Future of International Aviation

for

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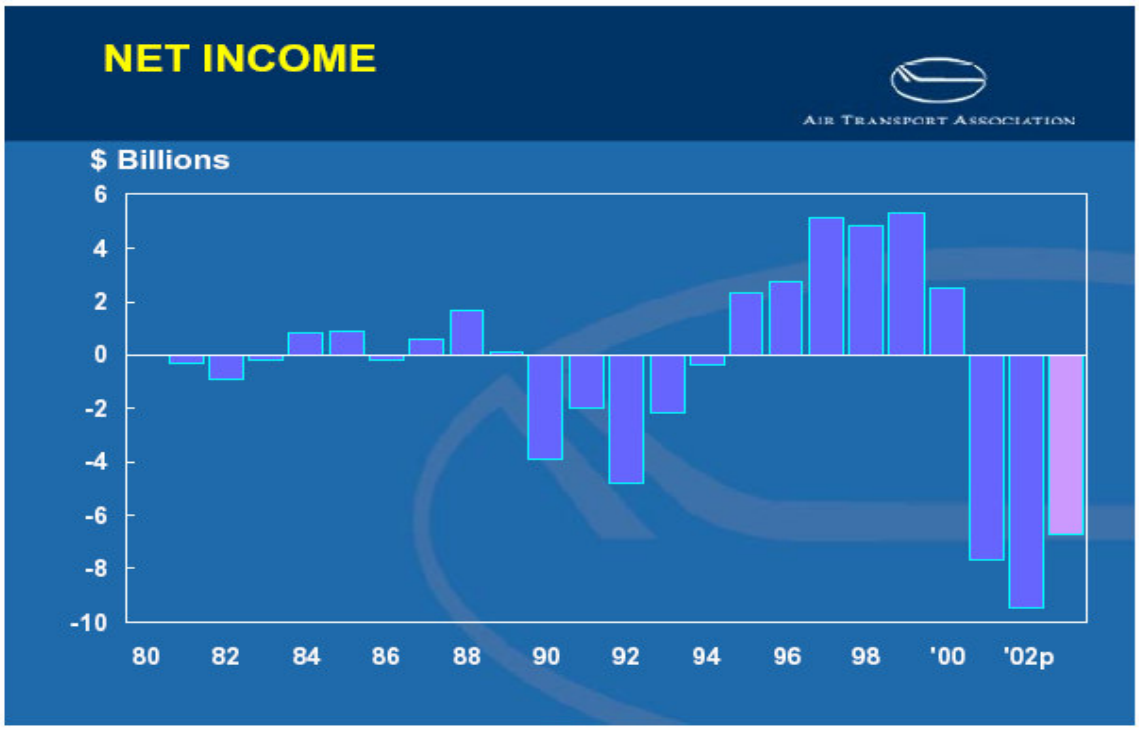
ABSTRACT

My research paper deals with the future of international aviation. I will focus on certain aspects of this broad field, like a general outlook into the future of the aviation industry in the United States and the impact of the war with Iraq on the industry. Graphics will be presented, showing the condition of the industry. Other covered topics are the future of the air cargo industry and a focus on two special aircraft, namely the Airbus A380F and the Antonov 225 – "Mriya", which, in my opinion, are going to play a major role, in a certain way, in the aviation cargo industry. The end of this paper contains a summary, interpreting my findings.

INTRODUCTION

The airline industry is in a very active phase, especially after the effect of September 11th. This is the case in the United States as well as in the rest of the world. Most airlines are in the worst condition in the history of aviation. It is generally believed and documented that September 11th was the last "nail in the coffin" of an industry, which already suffered of immense overcapacity. I think that the War with Iraq gave the aviation community the last push into its current crisis.

This page contains a graph taken out of the Air Transportation Association web site (http://www.airlines.org/public/industry/bin/IndustryUpdate.pdf), which illustrates the current condition of the industry and gives a forecast in the future.



The graph shows the total net income of the industry in billions of U.S. dollars. As you can see, the profit in the mid till late nineties was immense (almost $6 billion), but dropped at the end of 1999 tremendously (down to $0). I would refer this phenomenon to the overcapacity in the industry. The effect of September 11th explains the tremendous loss around 2001 and 2002. The highlighted column is a forecast of the ATA. They predict that the profit of the airlines will increase (the loss will be less) in the next year, despite the war with Iraq. On the other side, Ken Kaye, a writer for the Knight Ridder/Tribune Business Week, states that "Major U.S. air carriers lost more than $10 billion in 2002, laid off more than 82,000 workers and mothballed more than 550 airlines. The airlines likely will face another $9 billion deficit this year (2003) and layoffs will continue"(Kaye, K. (2003). Struggling airline industry pins hopes on innovative, creative future. *Knight Ridder/Tribune Business News,* pITEM03075013.). In my opinion this is a probable assumption. I assume that, after the war will be over, there will be an economic revival throughout the industry, once the general public is convinced that flying is safe again and they use the airplane again more often as a mean of transportation. Facts like in Mr. Kaye's article "Struggling Airline Industry Pins Hopes on Innovative,

Creative Future", where he talks about projects like "The Japanese government hopes to put into service by 2012 a new-generation supersonic transport, bigger and faster than the Concorde" and "On a smaller scale, Moller International, a California company, has developed a flying car with four propellers, one at each corner, capable of whisking around town at 350 mph" "(Kaye, K. (2003). Struggling airline industry pins hopes on innovative, creative future. *Knight Ridder/Tribune Business News,* pITEM03075013.), make me even more believe that the future of aviation is secure, most probably in other forms as we know them today.

Some last facts, underlining my opinion that the aviation industry will recover, I would like to present, are from Mr.Aardemas' AVS 280 class. There he states in his notes, that the number of commercial aircraft in service in 2001 was 7,000 and that this number will rise up to 11,000 in 2013, which equals a growth rate of 3.7% per year. Mr.Aardema also said that regional jets will increase in number from 696 in 2001 to 2894 in 2013, the number of turbo-prop aircraft will, on the other hand, decline. Further in his notes I read that "passenger traffic is expected to increase 2.5% per year after 2004". The regional/commuter traffic is expected to grow 6.5% per year. I am convinced that Mr.Aardema received these

information from a trustworthy source. Furthermore, I think that these facts underline my opinion, that the international aviation industry, although in it's deepest low ever, will recover, as it did several times before.

Regional and International

After this rather general outlook at the airline industry, I would like to focus on a certain aspect, namely the growth of the regionals and the shrinking of the majors. Robert Sheppard stated already in Maclean's in 2000 that "Continuing the trend that began in the early 1990s, the race for the commercial skyway is being won by both the nimble and the bulky" (Sheppard, R. (2000). The nimble and the bulky. *Maclean's*, 24.). Talking about the nimble and the bulky, he means small 20- to 90-seater regional and big jumbo jets. He quotes Tae Oum, an aviation expert from the University of British Columbia, who calls these small planes "hub busters" (Sheppard, R. (2000). The nimble and the bulky. *Maclean's*, 24.). According to Mr. Sheppard "an American market research company predicts 4,400 regional jets will be added to the world fleet within the decade" (Sheppard, R. (2000). The nimble and the bulky. *Maclean's*, 24.). Bombardier, the biggest producer of regional jets, accredited more than 273 new orders in 2000, and I think the numbers are growing every year.

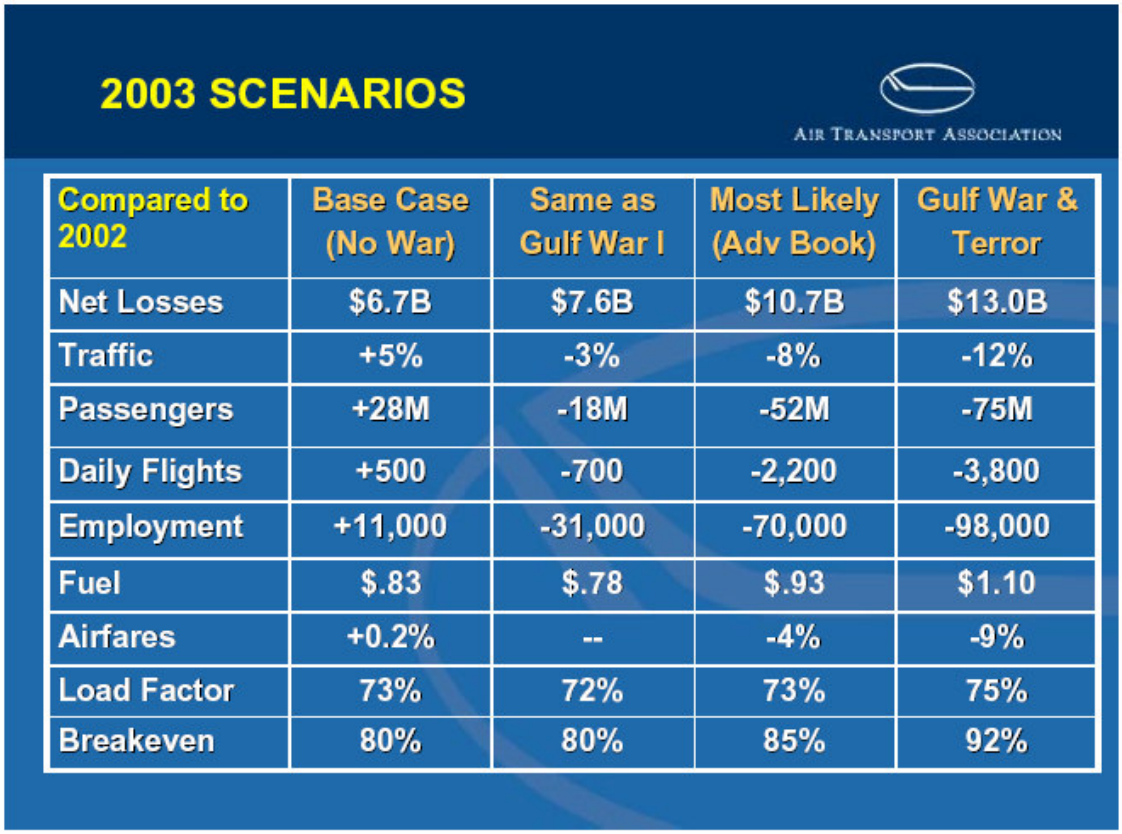
On the other side there are the "bulky", the big airplanes. In his article, Mr. Sheppard refers to the A3XX, which is now called the A380. The A380 will be the biggest commercial airplane ever build. In Sheppard's text it says "the European group (Airbus) says it expects to produce as many as 1,500 of these brutes over the next 20 years, primarily to ease congestion at the world's largest airports" (Sheppard, R. (2000). The nimble and the bulky. *Maclean's*, 24.).

I share this "picture" of the future. In many of my classes instructors express a similar opinion. I think that the regional of tomorrow are going to be as big as majors today, but will only serve the domestic market. On the other hand, the majors of today will most probably split up into an international part and a domestic part, trying to optimize each part.

Impact of the War with Iraq on the Industry

Just like I already mentioned at the beginning of this research paper, I believe that the war with Iraq is pushing the aviation industry in an even deeper crisis than it already is. That is why it is commonly believed that this is the worst scenario in which the industry has ever been. In a news report on March 26th, the ATA says that "the war effort is taking a heavy toll on demand for air travel" (www.airlines.org/public/news/display2.asp?nid=6566).

Further in the article it says "System wide drops in traffic ... have forced carriers to make additional capacity cuts and eliminate more than 10,000 jobs in the first week of the war". According to the same text, there was a 25% drop in traffic in the Atlantic, 13% on the Pacific, and 8% in Latin America. ATA says that there will be no relieve and that the situation will get even worse. In a presentation at the ATA web page http://www.airlines.org/public/industry/bin/IndustryUpdate.pdf I found this graphic, which illustrates the various scenarios of a possible war with Iraq.



Compared to 2002	Base Case (No War)	Same as Gulf War I	Most Likely (Adv Book)	Gulf War & Terror
Net Losses	$6.7B	$7.6B	$10.7B	$13.0B
Traffic	+5%	-3%	-8%	-12%
Passengers	+28M	-18M	-52M	-75M
Daily Flights	+500	-700	-2,200	-3,800
Employment	+11,000	-31,000	-70,000	-98,000
Fuel	$.83	$.78	$.93	$1.10
Airfares	+0.2%	--	-4%	-9%
Load Factor	73%	72%	73%	75%
Breakeven	80%	80%	85%	92%

I personally think that the scenario in column 3 (Most Likely [Adv Book]) is so far the most accurate one. The net

losses of the industry are indeed around $10 billion so far. The other numbers might seem too high but I would like to outline that nobody can predict how long the war will last, and even less, how long the impact of it will prevent people around the world to use airplanes. Although it is difficult to say how intense the impact of this war will be on aviation, I would say that the outcome after the war will lie between the "Most Likely (Adv Book)" and the "Same as Gulf War 1" forecast. In the case that, after the war is over and the industry will be struck by another heavy terror attack, then the scenario "Gulf War & Terror" will be the more probable case. As the numbers show, such a scenario would devastate the aviation industry not only in the U.S. but, in a certain degree, also the industry world wide.

Future Aircraft: the Airbus A380

The topic of this paper is, as mentioned before, the future of international aviation. That is why I have to mention this airplane, because, in my opinion, it will revolutionize the airline world. Capacities like 555 passengers in a typical three-class interior layout are unprecedented in aviation history. The following picture shows a schematic, illustrating the seating configuration of the plane.

The A380, according to the airbus web site www.airbus.com, is designed to "bring new standards of comfort and better economics". The concept is also aiming at the congested airports of the world. With its huge capacity, it would loosen the situation. Chicago O'Hare International Airport might be, for example, served in approximately 2007(www.airbus.com). I think this idea makes sense to me. If I, as an airline operator, could fill up such a plane, rather than sending out 3 smaller ones, then it will, not only reduce the congestion around the airport, but also reduce my operating costs. Airbus claims, that the A380 will be between 15% and 20% cheaper in operating costs than any other comparable aircraft. Also, the freighter version will change the standards of today's aviation. With 150 tons of payload it will even surpass the Airbus Beluga, which is used for extra large cargo. The A380 will change the international aviation industry, not only by it capacity, but also by its' range. 8,000 nm or 14,800km

(www.airbus.com) are unmatched in the industry. I can imagine that this plane will be used on very congested routes, for instance over the Atlantic, and on long-haul routes, for example between Europe and south-east Asia or Australia. As the following picture, which was taken from www.webshots.com, shows, my assumptions are not too fantastic. It shows an A380 in the colors of Qantas, which serves the Australian market. Similar pictures are available, showing for example Singapore International Airlines and Air France.

(www.webshots.com)

All in all, I would say that, with the entrance of this aircraft in 2006 in the aviation market, it will clearly change the industry. The constant growth of the world population and the globalization effect in the business world make this plane a necessity.

The Future of Cargo Aviation

The future of international aviation is also the future of cargo aviation. This branch of the aviation industry is experiencing a tremendous growth during the last years. The two biggest all cargo airlines are UPS and FedEx. UPS has a cash flow of $24 billion and FedEx has $14 billion. Mr.Aardema in AVS 280 claims that the annual growth rate of all cargo operators is 5%. Further in his notes he says that the amount of cargo planes will rise from 1,000 in 2001 to 1,559 in 2013. Another aspect of his notes talks about the revenue ton miles, which constantly rise since September 11th. Airplanes in the future will, in my opinion, grow in seize in order to keep up with growing transportation activity.

Antonov 225 – "Mriya"

One aircraft that will be able to do so, will be the A380F. Looking even further in the future I have to go back around 15 years, when according to the web side www.flug-revue.rotor.com "on 30 November 1988 the An-225 Mriya (dream) was introduced to the amazed world for the first time". What fascinated me was the fact that this plane already used fly-by-wire system, according to the previously mentioned web side, and that its' maximum take off weight is 600 tons with a payload of maximum 250 tons.

These are characteristics which are unmet in aviation. According to www.flug-revue.rotor.com, there are plans to use this biggest plane ever again in service. Apparently "the British freight charter specialist Air Foyle", so the article, has plans to revive the An-225, serving, for example, plenty of customers in the USA. Although this huge plane, which many WMU students and instructors do not even know that it exists, might at the moment only serve a rather small niche in the cargo market, I am convinced that planes of this dimensions will some day be present in much larger quantities in the air cargo business.

CONCLUSION

Summary

The data that I found helped me to understand the various aspect of the possible future of the international aviation industry. I learned about the impact of war on the industry and that creative ideas, like the A380, aim on the future market and might even help the industry to get back on its' feet earlier. All in all I would say that it is just a matter of time till the industry gets back to better condition.