

Cooperative Industry-Interagency Exchange Agreements

Basing a Program on Exchange vs. New Starts Can Reduce Costs, Maximize Value, Minimize Effects of Reduced Funding, Save Taxpayers' Dollars

COLLIE J. JOHNSON

“The General Service Administration’s (GSA) Office of Government-wide Policy is committed to supporting the efforts of the Air Force and other federal entities in using the exchange/sale authority. Use of that authority enables federal agencies to not only maximize the value of their current personal property assets, but also acquire replacement property that otherwise might not be obtainable. The Air Force missile exchange is an outstanding example of a cooperative interagency endeavor to use that authority. All parties involved should be proud of the significant savings to the taxpayer that are being achieved.”

—Rick Bender
General Services Administration

In the September-October 1998 issue of *Program Manager*, we featured the first part of an article on a unique government-industry bartering arrangement put together by the Maverick Missile Airframe Team. This innovative agreement between the Air Force, General Services Administration, and Raytheon resulted in the Maverick Missile Airframe Exchange Agreement.¹ Briefly, instead of taxpayers shelling out nearly \$1 million to disassemble and demilitarize 1,000 AGM-65A Maverick missiles over 20 years old, the Maverick team devised a way for Raytheon to buy back the missiles from the government for \$2 million and harvest the airframes, still in pristine, “like new” condition, for use in current AGM-65D,

F, and G Infrared (IR) Maverick missile production.

A lot has happened since then. They’re at it again. This Hammer Award-winning team (Figure 1) didn’t stop with their first success.² Losing a few members, picking up others, and regrouping, the team is now working on upgrading electro-optically guided AGM-65 air-to-ground Mavericks through reuse of hardware on older Mavericks, resulting in the newer Maverick AGM-65K “seeker.”

Led by Marc Trinklein, Maverick Development System Manager at Eglin AFB, Fla., their objective is to extend the service life of the AGM-65 through the use of a Charge Coupled Device (CCD) seeker.

Marc Trinklein — Maverick Development System Manager		
AAC/WMG J. Frank Robbins Becky E. Kirk Ron Edinger Deborah Archie Judie Jacobson James H. Kotouch Wanda C. Siefke Jean LaVoie Greg Kuntz Capt. Keith Kenne Lt. Col. Tom Sweigart	OO-ALC/LIWGM Col. Robert George Ben Harris Gary Card Capt. Stuart Wolthuis Maj. Robert Davis Tom Fronberg	GSA Rick Bender Raytheon Missile Systems Company Louise Francesconi W. Glenn Kuller Scott Zibrat Jim Rayburn John Brauneis Steven G. Roberts Dean C. Nelson Frank F. Barraza
AAC/JAN Wayne Warner	DCMC Tucson Edward J. Ancharski Clara M. Bolden	HQ ACC/DOTW Maj. Reid Goodwyn
	AFXORBP Maj. Bill Lindsey Col. Doug Lincoln	

FIGURE 1. **AGM 65-H/K Maverick Missile Upgrade Team**

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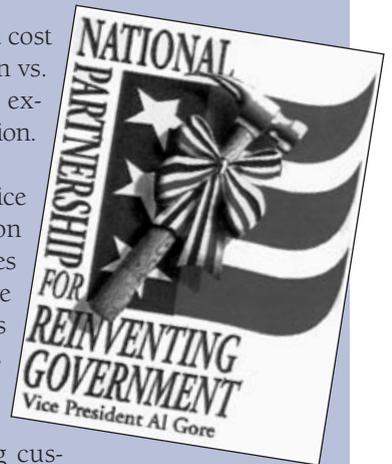
AGM-65K MAVERICK TEAM WINS HAMMER AWARD

Dr. Jacques S. Gansler, Under Secretary of Defense (Acquisition & Technology), presented Vice President Gore's Hammer Award to the AGM-65K Maverick Team at the Pentagon July 7.

The AGM-65 Maverick is a tactical, air-to-surface guided missile designed for close air support, interdiction, and defense suppression. The Maverick Team negotiated a unique arrangement whereby AGM-65A missile airframes and AGM-65G Guidance Control Sections were provided to Raytheon for credit toward the purchase of new electro-optical (TV) seekers in support of the AGM-65K upgrade program. Key to their efforts were approval from the General Services Administration to exchange outdated AGM-65A airframes for new improved missiles; and U.S. Air Force approval to exchange AGM-65G Guidance Control Sections for credit. These actions allowed the U.S. Air Force to move forward with their AGM-65K program to

buy up to 1,950 missiles at a cost of approximately \$18 million vs. the \$119 million normally expected, a savings of \$101 million.

The Hammer Award is the Vice President's special recognition of teams of federal employees and their partners who have made significant contributions in support of the President's National Partnership for Reinventing Government (NPR) principles – putting customers first, cutting red tape, empowering employees, and getting back to basics – resulting in a government that works better and costs less.



AGM-65K MAVERICK TEAM. PICTURED FROM LEFT: RETIRED AIR FORCE LT. COL. GLENN KULLER, RAYTHEON; MARC TRINKLEIN, EGLIN AFB, FLA.; BEN HARRIS, HILL AFB, UTAH; RICK BENDER, GENERAL SERVICES ADMINISTRATION, WASHINGTON, D.C.; AIR FORCE COL. ROSEANNE "RO"

BAILEY, EGLIN AFB, FLA.; AIR FORCE MAJ. BILL LINDSEY, AIR STAFF; DR. JACQUES S. GANSLER, UNDER SECRETARY OF DEFENSE (ACQUISITION & TECHNOLOGY); FRANK ROBINS, EGLIN AFB, FLA.; RETIRED AIR FORCE LT. COL. GREG KUNTZ, COMPTTEK; SCOTT ZIBRAT, RAYTHEON.

G's for K's — Let's Trade

Rather than confuse readers with Maverick alphabet soup, this article focuses primarily on two variants of the Maverick: the older AGM-65G IR missile and the newer AGM-65K CCD missile. (Figure 2 shows the variants of the Maverick Missile to date, along with each missile's capabilities and upgrades.)

Essentially, Raytheon is buying back 1,200 Guidance and Control Sections (GCS) from the Air Force inventory of 5,300 IR-guided AGM-65G's bought after the 1991 Persian Gulf War, exchanging hardware from the older AGM-65G's to fund production of the newer AGM-65K's (thus the term G's for K's). In the process, they are reusing about 1,200 AGM-65G Maverick missiles built since Desert Storm and replacing each missile's IR seeker with a CCD GCS. In addition, Raytheon will be able to use parts of the IR seeker it doesn't need for the

CCD for Foreign Military Sales (FMS) customers.

The new missile — the AGM-65K — is the newest electro-optically guided Maverick, carrying a 300-lb. warhead, and is the first new Maverick seeker variant in nearly 15 years. Its CCD GCS offers a large improvement over the old TV-seeker on previous Mavericks, by providing greater reliability than the current TV Maverick inventory, a much clearer picture, greater detection range, and the ability to operate in lower light conditions.

“Actually, the very heart of the program is the CCD camera, based on commercial technology,” says Trinklein.

The seeker upgrade became necessary, he explains, because obsolete parts made it very difficult to maintain the older vidicon-based TV Mavericks. Initially, the

Air Force put together a plan to fund the upgrade of between 2,500 to 5,000 missiles in the next couple of years, but was unable to find sufficient funding in the Program Objective Memorandum (POM). As a result, the Air Force scaled back initial procurement plans to about 1,200 and funded over 90 percent of the program via an exchange.

As with the airframe exchange, the concept of exchanging AGM-65G's for AGM-65K's was a response to a reduced procurement budget and the tough choices of not funding a much needed weapons upgrade program.

Taking a cue from the team's previous success with the airframe exchange agreement, Raytheon's Air Launched Strike Director, Glenn Kuller, proposed reusing older, unused Maverick hardware that could be certified as “like new,” to reduce program cost. “We had to walk before we could run, and our success with the much smaller airframe exchange, was the spring board for launching into a much larger GCS exchange effort.”

“We basically fell out of the POM,” says Air Force Maj. Reid Goodwyn, A-10 Weapons and Tactics Program Manager at Air Combat Command. “We had been doing very well in the 2000 to 2005 POM for \$130 million. We started having trouble so we suggested, ‘Okay, we'll cut down to 1,200.’”

“Within two weeks we went from a sure thing, seemingly, to no hope. Our Development System Manager at the time said, ‘You have to get it under \$50 million.’ We had to figure out a way to get 1,200 missiles, which is the minimum we wanted, for under \$50 million.”

The team did get the figure below \$50 million, according to Trinklein, “and from our perspective, that ultimately proved to be the right thing to do.” However, he notes that the programmatic were not entirely painless. “In the end,” says Trinklein, “we basically ended up with 1,200 missiles for \$7 million.” He explains that the \$7 million figure, however, nearly made the

AGM-65A	First Maverick air-to-surface guided missile; electro-optical television guidance system; 125-lb. warhead.	12,559
AGM-65B	“Scene Mag” seeker-improved optics; refined target acquisition capability; increased single-pass kill probability.	13,579
AGM-65C	USAF laser missile.	Not put into production
AGM-65D	World's first operational imaging infrared (I ² R) missile, designed to meet Air Force's requirement for a night precision strike weapon with adverse weather and night operations capability.	10,943
AGM-65E	U.S. Navy laser-guided missile, first variant with 300-lb. Maverick Alternate Warhead (MAW) with selectable fusing. Increased effectiveness against high-value targets.	2,165
AGM-65F	Refinements in the I ² R seeker, guidance processor, and system software; added ship attack mode for tactical operations at sea and included heavy-weight warhead.	1,732
AGM-65G	Added system software to give Air Force capability of attacking an expanded spectrum of land and sea targets. Optimized use against high-value targets.	10,414
AGM-65H/K	Upgraded Guidance Unit with Charge Coupled Device (CCD) technology; clearer picture, longer standoff range, haze penetration; enhanced tracking software. Guidance Unit mounts on either airframe with shaped-charge warhead (65H model) or with the heavy-weight warhead (65K model). Completed operational testing.	35 “R&M 2000” units built; 1,200 GCSs initial production

FIGURE 2. **Maverick Missile Variants — 1972 to 1999**

team a victim of their own success. When they briefed their plan to senior acquisition officials at the Office of the Secretary of Defense, a comment surfaced to the effect that, "Well, since you've been able to reduce the cost of the upgrade program this much, why not make it zero and do it outside the POM?"

"The problem was, you needed money to run the program office, flight test, etc.," Trinklein explains. "And you can't run that off of exchange credits. You have to have cash to do that. A good bit of that \$7 million figure is for things that can't be paid for with credit. So we got it down pretty much to the absolute minimum."

Under the recently negotiated funding arrangement, Raytheon will buy back the IR GCSs of 1,200 AGM-65G missiles and remove six electronic cards that can be used in building the CCD GCS. "We call it a CCD GCS," says Trinklein, "because it can end up on either an AGM-65H or K missile."

The CCDs will then be sold to the Air Force, according to Trinklein, for mating with the center aft sections from the AGM-65G missiles. Raytheon will use the remaining parts of the IR seekers to build new IR seekers for FMS and Direct Commercial Sales (DCS) missiles.

"I must tell you, there are a lot of customers who buy small quantities of items, and they can save a lot of money by using this approach. But it won't work for every organization in every situation. You've got to find the right conditions. You've got to have the exchange hardware in a pristine condition. It can't be junk rusting in some bunker that you push off onto a customer. Absolutely not. It's got to meet the highest quality standards that would apply to new production."

—Glenn Kuller
Raytheon Air-Launched Strike Director

The lower CCD cost and the credit the Air Force will receive for the buy-back of the GCSs effectively funds the AGM-65K program

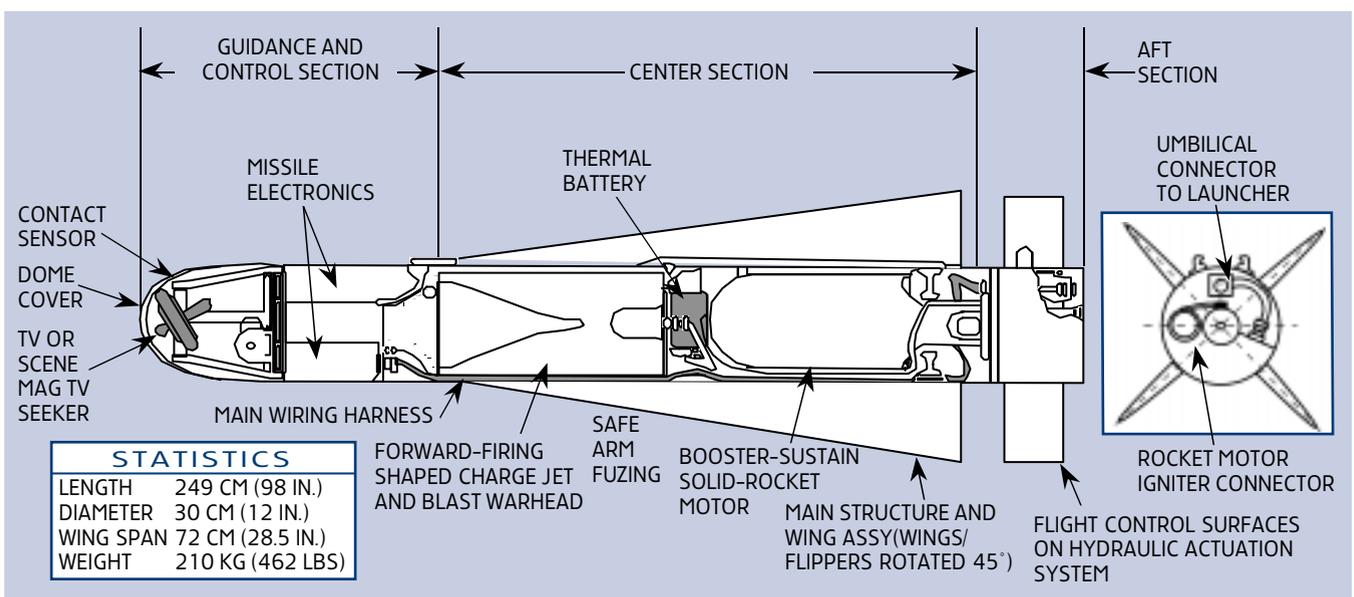
Says Kuller, "The U.S. Air Force, in essence, has become Raytheon's strategic supplier of airframes, and those airframes are then used in the manufacture of IR missiles. We would never have proposed the GCS exchange had we not been so successful on the airframe exchange. Doing the airframe exchange was painful, but it was the first of its kind for the Air Force, and certainly laid the groundwork for the GCS exchange."

Starting Point

"What we basically start with now is the AGM-65G," says Trinklein. "We pull off the GCS and send that back to Raytheon for renewal and sale. But before we give them the whole GCS, we pull six of the 12 circuit cards inside the IR version that are common to the cards used in the new seeker that we're building. And since the new seeker has only nine circuit cards, we need only purchase the three unique circuit cards for the CCD guidance units. Raytheon then gives us credit that we can use toward the new seeker."

And that credit, seemingly, is substantial. Trinklein states that the buy-back credit equates to well over 90 percent of

FIGURE 3. **Maverick Missile Arrangement**



Army AMCOM Exchanging Non-Excess Personal Property for Similar Items

Every year the Army disposes of government property that is worn out, obsolete or excess and, for the most part, receives no value from the disposal process. The Aviation and Missile Command (AMCOM), organized in October 1997 as a result of a merger between Missile Command (MICOM) and Aviation and Troop Command (ATCOM), is making creative use of the little known and used authority in recent years to exchange non-excess personal property for similar items, resulting in big dividends. By statute (see Defense Federal Acquisition Regulation Supplement [DFARS] Subpart 217.70), the DoD may exchange non-excess government property for similar items. The process is regulated by the General Services Administration.

Exchange authority provides the Army an opportunity to obtain some value for old, obsolete (but not excess) items when acquiring similar items.

Exchange transactions underway or already completed at AMCOM illustrate the savings potential:

- One contract awarded resulted in exchanging 124 old, obsolete, and non-pressurized U-21 U aircraft and a warehouse full of spare parts, for a brand new C-12 aircraft. The exchange was valued at \$6.2 million and avoided \$5.2 million in costs associated with storage and disposal of the U-21s and associated aircraft parts.
- Initiating exchange deal for jet aircraft. Requirement is nine; funded for five; program manager to offer obsolete aircraft in partial exchange.
- Upgraded Kiowa Warrior engine; exchanged old engines for new configuration; negotiated credit for old engines.
- Program Manager for Close Combat Anti-Armor Weapons Systems exchanging TOW production equipment with Raytheon; Raytheon assumes responsibility for plant clearance and environmental cleanup costs.
- Program Managers for Night Vision and the Multiple Launch Rocket System are also investigating exchange opportunities.

In an attempt to further expand exchange authority, Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology requested legislation to allow the Army to conduct a test program to sell non-excess equip-

ment. DoD subsequently granted the Army a waiver to DoD policy to allow the sale (as well as exchange) of old or obsolete nonexcess property.

What Every Program/Project Manager Should Know About Exchanges

In acquiring personal property, an agency may exchange or sell similar items and apply the allowance or proceeds as payments, in whole or in part, for the property acquired. (40 United States Code 481(c), Federal Property Management Regulation 101-46, DoD 4140.1-R, and DFARS 217.70). Until recent years, DoD was authorized only sale authority.

Past examples of the use of the exchange authority include: exchanging old diesel engines for credit during remanufacture of bulldozers, exchanging old helicopter engines for new helicopter engines during systems upgrades, and exchanging old and obsolete turret trainers for new ones. The addition of sale authority expands DoD's opportunities to obtain value for old, obsolete equipment.

If the sale or exchange authority is not used, old or obsolete equipment is generally declared excess and then is screened for possible use by other Government agencies before it is disposed of by either donation or sale. In any event, the Agency receives no value for the equipment. Sale or exchange permits the Agency to receive value by applying the sale proceeds or exchange credits toward the acquisition of similar items.

Some conditions are attached to the use of the authority (see Federal Property Management Regulation 101-46, and DoD 4140.1-R). Generally, there has to be a written administrative determination indicating the anticipated magnitude of the economic advantage to the government, that proceeds for the sale or exchange credits shall be applied in whole or in part payment for the items acquired, and if required, the property has been rendered safe or has been demilitarized. In addition, items sold or exchanged and those acquired must be similar. Items sold or exchanged may not be excess to agency requirements. Items acquired are required for approved programs. Items acquired replace and perform substantially all of the functions of the items being exchanged.

funding for AGM-65K production. Although the Air Force has only \$7 million in the POM to buy 1,200 seekers, he expects that number to climb to 2,000 seekers by the time the program reaches full production. Once the U.S. Air Force is purchasing 65K missiles, there will likely be international sales of the CCD missiles, which increases production quantities and further reduces unit costs for all parties.

Ben Harris, Maverick System Program Director at Hill AFB, Utah, attributes much of the success of the AGM-65K upgrade program to the commonality of the center aft section of the Maverick family of weapons concept (Figure 3). "This allows different guidance units and aft control sections to be mated to the same Maverick configuration. The system was developed with the concept of easily removing and replacing the guidance units, resulting in a very flexible core application in other areas for future applications."

Easier the Second Time Around

As with the team's previous airframe exchange agreement, there were regulatory constraints and appropriate waivers to consider for the AGM-65K upgrade program. However, Trinklein says they were far less burdensome than the previous airframe exchange. "We've been through the process a few times, and now it's much easier."

GSA covers the subject of waivers under Title 40 U.S.C. and under the Federal Property Management regulations, according to Rick Bender from the Office of Governmentwide Policy, GSA. "You need waivers," he says, "when you deal with certain federal supply groups. For the 65K upgrade, the team needed a waiver because munitions are in Group 14." The key point to remember, according to Bender, is that "... the exchange must be for a similar item."

"You have to look at the basic requirements," says Trinklein, "and you have to have a stated need. And if you need other than a one-for-one exchange, you've got to get a separate GSA waiver. We also worked very closely with our lawyer,

Wayne Warner, to make sure we could justify everything we did.”

Trinklein urges program managers not to be afraid to go to GSA for waivers. “Most acquisition people, when you tell them they need a waiver, may be somewhat intimidated. They needn’t be,” he says. “They [GSA] are definitely willing to work with you.”

Emphasis on New

Kuller emphasizes that the Maverick AGM-65K upgrade program will reuse components that are, for all practical purposes, new — having been built between 1993 and 1996, and immediately put into storage. “These components basically never left the factory,” he points out, “and they meet the definition of the FAR [Federal Acquisition Regulation] New Materials clause. In the case of these guidance units,” he says, “they’re very clean. The units are purged with dry nitrogen. You can take a guidance unit apart and still smell fresh glue. It’s amazing.”

Ben Harris, as the Maverick System Program Director at Hill AFB, Utah, manages all models of the Maverick in the sustained part of their life cycle, all FMS sales and contracts, and any issues associated with support of weapons in the field. The development agent, however, is located at Eglin AFB, Fla. All of the new systems and technologies are developed at Eglin. Once they’re fully mature, they transition to Hill. Release of the missiles from deep storage at Hill was a coordinated process between Air Staff, Hill, and Eglin.

“A lot of people at Air Staff had a lot of questions about the proposed exchange,” said Harris. “Even though we had worked with them on the previous airframe exchange, some aspects of the 65K missile upgrade were new concepts to them — things that were not really covered in any regulation. But those folks are very reasonable and were very willing to look at new things. It didn’t take that long to convince them that if we didn’t do it this way, there wasn’t going to be an upgrade program. They wanted the new TV seeker for the nation’s

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—Marc Trinklein
Maverick Development
System Manager

warfighters so much that they were willing to give up, from an Air Force perspective, 1,200 of the newest IR Maverick missiles to do this.”

Determining the Value

Determining the value of the guidance unit exchange was very straightforward, according to Trinklein. The team simply went to the FY91 contract, looked up the cost of the guidance unit CLIN [Contract Line Item Number], and then escalated it. “We had it very well spelled out in 1991 what a guidance and control section itself was worth,” he explains. “So we reviewed what escalation factors to use (e.g. machinery and optical parts), and that gave us a ballpark figure. In the end, we captured an appropriate mix of inflation indices and brought it up to today’s price.”

Says Kuller, “We saw this second ‘seeker’ exchange as basically ‘everybody wins’ — we had to come up with a method of determining the value that made sense, but that also priced the guidance units where we [Raytheon] could also sell them to FMS customers at a lower price. Because if we weren’t selling the IR GCSs via FMS, we weren’t going to have a CCD program. This same escalation proce-

Navy Asset Exchange Agreement

The Navy executed a unique Asset Exchange Agreement (AEA), leading to award of an \$8.5 million major torpedo contract to Raytheon Naval and Maritime Systems March 26. The Naval Sea Systems Command (NAVSEA) is the contracting activity, and work is scheduled to be completed by December 2000. Under the contract — a modification to a previously awarded contract — Raytheon will supply 41 Mk 46 Mod 5A(S) torpedoes for the government of Taiwan under the Foreign Military Sales (FMS) Program.

The contract is the first award resulting from the AEA, recently negotiated between Raytheon and the U.S. Navy in conjunction with the Lightweight Hybrid Torpedo (LHT) program, [being built on the original Maverick airframe exchange]. Under the AEA (first of its kind between the Navy and industry), earlier configurations of the Mk 46 torpedo are provided to Raytheon from Navy inventory in exchange for new LHTs. Raytheon, in turn, upgrades the Mk 46s to the latest configuration for delivery to FMS customers. The AEA effectively delivers the funding required to complete the current phase of the LHT program that provides engineering development models to the Navy.

The two-speed Mk 46 Mod 5A(S) torpedo features both active and passive sonar with enhanced capabilities for shallow and deep water. With launch accessories, the torpedo can be deployed by various means: rotary- and fixed-wing aircraft, rocket-assisted launch, vertical launch, and surface vessel torpedo tubes.

“This is a win-win-win,” Kuller says, “in that the U.S. Air Force was able to fund their TV upgrade. Obviously, it’s a win for Raytheon in that we get a new Maverick variant introduced, which holds out the carrot for additional business — that of upgrading 9,000 TV missiles overseas. That’s where the true business is.

“Most of all, our FMS customers also win and will now get an IR Maverick mis-

sile,” he observes, “at a more stable price because the government, as a supplier for airframes and for GCS components, is passing those airframes and components on at a stable price based on a 5,000-quantity buy; the only thing that’s variable is inflation. So for FMS customers who want to come in and buy 50, most of the GCS components are priced in constant 1998 dollars.”

Kuller emphasizes that Raytheon is certifying to all its customers that the AGM-65D, F, G, and K will be built to all factory production standards, that these models meet the FAR New Materials clause, that they have a full warranty, and that Raytheon stands behind them.

“I must tell you,” says Kuller. “There are a lot of customers who buy small quantities of items, and they can save a lot of money by using this approach. But it won’t work for every organization in every situation. You’ve got to find the right conditions. You’ve got to have the exchange hardware in a pristine condition. It can’t be junk rusting in some bunker that you push off onto a customer. Absolutely not. It’s got to meet the highest quality standards that would apply to new production.”

You Can’t Do This Because ...

Kuller says you’ve also got to get the right partners and be able to overcome the objections of those people that say, “You can’t do this because ... Exchanges are relatively new, and many are unaware of their true potential.” Time is a key element, he says. “It just takes time to work something like this through, but with the number of precedents already set, it should now be much easier.”

Trinklein and Kuller predict that defense budgets will continue to be tight, and that DoD will always be looking for upgrades vs. new start programs. “There’s plenty of material in the Defense inventory from the Cold War drawdown,” says Kuller. “I think we’re going to really get the green light to do more upgrades of this nature once DoD sees the results attained by three different Service programs that have all made it work.”

“A lot of people at Air Staff had a lot of questions about the proposed exchange ... They wanted the new TV seeker for the nation’s warfighters so much that they were willing to give up, from an Air Force perspective, 1,200 of the newest IR Maverick missiles to do this.”

—Ben Harris
Maverick System Program Director
Hill AFB, Utah

“Right now the climate is very good for innovative ideas and working these types of exchanges,” according to Trinklein. “We’ve spent a lot of time getting the exact language in the contract so far, getting all the special clauses laid out, waivers etc., so all that groundwork has been done.”

The AGM-65K team has just recently definitized the production options. But, in effect, Trinklein adds, “We’re not discussing the mechanics of the exchange at all. That’s not to say that we’ve got it all right. I’m sure we didn’t — we spent a lot of months writing the language as best we could. But I’m sure there’ll be some minor tweaks to the language as we go through it.”

Bottom Line — Keeping the Program Alive

For those programs experiencing trouble with funding, Trinklein believes the exchange is a viable option to consider and pursue. “It’s a very effective way of keeping a program alive, and it provides win-win-win opportunities for all parties.”

Trinklein adds that the Maverick program may receive funds in future POMs to buy even more CCD seekers that can be used to develop “H” model Mavericks. This would not have been possible, he emphasizes, without the exchange and limited POM funding for the “K” missiles that allowed the program to move forward.

Trinklein believes in the program and is confident that the users (in this case, the warfighters) will love the new seekers. “They’re so much better than the old TV Mavericks and greatly reduce the exposure to threats our aircrews may encounter.”

Although some of the IR seeker components will have to be newly built, the ability to reuse some hardware will make the total seeker less expensive than it would have been otherwise. Trinklein and Kuller are convinced that the concept of basing a program on exchange vs. new starts can reduce costs and be applied on a number of ongoing DoD programs [see pp. 6-7]. Clearly, they believe, the climate is right for acquisition leaders willing to take risks and try new things.

“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than the introduction of a new order of things.”

—Machiavelli

Editor’s Note: Trinklein was reassigned in September to Edwards AFB, Calif. Those interested in further information on the GCS exchange are encouraged to E-mail marc.trinklein@edwards.af.mil or Wgkuller@west.raytheon.com.

E N D N O T E S

1. Johnson, Collie J., “Maverick Airframe Team Scores Stunning Acquisition Reform Success,” *Program Manager*, September-October 1998, pp. 10-18.
2. USD(A&T), Dr. Jacques S. Gansler presented Vice President Gore’s Hammer Award to the Maverick Exchange Team July 7 at a Pentagon ceremony (p. 3).