

**REMARKS FOR ACTING ADMINISTRATOR  
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To take on this ambitious set of missions we've been discussing, we have to get better at managing risk and increase our decision velocity.

My friend General Hyten and others have talked many times on how we have to move faster in all aspects of our acquisitions. He couldn't be more correct.

As I close out my career with NASA, this is the one area I didn't make as much progress as I had hoped, but I thought I'd share my view on this topic as the leader of NASA.

**Risk Management**

Sell something on the benefit of a mission or program or budget request. But that benefit rarely gets discussed after the initial approval.

There are many components of risk. What I've learned is over-focus on one component without balancing these risk components is a challenge. I'm guilty of this myself.

For instance, maniacal cost control can lead to a penny-wise/pound-foolish mentality.

Too much focus on schedule will cause a mission to launch before its ready when maybe a little more time and dollars would've saved the mission.

Too often technical risk is tempered by "we've always done it that way" without the appropriate understanding of the requirements

Well, those are obvious ones -- cost, schedule, and technical -- and they are challenging enough to balance. Now add in the multiple external stakeholders we all have and it gets more complicated.

The cycle can be vicious.

Think about it -- we make a mistake, which is going to happen when taking on such challenges. We do an internal investigation and fix it, usually through a new process so it never happens again.

Then, depending on the severity of the mistake, we have external stakeholders -- IG, OMB, GAO, or an august independent review board come into play. Then they give us another set of recommendations and track our implementation of these into our processes.

That's how the FAR becomes so thick and the 5000 series and 7120 series documents

become so thick. It becomes more about the process and not the product. It's why we get the reporting requirements from OMB and Congress.

Don't get me wrong. Some of this is WELL EARNED. Most of us in any leadership position have experienced something where we immediately knee jerk to corrective action, and we should. But we always need the DOES NOT APPLY option. Yes, all our governing documents are "Tailorable" but WOW, just try to do that. Did I mention we also hire folks to make sure those "shall" statements get done?

Simplistic examples:

- \$14M a year to protect schedule. Blows their budget. But I'm spending \$75M a week
- Pushing better programmatic control -- cost and schedule -- look at the tech development. Is that what we want? And it trickles back into mission selection process. Take less risk -- but what did we want??? Where's the benefit discussion.

### **Decision velocity**

All this process simply crushes decision velocity. Elevate risk decisions early and relieve the teams. Even better, delegate risk back to the right folks. (A finding on incidents, I know). They will protect you, and sometimes you have to say "I've got that one," or "You need to fix that."

- GAO letter with allocations
- Six months to get an elevated issue after I heard about it.
- Getting procurements released that meet the basic need -- LEO Commercial for instance -- and yet we wait and wait for OMB because they don't like the way it's worded.

Taking risks and being safe are not the same thing. Do you think in today's environment we would do Apollo? Do you think we would ever launch the first shuttle with crew?

### **Summary**

The activities I described that we want to do will require an "eyes wide open" approach to risk management and decision velocity. The bigger picture must be remembered. This has to be recognized by all the stakeholders in the system. The executing organization -- in this case NASA -- but also the Administration, Congress, and the public. I'm reminded of the quote from British Structural Engineer A.R. Dykes, who defined engineering:

"Engineering is the art of modeling materials we do not wholly understand, into shapes we cannot precisely analyze, so as to withstand forces we cannot properly assess, in such a way that the public has no reason to suspect the extent of our ignorance."

That is risk management. What we are about to embark on with the plan we've shown

and rolled out in the budget is going to take a change in risk management culture. What we do will never be without risk. We never want to take risk without ensuring the benefit is there.

Managing is doing things right.

Leadership is doing the right things.

Both are important but when it comes to risk, we, as a nation must move from risk management to risk leadership.

From a risk management perspective, the safest place to be is on the ground. From a risk leadership perspective, I believe that is the worst place this nation can be.

Leadership is moving humans' presence farther away than we've ever have been before and pushing the boundaries of scientific knowledge and discovery. We want "civilization changing" level impacts. THAT is larger benefit of what we do.

We are poised as a nation to do that in the next decade from the ISS to the Moon to the beginnings of humanity's first trip to mars. The WILL is there in NASA, our industry teams, and our international partners.

My charge to each of you as I depart is "strive every day to be a risk leader." This amazing endeavor will never be without risk however, the benefit is we will change the world.

Thank you.