

Summer 2005

ISTAT

Jetrader

INTERNATIONAL SOCIETY OF TRANSPORT AIRCRAFT TRADING

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Paris Air Show

29th Annual
Air Race Classic

Low-Cost Airlines
in Eastern Europe

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ISTAT President's Letter



Tom Heimsoth
ISTAT President

Dear Members:

With the beautiful setting of our new venue at Le Pré Catelan and with over 800 members and member guests in attendance, ISTAT proudly hosted one of the premiere events of the 2005 Paris Airshow. The activities and announcements from the Paris Airshow combined with the opportunity to network with so many associates and friends created a magnificent setting for the ISTAT Reception. I hope the ISTAT members in attendance enjoyed the evening as much as I and please join me in thank-

ing my fellow Board member, Israel Padron, along with Dawn Foster and her team for all of the hard work in arranging and organizing our most successful Paris Airshow Reception yet. Our appreciation and gratitude goes to our sponsors of the Reception, debis, GA Telesis, Pratt & Whitney and Sage-Popovich for making this event possible.

If you haven't done so already, please register for the 12th European Conference in Hamburg, Germany on September 11-13. You will see from the insert in this issue of the Jetrader, the outstanding agenda and speakers we have planned for this program. Additionally, don't miss the opportunity to fly in a Messerschmitt Me-108 B-1 Typhoon and see the Airbus A380 up close during the visit to the A380 line.

I would venture to say that regardless of whether your particular segment of the aviation market is sliding, struggling or steaming along, the volatility and dynamics of this market predicates your success on longer transaction cycles, working harder and barriers to closure unforeseen. We hope your membership in ISTAT provides you with a network of associates and support creating a higher probability and measure for your success.

If you have any questions, comments or ideas you wish to share, please don't hesitate to contact me at my email address istatpres@aol.com or Dawn Foster, our Executive Director, at istat@istat.org

September 11 - 13 . **ISTAT European Conference** . Kempinski Atlantic Hotel, Hamburg

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CALENDAR

September 11 - 13 . The ISTAT European Conference will be held at the Kempinski Atlantic Hotel, Hamburg.

March 26 - 28 . 2006 . Annual Conference to be held at the Omni Orlando at ChampionsGate, Orlando Florida

COVER :: Lockheed 12A at the Paris Air Show

The Lockheed Model 12A made between 1936 and '41-"Electra Junior" may not have had the recognition that it deserves. Timing had a lot to do with it, and it did not build up an impressive airline or military record, nor did it make any notable record flights. The numbers produced are respectable, though; 130 built.

This did not quite match the production of its famous predecessor, Lockheed's Model 10 Electra (149 built), but it far exceeded the 75 pioneer Boeing 247s. It could not match the larger Douglas DC-2 (192) or the DC-3, which had reached 400 civil versions by the time Model 12A production was ended. More than 10,000 DC-3s, however, were made by the end of WW II.

photo by Bert van Leeuwen, DVB Bank

See you in Hamburg!



JetraderopEDs

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Jetrader is a bi-monthly publication of ISTAT, the International Society of Transport Aircraft Trading. ISTAT was founded in 1983 to act as a forum and to promote improved communications among those involved in aviation and supporting industries, who operate, manufacture, maintain, sell, purchase, finance, lease, appraise, insure or otherwise engage in activities related to transport category aircraft.

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The up-beat atmosphere that was already signaled at the ISTAT conference in Scottsdale certainly continued in Europe during the 46th International Paris Air show. Not only was the mood up-beat, but it seemed many of the industry players were prepared to "put their money where their mood is" as a significant number of new aircraft orders could be booked. The Paris Air show resulted in over 450 additional orders or commitments, valued at US\$ 45 billion at list prices.

Despite global airlines losses of about \$5 billion last year, operators are scrambling to secure significant new capacity. The low cost wave seems a major source of demand but the fact that oil prices are at record heights may very well be a major incentive to replace old gas-guzzlers. As a confirmation of the renewed confidence in the industry, several operational leasing companies returned to ordering new aircraft.

Another development that this year's Paris Air show clearly demonstrated was how truly international the industry is becoming. The four airframe manufacturers from the United States, Europe, Brazil and Canada may soon be joined by RJ manufacturers from Russia and China; in addition, most airframers are increasingly relying on major sub-contractors from all over the world.

The most striking trend however is the fact that aircraft mega-orders are now coming from non-traditional aviation countries. Who could have imagined only a few years ago that at the most important air show of the year, the major order volume would come from India? While the industry has gotten used to major orders from the Middle East, Qatar Airways still made the headlines as they expressed their intention to order 60 A350s and 20 B777s. As spectacular and maybe even more surprising was an order for 100 A320 family aircraft from start-up airline IndiGo, a name that only a few months ago hardly was recognized as an airline from India in the aviation business. IndiGo's compatriot Kingfisher put in an order including several A380s. Even in the traditionally US dominated market segment of the leasing companies, a remarkable event took place as Kuwaiti lessor Alafco became the first operating lessor to order the A350.

Now what are the implications for the INTERNATIONAL Society of Transport Aircraft Trading of all of this? Going through the Geographical Listings of the new and now nicely illustrated "2005 Membership Directory" one can not help but notice that the majority of ISTAT members are still coming from the traditional aviation countries like the US and the UK. India only has one ISTAT-member and the United Arab Emirates less than a handful, with many Middle East countries not even represented.

While ISTAT as an organization is clearly prospering, it would be good to see the emerging aviation countries represented in the membership list in a way that does justice to their role in the global aviation business. With the renewed and improved *Jetrader* magazine as good indication of what topics are relevant for the ISTAT member, we invite all current ISTAT members think of the "I" in ISTAT and to bring the benefits of an ISTAT membership to the attention of your growing group of international business partners.

Bert van Leeuwen DVB Bank AG

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29th Annual Air Race Classic 2005

hosted by the College of Technology, Purdue University, West Lafayette, Indiana



Keri Wiznerowicz (*on the nose*), 2005 Start & Terminus Chairman with Committee Members Crystal Mathews, Erin Scott, Libby Woelfert, Elisabeth Halsmer, Halley Oleck, Amanda Browne, Marie Janus, Kim Conrad and Stefanie Gates

When Heidi Moore and Keri Wiznerowicz first began the work to solidify Purdue University's role as host of the 2005 Air Race Classic, firm goals were established in what would become a three-year journey. Because education has been such a high priority in tier lives, they wanted to make sure that in the process of planning the 2005 Air Race Classic, education would continue to be a priority. The focus was to plan this nationally recognized event with an all- student team. They were confident of success.

Three years later, the core group of committee heads has become an incredible team. Planning this event allowed students from all over Purdue to gain valuable skills in their area of study while working on an event that is recognized at a national level.

>> How the Winner is Declared

The Air Race Classic is a race in which stock aircraft of various makes and models can compete against each other for the top prize. Each aircraft is handicapped based upon what the manufacturer publishes its performance capabilities to be. The aircraft which exceeds its handicap by the largest amount possible for the longest period of time is declared the winner.

Through the planning process skills such as team work, problem solving, leadership, budget planning, communications, process improvement, organization, project planning, airport and aircraft logistics, Purdue takes a lead in creating the future leaders of the aviation industry.

Camaraderie + Competition of Air Racing
:: Increasing the number of women in the aviation field is also been important goal.

Women, ranging in age from 16 to 93 share stories of their experiences, and provide support to the younger generation of female pilots, including pioneering women as Women Air Force Service Pilots from World War II, the first helicopter instrument instructor, past Powder Puff Derby racers, military pilots, corporate and airline pilots, as well as young collegiate aviators.

Air Race Classic | continued page 6



Amelia Earhart is pictured sitting on top of the nose of her plane with a group of co-eds who greeted her upon arrival at Purdue University. September 20, 1936

AIR RACE CLASSIC continued



Some 2005 Planning Committee members, John Schumacher, Mike Kenney, Dustin Wilcox, and Josh Stroka with Ruby Sheldon, the first helicopter instrument instructor.

Purdue's long standing history in aviation includes the first airmail flight in the world, Amelia Earhart's staff position as a career counselor for women, and the numerous test pilots that have become astronauts.

For over 13 years, Purdue University's Aviation Technology Department has provided opportunities by sending a team of two young women to compete in the Air Race Classic; the first university to do so. Today, the opportunities have expanded and now both men and women have participated in this historic event as support staff for the flight crew and as part of the planning committees of the 2005 Air Race Classic.

>> The Air Race Classic returned to Purdue University, Lafayette this year, site of the first air race in 1929. The race is the successor to the Great Transcontinental Air Race, better known as the "Powder Puff Derby," a named coined by Will Rogers. >> Amelia Earhart and a band of hardy women wanted to promote women's careers in aviation. At that time, Amelia Earhart was a counselor at Purdue University, Lafayette. Purdue has a long history of Aviation Industry firsts including being the site of the first official airmail flight by the United States Postal Service and the home of 23 former and current astronauts. >> This year's race was organized, managed and marketed entirely by the students at Purdue University under the leadership of Keri Wiznerowicz, a person you should know.

winners

- 1st Place Classic 11** - Sophia Payton, Marilyn Patierno & Erica Cochoff
HCP 111.23 Race Total 17.432
- 2nd Place Classic 7** - Judy Bolkema Tokar, Sarah Bean & Ann Williams
HCP 126.00 Race Total 17.365
- 3rd Place Classic 16** - Bonnie Johnson & Carol Foy
HCP 108.62 Race Total 17.183
- 4th Place Classic 24** - Royce Clifford & Melissa Sliffe
HCP 124.26 Race Total 15.587
- 5th Place Classic 17** - Marge Thayer & Helen "Wheels" Beulen
HCP 142.22 Race Total 15.544
- 6th Place Classic 31** - Jan Bell & Lara Gaerte
HCP 112.97 Race Total 14.586
- 7th Place Classic 8** - Denise Waters & Ruth Maestre
HCP 126.00 Race Total 14.493
- 8th Place Classic 22** - Sarah Tower & Erica Ebenhoeh
HCP 108.62 Race Total 14.381
- 9th Place Classic 23** - Maragaret Ringinberg & Karen Allina
HCP 112.97 Race Total 14.268
- 10th Place Classic 10** - Gretchen Jahn, Ruby Sheldon, & Julie Filucci
HCP 174.63 Race Total 14.262

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Asset Management in the 21st Century

by Ed Reese

Historically, aircraft and engine investors and traders have turned to aviation consulting firms for equipment records audits and



Pictured Ed Reese VP, The Aircraft Group & TAG Fleet Online with Walter Andrushenko, President, The Aircraft Group

inspections. These services are used (1) when the equipment is returned to an investor for any one of several reasons (some of them bad), (2) when ownership changes or (3) if collateral values must be revisited and updated. Most of us know that the mechanical condition of this equipment is important, but the content of the records is the pedigree of aircraft and engines. The information contained in these records is arguably more important to market value than the equipment itself.

With a few changes, the current process of auditing records has remained the same for decades. In today's high technology business environment, it lags way behind and that is not acceptable. It's archaic, clumsy, time consuming, inefficient and expensive. Effectively, the current practice places the investor and trader one step removed from direct access to the vital information that resides in their records and data. Most of us have been in this position all too frequently, and can testify to the cost in time, money, and inconven-

ience to secure this information for timely decision making.

Today, auditors travel to the record's location where they invest long hours gathering, sorting, organizing and auditing paper records, or struggle to sort through records on poor quality microfilm or CDs. This is a very expensive and time-consuming process easily costing \$20,000 to \$30,000 or more. It also takes days and weeks when time can be even more costly than fees. Per Diem, airfares, hotel rooms, car rentals, food and other out of pocket expenses make this an expensive experience for the investor and trader. Some relief is realized if the records are shipped to the auditor reducing or eliminating travel and most out of pocket expenses. But, the largest portion of the expense remains - gathering, sorting, organizing and auditing the records.

Records audits are also a burden for the operator. Just ask any one of the domestic airlines that are being so closely scrutinized by leasing companies, banks and other equipment investors. Recent and more sensitive records are easily accessible at the time of an audit, but the remainder are usually packed in boxes at an inconvenient storage location. It's also common that records must be reassembled from different locations within the airline. So, the operator must assign personnel to participate in the auditing process to locate information and answer the auditor's questions. In the case of bankruptcies, the cost of the operator's staff time will likely end up for the account of the investor. As we say in this business, the investor ends up "buying back" their records.

Unfortunately, the ben-

efit of an investment in an audit is event specific, and its value is too short lived. For instance if an operator returns an aircraft, an audit and inspection are necessary to satisfy the investor that the equipment is contractually acceptable for return. If the aircraft is subsequently resold or released, another records audit is typically required to satisfy the next owner or lessee as to condition of the records and the equipment. The cost of that audit and an inspection are for the account of the buyer or lessee, but it is prudent for the seller or lessor to have its technical representative present as well. Thus, the seller/lessor must again invest money in the records auditing process.

Over the years, audits and inspections are reoccurring and the expenses mount. In the event of a default or bankruptcy, the cost of the process escalates even further if the investor does not enjoy the cooperation of the operator.

It's ironic, but even after all of these expenditures of money, time and effort, investors and traders remain fundamentally disadvantaged in their relationship with their customers by the records access issue. That's because most of the technical information they need, often at critical times, remains in control of their customers. Investors are deprived of ready access to and control of the information and knowledge required to effectively manage their equipment or collateral. Every time they need more than a minimal amount of technical or operational information, they are forced to incur costs and delays for that access. Bottom line, by being once removed from their records, investors are too often

ASSET MGMT¹ continued

disadvantaged and forced to play catch up when knowledge is power and time is their enemy.

Even routine asset management activities suffer from the lack of timely access to and control of records information. Examples of these activities are the periodic updating of collateral values, taking transactions or equipment to market, and calculating and processing renewals, extensions and restructures. All of these asset management functions require data and technical information that reside in the records.

So all of this begs the questions, how do investors get to the next level of aircraft asset management and risk control? How do they get out of the old rut of repeatedly paying and waiting for records audits whose value is temporary? What does it take to have this information available at their fingertips and those of their consultants? Is there a system that can alert them when they need to pay attention or take action? Can technology revolutionize the old ways?

The 21st Century technology based solution is to digitize the paper records, make them 100% searchable using any word or group of words, make the search extremely fast, employ the Internet as the vehicle to access the information, easily share information as needed but keep it secure, and make it proactive and simple to use. And last but not least, make it economical so there is a clear cost benefit over current records auditing procedures. That's a tall order, but now there is a tool investors and traders can employ to do all of these things and more. An added overall benefit is that this solution levels the playing field and enhances the investor's power and leverage relative to their counter parties.

Such a product is available from The Aircraft Group in Phoenix, AZ. It's called TAG Fleet Online. It's a proprietary, Internet based system to digitize, organize and manage aircraft and engine data and records. It's designed specifically for aircraft and engine investors and traders, although others can effectively use it.

TAG Fleet is a system that brings speed and efficiency to due diligence records inspections and operational tracking so it saves money. And for the first time, it places the investor in a position of control. It

does so by providing immediate access to aircraft and engine records and data anywhere the Internet is available, any time of the day or night.

Here's how it works. Records are imaged, organized and placed on the TAG fleet Online web site. Scanning, Optical Character Recognition and other proprietary processing results in a set of operational data, specifications and images of original documents that reside on TAG Fleet's web site. All the information is fully searchable with no key word or index limitations, essentially a "Google-style" search capability. Tens of thousands of records can be searched in seconds. The system is very user friendly, intuitive and secure. TAG Fleet is also adept at tracking scheduled maintenance and proactively notifying investors of non-compliance. And last but not least, it calculates and tracks reserve payments.

The user simply enters the web site with a password. The user is then guided to the likes of Interior Configuration, Operating Status, Life Limited Parts, Engine Specifications, Engine Disk Sheets and Reserve Schedules. There is also a Document Archive button to access images of all historical documents that have been imaged and put up on the web site. Again, the information in these archived documents is fully searchable with no limitations like key words or indexes.

Another convenient feature allows the subscriber to grant others controlled access to the web site. For example under the investor's control, operators can be given discretionary access via passwords to periodically update operational data. Likewise, other parties can be given limited or discretionary access to records as part of an enhanced level of proactive asset and portfolio management. These could be records auditors, equipment inspectors, appraisers, brokers, prospective equipment or transaction buyers, and employees at the same or other locations.

Information and data, the lifeblood of successful commercial aircraft and engine investing and trading, can be shared with potential trading partners any where in the world almost instantly via the Internet. This can happen without transcribing or copying data, email attachments, faxes or overnight express. This access to information brings clarity and transparency to an aspect of aircraft and engine investing that is often cloudy, and difficult to understand and manage.

Most of us in the aircraft and

engine investment and trading community can easily appreciate the efficiency and cost savings of this Internet based system compared to existing practices. Immediate access to data and records saves money, time and resources. For example, once records are up on the web site the need for traditional, expensive and time consuming records audits, as we know them, becomes unnecessary. In addition, equipment inspections are accomplished more efficiently because the inspector arrives at the equipment's location with a complete set of up-to-date information. Add up the cost of repetitive traditional audits and inspections over the life of an investment and it's a big number.

By now it should be clear how this program permanently changes the landscape, and benefits investors and traders in so many ways. Via the Internet, they gain immediate access to and control of their data and records. In doing so, they realize the power and prerogatives needed to more effectively and efficiently manage their equipment collateral and portfolios. Keep in mind that these vital aircraft and engine records, and the information they contain, are as much the property or collateral of investors and traders as the equipment itself.

Commercial aircraft and engine investors and traders such as leasing companies, banks, hedge funds and others, have the right to direct and immediate access to the data and information contained in equipment records. They also have a right to information that is current and fresh. The growing magnitude of investments, commitments, responsibilities and risks associated with commercial aircraft and engine financing make this access mandatory. For the first time in the history of commercial aircraft and engine investing and trading, an Internet based asset management system like TAG Fleet Online makes this a practical and affordable reality.

How do investors get to the next level of aircraft asset management and risk control? How do they get out of the old rut of repeatedly paying and waiting for records audits whose value is temporary? What does it take to have this information available at their fingertips and those of their consultants? Is there a system that can alert them when they need to pay attention or take action? Can technology revolutionize the old ways?

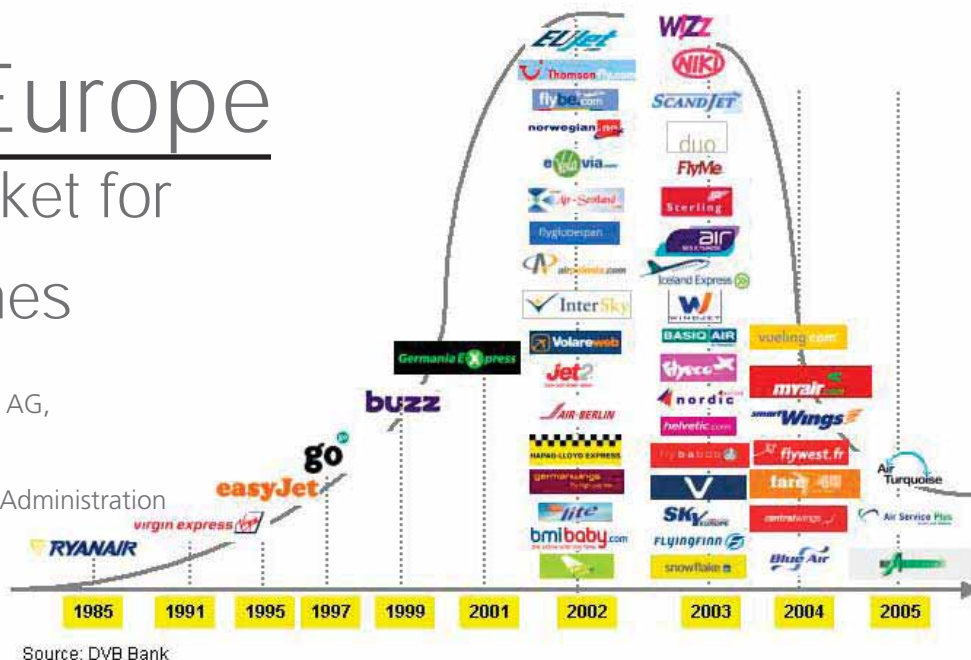


Eastern Europe

a growth market for low cost airlines

by Prof. Dr. Borislav Bjelicic
Senior Vice President, DVB Bank AG,
Frankfurt am Main

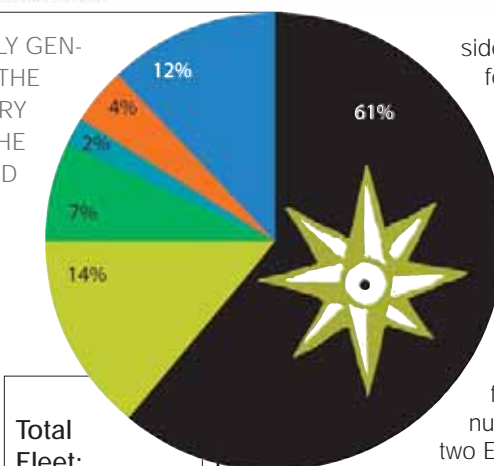
+
Honorary Professor for Business Administration
University of Mannheim



THERE IS NO TOPIC CURRENTLY GENERATING MORE INTEREST IN THE EUROPEAN AVIATION INDUSTRY THAN LOW COST AIRLINES. THE YEARS 2002 AND 2003 PROVED THAT THE REAL BOOM YEARS FOR THE FORMATION OF LOW COST AIRLINES THROUGH-OUT EUROPE (Figure 1 above). IN 2004 TO DATE ONLY A FEW MORE AIRLINES TOOK OFF, AND SOME OF THE START UPS HAVE ALREADY LEFT THE MARKET. NOT ONLY HAVE NEW AIRLINES BEEN CREATED BUT CHARTER AIRLINES HAVE ALSO CHOSEN TO ENTER THIS MARKET SEGMENT.

Whereas European charter airlines used to exclusively market their seat capacity to tour operators, they subsequently entered the low cost segment by introducing the so-called 'seat-only-product' involving the sale of airline tickets to individuals. Some of the tour operators' in-house charter airlines have followed this development, while the tour operator TUI has formed a special low cost airline (Hapag Lloyd Express). Some other new companies such as Germanwings and bmibaby are linked, however indirectly, to the traditional scheduled airlines.

Germanwings for example is a subsidiary of Eurowings, in which German Lufthansa has an interest. There are also virtual offers in the market, i.e., aircraft capacity is bought from other airlines (e.g. Evolavia). Or the low cost product may relate to a non-independent part of an airline (e.g. Fare4U and Thomsonfly). Taking into consideration, that some of the airlines who call themselves "low cost" might not be true low cost airlines and taking into con-



**Total
Fleet:
607
Aircraft**

**61% B737
All Types
14% A319/320/321
7% F100
2% B757/767
4% MD 80s
12% Other types***

**Dash 8, ATRs,
BAE146s, Avro,
Saab, EMB**

sideration that there is a variety of differences between the service offers, there are currently (based on May 2005 figures) 43 European low cost airlines operating a combined total of 607 aircraft.

It is interesting to note that 61 per cent of the total fleet consists of Boeing 737 aircraft (from various series), i.e., it is a segment of world aviation in which Airbus does not have a strong foothold (FIGURE 2, left). Despite numerous new market entrants, the two European pioneers, Ryanair and easyJet, still dominate the low cost market in terms of both the number of aircraft deployed and seating capacity. Ryanair (94 aircraft) and easyJet (91 aircraft) operate the largest fleets (as of May 2005).

The next largest airline is Air Berlin, which has entered a close co-operation with Niki, the airline, which was founded by Niki Lauda, the former Formula 1 racing driver. Other large airlines in the low cost segment include Transavia, DBA and Germanwings. DBA was sold by British Airways in 2003 to the German entrepreneur Rudolf Wöhlrl and in 2004 DBA took over the network of Germania Express, which operates a total fleet of 14 Fokker-100 aircraft. These airlines altogether command 313 aircraft, i.e. 52 per cent of the total European low cost airline fleet (See FIGURE 3).

Altogether, the European low cost airlines have 227 new jet aircraft on order. Ryanair, easyJet and Air Berlin have placed most of the new jet aircraft orders. Ryanair has still 73 Boeing 737-800 aircraft on order, while easyJet has still 77 Airbus 319 on order. In addition, both have options with the manufacturers for more new aircraft. Air Berlin has 60 Airbus 320 on order. Three other smaller airlines have 17 jet aircraft on order.

In view of the large orders from Ryanair, easyJet and Air Berlin, these airlines are committed to future expansion. Eastern Europe will represent an important area for

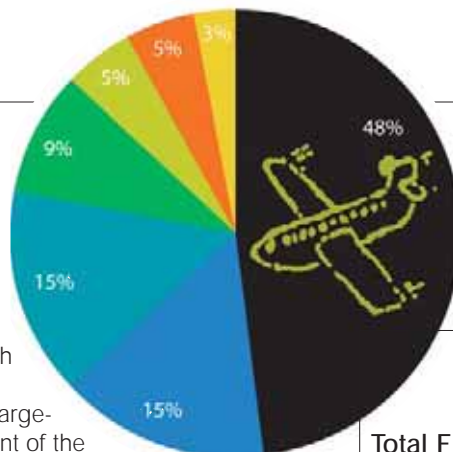


such expansion. At the beginning of 2004, Ryanair was still not flying to an Eastern European destination. But since then they have started expanding to Eastern Europe. In the current summer schedule the destinations Brno (Czech Republic), Riga (Latvia) and Wroclaw (Poland) are served.

With the new winter schedule eight new Eastern European destinations will be offered: six of them are in Poland (Gdansk, Szczecin, Poznan, Lodz, Rzeszow, Bydgoszcz). Also Kaunas (Lithuania) and Bratislava (Slovakia) will be served. EasyJet had introduced flights from London-Stansted to Prague already in 1999. But only in 2004 the network was largely extended into Eastern Europe. Altogether seven new destinations (Tallin, Riga, Warsaw, Krakow, Budapest, Bratislava and Ljubljana) have been introduced. Only Air Berlin has not yet started a major expansion to Eastern Europe. The only destination, which is currently served is Budapest. Interestingly, many of the small low cost airlines have discovered the Eastern European market much earlier.

FIG 3

With the enlargement of the European Union by Poland, the Czech Republic, Hungary, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Malta and Cyprus in May 2004, the legal framework of EU aviation has been extended to these states. This paves the way for more connections between East and West. By establishing operating bases in Eastern Europe, Western low cost airlines can tap labour cost advantages within the region. The enlargement also heralds new competition from Eastern European countries. The first market entrant was SkyEurope, founded in Bratislava (Slovakia) in 2000. In 2003,



Total Fleet:
607
Aircraft

48% All Others
15% Easy Jet
15% Ryanair
9% AirBerlin/Niki
5% DBA/GEXX
5% Transavia
3% Germanwings

SkyEurope Hungary was founded. In 2004 Wizz Air started operating in Poland and Hungary, while in the Czech Republic, Smart Wings, a subsidiary of Travel Servis, the national charter airline, commenced operations.

As a reaction to more competition, Polish flag carrier LOT founded Centralwings as a low cost airline in 2004.

There are several other indicators that suggest that Eastern Europe will remain a growth market for low cost airlines. First of all, the low cost business model meets the current level of purchasing power in Eastern Europe. Greater wealth and higher disposable incomes in Eastern Europe should serve to effectively underwrite an increasing demand for

East-West air travel in the foreseeable

LOW COST CARRIERS | continued pg 18

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Paris Air Show by the NUMBERS

1,926 exhibitors
from 41 countries

238 aircraft

480,000 visitors
over 7-days of
which 247,000
were general
public visitors and
223,000 trade
participants

206 official delega-
tions from 88
countries

4,000 accredited
journalists

127,519 sq.m. of
covered exhibition
space

192,000 sq.m. of
static display

The '05 Paris Air Show benefited on two fronts, both from a rise in the number of exhibitors to record levels and the presence of nearly 20 new aircraft, including the Airbus A380, Dassault Aviation's Falcon 7X and UCAV Neuron, Boeing's 777-200LR, Gulfstream's G550, Embraer's EMB 175 and Aermacchi's M356, all of which made their first public appearance at the Show.

ISTAT Reception Le Pré Catelan Paris

L/R, far right photo, David Treitel, SH&E & ISTAT Foundation Trustee with Mike Platt, ILFC & ISTAT Vice President, Tom Heimsoth, Willow Aviation & ISTAT President with Karen Heimsoth and Nils Hallerstrom, PK Air Finance



Near right l/r Paul Redman & Karl Brunjes of Republic Financial Corp with Steve Townsend, SALE.



Near left Elisabeth Harpoth and Rhonwyn House, wives of Steffan Harpoth and Gene House enjoy seeing each other at ISTAT events.



More photos pg 15

A day at the Paris Air Show

by Bert van Leeuwen, DVB Bank

FOR THE VERY FEW ISTAT MEMBERS who were not at Le Bourget this year, I will attempt to give you an impression of the risks and rewards of attending such an event.

The Paris Air Show 2005 is the 46th edition of this event. As arguably the biggest business-oriented aviation events, the Paris Air Show at Le Bourget and the Farnborough Air show near London take place every other year. It was Le Bourget's turn in 2005.

Unless you are a VIP (and this fact is recognized by the rest of the world) the key to surviving and even enjoying an air show is preparation. If one intends to stay for more than one day, it is essential to book a hotel in a strategic location. A hotel in downtown Paris is excellent for attending events like the ISTAT reception or a business dinner. A downtown hotel has, of course, "other" attractions like nice restaurants nearby etc.

Getting around in Paris, however, is a challenge. Don't even think of parking your car; finding a parking spot will take forever. Taking public transport is maybe a better idea. The Metro system is fast and cheap although not too comfortable. Taxis get stuck in traffic and, especially in the evening, finding one can be tough.

The alternative to a downtown hotel is finding a nice countryside hotel, preferably just north of Paris, and closer to Le Bourget. These smaller hotels tend to fill up early with visitors that have learned to appreciate the logistical advantage of such a place. Cheaper motels and the Charles de Gaulle airport hotels are less romantic alternatives. However, even a hotel 10 kilometers from Le Bourget doesn't mean getting there is easy. The last 5 kilometers will be very slow as officials, police, caterers, exhibitors, press and other visitors make their way to the venue. If it can be arranged, it is attractive to have a permit to use one of the parking lots reserved for officials, press or exhibitors. These are nearest to the actual display area and provide easy access. Parking in the residential area around Le Bourget is possible but should not be recommended for various reasons.

Getting access to the showground itself is another challenge. Most ISTAT members visit the show during the trade days when the general public is not admitted. It is important to arrange tickets in advance or –better– get a valid invitation from one of the exhibitors that includes general admission. Despite efforts to make entry more easy by using automated ticketing machines, reality is that it takes a lot of patience before being able to get in. Again, here "special" passes, like a press or exhibitor pass make life much easier.

Fortunately, this year's event at Le Bourget was blessed by gorgeous weather, so getting around the exhibition area was no problem. Many readers may recall previous air shows



“

...this year's star was the Airbus A380 and this was clearly the most important attraction for many visitors. Other big jetliners included a Boeing 747-400 Freighter, the A340-600 and the new Boeing 777-200LR. A B767 Tanker Transport and a bright orange DC-10 "water-bomber" also draw much attention. Other interesting commercial aircraft included the Bombardier CRJ705, the Embraer 175 and 195 and the PW6000 powered A318.

”



photo source ::
Bert van Leeuwen

that were plagued by storm and rain-showers, which didn't help to improve the looks of the average business suit. As an aside, despite tropical temperatures, business attire is essential if you are not a pilot or a "gendarme". Only professional photographers and "souvenir hunters" tend to be dressed "casual".

Once "in" there are a number of things to do. First of all there is the static display of aircraft. Without any doubt, this year's star was the Airbus A380 and this was clearly the most important attraction for many visitors. Other big jetliners included a Boeing 747-400 Freighter, the A340-600 and the new Boeing 777-200LR. A B767 Tanker Transport and a bright orange DC-10 "water-bomber" also draw much attention. Other interesting commercial aircraft included the Bombardier CRJ705, the Embraer 175 and 195 and the PW6000 powered A318. Although for the average businessman, less relevant might have been the number of the military aircraft. However, many UAVs were definitely drawing attention.

The many press conferences organized during the show are, unfortunately, only open to the professional press. During these events that take place either in the Conference Centre or in the "Chalets" of the exhibitors, in most cases, top-ranking executives of the major manufacturers provide the press with updates on their programs. This year the battle between Airbus and Boeing was a highlight as both manufacturers tried to upstage the other by announcing new mega-orders. The various "Show-daily" publications that are distributed to visitors are an indispensable tool to remain on top of the order battle if one is not in possession of a press pass.

The other "outdoor" activity (that not too many professionals will admit to) is simply watching the demo flights. Mainly during the afternoon, a number of aircraft are taken from the static display to the flight-line to prepare a demo-flight. Again the Airbus A380 was the undisputed "star". The quietness of the A380 stood in stark contrast to the many jet-fighters that showed their abilities. Although very impressive, these fighters are also extremely noisy and make normal conversation impossible.

For the lucky few, some of the manufacturers organize different demo-flights after the official flight display. This year, Embraer invited a number of its business partners as well as members of the press to a demo-flight on board of the new – and very comfortable – Embraer 175. Some of the readers that were at this year's ISTAT conference in Scottsdale may recall Bombardier taking a number of ISTAT visitors on a similar demo-flight on the Bombardier CRJ-700. Clearly if you are lucky (or important enough) this is a nice experience.

Back again to the show-grounds. If the weather is not as favorable as it was this year, there is always the huge indoor trade-fair with hundreds of booths and

“Meetings in the chalets range from serious business negotiations to casual conversations over a nice refreshing drink. Getting invited to a number of “relevant” chalets is an important achievement for many visitors and this positioning game must be considered an important part of the preparation.”



A DAY AT THE PARIS AIR SHOW | continued

exhibitors ranging from the major airframers to small “metal management” companies (engine part recycling). Even with nice sunny weather it can absolutely be recommended to visit a number of the indoor exhibits as this really makes one aware of the importance of the “nuts and bolt” in this industry.

And now, “la Piece de Resistance” of any air show: The Chalets and Pavilions. These are situated along the flight line and can be recognized by ❶ a sign “By Invitation Only”, ❷ a serious looking guard at the front door and ❸ a catering truck parked in the back. In these chalets, major corporations receive their guests. Meetings in the chalets range from serious business negotiations to casual conversations over a nice refreshing drink. Getting invited to a number of “relevant” chalets is an important achievement for many visitors and this positioning game must be considered an important part of the preparation.

Side benefits of having access to the chalets include ❶ having a place to rest one’s tired feet, ❷ having a place to have a nice cold drink without having to stand in line for an hour and paying 5 Euros for a soft drink, ❸ the opportunity to get some nice souvenirs – of course “for the kids” - such as little aeroplane models, T-shirts and caps and ❹ the opportunity of being invited for – in almost all cases – a fabulous lunch.

After having enjoyed a day at the show, the visitor is again faced with the challenges of traffic, although getting out of the parking lot at the same time everybody else is can be even more cumbersome than morning traffic.

In case of the Paris Air show this year, the challenge was getting from the show-ground to the other “Major Event” of the week, the ISTAT reception in the Bois de Boulogne. And for those interested in that event, a nicely illustrated article can be found elsewhere in this issue of your *Jettrader*.



ISTAT RECEPTION SPONSORS



Truett and Roland Moore, Aviation Attorney and ISTAT Foundation Scholarship Chairman and Past Foundation Chairman visit with Steve Boecker of Pratt & Whitney



Nick Popovich of Sage-Popovich, *left*, a conference sponsor with friends



L/R Karen Heimsoth, Alan Coe, GATX Air & ISTAT Board Member with Dawn O'Day Foster, ISTAT Executive Director and Mike Platt, ILFC & ISTAT Vice President



Abdol Moabery, *far right*, GA Telesis Turbine Technologies (& conference sponsor), hosts colleagues in the garden.



Pictured Dick Forsberg, RBS Aviation Capital with Michael Garland, Garland Aviation, Ltd. and Michael's daughter, Alicia.



Pictured l/r Chris Partridge, Deutsche Bank & ISTAT Foundation Trustee with friends.

More photos pg 16

future. Also reasons for travelling need to be taken into consideration.

Sightseeing is of prime importance, witness the fact that highly attractive tourist destinations such as Prague and Budapest lie at the heart of the development of air traffic in Eastern Europe. Eastern Europe also represents an interesting market for business travel as the enlargement of the European Union creates new business opportunities for companies in both the East and West. Closer political ties will also impact positively on travel. Meanwhile, the improving quality of the tourist infrastructure will herald more conferences, congresses etc. in Eastern Europe, particularly in those areas that are also sightseeing destinations. Migration is a key factor in Eastern Europe and this, in turn, touches on work and studies.

Numerous Eastern Europeans are currently on working leave in Western Europe. Au pairs come to mind as do seasonal workers and the staffing of Eastern European companies' offices in Western Europe. An ever-increasing number of Eastern European students are heading to Western Europe. Aspects of migration such as the reuniting of families and marriages abroad inevitably lead to increased air travel in terms of visiting friends and relatives.

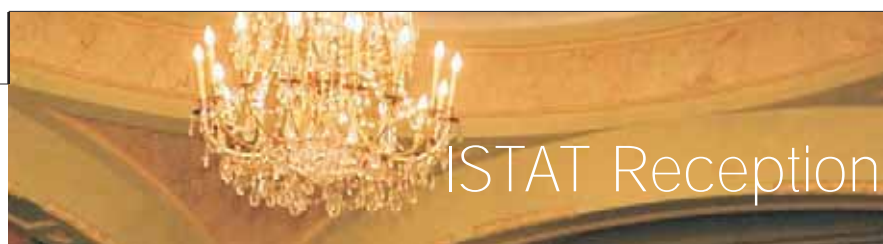
The question of airport choice is of vital importance to those low cost airlines that are intent on expanding from/into Eastern Europe. This, in turn, is closely linked to another question, namely the catchment area of an airport. Prague, Budapest and Warsaw all possess large catchment areas with highly concentrated populations in the vicinity of each capital. Bratislava, the capital of Slovakia, represents a somewhat special case. Here, access to the European Union created new perspectives due to the fact that the Austrian capital of Vienna is close to the airport of Bratislava (the distance between the two capitals is just 60 km) - the principal reason why the SkyEurope airline was established at Bratislava airport. A good example for growing competition and overlapping catchment areas is also the Alpe-Adria Region. Here Ryanair is already flying to Triest (Northern Italy) and Klagenfurt (Austria), while easyJet has started flights from/to Ljubljana, capital of the new EU member state Slovenia. The short distances

between Ljubljana and Triest (95 km) and between Ljubljana and Klagenfurt (82 km) already give travelers from Slovenia a greater choice and vice versa. But now also travelers from Croatia have access to a low cost offer by flying from Ljubljana. (distance between Croatian capital Zagreb and Ljubljana is just 137 km). In this region like in other parts of Eastern Europe much attention is given to an upgrade of road and rail infrastructure. In the Alpe Adria Region a number of highways have already been built. While some links will still have to be upgraded by new highways, these measures will all help to give travelers much quicker access to airports and low cost offers.

As already mentioned, the enlargement of the European Union has created new opportunities for low cost airlines. But there are more opportunities to come. Bulgaria and Romania are EU member candidates expected to join the European Union in 2007. And also countries like Croatia and Serbia offer possibilities to expand. These Eastern European countries, of course, will need to introduce more liberal elements into their bilateral air transport service agreements with EU states if they intend to open up similar travel opportunities for their communities.

A good example for such a liberal air transport policy is the Czech Republic. Here, the Czech Government had introduced a liberal air transport policy vis-à-vis foreign countries in the late nineties, when the country had just become a candidate for a membership in the European Union. And Prague airport has significantly profited from this policy and is currently highly frequented by low cost airlines, especially from the United Kingdom. May be that low cost airlines from the new EU member countries will take advantage first of these developments. For example, Wizz Air has announced in June 2005 to expand services to Sofia (Bulgaria) and offer passengers connections to other European destinations at Budapest. Wizz Air would be the first low cost airline to enter the Bulgarian market.

Also Romania offers a growing potential for low cost offers. After 2001, the lack of job opportunities on the home labour market and the higher wages offered abroad have led to a steep rise in the number of



Above left, Andy Troutt, GA Telesis Turbine Technologies (conference sponsor) with Mark Dreschler, Banc of America Leasing & Capital and Mark Maymar of Compass Capital

Above right, Pratt & Whitney Sponsors Mark Young, Cheryl Andersen and Steve Boecker

L/R Mickie, January and Al Jones with Marc Anderson of Aerocentury

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ISTAT Foundation

FAQ

What are the Foundation's goals?

Historically, the Foundation has provided funds for scholarships, educational programs and grants to qualified individuals and charities that promote the advancement of commercial aviation. More recently, the Foundation has branched into causes where aviation assets are utilized to deliver humanitarian aid.

How are the scholarships & grants awarded?

We work with schools that are sanctioned by the Council of Aviation Accreditation. Our scholarship committee reviews the applications from each school and often interviews the finalists before making its recommendations. The primary criteria are achievement and need. Our grant committee recommends other educational programs to receive our support.

How much will be given away this year?

Eight \$10,000 scholarships plus \$70,000 in grants for a total of \$150,000.

Why pursue humanitarian causes?

Because many members of ISTAT are in an excellent position to save lives through the application of their knowledge and resources in the delivery (via air) of humanitarian aid to nations in crisis around the world.

What is an example of a humanitarian cause the Foundation is involved in?

Airport Emergency Team to be located in Miami, servicing Central America. Members of this team would be called upon to coordinate relief supplies arriving to an airport in a Central American country that is suffering from a humanitarian crisis such as a flood or earthquake.

How does the Foundation raise money?

Through individual and corporate cash donations as well events such as raffles and auctions. We are now organizing to reach out to individuals and corporations with a major donor program. Expect a call from us soon!

Robert M Brown

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David Treitel



by Bob Brown

Chipping Contest raises \$5,900 for the ISTAT Foundation

Bob Brown

On June 2nd, The ISTAT Foundation found itself the beneficiary of an extraordinary impromptu fundraiser. Over \$5,900 was raised because of the generosity and goodwill of ISTAT members, not to mention the subtle invitations of Jennifer and Shaelene of sage-popovich.

Sage-popovich hosted its 11th annual Sage-Popovich Golf Outing held at the Course at Aberdeen in Valparaiso, Indiana. 150 golfers braved the showers and lightning to prove the old saying that golf "...was a good walk spoiled." 200 attendees to the post golf picnic held at Wisdom Ranch were invited to participate in a chipping contest fundraiser for the ISTAT Foundation.

The object was to hit a bucket on an island located in the middle of a pond. Even before the superb meal, the golfing skills of the attendees were remarkably challenged. Success was hitting the side of the barn behind the buckets. Now it must be said that there were substantial obstacles to overcome whilst the hitters were attempting to prove their golf worth. Nick Popovich helped the golfers concentration with a volley of cherry bombs (some were heard to say they were really M80s, one even alluded to Cracker Bombs) deliberately timed to aid shot placement.

Because no one hit the buckets, Zach Popovich "...volunteered..." to row a boat in the lake and play target. Was it the challenge of a floating target or just luck that we had a tie? Max Ulrich of Stratus Partners LLC and C David Brown of Bank of America tied in the "Hit the Kid Challenge". But David prevailed in the sudden death shoot out (no one died). VX Capital Partners sponsored a custom golf club set for the winner. Nick Popovich of sage-popovich matched dollar for dollar the money raised in this shoot-out. The ISTAT foundation benefited from the generosity of all who participated. Thank you all.

Bob Brown VX Capital Partners
ISTAT Foundation Chairman





Romanians working abroad. The Romanian "Department for Labour Abroad" estimates that around 2 million Romanians are currently working abroad. Most of them work in Italy (800,000), Spain (400,000) and Portugal (over 40,000). A significant number of Romanians also work in Greece, Israel, Ireland, Hungary, Germany and France. Because of migration, growing air travel demand in terms of visiting friends and relatives will be generated. This is the reason why the recently founded Romanian low cost airline Blue Air is also targeting destinations in Spain and Italy.

Selling tickets may prove to be the most challenging aspect of the expansion of low cost airlines in Eastern Europe. Typically, low cost airlines endeavour to sell most of their tickets via the Internet and only to a limited extent, if necessary, via travel agents. Telephone sales via call centres also play a part although the fixed costs involved are quite high. The Internet proved crucial to the successful development of low cost airlines in Western Europe. In line with growing personal computer penetration in private households more and more consumers are using the Internet for online booking. The figures relating to personal computer penetration in Eastern Europe are currently much lower than those for Western Europe and the number of Internet users in Eastern Europe is, in comparison with the population figures, still relatively low.

That said, the growth rates are nothing less than remarkable. All in all it would appear that call centres and travel agencies are likely to remain relatively important in terms of the low cost airlines' ticket sales in Eastern Europe for some years ahead. Even in Western Europe there is significant growth potential for Internet sales, bearing in mind the fact that many Internet users still refrain from online booking and/or shopping because they are suspicious of security and do not wish to divulge credit card details.

What are the risks inherent in the European low cost sector? One risk is that the market exit of one of the major players could impact adversely on the reputation of all low cost airlines, bearing in mind the fact that consumers who paid for tickets in advance would be unlikely to get their money back. Traditional airlines have long argued that con-

sumer protection is not high on the agenda of low cost airlines. An air disaster could, conceivably, pose a risk for the entire sector but the fact remains that low cost airlines, particularly the largest enterprises, operate very young aircraft fleets. Somewhat greater risk might be associated with small airlines that operate with older aircraft. It would be fair to conclude that the risk of an air disaster is no higher in the low cost sector than in any other sector of aviation. In terms of publicity, however, the majority of media reports regarding the aviation industry have, of late, focused on the low cost phenomenon.

Eastern Europe in general and the new member states of the European Union from this region in particular, will remain a strong growth market for aviation within Europe during the years to come. Almost all countries within this region show strong growth rates in air passenger traffic. A comparison of passenger numbers in relation to air traffic between new and old member states of the European Union with similar populations suggests significant potential for air traffic growth in Eastern Europe as economic disparities narrow. The Czech Republic's population of 10.3 million people is, for example, almost exactly the same as Belgium's population. In contrast, the number of air passengers in Belgium is currently three times that of the Czech Republic. It is also clear that low cost airlines are not, as traditional airlines may have imagined, a temporary phenomenon. On the contrary they are set to become a stable aspect of European aviation commanding between 20 - 30% of total European air traffic within the next decade. The low cost airlines will particularly in Eastern Europe continue to progress.



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By Bob Lekites
Vice President, UPS Airlines and International
Operations

UPS's order for 10 Airbus A380 super-jumbos illustrates our growing need for long-range, high-payload aircraft. The A380 will help us serve the fast-growing demands of customers around the world.

With global commerce at the heart of our business, UPS's fleet acquisitions focus on larger aircraft that support our international growth.

Acquisitions at UPS are a painstaking process. We continually look at our fleet, and evaluate and adjust the air network.

When it comes to acquisitions, we look to our experts to help decide which aircraft will be the best buy. We assemble a team of UPS employees, who study the company's ongoing fleet needs and recommend specific aircraft types for purchase. This team includes engineers, financial analysts, long-range planners and even pilots and mechanics.

Although UPS's senior executive committee has the last say in such capital expenditures, the company relies on the expertise of its day-to-day workforce to ensure every aspect is considered, from an aircraft's fuel



efficiency to its on-time reliability.

The employees who serve on our acquisition team bring a wealth of skills and knowledge to the process. The team includes people with experience working on and around aircraft, strategic thinkers familiar with UPS's transportation network and services, and accounting experts who compile comprehensive cost analyses.

The knowledge combined from these areas allows precise looks into the cost of new freighters versus passenger conversions, future operating cost, future revenue and flexibility of the aircraft.

This flexibility is key because UPS wants an aircraft that performs well under changing business conditions, such as fluctuations in our product mix or route structure.

For instance, when we chose the Airbus A300-600, we were looking for a regional freighter to meet our needs for increased airlift on domestic routes. But we're now finding that the aircraft fits into our international network.

In the 17 years since we started our own airline, we've acquired a diverse fleet of 268 jet aircraft. Our fleet reflects our efforts over the years to balance the risk equation between new and converted aircraft. It includes the A300 and other new production freighters as well as passenger-converted aircraft, such as the Boeing MD-11.

The A380 will bring the ability to fly a single flight to worldwide destinations that used to take two or more flights. With its 5,600-nautical-mile range, the aircraft has a 330,000-pound payload -- equivalent to two MD-11s or a 767 and a 747-100 combined. The 747 is currently UPS's largest aircraft.

The UPS Fleet

Aircraft Type	Avg. Max. Payload	No. in Fleet
Boeing 727-100	46,000 lbs.	44
Boeing 727-200	58,500 lbs.	2
Boeing 747-100	215,000 lbs.	9
Boeing 747-200	240,000 lbs.	4
Boeing 757-200	88,000 lbs.	75
Boeing 767-300ER	129,900 lbs.	32
Boeing MD-11 Long Range	188,495 lbs.	15
McDonnell-Douglas DC-8-71	94,000 lbs.	21
McDonnell-Douglas DC-8-73	110,000 lbs.	26
Airbus A300F4-600R	114,500 lbs.	40

Numbers reflect totals as of Dec. 31, 2004



Like the decision to purchase the A380, UPS acquisitions are made only after a long and exhaustive process.

Acquisition team members typically spend a year to a year-and-a-half reviewing data and specifications. They study purchase and operating costs, fuel burn, reliability, flexibility and future revenue.

If necessary, they also meet with prospective vendors for modification work and support services.

Once a decision on purchasing an aircraft is made, UPS gets involved in the design, manufacturing and conversion processes.

As the first customer for both the 757 and the 767 freighters, we worked closely with Boeing to make modifications that improved the aircraft and ultimately reduced operating and maintenance costs.

We run our business based on a term coined by our founder, Jim Casey - "constructive dissatisfaction." We run all the numbers, examine all the parts, look at all the ways to operate aircraft better and smarter. That's why we've grown into one of the finest airlines on the planet.

About the Fleet

Since purchasing its first aircraft in 1981, UPS has steadily built one of the largest all-cargo jet aircraft fleets in the world. The company currently owns 268 jet aircraft and has 36 more on firm order. UPS also charts 301 aircraft. Additional aircraft are leased during the November-December peak season.

UPS was the first major carrier in North America to meet Stage 3 federal noise regulations with 100 percent of its jet fleet in December 1996, three years ahead of schedule. In addition, 92 percent of UPS's aircraft are already in compliance with Stage 4 noise regulations, which are not mandatory until 2006.

About UPS Air Operations

UPS began its air express service Feb. 15, 1929, using cargo space on passenger flights between West Coast cities. Eight months later, with the worst stock market crash in U.S. history, the company was forced to terminate the fledgling air delivery service.

UPS reinstituted air express in 1953 and by 1980 had expanded its two-day delivery service, called Blue Label air, to cover the entire United States. The company grew more dependent on express service as it began to grow globally. In 1988, UPS started its own airline, operating its first revenue flight from Louisville to Milwaukee on Feb. 1. A year later, UPS's trademark service was available in more than 180 countries.

Today UPS operates the world's 11th largest airline using some 600 aircraft to serve more than 200 countries and territories worldwide. UPS is the largest express and air cargo carrier in Latin America. The company's extensive air network includes international air hubs in Cologne, Taipei, Miami, an intra-Asia hub in the Philippines and Worldport in Louisville, Ky.



In April 1944 the Army Air Corp issued a specification for a four jet engine powered bomber. Convair, North American and Boeing submitted similar proposals of straight thin wings and a twin jet engine pod under each wing. Boeing's own high-speed wind tunnel, (Mach 0.87 and Mach 0.975 without a model), allowed it to test the designs and found that the engine pods limited the top speed due to their drag, so the Boeing XB-47 design was delayed: each of the other contenders, plus Martin with a six engine design, got contracts for two or three test articles. As a result, the final Boeing XB-47 design flew eight months after North American's XB-45 and Convair's XB-46. Boeing's delay was the result of employing their unique wind tunnel to test the swept wing, using the information gained from Germany, and the work by Robert Jones at the NACA.

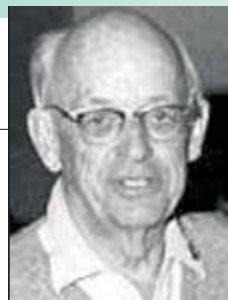
Initially, four engines were to be located on top of the fuselage, plus two in the tail: but fearing the risk of fire, the Air Force, (now no longer a branch of the army), insisted they be housed in separate pods under the wings. It was George Schairer's letter in May 1945 on the swept wing that got the interest of the Air Force Bomber Project Office at Wright Field, who helped fund the Boeing design.

Sawing the straight wing model in half down the center line and testing the wings at various angles of sweep, Victor Ganzer, one of the small group under Bob Cook on the design team, selected 35 degrees. It proved to be right, (the B727 has 32 degrees and the B747, 37.5 degrees). With only the Messerschmitt 262 fighter as a precedent, it took Boeing's vice president of engineering, Ed Wells, two trips to Wright Field to convince the Air Force that a swept wing bomber was feasible.

There were many heart-stopping problems during the wind tunnel and parallel construction phases of developing the prototype XB-47. The fast track was Boeing's only hope of keeping within striking distance of the competitors' models, which were well along to flying status. With little past experience and data to go on, it was not possible to solve every major problem by starting again with a clean sheet of paper and studying it to death. Even so, it took eight months of wind tunnel testing; with major components

being changed two to five times. Here are three of those near disaster episodes.

George Swift Schairer - Scientist whose discovery of Nazi wind tunnel research played a crucial role in development of swept-wing jets;



The low-speed stall of a swept wing was one such problem. Unlike a high-speed tuck-under, at the start of a low-speed deep stall the test model would encounter a sudden severe pitch-up, with or without the horizontal stabilizer installed. After a number of tests, which did not reveal the source of the stall, the tunnel was run at slow speed; a 12 inch length of string attached to a long pole, was used to track the air stream from the wing back to the tail; the airflow was found to separate at the wing's inboard leading edge, with the resulting thick wake completely blanketing the horizontal stabilizer so that it was not contributing any nose-down pitching moment. Making a slight droop to the inboard leading edge of the wing cured most of the problem; with the stall now starting at the trailing edge and progressing forward as the angle of attack was increased. The resulting narrow wakes of air left the horizontal stabilizer in clear air and free to maintain longitudinal stability. The modified model wing was built and tested while Schairer was away. When he returned, and saw that this messing around with his high-speed airfoil had not affected its top speed, he thought it was a great idea.

The residual pitch-up was cured when engine pod struts were installed on the test model. Instead of the thin boundary layer of slow moving air on top of the wing sliding outboard, to pile up at the wing tip and cause a loss of lift behind the center of gravity; the nacelle struts caused the air to peel off at the struts clear of the horizontal stabilizer; leaving the outer wing free to still provide lift.

Another possible problem was the flexibility of the very thin high-speed wing. The bending loads at the wing root were thought to be quite high, which meant the center wing box and wing panels had to be thick enough to support the loads induced by the wing flexing in turbulence. When the stress engineer,

Zeke Grey, studied the actual wing span and sweep, he found that as the wing bent upwards, the geometry of the sweep angle reduced the angle of attack at the wing tip, and therefore, the lift. This meant less bending load at the root, so they could increase the span of each wing tip by eight feet without adding weight; the increased aspect ratio of the wing reduced drag and increased the range.

The flexibility of the XB-47's high speed swept wing caused another major heart-stopper. In April 1946, the Air Force signed a fixed price contract of \$10 million for two prototypes. By December 1946, the structural design was almost complete, and fabrication of the wing's heavy sections was underway. Zeke Gray told Bob Cooke's expert, Vic Ganzer, that his final analysis of the wing strength at high speed showed that the flexing caused the center of lift to move inboard, and therefore forward relative to the center of gravity. This translated into an equivalent center of gravity shift of 15 percent between high and low speeds, an intolerable amount.

With only six engineers in the aerodynamics group and the departure of Vic Ganzer to teach at the University of Washington, Bob Cook was in a corner. He goes on to relate in his book, *The Road to the 707*, how he asked Zeke Gray, how much would the tail droop if its supporting jig was removed, while the wing and fuselage center section remained firmly clamped in the manufacturing jig. Gray told him to come back after lunch when he would have an answer. When Cook got the answer that afternoon, he multiplied it by the number that represented the horizontal tail's effectiveness; the aft body's downward deflection increased the stabilizer's angle of attack to counteract exactly the 15 percent shift in the center of gravity. The XB-47 was saved from possible cancellation.

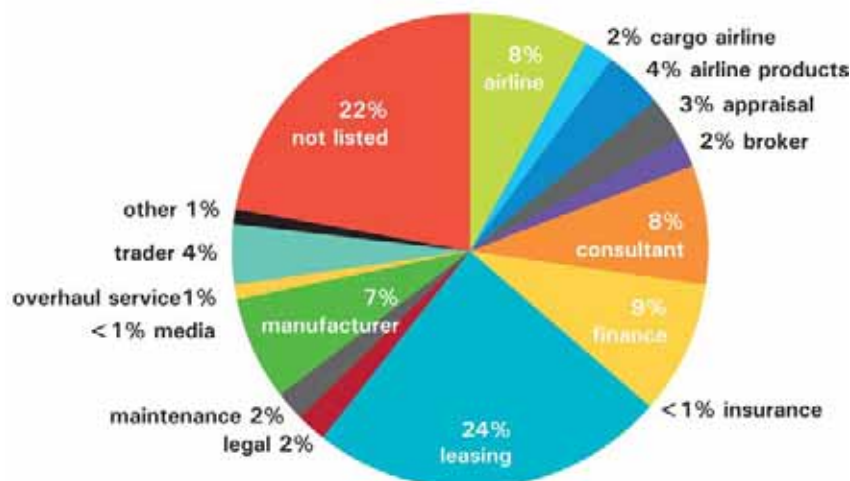
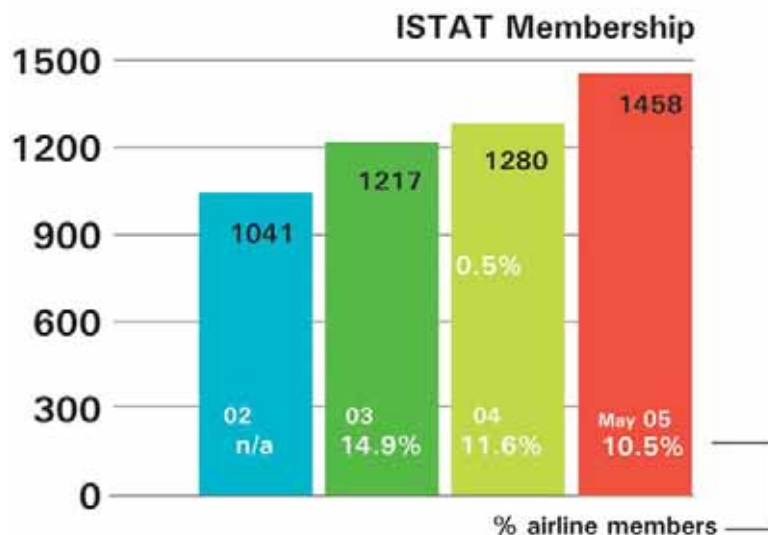
At a later high-speed conference, a paper describing the above problem was discussed. George Schairer inferred that the solution did not just happen, "it had been designed that way".

Rollled out of the factory at Seattle on September 2, 1947, the XB-47 first flew on December 17, 1947; exactly 44 years to the day after the Wright brothers made their historic flight at Kittyhawk.





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Flemming Jacobs and **Robert van der Burg** have joined the Supervisory Board of **DVB Bank AG**.

Mr Jacobs' career in the shipping industry commenced in 1960 when he joined AP Moller where he helped to build Maersk Line into one of the world's premier container lines, becoming a partner in AP Moller in 1996. Between 1999 and 2003 Mr Jacobs was President and CEO of Singapore based Neptune Orient Lines, owners of American President Lines and APL Logistics.

Mr van der Burg started his career in the aviation industry in 1970 when he joined the Dutch airline KLM. He held various positions at KLM, principally in the area of finance. In 1994 he was appointed Senior Vice President Finance at KLM and in 1997 he set up KLM Financial Services, a Dublin based in-house leasing company, where he held the post of Managing Director until his retirement in April 2005. Mr van der Burg's numerous other activities included Board membership of Transavia, the charter airline, between 1993 and 2003.

Other members of DVB's Supervisory Board are Dr Thomas Duhnkrack and Mr Wolfgang Kirsch, both members of the Board of Managing Directors of DZ BANK AG, Mr Hemjö Klein, a former member of the Board of Managing Directors of Lufthansa, Prof Dr Manfred Schölch, Deputy Chairman of the Board of Managing Directors of Fraport AG, and three DVB employees.

JETRADER Editorial Schedule:

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Topic: Review of European Conference

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Mail Jan 6

Topic: tbd

LATE WINTER 06 Issue

Mail March 3

Topic: ISTAT Annual Conference

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PEOPLE | going PLACES

BEIJING

by Alex Hsu



For more than 200 years, the Beijing opera, more commonly known as Peking opera to westerners, is deemed the national opera of China. The accompanying music, singing and costumes are all fascinating and artistic. Full of Chinese cultural facts, the opera presents to the audience an encyclopedia of Chinese culture as well as unfolding stories, beautiful paintings, exquisite costumes, graceful gestures and acrobatic fighting. Since it enjoys a higher reputation than other local operas, almost every province of China has more than one Beijing Opera troupe, "piaoyou" in Chinese.

Agenda 12th European Conference

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Kempinski Hotel Atlantic . Hamburg

The Atlantic Hotel, which the People Of Hamburg affectionately call "The White Castle On The Alster," is more than just a hotel. First opened as a grand hotel more than 95 years ago, the Kempinski uniquely combines the tradition of European hospitality, first-class service and an atmosphere in which guests from all over the world can find a home-away-from-home. With the most modern technical facilities, the hotel meets the needs of the most exacting business traveller. Latest news: The Atlantic unveiled its "PrivateMax" and now features the first private cinema in a German hotel.

Dating back to 1644, Beijing has long played an important role as China's capital. Through the centuries, up to 1911 in fact, Chinese emperors ruled the Middle Kingdom from the Imperial Palace. They established a far-flung bureaucracy to oversee dynastic rise and decline so, while the rulers would come and go, the mandarin scholar-officials-selected through the meritocratic imperial examination system-continued the Confucian traditions of ancient times. To this day, Chinese organizations, including those related to aviation, travel to the capital and kowtow before the authorities, seeking official approval for their activities. Readers of *Jetradar*, whether trying to lease, sell or buy aircraft in China, will all have an opportunity to visit; this brief article hopes to make that journey more pleasant.

In recent years, the city has changed dramatically: while the historical sites are still to be found, you will have to deal with the worst of modernity, including air pollution (among the top ten worst in the world) as well as traffic (instead of the thirty minutes required to cross town through Tiananmen Square, it now takes ninety). Add to this mix the increasing temperatures -104 F in June - and you will understand the critical need in China for great patience (an important Confucian virtue).

Where to Stay As the visitor will immediately notice while walking around the Imperial Palace, Beijing is a city of walls. Indeed, traditional Beijing architecture is the Four Corner House, basically four single-story buildings facing a courtyard planted with fruit trees and wisteria, each compound consisting of several such courtyards connected by small walkways. The *Hao Yuan Guest House*, built by a Qing dynasty emperor for his favorite concubine, is a centrally located secret with two courtyards; you can rent an inner-courtyard suite in the main building facing south, resplendent with Chinese antiques and a sauna, for around \$100. Within a fifteen minute walk is the *Peninsula Palace Hotel*, arguably the best hotel in the city. And while its sister hotel in Hong Kong will run almost \$500 per night, this Peninsula is only \$145.

Where to Eat No visit is complete without Peking Duck, of course; *Quan Ju De* is popular with several locations throughout the city. Another favorite is lamb hot pot, similar to shabu-shabu; *Ding Ding Xiang*, with four branches, is considered the best. And for something special, I recommend the *The Courtyard*. Overlooking the moat surrounding the Imperial Palace, this restaurant was recently featured in *Condé Nast Traveler* as one of the top fifty tables in the world and the *Wine Spectator* gives rave reviews. Ask your Chinese guests what they would like to eat but be sure to tell them that you want to drink Beijing Er Guo Tou. Cheers!



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