

L. Welch Pogue Award for Lifetime Achievement in Aviation

Marion C. Blakey Acceptance Remarks Sept. 17, 2019

Good evening, ladies and gentlemen, and thank you, Evelyn and Dave, for that **very kind** introduction.

And **Amr, Dan, Norm** -- Wow! – **Family** – **take note** – when I kick off, don't bother planning a memorial service, **just play back that tape!**

It's **heartwarming** to see so many **great friends** and **industry** leaders here tonight.

(Pause)

Thank you **all** for being here. And thank you to **Aviation Week & Space Technology**, the **International Aviation Club**, and the **Jones Day Law Firm** for continuing to honor the legacy of **Welch Pogue** with this **prestigious** award.

In the **formative** years of our industry, **Welch Pogue** was a **driving force** in enabling international civil aviation to become the **global powerhouse** it is today. His work not only **transformed our industry**, but it **transformed our way of life**, and for that we should **all** be especially thankful.

(Pause)

Everyone here today knows well that **our industry has always faced challenges**, especially in **turbulent times** like these.

But these times are also creating **important global opportunities**, and this evening – for just a few minutes -- I'd like to **focus on three**.

And – no surprise to those I worked with at FAA – I'll start with **commercial space**.

(Pause)

During and since my time in government service, I've had the **great fortune** of seeing the commercial space sector **take shape** from a very **embryonic state** to one of our **most promising** capabilities.

Visionaries like **Paul Allen, Burt Rutan, John Carmack, Richard Branson, Elon Musk, Peter Diamandis** – just to name a few – have been responsible for **creating the foundation** of this new sector and they have **effectively spread their enthusiasm** throughout the world.

As it became clear that our **new** space capabilities were going to be **largely in the private sector** while NASA focused more on **deep space initiatives** – such as **Mars** -- these visionaries made **investments** that have already shown **significant results**.

I was just out in Kent, Washington at **Blue Origin** where **Jeff Bezos and CEO Bob Smith** are giving **Virgin Galactic** a **real run** to take private passengers into space.

When I sat in their **crew capsule, New Shepard** – which has **windows** at least **triple the size of a 787's** – I thought, "**This is way cool**," and this coming from someone who has never wanted to be a **private astronaut**!

It also reminded me of how **far we've come** since the early days of **standing in the Texas desert** when **Armadillo's** four pod vehicle went up to about **15 feet**, kicking up a **huge dust storm**.

And out in the very dark dawn of the Mojave with our hearts in our throats as we watched Space Ship One – now in the Smithsonian --reach suborbital space and win the X Prize.

In those early years, it was important to determine the government's role in the commercialization of space. Should the government be only a regulator, an enabler, a partner?

As an aside, especially when it comes to humans into space as a private venture, I believed, and I still do, that it should be regarded as an adventure sport and the safety of those on the ground is foremost. That is until private space flight becomes utilitarian transport.

Back then, it was new territory in many ways, and the government's role would be an important element in fulfilling its full potential. I had a great partner in Patti Grace Smith, then head of Commercial Space.

Since the Ansari X Prize in 2004, private space initiatives have largely refocused onto market driven capabilities – such as reusable launch vehicles and nanosatellites – with the promise of good returns on investments.

But there's still a lot of heavy lifting to be done, especially concerning integration of frequent commercial space shots and reentry into the National Airspace System.

Of all the business opportunities in space, one stands out. The global wireless industry today is a trillion dollar a year market, even though it provides coverage to less than 10 percent of the planet.

Bridging the digital divide and connecting everyone in the world represents an enormous market opportunity.

Cell towers have reached their economic limit and are going the way of the buggy whip.

(Pause)

Second opportunity, as I see it, – **Air Taxis**.

(Pause)

It seems that almost every day we hear about a **new air taxi vehicle** entering the picture.

To get a **measure of the seriousness** of this, just look at the **world class companies** that are buying into the concept -- **Boeing, Airbus, Uber, Toyota, Volkswagen and dozens of others** who are taking it seriously enough to make **substantial investments** in the sector.

Of course, the idea behind **air taxis** is to have the vehicles available **close to customers** so there is little or no charge for the **deadheading** you have in **charters**. To do that, it's necessary to have a **concentration of aircraft** within a given region, **similar to city taxicabs**, and therefore **short runways** or **vertical take off and landing aircraft**.

The vehicles emerging today are designed with **low cost** in mind, particularly **fuel costs**, which is the biggest driver in cost of operation. Thus, the appeal of **electric** and **hybrid electric** vehicles.

Advances in **lighter, stronger and smarter materials, automation and autonomy** – present a very promising picture for the future of air taxi.

And **for us as passengers**, the dramatic **advances in computer technology** have also laid the groundwork for a **scheduling** and **reservation capability** that will allow us to really use them.

But there are **challenges**, again notably in **air traffic management**. These aircraft, both **manned** and **eventually unmanned**, must be able to integrate in the air traffic system.

Recognizing this, the **FAA and NASA** have been diligently working on developing the **infrastructure** to handle these aircraft.

So, we're not far from having an **Uber-like experience** when it comes to short-range and intra-city air transportation. In fact, I was just at **Uber Elevate** in San Francisco and they are planning to start service in **Dallas, LA and Melbourne in 2023.**

(Pause)

The third and final opportunity I'd like to touch on is in **propulsion.**

As even the **Wright Brothers** saw, powerplants have always been a **paceing force** behind advancements in aviation and space.

Now we're on the cusp of some **breakthrough innovations** in powerplants – more **transformational,** I believe, than **the move from pistons to jets.**

We are seeing the **evolution** from fossil fuel burning engines to **electric, hybrid and solar** engines, and sometime in the future we'll inevitably be seeing the **ultimate in powerplants** with the introduction of engines using the **cleanest burning fuel of all – hydrogen.**

Clean aircraft significantly contribute to helping aviation **reduce its environmental** impact and will have an **even greater influence** as the technology migrates to **larger aircraft.** Of course, **the jury is still out** on “**if**” and “**when**” full electric propulsion works its way into the airline sector. There are **formidable challenges** that will require some breakthroughs, but let's face it, **our industry has a pretty good track record of** developing breakthroughs that keep us moving forward.

Meanwhile, it's more likely that **the airlines** will incorporate **hybrid electric concepts.**

But when it comes to the **Holy Grail** of propulsion, I maintain it will be tough to **beat hydrogen powered aircraft** because their **only emission is water**.

It's a very **attractive prospect** – **lightweight, a liquid fuel, so potentially fewer changes** in aircraft design. And the **challenges are formidable** -- primarily in **creating, storing and transporting liquid hydrogen**, and developing the **ground infrastructure** to support the aircraft.

If this can be achieved, however, it will put **the stigma of emissions behind us** and will have benefits to industries **well beyond aviation**.

There have been **fits and starts** before, but it seems to me a **partnership** of **business, government and academia** now would make sense to pursue this promising technology.

(Pause)

In closing, I would like to recognize the **importance of government/industry/academic collaboration** in building the **finest commercial aviation system in the world**. It has been a **powerful driver** of our success.

We're now on the threshold of some **very exciting capabilities**, and so, it's **important** that we continue on the path to **enable these concepts to advance**, while at the same time keeping our **guard up** and **protecting our future** in the face of **turbulent political forces** -- and **well-intentioned** initiatives such as the **Green New Deal**.

In these times of **political uncertainty**, we must remain **vigilant** and **sensitive to any forces** that could **stymie aviation** and the ability of **millions of people to fly at a cost they can afford**.

The provisions of the **Green New Deal**, which in **recent Presidential debate** was supported by **all ten of the candidates on the stage**, represent a very real **threat** to anyone who **depends** on

air travel. So, let's not become **so overconfident in our success** that we disregard these proposals as "**highly unlikely**" and let our guard down.

We are the **protectors of aviation** and we **owe it** to those who have **worked tirelessly** for decades to achieve its greatness not to **ignore a wake-up call** that could profoundly damage our industry and the ability of **people all over the globe to fly.**

We must protect the future of aviation and space from **unintended consequences.**

(Pause)

I, for one, feel very blessed to have been part of this powerful industry and I look forward, with **great excitement,** to what will unfold in the years ahead.

And I am **greatly honored** to follow in the footsteps of those **past recipients** of this **prestigious award.**

Thank you.

(end)