

# **ERCA Autoloader is being tested for first time at YPG**

#### By Ana Henderson

Rome wasn't built in a day... but they were laying bricks every hour. This statement rings particularly true in the case of the work being done for the Extended Range Cannon Artillery (ERCA) project.

One day, ERCA will provide faster and safer firing capabilities for the Warfighter...the process to get there is one of meticulous planning, engineering, and a lot of team work.

"ERCA itself is a massive undertaking in that everything is under development at the same time and it's a platform that needs to be compatible with multiple howitzer configurations, multiple projectiles and multiple missions," explains Dante Mucaro, Test Lead for ERCA with the Combat Capabilities Development Center-Armament Center (CCDC-AC).

The ERCA program has been testing various components of its

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The ERCA program has been testing various components of its system for about four years. The newest component undergoing testing is a five-round limited capacity autoloader. It holds five projectiles and five propellant charges. (YPG loaned photo)

# **YPG hosts Reserve Officers' Training Corps cadets**

#### By Ana Henderson

While most college students are enjoying the summer at a sunny beach location, two Reserve Officers' Training Corps (ROTC) cadets spent their summer in the sunny desert in Yuma. The ROTC cadets interned at Yuma Proving Ground (YPG) as part of the officer's training course. While Cadets Christian Smith and Patrick Hernandez are majoring in different subjects and attending different universities they both had the opportunity to spend three weeks together at YPG experiencing things

they might never get to do again, "It's been a lot more than what I expected" said Hernandez.

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# **August is Antiterrorism Awareness Month**

#### By Ana Henderson

Terrorism is everywhere. Domestic and aboard, that is why the Army is sending the message to its workforce to always be vigilant.

August marks the Army's 10th observance of Army Antiterrorism (AT) Awareness Month. This year's theme is Assessing and Understanding the Terrorist Threat.

At Yuma Proving Ground (YPG) the month of AT Awareness kicked off with Master Sgt. Kai Christensen, Instructor Course Noncommissioned Officer in Charge at the Military Freefall School jumping from thousands of feet above the sky, with the symbolic Antiterrorism Flag.

YPG Commander Col. Ross Poppenberger, YTC Commander Lt. Col. Alicia Johnson and Command Sgt. Major Jamathon Nelson, along with other members of YPG leadership and workforce gathered to witness the momentous event organized by Lead Program Analyst, Gary Simpler.

The YPG AT Flag jump's purpose is to raise AT Awareness amongst the



The YPG AT Flag jump's purpose is to raise AT Awareness amongst the Soldiers, Family members, civilians, contractors, and surrounding community. The AT Flag was created at YPG and is currently used by all ATEC Test Centers to raise Antiterrorism Awareness. (Photos by Casey Garcia)

# **THEOUTPOST**

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YPG Commander Col. Ross Poppenberger, YTC Commander Lt. Col. Alicia Johnson and YPG Command Sgt. Major Jamathon Nelson, along with other members of YPG leadership and workforce gathered to witness Master Sgt. Kai Christensen, Instructor Course Non-commissioned Officer in Charge at the Military Freefall School, jumping from thousands of feet above the sky, with the symbolic AT Flag.

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The AT Flag was created at YPG and is currently used by all ATEC Test Centers to raise Antiterrorism Awareness.

This month YPG will also feature a variety of seminars organized by Installation Antiterrorism Officer, Charlie Johnson. The first seminar featured local FBI agents also scheduled to speak to the YPG workforce are Tim Beeler, the antiterrorism officer from Marine Corp Air Station Yuma, the Yuma sector Border Patrol and Ricky Rounds, the chief of operations for U.S. Army Garrison-Fort Hood, who served during the 2014 Spc. Ivan Lopez and 2009 Maj. Nidal Hasan shootings.



Another reminder for the YPG workforce to always be vigilant are the AT banners displayed around the installation. Army Antiterrorism is Always Ready! Always Alert! Because someone is depending on you.

# **Howard Cantonment Wastewater Lagoon**

#### By Tyler Pitts, Engineering Tech./ COR, Directorate of Public Works

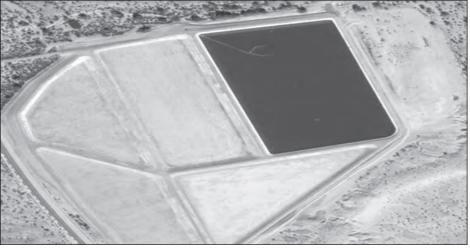
Have you ever wondered where your dirty water goes? Well, wonder no more. Howard Cantonment Lagoon is your one-stop-shop for all your dirty water. Wastewater is considered contaminated water from household use such as sewage, bathwater, toilets, and much more. In this article, Directorate of Public Works (DPW) hopes to address the concerns with the sewer smell that is lingering in the air, the purpose of a lagoon, how it works, and the current stage of lagoon maintenance.

The Yuma Proving Ground wastewater system collects and delivers sanitary wastewater through a collection of sewer lines, mains, and lift stations. A sewer lagoon is a large pond that contains sewage and other wastewater. Howard Cantonment Area (HCA) consists of five large ponds located in the southwest desert behind lower housing. The lagoons service approximately 27,550 linear feet of sewer lines. The sewer lagoon has an aerating system that places oxygen into the wastewater. Mother Nature is another contributing factor in the lagoon process; the sun supplies heat to help increase bacteria. The

bacteria and algae assist in breaking down sewage and effluent. The wind helps with evaporation and placing oxygen into the wastewater. Professional wastewater personnel certified by the Arizona Department of Environmental Quality are trained in maintaining the lagoon. They ensure the lagoon has proper operation of the aerating system, remove any vegetation growth, and make sure smells are kept to a minimum.

Over the years of waste accumulation, a lagoon needs to undergo a deep cleaning. HCA has recently experienced strong odors due to this process. The main lagoon has been pumped and drained. Once the wastewater is drained and placed into the secondary lagoon, the remaining water and sludge have to dry naturally. The drying phase will produce a strong sewage smell but will be alleviated as the drying progresses. Preventative measures have been taken to reduce foul odors. Chemicals have been purchased and placed into the wastewater lagoon to control the odor. During the drying phase, the top layer of sludge will dry and crust over. The remaining sludge underneath will

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Over the years of waste accumulation, a lagoon needs to undergo a deep cleaning. The main lagoon currently has been pumped and drained. The drying phase will produce a strong sewage smell but will be alleviated as the drying progresses.



The photo on the left shows the current drying stage. The water located in the middle of the lagoon is called the fermentation pond. The fermentation pond is where wastewater initially enters the lagoon and solids settle out. The wastewater then flows to the much larger evaporation pond which has been pumped into the secondary lagoon to allow the contractor to clean and remove sludge.



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slowly start to dry as the summer heat intensifies. Once the sludge is completely dry, like powder, trained professionals will remove the waste with the appropriate equipment. Once safe, the waste will be properly disposed of in accordance with state and federal regulations. The drying process of the lagoon could take up to six months.

The HCA's main lagoon is currently under maintenance. The lagoon is currently in the drying stage. The water located in the middle of the lagoon is called the fermentation pond. The fermentation pond is where wastewater initially enters the lagoon and solids settle out. The wastewater then flows to the much larger evaporation pond which has been pumped into the secondary lagoon to allow the contractor to clean and remove sludge. Shearwater, the Installation Support Services Contractor, has assisted in running a pipe to the secondary lagoon to allow water from the canal to enter the lagoon. The purpose of adding water to the lagoon is to increase the water level to allow the aerators to be placed. The temporary addition of freshwater and aerators will help alleviate odors until the main lagoon is cleaned and ready to be placed back into operation.

DPW plans to add a new aerating system using compressed air. The new aerating system would be permanent and route to both main and secondary lagoons. The aerating system would operate more efficiently and help reduce odors. The proposed system will allow for frequent cleanings and prevent maintenance delays. DPW believes in a clean, maintained and functioning aerating system, so our HCA will no longer be known as the place "Where the Smell Lingers in the Air".





#### Down:

- 1. This is played at the conclusion of every U.S. Army ceremony and all Soldiers are expected to stand and sing.
- 2. Unique geography created this and shaped the history of our community.
- 3. These lines are interconnected between our men and women in workforce.
- 4. He was the first person to land a plane in Arizona when he made a stop on a cross-country flight from Santa Monica to Florida.
- 6. Camp Laguna was one of how many major U.S. Army desert training camps in the California-Arizona Maneuver Area (CAMA).

KEY- 1. Army Goes Rolling Along 2. Yuma Crossing 3. Communication 4. Robert Fowler 5. Cracks 6. Twelve 7. Personal Courage 8. Real Time



#### THE OUTPOST CADETS FROM PAGE 1

Hernandez is a student at Louisiana Tech University he's studying mechanical engineering and hopes to get into a branch of the Corp of Engineers. He interned with the Metrology and Simulation Division.

Cadet Smith spent his time interning with the Instrumentation Division engineering support branch, working on GIS systems, mapping technology and transferring data from the field into software to get a 3D visualization. The training corresponds with his civil engineering curriculum at the University of Toledo in Ohio.

As part of the Reserve Officers' Training Corps program, the cadets attend a regular four-year university to receive a bachelors, once they graduate with their degree the cadets will commission into the Army as second lieutenants.

During their time at YPG the cadets had the opportunity to get an in depth look at YPG and Yuma Test Center's (YTC) operations.

Hernandez explains, "It was my first or second day here and we got in a truck and toured all the different testing sites. I was pretty amazed by that because you get to see what all this equipment goes through, literally the extremes of testing, before it comes back to the Soldier. It adds confidence in the equipment you are using and pretty amazing to see."

Some of the eye-opening experiences included a range tour via a Blackhawk helicopter. During the flyover the cadets received a bird's eye view of the various gun positions and training vehicle courses. The following week the cadets traveled one of those courses, the Patton Hilly course in a tank. The YPG police department took the cadets to the firing range and they also visited a mortar test site where they pulled the lanyard to fire the mortar, and performed physical training with the Airborne Test Force Soldiers.

"The coolest thing was being able to shoot off a paladin" said Smith.

This is the third college summer the cadets have spent their time full-filling their ROTC requirements. Prior to arriving at YPG the cadets attended the advanced training for cadet summer training at Fort Knox. After this summer they will return to school with a wealth of new experiences,

"Before this I didn't know about ATEC and how everything is tested before being fielded. At first it's like drinking from a water hose trying to take in all the information about stuff you never learned about in your classes" said Smith.



Some of the eye-opening experiences included a range tour via a Blackhawk helicopter. During the flyover the cadets received a bird's eye view of the various gun positions and training vehicle courses.

"Without this program we probably would have gone our whole career without knowing this (YPG and YTC) existed. Even if I did know

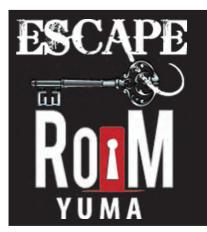
it existed I wouldn't know near the scale of the testing and operations here. So I grateful we got to experience this" echoed Hernandez.



To complete their internship requirements at YPG the cadets presented a brief to YPG leadership. Afterwards YPG Commander Col. Ross Poppenberger presented them with a Commander's Coin and told them "It's been an honor to have you here." YTC Technical Director Larry Bracamonte gave the cadets a Desert Rat certificate, a YPG Tradition.



YPG Police Department law enforcement instructors took Cadets Smith and Hernandez to the firing range where they ran through trigger reset drills, dry fire, four point draw and immediate action drills. (Photos by Ana Henderson)



Lets make some memoríes

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## ERCA FROM PAGE 1

system for about four years. The newest component undergoing testing is a five-round limited capacity autoloader. It holds five projectiles and five propellant charges.

In the past ERCA Howitzer Test Bed (HTB) systems have been built on modified M109A6 Self Propelled Howitzers. Testing of the limited capacity autoloader is being conducted from a prototype M109A7 which has been modified and integrated with the ERCA Armament System.

Mechanical Engineer Joe Troll, Integration and Demo Hardware Lead for ERCA with CCDC-AC, says the first step is, "We tear everything down and prepare it for ERCA modifications." Those modifications are primarily cab modifications to accept a larger, extended range armament system.

Troll sent the HTB cab to Anniston Army Depot, whose personnel widen the armament opening, raise the roof to make room for the upgraded elevation system and, "Unique to this vehicle, the bustle was extended to fit the limited capacity autoloader."

The integration undertaking is massive. At any time during the one and a half year it has taken to get to this vehicle ready for testing, more than 100 people have worked on this test item, "There has been a lot of good people doing a lot of good work



ERCA Team, top row (left to right) Dave Gatter, David Eng, Joe Troll, Dante Mucaro, Chris Plein. Bottom Row (left to right) Jim O'Malley, Derek Wolf, Curtis Bradley, Kevin Maloney, Gilbert Moreno, Thomas Forte, Brian Chase, Elliot Siu, Korinne Dobosh, Robinson Cruz

on this. All I can say is the future is now." That number includes the design and integration team.

The Limited-capacity Autoloader is a technology demonstrator enabling early hardware, software, controls, and system integration learning to inform the objective, Full-capacity Autoloader design and integration. The data collected by YPG will affect elements of the objective design, "ERCA is looking to test the rateof-fire on this vehicle to confirm information that we will take back and eventually use it to develop other technologies" explains Troll.

To get to that point, crews at YPG have been working with the ERCA

teams for years.

"YPG has been instrumental in everything for ERCA development for the last three and a half years. I got on the ERCA program October in 2015 and since then we have executed in excess of 100 test events on the ERCA program across multiple platforms, and they have been absolutely instrumental in us achieving everything we have to date. All the progress we have on this program," explains Murcaro.

YPG Munitions and Weapons, ERCA Test Officer, Gilbert Moreno, has been a part of about 90 of those test events—he's seen ERCA is all of its stages, "It started off with the propellant, projectile and gun tube and it evolved from that into a full weapon."

Another part of the team are the gunners, who if this was a war zone, their position would be manned by Soldiers. Artillery Gunner, Michael Gomez, has worked on the ERCA project about a year. His team consist of four gunners, they offload the ammunition, prepare it and then load it into the magazine, "The customer





Inside of this connex box is where the ERCA teams can safely monitor outside activity including the firing of ERCA. (Photos by Ana Henderson)



YPG ERCA Team, (left to right) Daniel Ramirez, Joseph Rodriguez, Tawnja Turner, Stephanie Archer, Gilbert Moreno, Marcos Morales, Ramon Ramirez, Mike Gomez, Brent Toddy, Levi Webb, Mitch McCann (background), Andrew Keddy, Jeff Carbajal, Jordan Keegan, Diep Ho.

shows us their procedures and the steps to do, and our part is figuring how we can make it safe for us."

Once the gunners insert the propellant into the autoloader magazine, the ERCA Autoloader Team takes over operations. The ERCA Autoloader Team monitors and controls the autoloader system from the safety of a remotely located connex box. "It's doing everything by itself, all we are doing is monitoring the health of it, checking that it is updating us with what it's currently doing, and making sure that it's saying that everything is okay," responds Dave Gatter, a Control Systems Engineer and member of the ERCA Autoloader Team.

This technology will enable higher rates of fire while unburdening the soldier as well as make it safer for Soldiers out in the field. "The main goal of this is getting a high rate of fire, but it's also safer," says Gatter.

Reliability, speed and safety is what ERCA ultimately comes down to—the whole reason why YPG exist is to make sure the Warfighter has the best and safest equipment possible.

Gunner Gomez adds, "You learn from them (customers), they learn from us, they are asking us if we see anything that can be improved or anything that can make it easier for us because at the end of the day this is not going to stay with us it's going to the Soldier," adding, "We see it every day and it's our job, but it's a history making project."

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Troll adds, "Everything is designed in-house by CCDC, the software, the hardware, the integration, the design of the cannon, the gun mount and recoil system, the fire control, everything in this vehicle is designed in-house. Even the propellant and projectiles. So it's a testament to what we are doing and how many hands are involved in this program, and to be honest with you, we wouldn't be where we are today without these guys here at YPG."

Moreno has seen first-hand how many people from YPG have made this mission in-progress possible, "I work with all the teams here, from storage, to the ammo plant to, electronics, high-speed, KTM Telemetry, everybody, we work with everyone here and it's a phenomenal team."



Another part of the team are the gunners, who if this was a war zone, their position would be manned by soldiers. The team consist of four gunners, they offload the ammunition, prepare it and then load it into the magazine. Once the gunners insert the propellant into the autoloader magazine, the ERCA Autoloader Team takes over operations.



At any time during the one and a half year it has taken to get to this vehicle ready for testing, more than 100 people have worked on this test item, "There has been a lot of good people doing a lot of good work on this. All I can say is the future is now" says Mechanical Engineer Joe Troll.

# Shop. Support. Volunteer.

#### By Ana Henderson

John King is currently a field instrumentation technician in the Electronic Warfare branch at Yuma Proving Ground (YPG). Although he started 14-years ago as a heavy equipment mechanic. Long before starting at YPG King was working with his hands,

"A passion of mine has always been to weld, fabricate, and build things. I love to do it."

# King of the cruisers

King learned to weld in high school then started fabricating for his uncle's business which lead to building race cars. "I built a race car when I was 16. I raced it in Phoenix until I was 23 years old and still occasionally race it."

Soon his attention turned to cruisers after seeing them in San Diego, "I love the beach and I love San Diego. I saw a bike frame I knew I could probably make on my own and started



"I love the beach and I love San Diego. I saw a bike frame I knew I could probably make on my own and started doing it" adding, "I didn't know how successful I was going to be until I built it." (Photo by Ana Henderson)





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doing it" adding, "I didn't know how successful I was going to be until I built it. Now, I have friends all over wanting one."

His first attempt at building a bike came with mixed thoughts,

"It was exciting and time consuming. I didn't know how it was going to be to build a bike because they just look so easy but they are a pain."

A pain that became a passion. King estimates it takes about 15 hours to building a bike, "That's bending the frame, welding it, getting it painted, assembling it, building the wheels and tires, lacing the wheels."

King works full-time at YPG so those 15 hours are spread out into any spare moment he gets, "Long nights, I dedicate all my weekends, time-off, holidays. It's my passion so you find time to do things that you love."



King works full-time at YPG so those 15 hours are spread out into any spare moment he gets, "Long nights, I dedicate all my weekends, time-off, holidays. It's my passion so you find time to do things that you love." To date Kings has built nine bikes. (Loaned photos)

To date Kings has built nine bikes and has continued to receive requests because he meets people at regional cruiser events, "When I first finished this bike I went to a beach cruiser event in Phoenix and got noticed by a huge beach cruiser club there who invites me to rides in locations spanning from Phoenix all the way to Huntington Beach."

King has also hosted cruising events in Yuma, "We held a ride here and 100 people from out of town came."

He is currently working on a bike project that will be the first of its kind in Yuma. He is keeping the details a secret until the project is compete but he hopes it will bring more people together to enjoy biking.

"What has intrigued me with bicycle building is that they are fun. Anybody can get involved. It's fun for me to get people involved."



THE OUTPOST





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THE OUTPOST



## **YPG welcomes AWC**





YPG welcomed Dr. Daniel P. Corr, President of Arizona Western College (AWC) and Reetika Dhawan, Dean of Career and Technical Education at AWC. YPG Commander Col. **Ross Poppenberger** presented his command brief, then Corr and Dhawan were guided on a tour where subject matter experts brief them on YPG's technical capabilities. (Photos by Casey Garcia)

## **YPG Health Clinic town hall**

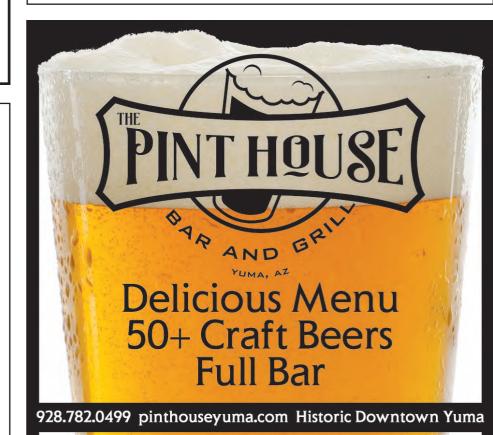


Col. Larry France, the Weed Army Community Hospital Commander, hosted a town hall to discuss the future of the YPG Health Clinic. France announced that the Army is implementing a new electronic database to keep track of medical records. This system will communication with the VA and other sister systems. The clinic is doing some restructuring which will add a provider. They can care for patients from newborn to elderly. The health clinic at YPG is an outlying clinic of Weed Army Community Hospital at Ft. Irwin. For more information contact the clinic at (928) 328-2502/2666. (Photo by Ana Henderson)

# Youth services end of year party



That's a wrap! Youth Services wrapped up its summer program with an end of the year party. The kids and adults alike enjoyed two waterslides, snow cones and a photo booth. For more information on the program contact Youth Services at 928-328-2860.



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