Army Foreign Comparative Testing (FCT) Program

Karen M. Wilson

Thanks to the 7.62mm short-range training ammunition cartridge, the Army has enhanced its live-fire training for small unit tactics at military operation urbanized terrain sites and reduced the size requirements for small-arms ranges. The cartridge, which was developed by SNC Technologies of Canada, was a solution to bullets traveling beyond the standard target distances, a problem that posed obvious safety issues. The 7.62mm cartridge is an example of the success our military has had under the FCT program. More than 800,000 rounds have been produced for the Army's inventory and the U.S. Navy has fielded more than 800,000 rounds. The projected Army fielding date is in the first half of 2009. Warfighters are anxious for the 7.62mm cartridge to be available through inventory and standard issue channel since it will greatly enhance the capabilities of training facilities and meet deployment requirements.

After FCT qualification in 2002, the first two Buffalo mine-protected clearance vehicles were deployed in support of the IVMMD. (U.S. Army photo.)

FCT is an important acquisition tool for the Army. It takes advantage of existing technology developed by non-U.S. companies to get the best equipment to our Soldiers quickly and cheaply. The FCT program also has a number of objectives beyond satisfying the immediate needs of program managers (PMs). FCT solutions have reduced program risk, fostered international relationships, enhanced standardization and interoperability, and bolstered the U.S. industrial base through licensed production of foreign products within the United States.

Background and Procedures

The Army FCT program's mission is to test items and technologies (with a high-technology readiness level) of our foreign allies and friends to determine their potential for satisfying Army requirements. FCT PMs look for candidates that save on cost and time (field rapidly), improve performance over the current item, or solve an operational or tactical problem.

The program promotes the procurement of mature equipment and technology, which reduces expenditures for research and development (R&D). FCT acquisitions can also lower procurement and operations costs (items already in production can lower the cost) and support life-cycle savings, thus reducing risk for major acquisition programs and accelerating the fielding of equipment needed by our warfighters.

The FCT program was congressionally authorized in 1989 as *Title 10, United States Code, Section 2350a(g).* The FCT program is a consolidation of the former Foreign Weapons Evaluation (1980-1989) and NATO Comparative Test (1986-1989) programs. The new program focused on identifying and testing equipment to get it quickly and more cost-effectively to U.S. forces to improve their readiness and safety.

The Army comparative testing team manages and provides FCT program oversight. The team consists of four civilians and one contractor. In addition to managing the program, the team actively seeks candidate items that could satisfy the existing requirements of PMs. The comparative testing team is part of the U.S. Army Research, Development, and Engineering Command (RDECOM) Headquarters South, Global Operations and Support Directorate, Fort Belvoir, VA. The Commanding General (CG), U.S. Army Materiel Command, exercises responsibility for Army participation in the greater DOD FCT program, and that responsibility has been delegated to the RDECOM CG.

The Army team also manages the Defense Acquisition Challenge (DAC) program, which proposes alternative or "challenge" proposals to existing DOD acquisition programs. Much like the FCT program, the DAC challenge is to find an out-of-the box domestic solution (or foreign solution if foreign candidates are included in the project) that would improve upon current performance or result in greater affordability, manufacturability, or operational capability. DAC funds are provided for test and evaluation (T&E) of the approved DAC proposals.

The Office of the Secretary of Defense (OSD) Comparative Testing Office (CTO) reviews and selects service or U.S. Special Operations Command (SOCOM) proposals per the FCT evaluation criteria and funding constraints and notifies Congress of its intent to provide funding for T&E for the new and continuing projects in the coming fiscal year. Approved and funded proposals become projects.

The sponsoring organization — either service or command — conducts the testing and procures items that meet the set requirements. U.S. candidate costs in FCT tests are funded by the sponsoring organization, as are all costs for procurement and fielding. Projects are usually funded for 1 or 2 years.

Since its inception in 1980, the Army's FCT and predecessor programs have supported 195 projects with 22 countries and procured 59 items from 12 countries. Although OSD has provided $215 million in T&E funding, the Army has avoided more than $3 billion in R&D and T&E costs and reduced the average fielding time for procured systems by 5 years.

Success Stories

Over the years, the Army FCT program has enjoyed the successful qualification, procurement, and deployment of a wide range of equipment and material, including support to our troops in Iraq and Afghanistan. The following are a few examples of that success:

The EAPS is an FCT program success story. When used on helicopters flying in dusty or sandy environments, the EAPS can significantly increase engine life because it decreases erosion of engine components. (U.S. Army photo.)

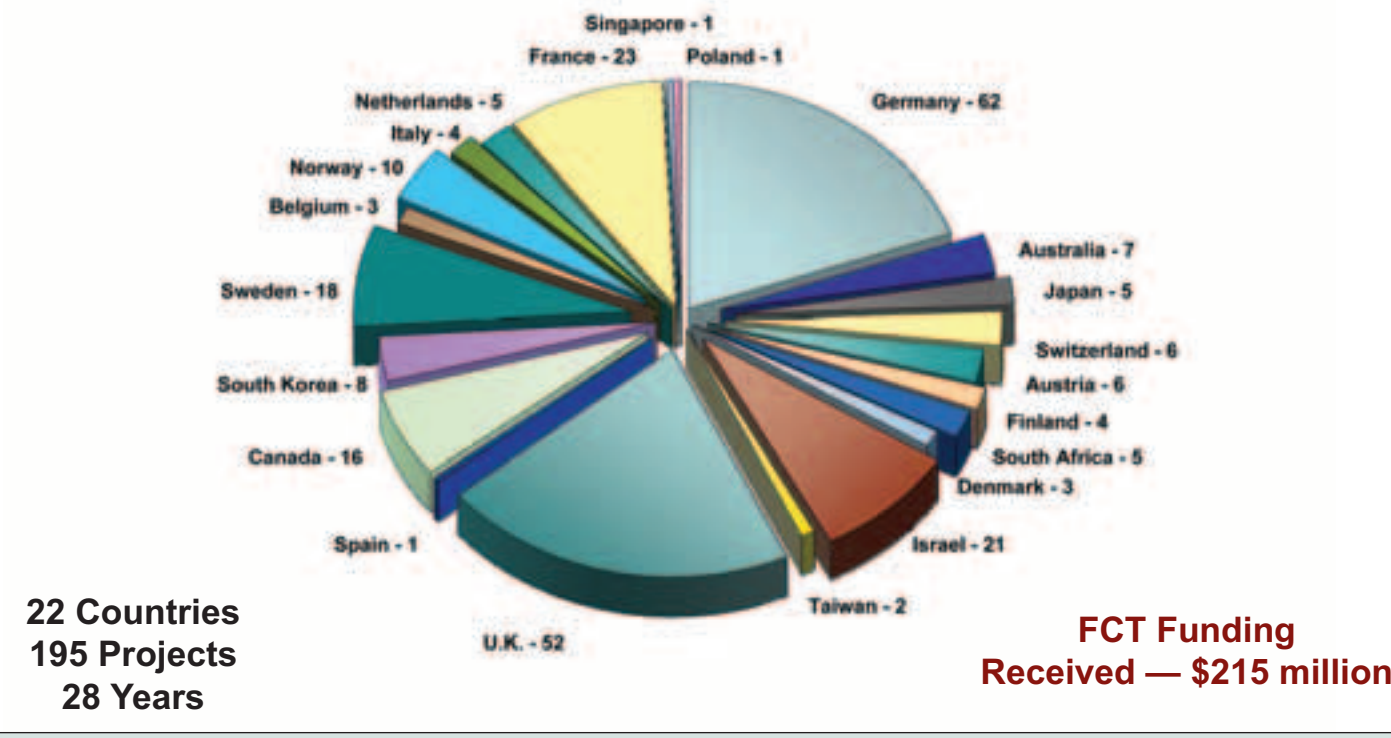

Figure 1. International Participation in Army FCT 1980-2008

Developed by Aleris of Germany, the aluminum alloy 5059 (AA5059) offers greater ballistic and blast protection for armored hull-type vehicles. Because it can be readily welded and offers superior corrosion resistance, the alloy was an excellent candidate material for a wide range of applications. The Army uses AA5059 in the RG-33 Mine Resistant Ambush Protected (MRAP) vehicle that is deployed in Iraq, and the alloy is being considered for other programs as well. In addition to protecting our warfighters, the lighter weight of AA5059 means greater fuel economy and enhanced system performance, and the decreased rate of corrosion lowers overall life-cycle costs. More than 2,000 RG-33 MRAPs have been fielded.

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The engine air particle separator (EAPS) for the CH-47 cargo helicopter is manufactured by Pall Aeropower Corp. of the United Kingdom (U.K.) at its U.S. location in New Port Richey, FL. The EAPS swirls engine inlet air at a high velocity to separate particulate matter via centrifugal force. When used in dusty or sandy environments, the EAPS can significantly increase engine life because it decreases erosion of engine components, thus reducing engine repair costs. The EAPS currently in use is a "long can" design that must be moved before engine maintenance or inspections. The Pall Aeropower design is a "short can" that can remain in place during maintenance. The CH-47D and its replacement, the CH-47F, are flying with EAPSs. All CH-47s in Iraq are now flying with the short can EAPS, which increases operational readiness and supports flight safety. There are approximately 130 sets of EAPS deployed in Iraq and Afghanistan, in the training pipeline, and/or assigned to both Active and Guard/Reserve units for their training/operational use. Total inventory is approximately 200 sets with more being procured. Many more experienced pilots are flying with EAPS and less maintenance man-hours are being performed on the T-55 engine.

The Buffalo mine-protected clearance vehicle was developed by Denel-Mechem (South Africa) for mine-clearing operations, especially improvised explosive devices. The blast-resistant vehicle protects Soldiers and is in operation throughout Iraq. After FCT qualification in 2002, the first two production units were deployed in support of another FCT success, the interim vehicle-mounted magnetic mine detection (IVMMD) system.

The GID-3 developed by Smiths Detection (formerly Graseby Dynamics, U.K.) was selected to fulfill the automatic chemical agent detector alarm (ACADA) requirement and was first procured in 1998. The sensitive detectors of the GID-3 can remotely detect chemical agents, including nerve agents that the previous detector could not. The ACADA's advanced power supply was qualified by the FCT program because of its improved reliability and significant weight reduction. ACADA is the standard detector for all Army units and is deployed worldwide. It also protects domestic installations, including the Pentagon. The services liked the ACADA and it became the Joint Force's standard chemical detector. There were approximately 5,300 ACADAs bought and fielded in FY07 and approximately 1,000 in FY08. The ACADA has been replaced by the Joint Chemical Agent Detector in FY08 and beyond.

The Gun-Laying and Positioning System (GLPS) developed by Leica Heerbrugg (Switzerland) significantly improves the capability of our warfighters to quickly and accurately position and survey a battery of howitzers. It uses a Global Positioning System receiver with satellite input to provide a very accurate position and reduce gun-laying time by more than one-third. GLPS is currently deployed throughout Iraq. There are 511 systems currently fielded and there have been no reliability issues reported to date. The GLPS is the primary system the Soldiers prefer to use for aligning their guns. It is currently manufactured by Vectronix in Virginia.

Standard Advanced Dewar Assembly (SADA) Type II and the One Watt Linear Drive Cooler successfully qualified for the Army's Horizontal Technology Insertion program. SADAs, which offer optical improvement, were developed by SOFRADIR of France; the One Watt Linear Drive Coolers were developed by AEG Infrarot Modules of Germany. These items (with advanced second-generation forward-looking infrared systems) provide unequaled day and night, all-weather capability to engage targets and provide situational awareness in the platform sights of the Abrams tanks and Bradley Infantry Fighting Vehicles that were deployed in support of *Operations Enduring* and *Iraqi Freedom*.

The Army has spent $5 billion in procurements as a result of FCT projects. The FCT funds are provided to T&E foreign nondevelopmental items with intent to procure and field items that test successfully. Funds are provided by the OSD CTO, which provides the opportunity for the services and SOCOM to submit proposals to compete for the funds. The services/SOCOM programs of record conduct the T&Es and pledge future funds to both procure and sustain the technology successfully resulting from the tests.

Through its FCT program, the Army has successfully met its key objectives to improve warfighter capability, accelerate fielding, and save taxpayer funds. FCT acquisitions of ammunition, electronic and communication equipment, power equipment, vehicles, and camouflage have enjoyed an outstanding track record for supporting the warfighter and contribute significantly to the fight against terrorism.

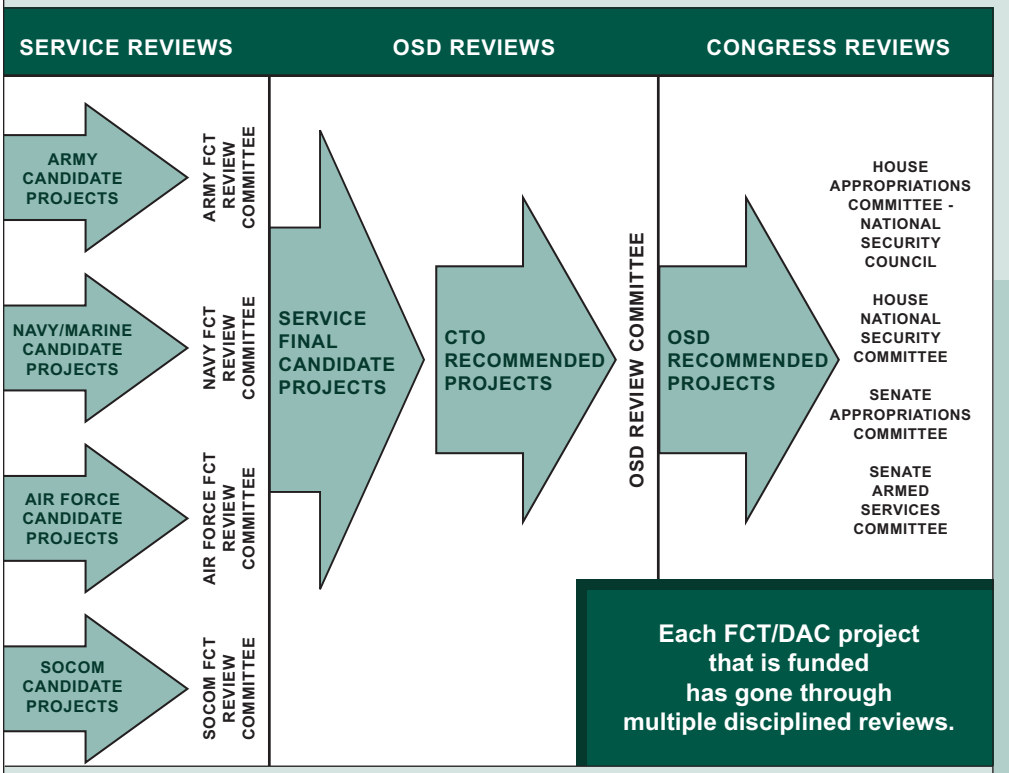

Figure 2. Project Selection Process

KAREN M. WILSON is a member of the Army Comparative Testing Team, RDECOM, Global Operations and Support Directorate. She is responsible for the program management of specific Army service level FCT program and DAC program proposals and projects. Wilson holds a B.S. in business management from the University of Maryland, University College, is Level III certified in program management, and is a certified Lean Six Sigma Green Belt.