

going green to save lives

Researchers at the U.S. Marines' new test lab are looking at ways to conserve water and energy at operating bases in Afghanistan. It's not just a PR initiative; their efforts could save lives.

NOT LONG AGO, I RECEIVED AN INVITATION TO TOUR THE MARINES' NEW Experimental Forward Operating Base, a test lab where researchers are investigating ways to conserve energy and other resources at forward operating bases in Afghanistan. The guest list included, among others, the commandant of the Marine Corps, Gen. James T. Conway.

There's a war on, there are Marines in harm's way, and the commandant of the Marine Corps is going to take time out to tour a lab devoted to green initiatives? I reread the press release to make sure I had it right, and sure enough, that's what it said. Now I think sustainability is important, but it just doesn't feel like something that would make it onto the top Marine's to-do list during a war.

But it turns out there's more to the story than first appears. The Marines' push to make operating bases more sustainable isn't some kind of science project or public relations initiative. It's about saving lives.

Rolling supply lines

What the lab is ultimately looking to do is cut down on the Marines' use of supply convoys, which are particularly vulnerable to attack. Right now, the forward operating bases depend heavily on these convoys to supply their basic needs. For instance, it's not unusual for an operating base in Afghanistan to be located in an area with no local source of potable water. In that case, trucks will likely be needed to haul in vast quantities of fresh water on a regular basis—according to the Marine Corps Survival Manual, a single Marine in the field in Afghanistan needs to consume at least 10 liters (2.6 gallons) of water a day to remain healthy.

And it's not just water. It's the same with the fuel needed for the generators that power the bases' 21st century high-tech equipment. In today's conflict zones in Southwest Asia, fuel consumption runs to over 25 gallons a day per troop—fuel that often has to be brought in from a supply depot a full day's drive away. Add the fuel and the water, and that's a lot of liquid moving down the road in the back of a truck—maybe as many as eight trucks going out a couple of times a week, each carrying two Marines with accompanying armed vehicle escorts.

Questions of cost and efficiency aside, running convoys is dangerous business. In 2009, Gen. Conway identified convoy security as one of the most pressing problems related to the risk of casualties. Cutting down on the use of convoys would reduce the Marines' exposure to improvised explosive devices and



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other threats. “We have to get Marines off the road,” says Maj. Patrick Reynolds, who works at the new Experimental Forward Operating Base, which is located in Quantico, Va.

Sustainable solutions

And that’s where sustainability comes in. Reducing consumption of fuel and bottled water at the forward operating bases would reduce the need for convoys, which in turn would reduce the risk to Marines on the convoy trucks. Making the bases more self-sufficient would have another benefit as well: It would reduce their exposure to supply line disruptions. Right now, a successful attack on a convoy could cut off the base from its source of supply, and if the situation persisted, even jeopardize its ability to continue its mission.

Researchers at the lab are currently looking at ways to use commercial, off-the-shelf technologies to make the bases’ operations more sustainable. They’re investigating methods of making shelters more energy efficient, so less fuel will be required to heat or cool them. They’re looking at solar and

photovoltaic technologies as possible “off the grid” energy-generation solutions that don’t require fuel transport. And they’re testing micro-purification plants, which could be used at the company level, as a means of allowing Marines to make use of wells, rivers, or canals for drinking water.

And these sustainable solutions will help protect the Marine in harm’s way.

For the Marines in Afghanistan today, the logistics tail—all the support that follows troops into combat—is not an afterthought. It’s a priority. That’s why the Marines are willing to spend dollars (which are in very short supply) to create the Experimental Forward Operating Base.

It isn’t a science experiment. It’s a very real issue that has very real implications for the troops on the ground in Afghanistan. □



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