



## Colonel James Caley Talks About Getting Energy Innovations into the Hands of Marines

**I**N THE SPOTLIGHT for this issue of *Currents* is the Marine Corps Expeditionary Energy Office (E2O) and its Director, Colonel James Caley. On March 26, 2014, Kenneth Hess, director of communication and outreach for the Chief of Naval Operations Energy and Environmental Readiness Division (OPNAV N45) and Bruce McCaffrey, managing editor of *Currents* magazine, sat down with Colonel Caley in his Pentagon office to talk about the mission and the recent successes of his office. Also joining in on the conversation were Katherine (Katie) Hantson, program analyst, and Captain Maureen Krebs, public affairs officer for the Expeditionary Energy Office.



**CURRENTS:** For readers who may not be familiar with your background, could you provide highlights of your career in the Marine Corps?

**CALEY:** I graduated from The Basic School in April of 1990 and was assigned to Headquarters Battery, 11th Marine Regiment, as a Motor Transportation Officer and later as the

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Battery Executive Officer. I then deployed to Somalia as the Motor Transport Officer with 3d Battalion, 11th Marine Regiment. Upon my return, I was transferred to Marine Wing Support Squadron (MWSS) 272 where I served as the Motor Transport Division Officer in Charge and then the Squadron Logistics Officer.

Following a school assignment, I served on Inspector-Instructor duty with MWSS



Colonel James Caley spoke about the importance of energy efficiency at the Secretary of the Navy's energy training event held aboard Marine Corps Base (MCB) Camp Pendleton in February 2014.  
Cpl. Orrin G. Farmer

472. I was transferred to Taegu, Republic of Korea in 1999 where I served as the 3d Force Service Support Group Liaison Officer to the 19th Theater Support Command.

Upon my return from Korea, I served as the Operations Officer and Executive Officer for Brigade Service Support Group-1 at Camp Pendleton. From there I deployed as the Executive Officer of Combat Service Support Group-11 to Kuwait and Iraq.

In September of 2004, after attending the School of Advanced Warfare, I served as the Deputy Assistant Chief of Staff, G-5 (Plans), Marine Corps Forces Korea. In June 2006, I was transferred back to Camp Pendleton where I served as the Commanding Officer, Combat Logistics Battalion 13, and deployed to Iraq with the 13th Marine Expeditionary Unit. Following a year at the Industrial College of the Armed Forces, I was assigned to the Pakistan Afghanistan Coordination Cell on the Joint Staff.

In July of 2011, I was assigned as the Commanding Officer of Combat Logistics Regiment 1, 1st Marine Logistics Group, Camp Pendleton. In July of 2013, I was reassigned as the Director of the Marine Corps Expeditionary Energy Office.

**CURRENTS:** How has this experience prepared you for your current assignment?

**CALEY:** Given my experience as a commander of Combat Logistics Regiment 1, with seven battalions of Marines and three previous combat tours, during which my units lost Marines every single time, I know the cost of fuel on the battlefield—what it costs in terms of money, effort and the lives of injured Marines. It is really high—too high in fact.

My previous jobs as battalion and regimental commander helped me to appreciate the fuel requirements of our forward-deployed Marines. As a battalion

## Programs of Record for Renewable Energy Systems

**TO DATE, THE** Marine Corps has implemented five Programs of Record (POR) for renewable energy systems that were first introduced by industry at past Experimental Forward Operating Bases (ExFOB).

### 1. Solar Powered Alternative Communications Energy System (SPACES)

SPACES is a lightweight, portable, renewable energy system designed to provide power for platoon- and squad-size units operating in remote locations. Marines use SPACES to recharge batteries that power communications equipment like satellite radios, reducing the number of batteries carried on extended patrols.

### 2. Ground Renewable Expeditionary Energy Network System (GREENS)

GREENS is a portable power generation system that incorporates solar panels, energy storage and AC/DC power sources. GREENS provides an average continuous output of 300 watts or 1,000 watts peak—enough to power a battalion combat operations center. Marines also use GREENS to power the High Mobility Artillery Rocket System and the Ultralightweight Field Howitzer, eliminating the need to tow a 3-kilowatt generator and reducing vehicle idle time.

### 3. Hybrid Power Systems

Hybrid power generation—combining batteries, solar, and smart controls with traditional diesel generators—has demonstrated up to 50 percent fuel savings and up to 80 percent reduced generator run time. The Marine Corps is working closely with the Army to develop joint requirements for and field hybrid power systems that will increase the combat effectiveness of both services.

### 4. Radiant Barriers

Radiant barriers, designed for use in Base-X 305 medium soft shelters, double the R-value (thermal resistance) of the tent. Marines use radiant barriers to keep cool air in and hot air out, reducing the number of environmental control units required in a combat environment.

### 5. Light Emitting Diode (LED) Lights

LED light sets for medium soft shelters and general purpose use are more efficient than traditional fluorescent lights. Marines light their tents with LEDs to keep power requirements at a minimum.

For more information about these and other expeditionary energy efforts underway, visit E2O's web site at [www.hqmc.marines.mil/e2o](http://www.hqmc.marines.mil/e2o).

commander, I actually had the advantage of being afloat with the Navy—going into Iraq at the same time. So I had a nice view of how it all comes together. I asked a lot of questions. How do I get the fuel off the ship? How do I get fuel to shore? How do I support combat operations? I've got the field experience and now work in an office that has ten really smart people who were hired to be innovative. And they come up with really cool ideas all the time. It's great to walk into a job where a bunch of smart people work for you and make great things happen. We're also getting



The Assistant Commandant of the Marine Corps, Gen. John M. Paxton, Jr. (right) with Colonel Caley at the Pentagon.  
*Cpl. Tia Dufour*

## It's all about increasing the operational reach of the force and saving lives through fewer convoys on the battlefield.

great ideas out of a lot of other people who work in Marine Corps Systems Command, the Marine Corps Warfighting Laboratory, and elsewhere.

**CURRENTS:** What is the mission of the Expeditionary Energy Office (E2O)?

**CALEY:** It's all about increasing the operational reach of the force and saving lives through fewer convoys on the battlefield. The focus of our Experimental Forward Operating Base (ExFOB) program is to find the best ideas from business and adapt and adopt those technologies for use by our Marines. We work to get the right equipment, the best equipment industry has to offer, into the hands of our Marines.

Through the ExFOB program, we generate requirements that support the warfighter and help make the acquisition of the technologies to address those requirements go as quickly and as smoothly as possible. We partner with dozens of Marine Corps offices and the other services to make this happen.

**CURRENTS:** What are your top priorities for E2O?

**CALEY:** We look at our seven Marine Expeditionary Units and three Marine Expeditionary Brigades—the contingency response forces we put out there to support the joint warfighter. We focus on increasing the operational reach of those forces that are going to be put in harm's way. We also help the other forces that are training in garrison to get more readiness out of their training dollars. If you can make an artillery battalion 25 percent more fuel efficient, they can spend 25 percent more on the training that they need. I'm trying to get them 25 percent more opportunities and increased readiness in the process—more opportunities to fire their weapons, more time in the field.

We're focused now on two major programs—the ExFOB program, which I've already mentioned, and the Commander's Energy Readiness Program (CERP). Through CERP we will arm Marine Commanders with data on how much fuel they're using so that they can plan and make decisions that will extend their tactical

reach. Awareness is a big deal. The best example I can give you is about my father and his Prius. When I drive it, I drive it with an awareness of how much energy I'm burning. Why? Because the display in the dash shows me how much energy I'm using. If I don't have that awareness about my own vehicle, which I don't, I hit the speed limit while I'm still on the on ramp. I'm not paying attention to how much gas I'm burning. But when I drive my father's car, I pay attention. So what we're trying to do is provide that awareness to all of our Marines. Right now, they don't know how they're consuming their fuel.



The Medium Tactical Vehicle Replacement (MTVR) cargo/personnel transport can travel through tough terrain. The MTVR was designed to replace older, commercially based cargo trucks used by Seabees.

*Photographer's Mate Airman Lamel J. Hinton*

So we're trying to give our field commanders a better understanding of how they consume fuel so that they can employ it more efficiently.

**CURRENTS:** How do you provide that awareness to your Marines?

**CALEY:** We're conducting studies at the Integrated Training Exercises (ITX) out at Twenty-Nine Palms—pre-deployment exercises for every ground unit in the Marine Corps. So before you deploy, you do an ITX. During those exercises, we're studying behavior, watching what Marines do and how they do it. We're collecting data like how long our trucks are idling. At ITX 2-14 (held in February 2014), we saw trucks idling more than half the time—at zero miles per gallon, which gets you nothing. We saw generators running at less than 20 percent of their load—not powering anything. 80 percent of the power generated powers nothing.

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We're trying to make sure that commanders are aware of this behavior so they can do something about it. I assure you that, having been one of those commanders, no commander is out there trying to waste gas. They're trying to stretch it. They just don't always know where their energy is being used. If I don't have to tell them—if their own meters can tell them where their units are wasting energy—they'll take care of this problem before the Commandant of the Marine Corps (CMC) has to step in.

**CURRENTS:** This sounds like what's being done with the energy dashboard on Navy ships. Would you be putting something similar on Marine Corps vehicles?

**CALEY:** Well, the energy dashboard is the Ferrari. We're going into austere times, so I call what we're working on more of a motorized bicycle. I just want a gauge that lets the corporal know that he's getting one mile to the gallon based on the way he's driving his truck right now. So if he modifies the way he drives that seven-ton behemoth, he can get three, four or even five miles to the gallon. That's what we're trying to do.



U.S. Marines take position in a HMMWV during amphibious assault training. E2O is working on incorporating a gauge into the next generation of these and other Marine Corps trucks that displays the fuel efficiency of the vehicle.

*Photographer's Mate 1st Class David A. Levy*

**CURRENTS:** Are you working with your acquisition community to incorporate a gauge that displays fuel efficiency into the next generation of these trucks?

**CALEY:** That's right—a simple gauge. Some of these companies out there make smart dashboards for generators and for vehicles. But they cost a lot of money. The gauge that we are testing right now cost about \$100 per gauge. There's some labor costs associated with installing these gauges but it's significantly less than \$2,500 to modify the dashboards of our High Mobility Multipurpose Wheeled Vehicles (HMMWV) and other large trucks.

We're trying to give commanders enough information to make these changes. Part of that is materiel, and part of it is providing information that commanders need to compare their performance with "like" commanders—so they know how they are doing relative to their peers. Consider the following scenario. One infantry commander takes battalion A out and does mission X. A second infantry commander takes battalion B out to do mission X but does it with 40 percent less energy. We want to make sure that those two commanders know that. The commanders then will exchange Tactics, Techniques and Procedures (TTP) and you'll see a natural leveling down to

the better commanders out there. At ITX 2-14, a well-trained motor transport platoon outperformed other transport platoons that were not as energy aware. The well-trained platoons were nearly twice as energy efficient.

**CURRENTS:** Were they just more aware?

**CALEY:** They were more aware but they also had tighter procedures. They weren't sitting on the perimeter with their trucks idling for 40 minutes before they went out on convoy. The lieutenant was paying attention to all kinds of TTPs—the things we're trying to share across platoons and battalions.

**CURRENTS:** The Navy and Marine Corps focus on combat capability as a primary driver for energy investments. What insights can you share here?

**CALEY:** We're about combat effectiveness. Period. Commanders focusing on energy are focusing on the mission. That commander's job is to enable his force to do its mission for as long as possible with the resources it has. Right now, those commanders don't necessarily have the tools to do that. We're not trying to tell the commanders how to do their business. We're simply trying to give them the tools to make the best decisions possible. Then they can make their own decisions regarding the trade-offs



Under Secretary of the Army Joseph W. Westphal (center), Assistant Secretary of the Navy for Energy, Installations and Environment (ASN (E,I&E)) Dennis McGinn (left), and Colonel James Caley (far left) inspect a Conformal Wearable at an Army Operational Energy Exhibit at the Pentagon.

Staff Sgt. Bernardo Fuller

between the application of firepower and operational reach. They don't need help from anybody else to do that.

A destroyer commander does the same thing. A destroyer commander knows that when he's cruising across the Pacific, going against the current, doing 25 or 30 knots that he's going to be burning a lot of gas. But he also knows if he shifts 25 miles to the south, he's going with the current and can cruise and not burn as much gas. We're giving those Marine Corps commanders the type of information they need to make those types of informed decisions.

**CURRENTS:** What reflections can you share about the Secretary of the Navy's (SECNAV) energy training event held at Camp Pendleton earlier this year?

**CALEY:** The SECNAV's energy training event was a great thing and it had some unexpected positive results. For the Camp Pendleton event, we asked ASN (E,I&E) McGinn to carry the messages from the Commandant and the SECNAV to the Fleet. Frankly, ASN (E,I&E) McGinn's participation was essential in the event, because it demonstrated that SECNAV and CMC are serious about reaching our energy goals—expanding our operational reach, getting the most out of the fuel that we have. It was a great opportunity because we were able to focus on Marine Corps

leaders, battalion commanders, regimental commanders, and general officers and bring them all up to speed on the challenges ahead of us. And they provided some great ideas. For example, Brigadier General Mundy suggested incorporating a way to evaluate energy efficiency as part of the Marine Corps combat readiness evaluation system. I think that's a great idea. The Navy already has it as part of their Battle E awards. (Note: Battle E refers to the Navy's "Battle Effectiveness" award, an annual competition that recognizes superior performance—including energy efficiency—in training and operations). We got some other great ideas and input from the Fleet at the event. We were also able to share some of our own information and insights with the Marines and Sailors in attendance.

Getting feedback from those Marines out there is more important than I can possibly communicate. We're trying to identify their good ideas because they know how to implement those ideas in the Fleet. Frankly, I'm betting that their good ideas are better than mine. The young Marine out there driving the truck every day knows better than I do how to make that thing work and how to save energy along the way. Or that battalion commander out there—if somebody makes him aware of the issues we're facing, he knows a whole lot faster than I do what improvements need to be made to help us save energy.

When I took over this program last summer, this program had a history of some great innovation. I want to make sure we're tapping great innovations from the Fleet as much as we can. The Marine Corps has a long history of innovation. For example, Marines were the first to practice and perfect the tactical innovation of close air support—using aircraft to support ground troops—during the “Banana Wars” of the 1920s. The Marine Corps and

**CURRENTS:** Is innovation easy in the Marine Corps?

**CALEY:** No, it's not easy. In fact, it's really hard. We're an organization that's based on tradition. Tradition is in natural opposition to innovation. We're also a victim of our own success. In the last 12 years, we have been heavily involved in two wars and combat operations and have been highly successful. Every unit that goes forward, even if they take significant

Just because we're successful doesn't mean we're as successful as we can be.

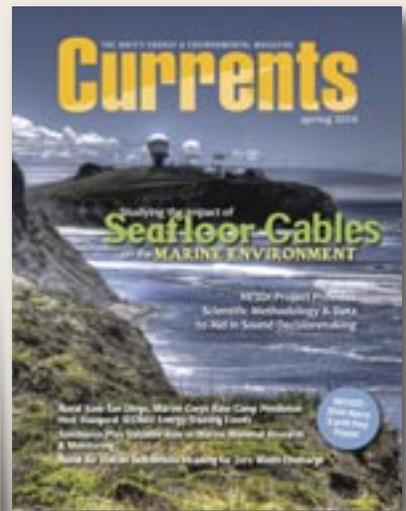
Navy team perfected amphibious operations during the inter-war period. And then we incorporated the helicopter into our operations so that by 1951, we could insert an entire battalion into a combat situation. That's the same Marine Corps that put together the Expeditionary Energy Office to help us to drive innovation and operational energy for the Marine Corps. The Marine Corps has been great at innovation for a long time. Now we're trying to encourage innovation from the Lance Corporal on up.

casualties, they're still successful. They still figure out how to make it work. One of the lessons that we teach in combat operations is just because you survived yesterday doesn't mean you got it right. But we often start believing that we're getting it right. And success can put a damper on innovation. I think that's part of the reason that the Commandant directed us to stand up this office. Just because we're successful doesn't mean we're as successful as we can be.

**CURRENTS:** So if you think you're successful, then there's no need to innovate.

## For More Information

**FOR MORE INSIGHTS** into the SECNAV energy training events held on the west coast earlier this year, read our article entitled “Naval Base San Diego, Marine Corps Base Camp Pendleton Host Inaugural SECNAV Energy Training Events: ASN (E&E) McGinn Delivers Keynotes; Hundreds of Sailors & Marines Share Energy Efficient Ideas & Best Practices” in the spring 2014 issue of *Currents*. To subscribe to the magazine or browse the *Currents* archives, visit the Department of the Navy's Energy, Environment and Climate Change web site at <http://greenfleet.dodlive.mil/currents-magazine>.



**CALEY:** You've got it right already. You've got 100 percent on the test so you're good to go. Our success today may just be good luck. I don't really think so. The past 12 years of success in combat shows that we're pretty darn good at what we do. My point is that we can do better. The original focus of this office was improving our combat operations in Afghanistan. The technologies we fielded reduced Marines' need for fuel in one of the most dangerous areas of Afghanistan—the north end of the Sangin Valley. Fewer fuel convoys on the road translates to fewer Marine casualties. Now, we're just continuing to push innovation.

**CURRENTS:** And how do you push the innovations you've already developed? How do you get people to use them?

**CALEY:** Our ExFOB program and the SECNAV's energy training events are making sure that our Marines know these systems are available for their use. The Marine Corps has a really high turnover rate (about 20 to 30 percent a year). So there's a continuous requirement for this type of training. One of the focus areas for both the CERP and the SECNAV's energy training events is to make sure that we teach Marines about the technologies that are available to them so that they get used.

**CURRENTS:** At the SECNAV training event at Camp Pendleton, you mentioned a process by which the Marines can communicate their requirements up the chain of command. Can you talk a little more about that process?

**CALEY:** Sure. There are two processes where Marines in the field can pass ideas for change up the chain of command. The first thing they can do is submit an urgent need statement that says, "We need a piece of gear to help solve this particular problem." The other thing that they can do is submit a "lessons learned" into the Marine Corps Center for Lessons Learned. Marines can say "We need to get gear X and Y into the field—for our deploying

reconnaissance or communications Marines—to make them more successful and so we don't have to resupply them as often." Frankly, if we teach them to work that way in the field, they'll work that way in combat. They train the way they fight.



Attendees at the MCB Camp Pendleton event received training on two of the POR energy systems that have been fielded to the Fleet including GREENS and SPACES.

**CURRENTS:** Congratulations on your office being rated as one of the world's top 10 most innovative companies in energy along with Tesla Motors, General Electric, and others. (Note: For more information about E2O's designation as a top energy innovator, visit [www.fastcompany.com/most-innovative-companies/2014/industry/energy](http://www.fastcompany.com/most-innovative-companies/2014/industry/energy).)

**CALEY:** Thanks. Let me make a point about that. I talked about my office but our ability to innovate involves a lot more people outside of this office. The Marine Corps Systems Command has a full team that helps us focus on energy and acquisition. The Combat Development and Integration folks help us integrate our technologies into our field operations. Personnel from the Fire, Maneuver and Integration Division (FMID) help us drive what we're doing with our Marine Austere Patrolling System (MAPS). (Note: MAPS is a wearable system that contains a flexible solar panel which Marines can now use to power their gear and filter their water, without multiple batteries, reducing the average infantryman's pack weight by nearly 50 pounds.) In addition, the Logistics Integration Division

HMMWVs drive along narrow roads on the way to a local village during a security operation in Khowst Province, Afghanistan.

*Cpl. James L. Yarboro*



It's advantageous to both the Navy and the Marine Corps to make changes at the same time to our common fleets of equipment. Only then can we capitalize on economies of scale gained by things like the MTRV upgrade.

(LID) is leading development of a new Marine Corps requirement for hybrid power systems. E2O may have received the recognition as an energy innovator but there are a lot of other offices outside of E2O who help us make this work.

The Marine Corps is currently replacing old tactical quiet generators with the next generation of efficient generators called Advanced Medium Mobile Power Sources (AMMPS). Instead of running at 100 percent all of the time, AMMPS detects how much energy is needed at any given time then runs at the required level. There is also important work being done today on the Marine Corps' Amphibious Combat Vehicle (ACV). A working group is focused on making the ACV more energy efficient, so that it gets more operational reach. All these entities work together. It's Marine Corps-wide innovation. We here at E2O are able to focus those innovations all in one place.

The CMC recently released Expeditionary Force 21 (EF21), which talks about how the Marine Corps of the future is

going to fight. At E2O, we have had and continue to have the opportunity to help develop concepts in EF21 that will increase the operational reach of the force. It's a very innovative organization as a whole. The fact that the CMC established our office should tell you that he saw the requirement to have an innovative niche in energy where we could focus our effort—much like we do in some of these other areas.

**CURRENTS:** Are there any areas in which E2O has collaborated with other Navy commands on energy initiatives?

**CALEY:** Yes. We work with a number of our Navy partners including the Naval Surface Warfare Centers in Carderock, MD and Panama City, FL as well as the Engineering and Expeditionary Warfare Center (EXWC) in Port Hueneme, CA. These people are essential to our success. EXWC personnel work at Twenty-Nine Palms, Camp Pendleton and elsewhere to ensure that each and every ExFOB is well executed.

Carderock is another great example of our partnering with the Navy. Carderock is, for lack of a better term,



GREENS, one of five PORs for renewable energy systems, is a 300-watt photovoltaic battery system developed by ONR that can provide continuous power to Marines in the field.

*John F. Williams*

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our engineering pool. When we pick new technologies—technologies that look like they'll be beneficial to Marines—we need the right engineers to tell us how to evaluate those technologies and if it makes sense to procure and deploy them. This way we can be sure that we'll have the right piece of gear performing to the right standards and meeting the right requirements for the Marines. Carderock not only provides us with a whole team of engineers that help us accomplish this but they also reach out to the other warfighting laboratories—whether it's in Panama City or elsewhere—to ensure we have the right specialist on the team.

Marines and the Navy's expeditionary forces (Seabees, SEALs and others) share similar energy and water requirements. It follows that E2O and the Naval Facilities Engineering Command's Expeditionary Program Office work closely to improve the capabilities of expeditionary energy and water systems and field this equipment to Marines and Sailors.

The Office of Naval Research (ONR) is another great example of our collaborations with the Navy. One of the

larger programs that we're working on is our fuel-efficient Medium Tactical Vehicle Replacement (MTVR). The fuel-efficient MTVR is an ONR program that takes existing technologies and integrates them into the MTVR to make it between 25 and 41 percent more efficient. An artillery battalion has a whole bunch of MTVRs. If you make this one truck—the most ubiquitous truck on the Marine Corps battlefield—25 percent more efficient, you're effectively increasing the operational reach of all those units by 25 percent. That means the potential to prosecute 25 percent more targets, 25 percent more availability of fires. What ONR did was reach out, grab all the available technologies, and develop an engineering modification to this truck so that it requires less fuel to operate—making the most common truck in the Marine Corps more fuel efficient.

**CURRENTS:** Is the MTVR your heaviest hitter in terms of energy consumption?

**CALEY:** The MTVR is our largest fleet of trucks although the M1 Abrams tank is a larger energy consumer than any other combat vehicle on the battlefield. Any aviation asset



LEFT: Colonel Thomas Eipp (right) presents the colors of Combat Logistics Regiment 1, 1st Marine Logistics Group, to Colonel James Caley aboard Camp Pendleton.

*Cpl. Khoa Pelczar*

BELOW: Seabee Equipment Operators drive an MTRV through the Naval Construction Training Center training course.

*Chief Photographer's Mate Chris Desmond*



obviously burns a lot of fuel as well. But the MTRV is our most common truck. It's in every unit on the battlefield. HMMWVs are also in every unit on the battlefield, and the Army and the Marine Corps together are working on an energy-efficient replacement for the Humvee—the Joint Light Tactical Vehicle. The MTRV is going to be in the Marine Corps and Navy inventory until 2034 so making it more efficient will provide great benefit to the Marine Corps and the Navy for decades to come.

**CURRENTS:** Who else do you collaborate with?

**CALEY:** We also work right across the hallway with Admiral Slates and his entire crew at OPNAV N45. It's advantageous to both the Navy and Marine Corps to make changes at the same time to our common fleets of equipment. Only then can we capitalize on economies of scale gained by things like the MTRV upgrade.

I think the Marine Corps has over 7,000 MTRVs in its fleet. The Navy may have around 1,500 MTRVs in its fleet. If the Marine Corps or the Navy were to make a change independently of one another, it would be much more expensive per copy. If we move together, it will be much less expensive per copy for all of us—and our entire force (including the SEABEES who deploy with us) will have extended its operational reach. It's all about making the whole team better.

Part of my job is to support the SECNAV's energy goals. One way I do this is by teaching at the Naval Postgraduate School's energy innovation course for senior Navy and Marine Corps leaders. It's a great opportunity because I get to see a lot of admirals, general officers, and members of the Senior Executive Service who have great impact across

the entire naval force. Along with my counterpart at OPNAV N45 (formerly CAPT Jim Goudreau and now his replacement, CAPT Jeffrey Maclay), we coordinate our message at this course and our underlying efforts because OPNAV N45 has the same operational focus that we do. So we need to capitalize on what we're doing together to solve our common challenges. Right now, we're figuring out how the brigade and the Expeditionary Strike Group (associated with the brigade) can operate more effectively together. It's not about the Marine Expeditionary Brigade (MEB) in a vacuum. It's about the MEB, the Expeditionary Strike Group, and how we as a force are successful in prosecuting our targets and destroying our enemies. So we are working with OPNAV N45 to address those challenges.

**CURRENTS:** What else would you like *Currents* readers to know?

**CALEY:** While we buy the armor, firepower and speed that we need to protect our Marines, we also need to give them the operational reach that they need to accomplish their mission. We're about extending operational reach and getting more out of every gallon of fuel. The final message I have—and we have talked to Congressmen about this—is we don't do "green." We're not encouraging Marines to be smart about their energy use because it's good for the environment. We're focused on energy efficiency because it increases Marine Corps readiness and improves the combat capability of the joint warfighter. ⚓