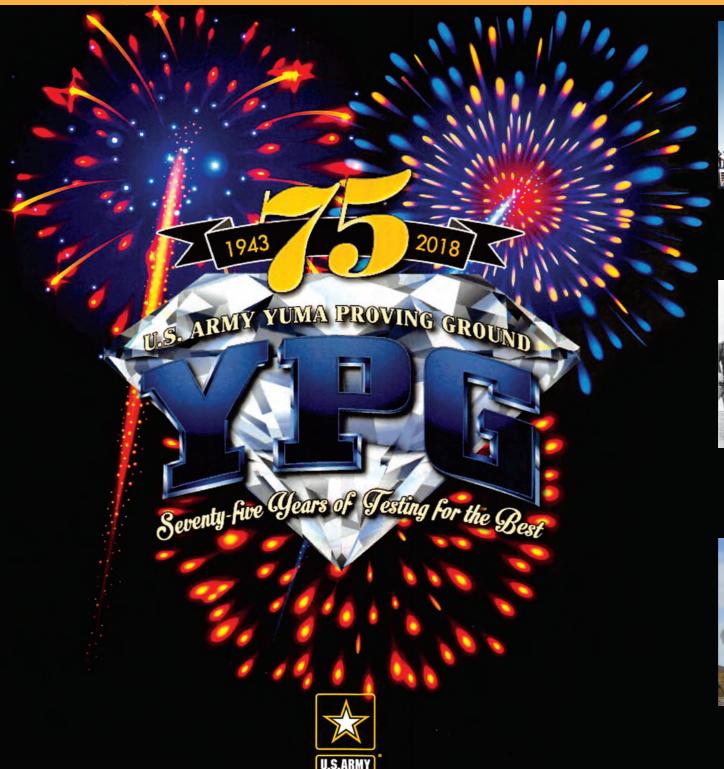


THEOUTPOST

U.S. ARMY YUMA PROVING GROUND, YUMA, ARIZONA 85365 | VOLUME 67 NO. 2 JANUARY 22, 2018





Highest-ever artillery projectile shot /Page 4



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DEPARTMENT OF THE ARMY UNITED STATES ARMY YUMA PROVING GROUND 301 C STREET YUMA AZ 85365-9498

TEDT-YP-CO

22 January 2018

MEMORANDUM FOR ALL ATTENDEES

SUBJECT: YPG's 75th Anniversary Celebration

- 1. It is a sincere pleasure to welcome you to U.S. Army Yuma Proving Ground's 75th anniversary celebration. We've assembled an outstanding collection of military hardware for you to look at, ask questions about and touch. Expert YPG personnel are standing by to answer any questions, so feel free to strike up a conversation. And there's much more, from outstanding live musical entertainment to an actual parachute drop.
- This is an excellent opportunity to learn about the vital defense mission performed at the proving ground throughout the year by an excellent military and civilian team – people who are your friends and neighbors. The annual economic impact of YPG in the Yuma area amounts to over \$450 million.
- 3. It is a distinct privilege and career highlight to serve as commander of U.S. Army Yuma Proving Ground. A great many important test and training activities take place here on a daily basis, with our primary mission being to ensure the quality and reliability of American military equipment. The proving ground's 2400-person workforce, the largest single civilian employer in Yuma County, has proven its dedication and excellent quality of work many times over.
- Since 1850, the U.S. Army has been involved in Yuma, helping it develop into the thriving community it is today. We are proud of the proving ground's heritage that began in the World War II year of 1943.
- 5. We at the proving ground are proud to serve you and to be an integral part of Yuma County. Have a great day!

ROSS C. POPPENBERGER COL, EN Commanding

Roger Clyne Roger Roger Clyne Roger Rog

FREE * OPEN TO THE PUBLIC

03 February 2018

10:00am - 6:00pm + YPG's Cox Field

THEOUTPOST

The Outpost is an unofficial publication authorized under provisions of AR 360–1. The Outpost is published every two weeks by the Public Affairs Office, Yuma Proving Ground. Views and opinions expressed are not necessarily those of the Army. This newspaper uses material credited to ATEC and ARNEWS. While contributions are solicited, the PAO reserves the right to edit all submitted materials and make corrections, changes or deletions to conform with the policy of this newspaper.



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Bus schedule for YPG 75th Anniversary on February 3rd, 2018

The first bus will depart the Target/Greyhound Bus stop at Yuma Palms Mall at 8:00 a.m., with stops at the YCAT bus hub at the old Del Sol



Hotel, the Foothills Branch of the Yuma County Library, and the event site at YPG's Cox Field.

YCAT buses will run every hour until 12:00 p.m. and then every 30 minutes thereafter. All buses will then wait at YPG for the event to be over, returning everyone back to their pick-up and drop off locations. The fare is \$2.00 per person. Children under 5 ride free.

Travel Curry Gate 1000-1600 Saturday 3 FEB 2018, COX FIELD, HOWARD CANTONMENT AREA (WALKER Gate Open to HCA Residents for alternate access point) EXIT ONLY Parking area 2 Living Area of the standard of th



February 3, 2018 SCHEDULE OF EVENTS FREE ADMISSION

- 10:00 a.m. Kickoff and opening ceremony
- Military Free Fall flag ceremony
- National anthem with color guard
- MCAS High Performance Aircraft Flyover
- 10:30 a.m. Manhattan Dolls performance
- 1:00 p.m. Downtime performance
- 3:00 p.m. Surprise musical guest
- 4:00 p.m. Roger Clyne and The Peacemakers
- 6:30 p.m. Fireworks extravaganza *For more information, call 928-328-3575.*

Ensuring a great day at YPGVisit information you need to know

By YPG Chief of Police Donnie Lucas

There are a few items of crucial information you need to know as we draw close to U. S Army Yuma Proving Ground's 75th anniversary celebration on February 3rd. Being aware of these items will help ensure you fully enjoy what will surely be a historic and fun filled day.

We want everyone to enjoy themselves and have a great time while keeping security and safety in mind. As the saying goes "if you see something say something."

First off, for the sake of everyone's safety, no weapons of any type are allowed on YPG at any time. Also prohibited is outside alcohol, coolers, pets, glass containers and, please, no umbrellas.

Department of the Army Police Officers and Security Officers will be circulating throughout the 75th anniversary event and you will easily be able to identify them as they will be in full police blue uniforms. Additionally, Department of the Army Security Officers will work in and around parking areas to ensure you are able to park and feel safe while proceeding to the event area at YPG's Cox Field. Handicapped parking is available at the front area of Cox field and a security officer will be available in this area to provide any necessary aid.

Department of the Army Police Officers will be at entry points with metal detectors and will be checking all visitors prior to entry to the main concert area. If you have any issue at all, no matter how big or small, please make your way to the command center --a big white trailer with police, fire and emergency medical service flags on top, which will be located in the far left corner of the event area. There will also be a lost and found, as well as a location for lost adults.

Again, please enjoy this wonderful event and have a happy and safe time here with the U.S Army.

4 JANUARY 22, 2018 Seventy-five Years of Testing for the Best THE OUTPOST

Yuma blasts way into international space race in 1966

By Chuck Wullenjohn

Notable hallmarks of the 1960's were precisely engineered rockets for space travel constructed by the Soviet Union and the United States, with the goal being to obtain space exploration bragging rights.

While numerous rocket-powered space missions were conducted by both powers, less well known are the thundering experiments with giant cannons developed to fire scientific payloads into space. One such monster gun was constructed at Yuma Proving Ground and, though it hasn't fired a projectile in decades, it remains today, slumbering in the desert.

Officially called the "High Altitude Research Project," or "HARP," for short, the program was the brainchild of gifted engineer Gerald Bull, a native of Canada. The great dream of his life was to fire supersonic cannon projectiles from the earth directly into outer space.

Ballistically speaking, a space cannon made sense, for the idea offered several advantages over



A gun crew loads the High Altitude Research Projectile gun at YPG prior to its record-setting projectile launch in 1966. The massive gun, constructed of two Navy 16 inch battleship tubes, fired 30 rounds between June and November of that year. (US Army photo)

rockets. When a rocket blasts off, it must carry not only its own weight, but also that of the fuel. Cannon "fuel" is contained and expended within a gun barrel, plus, it offers far more explosive bang for the buck than rocket fuel. Also, cannons are simpler and cheaper to operate.

But disadvantages also exist. The payload must be slender enough to fit into the barrel and capable of surviving the huge acceleration force of a cannon blast. Manned missions are out of the question.

In the 1865 science fiction novel "From the Earth to the Moon," Jules Verne told the story of space travelers propelled to the moon by a cannon shot. While he was unaware of the technical impossibilities, it made for an entertaining tale.

Though the bulk of the HARP project's well over 100 artillery firings took place on the island of Barbados, one of the most significant occurred at Yuma Proving Ground. At 118 feet in length, YPG's HARP gun was the largest artillery piece in the world and, in November 1966, it fired a 185 lb. payload 111 miles high, into the lower reaches of space. It was a world altitude record that still stands.

To achieve this success, engineers devised a number of technological innovations, one of which was a new ignition system. Instead of igniting the bottom of a 15-foot long stack of powder bags loaded into the gun's breech, the HARP gun ignited the charge at five separate points so the entire charge would ignite simultaneously. The projectile reached a maximum velocity of 6,800 feet per second upon leaving the barrel. When the gun fired, it produced a huge explosion and plume of fire that gushed hundreds of feet into the sky.

Another innovation was the supersonic shells developed for the gun. Dubbed "Martlets," they were cylindrical finned projectiles about eight inches wide and over five feet long. Each weighed several hundred pounds. The Martlets were scientific research craft designed to carry payloads of chemical smoke, meteorological balloons or metallic chaff. While in the gun's barrel, the Martlet was surrounded by a wooden casing known as a "sabot" that held it tightly against the gun's bore, then fell away after leaving the tube. Engineer Bull hoped to eventually fire a Martlet into earth orbit.

YPG's famous HARP shot took place long after most employees had left for home; at 11:56 p.m. to be exact. The shell was tracked from three points – at Yuma Proving Ground, in the nearby town of Wellton and at Arizona Western College. As the Martlet reached maximum altitude, it released chemicals that glowed in the night sky and could be seen with the naked eye. It came down on the proving ground about 30 miles from where it was shot.

Despite the HARP gun's Yuma Proving Ground success, the project was cancelled shortly thereafter. Disappointed, Bull went on to establish his own company to sell artillery wares to nations around the globe – Britain, Italy, Egypt, Israel, Australia, Angola, South Africa, and to both sides during the Iran-Iraq War of the 1980's. Later, working for Saddam Hussein, he designed a 500-foot long, 2100 ton super cannon that would allow Iraq to fire payloads into orbit.

Some were concerned, even perturbed at the threat this represented. In March 1990, Bull was assassinated at the door of his apartment in Brussels, Belgium. Shot five times with a silencer-equipped 7.65 mm automatic pistol, the assassin was never located. Some say it was an Israeli intelligence operative, but no one knows for sure.

Yuma Proving Ground's HARP gun is the only cannon in the continental United States that fired a round into space. At the very least, it won the proving ground an asterisk in the international space race history books.



Of the three HARP guns that were built, only YPG's remains in usable condition. The gun built on the Caribbean island Barbados, seen here in 1966, has long since corroded. Private industry customers remain interested in the HARP for its original intended purpose of launching satellites into space. (Loaned photo)

One out-of-this-world visitor



Yuma Proving Ground has had many distinguished visitors over the decades, but none as out-of-this-world as astronaut Neil Armstrong (left), the first man to walk on the moon. Nineteen months after taking his giant leap for mankind, in February 1971 the Apollo 11 commander visited YPG to witness testing of the AH-56 Cheyenne attack helicopter. The photo of Armstrong, taken at Castle Dome Heliport, includes then-congressman Lucien Nedzi (right) of Michigan. Though the AH-56 was cancelled by the Army the following year, the program was a boon to aviation testing at YPG, as it brought about the construction of a substantial amount of infrastructure like laser and optical tracking sites. YPG has done testing for the National Aeronautics and Space Administration (NASA) since 1966, when the mobility test article (MTA), a precursor to the lunar rover, came here for engineer design evaluations. (US Army photo)

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YPG testing critical to development of GPS

By Mark Schauer

Technological change alters the world and becomes so common that radically transformative inventions eventually are taken for granted. The Global Positioning Satellite (GPS) system is at such a point.

Currently comprised of 32 satellites in orbit around the Earth, the GPS constellation allows anyone with a handheld receiver to pinpoint their exact geographic location with astonishing accuracy. Today, the technology is used not only by military personnel and testers at U.S. Army Yuma Proving Ground (YPG), but by millions of civilian consumers around the world as a navigational aid in automobiles, aircraft, and boats, by owners as a means of tracking lost pets wearing a GPS-enabled collar, and even by hikers and casual participants in the pastime called 'geocaching," a treasure hunting game that utilizes GPS coordinates.

Few, if any of these users realize YPG tested GPS from the earliest days of its existence.

"It was the biggest single project the proving ground was ever involved in," Bob Mai, then Associate Director of the Range Support Directorate, said in a 1994 interview. "It paid a lot of bills for YPG for a long time."

YPG was the home of GPS testing from 1974 through 1990. YPG testers attracted the program by demonstrating their ability to collect more data at a lower price than other test ranges. Whereas other test ranges of the period gathered position, acceleration, and trajectory data of test items with electro-optical trackers called Cinetheodolites, recently completed testing of the AH-56 Cheyenne attack helicopter had given YPG an edge: The proving ground owned and used a then-state-of-theart laser tracker that had a far greater range and comparable accuracy to a battery of Cinetheodolites. Further, engineers at the proving ground had



In its 75 years of existence, YPG has tested all manner of cutting edge technology. From the mid 1970s to the early 1990s, testing at YPG was critical to the development of the handheld Global Positioning Satellite (GPS) technology used by millions of people today. By the early 1980s, GPS technology had been miniaturized to the point that a portable backpack unit weighing 25 pounds began testing with Soldiers at the proving ground. (US Army photo)

adapted room-sized 1960s vintage IBM computers with specialized software that allowed them to collect test data from range instruments and onboard telemetry devices in real time, a groundbreaking advancement that dramatically reduced the time and cost of testing.

"YPG didn't have supercomputers," said Bill Heidner, curator of YPG's Heritage Center. "We had sharp people writing algorithms for handme-down computers that made real-time data reduction possible."

"We pushed the state of the art," added retired Air Force Maj. Jim Bybee, who worked on the GPS program from 1975 to 1982 and retired as officer in charge of GPS testing at YPG. "YPG was already ahead of the state of the art, which is why the Air Force came here. That they had laser trackers integrated into real time was a tremendous cost savings."

When the evaluations began in March 1977, the launch of the first GPS satellite was more than a year away, and, like today, a GPS user needs coordinates from four satellites to get an accurate location reading. YPG testers coped with this by

creating an 'inverted range' made up of satellite simulators located in ground-based shelters at four different places. Ground tests of the infant technology were conducted from modified two-and-a-half ton trucks, and aircraft used for testing were outfitted with antennas on the bottom of aircraft to pick up simulated signals from the ground receivers. The earliest GPS systems were so large that a UH-1 helicopter, which carried as many as 14 troops at a time when used in Vietnam, could only accommodate a pilot and two passengers when carrying a GPS device. By September 1977 testers had conducted over 70 test flights with UH-1 helicopters and F-4, P-3, and C-141 airplanes.

"The UH-1 and the C-141 were real workhorses for us," said Bybee.
"But the C-141 cargo plane was large enough to fit three different contractor systems inside, so we got a lot of bang for the buck with them."

As the Air Force began to launch GPS satellites, evaluators took their positions from the satellites instead of the inverted range receivers. This created new challenges for the testers, however.

"The satellites gradually change position," said Bybee. "As they launched more satellites, we had a pretty good test period for three or four hours per day. But every two weeks we had to move back our testing by half an hour. We went around the clock at least three times in the time I was here."

Though the continual changing of work hours was difficult for the scores of range workers involved with the testing, YPG's vaunted flexibility in range scheduling always gave testers the opportunity to make the most of the situation. This was accomplished even as another monumental program, the Apache Longbow attack helicopter, began testing at the proving ground in the late 1970s.

"The satellites being available for only a few hours a day gave us an urgent requirement to test whenever we could," said Bybee. "We also didn't have to compete for range space at YPG. The ranges at other locations were consistently tied up, but at YPG we always had top priority."

By the early 1980s, GPS technology had been miniaturized to the point that a man portable backpack weighing a mere 25 pounds began testing with Soldiers at the proving ground. This testing was conducted in addition to that involving aircraft, all at a fast pace despite the fact there wasn't an active war in progress.

"We had a good group of people at YPG and in the program office," said Bybee. "There was a lot of high level interest in the program and everyone was pretty attuned to how important the project was."

Testing at YPG was critical to the development of the GPS technology so commonly used today. Just as YPG's testing prowess was put to good use then, it continues this same way today and will continue to serve the nation in the future.

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World's largest vertical wind tunnel at YPG

By Mark Schauer

It was 15 years in the making. It was so long that the man it is now named for, Master Sgt. George Bannar, once told his wife Michelle he thought it would never happen.

First assigned to the Military
Freefall School in August 2008,
Bannar was non-commissioned
officer in charge from 2009 to
2012, serving as an instructor to the
school's basic and advanced courses.
He taught special forces candidates
and future freefall instructors how to
maneuver in the air with precision,
and was frustrated that students had
to go to Fort Bragg in the middle of
the course to gain critical training
time within that installation's wind
tunnel prior to going on actual jumps
at YPG's drop zones.

As he deployed for his fifth overseas tour in 2012, he began to keep a journal, and frequently mentioned Yuma.

"This was the best military family he had," said Michelle Bannar. "In Yuma he had the best time of his life and career. This is where his heart is."

Though he lost his life in Wardak Province, Afghanistan August 2013,

the legacy of a man described by Col. Miguel Correa, commander of the 1st Special Warfare Training Group, as, "the epitome of a Special Forces NCO," lives on in students past and future.

The wind tunnel that now bears his name is one of the largest of its kind in the world, with a 16.5 foot flight chamber able to accommodate eight jumpers simultaneously with a top speed of 175 miles per hour. Its presence at YPG means freefall students no longer have to return to Fort Bragg during the course to get critical practice time.

"It represents the nexus between fiscal responsibility, decisive response to a changing world, and the belief that if you put a good man between you and the problem and properly resource him, he will always succeed," said Lt. Gen. Charles Cleveland, U.S. Army Special Operation Command commander. "I can think of no finer memorial to a warrior like George than one that impacts every special operator who will come after him."

The dedication ceremony in January 2014 capped a morning of events that included a personnel and



Michelle Bannar, widow of the late Military Freefall School instructor Master Sgt. George Bannar, touches the granite stone honoring her husband's memory at the dedication ceremony of the vertical wind tunnel in 2014. Bannar said her husband began keeping a journal during his last deployment to Afghanistan, and mentioned Yuma frequently. "This was the best military family he had," she said. "His heart is here."



YPG's vertical wind tunnel can accommodate eight jumpers simultaneously with a top speed of 175 miles per hour. The nearly 100 foot-tall structure contains over 4,000 tons of concrete and 80 tons of steel. The building was completed in about a year, six months ahead of schedule, and 95% percent of the labor to build the \$10.3 million structure came from within Yuma. (Photo by Mark Schauer)

cargo parachute demonstration at a YPG drop zone and briefings at the terminal freefall students depart from to jump from the skies. The scores in attendance at both sites were also treated to static displays of personnel parachutes on mannequins and cargo bundles rigged for air drop. Following the dedication, a large crowd gathered within the wind tunnel to observe Michelle Bannar take the ceremonial first flight inside.

"I'm just lucky to be here and be part of this family," she said afterward. "It is the best family you can have."

Exclusive company

In the six decades of military freefall, fewer than 800 individuals have qualified as instructors, and this select group has trained more than 21,000 freefall parachutists. To qualify for this instruction, a prospective student needs to have done a minimum of five static line jumps in his or her career, though most students have many more

than this. Regardless, the increased complexity of freefall parachuting usually renders such experiences irrelevant to a student's ultimate success.

"This is the hardest school to get to, but the easiest school to pass," said Sgt. 1st Class Kevin McDaniel, freefall instructor. "Basically, students need to show that they can control their body and be safe in the air. The only time-sensitive task in this class is pulling at the right altitude, because eventually the ground is coming up."

McDaniel says most students successfully complete the intensive four-week course that begins with classes that teach how to pack a parachute and maneuver in freefall. Next is a week putting the classroom lessons in practice inside a vertical wind tunnel, followed by real jumps from altitude with an instructor an arms-length away. Though the first of the real jumps aren't graded, instructors have a good sense of

whether or not a student is poised for success, and the presence of the vertical wind tunnel in Yuma is a boon to future students who need additional practice.

"Before, you would have to go all the way back to Fort Bragg to try to fix a jumper to help him graduate the course," said McDaniel. "Now if a student has a problem, you can take him to the wind tunnel right after his jump, help him work on it, and get him back up there again to help him pass graded exercises."

"It's a controlled environment," added Charles Sims, freefall instructor. "One minute in the wind tunnel equals one jump."

A student who successfully completes the solo freefalls then moves on to group jumps with two instructors assisting upwards of eight students. The ultimate test involves night jumps that simulate the covert insertion special forces perform overseas. If the student succeeds at all of this, they graduate the course.

First of its kind

"This is the first time the government has contracted a vertical wind tunnel," said Ernesto Elias of the U.S. Army Corps of Engineers. "The construction process was typical, the product was not."

The nearly 100 foot-tall structure contains over 4.000 tons of concrete and 80 tons of steel. The building was completed in about a year, six months ahead of schedule, and 95% percent of the labor to build the \$10.3 million structure came from within Yuma. Even on the hottest desert days, the wind tunnel's chamber can be cooled down to 75 degrees.

The opening of the wind tunnel was the first in a series of upgrades to the MFFS that saw the number of students increase by 50 percent. The Casa-212 aircraft that formerly ferried students and jumpers for their jumps was replaced by the C27J, a larger and faster aircraft that more closely resembles the type of planes Special Forces operators use in theater.

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Former President "drops in" to Yuma Proving Ground

By Chuck Wullenjohn

The first United States President to visit U.S. Army Yuma Proving Ground in the installation's history took place March 24 and 25, 1997, as George H. Bush trained for and made a parachute jump over the 1300 square mile proving ground. Accompanied by his wife Barbara, the then-72 year old former president spent many hours rigorously training for his parachute descent with members of the U.S. Parachute Association and the Golden Knights, the Army's precision parachute team.

Bush had made one previous

parachute jump, on Sept. 2, 1944, when he bailed out of his flaming "Avenger" torpedo-bomber over the Pacific during World War II. He vowed to make the Yuma Proving Ground jump to provide a sense of personal closure to this experience.

Bush completed his successful parachute jump shortly before 11:00 a.m. on March 25. He jumped from an elevation of 12,500 feet and opened his parachute canopy at 4400

Media representatives from througout the nation were present, including all the major television



The first United States President to visit U.S. Army Yuma Proving Ground in the installation's history took place March 24 and 25, 1997, as George H. Bush trained for and made a parachute jump over the 1300 square mile proving ground. Bush had made one previous parachute jump, on Sept. 2, 1944, when he bailed out of his flaming "Avenger" torpedo-bomber over the Pacific during World War II (US Army photos)



The former president jumped from an elevation of 12,500 feet and opened his parachute canopy at 4400 feet. Media representatives from througout the nation were present, including all the major television networks, the New York Times, Associated Press, and others.

networks, the New York Times, Associated Press, and others.

Before departing the proving ground to return to his home in Houston, Texas, Bush addressed members of

the Yuma Proving Ground workforce in the installation theater. He gave a rousing speech, saying that he didn't really miss the world of politics, but that he definitely missed the military.

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A legacy shared by YPG test officers

By David J. Horn

As YPG celebrates 75 years of testing army equipment, there are several jobs at YPG that can trace their origins back to the earliest days. One of those jobs, is that of the Army test officer. Whether it be a test on a tank, an artillery piece, a helicopter, or a parachute system, it is the YPG test officer who meets with customers to learn their test requirements, who plans the tests, safely conducts the tests out on the range, and writes the final test reports. It's a complicated job with a lot of moving parts, and it takes a long time to train someone to where they're fully capable. There is currently a generation of older test officers getting ready to retire, who are mentoring and training up a new generation of test officers, continuing a tradition that extends back to the early days of World War II.

What is today YPG, started out in early 1942 as two related, but separate missions. The first mission was the formation of "Camp Laguna," one of 12 sites of General George Patton's "Desert Training Center." Several

thousand soldiers from the 8th, 79th, and 80th Infantry Divisions set up a training site near the base of the Laguna Mountains, where from March 1942 through April 1944, they trained soldiers to fight in the deserts of North Africa. Today, visitors entering the YPG's mobility test area from Laguna Dam Road, enter through the "Walker" gate, named after General Walton Walker, the first commander of the Desert Maneuver Area.

The second mission, which started out in January 1943 as the "Yuma Test Branch", was an effort by the Army Corp. of Engineers to develop and test bridge crossing equipment, which would be needed by the Allied armies to cross several major European rivers, including the Rhine River. The Army chose the Yuma site, just downstream of the Imperial Dam and nearby to Camp Laguna, because the flow rates of the water in the numerous canals and the Colorado River could be easily regulated by the operators of the dam. The engineering objective, was to design bridges that could be easily transported and

assembled, then used to cross wide rivers with fast moving currents.

The test officer for those first tests,

was Major George Howard. Visitors to the YPG Main Post facility off Laguna Dam road enter through the "Howard Gate," which is named after Major (later Colonel) Howard. Major Howard worked at the test site until 1946, directing the work of the 88th Engineering Heavy Pontoon Battalion. The first tests that he and his team conducted, were on the M2 Steel Treadway Bridge, followed by a 25ton pontoon bridge. Later, the team tested modified Bailey Bridges, foot bridges, and amphibious Army Duck vehicles. His team continued testing through the war until 1949, when cracks in the spillway of the Imperial Dam resulted in testing operations being halted.

In June of 1951, the facility reopened as the "Yuma Test Station." Instead of bridge crossing devices, as a result of the lessons learned on the mechanized equipment used in North Africa and at nearby Camp Laguna during the war, the facility and a new generation of test officers took on a new, but familiar mission... testing vehicles and other equipment to improve their performance in the sand, dust, and high temperatures of the desert. The test officers talked about having a debt to pay to the WWII soldiers, to do whatever they could do, to make sure that the new equipment that would be fielded, would be the best it could be.

Test programs conducted by these test officers, many who had experiences from both WWII and Korea, included carburetor "vapor lock" testing on jeeps and trucks, vehicle cooling performance up to 115°F, and vehicle mobility in sand. The sand slopes first built up in 1951, visible to motorists traveling on Highway 95, are still in use today. It was also in the early 1950s, that the



Every M777 155mm howitzer produced is test fired at YPG prior to being fielded to troops. The Army, Marine Corps and Canadian forces use the M777 howitzer.

mission supported by the test officers expanded to include the testing of long range artillery, parachutes, and helicopters.

In the 1960s many of the WWII era test officers began to retire, passing the torch to the next generation of test officers. When these old WWII era officers retired, they reminded the new officers that by training up their new generation, they were in a way, repaying a debt to those old soldiers who had trained them. These new test officers would test the equipment that would be used in the Vietnam War, research projects like the High Altitude Research Project (a gun that could shoot a projectile to an altitude of 65 miles), and the effort to support NASA's Apollo space program. In 1963, the Yuma Test Station was formally renamed "US Army Yuma Proving Ground."

During the early 1970s, test officers continued testing equipment to support the Vietnam War, including testing the 8-inch M1 Howitzer, the



Yuma Proving Ground's Combat Automotive Systems Directorate puts military vehicles through a grueling reliability and performance regimen amid pristine desert terrain. When not racing across scores of miles of hot, treacherous desert road courses, vehicles like this M1 Abrams tank are put through other stresses, such as climbing this awing 60% grade. In comparison, the steepest grade on an American interstate highway is 6%. (Photos by Mark Schauer)

155mm M198 Howitzer, and the M60 Patton and M551 Sheridan Tanks. In 1972, another major mission area, "Aircraft Armament" (helicopter weapons testing) was transferred to the facility. During the late 1970s, much of the development work on the Global Positioning System (GPS) was conducted at YPG.

The early 1980s was another period of significant changes. At the same time that the 1960s test officers were beginning to retire, the Reagan administration began a major effort to modernize America's military. As the older 1960's era test officers neared the end of their careers, they trained up and mentored the generation that would be following them. They also, reminded those young folks just starting out on their careers, that again by training them, the old folks were repaying a debt they owed to Colonel Howard and the old WWII guys. For the 1980's generation, it was also a time when the job of test officer would evolve like never before, as computers appeared on every workstation, and in every vehicle and aircraft. For these test officers, it was a very busy time, as they conducted tests on the new M1 Abrams Tank, M2 Bradley Armored Personnel Carrier, M777 Howitzer, the M982 Excalibur guided artillery shell, the AH-64 Apache Helicopter, and new C-17 Military Transport Aircraft. They supported the Army through the Persian Gulf War of 1990-1991. More recently, the test officers were there to test the Mine Resistant Ambush Protected (MRAP) vehicles, and equipment designed to protect soldiers from improvised explosive devices (IEDs), as they were fighting the War on Global Terrorism that ensued after the attacks on September 11th, 2001.

To coincide with YPG's 75th Anniversary, many of that large group of test officers who were hired during the early Reagan years, are now getting ready to retire themselves. They talk about repaying that debt that they owe to the 1960s era test



The mobility test article (MTA), a precursor to the lunar rover, came to YPG for engineer design evaluations in 1966. YPG has supported NASA testing since the earliest days of the American space program, and continues to in the present day. (US Army photo)

officers who trained them. This latest generation, now being trained and working on projects like testing the parachutes for the Orion Spacecraft designed to go to Mars, will be conducting performance tests on equipment that will come to YPG for the decades to come. Like every generation, they will end their careers testing equipment they could have not even imagined existing, back when

they started.

Hopefully, 25 years from now, around the year 2042 when YPG celebrates its 100th Anniversary, as this latest generation of test officers nears retirement and they are mentoring and training up again that next generation, they'll say, "I'm repaying my debt to that old 1980's test officer who trained me. To Test for the Best....it's now up to you."



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9/11 tragedy leads to YPG workload explosion

By Chuck Wullenjohn

The world was relatively quiet early September 11, 2001. YPG commuters were experiencing a typical drive along highway 95, many turning into the Yuma Test Center headquarters area or Laguna Army Airfield, unhindered by security guard posts or lines of slowmoving traffic. A typical day had begun, but only a few hours later, conditions changed dramatically. What happened seared itself into everyone's mind.

When terrorists took over commercial aircraft to destroy the World Trade Center and part of the Pentagon, killing over 1000 American citizens in the process, YPG's people were momentarily stunned, as others throughout the nation, as reality seeped in. Was our nation at war? Who was the enemy? Were other attacks in the works? Should YPG's workforce be sent home?

Senior leaders at YPG met that morning and decided that, with no direct or imminent threat, the best course of action was to continue performing the proving ground's workload – to not hand terrorists a victory by closing down the installation.

In the 16 years since that fateful day, YPG has undergone many changes, the most obvious being beefed up security and an increased workload that has seen the proving ground set workload records each of the past eight years. But there's a great deal more to the story.

Julio Dominguez, recently retired technical director and senior YPG civilian, remembers the events of 9/11 well. He was working in the Armament Operations Center at the Kofa Firing Range that day.

"We watched events develop on television," he said, "and I remember seeing people with tears in their eyes and others who were angry. The most common emotion was anger – people



In the earliest days of the insurgency in Iraq, American forces came under frequent attacks that utilized the humble, easily transported mortar. To defend against this threat, the Army assembled the Counter Rocket Artillery Mortar system consisting of the Lightweight Counter Mortar Radar and the AN/MPQ-64 Sentinel radar to detect incoming rounds, and the Land-based Phalanx Weapon System that spits out bursts of fire at hostile projectiles. Thanks to rapid testing at YPG in the early days of the Iraq War, the system was deployed to Iraq in 2005, dramatically reducing mortar and other indirect fire attacks. (Photo by Kurt Harrison)

offended by what had happened."

The YPG workload didn't grow immediately, but the next few years saw more and more work heading its way. The Stryker combat vehicle was a major test taking place in the early and middle portion of the decade, followed by the testing of up-armored Humvees developed in response to chaotic conditions in Baghdad and other urban areas in Iraq.

Many weapon systems in common use today had not existed prior to 9/11 and came to YPG for expedited testing. These included the Counter-Rocket and Mortar (C-RAM) system, which is a major system used to protect military compounds by identifying, warning friendly personnel and destroying incoming enemy projectiles. The Mine Resistant Ambush Protected, or MRAP, vehicle underwent extensive testing over YPG road courses to examine performance over rough terrain, just as the system would be used overseas. YPG's automotive workload grew a huge extent.

Dominguez personally visited Iraq in 2007 and picked up a "Stars and Stripes" newspaper that contained an article about an artillery projectile tested at Yuma Proving Ground that had performed an important

mission. "The article was about the Excalibur 155mm projectile that had undergone years of testing at the proving ground," he said. "It had been used to take out a top al Qaeda leader, which really gave me a sense of pride, an emotion shared with many others." Dominguez observed numerous weapon systems tested at YPG in daily use by American forces.

At the dawn of the century 18 years ago, only a handful of widely scattered unmanned aircraft flights took place each year at the proving ground. As the craft proved their usefulness on modern battlefields, the workload exploded. Unmanned aircraft testing today is continuous, with about 150 soaring above the proving ground each month – about ten times 2001's workload.

The proving ground's role in the testing of landmines and countermines had been a YPG hallmark for many years prior to 9/11, which helped make it a logical place to center the testing of technologies to defeat the threat of improvised explosive devices (IEDs) used by insurgents in overseas combat areas. Urban areas consisting of hundreds of buildings, paved highways, telephone poles and more sprang up to make the testing as realistic as possible.

"Our counter-IED work expanded quickly in 2004 due to the damage IEDs were exacting on our forces," explained Dominguez. "YPG's efforts in meeting this challenge were monumental and the people involved performed magnificently." Employees continue to perform this work daily.

The YPG workforce has increased in size over the last ten years to some 2,400 today, with the proving ground's range support contractor tripling in size since 2001. The typical YPG employee -- government civilian, contractor or military -- is strongly committed to doing whatever is necessary to support American men and women in combat.

Though Yuma Proving Ground's primary mission remains testing, training activities have also increased exponentially, with advanced parachute training, military working dog training, and training of military units from around the country taking place throughout each year. YPG has become an increasingly valuable national asset because of its great amount of land space (1300 square miles) and restricted airspace (2000) square miles), permitting multiple test projects and training missions to take place at the same time with no interference.

"Without question, YPG testing saved an untold number of American lives and prevented hundreds of injuries in Iraq and Afghanistan," said Dominguez. "When one compares the terrible damage to vehicles and high casualty rate of the early years to the situation today, the improvement is remarkable. YPG testers are experts at finding system faults before Soldiers notice them out in the field."

YPG's workforce has met this expanded workload head on, always committed to excellence and safety, knowing that the work they perform directly influences the capability of American forces on the battlefield.

54-wheel drive in the desert



On April 2, 1962, the LeTourneau Overland Train seen here arrived at Yuma Test Station for evaluation. With a crew of six, the 572-foot long, 13 unit land train could haul 150 tons of cargo: if you look closely, you can see the full compliment of cargo cars loaded with a M113 armored personnel carrier, a bulldozer, a Jeep, and multiple cargo containers. At the time, the 54-wheel drive welded aluminum beast was the longest rubber-tired vehicle in the world. The result of logistical support problems encountered in World War II in areas without adequate highway and rail networks, the land train performed well, but was rendered obsolete by heavy lift helicopters like the S-64 Skycrane before it could be fielded. Today, the land train's prime mover is a crowd-pleasing display item outside YPG's Heritage Center, which is open to the public Tuesday through Friday from 10:00 a.m. to 4:00 p.m. (US Army photo)





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Yuma Proving Ground continues area's Army history

By Chuck Wullenjohn

The presence of the U.S. Army in Yuma goes back to 1850, when Fort Yuma was constructed on a hill overlooking the important Yuma crossing of the Colorado River. Soldiers at Fort Yuma maintained peace with the local Indians and protected the important crossing, which was used by thousands of travelers each year. The fort operated until 1883.

A second facility, the Yuma Quartermaster Depot, was constructed in Yuma next to the Colorado River in 1865 to act as a supply base for Army posts throughout Arizona and part of New Mexico. Supplies were delivered to the depot by riverboats and transported from there to various military outposts by wagon. The depot operated for 18 years. After it closed, Army personnel were not to return to Yuma on a permanent basis until World War II.

The U.S. Army Corps of Engineers opened the Yuma Test Branch near the present site of the proving ground below Laguna Dam on the Colorado River in 1943. This location was considered the most desirable spot

in the country for the testing of portable combat bridges because of the abundance of swift flowing water that engineers could control as they wished. In late 1944, rice and hemp plants were grown next to the Colorado River to establish realistic conditions for testing troop and vehicle movements in preparation for the expected invasion of Japan.

At the same time the test branch began operating, the Army established Camp Laguna a few miles to the west to train troops in mechanized warfare. Camp Laguna was one of 12 major U.S. Army desert training camps in the California-Arizona Maneuver Area (CAMA). An 18,000 square mile area chosen by General George S. Patton, this became the training ground for over one million soldiers.

Upward of 15,000 troops were stationed at Camp Laguna at any one time for periods generally lasting six months. The purpose of the challenging training was to prepare soldiers for a severe life of combat in the deserts of North Africa or one of World War II's other combat fronts. Camp Laguna and the other CAMA installations were crucial in



Soldiers depend on self-propelled howitzers for mobility and punishing firepower and the M109 Paladin remains the most common platform of its type in the world, with variants in the inventories of the United States and more than 20 friendly foreign nations. Now on its seventh major iteration since it was first fielded, the platform has been tested at YPG since its inception. (US Army photo)

preparing Army personnel for combat. Camp Laguna was deactivated and demolished in 1944. Other nearby CAMA facilities were Camps Pilot Knob, Hyder and Horn.

After the war, the Yuma Test Branch remained in operation, but testing activities were turned toward the effect of the desert environment on engineering equipment, such as high-speed tractors, semi-trailers and revolving cranes. In 1950, the test branch closed, only to reopen one year later with a new name, Yuma Test Station, and a greatly expanded mission.

This new mission saw the testing workload greatly expand beyond its river and desert environmental roots. It became a multi-purpose test center that took on the lion's share of the nation's artillery testing workload, with the longest overland artillery range in the country. In addition, many types of armored vehicles, armored systems, and air delivery systems began to be tested.

With the reorganization of the Army, the installation was renamed Yuma Proving Ground in 1963. In 1971, the aircraft armament testing mission was permanently relocated from Aberdeen Proving Ground, Md., to Yuma Proving Ground. Three years later, the proving ground was



The Joint Light Tactical Vehicle incorporated a long list of upgrades that will make it significantly more advanced than the current tactical vehicle fleet. Currently, the Army intends to purchase 55,000 JLTV's within the next 15-20 years. (Photo by Mark Schauer)

designated as a Major Range and Test Facility Base.

Numerous notable tests occurred over the years. As the Army's premier long-range artillery tester, extensive tests took place on systems for all the U.S. services and for the nation's NATO allies. Expansive testing ranges easily accommodated large explosive tests. Unlimited airspace, exceptionally long ranges and the availability of full system weapon maintenance combined to make ideal artillery testing conditions.

In the mid-1960's, the 119-foot, 240 ton High Altitude Research Project (HARP) gun was constructed from two Navy 16-inch gun tubes to fire projectiles into the lower reaches of space. An experimental projectile was fired late in that decade to an altitude of 111 miles and landed on the proving ground about 30 miles from where it was fired. The gun still sits at the proving ground today.

In 1971, the most highly instrumented helicopter armament test range in the United States was

constructed at the proving ground and has continuously been upgraded over the years. Known as the Cibola Range, it is uniquely suited to support testing of aviation systems and munitions, armed helicopters, air delivery systems, unmanned aircraft, and precision navigation systems. The range measures 18 miles wide and 40 miles long. The AH-64 Apache helicopter underwent all developmental testing in Yuma, and continues to be a frequent visitor today.

Yuma Proving Ground's testing of unmanned aerial systems dates back to the late 1950's, when the first hangar at Castle Dome Heliport, one of the proving ground's multiple airfields, was constructed to support a drone competition. With eight launching sites and nearly 2,000 miles of restricted airspace, the proving ground is as close to an ideal venue for unmanned aircraft testing as can possibly exist. The clear, stable air and extremely dry climate, where inclement weather is a rarity, makes



The M119 105 mm howitzer is the lightest, most technologically-advanced indirect fire weapon system in the American arsenal. The 4,500-pound howitzer can be transported by Humvee, 2.5 ton truck, helicopter, or cargo plane. In particularly inhospitable terrain, the howitzer can even be delivered by a single parachute system with the Humvee and 105mm ammunition. (US Army photo)



When the OH-58A Kiowa light observation helicopter was first introduced in 1969, Yuma Proving Ground was less than 20 years old and the nation' involvement in Vietnam was at its peak. YPG tested upgrades for the system, which was retired in 2017, throughout its lifetime. (US Army photo)

it highly coveted by both military and commercial customers. YPG has conducted extensive testing and weaponization on such diverse platforms as the Predator and the Fire Scout.

Beginning in the mid 1970's, all developmental work on the global positioning system (GPS), which has both military and civilian applications, took place at Yuma Proving Ground. The testing came to YPG after the proving ground demonstrated it could conduct development at a lower cost and provide test data in a way no other test facility could at that time. The Precision Aerial Tracking System developed by Yuma engineers made this possible, as did specialized computer software designed at the proving ground. The GPS testing involved three flights a day for over ten years following the completion of significant upgrades to range instrumentation. GPS testing was a major component of the proving ground's workload during this era.

Over 240 miles of automotive test courses and other test facilities capable of handling nearly all types of field performance and controlled engineering tests have been established at the proving ground. These include paved inclines, side slopes, obstacles, calibrated ride and

handling courses, a skid pad for dry and wet pavement handling, various material mud courses with adjustable moisture content, a Middle East cross country course, and others. These courses furnish variations in road, terrain and soil conditions, offering test engineers the ability to select any degree of severity desired for endurance and reliability or desert environmental testing. Hundreds of thousands of testing miles have been put on significant military systems like the M-1 Abrams tank, the M3 Bradley Fighting Vehicle, Stryker Armored Vehicle, and many others. Testing at YPG was instrumental in the dramatic extension of the usable lifespan of vehicle tracks used on platforms like the M-1 and Bradley, from hundreds of miles in the early 1990's to thousands of miles today.

Many foreign governments took notice of the proving ground's unique capabilities and arranged with the United States government to bring some of their equipment to Yuma for testing. Japanese troops, for example, visited the proving ground for long periods over several consecutive summers to conduct testing on a Mitsubishi-designed self-propelled howitzer. Germany visited to test a howitzer system designed in the country for use in a

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desert environment. Jordan examined a border surveillance system, Canada and the Saudi Arabian National Guard tested armored vehicles, and numerous other nations such as Britain, France and Singapore conducted a wide variety of tests.

As a result of the 1988 round of the Base Realignment and Closure (BRAC) process, production acceptance testing of 105mm and 120mm rounds at Jefferson Proving Ground, Ind., was consolidated at Yuma Proving Ground on the Kofa Firing Range.

Before and during the Persian Gulf War of the early 1990's, all the primary ground weapon systems deployed to Saudi Arabia underwent exhaustive tests at the proving ground. The campaign's lightning victory was partly due to the extensive testing that took place at the proving ground. In the years leading up to the war, nearly every item in the Army's ground combat arsenal went through testing at the proving ground. Yuma Proving Ground has played

a decisive role in supporting Soldiers deployed to Southwest Asia after the 9/11 tragedy. When mortar attacks constituted the deadliest threat to American forces in the early days of operations in Iraq, the proving ground's rapid testing of Counter Rocket and Mortar technology neutralized the danger. When insurgents shifted to the use of deadly roadside bombs and other improvised explosive devices, YPG constructed highly instrumented mock villages that simulated not only the physical characteristics of Southwest Asian urban areas, but the electromagnetic environment that affects electronic equipment. Technologies that minimize the threat of improvised explosives continue to evolve and continue to be tested.

Needing an upgraded track to test combat vehicles, YPG partnered with the automaker General Motors (GM) in 2007. The deal resulted in the construction of paved and unpaved courses used by GM for hot weather testing of commercial vehicles, and the Army for military vehicles. GM's Desert Proving Ground opened at the proving ground in 2009 and today tests virtually all vehicles



When testing a combat vehicle, YPG test officers plan for dangers unimaginable to a civilian motorist: If the vehicle's hull is rocked by a roadside bomb, can five Soldiers in full protective gear escape with weapons at the ready before the vehicle is engulfed in flames? Will the engine stall halfway up a rocky 40% grade after driving through a five-foot deep stream? Here, YPG drivers power through a fording basin in the all-terrain variant of the Mine Resistant Ambush Protected Vehicle. (Photo by Mark Schauer)



YPG is home to all manner of parachute testing, with spacious and instrumented ranges large enough to accommodate even the world's largest parachutes. Rigorously testing personnel parachutes like the T-11 is a one-stop shop for YPG customers. (US Army photo)

manufactured by the firm.

Today, the proving ground continues its busy work schedule. Major initiatives are being carried out to test the Army's newly developed extended range cannons that can accurately fire twice the distance of current artillery, and counter-unmanned aircraft technologies.

For the eighth year in a row, more direct labor hours are devoted by proving ground personnel to testing activities than any other test organization in the Army. The areas of cargo and personnel parachute technologies and the testing of unmanned aircraft, in particular, continue to grow each year.

There are four extreme natural environments recognized by testers as critical in the testing of military equipment. Of the four, three fall under the management authority of Yuma Proving Ground.

Desert natural environment testing takes place at Yuma Proving

Ground's Yuma Test Center, with cold weather testing taking place at the Cold Regions Test Center, Alaska, and tropic testing at the Tropic Regions Test Center, which operates in Hawaii, Panama, Suriname, and other tropic areas. Realistic natural environment testing ensures that American military equipment performs as advertised, wherever deployed around the world.

As one of the geographically largest military installations in the western world, Yuma Proving Ground's 75-year history has witnessed a huge and varied workload. Today's mission, as throughout its history, is to ensure that weapon systems and equipment issued to American Soldiers function safely and as intended -- all the time, without fail. This workload directly contributes to America's national defense, a source of intense pride for each of the over 2,400 Yuma County residents who work at the proving ground.

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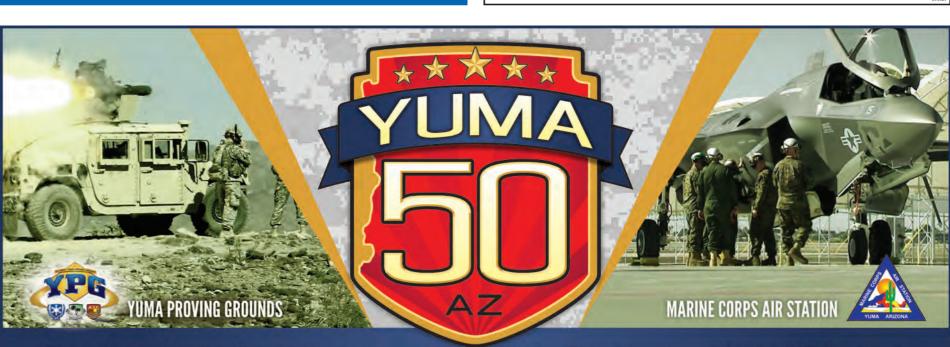


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Yuma Test Branch veteran recalls service during YPG visit

By Mark Schauer

Yuma Proving Ground as we know it today has operated continuously since 1951 with the mission of testing virtually every piece of equipment in the ground combat arsenal.

In the 1940s it constituted part of Gen. George Patton's Desert Maneuver Area, a massive swath of the Southwest utilized to realistically train Soldiers for combat in North Africa.

Even during that time, however, a portion of the range was used for testing: in a desilting basin below Imperial Dam, just down the road from modern day YPG, prefabricated portable bridges were evaluated, with testers altering the flow of water from the mighty dam as necessary.

Recently, Milton "Dub" Banning, who served at Yuma Test Branch from 1946 to 1949, returned to visit the remnants of the camp with wife Libby and two friends. The dam is still there, but little else from that long ago camp, though the concrete pad that served as the foundation for

his wood frame and tarpaper barracks still stands on the desert floor, the edges overgrown with scrub.

"When I first came here there were only two barracks, but they had some more later," he recalled as he stood on the exact spot his cot stood. "I didn't ever think I'd get back here. It kind of brings a tear."

The cataclysm of World War II completely altered the social landscape, killing tens of millions and impacting hundreds of millions more. Millions of American men became eligible for conscription, but Banning, a teenager from Fort Smith, Arkansas, assumed he would not be able to serve in uniform—his draft board had rated him 4-F, unfit for service due to deafness in one ear. Still wanting to do his part, he left home to work in a defense plant.

"I went to Kansas City to work for North American Aviation building the B-25 bomber," Banning recalled. "When I quit that defense job, 30 days later they sent me a notice—they had non-combat duty for people with just one disability."

He still has his yellowed, but well-preserved draft notice, dated January 17, 1945. He reported for induction at 5:30 AM on the 26th, and soon found himself undergoing training in Illinois and at Virginia's Fort A.P. Hill. The war ended in August, but Banning's service continued at Fort Churchill in frigid Manitoba and at Fort Belvoir, before he got orders to rural Arizona and Yuma Test Station. It was 1946, and his arrival in Yuma in the middle of the night was not auspicious.

"I walked into the train depot to eat, and there was nothing but seats there. I thought 'they know I'm coming, why don't they have somebody here to meet me?' Like I was the president or something."

He spent the night at the Del Sol Hotel, then a bustling resting point across from the city's train depot, and made it to the isolated test station at the foot of Imperial Dam the next morning.

"When I got here, I reported to the sergeant in charge of the motor pool. He looked at me and asked, 'have

you ever run a crane?' Thirty minutes after that, I was an experienced crane operator."

The crane's manufacturer was Lorain, and the company's name was printed in big bold letters along its boom. Banning spent enough time with it to lovingly refer to it by its proper name. Despite this lightheartedness, the daily mission was serious business.

"We started off with the Bailey Bridge. It was on floats: We'd build a section on land, and I'd pick up that section and set it down to where they could join it up and keep pushing until we crossed the river. We had a great time."

Even under controlled test conditions, it was dangerous work, particularly for the tankers assigned to drive across the bridges under evaluation.

"We had two M4 tanks that registered about 32 tons each. After we made sure it could hold the trucks up, we had a brave guy that would take a tank and creep out. His orders were, 'If you feel any slipping, put it



Recently, Milton "Dub" Banning, who served at Yuma Test Branch from 1946 to 1949, returned to visit the remnants of the camp. The dam is still there, but little else from that long ago camp remains. The concrete pad that served as the foundation for his wood frame and tarpaper barracks still stands on the desert floor, the edges overgrown with scrub. (Photo by Mark Schauer)



Even under controlled conditions, bridge testing at Yuma Test Station was dangerous work, as seen here. "We had two M4 tanks that registered about 32 tons each," Banning recalled. "After we made sure it could hold the trucks up, we had a brave guy that would take a tank and creep out. His orders were, 'If you feel any slipping, put it in reverse and back off.'" (US Army photo)

in reverse and back off."

As crane operator, Banning's played a critical role in the completion of the testing, and is proud there were never any accidents during his tour. "It was very interesting to be a part

of that. I won't say I didn't have a few nightmares, but it was a great duty building those bridges. We were very fortunate."

Banning happened to be at Yuma Test Station when enormous social changes were taking place in the Army and society.

"Back then, you had to stay in uniform when you went to town. If you were recognized in civilian clothes, you would be court martialed. I think President Truman changed it."

More significantly, Banning recalls when Yuma Test Station was integrated by an executive order from then-President Truman in 1948. The test station's first three African-American Soldiers were quartered in the far corner of one of the barracks

and mostly shunned by their white counterparts.

"Those men were very isolated. I didn't think we had that kind of discrimination, but we had a bad case." Banning's service at Yuma Test

Station came to an end when a mishap with the flow of water caused the desilting basin's concrete to crack. He was sent back to Fort Belvoir, and heard about a reconstituted Yuma Test Station being re-opened prior to deploying to Korea. He never returned to Yuma while in uniform, however, and didn't re-enlist after his service in Korea as a mechanic. He left the Army in May 1954, and had medals including the World War II Victory Medal and the Korean Service Medal with three bronze service stars.

Back in the civilian world, Banning and his family settled in California. He went to work for the post office and retired as postmaster of Coulterville, California in 1986.

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From 1951 to the present, Outpost history long, varied

By Mark Schauer

From its inception, U.S. Army Yuma Proving Ground has relied on state-of-the-art technology to ensure that the equipment issued to Soldiers works as it should all the time, wherever they serve.

For nearly 60 years, a long line of proving ground commanders have relied on the installation's newspaper, printed using technology available at the time, for sharing information with the widely scattered several thousand employee workforce.

"Particularly at a base like YPG, when you consider our 2,400 employees spread over 1,300 square miles, the newspaper is an important vehicle for the commander to disseminate information to everybody in a timely way," said Chuck Wullenjohn, YPG public affairs officer. "This is an ideal counterweight to those who might spread rumors or share only a small



Started in 1951, the newspaper at Yuma Test Station was known as the Sidewinder until being renamed the Outpost in 1981. This 1965 issue discusses a visit from the legendary U.S. Senator Carl Hayden, accompanied by then-State Senator Harold Giss.

piece of information."

YPG has been continuously served by a post newspaper since 1951, during the proving ground's earliest days. The title of the publication was the "Sidewinder" until 1981, when Spc. Patrick Buffet, who was editor at the time, ran a contest to give the newspaper a new name. Ronald Reagan had been President for less than two months, cable TV had debuted less than a year earlier, and the .45 caliber pistol was still the Army's official sidearm. The winning entry, the Outpost, was on the flag of the June 3, 1981, edition, with the explanation that the new name, "best symbolizes the past history of Yuma Test Station and the basic mission of the post today." Spc. Richard Johnson of the post medical detachment received a \$25 savings bond and a letter of appreciation for submitting the winning entry.

Under either title, few significant stories have escaped the attention of the public affairs staff over the decades: when the LeTourneau Overland Train, the longest off-road vehicle in world history, came to YPG for testing in 1962, a lengthy story appeared on the front page of the April 6th issue. When former President George H.W. Bush dropped into YPG for his first parachute jump in since World War II in 1997, the public affairs office was on hand to produce a front page story with action photos, even as they simultaneously escorted representatives from state and national media outlets.

Despite its venerable presence, the Outpost has been targeted for elimination several times. "Starting in the early 1990's, various people suggested eliminating the Outpost as a cost-saving measure," said Wullenjohn. "I tried quite hard to sell



U.S. Senator John McCain takes a look at the Outpost prior to an overflight at YPG in 2010. Copies of each issue of the Outpost are mailed to a variety of local and state officials on a biweekly basis. (Photo by Mark Schauer)

the Outpost as an advertising vehicle for private vendors at that time. I worked out cost details a company would need to make that kind of decision, but no outside firm felt they could make a profit on it."

With budgets tightening across the Department of Defense, Wullenjohn felt the Outpost could once again be a future target. And like their civilian counterparts, some Army newspapers have significantly reduced or ceased publishing. For instance, at Dugway Proving Ground in Utah, the newspaper is now produced monthly. Others have ceased entirely, such as at Fort Dix, N.J, whose base newspaper folded in 2009 after 67 years of publication.

Given the geographic and demographic realities of YPG, Wullenjohn felt neither of these scenarios were tolerable, and made a renewed push to secure a private vendor. This time, YPG's larger workforce and innovations in the printing industry that reduced costs

led the Yuma Sun to believe the venture would be profitable. For nearly seven years, the Yuma Sun's management has been pleased with the arrangement.

Assembly of a newspaper

The base newspaper was far different in the early days of Yuma Test Station.

"We've come a long way from the days when Soldiers mimeographed the newspaper," said Yolanda Canales, editor of the Outpost from 1989 to 2016.

Early copies of the Sidewinder were crudely typed and printed, but included captioned photos and other typical newspaper conventions. By the early 1960s, the Sidewinder was published professionally on newsprint, and, in the late 1970s, shifted to a black and white newsletter. From the earliest days until the early 1990s, the production and layout of the newspaper were performed manually. Stories were written on typewriters or early word

processors and laid out manually on dummy sheets, pieces of paper onto which stories and photos were pasted after being carefully cut with X-Acto knives.

"You had to have a very steady hand," recalled Canales. "If you cut stories or photos crooked, that's the way it looked in the final copy of the newspaper."

Photos were taken with film cameras, and innovations like autofocus, now taken for granted, were relatively new. Film was processed in a darkroom on post and the newspaper editor chose what size photo print was necessary. Though the newspaper has now been laid out electronically for over twenty years, the early days of this process were far different: stories were delivered to the local printer on 3.5 inch diskettes, each of which had enough memory to hold one story. By the late 1990s, Canales used specialized software and a desktop computer to lay out the newspaper, and an internet site

to transfer the completed product to an out-of-state publisher, who in turn shipped the printed newspapers back to YPG. In these years, the Outpost publisher changed frequently according to which company submitted the lowest bid for the work through the Government Printing Office at the end of each contract.

Though the newspaper alternated

between broadsheet and tabloid-style orientation over the years, until the late 1990s, it was always eight by ten inches in size. From 1997 to 2011, the newspaper was printed on 11 by 17 inch paper, the conventional size for a tabloid-style newspaper. A year after the switch, the Outpost won the Army Materiel Command's Maj. Gen. Keith L. Ware award for best small Army newspaper.

Regardless of its format, size, and paper quality, the Outpost has been a constant and vital part of YPG life from its inception, with a new issue on the street every two weeks, no matter what.

"The Outpost is definitely a unifying force," said Wullenjohn. "Everybody at YPG works for the American Soldier and contributes to the defense of the nation and the free world. That's an important mission, and we try to highlight individual work areas at Yuma Test Center and throughout YPG. However, it is important to keep the totality of work at all three test centers in mind, and the Outpost helps remind people of that. A person who reads each issue of the Outpost gets a much broader view of YPG than he or she would from their desk or work area alone."

The newspaper's influence extends beyond the boundaries of the installation, too. The public affairs office routinely sends off scores of copies to elected officials responsible for making the decisions that enable YPG to continue its important work.

"I've received reports from numerous elected officials at all levels of government that they review each issue," said Wullenjohn. "Doing so gives them information and awareness of the important work performed at YPG. They might get this in no other way."

Though it now sports advertising and is printed on ordinary newsprint, everyone involved with the newspaper is quick to say that editorial content remains exactly as it was prior to the switch. Unlike many Army newspapers, the vast majority of the Outpost's content is relevant to and produced by writers on post, as opposed to generic 'filler' material distributed by the Department of the Army.

"The Outpost will be relevant as long as people continue to read and have an interest in seeking information," said Wullenjohn.
"Our publication is more than just a newspaper—it can also be found on the internet and, oftentimes, articles are republished in commercial newspapers, magazines and trade publications. What we do has a reach that sometimes reaches far past YPG."





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Friday Fish, 4 - 7pm

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Saturday Karaoke, 5pm

Sunday Biscuits & Gravy Breakfast, 8 - 11am

Sunday Bar Stool Bingo - 2 - 4pm





Draftee remembers 1950s at Yuma test station

By Mark Schauer

The median age in the United States is 37 years, which means the last time retired lawyer Herbert Rosenberg set foot on what became YPG was 25 years before half the population had been born.

The year was 1954: Dwight Eisenhower was president, Rear Window was a box office smash and Marilyn Monroe was a popular idol. The population of Yuma numbered 15,000. The memories came flooding back to the now 85 year old Rosenberg when he approached the proving ground's main gate for the first time since then.

"There was a curve on the highway coming in we called 'the Coca Cola' curve," he recalled. "A Coca-Cola truck had overturned on it not long before I arrived."

Many of the buildings of the era still stand, albeit remodeled and with different uses. The barracks Rosenberg once slept in still exists as an office building on YPG's Howard Cantonment Area. The dining hall, which no longer stands, was a short walk away.



In 1954, now-Cpl.Rosenberg (right) won a contest to name Yuma Test Station's recreation center. His prize was a new shirt and pants, donated by local merchant and then-State Senator Harold Giss (left).

"Some guys wouldn't walk to the dining hall, they had to drive," Rosenberg said with a smile. "These were Californians who didn't know how to walk."

The regular Army of that time was quite different before becoming an all-volunteer force in the early 1970s. Young men who weren't in college were eligible to be drafted, a position in which Rosenberg found himself after earning his Bachelor's Degree in Business Administration in 1952. With the Korean War still in progress, he was sent to basic training at Fort Sill, Okla. in December of that year.

At that time, the Undersecretary of the Army was Anna Rosenberg, the first woman to hold the post. Undersecretary Rosenberg, not related to Pvt. Rosenberg, was a human resources expert whose World War II-era manpower recommendations had earned her the Presidential Medal of Freedom. She had, however, been branded a communist sympathizer by Sen. Joseph McCarthy in an effort to derail her nomination to the position in 1950. The attempt failed, but McCarthy's smear campaign had

tarnished her. Also, the presence of a Jewish woman in the position was not popular with some in the Army.

"At Fort Sill,
Rosenberg wasn't
as common a name
as in other parts of
the country," said
Rosenberg. "They were
convinced we had to
be related, and they
despised her. I had a
rough time."

His degree in business administration resulted in his being classified among scientific and professional personnel, a category where orders were sent directly from Washington, DC. When he graduated from basic training, Rosenberg was the only individual from his group assigned to Yuma Test Station.

"It was because I was classified scientific and professional, but to half the people in the battalion it was proof that I was related to Anna Rosenberg," he said.

Arriving at Yuma Test Station was another culture shock, though in a different way.

"The test station was an informal place," he said. "You did things you never would have done at Fort Sill or elsewhere in the Army. Everyone was on a first-name basis."

Rosenberg's primary job at Yuma Test Station was to reimburse incoming test teams for their travel mileage and per diems. The typical rate was 6 cents per mile and the per diem was calculated in quarter days.

"The finance office job had nothing to do with accounting or auditing, the things I had been trained to perform," he said. "The test teams traveled all kinds of ways, but the mileage and rate of pay was calculated by using railroad mileage tables. The only time I ever saw them was when they came to collect their money."

Yet Rosenberg didn't lack for things to do. He recalled that testing only occurred during the hottest summer months, leaving the post a relaxed duty station the remainder of the year. During his stay, he acted in a lavish production of Moss Hart's Broadway play Light Up the Sky at the post's outdoor theater and hitchhiked to Los Angeles as often as possible on weekends. Like many of his fellow Soldiers, he also spent time at the post recreation center, located in the



Pvt. Herbert Rosenberg came to Yuma Test Station in 1952 after being drafted during the Korean War. "For me, serving at Yuma Test Station was an extraordinary learning experience," he said. "I grew up here." (Loaned photos)

main post building that later served as commissary. During Rosenberg's tenure, a contest was held to name the building, with a suitcase, sports shirt and pair of pants as prizes.

"I submitted several names and thought the winning entry, 'the Test Rest,' was the worst of them," Rosenberg said with a laugh.

Nonetheless, he won, and a reference to him in an issue of the post newspaper, then called The Sidewinder, included 'Test Rest' as his nickname. The prizes for his winning entry were donated and presented by noted Yuma department store owner and state senator Harold G. Giss, who later became majority leader.

"I was aware that Giss was a merchant and significant figure in Yuma, but I didn't know the details of his impressive political career," said Rosenberg.

A number of his buddies went on to distinguished careers in the civilian world. One, Paul Caponigro, became a noted landscape photographer.

"This guy was a magnificent photographer who won an Army award while we were at Yuma Test Station," Rosenberg said. "He gave me a photo and I wish I could find it. His work sells for big bucks now."

Though Rosenberg enjoyed his time at Yuma Test Station, he wanted to return to civilian life.

"When the Korean War ended, the Army allowed draftees to leave a two year term up to three months early," Rosenberg recalled. "I took them up on it. I would have been promoted to sergeant in another week, but it was okay."

His final week at the test station was a whirlwind, though.

"My most eventful day occurred in my last week," Rosenberg said. "In the morning, I was a witness in a divorce case in town, at noon I had to talk myself out of a court-martial for being away without leave and at 1700 hours I was best man at a wedding at the post chapel."

The groom was Rosenberg's buddy

Bill Kimball, who was marrying Jean Veith, the stepdaughter of the finance officer, after a whirlwind courtship. The marriage was not only a major event on a post that experienced few weddings but had great longevity: Rosenberg and his wife were surprise guests at the Kimballs' 50th wedding anniversary in 2004.

Back in the civilian world, Rosenberg graduated from Columbia Law School and practiced law until retiring in 1999. He married his wife, Janet, in 1962, and they had two children.

Though he has led an eventful life, Rosenberg said the experience of serving with a diverse group of Soldiers at Yuma Test Station was valuable to his personal development.

"I loved it there. I had come from a very religious Eastern European family and my whole world had been New York," Rosenberg said. "For me, serving at Yuma Test Station was an extraordinary learning experience. I grew up there."







Yuma Test Station veteran recalls early days

By Mark Schauer

Wilton "Buzz" Sawyer retired as a command sergeant major, but began his service before the rank was even created.

He follows the progress of U.S. Army Yuma Proving Ground from retirement, and served here in its earliest days.

A native of Camden, N.C., Sawyer became a motorcycle enthusiast at a young age. His nickname came not from the mid-20th century comic strip hero Buz Sawyer, but from something a motorcycle dealer said after the teenaged Sawyer won a local race against famed motorcycle and stock car driver Joe Weatherly.

"He was jumping up and down yelling, 'he buzzed past that guy like a pay car passing a tramp.' People picked up on the 'buzz' part and started calling me that," explained Sawyer.

He joined the Army in 1948 and two years later deployed to Korea as an infantrymen. He was part of Task Force Dog, which spent five grueling days assisting embattled Marines and Soldiers surrounded by the Chinese army at the Chosin Reservoir. During his tour he occasionally used C2 and C3 explosives for demolition work

and operated a flamethrower.

"In my last days in Korea I taught South Korean soldiers to fire flamethrowers," he said.

Sawyer's war ended in August 1951 and his time in the infantry along with it, due to injuries.

He became part of the Army's Chemical Corps at Maryland's Edgewood Arsenal. In August 1952, a permanent team was organized at the recently-reopened Yuma Test Station, and Sawyer began the first of two stints here.

"We tested all of the chemical war gasses that were kept in environmental storage," he said. "We periodically sampled containers—sometimes a one ton container, sometimes a 500 pound bomb—by drilling into them and analyzing samples in the lab to see how they were holding up in desert storage."

The group also tested improvements to equipment he had used in Korea, such as a re-designed flamethrower with more leverage for the operator. Though the test station was then made up of multiple entities like Sawyer's that didn't share range space or communicate much with other operations, Sawyer was on good terms with YPG commander

During Sawyer's second stint at Yuma Test Station, the truck-mounted MGR-1 'Honest John', the United States' first surface-to-surface nuclear-capable missile, was tested here in 1958. In order to accommodate missile testing, the branch received significant upgrades in what was then state-of-the art telemetry, as seen here, and other range improvements. (US Army photo)

Col. Walter Abbey, post adjutant Maj. Bradley, and Master Sgt. Sam Massey, the post's senior non-commissioned officer. He recalls Abbey and Marshall racing to various unit Christmas parties in a commandeered provost marshall's squad car one year, and interacting with them when he submitted a daily report. It was then that he occasionally was assigned other duties.

"One day I delivered my morning report and Maj. Bradley said, 'Buzz, we have a civilian coming into the airport at 0830 and we don't have anybody who can pick him up, can you do it?' I said 'sure', and they made a sign that read 'Mr. Siple'."

The visitor turned out to be Dr. Paul Siple, the famed Antarctic explorer and Army geographer who selected the site for Yuma Test Station. At some point during Sawyer's trip to pick him up, others on post realized how distinguished their approaching visitor was.

"By the time I got back to the main gate with him, Col. Abbey was waiting and got into my car with us to apologize to Dr. Siple for not properly identifying him. He told him they were setting up a reception for him at the officer's club that evening, and Dr. Siple said, 'Buzz and I already have plans.'"

Siple attended the reception after all, but accompanied Sawyer to San Luis, Sonora, the following night, and went prospecting in the desert with Sawyer and a group of Soldiers the day after.

It was a different time, but some things—like the dangerous commuter traffic on Highway 95—haven't changed much. Sawyer car pooled with three fellow Soldiers and remembers one terrible accident.

"We were on our way into town after work one night near the long curve with a steep drop-off to the left, and a car flying through, passing illegally, went off that embankment



Yuma resident Wilton "Buzz" Sawyer served stints at Yuma Test Station from 1952 to 1955 and 1957 to 1960. He met his wife of 64 years, Amelia, a Bard native, on his first day at Yuma Test Station. (Photo by Mark Schauer)

and rolled several times," he said.
"We pulled up and stopped, and our safety officer Curtis Mullins, who had been a combat medic in Korea, took control of the scene, assigning people to tend to each of the injured. I took my t-shirt off and used it to hold a gushing head wound on one guy. Nobody died- we saved them all."

Sawyer served at YPG from 1952 to 1955, and then from 1957-1960, with his second stint bookended by an assignment in Panama. He transferred out of the chemical corps in 1962 and retired from the Army in 1975, his last assignment being Command Sgt. Maj. of Pine Bluff Arsenal in Arkansas. He was stationed in Alaska on two separate occasions, and had temporary duty assignments in Vietnam during America's involvement in that conflict.

In his retirement, Sawyer volunteered for a number of years at the Veterans Administration hospital in Prescott, Az. Today he lives in Yuma with his wife of 62 years, Amelia, a Bard native he met on his first day at Yuma Test Station. They have three sons and four grandsons, and have been active volunteers for groups ranging from the Boy Scouts to the Knights of Columbus over the decades, continuing a lifetime of service to his community and nation.

Stars shine on Camp Laguna



At the same time Yuma Test Branch began operating in 1943, the Army established Camp Laguna a few miles to the west to train troops in mechanized warfare. Camp Laguna was one of 12 major U.S. Army desert training camps in the California-Arizona Maneuver Area (CAMA), an 18,000 square mile area chosen by Gen. George S. Patton (right), that became the training ground for over one million soldiers. Maj. Gen. Walton Walker (left) was the first commander of

Upward of 15,000 troops were stationed at Camp Laguna at any one time for periods generally lasting six months. The purpose of the challenging training was to prepare soldiers for a severe life of combat in the deserts of North Africa or one of World War II's other combat fronts. Camp Laguna and the other CAMA installations were crucial in preparing Army personnel for combat. Camp Laguna was deactivated and demolished in 1944. Other nearby CAMA facilities were Camps Pilot Knob, Hyder and Horn. (US Army photo)





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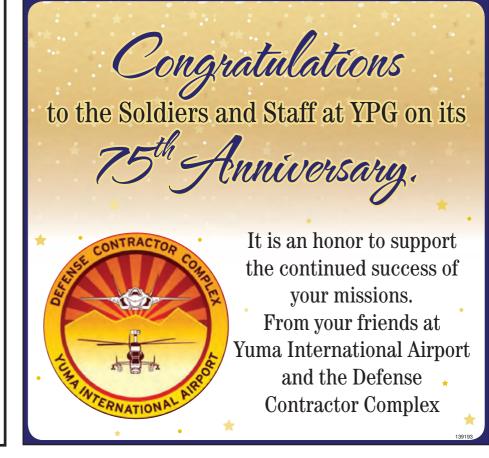
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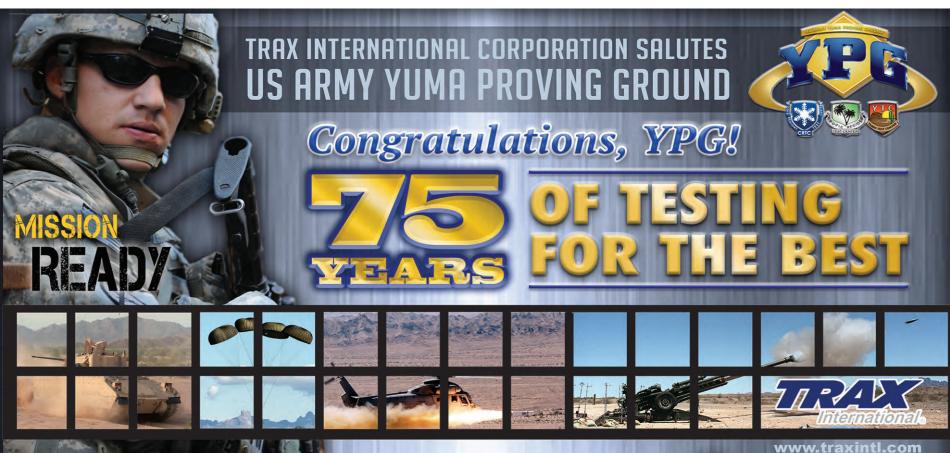
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