



## Andrew Steinberg: The Five Pillars Approach

*Currently a partner with the law firm of Jones-Day in Washington D.C., **Andrew Steinberg** served as Chief Counsel of the Federal Aviation Administration from 2003 to 2006, and then as Assistant Secretary for Aviation and International Affairs with the U.S. Department of Transportation from 2006 until January 2008. He was appointed to both positions by President Bush and confirmed for the latter by the U.S. Senate.*

**ICAO Journal:** Please outline for our readership the impetus behind the five pillars approach and explain why it's the appropriate path for aviation to be proceeding along given the current environmental situation.

**Andrew Steinberg:** What we have found in aviation environmental matters over the course of many years is that a variety of approaches—technical, operational, market-oriented and so on—are normally the most effective at producing a long term solution.

Noise reduction is a perfect example of how employing a combination of different tactics can be overwhelmingly successful. The amount of people subjected to aircraft noise has been reduced by about 95 percent over the last 30 years. Though I've seen slightly different percentages in various sources, there is no question industry efforts have been inordinately successful. This success was achieved through improved engines, air frames and flight procedures combined with scientific research, mitigation and market-oriented incentives—such as phasing out noisier aircrafts.

With that success story in mind, the U.S. has therefore taken a multi-faceted approach to the issue of aviation's impact on the environment and climate change. The five pillars we've established include: an improved scientific understanding (particularly of greenhouse gas emissions at higher altitudes—a subject not as well understood as others at present); improved technology such as more efficient engines and airframes; improvements in the operational environment (particularly air traffic management); research into alternative fuels, and; market incentives. Please note that these are not necessarily listed in order of their respective importance.

I'd like to add that one of the things that's very striking about the debate going on right now is that aviation is regarded as being more-or-less comparable to other industries when there are many significant differences that suggest it requires a unique approach.

**Could you please highlight some of those differences?**

I think the biggest difference is that fuel is already such a large percentage of the cost of aviation operations—in other words there's already an enormous built-in incentive therefore for every operator to reduce their fuel burn. Because of this direct correlation of fuel burn to greenhouse gas emissions, the reductions already being sought in fuel consumption have meant that we've already seen significant reductions in past decades of the aviation industry's aggregate carbon footprint. My guess will be that when you look at 2008 versus 2007 you'll see yet another decline in aviation emissions—certainly, at least, in the U.S.

The second important distinction between aviation and a typical smoke stack industry is that there are no practical and available alternatives to jet fuel available to aviation at this point.

**Your last point brings to mind February's fairly high-profile Virgin Atlantic flight from London to Amsterdam with a CF6-powered 747 that ran on a biofuel. Is this where the industry needs to be heading?**

There is a lot of good work going on in this area and it all should be encouraged. For instance the U.S. Air Force is also now looking at using drop-in fuels across approximately 50 percent of its fleet in the next decade or so. Today, however, there's still nothing that aviation operators can do other than simply not fly if they wish to avoid using kerosene-based fuel. This remains is a very large distinction between the aviation industry and other industries in the present environment.

Another point of distinction is that transportation markets are more complicated than other markets. For example if you raise the price of fuel through an allowance system or as was proposed in S 1191, the Lieberman-Warner bill<sup>1</sup>, the result is going to be either less flying or higher ticket prices. But, with the airlines already operating at an 80 percent load factor a raise in ticket prices may simply create a situation whereby the same or a very similar number of flights are carrying fewer passengers. This solution therefore would be very ineffective at lowering aviation's aggregate emission levels.

So we have to be careful then about how we approach this sector. Aviation is a generator and enabler of many disparate forms of significant economic activity, and therefore the health of the industry as a whole needs to be maintained. By simply targeting consumer demand you could end up disabling the aviation system, cause serious economic ramifications society-wide, and in the end simply push passengers into other forms of transportation that could end up raising emissions rather than lowering them. We need to remember that having 200 people take their cars across a short-haul route is not more environmentally friendly than having them take a single aircraft for the same purpose.

**Will air traffic management also play an important role?**

There's a great deal of potential savings to be had through more efficient air traffic management and we've been, as a nation, struggling for many years to modernize the air traffic control system. We all know the right solution is a satellite-based navigational system with shorter separation of aircraft in trail, and certainly climate change and fuel costs have now become compelling reasons to modernize. In other words, the waste of fuel and the unnecessary creation of greenhouse gas emissions caused by an outmoded air traffic system is a very good reason to change.

**Would you say both the economic realities of the oil market and the growing environmental concern are, combined, encouraging the entire airline industry to look at these solutions more seriously?**

Yes, there's no question about that. One of the great impetuses toward satellite-based navigation on the part of the airlines is the need to reduce fuel burn. Again, because there's a one-for-one correlation between fuel burn and greenhouse gas emissions, any reduction in fuel consumption benefits

the environment. Whatever the motive, the result is very good. There is no justification for a system that requires people to waste fuel.

The position of the U.S. during my tenure at DOT was that we need to focus on some of these operational and technical issues and not just be wedded to so-called market incentives—especially when the cost of fuel is already a big market incentive.

**In regards to cap and trade approaches are there any specific elements that you think are counter-productive to making progress in the aviation industry with respect to the environment?**

Yes, a lot of them actually. For starters, it's unclear if the EU has the legal right to include international aviation in its existing cap and trade scheme. That's relevant because doing so could end up with us distracted and diverted by litigation rather than focusing on the actual problem. But, beyond that, I think it's very difficult to do this in a way that benefits the environment without doing it on a global rather than regional basis. There are several reasons for that. For example, let's say you're an airline operator and 10 to 15 percent of your flights are from the United States to Europe. Assume it becomes more expensive to fly to Europe because you need to buy allowances from the market for carbon emissions. You may choose to put your more fuel-efficient aircraft on those routes in order to save money, but the option remains open to simply move the less efficient ones to other routes...

It's very hard to control emissions unless everybody participates in all the markets. With a growing domestic aviation industry in China and India, the European proposal only addresses what, over time, will be a declining share of the overall global market. As I said before, in markets where the car provides an alternate means of

transportation, the result may actually be an increase in emissions. At least in the United States, it's obvious that the biggest source of emissions to be controlled in transportation is the wasteful use of our cars much more so than what is now being caused by aviation.

In the U.S. we look at aviation as a critical part of our transportation infrastructure. It's no secret that the industry is suffering a lot right now and there are many people who, with the current oil prices, question the industry's economic viability. Any effort to raise operating costs for airlines has the potential to have a calamitous effect. I don't know why we would want to take steps that would knowingly increase operating costs for airlines at this juncture. It maybe different in Europe, where there is a much better rail infrastructure.

I, like many other people, believe environmental concern is going to be one of the most challenging issues for aviation for some time to come. I expect there will be serious questions raised and legal challenges ahead, but we need to keep aviation's current effects on the environment in context and try to avoid being distracted by regional squabbles that will do more to promote litigation than they will to serve our global environmental needs. ■

**Footnotes:**

<sup>1</sup> S 1191 was a Climate Change Bill in the U.S. Senate that would essentially have been a tax on source emissions at the refinery level. This Bill was blocked in the Senate on 07 June 2008.