

**Summaries of Foreign Comparative Testing Projects
Selected by the Office of the Secretary of Defense
For Fiscal Year 2002 Funding**

Army New Start Projects

40mm Dud Reducing Ammunition – Austria, Germany, Singapore. This project will evaluate dud-reducing ammunition developed by Arges of Austria, Junghans/Dayron of Germany and Chartered Ammunition of Singapore for effectiveness, safety and feasibility of integration into the Mk 19 40mm round as a suitable fuze to reduce unexploded ordnance on the battlefield and training ranges.

Laser Obstacle Detection System – Germany (joint with U.S. Special Operations Command). This project will evaluate the performance, safety and feasibility of the integration of a wire detection/obstacle avoidance warning system for U.S. military rotary wing aircraft, developed by the European Aeronautics Defence and Space (EADS) Company, Dornier Group.

Self-Destruct Fuze for Multiple Launch Rocket System (MLRS) – France, Germany, Israel. This project will evaluate the performance, safety, and feasibility of integration into the MLRS submunitions, of two self-destruct fuzes, developed by Junghans/Giat and Israel Military Industries, Ltd., for the purpose of reducing unexploded ordnance on the battlefield.

Army Continuing Projects

Bradley Fighting Vehicle Long-Life Roadwheels – Canada, Republic of South Africa. This project is evaluating urethane coatings for roadwheels, developed by Elastochem Specialty Chemicals of Canada and Allthane Technologies of the Republic of South Africa, to upgrade the Bradley Fighting Vehicle and extend its service life, achieving better than a three-fold cost savings over the current rubber roadwheels. Through adaptations over the years, the Bradley Fighting Vehicle has been upgraded to stay ahead of changing missions, capabilities, and technologies. As a result, more weight has been added to the vehicle system, and more stress is exerted on the roadwheels.

Driver Vision Enhancer – Canada, United Kingdom. This project is evaluating thermal imaging driving systems for integration into the Army's Driver's Vision Enhancer Program, developed by Thales (Thomson-CSF) of Canada and BAE Systems of the United Kingdom. The vision enhancer devices are critical during combat operations, allowing operators of wheeled and track vehicles to see in dark and obscured conditions.

High Mobility Excavator – Australia, Germany. This FCT project seeks to meet the Army's requirement for a more transportable and mobile engineer's vehicle in support of an Army Chief-of-Staff initiative. The project is evaluating candidate excavators developed by Australian Defense Industries of Australia and Mercedes Benz of Germany for the following characteristics: C-130 deployability, all-wheel drive; diesel engine driven with backhoe; bucket loader; and design for multiple attachment acceptability.

Less-Sensitive RDX – France. This project is evaluating a new less sensitive RDX (a chief ingredient of high energetic material used for explosives, propellants, and initiation activators) to determine if it meets the insensitivity requirements for cast explosives development for 155mm artillery projectile applications. Manufactured by Société Nationale pour Poudres et Explosifs (SNPE) of France, this technology will be incorporated into all future U.S. munitions procurements if the project is successful.

Lightweight Chemical Agent Detector – United Kingdom (joint with U.S. Special Operations Command). The Army and U.S. Special Operations Command require an effective, portable, chemical-detection capability. This project is evaluating a lightweight chemical agent detector (the LCD) manufactured by Graseby Dynamics of the United Kingdom to determine whether it meets or exceeds the requirement for personal warning and protection.

Optically Improved Standard Advanced Dewar Assembly Type II – France. This project is evaluating the French SOFRADIR Optically Improved Standard Advanced Dewar Assembly Type II for integration into the Army's Horizontal Technology Integration (HTI) program second generation FLIRs. The French assembly incorporates the latest optical improvements and represents state-of-the-art FLIR detector/dewar performance.

Prophet Ground – Canada, Israel, United Kingdom. This project is evaluating the capabilities of signals intelligence subsystems developed by Thales of Canada, Tadiran of Israel, and Racal of the United Kingdom to detect the presence of conventional and low-probability-of-intercept (LPI) radios and determine the direction to the radio source. The subsystem will be able to be integrated into a High Mobility Multipurpose Wheeled Vehicle (HMMWV) and operate on the vehicle's organic power.

Navy and Marine Corps New Start Projects

Communications Distribution System – Canada. This FCT will evaluate a digital voice and data distribution system developed by Computing Devices of Canada, integrated with the KC-130 aircraft, for command post complexes ranging (in size equivalents) from Marine Expeditionary Force headquarters down to squadron level air support.

Digital Flight Control System for EA-6B – United Kingdom. This project will use digital technology developed by BAE Systems for the Eurofighter to improve the reliability, maintainability, and performance of the aircraft flight control system of the EA-6B “Prowler” aircraft.

High Frequency Adaptive Antenna Receive System Replacement – Canada. This project will evaluate a high-frequency adaptive antenna developed by SED Systems of Canada to meet a Navy requirement to improve the quality and range of radio communication to support long haul RF communications with P-3 patrol and surveillance aircraft.

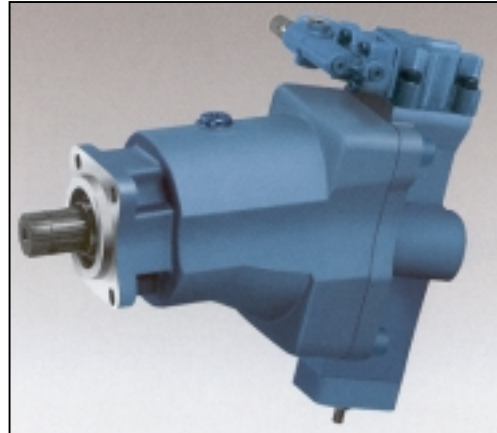
NBC Multipurpose Protective Sock – France, Germany, United Kingdom. This project will evaluate candidate launderable socks developed by Texplorer GmbH, Helsa-Werke GmbH – Germany, Purification Products, Ltd. - United Kingdom, and Paul Boye – France for freedom of movement, and chemical/biological and friction protection to areas of the foot when worn inside warfighter footwear. This sock will be an integral part of the Joint Service Lightweight Integrated Suit Technology (JSLIST) ensemble.

Navy and Marine Corps Continuing Projects

Floating Smoke Pot Components – Germany. The Marine Corps is evaluating an environmentally safe, non-toxic, smoke-producing filler in a floating smoke pot configuration for use during low-light battlefield and training situations. The floating smoke pot is designed to screen personnel and equipment on the battlefield, both land and sea. The candidate filler, produced by Comet Pyrotechnik of Germany, is fielded in smoke pots in Germany, Belgium, France, Norway, and Poland.

High Performance Hydraulic Pump for Advanced Amphibious Assault Vehicle – Germany.

This project is evaluating the performance of the Rexroth Hydraulic Pump under unforced and military environments for use on the Advanced Amphibious Assault Vehicle (AAAV). This commercial bent-axis pump promises to meet the AAAV requirements at a significantly lower price than the current pump.



Joint Protective Aircrew Ensemble – Source Selection Sensitive.

While the Joint Services Lightweight Integrated Suit Technology program addresses new technologies for ground troops in chemical/biological (CB) protection, CB garments for the aviation community have not been updated for over a decade. This FCT project is evaluating foreign non-developmental item (NDI) ensembles to determine whether they meet U.S. requirements.

Lightweight Aluminum Track – Germany. This project is evaluating a lightweight aluminum track for the Marine Corps' Advanced Amphibious Assault Vehicle (AAAV). This track is a modification of an existing track manufactured by Diehl of Germany and is the lightest production track available for the AAAV weight class, approximately 500 pounds lighter than the current AAAV track.

Lightweight Diesel Driven Auxiliary Power Unit – Germany, United Kingdom (joint with Army). This project is evaluating lightweight high-speed diesel engine auxiliary power units (APUs) for use on the Marine Corps' AAAV. Fischer Panda of Germany and Mid-West Engines of the United Kingdom have developed a series of lightweight, quiet, APUs for the commercial marine industry. These units possess a high power-to-weight ratio and promise to provide superior acoustic noise performance. Successful demonstration of these APUs in a military environment could result in a significant reduction in size and weight and reduce production costs for the AAAV program. In addition, the Army will consider using the APUs in the Advanced Medium Sized Mobile Power Systems and Crusader Programs

Multi Bandwidth Submarine Antenna – United Kingdom. This project is evaluating the ability of a Thomson Marconi antenna to enhance UHF MILSATCOM performance of the OE-538 Multifunction Communications Mast used on all U.S. submarines. The antenna system provides Identification Friend-or-Foe (IFF) and Global Positioning System (GPS) as well as L-Band for mobile subscriber service communications and wireless networking.

Skin and Open Wound Decontamination – Canada. This project is evaluating a Reactive Skin Decontamination Lotion developed by O'Dell Engineering of Canada to assure that it can be used

by individuals and medical personnel to decontaminate skin and open wounds and equipment, with the goal to obtain U.S. Food and Drug Administration approval for use on U.S. personnel. The currently fielded M291 Skin Decontaminating Kit can be used to decontaminate equipment, but cannot be used on open wounds.

Star Tracker – Denmark (joint with Air Force). This project is evaluating the Terma Elektronik HE 5AS Star Tracker system capabilities to provide absolute, three-axis attitude data for spacecraft control, pointing of payloads, and localization of ground observation. The Danish item offers a reliable and affordable attitude-determination system for a wide range of DoD satellites.

Tactical Geographic Information System-MARIA – Norway. This project is evaluating a software-based command and control system from Teleplan that provides superior battlespace awareness through the rapid display of geographic, imagery, and positional information on friendly, neutral, and enemy units. The system provides advanced planning and decision aids such as communication and emitter propagation analysis tools. The project has the added benefit of increasing interoperability with U.S. allies. The objective is to integrate Maria into the Navy's Global Command and Control System-Maritime.

VLF/LF Composite Bushing Replacement – Switzerland. This project is evaluating advanced porcelain bushings for power systems developed by Cellpack Advanced Composites of Switzerland, for use on communications antenna tuning elements that feed high voltage - high current for antenna power. Currently employed Navy communications bushings are near or past their operational service life and must be replaced.

Air Force New Start Projects

Self-Regulating Anti-g Ensemble – Switzerland/Germany. This project will evaluate an advanced technology liquid-filled g-suit developed by Life Support Systems of Switzerland, teamed with Autoflug Libelle GmbH of Germany, that appears to be a major breakthrough over “g protection” provided today. Gravity induced loss of consciousness still plagues fighters above 6gs and current equipment limits crews from achieving and maintaining sustained Hi-g maneuvering without significant risk and fatigue. Currently, Air Force fighter aircrews use a 1940s technology pneumatic anti-g suit that is often the limiting factor in employing aircraft to their full operational capability.

Inertial Measurement Unit (IMU) for Wind Corrected Munitions Dispenser – United Kingdom. This project will evaluate a BAE Systems micro-electromechanical IMU as a possible technical insertion to reduce cost in the third year of full rate production (2003). The Air Armament Center manages a program entering first year full rate production of tail kits which convert munitions dispensers in the inventory into guided weapons capable of accurate hits on targets in any weather and from any altitude. The heart of the kit is an IMU, which provides weapon accelerations and attitude rates to the navigation computer.

Air Force Continuing Projects

Airborne Video Recorder/Replay System – France. This project is evaluating a new, state-of-the-art recorder/replay system developed by Enerotec of France for reliable and cost-effective use on aircraft for flight tests. The proposed recorder/replay system is smaller, has more storage capacity, uses hard disk as storage, does not need external encoder/decoder units, and is more reliable.

Infrared Flare for the C-17 Aircraft – Germany. This FCT project is evaluating the effectiveness of the Buck Technologies' infrared flare to protect C-17 aircraft as part of the Advanced Strategic and Tactical Infrared Expendables Program solution.

Large Aircraft Interior Decontamination – Germany. Current U.S. capabilities to decontaminate the interiors of cargo aircraft are limited to hot and warm air application or weathering and offgassing. This project is evaluating a system manufactured by Odenwald-Werke Rittersback of Germany that could meet the Air Force requirement for decontamination of aircraft from chemical and biological agents without affecting sensitive aircraft components.

Micro-Satellite for Space Experiments – United Kingdom. This project is evaluating the United Kingdom PICOSat, a micro-satellite spacecraft bus developed by Surrey Satellite Technology, Ltd., as part of the Air Force Space Test Center's first acquisition of a low-cost, off-the-shelf micro-satellite bus to support DoD space experiments. Structured as a "turn-key" approach to space flight, the PICOSat acquisition includes all hardware and services, including spacecraft bus, experiment integration services, mission planning, launcher interfaces and deployment mechanisms, launch support, on-orbit operations, and payload data retrieval. Following successful laboratory and ground technical evaluation in FY 1999, the launch was cancelled until a suitable launch vehicle was identified. The launch is now scheduled for October 2001 at the Kodiak Launch Complex, located at Kodiak Island, Alaska.

Plastic Practice Bombs – United Kingdom. This project is evaluating a plastic practice bomb manufactured by Portsmouth Aviation of the United Kingdom for use on Air Force aircraft such as the F-16, A-10, F-15, and B-52. Testing will confirm the operational effectiveness and suitability of the candidate, along with its potential dramatic improvement to the environment and economical aspects of Air Force training range cleanup.

Retractable Arresting Cable System – France. This project is evaluating a system developed by Aératur of France that locks the arresting cable in the up position when needed (for fighter aircraft) and retracts the cable when not required (for commercial and military cargo aircraft). This retraction reduces wear of the cable, since every aircraft using the runway will not have to trample it. This retractable system is currently used in the Czech Republic, France, Spain, Saudi Arabia, and Switzerland.

Wideband Klystron for E-3 AWACS – United Kingdom. This project is evaluating a wide-band klystron power amplifier for the E-3 AWACS aircraft, manufactured by Thorn TMD, that promises greater reliability and much lower operating and maintenance costs. The Air Force has a requirement to improve E-3 AWACS aircraft power amplifier reliability for the main search radar. The current klystron power amplifier has a low mean-time-between-failure and is costly to repair.

U.S. Special Operations Command New Start Projects

7.62mm Lightweight Machine. Gun – Belgium, Germany. This project will evaluate lightweight, durable and reliable 7.62mm machine guns, manufactured by FN Herstal of Belgium and Heckler and Koch of Germany, to complement the organic firepower of Special Operations Forces in operations ranging from low intensity conflict to direct action missions.

Stand-Alone Cooling Suit – Canada, France, United Kingdom. This project will evaluate lightweight, man-portable cooling suits designed to regulate the body temperature of Special Operations Force personnel when operating in environments with elevated temperatures or when wearing chemical protective garments. The candidate suits are manufactured by Delta Temax of Canada, Eurodefhi of France, and W.L. Gore of the UK.

U.S. Special Operations Command Continuing Projects

Advanced Demolition Weapons – Germany, Sweden. This project is evaluating candidate shoulder-fired weapons developed by Diehl/Dynamit Nobel of Germany, and Bofors of Sweden that can be employed from confined spaces and can meet a range of Special Operations Forces missions, including Military Operations in Urban Terrain, anti-armor, and direct engagement of targets in protected/covered areas. Testing involves a series of live-fire assessments by representative users and munitions experts to determine which weapons are most effective against a number of targets ranging from reinforced concrete, to triple brick walls, enemy armor, and defilade positions.

Advanced Lightweight Grenade Launcher Ammunition – Germany, Norway, Sweden. This project is evaluating air-bursting ammunition manufactured by Diehl of Germany, Nordic Ammunition Company of Norway, and Bofors of Sweden for use in the U.S. Special Operations Command's (USSOCOM) Advanced Lightweight Grenade Launcher acquisition program. The candidate ammunition promises the capability to engage targets in defilade positions or urban areas.

Chemical Protective Gloves – Austria, Canada, France, Germany, United Kingdom. Special Operations Forces require an immediate replacement for the current chemical protective glove. The current 14 or 25 mil thickness butyl gloves are not tactile enough, and the 7-mil thickness gloves are not durable enough. This project is conducting a series of operational field tests in different chemical and Petrol/Oil/Lubricant environments to determine if the gloves are fully capable of meeting mission requirements. Candidates include Goetsloff of Austria, Acton International of Canada, Paul Boye of France, Texplorer and Alfred Karcher GmbH (both of Germany), and Southcombe Brothers (United Kingdom).

Counter-Sniper/Gunfire Detection System – France. The PILAR Counter-Sniper/Gunfire Detection System manufactured by the Metravib of France is an acoustic detection system that determines azimuth, elevation, and range to the origin of a shot. This project originally evaluated the French item with the objective of type classification and fielding to meet the urgent requirements of Commander-In-Chief-Europe at a time of intense sniper action in Sarajevo. Project sponsorship transferred from the Army to USSOCOM, and the Army Research Laboratory and selected Special Forces elements successfully conducted the test program. In early FY 2000, 8 systems were deployed with U.S. Forces to Kosovo. While limited procurement is in progress, further testing in tropic and urban environments will fully characterize the system.

MAAWS Infrared Illumination Round – Sweden. The Navy Special Warfare Command is evaluating infrared illumination ammunition developed by Bofors of Sweden for the Carl Gustaf anti-armor weapon, with a fuze that meets U.S. safety standards. These standards were previously waived for the version currently fielded with U.S. forces, and the waiver quantity limit has been reached. The Swedish round incorporates an infrared candle visible only with night vision devices in place of the current white light candle.

Man-Portable Multi Sensor System – France, Israel, Sweden, United Kingdom. This project is evaluating lightweight, hand-held and/or portable sensors developed by Metravib of France, and FLIR Systems and EXENSOR of Sweden to meet requirements of the Joint Threat Warning System. As part of this FCT, specialized headsets/receivers developed by Source of Sound of Israel and Davies of the UK, are being evaluated for compatibility with communications equipment and specialized personnel equipment. The sensor candidates offer capabilities

including all-weather detection of ground, air, maritime, and river vessels, while the headsets provide ruggedized and waterproof communications capability.

MC-130H Aerial Refueling System Pod – United Kingdom. This project is evaluating an aerial refueling capability for the MC-130H Combat Talon II aircraft. Manufactured by Flight Refuelling, Ltd. of the UK, this system provides a wing-mounted hose and drogue aerial refueling pod capable of meeting USSOCOM mission requirements for both rotary wing and fixed wing aircraft. The system is a preplanned product improvement for the MC-130H.

Parachute Leaflet Delivery System (LDS) – Canada. Operations Other Than War and Low Intensity Conflict scenarios expose U.S. aircraft and crews to increasingly complex threat environments. Current delivery methods for psychological operations leaflets require manual dumping by hand over a target at low altitudes. This project is evaluating the LDS developed by Mist Mobility Integrated Systems Technology Inc. of Canada to determine whether it meets USSOCOM requirements for safer and more accurate delivery. The LDS provides automated delivery over long distances and high altitudes.