct model of airplane with the appropriate equipment and component status, to what you should do to begin operations immediately post-acquisition. You wouldn't have an operation without a doctor and you shouldn't buy an aircraft without a broker. Here are the specific reasons you should hire a qualified aircraft broker:

1. Market Knowledge - The aircraft market is constantly changing, sometimes daily, due to dynamic market conditions and the limited number of aircraft of any particular type that are available for purchase. You need someone that is in the market everyday and can advise you about accurate market pricing. We know of buyers who have bought aircraft at prices as much as 20% above market.
2. Experience - There is a standard process for aircraft acquisitions by professional aircraft brokers. Although that process can be shortened under the right circumstances, the process exists to protect both the buyer and the seller. Using the process wisely and being intimately familiar with such a process gives you a distinct advantage. This process is quite complicated and is discussed in detail later in this article.
3. Expertise - You also need a professional that will make sure the aircraft you select is right for your mission. A good broker has the information available to help you make accurate and educated comparisons between different aircraft. Once you have selected a particular model of an aircraft, you must sort through the myriad of differences between each aircraft of a particular model. Some of the differences are obvious, such as paint and interior quality, but others are much more subtle to the non-professional, such as type of avionics, maintenance history, and the time on the airframe and various components. Again, experience can make a huge difference.

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4. Broker Network - Chances are the aircraft you are interested in buying is represented by another broker. Like in real estate, the 80/20 rule applies. 20% of the brokers do 80% of the work. Generally those brokers know and work with each other on a regular basis. Knowledge of how the particular broker selling the aircraft you might have an interest handles his business can prove an important advantage during the buying/selling process.

Acquisition and Marketing Agreements

Commissions paid to brokers vary from flat fees to a percentage of the sales price. You should expect your broker to prepare an agreement for you to retain his firm on an exclusive basis to represent you to acquire or sell an aircraft on your behalf. Most acquisition agreements should provide that you are under no obligation to pay a fee to the broker unless there is a successful acquisition. Most acquisition agreements are for a relatively short term, 90 to 120 days. Some brokers require you to pay for all of their expenses, while others only charge for travel expenses or even no expenses at all. Once you have signed the acquisition agreement it is on to the fun stuff. Unlike real estate, each party, the purchaser and seller, pays the commission or fee of the broker that represents them in the transaction.

Choosing the Right Aircraft

Choosing the right aircraft for you is more complicated than you would think and is absolutely critical to your future happiness with your aircraft. Statistically, most aircraft owners keep an aircraft only 3.5 years. This is due, in part, to poor initial selection. The cost to acquire an aircraft is not inconsequential. These costs include sales tax, property tax, broker fees, legal fees, tax advisors, pre-purchase maintenance expenses and the money and time to travel to view the prospective aircraft and relocate it to your home base. Doing this process less often is smart. A reputable broker will help you determine what aircraft best suits your missions. To select an aircraft that meets your needs, you will need to know the answers to the following questions:

1. How far do you normally travel (the length of your typical mission)?
2. Where do you go and what is the size of the runway and altitude of the airports at your frequent destinations?
3. How large a cabin do you need (how many passengers)?
4. How fast do you want to go (should you buy a turboprop or jet)?
5. How much capital do you want to invest?
6. How much annual operating expense is acceptable (what's your budget)?
7. How do you intend to crew the aircraft (will you start a flight department, hire pilots, hire a management company)?

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8. How often do you intend to use the aircraft?
9. How new an aircraft do you want?
10. Tax implications of Aircraft ownership including new versus used.

Types of Aircraft

As you can imagine, there is a wide variety of aircraft available today and the goal is to match one to your needs. Though there is no one aircraft that is perfect for all missions, generally most owners buy a particular aircraft because it meets 80% of their missions. Below we discuss the different categories of business aircraft, focusing on turboprops and jets. By way of background, everyone in the aircraft world talks of knots and nautical miles (1 knot equals 1.15 mph and 1 nautical mile equals 1.15 statue miles).

Turboprops

A turboprop will seat 5 to 9 passengers and fly at speeds ranging from 240 knots to 310 knots. Acquisition costs for a turboprop can range from $600,000 to $6,000,000. Annual operating costs for 200 flight hours with one professional pilot will range from $50,000 a year to $450,000. Turboprops are great for 300 to 1000 nautical mile trips. Modern turboprops are extraordinarily reliable and may be operated in all types of weather conditions. Turboprops have some key advantages over jets, particularly the very light and light jet category discussed later. Turboprops also have lower operating costs than jets, have the ability to carry a full load of passengers and luggage for most of their standard mission trips of 500 to 1,400 nautical miles, are less expensive to maintain over jets and have the ability to takeoff and land at some of the smallest airports. Their disadvantages include cabin noise levels louder than jets, slightly more vibration from the props and engines, and slower cruise speeds than jets. Turboprops can be operated single pilot while many jets require a crew of two.

There have been many manufacturers of twin engine turboprops in the past, but only two twin engine corporate turboprops are currently being manufactured, Beechcraft King Airs and Avanti Piaggios. The King Air line of aircraft manufactured by Beechcraft is the most popular model line of twin turboprops in production today. They have larger cabins than the very light and light categories of jets discussed below. They are also the most common and come in three main body styles, the C90, the B200 and 350. The models become larger and faster as you move up the line from the C90 to the 350. The B200 is one of the most popular business aircraft ever built.

There are three very popular models of single engine turboprops, the Socata TBM, the Pilatus PC-12 and the Piper Meridian. These aircraft are particularly economical to operate compared to the twin-

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engine models because they have only one engine. Single engine turboprops use less fuel and the repair and overhaul costs are generally half of the twin turboprops. Nevertheless, single turboprop economics should be balanced with the safety factor of have two engines in the King Air and other twin turboprops.

JETS

For purposes of discussion here, we will divide jets into 5 categories: 1. very light jets; 2. light jets; 3. medium jets; 4. heavy jets; and, 5. commercial airliners.

There are two very light twin jets that are currently in production, the Cessna Mustang and the Embraer Phenom 100, with many more are in the works including a few single engine jets. They can be purchased for between $2,100,000 and $3,700,000. They seat a maximum of 5 passengers and 1 pilot, but are more practically flown with 4 passengers. Their range is between 800 to 1,500 nautical miles, depending on load, and they fly from 340 to 380 knots. Annual operating expenses are slightly more than turboprops. They are generally flown with one pilot.

Light jets generally carry 5 to 7 passengers and cruise 350 to 460 knots and can fly 800 to 1,500 nautical miles. Because light jets have been produced since 1974, the price range for a light jet varies from less than $600,000 for an older model to around $8,000,000 for the newest, most fuel efficient. Annual operating expenses are generally 30% more than turboprops. The Citation CJ1, Citation CJ2, Citation CJ3, Citation CJ4, Citation I, Citation II, Citation V, Citation Encore, Citation Ultra, Beechcraft Premier I, Phenom 300 and Beechcraft Hawker 400XP are all considered light jets.

Medium jets generally seat from 6 to 8 passengers and can fly 1,800 to 2,900 nautical miles. There are quite a wide variety of manufactures and models in this category. Speeds vary from 430 knots to 465 knots. Prices range from $800,000 for an older model to around $15,000,000 for the newest. Annual operating costs can run in excess of $1,000,000 per year. Medium jets include the Lear 45, Lear 60, Hawker 800 series, Gulfstream 150, Gulfstream 200, Astra, Citation Excel, Citation XLS, Citation VII, Citation X, Falcon 10, Falcon 20, Falcon 50, and Saberliners.

Heavy jets can carry 8 to 14 passengers and have ranges from 3,000 to 7,000 nautical miles. Speeds vary from 445 knots to 525 knots. Prices vary from less than a $500,000 for the old and fuel inefficient aircraft to $50,000,000 plus for the newest. The annual operating expenses for the jets in this category easily top $1,500,000. Heavy Jets include Challenger 600 series, Gulfstream II, III, IV, V, 350, 450, 550, Bombardier Global, Falcon 900 series, Falcon 2000 series, and Falcon 7X.

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Commercial jets, such as 737's, 757's, 767's, 747's and many Airbus models can be found in private corporate configurations. Most of these aircraft have speeds around 450 knots or greater and have ranges in excess of 6,000 nautical miles. A few of the earlier models are very inexpensive, but not as fuel efficient as newer models. The costs to acquire these types of aircraft can range from $10,000,000 to $100,000,000. The different interior configurations are endless and limited only by your budget. Such aircraft are commonly used by heads of state, professional sports teams and those in need of carrying more than 14 people.

Acquisition Costs

A critical question for every client is "What can I afford?" As you can imagine, the cost of a jet or turboprop varies widely depending on year of manufacture, avionics, amount of hours on the engines and airframe, quality of the paint and interior, whether the engines are on an engine maintenance plan, and the maintenance history and the timing and scope of any major upcoming mechanical inspections. If the aircraft has any damage history, high total time compared to the rest of the fleet, incomplete records or substantial ownership in third world countries, the market value will be substantially affected. Even if an aircraft is offered at a discount, these negative factors often make an aircraft an unwise purchase because the aircraft can become extremely difficult to resell. As a general rule, aircraft become more expensive to maintain as they age. Also, the newer the aircraft the more fuel-efficient. Many airframe limits exceed 25,000 hours and very few aircraft have accumulated such high airframe times. Most modern jet aircraft and turboprops do not have life limits on their airframes that would exceed the number of hours that an owner would fly during their ownership period. For most aircraft models there is a smart balance between airframe time, aircraft age and marketability so that you can purchase an aircraft that you will be able to market successfully at the end of your anticipated ownership period. Brokers are particularly helpful with these calculations.

What do I need to know about aircraft maintenance?

All corporate aircraft have inspections that are required and components that must be overhauled at certain prescribed times based on either the calendar (months or years) or flight hours on the component. The maintenance costs for turboprops will run from $10,000 to $25,000 annually not including major items that must be overhauled or repaired such as engines, props, paint, interior, landing gear, and windows. Jet aircraft, especially in the medium to heavy jet category have annual maintenance expenses that can easily exceed $35,000 per year. Most aircraft have major inspections at 4, 5, 6 or 10 years that can cost in excess of $200,000. Turboprop aircraft generally have inspections due every 200 flight hours with costs ranging between $7,000 to $25,000. There are maintenance facilities that specialize in certain brands of aircraft. Some maintenance facilities are

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owned by the aircraft manufacturers. The quality of work and cost can very greatly between shops. It is critical that you make this selection carefully. The right choice will save you money, enhance the future marketability of your aircraft and greatly assist in the safe operation of your aircraft.

Aircraft engines have life limits and have to be overhauled between 3,600 and 10,000 flight hours, although there are some exceptions. Some engines overhauls and maintenance are considered "on condition." They receive maintenance only when they are found to need it and must be checked periodically. Most turboprop and jet engines have a mid-life or hot section inspection at some interval between overhauls. The mid-life event is considerably less expensive than an overhaul. Prices very widely for overhauls and mid-life events. Owners can purchase maintenance plans for their engines whereby they pay an hourly rate to an engine manufacturer or third party insurer to pay for the mid-life and overhaul costs whenever they come due, even if it occurs prematurely. These engine plans greatly enhance the resale value of the aircraft and we highly recommend such plans.

Aircraft Refurbishment

Interior refurbishments can cost $40,000 for a turboprop to millions of dollars for heavy jets or commercial aircraft. Painting costs are approximately $25,000 for a small turboprop or very light jet, $50,000 to $125,000 for light to medium jets and heavy jets can cost in excess of $150,000. An owner can save money by doing a partial refurbishment by changing the carpet or re-dying the leather. Although it can be quite satisfying to retrofit your aircraft with the latest paint scheme and interior, it can be costly and your aircraft can be down for months and months and you will not get back the dollar for dollar investment in any refurbishment. It is almost always better to purchase an aircraft that is as close to what you want as possible.

Operating Costs

There are many reliable sources for estimating direct operating costs and annual fixed costs for aircraft. Your broker can readily access such information and should provide it to you during the aircraft selection process.

Direct operating costs are mainly comprised of fuel and an estimated hourly maintenance costs based on manufacturer's recommendations and industry estimates.

Fixed annual costs are mainly comprised of hangar, insurance, pilot salaries and benefits and engine reserves. The engine reserves are calculated by dividing the cost to overhaul the engines by the remaining time left on the engine until overhaul. This is not necessarily a cash expenditure, but an

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estimated amount to be put aside for every hour flown so that when it comes time to overhaul your aircraft's engines there is a readily accessible pool of funds. Or, as discussed earlier, you can buy an aircraft on an engine maintenance plan or pay to put your engines on an engine maintenance plan. There is substantial value in purchasing an aircraft that is already on an engine maintenance plan because a portion of the future overhaul costs have already been pre-paid and the plan covers catastrophic mechanical failures.

Getting your aircraft properly insured is very important. Although there are many different coverages for aircraft, it is most common to have liability coverage and hull coverage. A liability policy covers the owner from lawsuits for damages brought by third parties against the aircraft owner for negligent operation of the aircraft. Liability coverage is commonly available in $1,000,000, $3,000,000, $5,000,000, $10,000,000, $25,000,000, $50,000,000, $100,000,000 denominations. Hull coverage covers any damage to the aircraft. Insurance agents that handle aviation insurance specialize.

Tax Benefits of Aircraft Ownership

An additional non-cash cost of an aircraft is depreciation. If an aircraft is operated for charter (referred to as Part 135 use), there is a 7-year depreciation schedule. For aircraft operated primarily for the benefit of the owner (referred to as Part 91 use), there is a 5-year depreciation schedule. When the aircraft is used for business, most of the operating costs can be expensed. It is highly recommended you choose an attorney and accountant familiar with aircraft ownership tax and legal issues prior to closing on an aircraft. Clients that go to their usual legal and accounting professional will usually find a lack of knowledge on aviation transactions. We recommend you utilize the services of aviation centric legal, accounting and tax practices as it is not worth the expense and risk to try and get your usual advisors up to speed with aircraft sales tax issues, property tax issues, IRS issues, and FAA issues. It may be critical where the aircraft is based and the type of use the aircraft will have. A professional aircraft broker will have a list of seasoned legal, tax and accounting professionals that will help guide you. Seemingly small mistakes to you can be really big mistakes with the IRS and FAA, subjecting you to fines and penalties that can exceed your annual cost of ownership.

Summary

Owning an aircraft is a fantastic experience if go about the purchase process in a professional, thoughtful and careful manner. This article only touches the surface of many issues involved in the selection and operation of an aircraft. It is critical to obtain guidance from professionals who stake their reputation and livelihood acquiring aircraft. Please note that a chart summarizing the key characteristics of the common turboprop and jet aircraft, such as speed, range, cabin size and hourly costs, can be found on our website at www.primeaircraft.com.

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