

Remarks As Prepared For Delivery
By the Honorable Shana Dale
NASA Deputy Administrator
NRO/AIAA Space Launch Integration Forum
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Thank you for that introduction Bob (Dickman, AIAA Executive Director).

I'd also like to recognize Colonel James Norman, Chair of this conference and Director of the Office of Space Launch, National Reconnaissance Office (NRO) and Captain Joyce Gamache, Technical Chair of this conference and in the Office of Space Launch of NRO. And thank all of you for having me here tonight.

Since you have spent much of the day talking about our evolving launch environment from an engineering perspective, I will give you something other than a technical presentation.

I'd like to talk about our evolving launch environment from an historical perspective: Where we were, where we are, and where we are headed.

Let's begin by going back exactly thirty-eight years. Some of you aren't born yet. The rest of us are a lot younger. Some of you are still struggling through calculus or differential equations. A few of you probably have more hair.

And I was tooling around in a pedal-powered red mustang with a box of pretzels as big as I was at my side. And I had less hair.

But going back to July 24, thirty-eight years ago, we were all focused on one event. On that day, had we been in the South Pacific, aboard the aircraft carrier, USS Hornet, we would have been sailing in fair seas.

But those who were there weren't looking at the ocean. Instead they were looking up, straining their eyes into broken clouds.

Suddenly, they saw a brief flash high overhead. Three giant orange and white parachutes opened above a small capsule, which had been seared with the speed of its descent from one great ocean into another.

The craft splashed down – upside down – and then righted itself with the white balloons in its nose. A helicopter hovered nearby, dropping frogmen into the sea. A hatch was opened.

And suddenly, after years of relentless effort, sharp setbacks and astonishing innovations, America had landed men on the Moon, and returned them safely to Earth.

In many ways, Apollo 11 was the culmination of our first era in space. But the race was not over. In truth, the journey had just begun.

And in the years that followed, the launch environment continued to evolve. Better platforms were developed for new payloads. Explorers and Coronas became sophisticated communications and intelligence satellites. Manned missions went from the cramped capsules of Apollo spacecraft to the comparatively spacious environment of the Space Shuttle, from short missions to the Moon to multi-month stays aboard the International Space Station.

We've made progress. And at each step, what once seemed impossible was made possible through partnerships. Since the beginning of the space program, civilians and armed service members have worked side-by-side.

That's true today.

The Administrator and I are grateful for the teamwork that exists between the organizations represented here tonight. NASA and the National Reconnaissance Office have a long history of working together, and our relationship is as close as it has ever been. That's true for NASA and the Air Force – and NASA and our industry partners as well.

Partnerships usually come down to people. And the Administrator and I are thankful for all of you who make such close working relationships possible. We're committed to building those relationships and maintaining that teamwork, wherever practical and as far as possible.

We – that's all of us – will need it in the future. For the launch environment is continuing to evolve, and America's leadership in space is less certain than in the days of Apollo.

Before I talk about the future, here's a quick look at where things stand.

As all of you are aware, NASA is counting down to the completion of construction of the International Space Station. The Shuttle Endeavour is expected to launch in about two weeks, carrying a new truss to be installed on the Station, as well as supplies and cargo for the next 12 to 15 months.

Over the next few years, that world class laboratory will be completed. And as the final segments are sent up, Shuttle flights will be counting down.

At the same time, construction of our new craft, the Ares rockets and the Orion Crew Exploration Vehicle, will continue. Components for those spacecraft are already starting to come together. Contracts are being let. For instance, earlier this

month we announced that we signed a \$1.2 billion contract for upper stage engines of the Ares rockets.

Like Apollo, these spacecraft will belong to all Americans, for every NASA Center has a role in their construction and companies all across the country are contributing. There's still a lot of infrastructure and equipment that we need, and so there will continue to be a great deal of opportunity for companies and contractors.

A political transition is looming, and so is a gap in human spaceflight.

In 2010, NASA is scheduled to start more than a four-and-a-half year gap in human spaceflight capacity.

A four-year gap between the Shuttle and the launch of the new exploration vehicles was already expected, but recent budget realities have added about six more months to the gap. As a consequence, Ares and Orion are not likely to come online until the first part of 2015.

I'm concerned about these transitions, and I know that many of you are concerned about them as well. For almost five years, we won't have the ability to put people into space – at least not without the help of our international partners or the development of alternatives in the private sector.

While NASA is not putting people into space, other nations can and will. Several countries have expressed such ambitions. A few have already developed that capability. The evolving environment will have new competitors, some with great resources and great will.

It is nearly certain orbital space will become more crowded during the gap: Manned spacecraft from other nations could be there as well as commercial enterprises carrying passengers; so could new satellites and debris from disabled and destroyed ones.

So it will be critical for us to pull together during this period of transition, to keep the human spaceflight program headed toward a new era of exploration.

For all of the well-founded concerns about the gap, that period also presents real opportunities for industry. The gap will mean the potential for more open competition and the development of even lower-cost approaches to launches – manned and unmanned. We're already looking to the private sector for assistance in supplying and supporting the International Space Station during that period.

Other opportunities could develop as well. For instance, we will continue to require expendable launch vehicles: Up to, during, and after the gap. We will continue to invest in science missions, and we'll continue to need the vehicles to

launch them. The Phoenix Mars Lander is scheduled to launch next week, the Dawn mission to the asteroid belt is likely to follow sometime in the fall, and many more missions will launch in subsequent months and years.

Yet the human exploration of space has always been an essential part of NASA's mission. And we again have the mission of stepping beyond low Earth orbit. Unlike the earlier era, we're going to the Moon to stay. With help from our international partners, we'll construct an outpost on the Moon. The outpost will be a toehold to further exploration, a unique viewpoint from which to study the universe and observe our planet, and possibly even an industrial base with which to enrich the Earth.

And we want our partners in the armed services to know that we'll work with them every step of the way. We'll both benefit from the partnership, for the spin-offs of space exploration have a fruitful habit of finding use among members of armed services.

For instance, a robot created at the Jet Propulsion Laboratory for Mars has been further developed into a tactical reconnaissance robot. U.S. troops are using those robots in Afghanistan and Iraq to clear caves and bunkers, as well as cross minefields and deal with the dangers of improvised explosive devices.

Such robots have saved lives. According to iRobot, the company that makes them, soldiers have given their robots nicknames – one was called “Scooby-Doo.” And according to the Washington Post, the robots' military keepers become so attached that they have even awarded the robots with unofficial “purple hearts” and “battlefield promotions.”

Another example is a specialized robotic joint developed at Goddard Space Flight Center was used to develop an advanced walker, which is helping wounded service members at Walter Reed Medical Center recover the ability to walk sooner than they would have otherwise. One active duty military patient who was wheelchair-bound for two years now uses the walker to walk up to twenty-five minutes each day.

That's what space exploration is all about. True, it is about pride and pioneering, exploration and leadership; about testing the unknown and challenging the impossible. These things are important. But space exploration is also about bringing technologies that touch people's lives back to earth.

Ultimately, space exploration is about building a better future through small steps and large leaps. They are our steps to take, if we again have the will.

Shortly after Apollo 11 splashed down, Dr. George Mueller, the Associate Administrator for Manned Space Flight declared, “These trips are only the first steps.” But then Mueller asked, “Will we press forward to explore other planets,

or will we deny the opportunity to the future? To me, the choice is clear. We must take the next step.”

To me, the choice is clear as well. The launch environment is evolving. America’s leadership in space is not guaranteed. So we must take the next step.

And we’re beginning to do so. There are challenging days of transition ahead. But step by step and launch by launch, we’ll bring worlds of possibility within reach.

Thank you.