



THE OUTPOST

U.S. ARMY YUMA PROVING GROUND, YUMA, ARIZONA 85365 | VOLUME 67 NO. 10 MAY 14, 2018

Yuma Test Center Commander addresses workforce in all-hands meeting

By Mark Schauer

Lt. Col. Timothy Matthews, YTC commander, addressed personnel from across the command in late-April.

More than 200 members of the YTC team crowded the post theater to hear his vision for the command and ask questions on current topics.

Also speaking at the event were Ground Combat Systems Director Eddy Patchet and Air Combat Systems Director Jeff Rogers.

Matthews pledged to hold more frequent all hands meetings, with the next one tentatively scheduled for August, and also introduced



Yuma Test Center (YTC) Commander Lt. Col. Timothy Matthews (left) addresses members of the YTC workforce at the post theater in late April. Matthews pledged to hold more frequent all hands meetings, with the next one tentatively scheduled for August, and also introduced a monthly brown bag luncheon with various segments of the YTC workforce. (Photo by Mark Schauer)

a monthly brown bag luncheon with various segments of the YTC workforce: directors in May, division chiefs in June, branch chiefs in July, and team leaders in August.

Matthews also announced that the next YPG Organization Day is tentatively scheduled for November 1.

Patchet discussed YPG's results from the most recent Army Readiness Assessment, saying that the post was above the Army average in 12 of 15 categories. Of the 12, safety rated the highest

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New technology testing may achieve the goals of HARP "space" gun

By Mark Schauer

From Jules Verne until the dawn of the rocket age, scientific thinkers and dreamers assumed that massive artillery fire was the logical means of accelerating payloads into the heavens.

Even in the 1960s, as NASA perfected the massive, multi-stage

Saturn V rockets that propelled humanity to the moon—and YPG tested the Mobility Test Article, precursor to the lunar rover—the Army was conducting the High Altitude Research Project (HARP), which intended to utilize artillery fire as a lower cost alternative to launching scientific payloads into

Earth orbit. The world record for the highest altitude shot—which reached past the Karman Line into space-- was set at the proving ground in 1966. It proved the concept of ballistic suborbital space access, but funding for the program was cancelled the following year.

The original HARP cannon and

several smaller gun tubes associated with those long-ago tests remain at YPG and are still viable for firing with a relatively small amount of refurbishment. Currently, a private industry customer called Green Launch is conducting early testing

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the
torch
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Helicopter on public
display removed
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A View Without A Point

Jungle survival at the Tropic Regions Test Center

By Teri Womack

Recently, I had the opportunity to visit one of our Tropic Regions Test Center (TRTC) locations. I've been developing briefings, brochures and marketing materials for this test center for many years at my desk in the desert, but had never experienced firsthand all the environmental factors that affect testing in the jungle.

This visit took me way outside of my comfort zone as I am a gal who loves her make up, high heels, and anything sparkly. This trip required a drastic costume change. Fashion went out the window and practically walked in the door as I packed jungle boots, bug spray, all things camouflage, and a cool hat I had purchased specifically for this journey.

We were met at the airport by the TRTC Director and immediately greeted by a wall of the most hot, humid, air I had ever experienced. I lived in Florida before moving to Arizona, and I thought I knew humidity, but this was different. I swear I could actually feel the weight of it, and it was stifling. It definitely gave me a better understanding of when

people back home say "Arizona is hot, but it's a dry heat!"

Upon arriving at the TRTC offices the next morning, we received overwhelming hospitality from the TRTC team, some with many years of experience who are mentoring and sharing their knowledge with the newer personnel who will lead the tropic test center into the future. Face to face communication with the folks that are immersed in this environment was extremely productive as we brainstormed ideas to better present the test center's facilities and capabilities. And it didn't hurt that they kept my cup full of that intense, strong coffee either.

We were presented a test center overview which was a bit of a thrill for me because although I have developed numerous briefings over the years, this was the first time one was presented to me with my name on the opening slide. It was followed by a safety briefing that highlighted all of the dangerous things to watch out for and avoid in the jungle. There were so many hazards extending from mosquitos, flies, and bugs

to plants and trees, that halfway through the briefing, the wanderer in my heart came to a conclusion - "OK, I got it -- everything wants to kill me -- I won't touch anything and will definitely stay on the trail." They thankfully shared the Snake Rule with me, which is - the first person wakes up the snake, the second person makes the snake mad, and the third person gets bitten by the snake. I made it my top priority to never be the third person in line. I left that to the professionals.

I discovered that testing in a foreign country includes many unique processes and interactions with multiple agencies-- and that's before the test even starts. Just getting the test item into the country can be complicated, and requires special finesse to resolve any issues that arise. It takes a fully experienced team to make it happen.

This venture was a huge learning experience as we visited corro-

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The author visited maintenance facilities, multiple firing ranges, and a recently completed obstacle course. Testing in a foreign country includes many unique processes and interactions with multiple agencies-- and that's before the test even starts. (Loaned photo)

THE OUTPOST

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Chaplain's Corner

Love is a powerful thing

By Maj. Ronald Beltz

Once upon a time a young guy and a young girl fell in love. But the guy came from a poor family: The girl's parents weren't too happy about that. So the young man decided not only to court the girl but to court her parents as well. In time, the parents saw that he was a good man and was worthy of their daughter's hand.

But there was another problem: The young man was a Soldier. Soon, war broke out and he was being sent overseas for a year. The week before he left, the man knelt on his knee and asked his lady love, "Will you marry me?" She wiped a tear, said yes, and they were engaged. They agreed that when he got back in one year, they would get married.

But tragedy struck. A few days after he left, the girl had a major car accident. It was a head-on collision. When she woke up in the hospital,

she saw her father and mother crying. Immediately, she knew there was something wrong.

She later found out that she had suffered a brain injury. The part of her brain that controlled her facial muscles was damaged. Her once lovely face was now disfigured. She cried as she saw herself in the mirror. "Yesterday, I was beautiful. Today, I'm a monster." Her body was also covered with so many ugly wounds. Right there and then, she decided to release her fiancé from their promise. She knew he wouldn't want her anymore. She



would forget about him and never see him again.

For one year, the Soldier wrote many letters--but she wouldn't answer. He phoned her many times, but she wouldn't return his calls. But after one year, the mother walked into her room and announced, "He's back from the war."

The girl shouted, "No! Please don't tell him about me. Don't tell him I'm here!" The mother said, "He's getting married," and handed her a wedding invitation.

The girl's heart sank. She knew

she still loved him--but she had to forget him now. With great sadness, she opened the wedding invitation. And then she saw her name on it! Confused, she asked, "What is this?"

That was when the young man entered her room with a bouquet of flowers. He knelt beside her and asked, "Will you marry me?"

The girl covered her face with her hands and said, "I'm ugly!"

The young man said, "Without your permission, your mother sent me your photos. When I saw your photos, I realized that nothing has changed. You're still the person I fell in love with. You're still as beautiful as ever, because I love you!"

Love is a powerful thing! Probably the most familiar Bible passage, John 3:16 reminds us of God's love for us and our world. Don't forget to tell those you love that you love them!

ALL-HANDS

FROM PAGE 2

above average.

"The assessment showed that the workforce also believes that YTC has a reputation for high-quality work," he said.

Rogers discussed the command's initiative to speed up the hiring process. He reported that 35 long-vacant positions have been filled so far this fiscal year, with more than 70% of these accomplished through either expedited hiring authority or veteran recruitment authority.

"Hopefully we can bring down some of the overtime concerns and reduce attrition," he said.

He also discussed an initiative to issue government iPhones to everyone who is a team leader or above to ensure efficient phone and email communication while out on the range. Rogers also stated that more iPhones could be distributed to lower-level employees in the future if doing so would contribute to safety or efficiency gains.

Both Matthews and YPG Commander Col. Ross Poppenberger gave awards and commander's coins to several dozen employees who had shown particular excellence this year. Matthews concluded by stating the next all-hands meeting would take place in August.

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Shootin' the Breeze

Never forget!

By David J. Horn

I recently saw a particular t-shirt for sale that caught my eye. It had images of several obsolete tech items on the front of the shirt such as cassette tapes and film cameras, with the caption "Never Forget!" Here at YPG, where we're surrounded by new technology, many of our younger employees aren't able to forget these items, simply because they never encountered them in the first place. Anyway, here's a quick trip around the bases for a couple of these memorable, or maybe forgettable, items:

8-Track Tapes. Back in the '70s, when you got into your car, you carried your music around with you in a small suitcase that held 20 or so 8-track tapes. The quality of the audio was really bad and they didn't work well in the cold temperatures of winter, but heck...we didn't know any better. If the tape got accidentally pulled out of the cartridge by the player's drive roller or curious fingers, you couldn't rewind it and the cartridges pretty much had to be tossed. It was a common sight in the '70s to see strands of music tape blowing across the highways, fluttering out of an 8-track cartridge laying along the side of the road.

Cassette Tapes. Cassettes soon replaced 8-tracks because they were smaller, so you could fit twice as

many of them in your music case. The audio was a little better, and if the tape got pulled out of the cassette and wasn't crinkled too bad, you could rewind it back on the reels with a pencil. They did have the drawback of getting stuck inside the players, and, like 8-tracks, the player drive wheels would occasionally grab, eat up, and mangle the tape. If the tape got really chewed up, it, too, would soon be blowing across the road.

Film Cameras. In the olden days, cameras used to have this chemical-based image storage system. You had to expose just the right amount of light onto plastic film that was coated with silver halide crystals, where each roll was good enough for either 24 or 36 exposures. If you didn't forget to rewind the film back into the canister before you opened the back of your camera, you could then mail the canister off to a processing lab, who would develop it and send back your prints in about a week. You could then either toss



the prints loosely in a box, or mount them in a big photo album, about the size of a small suitcase. It was almost like Christmas every time you got your new prints back from the lab, except for the fact that you were again reminded that you still had a lot more to learn about shutter speeds, film ASA, and whatever an F-Stop was.

Floppy Disks. Back in the early 1980s, when you wanted to operate your computer (when both the monitor and the computer box were the size of a small suitcase), you first turned the box on, then got a 5.25-inch floppy disk that had a program on it called "DOS." Floppies were called floppies because inside their cardboard jacket was a disk of thin, floppy plastic. You inserted the floppy disk in a slot in the front of the box, turned the locking lever down, then uploaded the DOS program into the machine. DOS gave you the capability to talk to the computer by typing in crude code words. You

could then do stuff like change things from the "B" directory to the "C" directory, or accidentally reformat your floppy disk.

VHS Recorders. For decades, every family had one techie uncle who would make family movies with an 8mm movie camera. That capability went to everyone with the advent of the VHS camcorder. About the size of a small suitcase, you propped it up on your shoulder and were able to make fuzzy movies of the kids, all saved on VHS cassettes the size of a book. Oops, book...aaah, imagine something the size of your e-reader, except about an inch thick. Anyway, while it was easy for everyone to operate a VHS camcorder, when it came to programming that big VHS player sitting on top of your thick TV set in order to record a future TV show, nobody ever figured that one out.

AM Radios. So, the other day, the AM radio in my 1993 Ford Ranger conked out. Because the truck itself is close to conking out, I replaced the radio with the cheapest new system I could buy...which still ended up being an AM/FM radio that has a blue-tooth connection to my phone and its music, and lots of other cool stuff. I kinda miss my scratchy old radio. Actually, that's not true. I love this new radio!

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JUNGLE

FROM PAGE 2

sion sites in the jungle as well as on the coast. We tramped into places where you could barely see the sky through all that jungle canopy. The effect of any combination of temperature and humidity, vegetation, wind, salt spray, rain, plants, trees and bacteria degrades pretty much anything - from clothing to metal pipe. In the short time I was there, it even ruined a pair of my cork shoes. We visited maintenance facilities, multiple firing ranges, a recently completed obstacle course, and the FARC course that was so far in the jungle, the stillness amplified every little sound around me and gave me

the creeps.

It is very different experiencing this environment up close and personal instead of viewing it on a briefing slide, or a video. This visit gave me a new perspective on how to improve future marketing materials such as incorporating short video clips and exploring the development of an e-marketing strategy to better tell the TRTC story.

On a personal note, I did discover that DEET bug spray is not my perfume of choice, cammo is not a good color for me, and there is a big difference between glowing and sweating your face off.

Some days are a total waste of make-up-- my days spent at our tropic test center were totally worth it.



It is very different experiencing this environment up close and personal instead of viewing it on a briefing slide, or a video. This visit gave the author a new perspective on how to improve future marketing materials such as incorporating short video clips and exploring the development of an e-marketing strategy to better tell the TRTC story. (Loaned photo)



A number of YPG personnel, including Col. Ross Poppenberger, commander, and Command Sgt. Maj. Jamathon Nelson, carried the Special Olympics torch today on an approximately two mile stretch of Highway 95. The YPG effort was part of the Law Enforcement Special Olympics Torch Run held each year that involves most law enforcement and uniformed service organizations within Yuma County. (Photo by Mark Schauer)

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HARP

FROM PAGE 1

of launching a space projectile with some of this equipment, combined with an innovative new technology.

Using a hydrogen and oxygen gas propellant, the company feels that as humanity expands its presence in the Solar System in the coming decades, impulse-launched deliveries of supplies and materials will be critically important, particularly given the vast sums of money required for humanity's first forays to places like Mars.

"It takes a million pounds of fuel per person to get to Mars and back," said Eric Robinson, strategic outreach manager. "Multiplied by \$5,000 per pound, that's \$5 billion just for fuel. Our system would be more like \$200 per pound. Hydrogen and oxygen are cheap."

Another advantage of artillery-fired delivery of objects would be the speed and frequency of fire: they could ascend faster and be repeated with less work than multi-stage rockets.

"Your items could be in orbit in five minutes," said Robinson. "We could be launching every 60 to 90 minutes. This will enable us to be the FedEx of space."

It would also be significantly more environmentally-friendly than burning rocket fuel.



Start-up company Green Launch believes that impulse launched deliveries of supplies and material will be critically important as humanity expands its presence in space, for environmental and economic reasons. Objects delivered into space via artillery launch would also ascend faster and be repeated with less work than multi-stage rockets. (Loaned photo)

"At the very end of a shot, a little bit of a steam cloud comes out, because hydrogen and oxygen make water," said Robinson. "The eventual design may use a solar-heated steam piston and hydrogen that is 95% recaptured after each launch."

The early phase of testing in progress now consists of horizontally firing a high density plastic slug through a velocity trap into a specially-constructed catch box in front of a thick earthen berm.

"The set-up is very similar to that of many other firing tests, but this is truly a developmental test," said Chris Tennant, test officer. "A lot of tests at YPG are lot acceptance or stockpile reliability tests, or engineering tests where most of

the components are known and one portion of a system is being changed."

To prepare a launch, the testers insert a burst diaphragm, followed by an o ring behind the plastic slug. Finally, an ignition assembly with squibs the testers have dubbed the 'Christmas tree' is loaded. The testers have added feed tubes that push hydrogen and oxygen gas into the gun. Once enough gas pressure is built up behind the diaphragm, the testers ignite it from a bombproof control room panel and the projectile fires.

"We really haven't modified the gun significantly, except for the breach section," said Dr. John Hunter, chief technical officer. "It's made for a solid propellant, which

is why the available breach volume is fairly small. We prefer a much bigger breach, so when we do the vertical shots we'll probably end up pushing the projectile about a third of the way in the barrel and use a specialized release mechanism that gives about three times the volume."

At this stage, testers are primarily interested in measuring projectile velocity and ensuring the burst diaphragm performs in a controlled manner. So far, with horizontal fires, the testers have already achieved velocities similar to that of the HARP vertical shot that set the world record in 1966. They want to achieve even faster velocities before converting to vertical test fires of their system.

"The trick is using a light gas like



The current testing utilizes a 175 mm gun tube that was associated with the High Altitude Research Project (HARP) that set a world record for highest altitude shot during testing at the proving ground in 1966. "If they get the muzzle velocity they want, they intend to eventually shoot vertically," said Chris Tennant, test officer. "I'm hoping we can make it happen here and break the world altitude record."



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Green Launch employee Ray Tinker prepares the "Christmas tree," the team's term for an ignition assembly with squibs. The testers have already reached velocities similar to that of the HARP vertical shot that set the world record in 1966, and want to achieve even faster velocities before converting to vertical test fires of their system.

hydrogen, which has a very low molecular weight," said Hunter. "You can get very high velocities that aren't possible with powder. This exceptional propellant will allow us to revolutionize access to space and open the solar system to exploration and resources."

"Hydrogen is super-fast, and the ignition and energy from making water is a very energetic exothermic reaction," added Robinson.

Green Launch is a start-up

company that seeks rigorous cost control to ensure the long-term perpetuation of their ambitious program. Hunter, highly regarded in the projectile research community for many decades, was only marginally aware of YPG and its capabilities until a chance meeting with proving ground personnel.

"I went to a conference in New Mexico five or 10 years ago and ran into some high speed photographers who told me the best test range is YPG," said Hunter.

"YPG is very helpful at keeping our costs under control so we can continue our testing," added Robinson. "If we went somewhere else, we could never finish the sequence and the world would be denied this very promising technology."

For their part, YPG personnel are excited about their role in supporting what could turn out to be a project of monumental importance.

"If they can get the muzzle velocity they want, they intend to eventually shoot vertically," said Tennant. "I'm hoping we can make it happen here and break the world altitude record that was set at YPG back in 1966."



Eric Robinson (left) and Dr. John Hunter of Green Launch inspect a velocity trap prior to a test shot at YPG. The early phase of testing in progress consists of horizontally launching a high density plastic slug through the trap and into a catch box. (Photos by Mark Schauer)





The team prepares for a launch in the gun position's mission control room. "YPG is very helpful at keeping our costs under control so we can continue our testing," said Robinson. "If we went somewhere else, we could never finish the sequence and the world would be denied this very promising technology."



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Helicopter on public display removed for repainting

By Chuck Wullenjohn,
Public Affairs Officer

The AH-1F Cobra helicopter mounted atop a pole adjacent to Yuma Proving Ground's Walker gate on Imperial Dam Road was removed for painting yesterday. Built in 1966, it came to YPG many years later for testing of newly installed armament and sensors. Planners estimate repainting will take less than two weeks. The repainting will reduce degradation from the natural elements, namely, the sun and wind, and will return the aircraft to its like-new luster.

The Bell AH-1F Cobra is a two-blade, single-engine attack helicopter

developed using the engine, transmission and rotor system of the Bell UH-1 Iroquois. A member of the prolific Huey family, the AH-1 was the backbone of the Army's attack helicopter fleet, later replaced by the AH-64 Apache. The Marine Corps continues to operate an upgraded twin-engine version of the aircraft.

Two more major historic artifacts are due to be repainted before the end of the fiscal year – an M551 Sheridan Armored Reconnaissance/Airborne Assault vehicle and an M47 medium tank. Funding is being provided through the YPG Heritage Center by the Army Center of Military History.



What does it take to remove an AH-1F Cobra helicopter mounted atop a pole? An eight man crew, a 40-foot trailer, a tractor, chains, binders, straps, and a very tall crane. In this sequence, the personnel carefully maneuver the airship off its perch and onto a trailer for its trip to the paint booth, then clean up the display area before departing. "It's kind of unique," said Eddie Pierson, motor pool supervisor. "It's not something we do every day." (Photos by Mark Schauer)



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YPG hosts Weapons and Tactics Instructor Course training



U.S. Marines with 1st Regiment 4th Marines stage simulated casualties for pickup in support of Weapons and Tactics Instructors course 2-18 at Yuma Proving Ground in late April. WTI is a seven-week training event hosted by Marine Aviation Weapons and Tactics Squadron One cadre, which emphasizes operational integration of the six functions of Marine Corps aviation in support of a Marine Air Ground Task Force. The training provides standardized advanced tactical training and certification of unit instructor qualifications to support Marine Aviation Training and Readiness and assists in developing and employing aviation weapons and tactics. (Photos by Cpl. Nathaniel S. McAllister)

2018 YPG ARMY STRONG B.A.N.D.S. EVENTS

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2, 9, 16, 23, 30 May 2018
0645-0715 | Fitness Center
(928) 328-2369

Why Bowling? 10 Healthy Benefits

9 and 23 May 2018
1100-1300 | Coyote Lanes Bowling Center
(928) 328-2790

Mother's Day Story Time Yoga

10 May 2018
1100-1200 | Post Library
(928) 328-2558

Dive-in Movie

18 May 2018
1830 Hours | Kahuna Lagoon Swimming Pool
(928) 328-2400

Community Pool Party

19 May 2018
1800-2000 | Kahuna Lagoon Swimming Pool
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STRONG
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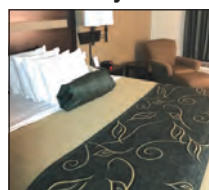


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