

# PILOT'S HANDBOOK

Member's Guide and Procedures Manual



Revised October 16<sup>th</sup>, 2006

*"LONE STAR SERVICE TO THE WORLD"*

**AEROTEXAS.COM, AEROTEXAS AVIATION INTERNATIONAL,  
Mango Air Cargo, ATX, ATX-INTL**

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## WELCOME!

Welcome to AeroTexas Aviation International (ATX). This handbook provides new members with a good source of information about one of the most unique and innovative virtual airlines in the world. We hope this will enhance your enjoyment, and help you in your career at AeroTexas. In this handbook you'll find a full company profile, lots of membership information, our services, descriptions and requirements for ratings and certifications, schedules, frequently asked questions, and a number of helpful and informative appendices.

## COMPANY PROFILE

AeroTexas Aviation International is a premier, full service, passenger airline. Our headquarters are in Houston, Texas and our primary hub is located at William P. Hobby International Airport (KHOU), south of downtown Houston, Texas. AeroTexas was chartered in September 2000 when the [aerotexas.com](http://aerotexas.com) domain was registered. We recognized the need for a VA located in, and serving the Lone Star State. We do so much more, though! Our operations now spread throughout the entire United States, and include international flights as well. We also participate in, and contribute to the flight-sim community, and are active in competitions and online events. Our system for advancement is logical, the most extensive on the net, and attainable. We have established ourselves in the virtual aviation community as innovative organization dedicated to commercial flight simulation.

## AEROTEXAS

Our pilots are some of the best in the business, and our staff is ambitious and creative. Not anyone can be an AeroTexas member. We aren't interested in push-button pilots: a new hire flight check is requisite, as is an annual flight review. Our administrative structure is that of a partnership. Led by a Chief Senior Partner, and assisted by other partners and staff, AeroTexas has grown into a solid organization, without the tyrannical whimsy of a CEO, typical of many virtual airlines. Our roster page is updated daily, our fleet includes some of the most popular commercial transport aircraft, and our promotion system is ambitious. Pilots progress upward through the ranks through flying tenure, and advance to the highest levels after providing evidence of aeronautical knowledge through sensible, self-administered, flight exams.

Every hour is real! Every flight logged represents a real-time flight - the roster displays accurate flight logs with actual hours, and no one cheats, because no one can. Each pilot uses the AeroTexas Aviation Validation System (ATAVS), an application that works with FSUIPC, and the flight simulator. It acts like a flight recorder, and verifies that our pilots take off and land when and where they're supposed to takeoff and land. At the end of a flight a pilot will receive a validation code as evidence of a completed flight. It also facilitates accurate and timely flight reporting on the website - the easiest and fastest method of flight reporting around. And then there's the excellent aircraft packages, the message board, and exclusive documentation and software *Are we a better airline? Are AeroTexas pilots the best? You bet!*

## **(1) MEMBERSHIP**

### **(1.1) MEMBERSHIP REQUIREMENTS**

We require no previous virtual airline experience to join. We do assume that you understand the basics. You can take off and land, you can navigate across country, you have experience flying on instruments. New hires must be familiar with IFR procedures, and feel comfortable with high performance multi-engine aircraft. If you're new to aviation then we're not the airline for you. As a rule of thumb, if you have personally logged less than 40 or so hours with Microsoft Flight Simulator, then you're not ready for us.

AeroTexas supports only Microsoft Flight Simulator FS9/FS2004/Century of Flight.

Pilots are required to have a valid e-mail address while employed with AeroTexas - please keep your e-mail address up-to-date: if we can't contact you then you get dropped, and we really don't want to do that.

AeroTexas does not accept transfer of hours from other virtual airlines. As a new member, you can be reassured that you will work your way up through the ranks just as every member has done before.

#### **(1.1.1) ATAVS**

AeroTexas was the first virtual airline to positively validate every flight. Pilots can only report a flight if they have a validation code. They can only receive a validation code from ATAVS, and ATAVS will only display a validation code if a pilot has departed and landed at the correct airfields, used the supported aircraft, and made the flight without slewing or pausing.

ATAVS also greatly simplifies the flight reporting process. Gone are the days of having to make long and laborious reports of each flight. The ATAVS validation code is like a flight data recorder. Encoded in the validation string is the route, distance, amount of fuel used, passenger survey results, and other information

### **(1.2) LONE STAR SERVICE**

Lone Star Service (LStar) represents your first step as a pilot for AeroTexas. LStar pilots fly passengers on short flight to airfields in and around Texas using turboprops. LStar pilots can also fly in our vintage division, Trans Texas Airways, which uses radial engine aircraft.

### **(1.3) FLIGHT SERVICES**

Flight schedules are posted on the AeroTexas website. AeroTexas flight services are divided into four major divisions: (1) Local; (2) Regional; (3) National; (4) International; and (5) Cargo.

### Brief Summary of AeroTexas Flight Services

Local Service flights include Lone Star Service, and Trans Texas Airways. Bluebonnet Regional Service flights are longer flights in regional jet aircraft. National flights consist of a variety of flights throughout the lower 48, and may make use of small business jets, regional jets, turbo props, and large jets. International service pilots fly around the world in some of the largest and most sophisticated aircraft. Finally, our cargo aircraft parallel our passenger aircraft – we have paired textures for each of our aircraft packages.

As you progress through the ranks you can still fly routes in lower service levels. For example, a pilot with an International certification can still fly Local Service routes. Occasionally we offer charter services, or temporary seasonal transport, usually in the form of an event (e.g., during July 2004 we followed Lance Armstrong with flights in France and Belgium).

#### **(1.3.1) LONE STAR SERVICE & TRANS TEXAS AIRWAYS**

When AeroTexas opened for business in September of 2000, we offered a handful of flights in Texas. We still offer that same core set of flights. Local service includes Trans Texas Airways and Lone Star Service. Trans Texas Airways re-creates the early days of flying in Texas, when piston aircraft and minimal use of IFR was the norm. Lone Star Service brings the member pilot to present, with modern turboprops, and a dazzling array of avionics.

#### **(1.3.2) REGIONAL JET SERVICE**

For pilots who have graduated through Local Service (20 hours), Regional Jet Service is the next step. One of newest flight service options, Bluebonnet Regional Jet Service carries Texas passengers to regional destinations in nearby states.

#### **(1.3.3) CARGO SERVICE**

Flying cargo is another option for our local service graduates. Cargo assignments are based on current weather conditions, and issued hourly on the website. Some cargo flights, because of the possibility of low visibility IFR approaches (e.g., a decision height less than 200 feet), may require special aircrew certification – the CAT II Flight Check (below). Late reports may not be accepted – this assures us that the assignment was completed within the specified time frame. A slight time buffer is built into the reporting expiries to account for gate delays, holding, missed approaches, and re-routing to alternate airfields.

#### **(1.3.4) NATIONAL FLIGHT SERVICE**

A Pilot who has logged 40 hours may start flying the big jets. Our primary service for this has been known as Suprema, but includes almost any national point-to-point flights to the top airports in the USA.

### **(1.3.5) INTERNATIONAL SERVICE**

Pilots who have logged 80 hours may fly international routes. AeroTexas International Service stands quite apart from the rest of what we do; it is not for everyone. Although it is rewarding and affords the opportunity to fly the largest and most sophisticated aircraft to remote and exotic locations, the flights are often long and tedious. Some of the airfields are quite challenging, and have no ILS. Even so, many pilots desire to fly internationally because it increases their flexibility, and gives them a greater variety of flights. Just remember, at AeroTexas all flights are completed in real time – we don't use slewing or advanced simulation rates – even if it's a 12-hour flight.

### **(1.4) PRACTICAL CONSIDERATIONS**

While not mandatory, for the highest level of realism with fixed-schedule flights, the departure and arrival times should be adhered to as closely as possible by either: (1) departing at the actual time as stated; or (2) setting the sim clock to the assigned time prior to departure.

### **(1.5) SPECIAL CERTIFICATIONS**

#### **(1.5.1) CAT II AIRCREW CERTIFICATION**

Pilots who have logged 20 hours are encouraged to take the CAT II Flight Check. CAT II certification authorizes active pilots (at least one flight in the past 30 days) to make low visibility IFR approaches on any AeroTexas flight. As a bonus, pilots with a CAT II certification can make a low visibility CAT I approach to CAT II minimums (see appendix).

#### **(1.5.2) ORDER OF AVIAN**

The Order of Avian is our way of honoring the truly elite pilots and dedicated members of AeroTexas who have logged at least 200 hours. It consists of three grades: Master Navigator, Atlantic Elu (or expert), and Pacific Elu. See §2.0 for details.

#### **(1.5.3) PARTNERS**

Pilots who have made significant contributions to AeroTexas may be appointed as a Partner. Partners are demonstrated leaders, dedicated and loyal to AeroTexas and the progress and goals we strive to achieve. Partners are expected to work with other partners to help contribute to the success of AeroTexas. Partnership is a privilege and is held as a concurrent rating; they progress through the rating schedule just as any other pilot would.

**(1.6) AEROTEXAS RATING SYSTEM**

<b>Rating</b>	<b>Hours</b>	<b>Notes</b>
Associate	Flight Check	Requires New Hire Flight Check, local service
Lone Star First Officer	<i>minimal</i>	
Lone Star Captain	10	
RJ First Officer	20	Bluebonnet Regional Jet Service, Cargo, eligible for CAT II
RJ Captain	25	
RJ Senior Captain	35	
Jet First Officer	40	Suprema National Service
Jet Captain	60	
Jet Senior Captain	70	
INTL First Officer	80	International Service
INTL Captain	200	Eligible for Order of Avian
INTL Senior Captain	500	
INTL Senior Captain II	1000	
ATX Captain	2000	
ATX Captain II	3000	
ATX Senior Captain	5000	
ATX Master Captain	10000	
Junior Partner	-	<i>concurrent rating; by appointment</i>
Senior Partner	-	<i>concurrent rating; by appointment; maximum of four</i>
Chief Senior Partner	-	<i>Founder</i>

**(1.7) THE ROSTER**

The roster page is sorted by most recent activity. This is the fairest method of presenting pilot rosters. Everyone wants to be at the top of the list, and this way everyone has a chance to be in the spotlight. The roster is updated automatically and/or periodically.

**(1.8) AIRCRAFT**

Additional aircraft are continuously being tested. All aircraft are well researched by AeroTexas partners, and come with quality panels and sounds. Although all of our aircraft are freeware, it is AeroTexas policy that members are not allowed to upload our planes to any website, place the aircraft on a CD for commercial use or distribute them in any way other than for personal use.

The aircraft used along the different routes at AeroTexas depend upon which service the route belongs. Aircraft in one class are not typically suitable for routes in services of another class.

**(1.8.1) USE OF NON-AEROTEXAS AIRCRAFT**

While we prefer that our members use aircraft in the AeroTexas livery, we recognize that some pilots have favorite aircraft that they have either purchased or downloaded from freeware sources. Although not all of these aircraft are compatible with ATAVS, many of these can be adapted for

use with ATAVS. This section describes how you can determine if your aircraft can be adapted to work properly with ATAVS and how to adapt them so you can successfully report your flights.

### **(1.8.1.1) AIRCRAFT ELIGIBILITY**

If you look in your ATAVS folder on your computer, you will see the `atavs_eqpt.txt` file. If you open this file using Notepad, you will see entries such as:

```
B739,16,0,156,0,680.5,  
B73Q,0,0,111,0,1066.1,  
B744,0,42,379,0,2319.0,  
B752,0,22,166,0,1195.7,  
B763,0,30,175,0,1669.7,
```

The first four digits in each line represent the ICAO aircraft codes that ATAVS uses to determine the aircraft you are flying and whether it is a supported type.

Suppose, for example, you have a Boeing 747-400 aircraft that you want to adapt to use ATAVS. The ICAO code for this aircraft is B744, so the aircraft can be adapted to use ATAVS. Remember this code because you will need it later in the aircraft modification process.

On the other hand, if you have a Concorde whose ICAO code is CONC, you would not be able to adapt it to use ATAVS since the CONC code is not in the `atavs_eqpt.txt` file.

### **(1.8.1.2) AIRCRAFT MODIFICATION**

Once you have determined that your aircraft can be modified to use ATAVS, you will have to make changes to its `aircraft.cfg` file.

When you install an aircraft in FS2004, a subfolder for the aircraft is created in the “Aircraft” folder. For example, the `b747_400` folder was created as part of the FS2004 package for the Boeing 747-400 aircraft. If you locate this folder using Windows Explorer, you will notice a file in this folder called “`aircraft.cfg`”. You need to edit the corresponding file for your aircraft.

The following instructions serve as an example of how to modify this file to use the FS2004 Boeing 747-400 aircraft with ATAVS:

1. Close FS2004 if it is running
2. Make a backup copy of the “`aircraft.cfg`” file in the `b747_400` folder
3. Open the “`aircraft.cfg`” file in the `b747_400` folder using Notepad.
4. Locate the `[fltsim.0]` section
5. Edit the title line so that the first four digits after the = sign are “B747”, the ICAO code for the aircraft. It doesn’t matter what follows the ICAO code.
6. The title line should look like: `title=B744 Boeing 747-400`
7. Repeat steps 4, 5 and 6 for the `[fltsim.1]`, `[fltsim.2]` and `[fltsim.3]` sections for the other aircraft variants.

8. Save the edited “aircraft.cfg” file to the b747\_400 folder.
9. This aircraft will now work with ATAVS.

If you follow this procedure for your aircraft and get a message from ATAVS indicating that your aircraft is not approved for use, then the “aircraft.cfg” file was not edited properly.

### **(1.9) REPORTING YOUR FLIGHT**

To report your flight you will need the flight validation code generated by ATAVS after you arrived at your destination. The validation code is long, but after you land it is automatically placed into the copy/paste buffer, and in several files in the ATAVS directory for future reference should the need arise.

All you have to do is paste the validation code into the pilot flight reporting form, rate your flight, make some optional comments, and press the Submit button. If your flight was logged successfully, you will be issued a reference code, which you can use for reporting duplicate or erroneous flight reports.

It’s okay if you file a late report, but for record keeping your flight report should be filed on the same day that you complete your flight. There is no limit to the number of flights you can complete - fly as often as you like – just be sure to file those reports!

### **(1.10) MONTHLY FLIGHT REQUIREMENT**

#### One Flight Per Month

AeroTexas staff work hard to see that you have what you need for an enjoyable virtual airline experience. That includes quality aircraft, panels, sounds, supporting files, and a friendly, and an easy-to-use website that is frequently updated. All we ask in return is that you fly at least ONE flight per month. You'll probably want to fly more often. We realize that really busy people can't fly every week, but almost anyone can complete one flight per month, and there are plenty of flights less than one hour in duration.

Pilots who have not logged at least one flight in the last 30 days are considered inactive. Inactive pilots risk being dropped from the roster without notification. Dropped pilots will lose their identity at AeroTexas, including their pilot id, hours logged, and any special certifications or awards received. You’d have to start from the beginning if you came back. We don't want to lose you - we want you to enjoy AeroTexas as much as we have! Let us know if you need to take a leave of absence - it's available to all active pilots for a period of up to six months and all you have to do is keep your contact information current during the period.

## **(1.11) CONDUCT**

AeroTexas pilots are simply the finest. Improper conduct (which may include failure to comply with the details in this document) may result in membership termination. Pilots should be on their most excellent and most courteous behavior when representing AeroTexas in any fly-in, or multi-player event, and when communicating with any other member of AeroTexas. Pilots are allowed to fly for other airlines while flying for AeroTexas Aviation International, but should not report the same flight to both airlines.

## **(2) ORDER OF AVIAN**

The Order of Avian is AeroTexas' way of honoring the truly elite pilots at AeroTexas. It consists of three grades (or degrees). Only pilots who have logged 200 hours or more are eligible for the Order of Avian.

### **(2.1) AVIAN 1° - MASTER NAVIGATOR**

The grade of Master Navigator is awarded to pilots who pass a rather difficult written navigation exam. The score on this exam is graded as either pass or fail. The exam may be taken no more than two times. Master Navigators are automatically certified for specially designed elite routes, and can preview new routes and test new aircraft before they're released to the rest of the membership. A Master Navigator is one who has demonstrated abilities in flight planning, pilotage, and great circle navigation techniques.

### **(2.2) AVIAN 2° - ATLANTIC ELU**

The grade of Atlantic Elu is awarded to Master Navigators who have demonstrated that they can fly successfully across the Atlantic Ocean without using GPS, or using any flight management system (FMS) such as FSNavigator, Procontroller, or the FMS in Squawkbox. The flight can include stopovers and layovers for fuel and rest as needed, but must be flown entirely in real time (i.e., no accelerated simulation rates). Additionally the flight must use the most realistic weather capability available. Demonstration of success is provided in the form of a written report of the flight with complete details as to heading, weather, fuel usage, and other details that prove beyond any reasonable doubt that the flight was made with the pilot's skills in navigation and pilotage. During this endeavor it is entirely possible that a pilot could become lost. The pilot's imagination and sensibility are the only tools he has to extricate himself from these difficult situations. Honesty and ingenuity will guide the pilot back home.

### **(2.3) AVIAN 3° - PACIFIC ELU**

The grade of Pacific Elu is only awarded to the most elite pilots. It is awarded to pilots in the Order of Avian who have been awarded the grade of Atlantic Elu, and can demonstrate a successful crossing of the Pacific Ocean as outlined for the Atlantic Elu. This grade is the ultimate

recognition of pilot who, with patience and high navigation skills, is capable beyond all manner of common proficiency. It denotes expertise, and an adventurous spirit, and completes the perfection of the pilot at AeroTexas. Pacific Elu's are almost always AeroTexas Partners.

### **(3) REALISTIC COMMERCIAL OPERATIONS**

At AeroTexas you're flying in a profit-based environment. With every flight you'll have instant feedback – passenger and cargo revenues, fuel costs, administrative and gate fees. This data will give you a taste of what is involved behind the scenes in real life commercial air transport operations. AeroTexas tracks hundreds of flights, along with important flight data, including how much fuel was used, and on-time status. It will be up to you to assure that your passengers arrive on time, and at their destination.

Revenues come from carrying passengers. We also receive some revenue from mail, and freight and express contracts on most passenger flights. The number of passengers on any one flight is determined by demand for travel.

Costs include: fuel costs (based on current spot market prices of West Texas Intermediate crude), pilot salaries, pilot benefits and pensions, pilot payroll tax, maintenance (including parts and labor), ground services (including landing fees, traffic commissions, communications and gate agent costs), sales (including advertising and promotions, and travel agents and reservations), administrative costs, depreciation and amortization, and passenger services, which includes food and incidentals.

Good flight planning increases revenues. Even a single missed approach can mean the difference between profit and loss.

#### **(4) FREQUENTLY ASKED QUESTIONS - FAQs**

##### **Can I use FSMetar and other add-ons?**

Yes! Any add-on that enhances your flying experience is encouraged. We especially encourage FSMetar (which is free), and other weather updating add-ons. These programs make the flight more realistic, and that's what it is all about.

##### **How About Squawkbox?**

Absolutely! The use of Squawkbox is encouraged. We support VATSIM and IVAO.

##### **Does AeroTexas.Com make real money?**

AeroTexas.com is strictly a form of entertainment and its founder, partners, and staff receive no monetary compensation of any kind. We just have fun!

##### **Can I quit?**

Sure. We know you're busy and we provide you plenty of flexibility to schedule your flights with AeroTexas, however we also understand that you may find something that makes you happier. Just send e-mail to AeroTexas and ask to be removed from the roster. Note that all of your information will be deleted, including your e-mail address, certificates awarded, flight identifications. Your flight reports will be transferred to the boneyard however, and will remain the property of AeroTexas.

##### **Can I take a leave of absence?**

Send e-mail to AeroTexas with the amount of time needed. Be sure to keep your e-mail address current during the period – if we can't contact you then you might get dropped. Leave is limited to six months.

##### **Can I transfer my hours to another VA?**

The Partners at AeroTexas will be happy to communicate any of your information with another organization, but ONLY with your permission. Send an e-mail to AeroTexas and explain the nature of the transfer, the VA, the VA's administrator's e-mail address and website. We will query the VA and ask them what they need, and will get your permission before proceeding.

##### **What are our gates at Hobby?**

Officially our gates at Houston Hobby are along Concourse C, gates 22 and 23. Overflow (and maintenance gates are 24 and 25). Concourse C is the most western row of gates at Hobby terminal.

##### **I'd like to help manage - do you have any openings?**

If you are interested in contributing to the success of AeroTexas, then tell us what *you're* interested in doing, and we'll start you out on a simple project. Our staff members have found that with each success comes gratification of a job well done more exciting and challenging projects. You need no experience - just the desire to help and learn, and the will to work with a creative team in an environment open to new ideas and change.

##### **Does ATAVS score my flight? Will I be penalized if I use my own flight plan?**

ATAVS does not score you on your flights; only the check rides (like the CAT II Flight Check or Annual Flight Review) assess your technical flying ability.

**Appendix 1. AeroTexas Cargo Services**

Mango Air Cargo - is our signature "All Weather Air Cargo Service"

Mango Air Cargo does not require CAT II/III certification. However, many of the cargo flights are to airports where the destination weather is reported as below minimums. That's always been the allure of MAC - miserable weather. You'll end up doing a lot of missed approaches without a low visibility approach certificate. AeroTexas offers the CAT II certificate, which is good for approaches to a decision height of 100 feet. Members with 20 or more hours can request the CAT II flight check.

Cargo Types

Most of our cargo flights carry routine items and can be just about anything: automotive parts, canned specialties, analytical instruments, metal stampings, and food. Sometimes you'll get to carry an article of exceptional value (AEV). These are typically things like bills of exchange, evidence of debt, furs, gems, and money.

Hazardous cargo includes things like flammable liquids, dangerous wet materials, infectious substances, explosives, and radioactive materials.

Cargo Classes

There are five cargo classes: Standard, Priority, Express, Urgent and Critical. Each assignment is stamped with an ETE, or estimated time enroute.

**CARGO CLASS ON TIME TABLE**

Cargo Class	On Time Criteria
Standard	ATE ≤ ETE + 20 minutes
Priority	ATE ≤ ETE + 15 minutes
Express	ATE ≤ ETE + 12 minutes
Urgent	ATE ≤ ETE + 10 minutes
Critical	ATE ≤ ETE + 5 minutes

ATE = ACTUAL TIME ENROUTE  
 ETE = ESTIMATED TIME ENROUTE

**ATX LOWERED MINIMUMS SCHEDULE**

Approach	DH/RVR	Guidance	Days
CAT II	150/1800	20 hours logged + at least one flight in the previous...	30
CAT II	100/1200	One approach to DH 150 in the previous...	20
CAT IIIa*	50/1000	One approach to CAT II or CAT IIIa in the previous...	20
CAT IIIb*	20/600	One approach to CAT IIIa or CAT IIIb in the previous...	20
CAT IIIc*	0/150	One approach to CAT IIIb or CAT IIIc in the previous...	20

\*AeroTexas does not offer CAT III certification at this time.

**CAT I APPROACH TO CAT II MINIMUMS**

A member with a valid CAT II certificate may complete any precision approach down to CAT II minimums, but only after completing the approach to the same runway, and declared a missed approach at the published CAT I minimums. No member may exercise this exemption for the same approach more than once per weather reporting cycle.

**Appendix 2. Tips for efficient flying**

**THREE THINGS AFFECT PROFITS**

1. The number of passengers. Passenger counts are based on fare, time of departure, date of departure, and the level of discounting
2. The average fare. Fare is based on distance and the price of oil.
3. The amount of fuel used.

**WHAT YOU CAN CONTROL**

Really the only thing that is directly under the pilot's control is the *amount of fuel used*. As you can see in the table below, an unprofitable flight is typically twice as large as the average profitable flight! That means it takes two profitable flights to make up for every profitable flight.

The only thing in this table that you can directly affect is usage of fuel per hour. Unprofitable flights averaged 400 gallons per hour, while profitable flights used only 175 gallons.

First Quarter, 2001	Avg NET	Avg Fuel/Hour	Avg Passengers	Avg Distance	Avg Fare
<b>Profitable</b>	\$724	175	21 +/- 7	181	\$69
<b>Unprofitable</b>	-\$1500	401	11 +/- 6	214	\$73

**FACTORS AFFECTING FUEL USAGE**

The two biggest factors are probably speed and weather. Generally speaking the faster you go the more fuel per hour you're going to burn. The weather is a close second, though - because headwinds reduce your forward progress resulting in more time in the air, and bad weather may result in missed approaches or just too much maneuvering. ATC is potentially another factor, since controllers may issue various diversions and directives that can delay your arrival.

**TIPS TO IMPROVE EFFICIENCY**

- Monitor the weather constantly. Choose a filed altitude that will result in the most favorable winds. You want the winds behind you! At the upper levels, wind speed may increase your forward travel as much as 50 knots or more.
- Fly economically. Try to maintain an even and economical throttle usage.
- Get to altitude as soon as possible. The air is less dense the higher you are, therefore it takes less power to maintain a given airspeed. A rule of thumb is that your true airspeed increases 2 knots per every thousand feet (at FL180 that's an extra 36 knots!)
- Don't fly maximum speed. Keep it at economy for as long as possible.
- Spend as much time as possible in your flight descending. Of course you have to go up before you can come down, but evens so, "glide" comes into play and you can therefore actually cover more ground on your descent than your ascent!
- Plan your arrival! Don't get to the airport and then try to figure out what to do. Instead you should think ahead, and determine the runway you'll land on. Then you can plan your initial descent and final descent profile.

- Missed approaches consume a lot of fuel. Try to avoid them.
- Holding patterns burn fuel too - if you must enter a holding pattern make sure it's at the highest practical altitude, and at the slowest practical speed.

### **MORE HINTS (Source: Asociacion Sindical de Pilotos de Aviacion)**

USE OF AUTOMATIC FLIGHT CONTROL SYSTEMS. The professional pilot sincerely believes he is able to coax a little more performance from the airplane than the autopilot can. This may be true over the short term but human fatigue usually degrades performance more than automatic pilot tolerances over the long haul. For example, during a 20 minute climb to cruise altitude, the autopilot can maintain the desired airspeed within + 5 knots or + 0,015 Mach. While crew attention is temporarily diverted by ATC, departure procedures, or other cockpit duties, the automatic systems are continuously at work monitoring and correcting for changing conditions. Although deviations of + knots during climb will not result in significant fuel consumed increments, the goal of consistent optimum performance argues for maximum use of the automatic flight control system. Specific penalties will be discussed, where appropriate, by phase of flight.

ENGINE START. The clearance to start engines is generally governed by traffic conditions. However, crew awareness of potential fuel savings may minimize early start times and long engine idle times through close communication with ATC and consideration of existing traffic conditions. A typical fuel flow during ground idle for two engines is 46 pounds per minute.

TAKEOFF. During takeoff, the aircraft should be "cleaned up" as soon as possible consistent with other operational factors. The drag reduction by the early retraction of flaps, slats and the landing gear will increase fuel economy.

THRUST SETTING TECHNIQUE. Improper level off and thrust setting in cruise will result in excessive fuel consumption. As the cruise altitude is attained, it is important that the aircraft speed not be permitted to drop below the target cruise speed. Regaining the target speed requires considerable thrust increase to overcome the drag resulting from the higher angle of attack at the lower speed and thus higher fuel flow.

DESCENT. The most important factor in the reduction of descent fuel is the use of idle thrust at a fixed speed. In comparison, the use of power to maintain a fixed descent rate at a fixed speed is much more costly in fuel consumption.

AUTOMATICS. The automatic pilot and throttles should be used as much as possible. Performance and operation of the automatic systems over a period of time may contribute to fuel savings.

SURPLUS FUEL Some operators utilize excess capacity to carry more fuel than required for a flight. Reasons for this include "tankering" of fuel due to relatively high fuel costs at destinations, and conservatism put into reserve fuel policies. Both of these are acceptable practices, but remember that it costs extra fuel to carry extra fuel!

Technical Specifications for Selected AeroTexas Aircraft													
	AT42	AT72	B722	B732	B752	DHC7	E120	E135	FA50	MD90	PC12	B190	DC10
<b>V1 (takeoff decision speed)</b>	95	90	145	143	133	85	90	132	110	137	75	75	153
<b>Vr (rotate speed)</b>	100	95	150	147	136	92	95	135	115	143	80	130	176
<b>Vr [calculated]</b>	135	116	187	169	202	134	143	179	124	150	111	131	195
<b>Vs (clean stall)</b>	104	89	144	130	155	103	110	138	95	115	85	101	150
<b>Vso (stall, landing config)</b>	84	72	116	105	120	60	92	111	80	92	61	84	135
<b>Vref (landing reference speed)</b>	109	94	151	137	156	78	120	144	104	120	79	109	176
<b>Final approach speed</b>	129	114	171	157	176	98	140	164	124	140	99	129	196
<b>Minimum approach speed</b>	114	99	156	142	161	83	125	149	109	125	84	114	181
<b>Maximum cruise speed</b>	250	279	470	340	450	230	298	450	370	340	270	276	350
<b>Service ceiling</b>	FL250	FL250	FL390	FL390	FL470	FL250	FL300	FL370	FL380	FL380	FL300	FL330	FL420
<b>Takeoff field length</b>	4300	4400	9600	6500	7500	3500	5118	5650	6500	6500	2000	3740	7500
<b>Landing field length</b>	3694	3500	4700	5500	6500	3300	4528	4370	5500	5500	1500	2770	6500
<b>Maximum rate of climb</b>	1800	1800	2200	1800	2700	1800	2000	1800	1800	1800	1800	2650	2200
<b>Fuelage</b>	274	233	1524	663	1030	106	189	483	313	878	64	60	2463
<b>Fuel Capacity</b>	970	1056	8800	6878	12200	1461	882	2353	2295	5835	450	668	12200
<b>Range with typical payload</b>	896	1201	1583	2999	3451	4048	1243	1306	2063	1852	1970	3232	1331