A different outlook at the NRO

You won't find intel assignments in the record of Bruce Carlson's 38-year career in the Air Force, although he now heads the intelligence agency in charge of the country's spy satellite constellations.

Carlson is a former pilot and commander of the 70,000-person Air Force Materiel Command, which manages billions of dollars worth of weapons and aircraft programs. His space knowledge comes from a three-year stint as the commander responsible for day-to-day operations of America's military satellites and nuclear forces. He professes little if any knowledge of the inner workings of the NRO before his first week on the job this past June.

That might be exactly why the Obama administration chose him as the 17th NRO director. Through its five-decade history, the NRO has been run almost exclusively by physicists, spy engineers and technologists. Even after the implosion of the agency's Future Imagery Architecture satellite development program in 2005, the U.S. chose a veteran CIA technical expert to steer the agency out of the debacle.

Top among the priorities for Carlson is to keep FIA's 1-year-old successor, the Next Generation Electro-Optical satellite program, on schedule. It's been a political challenge. Carlson has not backed away from his insistence that two U.S. senators were wrong to advocate a separate, largely secret satellite program as a better option.

Carlson's choice also fits in well with the NRO's recent push to work more closely with troops and commanders. He orchestrated airstrikes from the cockpit of OV-10 Broncos over Cambodia during the Vietnam War and commanded an F-117 wing in the mid-1990s.

He spoke with Ben Iannotta at his Chantilly, Va., office.

Is the NRO reorganization complete?

You bet. I didn't change much when I got here. I flattened the organization just a little bit. I didn't want as many layers in it. I want the program managers, especially, to have access to me very, very quickly. The size of our programs and the impact that they have is very large.

When you were in the fighter community, were you a user of NRO products?

Yes, I was. I didn't realize it at the time, but when I was an F-117 pilot, we had a very, very close working relationship with the NRO and the electronic intelligence they provide with regard to where surface-to-air missile sites are located. That was very important for us because, as you know, the airplane was essentially unarmed. We did very detailed mission planning based on the intelligence we gathered. Then, of course, our targets were all based on NRO photography.

What was your perception of the NRO then, and how has it changed now?

I had very little experience with the [NRO], so I didn't have much of a perception. My perception really changed from the time I retired and went off of active duty until I accepted this job and had been here a week. Mostly I was uninformed.

First, and foremost, I was and remain incredibly impressed with the work force. The second thing that I didn't have a realization of was this business of building satellites. Half the constellation is over its life expectancy. Many of them are old enough to vote. A bunch of them are old enough to drink. And we're still getting data from them. Even though they were designed for a particular mission that had something to do with maybe Soviet strategic communications during the Cold War, today they're helping us fight the war on terror.

Looking at the next-generation optical satellites, why should the troops care about this debate over satellite design?

In an unprecedented move, the director of national intelligence and the secretary of defense [signed] a joint memorandum that said: Our recommendation is that we go with this kind of satellite. The president endorsed that, and we're on that path to build those satellites.

Now, you're right. There are some who disagree — that there's somehow some small satellite answer to that question. All of the combatant commanders — and I've been to see nearly all of them [since] I've been here — appreciate the photographs that come off of other smaller satellites, and they use those when they can't get what they need from us. But they will wait to make critical targeting decisions about troop movements because the data that we provide is detailed enough to make those kinds of decisions.

But what Sens. Christopher Bond [R-Mo.] and Dianne Feinstein [D-Calif.] are talking about are smaller satellites that would provide roughly the same quality of imagery.

If you're getting that from somebody, then they're just not familiar with what we provide. It's really a physics question, a mathematics question.

Flying smaller satellites lower wouldn't produce the same quality of imagery?

No, they wouldn't. And I'm involved in this, the program that they're talking about. The guy that's running it came from this organization. I know a little bit about it. I'm not convinced that the sensors they want to put on there are the right ones, but that kind of program is a good thing to pursue. But it is a technology demonstrator. It is not a requirements-based system.

In other words, nobody knows what it will do. It's a paper system right now. It's a system we will develop and launch, and we'll get whatever we get out of it. But mostly we're trying to study the technologies involved and see if those things have applicability to future platforms.

What contractor is doing that work?

Nobody yet. It's really too early to begin these kinds of conversations about whether it can fill operational needs or not, because we really haven't spent a dime on the program.

Is Lockheed Martin on contract for the next-generation system?

Yes. And we're negotiating the next phase of that contract. We're in phase A, so we're doing requirements derivation. We're beginning to look at what the specifications of a satellite will be. That will last until later this year, and then we will do a design review and begin the detailed design work on the satellite.

What does it mean when people say the new satellites will use a modular approach?

In the past, many of our satellites have been built around essentially a cylinder. You have a group of people that put package A in. Another group of people come and put package B in. When we say modular, instead of building it in a cylinder, you build it in flat panels. Then simultaneously you can have people putting on those packages. And then you assemble the packages. The proven part of this is that you can do it faster. So, what we have to do now is make sure that panel-like construction provides the rigidity, acoustic characteristics, the [electro-mechanical interference] characteristics that you need to keep the vehicle stable during the launch.

How healthy is the constellation now?

We have daily problems with [the constellation]. The low-altitude stuff goes through the Van Allen [radiation] belt. Older designs don't have the resistance to that harsh environment that we would like, and so we have constant work to keep [them] operating. Some of [the constellation] is operating on less than optimum power and some of it doesn't have full payload capacity.

We have replacement imagery satellites in the pipeline. They will be launched here in good order. Each of them is essentially ahead of schedule and has margin.

Where do you come down on the

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word "exquisite" to describe NRO satellites?

I don't like that word because it sort of has this connotation that somehow you've got a two-speed cigarette lighter and a fur-lined glove box. What we have is systems that meet the needs of those who demand this kind of intelligence information.

What has the Air Force-NRO Space Protection Program achieved in the year since it's been established?

We have developed and successfully implemented some niche solutions to helping to preserve our low-altitude constellation. We are now working on a much larger strategy to preserve the very, very critical assets we have in geosynchronous orbit. That will be a little bit more expensive, take a little bit more time, but we're actively engaged and working on that.

There was that incident in 2009 when the Iridium satellite collided with the Russian Cosmos satellite. Could that have been an NRO satellite just as easily?

No, it wouldn't have been an NRO satellite. And we work that issue very hard jointly with the Air Force to make sure. In fact, I look at it every morning at 8 o'clock to make sure we don't get close to a place where we could damage one of our satellites.

Are merged products of signals intelligence and imagery available today?

Yes. We have significantly improved our ability to precisely locate and then disseminate information on — activities — that might give away somebody's position. We're able to disseminate that information probably three times quicker and five times more accurate today than we did just a year and half ago. And we have plans to get even better than that.

Is that the Ground Enterprise Directorate started by Pete Rustan that does that?

Yes. I've moved Pete over to mission support. In other words, he's my lead guy with the customer. And so Pete's on the road a lot. He just returned from a trip to Afghanistan. Pete understands better than anyone the entire NRO apparatus and how it knits into the [National Geospatial-Intelligence Agency] and the [National Security Agency]. So he knows where you can take shortcuts. Where you can't. He has been able to help us tailor solutions for our customers around the world.

Have you made any progress on NRO's science and technology budget?

I inherited an organization where the science and technology budget had been slashed by about 50 percent in the last five years. We have a program in place to incrementally bring that back. I'm not satisfied with the amount of progress we've made. That's our seed corn. I have to tell you that in this budget environment, it is very difficult and I'm only being able to do it in tenths of a percent every year.

On the SigInt side, are your new satellites a little farther reaching?

The world is changing rapidly, and the intelligence needs are changing rapidly. So we're building satellites that will focus more on specific areas, bring more volume in from those areas, and process that information much quicker. When I say more volume, I mean signals that are much weaker than we previously used to pick up signals and in environments where signals are more dense. We're making them much more flexible and much more responsive to the war fighter tasking.

So are those still called Orion on the SigInt side?

NRO spokesman Rick Oborn: I don't think we've released any of those names although you may have seen them somewhere.

Carlson: We have a signals intelligence constellation, and [we are] replenishing it. And renewing its capability.

How is Boeing doing on the radar satellites that it retained after the FIA cancellation?

Oborn: Can't go there. We've never broken down officially who's building [those]. We admit we have radar satellites.

Carlson: Here's what I can tell you. That we are building an imagery constellation that goes across multibands, and the construction of those satellites is going along very well.

Is there an issue we haven't raised that needs to be covered?

There is no more [launch] competition in this country. Now, there's some coming along. At some point, some day, maybe we'll have a second company. But the age of our infrastructure is terrible. And so I'm worried that if we don't reinvigorate the number of people we have in launch industrial base that will develop the next rocket or modify the ones that we have today, [and] put some money into the basic buildings and launch stands, that we're going to have some trouble in the future.

Are you working with the Air Force on that?

Absolutely. We have for the first time an integrated launch schedule and I look at it every week to monitor how it's going. In other words, we haven't just let the towers go off and plan their launch. We now have all of those launches for the next 18 months integrated. So I know that if this satellite doesn't ship here, what impact it has on every other system. We have a very, very precarious [position] with respect to launch.

On my FIA question, ignoring what kind of satellites these are, how is Boeing doing on these?

Boeing is doing good on the contracts that we have with them. I'm going to be very stern with them about where they apply their people, and how they apply their people. As I am with all of our contractors.

At least in the imaging satellite area, you have one company: Lockheed. Do you ever envision competition?

We've made a conscious decision over the last 10 or 12 years that said we don't need to keep all this infrastructure in place. You bet I have concerns over it. Competition is great, but if you want to foster competition, then you've got to have ongoing production programs to sustain the kind of work force that needs to compete. We haven't been willing to do that in this country. We are where are, and we'll manage our way through it. ■