ISTAT

Jetrader

International Society of Transport Aircraft Trading

asms v. rasm v. casm

yield . load factor

unit cost . trip cost . spill

Time to call a consultant????

WINTER 2005

Total Asset Support TAS® is a 360° no-headache package thats making more and more aircraft leasing companies smile. Why? Because TAS® substantially lowers your financial risk when changing leasing partners.
No matter where in the world an aircraft is returned from a leasing contract or what condition its in, TAS® will get it back in top form in next to no time. Technically, optically, equipment-wise, we ll take care of every last detail, without wasting a single day on the ground.
In a word, TAS® takes the value of your investment to new heights while pushing costs down. Thats a big promise, that only an MRO provider with in-depth technical expertise, decades of experience and global reach can make: Lufthansa Technik. Want to make the most of your assets in future, too? Lets talk about it.

Lufthansa Technik AG, Marketing & Sales
www.lufthansa-technik.com

More information:
Call +49-40-5070-4780

More mobility for the world

Lufthansa Technik

President's Letter

Michael A "Mike" Metcalf
President . ISTAT

ISTAT's
11th Annual European Conference
Gleneagles, Scotland
"The Road to Recovery"

But will it be the high road or the low road?

Perhaps in keeping with airline history it will be the less imposing "middle road," but travelers may continue to make it the "road less traveled."

Clearly, the European and Asian carriers have something to crow about. They are experiencing a faster and more evident recovery from the global airline woes than their counterparts in the massive United States marketplace. Does this truly signal that they are on the road to recovery, and, if so, why? These were among the topics discussed at ISTAT's 11th Annual European Conference.

While the program produced many thought provoking topics and provided a forum for real, meaningful education, it was almost overshadowed by the pageantry of Gleneagles. The bucolic and awe inspiring setting of the Scottish moors, a world class golfing environment, a trip to settings encompassing the basis of western civilization and history, not to mention the elegance of the accompanying cuisine and continental service tied the proceedings into a package not soon to be forgotten.

For many of us, our true position in the food chain of flight expertise was humbled, as the Gleneagles falconry experts showed off their feathered charges, who also flew among the crowd and obstacles during the same aforementioned gale and what we human aviators would term "instrument conditions," and they did it without a union, pension plan, and/or even the remote threat of a strike.

Dawn O'Day Foster and her staff once again provided a flawless event. Last but not least, Tom Hiniker and the ISTAT Foundation capped off the perfect gathering by means of the silent auction to benefit the ISTAT Foundation and the awarding of a Segway HT transportation device to the ultimate lucky winner, David Lowe, Chairman of Belvest Limited in Pulborough, England. Our sincere thanks to IBA who sponsored the Segway on behalf of the ISTAT Foundation.

Back to the Conference: The thought-provoking topics issued from the program presentations. It soon became clear that the divide between the United States airline industry and its global counterparts is larger in geopolitical impact than the more center-stage trans-oceanic rivalry between Airbus and Boeing. Perhaps this explains why a true and meaningful "open skies" bilateral between the United States and the United Kingdom (among others) seems an impossibility.

At one point, an audience participant was heard to make the statement that, "the United States' airline industry's overall financial performance was a disgrace to the world's airline industry".

However, after having been to quite a few rodeos in my thirty-plus years in aviation and having tasted quite a

Metcalf | continued page 22

:: In This Issue

Jetrader opEDs

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.

ISTAT International Society of Transport Aircraft Trading
Dawn O'Day **Foster** Executive Director
5517 Talon Court . Fairfax Virginia 22032-1737 USA
T +703 978-8156 F +703 503-5964 E istat@istat.org
W www.istat.org
A ADVERTISING Ajax Newservice Inc 219 939 9581
stephen@ajaxnewservice.com | barbara@ajaxnewservice.com

Jetrader Editorial Board

SLIGHTLY OVER A YEAR AGO Mike Platt and I were tasked by the ISTAT Board to evaluate the *Jetrader* along with the various costs associated with publication and distribution. The mission profile was simple: improve this member service while at the same time reducing cost.

After months of research and careful consideration, the recommendation presented to the Board included not only the concept but also a clear and workable plan to incorporate the changes and achieve the cost reduction sought.

The result has now been seen by the membership and overwhelmingly we have received approval for the new look, the new content and direction and advertising support has started to gain momentum.

The jump from newsletter to magazine was a huge undertaking and not one without risk. In addition to a new look we had to reduce the cost. A key component to the concept was to establish an Editorial Board to define a focused editorial calendar. Mike and I were lucky enough to enlist Bert van Leeuwen, Head of Aviation Industry Research at DVB, as the third member to assist in this effort. His insight has been critical to the changes you have and will be seeing in the *Jetrader*. We thank him for his time and efforts. Mike Platt, Senior Vice President and Assistant Secretary at ILFC, has had a pivotal role in this transformation; his effort and time are certainly appreciated.

Get **Involved**

An integral part of this campaign is to encourage more of the membership to become involved. The strategy is to accomplish this by expanding the contributors to the content and soliciting a much wider variety of view points. To continue along the course established and to be successful, we call upon the membership to get involved. The *Jetrader* is constantly looking to identify topics that are of concern to the membership; as such, we welcome any and all suggestions, and/or articles. Shortly, the editorial calendar will be published providing the primary focus for each upcoming issue. We urge you to volunteer to submit an article, or perhaps tell us about an author that you have recently read that you believe would be of interest to the membership. As with any publication, we constantly are seeking to bring in new advertisers. Consider this - where else are you going to attain such a targeted and influential readership in this industry?

Finally, I would be remiss not to mention the great job done by Ajax Newservice, the new Editor and Publisher for the *Jetrader*. Their creativity and professionalism certainly show in the end product.

Mike Platt
mplatt@ilfc.com

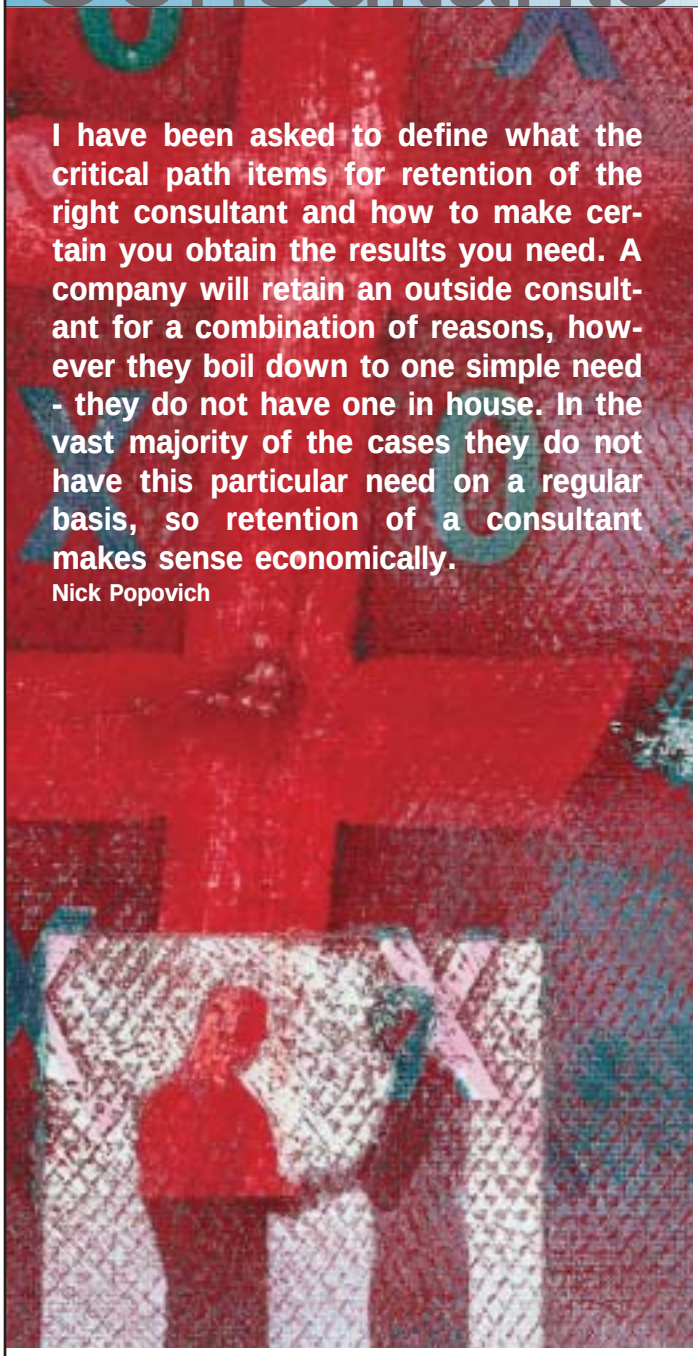
Nick Popovich
nick@sage-popovich.com

Bert van Leeuwen
bert.van.leeuwen@dvbbank.com

✖ Nick Popovich authored this issue's column

Consultants >> where to start

by Nick Popovich, sage-popovich



I have been asked to define what the critical path items for retention of the right consultant and how to make certain you obtain the results you need. A company will retain an outside consultant for a combination of reasons, however they boil down to one simple need - they do not have one in house. In the vast majority of the cases they do not have this particular need on a regular basis, so retention of a consultant makes sense economically.
Nick Popovich

When retaining a consultant it is important to remember that this is an industry that has literally no barriers to entry. Any one with a limited amount of knowledge can enter the market place and hold himself or herself out as an"expert." Over the years we have watched as individuals and companies have come into the market, many at reduced rates, to lure business only to be gone four to six months later, leaving some very unhappy clients in their wake.

Perform Reference Checks

On a regular basis, not only on the initial engagement, you should perform reference checks on your consultants to be certain that the standards are being maintained. Perhaps most importantly, know how they deal with problems and mistakes. We all make mistakes. It is inevitable. The real issue is how those errors are resolved. You want a consultant that steps up and takes responsibility and then resolves the issue at no cost to you.

I cannot stress enough the importance in checking references. Ask around and make certain that the consultant you retain can be trusted with your information, deliver a quality product, and that they will stand behind their work. Also check conflicts carefully. Make certain that the consultants cannot profit from information gained in your particular transaction.

Know Your Consultant's Client Base

Understand your consultant's client base, and other business ventures they are involved with. Does any one or small group of clients represent an overwhelming majority of their revenue? Do they have a business unit that conflicts with your operations? Are they in a position to exploit your information? Who are the people that will be assigned to your project? What is their expertise level related to your specific needs? How long have they been with the consulting company?

These questions are especially critical since 9-11. Additionally, since 9-11, we note that in order to supplement revenues, many operations are expanding by offering consulting services. In a few cases we have seen the conflict created and the resulting damages.

Guidelines

These are a few basic guidelines in retaining a consultant that will establish and govern the relationship and build the framework for a successful project.

- Demand a clear definition of the deliverables and time frames.
- Demand a clear engagement letter defining the nature of the assignment and costs associated or the billable basis
- Again, check conflicts of interest and obtain a full disclosure

The selection process is the easy part- next you have to be specific about what you are seeking- and how you expect it to be presented- the deliverables.

CONSULTANTS | continued page 6

JETRADER PROFESSIONAL LISTINGS

Here's another way for you and your company to **GET INVOLVED** and introduce your company to fellow ISTAT members and others who receive this publication. Easy to do because we do the layout for you. Or, see what you can do with a space that measures 3.417" wide by 1" high.

The price is right. Please email barbara@ajaxnewservice.com for single insertion and multiple insertion rates, or telephone 219-939-9581 for *immediate* personal service. Thank you to Tom Burke, Director, AVMARK Inc, for supporting the *Jetrader*. *See his article in this issue,* **Aircraft Future Values: How accurate is the forecasting?**

The Deliverables

Be clear as to workscope, authority, timetables, and what you want the end product to look like. The workscope should be the result of discussion between client and consultant and include all the parameters of the project. The authority vested in the consultant should be agreed upon at the onset to prevent delays or added costs and to keep the consultant from overstepping the boundaries. A clear timetable should be established with certain defined reporting intervals and progress checks. Finally what is the end product and how do you want it presented?

Enter into an engagement letter which defines the following:

- The parties and their respective positions and duties
- The workscope and timetable as above
- The deliverables - who gets them and who has ownership
- The handling and retention of documents and notes
- The consultant's authority and access to books, records, etc.
- Confidentiality
- Fees, expenses and other costs, when due and payable and the responsible party for paying the invoice
- Retainers if any and how handled and or applied
- How to modify the workscope or engagement
- Dispute resolution and governing law and attorney fees

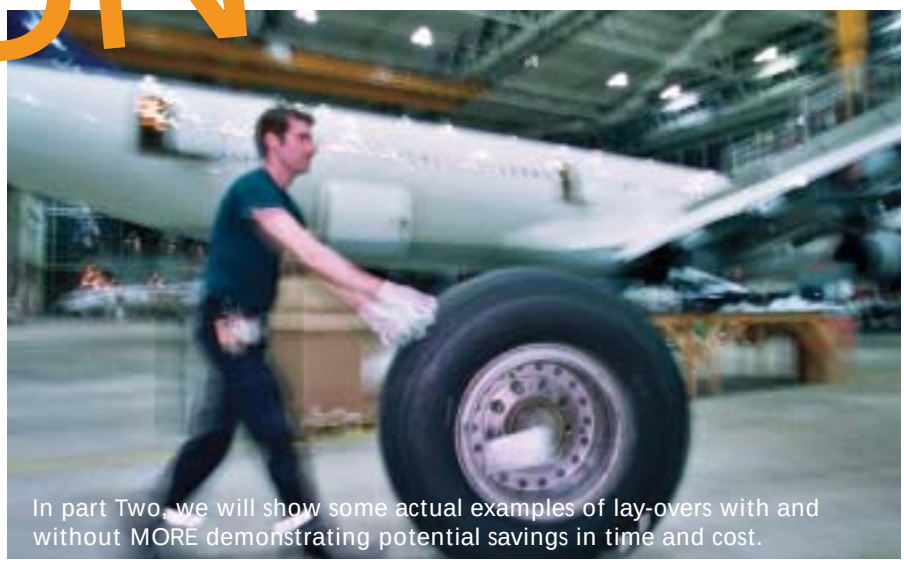
Reconfirm, in writing, any potential conflicts of interest, other clients of the consultant who may be in the same deal, or have conflicting positions. Get specific, and make certain that if you are going to waive the conflict, that all parties are in agreement as to what the terms are.

Lastly, understand and define your consultant's limitations, expertise and capabilities, then make certain that your project falls within those parameters.

About Sage-Popovich >>> *For over 25 years, our consulting practice has grown, gained recognition, and has become more active in the industry. We have helped promote improved strategies for dealing with both everyday issues and unique situations facing the aviation fraternity at each of the last three down turns. Our practice was built on our reputation for high success rate aircraft repossession, and the other services we provide.*

UNscheduled Events (1)

Dealing with risks from



In part Two, we will show some actual examples of lay-overs with and without MORE demonstrating potential savings in time and cost.

by Peter Huijbers, Director, Key Account Lessors and Banks,
and
Thomas Orlowski, Product Manager, Component services, Lufthansa Technik

TRANSITION CHECKS of leased aircraft frequently hold unpleasant surprises. It often only becomes clear during the actual transition lay-over that an even larger number of components have to be unexpectedly repaired or even replaced. On top, leased aircraft also have a potential to be modified beyond routine work for operation with a new registration and corresponding to other regulations, for example the conversion of the fuel quantity indication system from imperial to metric units. This can cause a rapid increase in the organisational effort, time and cost in processing this unplanned work, which normally means an incalculable cost increase for the owner / lessor.

The ideal fix would be a solution whereby the owner acquires a guaranteed availability of such components within the scheduled layover period. This, combined with a predictable pricing that allows the owners to make a firm planning on the financial side too. The costs of such a service should be transparent from the very start.

The idea was simple: provision of this service as a relation to the manufacturers' original parts prices. Find, on the basis of years of experience, a proper ceiling were a list price percentage makes sense, and from which level it would be too burdensome. Job number two: use as much as possible closed loop repairs, again based upon statistics. But here too, from a certain level, time is too short and exchanges or other solutions need to be established.

"After we got the set-up right, the combination of guaranteed component supply at fixed total prices with a long-term forecast provided lessors with a highly effective cost control tool during the critical transition phase," says Thomas Orlowski, Product Manager Component Maintenance Services.

A dedicated team of experts, controlling all work that arises during the lay-over - from the removal of the components to door to door transport by means of a high-speed logistics network, right through to the procurement of consumables and direct sales from available stocks is key. If required during the layover period, additional components that are not available are purchased within the scope of component sourcing.

Furthermore, reality proved that access to the AOG reserves (Aircraft on Ground, AOG) of the original equipment manufacturers, was a beneficial addition towards customer expectations. Last but not least in the row of "musts" is the required own repair procedure capability.

Typically, a most accurate end-of-lease inspection is required. "Virtually every aircraft's documentation contains either minor or major inaccuracies," says Thomas Orlowski who is regularly confronted with the task of finding the correct status of components in a transition, adding: "We nearly always find components which are not documented or don't belong in the respective aircraft."

The consequences of such an inaccurate aircraft configuration, if not corrected, can be significant. It is even possible for the respective aircraft to lose its certification for certain operational profiles, for example, if a particular component modification status is required for Extend Range Operations (ETOPS) and these requirements are not met. "The aircraft concerned would immediately lose its appeal to a whole group of potential lessees," says Orlowski. An integrated parallel independent valuation gathering data on the actual condition of the aircraft in an end-of-lease inspection would eliminate the last remaining inaccuracies and uncertainties hence optimizing the cost forecast.

Lufthansa Technik offers such a solution; MORE (Management of Component Overhaul and Repair). Many Lessors are using this service already, taking away a lot of headaches.

Aircraft Future Values: How Accurate is the Forecasting?

by Tom Burke, Director, Avmark Inc

Predicting the future value of commercial jet transport aircraft is a necessity for today's financing market. Aircraft residual value at the end of a lease or financing term and scrap value at the end of service life are integral to the financing equation. There are several companies that provide future value estimates, all of which provide somewhat different values in somewhat different formats. It is often asked how accurate are these forecasts. In this article, we report on a very small effort to establish a methodology and to get a feel for the range of accuracies that could be expected.

AVMARK was the first company to publish estimates of current and future values in 1976, giving us a long history of predictions. With this plethora of data, we can compare what we forecast for any out-year with our estimate of value when that year actually rolled around. It is also possible to observe how the forecasts change from year to year. That is, we can compare, say, a 1989 forecast for 2010 with a 1995 forecast for 2010 to gain an impression of the dynamics of the aircraft value cycle. There are many avenues of analysis possible and a great wealth of data available.

For this initial look we took data that was readily available, reasonably current, and for aircraft currently in wide use. We were looking to establish a reasonable methodology for addressing the question. The amount of data available is overwhelming. Consider that our forecasts each year cover more than 100 aircraft types, for every year of production of each type, and for 25 or so years in the future. For the sake of discussion, consider that if each aircraft type has a 7-year production run, we would have 17,500 data points to compare. That's the good news. The bad news is that the data are not calculated the same from year to year, so we have no real assurances that we are comparing apples to apples. Clearly, this is not an easily managed endeavor. However, it is worth the effort for there are significant insights to be gained.

The insights we intend to show include: the magnitude of the problem, a few of the various choices for evaluating forecasts, obvious limitations, and most importantly, what is the benefit in having a technique for "grading" previous forecasts. Could this be called a "seer review"? Finally, we address the question, what constitutes a good, acceptable, or bad forecast.

METHODOLOGY >>> We must mention statistical significance. A truly statistically significant investigation starts with random selection of data, from a well-defined population, in sufficient quantity to achieve a desired confidence interval: we didn't do that. For the pilot study reported in this article we picked information readily at hand for aircraft and years that we thought would be of interest to the ISTAT membership.

We also must mention several very important factors that have major influence on the accuracy of the forecasts:

- Aircraft in or out of production; we cannot predict when a production run will end.
- Maturity of the aircraft; we do not have good market data during the first year or so of production.
- Competition; new model aircraft maintain higher values until a competitor comes along.
- Configuration changes; two aircraft of the same type, model, and series built several years apart could have very different technology.
- Inflation; we estimate 2.31% as the long-term inflation trend, but actual inflation year-to-year can be significantly different.
- Base value and market value; forecasts are of necessity base values, AVMARK's estimates of current value are market values.

We selected three years to consider: 1989, 1995, and 2004. This selection provides six-year, nine-year, and 15-year forecast periods: short-term, medium-term, and long-term. We compare the predictions made in 1989 with our estimate of value in 1995 and with our 2004 estimate of value. Similarly, we compare our forecast made in 1995 with our estimated value in 2004 to produce our nine-year period. We selected a few aircraft types with the objective of looking at a cross section of situations: in and out of produc-

TABLE ONE

AIRCRAFT	FIRST YEAR OF MANUFACTURE	AVMARK FEB 2004 ESTIMATE OF VALUE + 2004 YEAR OF MANUFACTURE (US$ mil)	
767-200ER	1984	14.0	65.0
747-400	1989	50.0	140.0
A300-600R	1988	19.0	84.0
A330-300	1992	60.0	115.0
757-200	1982	12.0	51.0
A320-200	1988	16.0	40.0

Forecasting

tion, both narrow-body and wide-body as well as the two major manufacturers, and to explore the forecasting envelop a wide range of accuracies in our forecasts.

The aircraft selected are shown in the **Table 1**. This selection provides aircraft of varying age, some in production during the entire 15 years from 1989 to 2004. One aircraft was not in production in 1989, although we have a 1989 forecast for that aircraft. One aircraft is no longer in production. Three are Boeing and three are Airbus. The intent in this selection was to get a feel for the range of the problem space.

767-200ER (*Example Case*) To fully explain how we performed this analysis, we will step through the process by means of a series of tables, each a building block leading to comparative results. For subsequent aircraft, we will merely present the results. We have chosen to use the 767 as the example case because this is the least accurate of our forecasts. Since our intention is the explore the envelope, we must show bad as well as good results. This first case is the bad example, the good news comes later.

Table 2 is from the 1989 edition of Transport Aircraft Values (TAV), the AVMARK publication for future value forecasts. In the table, we show the estimated value of the Boeing 767-200ER in 1989 and the forecast value for the years 1995 and 2004 in current (then year) 1989 dollars, at the 1989 assumed inflation rate of 3.5%.

We need to take a moment to discuss constant dollars versus current dollars. For this work, current dollars are the points of comparison. To arrive at current dollars, an inflation rate must be applied to the base calculations, which are done in the constant dollars. In the TAV, we provide both tables, so the user can accept our guess as to inflation or use any other estimate of inflation to generate a different then year estimate of value. Having noted this, we will not mention constant dollars again.

In this table we show that in 1989 we estimated the value the aircraft by production year as shown in the row 1989, and we forecast that in 1995 and 2004 the aircraft would have values for those years as shown in the respective rows.

The next table is taken from the 1995 edition of Transport Aircraft

TABLE TWO 1989 TAV 767-200ER

767-200ER	Year of Manufacture					
	1984	1985	1986	1987	1988	1989
Forecast Year	Value in current (then year) $ mil at 3.5% annual inflation					
1989	33.00	35.30	38.10	41.50	45.50	50.00
1995	27.0	28.30	30.0	31.90	34.30	36.90
2004	25.60	26.00	26.60	27.50	28.50	29.70

TABLE THREE 1995 TAV 767-200ER

767-200ER	Year of Manufacture									
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Forecast Year	Value in current (then year) $ mil at 2.31% annual inflation									
1995	34.00	34.60	35.70	37.30	39.60	42.30	45.70	49.60	54.00	59.00
2004	32.30	33.20	34.50	36.40	38.90	41.80	45.50	49.40	53.40	57.90

TABLE FOUR 1989-1995 TAV 767-200ER

767-200ER	Year of Manufacture					
	1984	1985	1986	1987	1988	1989
1989 Forecast	27.10	28.30	30.00	31.90	34.30	36.90
1995 Value	35.00	34.60	35.70	37.30	39.60	42.30
$ Difference	-6.9	-6.3	-5.7	-5.4	-5.3	-5.4
% Difference	-20.29%	-18.21%	-15.97%	-14.48%	-13.38 %	-12.77 %

Values. **Table 3** was calculated with an assumed inflation of 2.31% to arrive at current year millions of dollars. It is important to notice the assumed inflation rate changed from the 1989 estimate. There is a brief discussion of the impact of inflation rates later. Table 3 shows that in 1995 we estimated the value of the aircraft for each year of production as listed in row 1995, and that we forecast the value for those aircraft in 2004 in that row.

The first evaluation is to look at the Table 2 forecast for 1995 and compare that to the Table 3 estimate of value in 1995. This comparison is shown in Table 4. The negative values for $ difference and % difference indicates that we underestimated the

FORECASTING | continued page 15

EVERYONE, including me, seems to be excited about this new format for our *Jetrader*. ISTAT Board members Nick Popovich, Mike Platt and Bert Van Leeuwen serve as a voluntary editorial board to assist Barbara and Stephen Iverson of Ajax Newservice in getting this informative publication to you. They put in a lot of effort and, unfortunately, it is not possible to stick to a very tight schedule. (That may be partly because contributors like me don't get their articles in on time.) Therefore, by the time you read this, the issues I will talk about may have already been resolved.

As I write it, however, we appraisers are facing an exciting opportunity to resolve a problem that has bothered us for more than 10 years. Since comparison to recent sales is the most used and most reliable method of determining current market value, the appraisal community requires current transaction data to improve the credibility and accuracy of our appraisals. In 1992, the U.S. Department of Transportation, originally at the request of United Airlines, but subsequently backed by most other airlines, agreed to withhold DOT Form 41 data from public disclosure. The airlines felt that the transaction prices for aircraft they bought or sold was sensitive and competitive harm would be incurred if the data were disclosed. The DOT agreed to withhold the data for 10 years.

Recently, the DOT announced that the 10-year period is up and that they would now release the transaction data for 1993 and 1994. United and UPS immediately filed objections claiming that even though the data are 10 years old they are still sensitive and should not be released.

In late 2004 the DOT issued a "Request for Public Comments" so that they might resolve the issue. While they were addressing the 10-year waiting period, they indicated that they would consider shortening or eliminating the waiting period for release of the data. Many of us in the appraisal community and some from the financial community have communicated their thoughts to the DOT and we will just have to wait and see how it is resolved.

Of course, ISTAT takes no position on the matter and has never done so before. ISTAT includes members who are appraisers who desperately need the transaction data but also includes members such as airlines and manufacturers who want the data kept confidential.

Their position is understandable to an extent. If U-Land It Airlines goes to Boeing to negotiate the price of their new B737, they would be at a distinct negotiating advantage if they new what price U-Take It Off Airlines paid last week, or last month. However, if You Took it Off bought their B737 10 years ago, or five years or even six months ago, can it really influence the current negotiations?

A recent event reminds me of the difference it would make for our industry and the public good if we had current transaction data. You may recall that when I first became Chairman of the Appraisers IBG, I used this column for a mid-year update. It has become the custom in recent years to have an appraiser panel at the annual ISTAT conference. Five or so appraisers give their current value opinions on several selected aircraft. At the Cargo Facts Conference six months later there is usually a similar panel and often it includes the same panelists and the same aircraft. So, I would give a mid-year update report on how their value opinions have changed. There is no longer enough room in the Jetrader to present all that again but I would like to give one example.

One of the aircraft included at the Cargo Facts panel was identified as a 1985 non-ETOPS B757-200 with RB211-535E4 engines. The range of current values given by the five appraisers was from $6,600,000 to $11,200,000. That is a range of from 25 percent below the average to 36 percent above the average for the group. Can't we get it closer than that? Well maybe we could with some help from the DOT. It turns out that, according to the BACK JetMart, during the 14 months prior to the Cargo Facts Conference there were nine B757s sold by U.S. Airlines that are required to report the transaction price. If the DOT were not restricting the discloser of that data, is it possible the appraisers could disagree so widely on the value of this aircraft?

This issue of credibility of appraisers brings me to another subject. Late in 2004, Airfinance Journal and Aircraft Economics began sending a daily e-mail newsletter called AirFive. It is quite informative and I would recommend you getting on their mailing list if you are not already on it. During early December they decided to conduct an online survey of lessor and banker attitudes toward appraisers. (As it turned out, some of the questions were aimed at ISTAT-certified appraisers in particular.)

I did not look at the survey at first because I didn't think it was any of my business. They were not looking for appraiser opinions about appraisers. Several days later, as a "news item" in their newsletter they reported that, to date, no respondent to the survey had checked that they agree with the statement "All appraisers know what they are talking about and are trustworthy."

Needless to say, I found this very disturbing. Has it come to this, that nobody trusts an ISTAT appraiser? So, I went to the survey to look at it and found this statement was one from a multiple choice question. An alternate response was, and I paraphrase, some appraisal firms are good and some I don't trust to give accurate appraisals. Who but an angry malcontent would say I don't trust any appraisers when the alternate choice is that some are good and some are not so good. It just shows how a survey's results can be distorted by the format of the questions.

I believe that if the timing is right with the publishing schedule you will find a separate report on the results of this survey elsewhere in this *Jetrader*.

The ISTAT Foundation

win a

MINI

support the Foundation's aviation scholarships, internship and aviation education programs

Underwriting Sponsors
DVB BANK AG
AUTOMATIC LLC
UNIVERSAL ASSET MANAGEMENT

Thank You

October 29, 2004
Roland H. Moore, Esq.
Mr. Thomas Hiniker

Dear Mr. Moore and Mr. Hiniker,

I just wanted to take this time to thank you for the amazing scholarship the ISTAT Foundation has given me. It has been very hard for me to push through this last year, due to financial worries, but receiving this award has given me the motivation to succeed that I started college with. I have a renewed excitement and anticipation of a great career in an even greater field. To me that is a greater gift than the actual money itself.

The check Mr. Hiniker presented me is right on my desk where I look at it every day and I still cannot believe it really happened. I find it difficult to even write this letter because how, exactly, do you sum up all the feelings one experiences when they are given such an opportunity by people that hardly know them, which leads to my appreciation of all those that supported me in my nomination to you. I already knew that I have the greatest family but I now realize you do not need to share a blood line in order for people to support you and have faith in your potential.

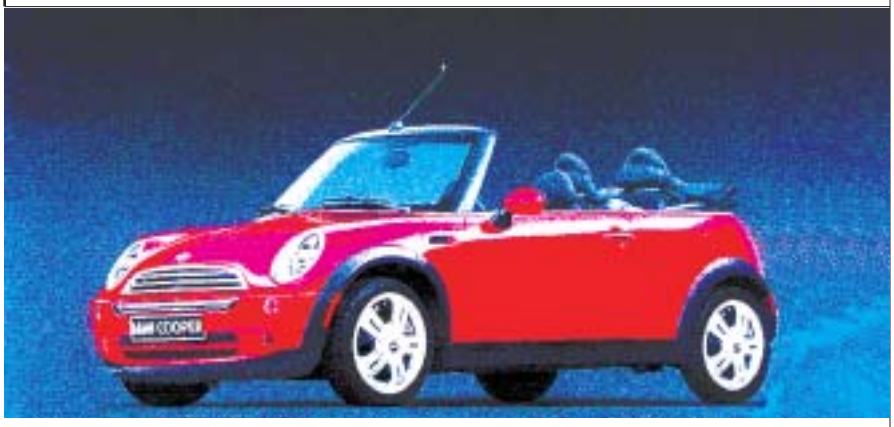
Mr. Hiniker saw first hand my reaction to your generosity but even those few tears could not fully explain or describe how much this has helped me financially and emotionally. You have helped change the life of a girl from a small town and a big family and I can only hope to return the favor to someone else someday.

With many sincere thanks,
Katryzina P. Zaranek, DWC '05

The F-U-N in Fundraising

by John Keitz

Fundraising can actually be fun. It is fun when the donations are generated by enjoyable activities and events and the participants give with a smile on their face. I think we have accomplished that in our last 2 silent auctions and certainly the live auction at last year's gala dinner. As we prepare for our 2005 annual meeting, we plan to keep the fun in fundraising with another silent and live auction together with the raffle of a mini-Cooper convertible! Last year's raffle of the Harley Davidson was hugely successful from a fundraising standpoint but not everybody was enthused about riding a Harley. There is no member of the ISTAT that would not want to be driving this beautiful mini-Cooper convertible.



We are also expecting to have some fun with our auctions. The silent auction at last year's annual meeting and the European annual meeting were successful events with bidders offering generous amounts for what I hope was exciting merchandise. We are going to expand the popular "logo tables" of moderately priced items of interest to everyone. On the autographed model side, actor Harrison Ford has agreed to autograph a model of his aircraft to raise money for scholarships. You can also expect to see models signed by Fred Smith of FedEx and other industry leaders. We are working on a couple of items for the Tuesday night live auction that should be spectacular.

The most "fun" in fundraising comes when we are able to provide benefits to a recipient to support our aviation scholarship program. With the scholarship program announced at last year's annual meeting, we have provided several direct scholarships to students throughout the world. As a continuation of that program, I am please to announce that the scholarship committee has selected Kelly Chandler, an aviation management student at Purdue University to be the recipient of the Automatic, LLC $10,000 scholarship. Automatic, LLC has donated the funds to support this scholarship. The ISTAT Foundation thanks Wayne Lippman and the entire staff of Automatic for their support.

Kelly Chandler has been a participant in the intern program at *sage-popovich, inc.* for the past two years, supporting *sage-popovich's* activities in special projects and aircraft inspection reports. Kelly has been an attendee at both ISTAT and Chi-Stat meetings and is a participant in planning the annual post-Chi-Stat golf outing dinner that *sage-popovich* sponsors. Kelly was a team leader for class projects at Purdue; she has also accumulated 22 flight hours toward getting her private pilot certificate. The scholarship will be used to help defray her college expenses.

I am particularly pleased to make this award to Kelly, not only because she is a bright, needy student who loves aviation, but also for the process that got her the scholarship award. The ISTAT Foundation encourages its members to nominate interns, like Kelly, where we can assist the student in their aviation education. Nick Popovich provided leadership in doing so and we encourage other ISTAT members to recommend worthy candidates to the ISTAT Foundation scholarship committee.

WHO'S ON FIRST, MATTER WITH AL

US President Truman reportedly said that he wanted to find a one-armed economist.>>>> Apparently this was because he was tired of replies to his simple questions, which contained disclaimers starting with "on the other hand". >President Truman was not the only human who liked straight and simple answers to his questions. >> The problem is that often reality contains more complexity than a simple answer can provide.

A simple question from the field of sports may illustrate the above. Let us eliminate the US sports like the statistics intensive baseball or the intellectually stimulating American football. A sport played everywhere is basketball. So, who is the best basketball player? We can look at various statistics.

One way would be to look at physical attributes like height, speed or stamina but these criteria are quickly dismissed. How about the number of points scored? That would favor centers over guards. Also, a great player may force the opponents to sacrifice few players to guard him freeing his teammates to score. How about assists? A great player should not just score points but help his teammates. And let's not forget shots blocked. And how about the accuracy of shooting measured in percent of successful shots? Or three point shots? A high accuracy together with very few shots taken is not good, though. So maybe we should look at the number of wins the team achieves? Should we look at statistics for one year or for a whole career? The list of questions and "on the other hands" can go on forever. How come we cannot come up with a simple answer to a simple question: who is the best basketball player?

Life is full of such complexities. So is aviation, being an (important for us) part of life. Does it mean that there are no answers to any questions? Clearly not. The statistics mentioned above all contain part of the answer. Using these statistics we can ascertain that Michael Jordan was a

OR WHAT IS THE
L THE ACRONYMS

A Primer

by Adam Pilarski

great basketball player, definitely better than Adam Pilarski. Was he the *best ever* is in the eyes of the beholder? Some people will bring some data pointing to somebody else; many will use the data to crown Mike. We all agree however based on objective statistics that he was one of the best who has ever played the game.

In aviation, we also face a multitude of complex questions that people expect simple answers to. Which is the best plane? Which is the best airline? If you had money to invest, in which plane would you invest? Again, there is no single and universal answer. There are parameters that help the questioner formulate an answer relevant to their peculiar circumstances. The industry is full of these statistics and of confusing acronyms, which often bewilder many of us. This primer is a glossary of terms with some background and examples of when a particular statistic is useful.

RASM, CASM, Yield and the like.

A big question is which airlines are profitable. If airlines make money they will buy aircraft making all ISTAT members happy. The terms of RASM, CASM and yield are often mentioned in this context. First, let us introduce ASM, which is simply the available seat miles or the total number of seats flown times distance. Hence, in Europe we have ASK or available seat kilometers. If ASMs go up it means either more people flew or they were flown longer distances.

We can add another concept of RPM (or RPK in Europe) to get revenue (confusing term meaning here actual paying customers) passenger miles, which are passengers that flew times the distance they flew. Dividing RPM by ASM gets us the load factor or how many of the available seats were actually occupied by revenue generating customers.

Now we are getting somewhere.

The infamous RASM is revenue per ASM or per available passenger mile. It basically tells us how much revenue the airline generated per seat flown one mile. It does not, of course, give us the revenue per actual passenger flown one mile. That concept is called yield, or revenue per RPM, not per ASM. Revenue per passenger is average fare.

So, is a high yield good? Well, yes and no, as economists say. You may fly one passenger with a very high yield in a 100-seat plane with 99 seats empty generating good yield but terrible RASM. So, yields are meaningful only together with load factors. Also, USAir had very decent yields but did not do so well because their costs per seat (CASM) were even higher. At the end of the day, it's profits that really count.

In real life, RASM and CASM are not that easy to calculate. Trying to figure out the profitability on a given route means having to make a lot of assumptions. How much of the revenue gained from passengers that connect to another flight should be given to that route? How much of overhead or cargo revenue and expense should be attributable to that route etc?

DOC, Seat Mile and the like.

Another simple issue is the question as to which plane is best. Cost is an important consideration. DOC measures direct operating cost or cost directly related to the aircraft like maintenance, fuel, cockpit crew

ACRONYMNS I continued page 14

ASM or ASK

RPM or RPK

RASM, CASM

"At the end of the day, it's profits that really count."

Adam Pilarski, PhD, *is Senior Vice President of AVITAS.*

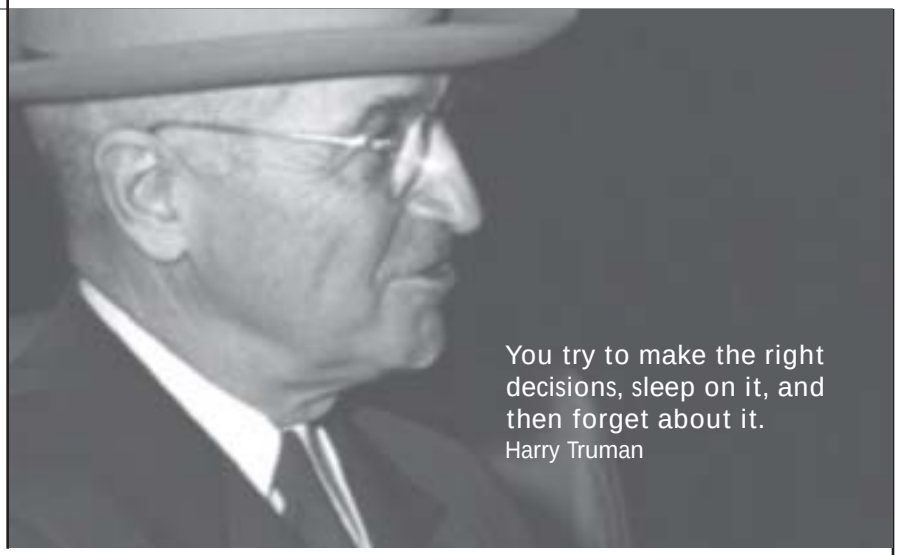
He may be reached at Gurudude@avitas.com

or landing fees. It does not include indirect costs like food, distribution costs or flight attendants. Should the airline look at the highest efficiency by selecting the lowest seat mile cost?

Comparing similar size 737NG or 727 can reveal that the former has lower seat mile costs because of lower maintenance and fuel consumption. On the other hand, again as economists say, using a large wide body will generate even lower seat mile costs, especially on longer routes.This is useful only, though, if you can fill the extra seats.In such a case an airline will prefer to look at total trip cost instead of seat mile cost.

DOCs, by the way, do change. As fuel prices change, a development we are in the process of experiencing, the cost of flying a passenger mile changes too. All of a sudden, a gas-guzzler à la 727 may look quite bad compared to a previous analysis.

All of us know there are many more factors in addition to seat and trip mile costs in determining which airplane is best. They include the customer base, the perceived residual value, the possibility of obsolescence because of the advent of new technology, the launch of competing products and the like. There are two things to remember. Really, trust me, more information is better than less. It should not be contradictory but rather represent trade offs. One plane may be a better buy for the short term by being less risky but having a lower possibility of a great upside. Another may be more risky but under certain circumstances may be a great hit. Which one is better?



True business geniuses (or just plain lucky people) will make the right choice. And those who complain about uncertainties and ambiguities, remember this: if everything could be perfectly predicted you would have no job. A simple computer would make all the decisions for your company.

Aren't we lucky life is full of complexities and uncertainties!

future values; we were low in our forecasts. If we had over estimated the future value, the differences would show as a positive number.

Looking at **Table 4**, we observe that the older aircraft (1984-1985) held value much better than forecast, where our forecasts were about 20% low. The forecast values of the newer aircraft were much closer to the 1995-estimated value, being on the order of 13% low. Across the board for this particular aircraft, during this particular period, our forecasts were low. Also observe that the estimates for the newer aircraft were more accurate than the estimates for the older aircraft.

We can complete the description of the methodology with a look at the 1989 to 2004 and the 1995 to 2004 forecasts. The starting point, 1989, is the same, but now we compare the forecast to the 2004 estimate of value. And we do the same comparison of the 1995 forecast to the 2004 estimate. These comparisons are shown in **Tables 5 and 6**.

From Tables 5 and 6, apparently the forecasts for year 2004 were off base, especially those done in 1995. Again, a positive number in the differences rows indicate that we over estimated the future value. Now, is this common, or a trend, or an aberration? We must look at the other aircraft in the study and also must consider the state of the current market overall and for the 767 in particular.

Our 2004 estimates of value are heavily influenced by two significant factors. Orders for the 767 are declining. The overall market for aircraft is still somewhat soft, albeit improving. At the time we produced out 2004 estimates of value, market values were running on the order of 15% below base values. Recall, as noted above, forecast value is of necessity a base value, while our estimates of current value are market values.

747-400

Having shown an example case of this methodology and the source for all data, we will henceforth show just one table for the other aircraft. That will be the equivalent of Tables 4, 5, and 6 combined. Source data and comparisons are done exactly as shown above, for the data available in each year. **Table 7** contains data for the 747-400 aircraft. 1989 was the first year of build for this model, so there is but one data point from that year. Observe very simi-

TABLE FIVE Comparison 1989 to 2004 767-200ER

767-200ER	Year of Manufacture					
	1984	1985	1986	1987	1988	1989
1989 Forecast	25.6	26	26.6	27.5	28.5	29.7
2004 Value	14	14.24	14.73	15.46	16.43	17.64
$ Difference	11.6	11.76	11.87	12.04	12.07	12.06
% Difference	82.86%	82.58%	80.58%	77.88%	73.46%	68.37%

TABLE SIX Comparison 1995 to 2004 767-200ER

767-200ER	Year of Manufacture									
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
1995 Forecast	32.30	33.20	34.50	36.40	38.90	41.80	45.50	49.40	53.40	57.90
2004 Value	14	14.24	14.73	15.46	16.43	17.64	19.1	20.8	22.74	24.93
$ Difference	18.3	18.96	19.77	20.94	22.47	24.16	26.4	28.6	30.66	32.97
% Difference	131	133	134	135	137	137	138	138	135	132

TABLE SEVEN Comparison 1995 to 2004 767-200ER

767-200ER	Year of Manufacture						
	1989	1990	1991	1992	1993	1994	1995
1989 F'cast	Current Year $ Mil						
1989	125						
1995	97.9						
2004	89.3						
1995 F'cast	110.00						
2004	109.70	112.60	116.40	121.00	126.90	134.40	142.90
2004 Value	50	50.75	52.25	54.5	57.5	61.25	65.75
$ Difference 1989-1995	-12.10						
$ Difference 1989-2004	39.30						
$ Difference 1995-2004	59.70	61.85	64.15	66.50	69.40	73.15	77.15
% Difference 1989-1995	-11%						
% Difference 1989-2004	44%						
% Difference 1995-2004	54%	55%	55%	55%	55%	54%	54%

FORECASTING | continued page 16

lar results as those from the 767-200ER tables. That is we were reasonably accurate in forecasting the short-term, in this case we were 11% under the actual value. While the longer term forecasts were less accurate, although much closer than the 130% high estimates seen in the earlier 767 data. In 1989, the 747-400 was a new product from a very successful and then market dominant type. This would seem to be the formula for holding high values. In 2004, orders for the 747-400 were down, hence the estimates of current value started to show a decline. This is a reflection that as an aircraft type starts to see the end of production the values decline.

A330-300 Our next aircraft is the Airbus A330-300. **Table 8** contains the data and comparative results for this aircraft. Note that in 1989, the first year of production was thought to be 1993 and AVMARK did provide a forecast of value beginning in that year, and continuing out to 2006. AVMARK has since ceased to provide forecasts for aircraft not yet produced. The basic problem is that to do so requires an estimate of the length of production run.

TABLE EIGHT A330-300 Comparisons

A330-300	Year of Manufacture				
	1993	1994	1995	--	2004
1989 F'cast	Current Year $ Mil				
1989	74.6	77.2	79.90		82.7
1995	67.90	73.50	79.90		
2004	52.10	54.80	57.90		108.90
1995 F'cast	92.00	93.30	96.00		
2004	95.80	96.80	99.00		
2004 Value	60.71	62.12	64.23		115
$ Difference 1989-1995	-24.10	-19.80			
$ Difference 1989-2004	-8.61	-7.32	-6.33		-6.10
$ Difference 1995-2004	35.09	34.68	34.77		
% Difference 1989-1995	-26%	-21			
% Difference 1989-2004	-17%	-13			-6%
% Difference 1995-2004	37%	36%	35%		

In Table 8 we see a new phenomenon. The 1989 forecast of the values of an aircraft not then in production were almost dead on. In fact, to come within 6% to 9% of any forecast is probably more than one could expect. For this aircraft, the 1995 forecast was also reasonably close. Of course, this also raises the question of what is a good forecast. How close must one be to have a "good" forecast? How far off must one be to have a "bad" forecast? More importantly, what were the factors involved in the forecasting process that drove the forecasts to end up as good or bad? As noted at the outset, for this small effort we wanted to address some of these questions. There is more to be done to delve deeper into the issues.

A300-600R The second Airbus aircraft we examined is the A300-600R. The results of our comparisons are show in **Table 9**.

TABLE NINE A300-600R Comparisons

A300-600R	Year of Manufacture							
	1988	1989	1990	1991	1992	1993	1994	1995
1989 F'cast	Current Year $ Mil							
1989	56.5	58						
1995	45.1	45.4						
2004	39.2	39.2						
1995 F'cast	48.00	49						
2004	30.90	32.9	50.90	53.80	57.60	62.50	68.30	75.00
2004 Value	19	19.48	35.40	38.10	41.10	44.50	48.30	52.50
$ Difference 1989-1995	-2.90	-3.60	20.43	21.87	23.78	26.17	29.04	32.38
$ Difference 1989-2004	20.20	19.72						
$ Difference 1995-2004	11.90	13.42						
% Difference 1989-1995	-6%	-7%	14.97	16.23	17.32	18.33	19.26	20.12
% Difference 1989-2004	52%	50%						
% Difference 1995-2004	39%	41%	42%	43%	42%	41%	40%	38%

We seem to be getting similar results across all of the aircraft. The forecasts done in 1989 were very close; the forecasts done in 1995 were not so good. It seems very likely that market conditions at the time of the forecast had great influence on the forecasts themselves, and the estimates of inflation do come into play. We do need to make a comparison of the results here with those for the 747-400. These two aircraft are very similar in production run, both are the latest variants of successful types, and both currently have a shortage of passenger aircraft orders and a few freighter orders. So this provides an opportunity to look for differences in forecast by aircraft manufacturer. The results are inconclusive, partly due to differences in data availability.

757-200(RR) Having looked at four wide-body aircraft, we now examine two narrow-body, starting with the 757-200 equipped with Rolls Royce engines. The results of our comparison are shown in **Table 10**. Please note that we show only the dollar and percent comparison in this table.

TABLE TEN 757-200 (RR) Comparisons

757-200	Year of Manufacture													
	82	83	84	85	86	87	88	89	90	91	92	93	94	95
$ Diff '89-'95	0.4	0.3	0.1	0.3	0.8	1.4	2.2	-3.3						
$ Diff '89-'04	9.4	9.3	8.9	8.5	7.9	7.1	6.2	5.1						
$ Diff '95-'04	4.7	5.3	5.8	6.4	6.4	7.4	8.1	8.8	9.5	10.1	10.1	11.0	11.5	11.4
% Diff '89-'95	2	1	0	-1	-3	-5	-8	-11						
% Diff '89-'04	44	43	42	40	37	33	29	24						
% Diff '95-'04	28	31	32	33	34	34	35	35	35	35	34	33	32	30

How close must one be to have a "good" forecast? How far off must one be to have a "bad" forecast?

Across the board, the comparisons show that the forecasts for this aircraft were consistently pretty good. There is a trend reversal here, however. In this case, the 1989 forecast was not as good as the 1995 forecast. This could be attributed to the fact that in 1989 the 757 was extremely popular, while in 1995 orders had begun to weaken in face of the competition from Airbus. This aircraft is the best case in terms of accuracy of forecasts. Notice the percent difference row for 1989 to 1995; essentially we were right on the mark.

A320-200 The sixth aircraft presented in this work is the A320-200, a very popular narrow-body, with over 1,200 in service. The results are shown in **Table 11**.

The results for this aircraft are similar to the others. The 1989 forecast was pretty good, the 1995 forecast not so good.

INFLATION

Inflation does play a role in the accuracy of the forecasts. As noted above, AVMARK currently considers inflation to average 2.31% over the long term. In actuality, inflation from 1989 to 2004 has averaged 2.88%. Inflation data taken from the US Government Bureau of Labor Statistics is shown in the **Table 12**, below. From 1989 to 1995, the average annual inflation was 3.5%, which is the value AVMARK applied in the 1989 forecasts. The AVMARK estimates for inflation were reasonably accurate, but look at what can happen. Of the three time spans considered, the inflation estimates used turned out to be very close to what actually transpired. That is from 1989 to 1995 actual inflation was 3.52 almost identical to the estimated inflation of 3.5. From 1995 to 2004, again the inflation estimate of 2.31 was very near the actual inflation of 2.42. This difference would generate only a 1% to 2% error in aircraft values. However, for the 15-year time span from 1989 to 2004, the forecast estimated inflation was assumed for all 15 years, yet the actual inflation was actually 2.42%. This difference produces a difference in about 15% in the future values. This is significant. Go back and look at what the % difference for the 15-year time span would be if all were reduced by 15%.

CONCLUSION

From all of the above, there are a few gems to take away.

We have explored the envelope and have found much variety. There is much work that could still be done, if there is a need for such a means of evaluating forecasting accuracy. Perhaps the ISTAT Foundation could fund a few graduate level dissertation on the subject. Perhaps a few of the other companies that produce forecast aircraft values could make their data available for similar pilot studies. Perhaps some of the users of the forecast data could tell us how the data is used and what is of most value.

Evaluating the accuracy of the forecasts is really in the eyes of the beholder. To produce a statistically sound evaluation such that we could make a statement such as, "At the 95% confidence level, forecasts are within 15%", would require extensive analysis across all aircraft type and all forecasters. This may be a worthwhile endeavor, but well beyond the scope of what we attempted to do here. Further, is there value in knowing such information.

We mentioned above the need to define a good estimate. Clearly missing by 80 to 140% is not in the range of good. Also, missing by less than 10% is probably lucky. It seems that for this small sample, from one forecasting source there might be a rule of thumb: forecasting accuracies are in the range of 20% to 30%.

TABLE ELEVEN A320-200 Comparisons

A320-200	Year of Manufacture						
	1989	1990	1991	1992	1993	1994	1995
1989 F'cast	Current Year $ Mil						
1989	32.00						
1995	25.10						
2004	21.60						
1995 F'cast	24.70	25.80	27.40	29.30	31.70	34.40	37.50
2004	25.30	26.70	28.40	30.20	32.60	35.20	38.20
2004 Value	16.18	16.53	17.06	17.76	18.65	19.71	20.94
$ Difference 1989-1995	0.40						
$ Difference 1989-2004	5.42						
$ Difference 1995-2004	9.12	10.17	11.34	12.44	13.95	15.49	17.26
% Difference 1989-1995	2%						
% Difference 1989-2004	25%						
% Difference 1995-2004	36%	38%	40%	41%	43%	44%	45%

TABLE TWELVE Inflation Data

Actual Inflation from Year to Year
(US Bureau of Labor Statistics CPI Data)

Years	Total Inflation	Average per Year
1989-1995	23%	3.52%
1989-2004	53%	2.88%
1995-2004	24%	2.42%

Tom Burke may be reached at
T 703 963-7028 >> *personal*
F 703 451-0660
E TomEBurke@aol.com
www.avmarkinc.com

Q + A

The Presidents of the Wings Club & ISTAT answer questions about their organizations

The Board of Directors of the **Wings Club** of New York City, and the **International Society of Transport Aircraft Trading (ISTAT)**, approved in 2004 an initial "working together agreement," whereby the two organizations would explore the potential for closer ties and operating arrangements.

Mr. Kenneth Gazzola, near left, President of the Wings Club (Aviation Week Group, Executive Vice President & Publisher) and Michael Metcalf, far left, President of ISTAT (Flightplan International, President) answerd questions concerning their organizations and the goals for the now active program, and hoped-for benefits accruing to the two memberships in the future.

The Wings Club, founded in March of 1942, with its founders' and leaders' pedigree reading like a Who's-Who of aviation history, includes Juan Trippe, Charles Lindberg, C.R. Smith, William Patterson and Eddie Rickenbacker. Their birth in the global war year of 1942 to today has been inextricably woven with the rich history and pageantry of aviation itself.

ISTAT is a much younger entity was founded in 1983 by aviation like-minded individuals who wanted a forum to discuss topics and ideas concerning the commercial aspects of aviation, air finance, and all facets of the global airline and aircraft manufacturing industries. Today ISTAT is comprised of approximately 1,300 very proactive global members encompassing both senior level executives and younger industry participants just beginning the path intended to mark their to-be-distinguished careers.

Both organizations are known for their charitable giving and scholarship programs; both recognize distinguished leaders in aviation; both programs share a common goal a thought codified in the Wings Club's initial goals, namely to: "at all times serve as a forum for the orderly and free expression of opinion."

WINGS CLUB

>>>>> *With the demise of Pan Am, TWA, and the lessening presence of airlines in the New York City area, how does the Wings Club intend to grow and refresh its membership rolls; likewise, with the global airline industry reeling from consecutive years of economic downturn how does ISTAT intend to continue its remarkable international growth and membership recruitment?*

Mr. Gazzola, Wings Club:
The move of the airlines out of New York began over 20 years ago and there has not been a major carrier based here since Pan Am's demise in 1991. The Club has broadened its base by appealing to executives in the consulting, financial services, investment banking and legal profession, among others, and reaching out to organizations, such as ISTAT. The largest occupational categories in the Club today are Consultants, followed by members working for airlines, aircraft manufacturers and investment bankers.

Mr. Metcalf, ISTAT:
The ISTAT Board has approved a program giving airlines corporate memberships at no charge; all membership fees and conference fees have been subsidized and kept artificially to hold costs down going forward. We have actively recruited senior level executives and industry participants as well as younger upwardly mobile aviation participants. Lastly, we have spent considerable time and effort on improving our Membership Directory and the quality and content of our in-house publication the JETRADER.

>>>>> *What are the major or notable events sponsored each year by your respective organizations?*

Mr. Gazzola, Wings Club:
We hold nine Luncheons at the Yale Club where a prominent industry guest speaks to the members and guests. Recent speakers have been: David Neeleman of JetBlue, Alan Mulally of Boeing, Joe Leonard of Airtran and Glenn Tilton of United. We also hold an annual Dinner-Dance in October at which we present our Distinguished Achievement Award to a deserving member of the industry.

Mr. Metcalf, ISTAT:
ISTAT has three primary events annually: our ISTAT Annual Conference held in the United States alternating between an East Coast and a West Coast site; our annual European Conference which this year [was] held at Gleneagles Hotel in Scotland and an annual cocktail reception held at the Paris and Farnborough Airshows respectively. Additionally, our ISTAT International Appraisers Program conducts candidate testing and appraiser continuing educations sessions in conjunction with our ISTAT Annual Conference, while the ISTAT Foundation provides fund raising golf tournaments and raffles at both the ISTAT Annual Conference and the European Conference.

>>>>> *Concerning those events and activities what is the biggest event of the year for your respective organizations?*

Mr. Gazzola, Wings Club:
That is easy. It is the annual Dinner-Dance, which typically attracts 800-900 attendees. The major Airline, Airframe and Engine and Avionics Manufacturers have become the major supporters of the event, inviting their major customers each year. However, our monthly luncheons are also major events because they enable our members and guests to keep current on major issues from the top airline executives.

Mr. Metcalf, ISTAT:
This past year's 21st Annual Conference was attended by over one thousand speakers, local dignitaries, and media. The conference was kicked off at the ISTAT Foundation Golf Tournament at the Diplomat's golf course along the Intercoastal Waterway in Hollywood, Florida.

The ISTAT International Appraisers Program conducted its annual candidate testing activities and its continuing education workshop and business meeting on the Saturday preceding the Conference. The Conference concluded with the President's Gala Dinner & Awards Ceremony.

>>>>> *The Wings Club "Sight Lectures" have long been known to contribute to aviation knowledge. Are there any other plans for the Wings Club to advance aviation awareness and education? The ISTAT International Appraisers Program is the largest certified and accredited aviation appraisal program in the world. Could you tell us a bit more about its future and goals?*

Mr. Gazzola, Wings Club:
Aside from our traditional Sight Lectures, we have an extensive library of aviation books which are under the direction of our Wings Club Historian. We are also looking into industry related conferences to add to the educational mission and value of the Wings Club.

Mr. Metcalf, ISTAT:
The ISTAT International Appraisers Program maintains contacts with the major aircraft and engine manufacturers to benefit from the latest market and technical briefings. ISTAT is also seeking educational ties with several aviation educational institutions. ISTAT Certified Appraisers are in the process of setting up a dedicated chat room wherein ISTAT Certified Appraisers can conduct discussions of topical interest and/or solicit qualified peer group help with particularly thorny questions which might arise in the appraisal process.

>>>>> *The Wings Club has long been known for its charitable giving and sponsorship of aviation scholarships. Could you tell us a bit of how this is done? The ISTAT Foundation has recently begun an enhanced program relative to aviation giving and scholarship activities. Could you further outline ISTAT's actions and goals in this area of endeavor?*

Mr. Gazola, Wings Club:
The Wings Club Scholarship Fund was formed in 1991 and scholarships have been awarded since 2000. At present, the Wings Club makes an annual contribution to the Fund that allows it to grant four-$5,000 awards to one student each from the College of Aeronautics, Dowling College, MIT and Purdue University. In addition the Club invites ten students each month who are pursuing aviation careers from a local educational institution as guests at the monthly Luncheon, sponsored by a Club Member.

Mr. Metcalf, ISTAT:
The ISTAT Foundation has raised the ISTAT Foundation's Scholarship funds to a new level and positioning itself, in a few years, to become one of the largest benefactors and administrators of aviation scholarship. Further, the Foundation is continuing gifts to aviation museums to memorialize aviation history and help to attract future generations into the industry; similarly the Foundation is interested in gifting to incubator programs which attempts to teach information concerning aviation topics in grade schools and early educational settings.

>>>>> *The global airline industry find themselves shaken by what many have described as "the Perfect Storm" of calamities to befall any singular industry sector. What role do you see your organizations playing as the future unfolds for those industry sectors affected since the horror of September 11, 2001?*

Mr. Gazzola, Wings Club:
First of all, continuing to provide affordable programs for our members is a given during this difficult time for the industry. Secondly, We have increased our Scholarship awards from one-$5,000 annual gift to four. Finally, we believe we must continue to attract industry leaders to speak at our Luncheons to allow our members and their guests to keep up with the dramatic changes the industry is experiencing, on a firsthand basis.

Mr. Metcalf, ISTAT:
We will continue to be a forum for all legitimate discussion of meaningful aviation topics, and hopefully an incubator of ideas and actions, which may be beneficial to both sides of any issue. ISTAT intends to continue its assistance to airlines by allowing subsidized membership cost to airlines on a corporate membership basis, in order to allow them access to the ISTAT organization and previously mentioned forum of ideas and discussion.

The on-going work of the ISTAT Appraisers Program will be critical in assuring continued ethics and educational discussions of the new techniques surrounding the sea change technologies attaching to such aircraft as the Airbus A380, Boeing 7E7 and the Embraer 170/190. Finally, we will continue the excellent formula attached to all of our Conferences.

>>>>> *More specifically what are your goals for the benefit of the members of your respective organizations, from this now active "working together" initiative?*

Mr. Gazzola, Wings Club:
We are obviously hoping that many more ISTAT members will become Wings Club members to add their industry background to our mix of members, and becoming active in the management of the Club by serving on Committees or standing for election to the Board of Governors. We also hope that the association would identify potential Luncheon speakers, either from the ranks of ISTAT or because of ISTAT's interest in a particular industry discipline. Finally, we are anxious to discuss possible joint New York City sponsored events that may not be feasible with single sponsorship. We are also encouraging our members to join ISTAT to broaden their industry involvement as part of our joint initiative.

Mr. Metcalf, ISTAT:
ISTAT hopes to find ways to grow its membership in this [New York] all-important capital of aviation commerce. Secondly, the ability of our members to avail themselves of the facilities through the relationship with the Yale Club could prove. Thirdly, as a longtime member of the Wings Club, I have long admired the excellent job the Club has done in recording, archiving, and displaying its role in aviation history, and since ISTAT has just appointed a historian to collect and record our two decade history going forward, much can be learned. Lastly, a chance to admire and share the rich history and accomplishment of the Wings Club will undoubtedly make ISTAT a better organization from the insight and lessons we can learn from the experience.

For more information ::
Wings Club website
www.wingsclub.org
Telephone 212-867-1770
email at wingsclub@aol.com

ISTAT website /www.istat.org
Telephone 703-978-8156, or by email at istat@istat.org

AVIATION HISTORY | Did you know?

by Bill Bath

Wrights' Kites

Although there is no clear evidence that the Wrights were aware of the fundamentals of flight that were published by Sir George Cayley in 1809 and 1810, (separate systems to provide control, lift and propulsion), they were following the same path in developing their gliders in1899 through 1902, and the powered Wright Flyer in 1903.

The Wright brothers were having a serious problem deciding how to control their unmanned glider in roll. This model was built in 1899 and was to be controlled from the ground like a kite. *Did you know they found a solution for controlling roll around the longitudinal axis when Wilbur sold an inner tube for a customer's bicycle?* While talking to the customer, Wilbur absentmindedly began to twist the inner tube's now empty box between his fingers. He then realized that in spite of considerable torsion the box retained its lateral stiffness, and that the same principal could be applied to a biplane's wings. It was their system of wing warping which enabled the pilot to control and turn the Wright Flyer as well as alleviate the effect of wind gusts; although like modern combat aircraft, the Flyer was inherently unstable.

Unlike the other pioneers, who considered stability to be a key factor for a successful flying machine and then decided that control could be thought about sometime in the future, the Wright brothers realized that stability and control for equilibrium had to be solved together if one was to remain

airborne. Here their analytical thinking as engineers, and practical experience with bicycles, were the foundation on which they developed their designs leading to the first successful controlled flight.

They reasoned that a bicycle is unstable and cannot by itself remain upright on its two wheels, yet a rider, besides keeping it upright on an uneven road surface, could, by using the handle bars and leaning slightly to the inside, make the machine turn in a fully controlled manner. Having applied this reasoning in developing the control system, the 1899 biplane kite incorporated wing warping for banked turns and a horizontal stabilizer for pitch control.

The kite had a wing span of five feet and a wing chord of thirteen inches. Two lines were attached to the front of each wing; one at the top and the other at the bottom of their outer struts; the free ends were fastened to two control sticks. When the ground operator, holding the sticks, tilted them in opposite directions to each other, thus twisting one wing up and the other down, the kite would bank and turn: when both sticks were tilted in unison and change the angle of the horizontal stabilizer, the kite would pitch either up or down.

The precise and quick response of the kite to the operator's commands proved the superiority of the wing warping system over the weight shifting, and other means of control, their competitors were attempting to use. The Wrights patented the wing warping design and in later years brought a number of patent-infringement suites against copiers of the idea.

They had solved the basic problem of control, now they had to tackle the complex problems of aerodynamics and a structure that could safely carry a man. After many set backs with the 1900 and 1901 manned gliders, when, among other problems, making a turn using wing warping, caused the greater drag of the outer wing's increased lift to make the inboard wing fly faster, and the Flyer to reverse direction and sometimes stall. Adding a fixed rudder cured the problem, but worsened the effect of wind gust induced side-slipping, due to the side drag on the rear mounted rudder pivoting the machine into the dive. They were finally successful with the 1902 model, by adding a movable rudder interconnected with the wing warping controls.

They then turned their attention to the problem of adding a propulsion unit and a means of converting its output to forward thrust; for this they invented and patented the modern-day propeller. The Wright's were the first to realize that a propeller was simply a wing traveling in a spiral course; before there there were none like it; after it there were no propellers that were different.

Using their wind tunnel and lift and drag equations from their previous airfoil tests, they developed what today we call "blade element theory". In addition to these equations, they had to incorporate other factors such as torque, thrust, blade width and planform, as well as the propeller's propulsive efficiency. The efficiency of the paddle propellers of the other pioneers was around 50 percent; that of the Wright's has been calculated to be around 75 percent. They designed it for 90 pounds of thrust, which required an engine output of approximately eight or nine horsepower; in static tests they measured the propeller thrust to be 132 pounds.

They were elated.

References: Peter L. Jakab, Visions of a Flying Machine, Smithsonian Institution, 1990. 1906 Wright US Patent, No. 821,393

Unraveling The Mystery Of Aviation Consulting

By Kevin Michaels, Principal, AeroStrategy LLC

CONSULTING is one of the least understood professions in the aviation industry today. Indeed, "consulting" is a nebulous term that can mean anything from hiring someone on a temporary basis for a specific task to the major studies performed by large, well-known organizations with vast resources and global reach. Some of this confusion may arise from the fact that many types of consulting lack the licensing or professional standards that govern other professional services, such as accounting and legal support. Thus nearly anyone can label himself or herself as a "consultant."

Consultants and consultancies have become an indispensable part of the knowledge economy and a vital element of the aviation industry today. This article aims to dispel some of the confusion surrounding consulting by explaining the different types of aviation consulting firms, outlining the conditions when to use and when not to use consultants, and identifying criteria for selecting the right consulting firm.

Aviation consultancies, A to Z

There are scores of consulting firms serving the aviation industry today, but what distinguishes one firm from another?

Perhaps the easiest way to distinguish aviation consultants is by the *functional expertise* that they provide. Some firms are technical specialists that bring specific engineering, maintenance, IT, or project management expertise to bear on a particular circumstance. Other firms are economic specialists, which provide independent valuations or forecasting services to clients. Firms like Avitas and Airclaims, for example, provide independent aircraft valuation services and are well known to ISTAT members. The third and largest category is general management consulting firms that counsel on issues related to strategy, market analysis, operations, business process redesign, and organization.

A second fundamental way to distinguish consulting firms is by *sectoral expertise*. No one wants to hire a consultant that is ignorant about their industry, and consultancies therefore tend to specialize in one or more market segments. This breed of consultants is very familiar with transportation economics and understands how drivers of air travel - including economic growth, trade patterns, and consumer preference - influence the demand for air transportation service and infrastructure. These firms are also very knowledgeable with airline operations and understand the inner workings of today's operators. SH&E is a good example of this genre of consultancies, and has advised airlines, airports, and governments for more than 40 years. These firms focus on the maintenance, training,

MYSTERY | continued page 22

However, after having been to quite a few rodeos in my thirty-plus years in aviation and having tasted quite a few barbeque sauces, I've come to the conclusion that the real taste of the meat doesn't change. By that folksy homily, I mean the following: *the United States airline industry is in the process of making a major structural correction in the labor-management equation that is desperately needed if the airline industry is to ever find a realistic pathway to sustained profitability, manageable growth, and meaningful service quality to paying customers.*

I find it extremely interesting that it took a trip to ISTAT's European Conference for me to recognize what is going on in my own backyard, so to speak. Thus proving the point, "change the environment and you change the perspective." I strongly encourage those ISTAT members who haven't attended the ISTAT European Conference to do so at the next opportunity, I promise it will prove enjoyable, memorable, and meaningful. Our appreciation goes to Collin Molloy of Finnair, who has, through his many years of hard work and diligent attention to detail, grown the ISTAT European Conference to the hallmark event that it has become.

Special thanks and many inadequate words of appreciation must go to the one and only "Cumbo," Bill Cumberlidge, who after this year will step down from service on the ISTAT Board after more than twelve years of ISTAT service.

The ISTAT Annual Conference which this year will be held in Scottsdale, Arizona at the Westin Kierland Resort & Spa with The President's Gala Dinner and Awards Program culminating with the presentation of this year's ISTAT Award to Mr. Fred Smith, founder of Federal Express on Tuesday evening March 8, 2005.

Fred Klein of Aviation Specialists Group is again this year's Conference Chairman. This year's line-up of keynote speakers: Mr. John Leahy of Airbus, Mr. Alan Mulally of Boeing, Mr. Steve Ridolfi of Bombardier, and Mr. Fred Curado from Embraer; from the world of airlines, Mr. Doug Walker of America West, Mr. Gerard Arpey of American Airlines, Mr. Tim Clark of Emirates, Mr. Robert Crandall of Pogo (formerly of American Airlines), and Mr. Jerry Atkins of Skywest. Other speakers include Ed Greenslet from The Airline Monitor, Frank Berardino, GRA, Steve Manley, Universal Asset Management, and always the headliner Dr. Adam Pilarski from Avitas.

Back will be the following panels: the "Appraisers Panel," moderated by Bill Gardner, the "Cargo Panel" moderated by Steve Fortune and David Sutton, and the "Operating Lessors Panel," moderated by Alan Coe.

Tom Hiniker and the Board of the ISTAT Foundation is raffling off a new Mini Cooper Convertible and they promise an even bigger and more creative selection of silent auction items, as well as some surprise live auction items to close the evening.

Finally, the ISTAT Foundation Board has arranged to present four scholarship awards at the President's Gala Dinner & Awards Ceremony. ISTAT particularly thanks the scholarship and Mini Cooper Raffle sponsors who make this segment of the program possible (Automatic, LLC, DVB Bank AG, Universal Asset Management, and the Batchelor Foundation). Thanks, too, to the ISTAT sponsors and ISTAT Foundation contributors who have given to the ISTAT Foundation as we move toward our overall goal of becoming the largest provider of aviation scholarships and one of the largest funding sources of aviation education programs.

MYSTERY | continued

logistics, ground handling, finance, and other services required to support the global fleet of tens of thousands of jet aircraft. The author's consulting firm, AeroStrategy, is often identified by its aviation services expertise.

A final way to distinguish consulting firms is by their size and resources. The largest firms, known as majors, can have hundreds or sometimes thousands or consultants in offices spread around the globe. They typically serve the aviation industry through aerospace/defense or transportation practices that feature smaller groups of industry experts. The tradeoff of these capabilities is cost, as majors are generally the most expensive consulting option. After majors are mid-tier consultancies. These firms are smaller and generally more focused than majors generally specializing in specific functions or practice areas while maintaining lower billing rates than majors. Finally, there are boutique consultancies that range from solo operations to firms with a handful of consultants.

Why use a consultant? Clients hire aviation consultants for a plethora of reasons. These reasons generally fall into one of three categories:

1) the client lacks the expertise or knowledge - Here, the client does not have internally the required market or functional expertise to support a business or strategic decision, process redesign, or transaction. And in these instances, the functional or sectoral expertise of aviation consultancies can add immediate value.

2) the client needs independent and objective advice - Businesses, like any human organization, are inherently political. Information is therefore filtered and channeled to meet the interests of individuals and factions -- sometimes with negative consequences. Consultants can improve business decisions by providing objective input to decision makers.

3) the client lacks the time and resources to get the job done in a timely manner - Today's lean organizations sometimes lack the human resources bandwidth to "staff up" for a major one-off undertaking that requires key employees and executives to multi-task. Here, consultants can be a catalyst that focuses 100% on an issue to get it resolved. This can be particularly valuable in instances where the cost of inaction is high.

When not to use a consultant It is just as important as knowing when to use a consultant as when not to use a consultant. There are several conditions where consultancies are not the best option. One condition is when the subject area underpins a crucial core competence to the firm. Business leaders should avoid situations where the use of consultants will hinder the development of the competencies that make their firm unique.

Another reason to avoid using consultants is when there is a strong desire to develop and train staff. It may make more sense, for example, to undertake a market study or redesign a crucial business process by empowering employee teams and holding them accountable for the results. Yet another reason not to use a consultant is when leadership uses them as a substitute for making difficult decisions that they should make on their own. All too often, business leaders know what needs to be done but hire a consulting firm to deliver the bad news.

11th European Conference | addendum

Lufthansa Technik

At the 11th ISTAT conference [Gleneagles], a Lufthansa Technik team headed by Peter Huijbers, Director, Key Account Lessors and Banks, presented Lufthansa Technik's service for banks and leasing companies - namely Total Asset Support (TAS®) - to a large number of interested industry partners. The two-day meeting was filled with presentations and discussions, but for Lufthansa Technik, the aspect of "people meeting people" was the most important.

Peter Huijbers: "We had excellent and fruitful talks with practically all of our customers - a clear indication of the business value that the ISTAT and its conference have."

The next ISTAT conference is to take place March 6-8, 2005 in Scottsdale, Arizona, USA. Lufthansa Technik again will participate at this event.

CALENDAR

March 6-8, 2005 ISTAT 22nd Annual Conference; Westin Kierland Resort, Scottsdale AZ :: Reserve your spot now at ISTAT@ISTAT.org.

May 9-11, 2005: SpeedNews Third Annual Aerospace & Defense Suppliers Conference, Park Hyatt, Century City, Los Angeles CA www.speednews.com/Conference/defense.html

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

Finally, a tautology is that consultants should not be hired when the value trade-off is wrong.

How to choose a consultant

Prospective clients should ask themselves of number of questions when contemplating the use of aviation consultants: -Is there a good fit with needs? Does the consultancy provide the needed functional or sectoral expertise to do the job? -Does the consulting firm have a track record of success in similar engagements? It can sometimes be valuable to ask for references or speak with peers that have recently hired the consultants. -How important is the brand of the consulting firm? In some instances, clients require a well-known brand, e.g. board-level decisions. In other cases, brand is less important. -Is there good chemistry with the consulting firm? Is there a sense that the client's organization can work effectively with the consultants? -What is the relevant experience and expertise of the consulting team? Clients should make a decision based on the experience of the consulting team, and not the partner that sold them the project. -Is there need (and budget) for the consultants to implement and monitor results? -Is there sufficient trust in the consultancy that it will do quality work and protect proprietary information?

Conclusion More than 200 years ago, Adam Smith wrote about comparative advantage and the necessity for the division of labor for win-win transactions in *The Wealth Of Nations*. Just as most manufacturing firms realize that vertical integration and complete self-sufficiency is not economically desirable, the same is true of information-oriented firms. In the knowledge economy, consultants are a necessary and sometime crucial supplier of value-added information and insight.

As the aviation industry becomes more knowledge based - and competitive - the role of aviation consultants is therefore likely to increase. Knowing when to use consultants and how to choose the right consultants will be critical decisions for current and future generations of aviation management.

Kevin Michaels, AeroStrategy Principal and co-founder, has 19 years of aviation experience, including more than 100 consulting engagements for leading aviation and aerospace companies across the globe. He has expertise in the aerospace OEM and MRO sectors, strategic planning, and industrial marketing. He holds BS - Aerospace Engineering and MBA degrees from the University of Michigan, and MSc and PhD degrees in International Relations from the London School of Economics. He manages the AeroStrategy North American office in Ann Arbor, Michigan

PEOPLE | going PLACES

AMSTERDAM

Most Traveled to City

by Mike Platt, *Senior Vice President & Assistant Secretary, International Lease Finance Corp.*

Favorite Hotel Sheraton Pulitzer - ask for a room away from the church bell tower or you might be woken up by the bells. Great painting in the restaurant.

Favorite Restaurant The Long Pura Indonesian Restaurant, a short walk from the Pulitzer, is a sure bet. For a more upscale restaurant, try the Asian Fusion restuarant in the Blake's Hotel.

Best Driver E-mail Ralph at ralph.q.s@worldonline.nl He will pick you up in his nice new Mercedes drive you around all week and give you one bill that is the same rate as any taxi at the end of your trip.

Best thing to do on a day off Visit the Van Gogh Museum, bike ride through the Vondel Park, and see Rembrandt's "Night Watch" (*pictured above*) at the Rijksmuseum.

LONDON CORRECTION

Tom Burke, Avmark, Inc., who wrote about London in the last issue of *Jetrader* in "People going Places" has corrected the name of the Turkish restaurant on Warwick Way to MARMARIS.

If you would like to share your travel experiences in "going PLACES," please contact us. Your format - long or short. Photographs of people and places encouraged. Questions welcomed and answered promptly.
Publisher barbara@ajaxnewservice.com

ISTAT Members & Visitors: Welcome to Arizona!

Home of

THE EVERGREEN AIR CENTER

the 4th Largest Commercial MRO in the USA

QUALITY MAINTENANCE IN SOUTHERN ARIZONA!

At Evergreen, quality comes first:

HEAVY MAINTENANCE
LINE MAINTENANCE
COMPONENT SERVICE
INTERIORS
STRIP & PAINT
RECLAMATION
AIRCRAFT STORAGE & PRESERVATION

For our competitive pricing and slot availability: 1.800.624.6838

EVERGREEN AIR CENTER, INC.

FAA Approved FAR Part 145 Repair Station with FAA Class IV Airframe Rating (#ERKR675D)

Pinal Air Park, Marana, AZ 85653 *info@evergreenac.com* *www.evergreenac.com*