



About TechSolutions

TechSolutions is an Office Naval Research (ONR) rapid-response program focused on producing prototype technologies to solve problems submitted by Sailors and Marines. TechSolutions was created by Rear Admiral Jay Cohen, former Chief of Naval Operations, as an innovative business process to bridge the gap between the warfighter and the scientist. As Chief of Naval Operations Admiral Gary Roughead says, "I never want to see a sailor or marine in a fair fight." Our warfighters need the best technology, and they need it now. TechSolutions is the definition of speed to fleet, with the goal of putting a solution prototype in the hands of the requesting warfighter within 12-18 months.

To be successful, TechSolutions needs active engagement from the Fleet/Force. To submit a request, Sailors and Marines need only go to the TechSolutions website, <https://www.onr.navy.mil/techsolutions> (no account needed), and answer two basic questions: "What is the problem?" and "What needs to happen to solve it?" Every query will be answered, even if it does not result in a project.

Once TechSolutions decides to take on a project, they work closely with the submitter and subject-matter experts to define the problem and the required solution capabilities. They then ask the Naval Research Enterprise for potential solution ideas. The submitter is involved throughout the process, helping to select the best solution candidate, providing feedback to the developers and whenever possible, participating in the final test and evaluation of the solution prototype. To receive calls for solution ideas, government researchers should register for an account at the TechSolutions website.

Focused on improving the effectiveness of Sailors and Marines, TechSolutions provides a direct means for the Fleet/Force to reach the science and technology community. TechSolutions is the epitome of speed to fleet, asking Sailors and Marines to help ONR execute its strategy and build the technology for the future force.

FOR MORE INFORMATION VISIT:

▶ www.onr.navy.mil/techsolutions

Turning Ideas Into Technologies



Master Chief Petty Officer
Charles Ziervogel
Command Master Chief

It is often said, "It only takes one person to make a difference; it only takes one bright idea." In today's fast-paced and highly technological world, this phrase is easier said than done; there are many challenges to creating change.

First, making a difference requires a person speak up and a person who will listen. Crowd sourcing and collaboration gives a voice to many, making it difficult to hear individuals with bright ideas. There is also the natural pressure to conform to the current standard or practice. This is especially true in the military, where the tendency is to make do with what is available because it's what works, and how it has always been done. Next, budget cuts and the need to use resources more effectively can limit the introduction of new technologies. It took more than 20 years in the Navy and a position at the Office of Naval Research (ONR) for me to realize how impactful technological advances are on a Sailor and Marine's quality of life. Having been a Submariner working in the Engineering Department my entire career, there were many times when I wished for the opportunity to introduce a new idea or technology that could potentially make life easier for me and my crew.

The Navy is always looking for innovative ideas to improve how we operate and bring new capabilities to the warfighter. TechSolutions is a program that gives individual Sailors and Marines a chance to speak up about a problem or challenge that technology can solve. The most rewarding aspect of my job comes when I put a finished prototype in the hands of the Sailor or Marine who submitted the request. In that moment, the individual who thought "if only," the one with the bright idea and confidence to speak up is now one person making a difference.

Next time you think how could I make this better, or, what piece of technology could I use to improve the process, then think about using TechSolutions as a way to bring that good idea home as a reality.

*- Master Chief Ziervogel heads the
TechSolutions program*

CSV Calculator



Lt. Andrew Wiese evaluates a catapult capacity selector valve (CSV) calculator provided by the Office of Naval Research during flight operations aboard the aircraft carrier USS Harry S. Truman (CVN 75).

The Catapult Capacity Selector Valve (CSV) Calculator is a handheld electronic device with custom software that enables flight deck officers to accurately and quickly compute the proper CSV setting for an aircraft carrier steam catapult. The CSV is a critical component of an aircraft carrier's catapult system because it controls the energy output of the catapult. The current CSV procedure requires catapult officers to calculate the proper CSV setting by performing a series of manual lookups in paper reference tables.

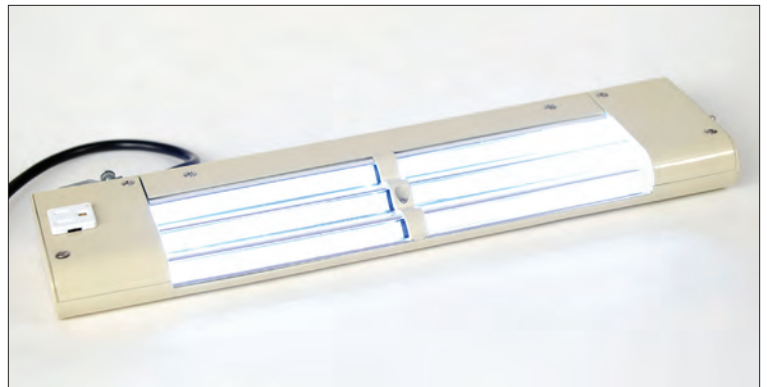
The new automated, ruggedized personal digital assistant contains electronic versions of the paper reference tables and calculates the CSV setting based on parameters input by the catapult officers. To reduce flight deck officers' workloads, the software automatically loads reference table updates, ensures safety and reduces catapult stress by flagging input data that exceeds thresholds. The Catapult CSV Calculator was developed in response to a request submitted by a lieutenant commander from Naval Air Station, Whidbey Island.



Shooters test a Catapult CSV Calculator provided by the Office of Naval Research during flight operations.

Solid State Lighting (SSL)

Low-power, high-reliability light-emitting diode (LED) fixtures were developed to replace the current 8WT5 fluorescent lighting fixtures used aboard submarines and surface ships. The LED fixtures are direct form, fit and function replacements for the 8WT5 fixtures. Since the 1990s, the Navy has been working to revolutionize its lighting systems; the answer is found in SSL, which reduces maintenance and hazard materials and saves LEDs, resulting in fewer replacements, reduced maintenance and lower disposal costs.



Also, they reduce the need for onboard spares, freeing up storage space and making the ship lighter and more fuel efficient. LEDs provide more light output for the same power input, further lowering energy costs.



Electrician's Mate 2nd Class Christopher Curtis uses an LED light while relaxing in his rack during his off hours.

Fluorescent bulbs are noisy; in the limited space aboard a submarine, the silence of the LEDs improves quality of life. The mercury, a hazardous material, contained in fluorescent bulbs requires expensive and intensive disposal procedures. LEDs do not contain hazardous materials, eliminating another ship-maintenance cost.

Talon Battery Module (TBM)



The TBM adapter allows BB2590 batteries to power the Talon EOD robot.

Explosive Ordnance Disposal (EOD) crews often rely on remotely operated robots to disarm explosives. The new TBM, which powers the Talon EOD robot, is a better alternative to the existing large, expensive custom battery. The TBM is a battery cradle and docking bay that holds up to six standard military BB-2590 batteries and includes built-in battery health monitoring. The robot can now run for almost nine hours, 23 percent longer than with the custom battery. The currently issued Talon batteries require warfighters to shut down and reboot the robot to change batteries.



The TBM adapter replaces standard Talon robot battery with six BB2590s.

The TBM eliminates this time-consuming task and gives Talon EOD Robot operators more confidence in their equipment readiness. With the new module, replacement batteries are readily available, and TechSolutions has eliminated the single-purpose custom battery and its charger. The request for the efficient and affordable TBM came from a staff sergeant at II Marine Expeditionary Force 8th Engineering Battalion.

Food Service Management Software (FSM)

The next-generation FSM Software exceeds all capabilities of the existing FSM system and includes additional capabilities to support networked operation and the needs of today's Navy. This modernized FSM Software replaces the Navy's DOS-based FSM, which expires in October 2011. The modular software design caters to each location's specific needs and offers menu planning tools, recipes and nutritional analysis, budget information and inventory tracking. It supports galley operations and administrative, management and record-keeping functions across the entire Navy, both afloat and ashore.



Sailors eating on mess decks aboard USS Harry Truman CVN 75.

The new FSM also helps keep ships from taking excess food aboard, which reduces food spoilage, increases storage space and lightens the ship load, saving the Navy money and energy. Because of the mass amounts of paperwork produced by the current FSM system, culinary specialists have turned into record keepers. The new electronic system enables the kitchen officers to focus on food, not paper, enhancing their creativity and quality of life. Most food service officers would agree that their biggest job is keeping up the morale of the crew, so bettering a food service officer's workload and experience will positively impact the entire crew. A former ONR science advisor at Naval Supply Systems Command (NAVSUP) submitted the request for the new FSM Software.