Written Testimony. Matthew G. Andersson. US Senate Subcommittee on Aviation. "New Aircraft in the US Aviation System." 28 September 2006.

Introduction

Members of the Senate Aviation Subcommittee, I appreciate this opportunity and am pleased to testify this morning on a very important topic.

My comments here, as well as my purpose today in answering your questions are necessarily limited to VLJ economic, business and policy issues and their implications for the NAS, ATC modernization and FAA reauthorization. I am an exclusive senior consultant to CRA, not an employee; some views may be strictly my own professional ones.

Of course I welcome any inquiries you may have on broader civil aviation development, and will endeavor to respond to the best of my abilities.

Background

My relevant background briefly, includes more than 25 years of private and commercial aviation management experience, including over 10,000 hours as an Airline Transport Pilot. I come from an aviation family. My father, Lee, was a Navy veteran and Eastern Airlines Captain. My mother, Bobbi, was a Colonial Airlines DC-3 "stewardess." I leaned to fly at age 11 in a Piper Cub on a grass field in Connecticut, and graduated from Embry Riddle Aeronautical University at age 19. I received a B.A. degree and studied economics with W.W. Rostow at the Johnson School of Public Policy at the

University of Texas at Austin and received an MBA in economics from the University of Chicago. I was the Founder and CEO of Indigo Airlines, an American Express Corporation backed venture and currently serve as a Senior Aviation Consultant to CRA International (Charles River Associates) a leading provider of economic, financial, business, legal and regulatory consulting, recently ranked by Forbes among the top 100 fastest growing service firms, founded and in business continuously since 1965 with over 1,000 specialists around the globe serving Fortune 500, government and new businesses across more than 12 sectors including aerospace, defense and transportation. Our firm is comprised primarily of Ph.D. level economists, engineers and other specialists and is known worldwide for its innovations and expertise in travel analysis and forecasting.

Overview of VLJ EI analysis

The VLJ economic impact study that you have been supplied with and that our firm produced was commissioned by Eclipse Aviation and is part of a growing body of formal analysis directed at producing a sharper understanding of this important new transportation initiative.

My objectives here today in this particular forum are not to provide an oral defense per se of the study but to help explain some of the features of the results, and to translate these into real world examples, including their merit as indicators of industrial and market development, such that the nation's aviation infrastructure is contemplated in light of demands on system modernization and processing capacity, consumer/constituent benefits—and of course, ATC funding.

The EI study concludes that a range of VLJ production is reasonable and provides from a base-case and higher production scenario, likely economic impacts organized as user, direct, indirect and induced. There is not a probability weighting across the scenarios but a sensitivity to variance addressed through production variation. Moreover, it is important to understand that our focus was on EI, given certain assumptions of VLJ production. We are currently conducting a much more formalized and comprehensive unit forecasting analysis.

As for the reports accuracy, only one thing is certain: it will be wrong. All forecasts are. But getting it "right" also means what "right" means. This can range from the right numbers, to the right market and industry direction, the right trend, to the right reality, the right view of the world. And for some descriptive comparison of previously unexpected developments in air travel, consider, among others, the growth of shared or so-called fractional jet services. In 1985 this industry didn't exist. Today, one company alone is considered a "top-ten" airline with a fleet as large as the world's largest airline, and as an industry continues to attract record numbers of consumers. In 2005, the private jet industry was the recipient of over $10 Billion in new business that consumers diverted from traditional airline service. Why? This is how consumers—your constituents—increasingly want to travel.

Competitive Airspace considerations

Allow me to preface some remarks concerning NAS management with an underlying position: the current debate (contest) between the airline industry

and the general aviation/private jet sector is an ill-founded one; it is unproductive, distracting and unnecessary. Various sound bites including "a blip is a blip;" "mosquito fleet" or "Pterodactyl airlines" are not helpful and needlessly antagonistic. Most importantly they are not accurate. Consider for example, the airline industry. Their position may not even be relevant to today's topic. Airlines are concerned right now especially, not so much with the future, but with survival. Airlines are subject to a legacy regulatory system that is central to their struggles. The "Hill" is merely another platform for cost divestiture in the absence of a comprehensive, supportive regulatory and policy regime. As for the notion of a "mosquito fleet," I prefer a smart team of peregrine falcons, of fast swallows, or a VLJ family of "worker bees," pollinating their environment and experts at making honey.

Relatedly, the consternation over so-called user fees may be misplaced. The FAA broadly, is in my view a public good that will be publicly financed, with targeted private participation. User fees may serve as a proxy for private sector financing preconditions. Then again, they may not. And future infrastructure finance requirements likely in high excess of both funding levels and funding duration stemming from this limited component. And of course the source of funding is fungible and always the same: the consumer. Whether various income, sales, estate, transaction or ticket tax receipts; user fees passed through to the consumer; or private equity investing pension funds, the consumer pays. We can vary the descriptor but the subject remains unchanged. As for "new aircraft in the NAS" it may be helpful to consider that long before the concept of an airline was introduced, aviation was born from individual aspiration; of individuals operating small,

private aircraft for personal and business purposes. And right alongside the introduction of the very first passenger jets were also the very first business jets; including the Sabre, Jetstar, Lear Jet, Falcon, Gulfstream (in civil and military use) and now the VLJ: a natural development from a long series of built-to-purpose aircraft.

UAVs in the NAS

Concerning UAVs, I limit my response to the following issue: detection. UAVs must possess 4-Pi steradian or full spherical coverage to operate safely outside restricted airspace in the NAS. UAVs must posses a sensor capable of fulfilling the FAA's "sense and avoid" requirement and this must be applied across the full range of UAV types, from large winged loiter craft to small tactical UAVs that may require a ultra-wide-band (UWB) capability for high range-resolution across microstrip patch-array antennas directed at object avoidance (power lines, telephone poles, buildings, towers, trees etc). I direct your attention to Mr. William Cotton, President, Flight Safety Technologies, Inc. for further elaboration and possible expert testimony on this subject.

Position on New Aircraft Vis-à-vis the US Aviation System

NAS ramifications are in my view, straight forward and clear:

1. There is no shortage of airspace
2. VLJs will not constrain airspace
3. Personal jets will not compromise airline operations

4. VLJs will productivize dormant aviation assets
5. Intelligent ATC will revolutionize density assumptions
6. NGATS must be funded regardless of the slope of UAV and VLJ growth curves (NGATS is really a recap issue)

Indeed, not unlike automotive development, there are various sports cars, family cars, SUVs, motorcycles, campers, LTL and LH trucks and many other forms of surface vehicles and multimodal interaction that all rather peacefully coexist, if not mutually reinforce each other (and one could compare telecommunication networks similarly, from copper, fiber, ISDN, cable, satellite, PCS, cellular, radio, VOIP) especially as airspace will become "digitized."

Finally, implied EI, jobs and earnings from our recent study are indeed meaningful. It indicates to me that we could witness not merely a new segment of civil aviation, but a whole new industry, one based on the powerful effects of decreasing product and service cost and its ability to make individual jet transportation available to the broader public. Moreover, the indications of work productivity achievable from such travel tools and services are serious: millions of precious travel hours saved every year, ones that can be "reinvested" back in our economy.

Please keep in mind, however, that these initial estimations of future production and impact are, in the context of other current forms of transportation, still modest. Indeed, it is my view that the study is conservative in its conclusions but liberal in its implications: that the "democratization" of personal air travel may be upon us, and if so, the future

of urban and short-distance air travel will be very much different than the one we know today.

Regardless of your acceptance or rejection of this view, one thing is certain: individuals will continue to gain increasing control over their air mobility, as we have witnessed over communication and computing tools. As Steve Forbes insightfully stated over a decade ago, "Small jets are starting to do to the airline industry what PCs did to mainframe computing; minimills did to steel; cellular is doing to telephony; mutual funds are starting to do to centrally managed corporate and government pension plans and eventually will do to Social Security; and what coming minigenerators will do to massive power plants—give customers more service, more flexibility, more control at less cost, as well as generate new products and services. Its about power moving away from the machine-age center toward individuals of the microchip era."

Moreover, traditional airlines will continue to work toward improving their products and services and mass public transportation will continue to be a central, critical backbone of our nation's economy. Both air networks will share a need for increasingly "intelligent" ATC capabilities (and financing) such that these advances and benefits can be operationalized. Airlines and GA need not fight an antagonistic battle. Working together on strengthening our aviation industry—in all its forms—along with driving forward breakthroughs in technology, material science, propulsion and processing, will only best serve the American public, American business, and American government.

Conclusion

Allow me to conclude with what I believe to be a key message: the topic under our consideration is not just important, it is of vital National significance.

Air travel is a young industry. Only 50 years ago the first jet aircraft was introduced into commercial service. The impact on communication, economic development and business productivity has been profound. But perhaps we have lost our perspective as well as our ambition: in all the confusion and turmoil of aviation dramas we may easily lose sight of the real goal; it isn't just commercial survival, but continuous modernization, fundamental scientific advancement and technical and service progress. The aviation industry is capable of developing in ways just as dramatic as it did when we went from the Wright Flyer to the first passenger jet. More so, in fact. It will be lead by U.S. aviation entrepreneurship while advancing and building on U.S. aviation know-how.

But rather than fixating on what one airline's quarterly financial results were, we should ask first where America's future is; what the next generation of flight will look like, and what it will take to get there. Some of that future is testifying today. In addition to VLJs and personal air mobility services such as air taxi, we should be engaged in a flurry of inventive activity that brings us new, quiet supersonic aircraft, new blended wing designs, new forms of propulsion and material science, entirely new ways of processing a flight from take-off to touch-down, and especially, new kinds of thinking.

The airline industry is capable of developing in ways just as dramatic as it did when we went from the Wright Flyer to the first passenger jet. More so, in fact. But first we're going to have to get our economics right. And that also means crafting a U.S. national airline policy.

Most observers often forget just how big and how important the overall U.S. market is to the rest of the world. America's GDP is over $11 Trillion; Japan is a very distant second of $4.5 Trillion while Germany and France around $2T each. The GDP of California alone is larger than Spain, Italy and even Russia; over twice the size of Australian GDP and together with several other states including Texas, larger than all of China. If the U.S. grew 10% in one year it would produce another "Canada." America's aviation markets are no less dramatic. More passengers fly more often on more aircraft to more places than in any other country. Our aerospace, defense, commercial and space programs lead the world. No one rivals the U.S. in aviation. India may have call centers, China low tech manufacturing, the Middle East oil and Japan its auto industry, but the U.S. owns aerospace.

It is critical that all of us do not unintentionally neglect or short sell, U.S. aviation dominance, U.S. aviation expertise or the potential and future of the U.S. aviation industry.

America's aviation system can't meet all of its challenges alone. Industry can't carry all the load. But neither can government. Until we raise aviation's modernization requirements to a national policy level of

importance, can we expect the private sector and government to be able to join forces coherently and reliably around a comprehensive modernization objective, and then actually realize it.

The late President Ronald Reagan said that everyone American is a shareholder in government; so for my 1/300M-ionth equity share, I urge you to join forces with the nation's entrepreneurs and aviation professionals, some of whom are here today, to make certain, that we succeed. As American technology pioneer Alan Kay said, "The best way to predict the future, is to invent it." Captain Picard might say "Make it so." Nike would say, "Just do it."

I say, this nation's aviation future is too important and promising to leave to chance.

Thank you and I look forward to your questions.