

The Excellent Question of *Passarola Rising*

Remarks by

Patricia Grace Smith

**Associate Administrator
Office of Commercial Space Transportation
Federal Aviation Administration**

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Welcome, and thanks to all of you for being part of the FAA's Annual Commercial Space Transportation Conference.

This is our tenth consecutive gathering, our tenth anniversary.

I'm told that the traditional gift for a tenth anniversary is something made of aluminum.

Please believe me when I say to all the husbands in today's audience that I do not recommend aluminum as a suitable gift for a wedding anniversary. But I do think it is an attractive omen for those of us in the rocket world, a world that is changing so rapidly.

In fact, that's what I want to talk about briefly this morning, about change, about transitions.

Space transportation is in transition now. We are on the move, travelers in search of unknown places, reaching for clear new vistas on the horizons of history and adventure.

THE QUESTION

To that end, let me tell you something about a book I read last year. It's called Passarola Rising. It's a novel, but a novel based on actual historical events.

It's the story of a Brazilian-born priest ... a real-life aviation pioneer ... who, almost three hundred years ago, built and flew an air-ship of his own design. For me, one of the most memorable moments in the book came when the priest posed this question:

“Have you ever asked yourself what lies beyond the everyday sky?”

It seems to me that those words are the absolute essence of what drives the world of space flight.

My guess is that people in this room, people throughout the industry, and people all around the world ask that question ... or something close to it ... all the time.

What lies beyond the everyday sky?

It was only within the last half-century or so that we finally began to gather some answers to that enthralling question.

For example, nobody fifty years ago could have foreseen launches of satellites by private companies or the prospect of their own neighbors down the street actually taking a rocket into space, a rocket built and flown by a private company.

But that very process has begun and it ranks as one of the greatest technology transitions in human history.

Within the last half-century and to an even greater extent within the last decade, our options for getting to space have changed dramatically. What once required the resources of entire nations has now become an entrepreneurial business model.

Two results-oriented words, “private enterprise,” are reshaping the way people can travel to space.

Since the last time we met at this conference, I’ve been around the country and seen it for myself.

SPACE FLIGHT AT HOME

For example, last April in Colorado Springs, the FAA hosted a summit to introduce the Air Force to entrepreneurial Reusable Launch Vehicle developers around the country. That hadn’t happened before. Ever.

The Air Force saw clearly for the first time just how active, able, and interested private enterprise is in helping on the path to assured access to space.

In October, I was in New Mexico for the X-Prize Cup and saw the Armadillo hardware as it prepared for its first effort in the Lunar Lander Challenge. It didn’t win the prize. As a matter of fact the first launch by Space X last March didn’t make its goal, either.

But I would point out that there are a lot of players in the Hall of Fame who didn't hit a home run their first time ... or even the second time ... at bat.

So the competition goes on, and prospects for the builders are very bright as they go about developing an impressive array of space vehicles.

The fact is, whether it was the COTS selections of Rocketplane/Kistler and SpaceX; or the issuance of new regulations governing the operation of crew and space flight participants; the launch of Bigelow's Genesis I; or the test flight by Blue Origin; ... we saw tangible evidence of transition in space flight in the past year, a transition that will continue and substantially accelerate in 2007.

What I saw here at home, I saw as well when I traveled abroad.

SPACE FLIGHT ABROAD

Last June, I was in Japan to deliver a paper at an International Symposium on Space Technology and Science. I came away from that experience deeply impressed by the level of interest in the next American steps in private human space flight. And I was equally impressed by the wide-ranging interest of people from other countries in pushing the development of space flight in their homelands.

In July I went to the Farnborough International Air show. And I spent most of my time listening, listening to people from Europe and Asia talk about the value of space. So when South Korea began this year by launching a rocket of its own, I can't say I was surprised.

And it comes as no surprise at all that England, the home of Sir Richard Branson, is exploring what their next steps should be on how they can help promote the space industry.

Then, of course, there is the European Space Agency. It is a dynamic organization deeply committed to excellence in space. Among a long list of initiatives including this year's launch of the Columbus

science module, it is at work on strategies to develop a Crew Space Transportation System with the Russians.

And there's more.

Last summer, the VEGA study on space tourism concluded that: "There is no reason why Europe should not be leading the growth of the private space flight industry."

And I actually drew a line under something I read last month that said "the aim of Spaceport Sweden is to [be] Europe's first and most obvious place for personal suborbital flight."

India is making tremendous strides in space. Just last month it launched four satellites on one rocket, and returned one of those satellites to Earth.

And let me point to one more first-hand experience.

Last December I went to the French Guiana Space Center for the launch of an Ariane 5 rocket. It put two satellites into orbit, one of which provides broadband Internet access to rural areas of the United States and Canada. I can tell you without reservation the Arianespace operation is extremely impressive, totally professional, and, quite clearly, a template for success.

All these events, and so many more, help explain why the title of this conference is: "Space Transportation: Competing in a Global Market." People around the world are reaching for what lies beyond the everyday sky.

How far will that reach take us?

WHAT'S TO COME?

In the United States we believe space is surely *not* the final frontier. We believe it is more likely the front door to a future beyond our dreams, a future with private human space flight as an economic driver, a future with some of the most astute business persons coming from the industry sector.

If you were to ask me what impact space will have on Earth, I would simply say I've been around long enough to see the commercial space transportation industry establish itself as a revenue producer and a job creator.

I have seen the idea of private human space flight move from the pages of novels to the front pages of the newspapers.

I have seen the genius and initiative of private entrepreneurs joining hands with state and community leaders to create spaceports.

And I have heard determined people pledge to lower the cost of access to space using either ELV's or RLV's.

So when I look to the future, what I see directly ahead is serious work in the field, live testing of real vehicles and at a quickening rate.

As early as the end of next year, I see piloted vehicles undergoing tests in preparation for the imminent debut of regularly scheduled service for private passengers traveling to space.

What I see is a professional community of men and women hard at work ... judicious, exacting people of science and business, driven by the limitless possibilities of space flight and guided by the twin credos of safety and excellence.

On this and more, I base a robust personal confidence that scheduled private human space flight ... something so close now we can almost touch it ... will establish itself as a serious, productive engine in our economy.

I believe that in the time it takes children born today to earn a master's degree, it is quite possible that we will have point-to-point commercial space service and at least the beginning of privately operated orbital space flights. Who knows, it could be sooner! I fully expect that a number of spaceports emerging today in different parts of the world will flourish.

We will continue to learn. We will encounter new issues among nations reaching into commercial space. But, above all, I expect commercial space to be a unifying factor in an age of global exchange.

In the course of the next two days, we will examine that international perspective. We will look at COTS and what comes next. We will look at space weather and what it means to humans and to vehicles.

Tomorrow we will examine human factors in vehicle design, consider the status of spaceports, discuss the outlook for expendable launch vehicles and take a close look at the question of when is a launch vehicle ready to carry passengers.

And, of course, we will hear from Anousheh Ansari.

These are exciting times. After generations of hope, we are doing what we hoped for. The way will not be easy and it will not be free of setbacks.

This is, indeed, a time of transition. But we will do it. In fact, by the very nature of the word “transition,” we are in the process of doing it already.

We are doing it at this precise time in human history because science, technology, and private investment are combining to make it happen.

But there is another reason, a reason as large as life itself, and it is defined in the pages of the novel I quoted from in the beginning.

The words are from the Brazilian inventor. “The real unknown lies up there where the sky ends,” he said. “I want to see what exists at the edge of the void.”

That’s what the book said, and the sentiment is familiar.

That is, after all, just the way we are. The will to find out, the desire to do better, to go farther, to open closed doors, the courage to

ask questions at the edge ... the bristling spirit of all those things will one day, reveal to many of us “what lies beyond the everyday sky.”

Thank you very much.