

∞ Marines push for solution to roadside bombs in Iraq

April 30, 2006

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TWENTYNINE PALMS ---- After two tours of duty in Iraq, Marine Corps Maj. Rich Doherty harbors a deep-seated hatred.

His loathing is aimed squarely at roadside bombs, the lethal, makeshift weapons of choice for insurgents in Iraq and Afghanistan that the military calls improvised explosive devices, or IEDs.

"I hate the damn things," the company commander said while showing a group of civilians a simulated Iraqi town that he helped fashion to train every Marine who passes through this sprawling Mojave Desert base. "All I want is a stable Iraq. I don't want to have to ever again see a kid in a body bag, so I want to get rid of all the damned IEDs."

The bombs are responsible for the deaths of 781 U.S. troops serving in all branches of the armed services in Iraq, including two under Doherty's command.

His sense of urgency is underscored by IED death and injury counts, with fatalities in recent months typically in the 40s.

April has been no different. Through Friday, 40 of the 67 U.S. troops killed in action died from roadside bombings.

"I don't want to ever again have to show up at somebody's door after a year in Iraq and tell them what a good kid their son was, but I wasn't able to bring him home because of an IED," Doherty said.

Doherty's passionate, impromptu remarks were delivered to defense industry workers gathered here last week to learn more about the lethal roadside explosives, and to share ideas on how to detect and disarm them before their killing power is unleashed.



*Marine Cpl. Randall Harper, who was hit, but not injured, by IEDs three times while serving in Iraq, guides a group of civilian defense industry workers past a mock car bomb explosion as they walk through a mock Iraqi town used for training Iraq bound Marines at Twentynine Palms on Tuesday.
HAYNE PALMOUR IV Staff Photographer*

The most recent IED death to strike a soldier from California came Tuesday, when the Defense Department reported that Army Pfc. Raymond L. Henry, 21, of Anaheim, died in an IED attack while on patrol in Mosul.

The bombs, fashioned in many ways ---- including being disguised as ordinary roadside trash or embedded just beneath a roadway ---- also are responsible for a majority of the nearly 17,800 injuries suffered by U.S. troops in Iraq.

Good ideas

At the direction of President Bush, who last Sunday became the first U.S. commander in chief to visit this 932-square-mile base, the Pentagon this year is spending \$3.3 billion on stepped-up efforts against IEDs.

In 2004, funding for countermeasures was only \$150 million. The number of attacks escalated from a little more than 5,600 that year to nearly 11,000 last year, a dramatic spike that prompted U.S. Rep. Duncan Hunter, R-El Cajon, and chairman of the House Armed Services Committee, to call for a "campaign to take back the roads."



Smoke rises from an explosion to simulate a car bomb as a group of civilian defense industry workers are taken through a mock Iraqi town used for training Iraq bound Marines at Twentynine Palms on Tuesday.
HAYNE PALMOUR IV Staff Photographer

More than 200 defense industry researchers and executives responded to that call Tuesday and Thursday. They were at the base to take part in live-fire and simulated exercises to show what combat is like in Iraq.

The emphasis was on the array of roadside bombs manufactured from a seemingly endless supply of munitions that belonged to the regime of the deposed Iraqi leader, Saddam Hussein.

The civilians were split into small groups and paired with Marines who have lived through roadside bombings and could tell their stories firsthand.

The intent of each "IED Demonstration Day" was to spur development of technologies to stop the bombs that base commanding Brig. Gen. Douglas Stone said are responsible for 55 percent of all Marine Corps casualties.

Troops in Iraq now face an average of 370 bomb attacks each week, most from the roadside bombs, but also from explosive-laden vehicles. In Afghanistan, the number of roadside bombings has rapidly escalated in recent months and now averages about 50 a week, Stone said.

"What I need from you are good ideas," he told the defense industry representatives. "I am going to fast-track any good ideas you send to me and get you the funding. This is a forced march at Mach 1 speed to try and save lives."

'Help us'

Stone, in charge of training approximately 10,000 Marines stationed at the base, officially known as the Marine Corps Air Ground Combat Center, said that roadside bombs are simply booby traps. He has the go-ahead to pay for the development of any good ideas brought to him, and the ability to smooth the way with the Joint IED Defeat Organization, the 350-member Pentagon office in charge of the overall effort.

He also challenged the industry representatives, saying they and all Americans need to realize that the insurgents are sophisticated, technologically savvy and adaptable.

"They are faster at developing technology than anyone in this room," Stone told the executives. "My Marines in country face a clear and present danger from IEDs every day, the technology is highly exportable, and it's probably coming here when the enemy decides to bring it here.

"If that doesn't stir your blood regardless of how you feel about the war, then you're not an American," said Stone, who then cited one example of what U.S. forces need.

"Give us a way to look ahead. I need to be able to sense whether a vehicle is carrying a 500-pound bomb so I can take it out before it reaches its intended target."

Surviving Iraq

Elements of every Marine Corps battalion sent to Iraq or Afghanistan train for about a month at Twentynine Palms, engaging in live-fire training and simulated exercises dubbed "Mojave Viper."

Many of the Marines and sailors from the 25,000-strong I Marine Expeditionary Force based at Camp Pendleton, Twentynine Palms and Miramar Marine Corps Air Station and who are now in Iraq took part in the base's training regimen.

Marines from the 3rd and 2nd Battalions are training now, part of the roughly 50,000 troops from 19 battalions that train each year at the Marine Corps' largest base, a facility that approaches the size of Rhode Island.

One of the Marines who calls the base home is Cpl. Randall Harper, a 23-year-old command and control radio operator who has been to Iraq twice. Thanks to heavily armored Humvees, he has made it unscathed through a trio of roadside bomb attacks while traveling in convoys in the



As Cpl. Randall Harper, and a civilian defense industry worker, right, look on, a role player aims a rocket propelled grenade launcher, or RPG, as a small rocket starts to streak down a wire ending with an explosion at a car to simulate a RPG hit as the group of civilians get a tour of a mock Iraqi town used for training Iraq bound Marines at Twentynine Palms on Tuesday.

HAYNE PALMOUR IV Staff Photographer

dangerous western Anbar province.

"That armor saved my life three times," said the native of LaGrange, Ga., who got back to the United States in January. "I look at life differently now and I don't take any day or any thing for granted. I survived for a reason."

Harper helped lead one of the industry groups through the simulations, the most intense of which was the Iraqi town developed under Doherty's no-nonsense direction.



Wearing flak jackets, helmets and earplugs, participants were exposed to blaring prayers emanating from a faux mosque as they walked through some of the dozens of prefabricated buildings in the town. Mock electrical wires, limited lighting, litter and abandoned vehicles help give the town a realistic feel.

Helping to bring home that reality are 350 civilians portraying ordinary Iraqis and insurgents, including 90 who speak Arabic.

A mock mosque, complete with Islamic prayers being played over a loudspeaker, is part of the mock Iraqi town where Marines bound for Iraq train at Twentynine Palms on Tuesday.
HAYNE PALMOUR IV Staff Photographer

Subtle changes to the town are made weekly as reports from Iraq provide the latest techniques being used by insurgents, thus enabling troops to train in the most up-to-date scenarios they are likely to encounter during urban patrols.

As the group walked through a series of buildings, it was exposed to simulated attacks from an IED, snipers and rocket-propelled grenades.

San Diego's Brian Kelly, president of R/Vision Inc., came away with a newfound appreciation of the training the Marines are getting, and how industry can help.

"I sensed the vulnerability our men and women face in not knowing what's around the next corner or how close you may be to an improvised explosive," said Kelly, whose company manufactures camera system components used to help identify and disarm roadside bombs.

Earlier, the group witnessed the lethal attack from a "daisy chain" of four, 155 mm shells that destroyed a Humvee; stood behind a berm and experienced the concussion from a single 155 mm shell detonated about 100 yards away; and rode in the back of 7-ton trucks for a live-fire drill featuring Marines aboard the trucks and an accompanying convoy fighting off an insurgent attack.

At day's end, group members took a turn behind the wheel and machine guns and rifles at the base's Vehicle Combat Convoy Trainer.

For Harper, all the training offered by the base is a young Marine's best hope for survival in a

conflict that he said the U.S. cannot now walk away from.

"If we come home now, then what the hell was the point of us ever being there?" the corporal asked. "Progress is being made over there and we can't leave until there is a strong and stable Iraqi government."

Industry weighs in

George Coyle, a researcher from Northrop Grumman Electronic Systems in Maryland, said he took part in Tuesday's exercises to get a better feel for what the troops experience.

Coyle worked on the roadside-explosive problem for three years before retiring from the Air Force and joining Northrop. His boss has just directed a divisionwide effort at combating the bombs.

"We're working on a sensor-style solution," said Coyle, adding that the company currently has two proposals before the Pentagon that would detect the bombs with chemical sensors.

Brian Kariya, manager of armored and technology products at BAE Systems in Santa Clara, said the exercises helped him gain an understanding of the tactics and procedures used in Iraq.

"Just getting a feel of the environment by walking through the urban center exercise was helpful in understanding how vulnerable the troops are," Kariya said. "But the most important part is that the Marine Corps is energizing the industry to develop new methodologies to beat IEDs."

Centuries' supply of munitions

The Marines also demonstrated the latest in robotics and armored vehicles, including a heavily armored, \$600,000 vehicle manufactured by a company called Force Protection.

Staff Sgt. Matthew Small, an explosives technician, said he has experienced four roadside bomb attacks on patrol without suffering any injury or serious damage to the vehicle, which features a V-shaped undercarriage to help disperse the effect of the blast.

About 30 of the rigs dubbed "Cougar" are now in Iraq, along with a handful of its larger cousin, the "Buffalo."

It is the troops on foot and in vehicles without the enhanced armor who remain the most vulnerable, said Gunnery Sgt. Kelly Crawford, who like Stone said the greatest weapon to combat roadside bombs is an alert and aware Marine who knows what to look for.

Crawford's team of explosives technicians detected and rendered harmless 161 roadside bombs during his most recent tour in Iraq, and he demonstrated the various types of weapons now being encountered. That includes disguising piles of garbage, ammo boxes abandoned by U.S. forces, old appliances, broken-down cars and concrete blocks.

Crawford said insurgents frequently embed a bomb in a section of curbing, and that an area searched and deemed safe can become a killing ground minutes after troops move on.

"My job is to teach the Marines to look for subtle differences, such as whether a section of red

paint along a curb looks different," Crawford said. "The No. 1 rule in Iraq with IEDs is, an area that has been cleared is secure only until the time you leave it."

The availability of munitions is unending, Crawford said, citing a Defense Department estimate that stated the insurgency has enough recovered munitions from the Hussein regime to sustain its current level of attacks for 274 years.

'We will find it'

Maj. Doherty said every insurgent captured during his two tours came from either Jordan, Syria or Chechnya.

His intense hatred of their tactics comes in part from the fact that they hide.

"When he comes out to fight, that's when his ass is mine," Doherty said. "When he hides behind women and children to set off an IED, there is no way I can see him or take him out."

Stone said that despite the stealth and inventiveness of bomb-makers and triggermen, he is confident that technological advances can overcome their cleverness.



A role player fires an AK-47, which is loaded with blanks, out a window as a group of civilian defense industry workers walk through a mock Iraqi town at the Twentynine Palms Marine base on Tuesday.

HAYNE PALMOUR IV Staff Photographer

During his meeting with the president, Stone said, Bush made it clear he understands the threat. The general said Americans in general must clearly understand how quickly insurgents adapt to new U.S. strategies, and what a sophisticated enemy the troops face.

"I am awestruck by the number of people who simply don't get it that our enemy is good," he said. "We're going to defeat him, but make no mistake about it ---- he is good."

While Stone said he does not expect any silver bullets to emerge in the stepped-up efforts against the roadside bombs, there is hope.

"The threat will go away because we are creeping up on them," he said. "Right now, I just need to slow them down and then stop them."

"Ultimately, there is a solution, and we will find it."

