AEROTECH NEWS and Review

Journal of Aerospace, Defense Industry and Veteran News

Courtesy photograph

An F-16 Fighting Falcon conducts a familiarization test flight over Southern California. The F-16 High Angle-of-Attack event, conducted around the eighth month of USAF TPS, is an event where the students design, rehearse, and execute a plan that is representative of "real" flight test coordinating with the pilots.

USAF TPS' flight test engineering program

by Adam Bowles
Edwards AFB, Calif.

The Flight Test Engineer program was established at U.S. Air Force Test Pilot School in 1973, 29 years after the first TPS class in 1944.

Since initiation of the FTE program at USAF TPS, over 650 military and civilian students from the Air Force, Navy, and foreign military partners have graduated from the program.

As part of National Engineers Week (that ran Feb. 19-25), we get an exclusive look at what it's like to be a U.S. Air Force Flight Test Engineer going behind the scenes within the USAF Test Pilot School.

"The goal of the TPS year-long program is to produce highly adaptive, critical-thinking, flight test professionals that will lead and conduct a full-spectrum of test and evaluation of aerospace weapon systems," Jessica Peterson, technical director, 412th Operations Group explained. "To accomplish this goal, FTEs students are exposed to a diverse set of experiences to include over 50 semester-hours of academic courses, numerous control rooms, and over 80 flights in fighter, trainer, remotely piloted, and transport aircraft."

Over the course of the year, the students fly in 80 curriculum sorties. Four key events stand out in TPS that are a build up throughout the year. These students must pass these key events to become an established flight test engineer.

Airborne Test Conduct

The Airborne Test Conduct event, instructed on the C-12 Cargo aircraft, is the first event at USAF TPS where students are instructed on the use of basic test conduct tools such as test cards, a communication plan and collection of flight data.

"The students do test conduct and basic attitude flying for the pilots," Col. Sebrina Pabon, commandant of the USAF Test Pilot School explained. "This is their first time to work as a team, build communication and learn how to safely and effectively run a mission so they can they can do it in a timely manner while collecting all of the required data in a safe manner."

Being only the second TPS Commandant flight test engineer in history, Pabon says test conduct, being the main focus of the mission, is extremely important as a flight test engineer.

"It's getting them used to taking data and making the calls. It's all about that communication," Pabon said.

Tower Fly-By

The Tower Fly-By curriculum event is used at USAF TPS to expose students to multiple learning objectives such as safety planning, monitoring of safety critical parameters, use of radio communication, collection of flight and ground data, and the analysis and reporting of flight test results. The student pilots, with an instructor pilot onboard, fly a T-38 or F-16 aircraft at around 200 feet above the ground at speeds ranging from 200 to 600 knots. The event, a traditional method for testing a new air data system on an aircraft, has the FTE students in the fly-by tower on the lakebed at Edwards Air Force Base.

"This is an interesting technique as it gives us very accurate data," Capt. Hadrien Schneider, International Student, USAF Test Pilot School said. "We perform a risk analysis in order to mitigate those risks. Ground collision and bird strike are the key risks we are looking out for during these tests."

F-16 High Angle-of-Attack Envelope Expansion

The F-16 High AoA event, conducted around the eighth month of USAF TPS, is an event where the students design, rehearse and execute a plan that is representative of "real" flight test.

The students are given a scenario where they have to design a plan to test the flight controls of the F-16 and identify if there are any danger-

See TPS, Page 3

NASA Armstrong advances shock wave photography

by Jim Skeen
NASA Armstrong

Sound never looked so good!

Using a special handheld camera, researchers at NASA Armstrong Flight Research Center in Edwards, Calif., recently captured images of the shockwaves coming off F-15B research aircraft.

Armstrong continues to refine its use of a process called Schlieren photography, which captures images of sound shockwaves, to support the Quesst mission and its centerpiece, the X-59 quiet supersonic aircraft.

During a Dec. 16, 2022, flight test, Armstrong researchers acquired their latest images using upgraded equipment from previous experiments. A photographer captured the shockwaves from an F-18 support aircraft flying below the F-15.

"This is all in preparation for X-59. We want to be able to have a proven system to be able to image the shockwaves of the X-59," said Ed Haering, principal investigator for the Schlieren photography. "That way we can have proof of the shockwave distribution around the X-59 that hopefully will result in the quiet thump on the ground."

Much like how a hot surface in summer changes nearby air density, making objects in the background appear blurry, Schlieren photography uses bended light to create images of shockwaves. Schlieren photography uses a textured background, such as the edge of the Sun or spots on the Sun, to visualize changes in air density created by an aircraft.

As light rays flow around an aircraft, the change in air density caused by the airflow bends the light, making the edge of the Sun and sunspots appear to move. Software then calculates how each spot moved and reconstructs the shockwave into a Schlieren image.

While NASA's use of Schlieren photography focuses on being able to one day see the unique shockwaves from the X-59, its applications go beyond the Quesst mission. Researchers could also apply the technique to designing other aircraft or improving airflow — and fuel economy — of trucks, Haering said. They could even use it to optimize the placement of wind turbines, he said.

"We hope to have this as a ready service for Armstrong or others to use to evaluate their vehicles," Haering said. "Knowing where the air is really moving tells you a lot about what your vehicle is doing, how efficient it is, and how you can make it better."

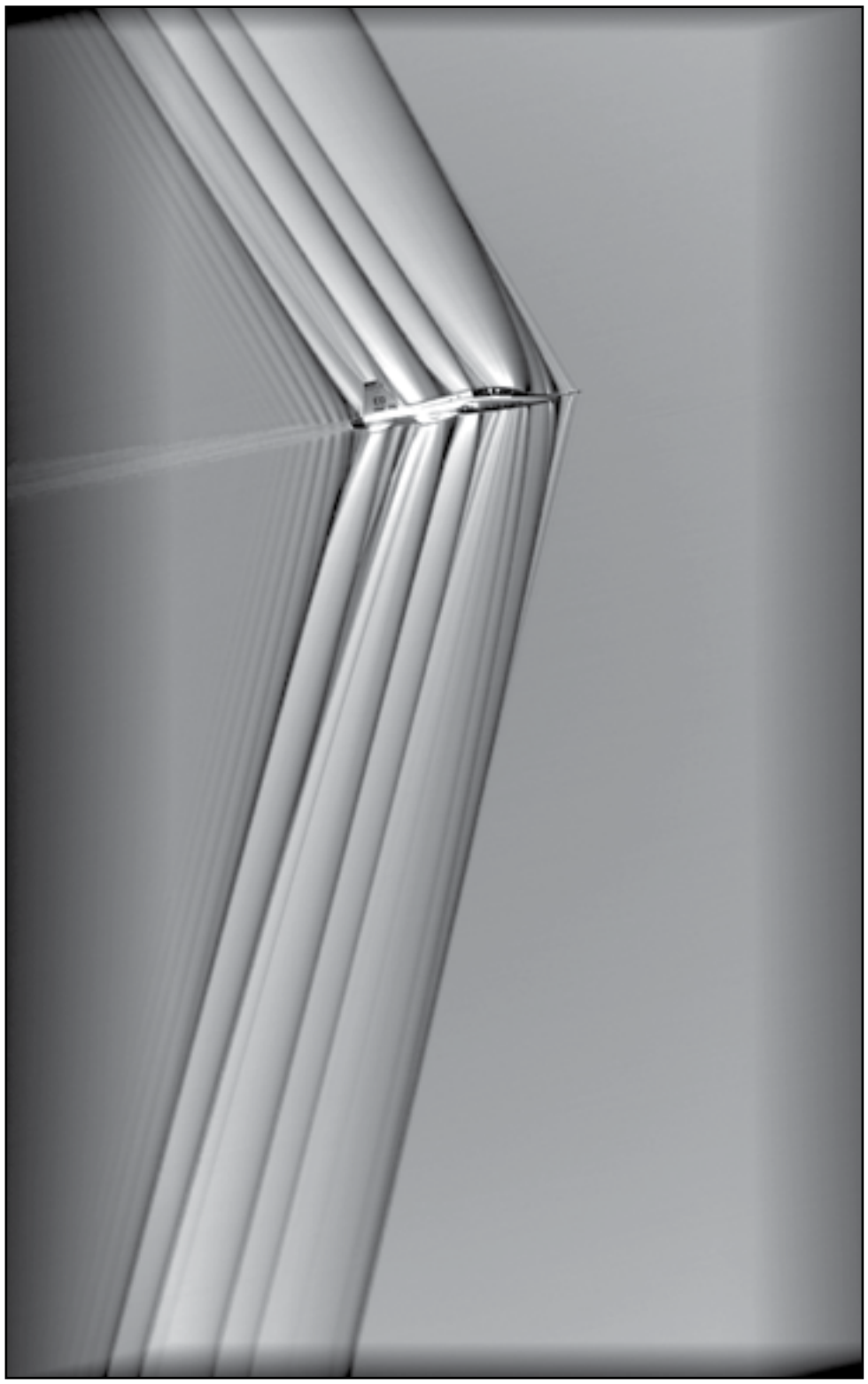
NASA plans to conduct additional flights to test the handheld camera for late winter or early spring 2023. For those tests, a photographer will capture the F-15B from an aircraft 10,000 feet away. The two aircraft will fly in sync at different altitudes to see if this results in a loss in clarity of the images. By figuring out what factors affect clarity, researchers can set up better experiments in the future,

"We did similar tests like this in 2014," Haering said. "We are reconstituting the equipment with a better camera and providing better pilot guidance."

Researchers are planning on incorporating a new Schlieren system for future testing – a wing-mounted pod will serve as the primary camera. The handheld camera will serve as a backup."

For tests later this year, researchers will attempt two types of shots. The first, which Haering calls a normal view, will have both aircraft flying parallel paths and the photographer shooting straight across at the other plane.

"As you get higher the density is lower and lower, so the shockwaves should start to disappear, but we don't know where," Haering said. "Hopefully it's above 60,000 feet. That altitude is the maximum planned for X-59 flights."



NASA photograph

These shockwaves are seen coming off a T-38 trainer jet during the air-to-air Background Oriented Schlieren flights in 2019, using Schlieren photography equipment and techniques. With the Airborne Schlieren Photography System, NASA Armstrong Flight Research Center is refining Schlieren photography equipment to support flight testing of NASA's X-59 aircraft for the Quesst mission. Such imaging will help engineers validate sonic boom-reducing technologies.

For the second type of photos, one aircraft will fly behind the other at a different altitude. With the airplanes keeping the same distance apart, the team will try different angles to see at what point the shockwaves may start to disappear.

The Quesst mission aims to design and build NASA's X-59 research aircraft with technology that reduces sonic booms to gentle thumps. NASA will fly the X-59 over U.S. communities to be selected in the future and gather data on human responses to the sound generated during supersonic flight. The agency will deliver that data set to U.S. and international regulators so that they may reconsider regulations prohibiting commercial supersonic flight over land.

"We hope to have this as a ready service for Armstrong or others to use to evaluate their vehicles. Knowing where the air is really moving tells you a lot about what your vehicle is doing, how efficient it is, and how you can make it better."

Ed Haering

Readers' Services

How to contact
Aerotech News and Review
Email: **editor@aerotechnews.com**
Phone: **661-945-5634**
Fax: **661-723-7757**
Website: **www.aerotechnews.com**

Advertising Corporate Headquarters:
877-247-9288
Email: sbueltel@aerotechnews.com

Subscriber Services
Subscriptions to
Aerotech News and Review
are $59 for six months
or $89 for one year.
For more information, contact
the subscription
department at: **661-945-5634**

Story ideas, letters, editorials
Please send all letters and editorials
to Stuart A. Ibberson, Editor,
at **editor@aerotechnews.com**.

Web Site
Access the ***Aerotech News and Review***
web site at **www.aerotechnews.com**

Submissions for upcoming events,
air shows and museums should be
emailed to **editor@aerotechnews.com**.

For questions concerning the web site,
contact the webmaster at
webmaster@aerotechnews.com.

Where you can get Aerotech News and Review

For information on
Aerotech distribution,
call **661-945-5634** or visit
www.aerotechnews.com/distribution.

Aerotech News and Review is published
the first Friday of the month, serving
the aerospace and defense
industry of Southern California,
Nevada and Arizona.

News and ad copy deadline is noon on
the Tuesday prior to publication. The
publisher assumes no responsibility
for error in ads other than space used.
Your comments are welcomed and
encouraged. Write to the address below.

- Publisher ..... **Paul Kinison**
- Business Manager ..... **Lisa Kinison**
- Editor ..... **Stuart Ibberson**
- National Advertising Manager ..... **Paul Kinison**

Aerotech News and Review
email: **editor@aerotechnews.com**
Visit our web site at
www.aerotechnews.com

ous scenarios where the aircraft could depart controlled flight. The student pilots, with an instructor pilot in the backseat, execute flight test maneuvers to test the flight controls while the engineers monitor real-time safety critical parameters from the control room and provide feedback to the pilot.

"I always think about the control room as a sports event," Capt. Bobby Torick, a USAF Test Pilot School student, explained. "You do all of this preparation, build up and practice. Then, you go execute and do your sport at the highest level you can. You have your team together and you have put a lot of effort on the front end. Now, it's time to put the headset on, get ready to retrieve data and keep the aircrew safe."

First Flight Event

The last USAF TPS event is the First Flight sortie, flown in the C-12 aircraft with the student pilot and engineer planning for the scenario of the very first flight of a brand-new airplane. The students are given a made-up scenario, a "C-90" modified aircraft, where they need to determine how to safely take-off, execute flight conditions and return for a safe first landing.

"The priority of every first flight is to land safely," David Vanhoy, TPS technical director, explained. You are working the entire flight to set the airplane up to come back and land safely. You have predictions that helped prepare you for this. You've practiced in airplanes that are similar. You have a lot of experience now handling unknowns."

This year-long course at TPS provides engineers with the skillset, toolset, and mindset to be highly adaptive, critical-thinking, flight test professionals. Flight and control room events, expose the students to a diverse set of real-world problems and mission sets. Events like the F-16 High AoA Control Room evaluation and the C-12 First Flight are just a few of the opportunities for students to get a taste of real-world flight test.

For more information on this program and others at USAF Test Pilot school and how to apply, you can visit https://www.edwards.af.mil/Units/USAFTPS/.

Courtesy photograph

An F-16 Fighting Falcon conducts a Tower Fly-By for the USAF Test Pilot School's Flight Test Engineering students. The Tower-Fly by curriculum event is used at USAF TPS to expose students to multiple learning objectives such as safety planning, monitoring of safety critical parameters, use of radio communication, collection of flight and ground data, and the analysis and reporting of flight test results.

Air Force photograph by Adam Bowles

Capt. Bobby Torick, a USAF Test Pilot School student, reads flight data in a control room at USAF Test Pilot School. The F-16 High Angle-of-Attack event, conducted around the eighth month of USAF TPS, is an event where the students design, rehearse, and execute a plan that is representative of "real" flight test coordinating with the pilots.

Air Force photograph by Adam Bowles

USAF Test Pilot School Flight Test Engineers walk out to the C-12 Huron to begin the Airborne Test Conduct Event. The Airborne Test Conduct event, instructed on the C-12 Cargo aircraft, is the first event at USAF TPS where students are instructed on the use of basic test conduct tools such as test cards, a communication plan and collection of flight data

Courtesy photograph

The last event USAF TPS event is the First Flight sortie, flown in the C-12 aircraft with the student pilot and engineer planning for the scenario of the very first flight of a brand-new airplane.

Courtesy photograph

The last event USAF TPS event is the First Flight sortie, flown in the C-12 aircraft with the student pilot and engineer planning for the scenario of the very first flight of a brand-new airplane.

Aerospace alive and well in the Antelope Valley

by Larry Grooms
special to Aerotech News

LANCASTER, Calif.—Neither icy winds, nor pouring rain and snowbound freeways could dampen positive messages about the past, present and future of the nation's Aerospace Valley.

On its traditional last Friday in February, economists and other business professionals told AV/EDGE's Winter Business Outlook Conference audience that contrary to local rumors, the aerospace economy is not only alive and well, but saving the region from the worst effects of the national recession — in both employment demand and wages, and strength in home prices.

Booming aerospace programs are driving wages significantly higher for skilled technicians and professionals at Northrop Grumman, Lockheed Martin, Edwards AFB, Air Force Plant 42, Mojave Air and Space Port, Stratolaunch, China Lake, General Atomics and others.

Coming off the previous year's diminished conference attention to the aerospace sector, this year's agenda included an appeal for greater official involvement and support of the non-profit Edwards AFB Flight Test Museum Foundation.

Lisa Sheldon-Brown, director of Education and Community Outreach, was speaking on behalf of Foundation Executive Board Chairman and Sage Cheshire, Inc. CEO Art Thompson, who was unable to attend. She told the conference that the communities which launched the campaign 40 years ago can complete the mission now with one last push.

She explained that the two-year COVID-19 campaign delay with the inflation which followed increased material prices by $1 million.

On Feb. 25, the Antelope Valley chapter of the American Institute of Aeronautics and Astronautics presented a program featuring local historians. The program focused on the sometimes long-forgotten but pivotal moments when technology created the foundations of the current and future prosperity of the region.

In more detailed *Aerotech News* reports coming later this week, online at www.aerotechnews.com, readers will learn from the NASA Dryden/Armstrong engineer who was a team leader in a one-time joint flight research test program with Russia's supersonic transport.

Another story comes from an archivist who tells the story of Aerospace Valley's role in beating Russia in the Cold War Race to Space after Sputnik, and also building on that wealth of knowledge and research skill to create X-15s, space shuttles and other programs that paid the bills to let politicians conveniently forget where it came from.

And how does somebody estimate the tourism attraction in being able to visit the place where the first person on the Moon lived and worked?

AFTPS instructor gets well-deserved accolade

Longtime U.S. Air Force Test Pilot School instructor, David Mitchell, has achieved the distinction of being elected to the rank of American Institute of Aeronautics and Astronautics Fellow.

In his professional career of more than 45 years, Mitchell has been a contributor to the development of flying and handling qualities requirements for every type of air vehicle. Mitchell is the author/co-author of more than 75 technical papers and articles and over 50 technical reports on vehicle dynamics and handling qualities.

Civil Air Patrol complete Cadet SNCO School at Plant 42

Thirty-six Civil Air Patrol Cadet Students, 25 CAP Cadet Staff Cadre/instructors, and 10 adult CAP senior members from the California Wing - Civil Air Patrol recently completed Cadet SNCO School.

The weekend concluded with a graduation ceremony at the famous Blackbird Airpark in Palmdale, Calif.

The goal of senior NCOs is to create an environment in pursuit of the mastery of Drill and Ceremonies, NCO leadership, and the mentoring of NCOs and Airmen, as well as to refine the techniques of public speaking, and classroom instruction. Congratulations!

For information on how to join the Civil Air Patrol visit gocivilairpatrol.com.

Air Force photographs

A look back:
Rockwell's Highly Maneuverable Aircraft Technology

by Tony R. Landis
Wright-Patterson AFB, Ohio

During the 1970s the name of the fighter game was maneuverability, and aircraft manufacturers needed to develop new concepts that would make their fighters more nimble than those currently in service.

The legendary F-4 Phantom II had been a workhorse in Vietnam, yet it lacked maneuverability in a dogfight. Fly-by-wire control systems developed through the various Control Configured Vehicle programs conducted by the Air Force Flight Dynamics Laboratory added flexibility to modern designs.

In addition, the use of graphite-epoxy composites that are just as strong as their metallic counterparts, but less weight and more flexible, gave manufacturers the options required to create designs that could meet the new requirements set forth by the Air Force for added maneuverability.

Through the combination of relaxed static stability offered by fly-by-wire controls and construction with the use of graphic-epoxy composite materials, the designs coming off the drawing boards exceeded the known limits of pilots and crew. In order to test a new design to the proposed limits required the use of a unpiloted vehicle capable of supersonic flight and 8G plus sustained turns with superior maneuverability.

The Air Force Flight Dynamics Laboratory Vehicle Dynamics Division teamed with NASA to create requirements for such a vehicle. While submissions from Grumman, Douglas Aircraft and Rockwell all showed great promise, in August 1975, the Air Force awarded the $17.3 million contract to Rockwell to build two 44-percent scale, remotely-piloted vehicles under the Highly Maneuverable Aircraft Technology, or HiMAT, program. Rockwell chose the General Electric J85-21 jet engine with a digital control system replacing the standard hydromechanical engine control system to power the small test aircraft. To reduce complexity the HiMAT aircraft used skid landing gear in place of traditional wheels similar to the X-15.

Rockwell constructed the aircraft with a modular design giving the capability of changing the configuration. A proposed two-dimensional, thrust vectoring, engine exhaust nozzle had been test-fit in mockup form, but never built. The highly instrumented Remotely Piloted Research Vehicles were air-launched from NASA's venerable NB-52B Mothership and flown remotely from a ground station with emergency backup controls in the aft seat of a TF-104G Starfighter chase aircraft.

The advanced technologies incorporated into the new vehicles were a close-coupled canard planform, aeroelastic design with composite structures and relaxed static stability, with a secondary objective to evaluate the smaller RPRV design in comparison with a hypothetical full-scale vehicle.

An important feature of HiMAT was the flight test maneuver autopilot system. The FTMAP linked with two ground-based computers that allowed preprogrammed maneuvers, such as a constant Mach windup turn, pushover/pullups, and thrust-limited turns, that were implemented as an outer-loop command bypassing the pilot stick. The first HiMAT, RPRV 870, was devoted primarily to envelope expansion and design point demonstrations, while its sister ship, RPRV 871, was used for research data collection. An important goal of the program was the transonic maneuverability point of 8G sustained at Mach 0.9 and 25,000 feet. The supersonic endurance point goal was to sustain a 3G turn for 3.5 minutes at Mach 1.4 and 40,000 feet.

The flight test program was carried out at NASA's Ames Research Center/Dryden Flight Research Facility located at Edwards, Calif. From October 1981 to March 1994, Dryden Flight Research Center had been merged with Ames Research Center, becoming the Ames-Dryden Flight Research Facility, and currently named the NASA Armstrong Flight Research Center.

During an unveiling ceremony at Rockwell's Los Angeles facility in March 1978, the company revealed the first HiMAT vehicle to a group of VIPs and media. Shortly after the official ceremony, Rockwell loaded the HiMAT on to a flatbed trailer and trucked the vehicle to ADFRF, arriving on March 10, 1978. The second airframe arrived just three months later on June 15.

The following week, on March 16, 1978, RPRV 870 performed the first fit check attached to the NB-52B Mothership. Utilizing a special adapter, HiMAT made use of the same NB-52B wing pylon that once dropped the X-15, Lifting Bodies and other test articles. Taken aloft for the first time on July 11, 1979, during a planned captive flight, this first HiMAT test had to be aborted due to telemetry and aircraft problems encountered due the mission. A second captive flight took place on July 20, with all test objectives met, the first free flight was scheduled for the following week.

The first free flight for HiMAT took place on July 27 with NASA test pilot Bill Dana flying HiMAT from the ground station. With all objectives met, the small test vehicle performed a successful landing on Rogers dry lakebed at Edwards. NASA engineers spent the next few months installing instrumentation into RPRV 870 prior to its second flight on Dec. 21. Testing proceeded well until the fifth flight on July 8, 1980, when the decoder failed 5 minutes into the flight and control switched to backup pilot in the aft seat of the TF-104G. A glitch in the latest software update prevented landing skid deployment and HiMAT performed an emergency gear-up landing on the lakebed. With minimal damage, the team repaired the aircraft and it took to the air once more on Oct. 10.

The second HiMAT, RPRV 871, joined the flight test program on June 25, 1981 making its first captive flight, and first free flight performed a month later on July 24. RPRV 870 performed the first 8G maneuver demo during its tenth flight on Feb. 3, 1982, followed by the first supersonic flight to Mach 1.2 during the next flight on May 11, with NASA test pilot Steve Ishmael at the controls. During next flight on May 14, HiMAT flew to a maximum Mach number of 1.45.

Research flights continued throughout 1982 with Ship One making its 14th, and final, flight on Aug. 27, while Ship Two carried on until making its 12th, and final, flight on Jan. 12, 1983, with test pilot Einar Enevoldson in the remote cockpit station. The average flight time for each HiMAT flight was approximately 30 minutes. At the end of the test program, HiMAT 870 had made 14 flights with a total flight time of 11 hours and 35 minutes, while 871 made 12 flights for a total of 10 hours and 57 minutes.

HiMAT's contributions appear to be mixed. The system's complexity was greater than predicted, flight operations more labor intensive, and the subscale size made it restrictive in many aspects. Yet, its accomplishments were impressive, sustained 8G turns at near supersonic speed, and supersonic endurance surpassed the design goals with aerodynamics as good, or better, than predicted. One HiMAT engineer stated that Dryden engineering section disliked seeing HiMAT on the flight schedule because it took virtually the entire pilot's office to fly a mission; two in the NB-52B, one in the RPRV ground station, two in the TF-104G safety chase and one more in a second chase aircraft as required, bringing about the joke of "how many pilot's does it take to fly an unmanned aircraft?"

With the flight test portion completed, NASA placed the first aircraft in storage while the second participated in loads testing. Flexibility and strength of the composite wing structure tested to the point of failure provided data on future construction techniques of composite aircraft.

After testing HiMAT 871, NASA technicians repaired the aircraft and placed it in storage with its sister ship. Eventually, HiMAT 870 found a place of honor in the Smithsonian Air & Space Museum in Washington, D.C. RPRV 871 eventually ended up on outdoor display at Ames Research Center at Moffett Field, Calif. It remained there until 2009, when it returned to Dryden, restored to its original colors, and placed on display outside of the center.

A number of contributions in fly-by-wire controls and design, manufacturing and use of advanced composites from the HiMAT program ended up in follow-on design programs such as the Advanced Design Composite Aircraft, Advanced Fighter Technology Integration, Rockwell's Tactical Interceptor, Ground Attack & Reconnaissance, as well as the Advanced Tactical Fighter program that became the Lockheed F-22 Raptor.

NASA photograph

The first Highly Maneuverable Aircraft Technology test aircraft arrives via flatbed at NASA's Ames/Dryden Flight Research Facility, March 10,1978. NASA quickly painted over the Rockwell logo on the outer vertical stabilizers. Note another Rockwell product parked in the background, the Space Shuttle Enterprise, atop the Boeing 747 Shuttle Carrier Aircraft prior to departing California for mated, vertical, ground vibration testing at Marshall Space Flight Center in Alabama.

NASA photograph

NASA's Ames Research Center/Dryden Flight Research Facility at Edwards, Calif., took delivery of the second Highly Maneuverable Aircraft Technology test aircraft on June 15, 1978. Unlike the first vehicle, Ship Two remained unpainted during the ground testing that transpired over the next 36 months, prior to its first flight.

On this date . . .

March 4, 1954: With Lockheed test pilot Tony LeVier at the controls, the XF-104 Starfighter makes its first flight at Edwards Air Force Base, Calif. The landing gear remained extended throughout the 20-minute flight.

March 6, 1990: A U.S. Air Force SR-71 Blackbird, tail number 61-7972, flew its final mission, setting three Fédération Aéronautique Internationale in the process. The aircraft left Air Force Plant 42 in Palmdale, Calif., with Lt. Col. Raymond E. "Ed" Yeilding and Lt. Col. Joseph T. "J.T." Vida, at the controls. After takeoff from Palmdale, the aircraft headed offshore for refueling from a KC-135. The plane entered the "west gate," a radar reference point over Oxnard on the southern California coast, then headed east to Washington Dulles International Airport at Washington, D.C.

March 8, 1979: Space Shuttle Columbia arrived on a trailer after a 38-mile journey from the Rockwell International plan in Palmdale, Calif., through Lancaster then on to Edwards AFB. The first step in its travels toward space was taken at five to 10 mph. The orbital vehicle was delivered to NASA's Dryden Flight Research Facility to be mated with its Boeing 747 carrier aircraft.

March 6, 1985: The Rockwell International-built Space Shuttle Atlantis (OV-104) is rolled out in Palmdale, Calif. It would later be transported, overland, to Edwards Air Force Base, Calif., for delivery to the Kennedy Space Center in Florida. After flying 33 missions, it was decommissioned and is now on display at Kennedy.

March 7, 1942: The first Tuskegee Airmen graduated from advanced pilot training at Tuskegee Army Air Field, Ala. The Tuskegee Airmen were the first African American U.S. military pilots. "No standards were lowered for the pilots or any of the others who trained in operations, meteorology, intelligence, engineering, medicine or any of the other officer fields," The Tuskegee Airmen National Historical Museum writes. "Enlisted members were trained to be aircraft and engine mechanics, armament specialists, radio repairmen, parachute riggers, control tower operators, policemen, administrative clerks and all of the other skills necessary to fully function as an Army Air Corp flying squadron or ground support unit."

Poker game saved WWII Navy veteran's life

Courtesy photographs

by Dennis Anderson
special to Aerotech News

LANCASTER, Calif.—It was a poker game with buddies that saved Carroll Ray Bierbower's life during World War II, and he was not even much of a poker player.

"The Lord had other plans for Carroll," Pastor Joel Plantinga observed at the memorial service for Bierbauer on Feb. 15, 2023. "We are here to celebrate the life of Carroll, for one reason, because there simply are not many left like him in the world."

Of the 16 million Americans who served in World War II, a little more than 100,000 are alive today, and Bierbower was one of the fast-departing "Greatest Generation." He was 97 and died on Feb. 6, known and loved by a large family and a community of friends and veteran buddies.

A veteran of World War II's "Greatest Generation," and sailor on a great ship, Bierbower was an electronics whiz, a minister in the Antelope Valley and across the "Bible Belt," a Dodgers fan, and not much of a poker player, but it was one floating card game that saved Carroll Ray Bierbower's life.

If he was anything other than a man of such conviction in his Christian faith, April 29, 1945, might have been called his lucky day. But there was nothing lucky about the Japanese pilot, a human turned into a flying bomb, piloting an explosives-laden fighter plane into the ship floating off Okinawa.

The kamikaze pilots, their name taken from the Japanese words "Divine Wind," represented Imperial Japan's last-ditch effort to hold the Americans and their Allies at bay before they reached the Japanese home islands. American pilots in Navy Hellcats and Corsair fighters did their best to swat them away, but some, about 20 percent of them, crashed into Navy and merchant ships causing death and destruction.

The USS *Comfort* hospital ship joined the enormous flotilla that landed divisions of Marines and Army on Okinawa for the last, and one of the largest battles of World War II.

According to the *Comfort's* official history, it stood by off Okinawa from April 2-9, 1945, receiving wounded for evacuation to Guam. Returning to Okinawa on April 23, six days later she was struck by a Japanese suicide plane. The *Comfort* was organized as a Navy ship that was staffed by Army medical personnel.

The plane crashed through three decks exploding in surgery which was filled with medical personnel and patients. Naval history record 28 killed, including six nurses, and 48 wounded, with major damage to the ship. After temporary repairs in Guam, *Comfort* sailed for Los Angeles, Calif., arriving on May 28.

A celebration of the long and adventurous life of Bierbauer convened at Halley-Olsen Murphy Funerals on Feb. 15, attended by family, friends, and veterans. He was saluted with full military honors by the Veterans of Foreign Wars Post 3000.

Bierbauer was just 20 years old, a Sailor and an electronics and communications specialist, serving aboard the USS *Comfort.* The *Comfort* was one of the three great U.S. hospital ships of World War II that evacuated and cared for thousands of wounded troops, bringing them home to the United States.

"They found out I was a radio repair man, and that is what they had me doing, working on radios," Bierbower said in an interview.

Bierbower served during some of the great naval and land battles of the Pacific campaigns, including the Battle of Leyte Gulf to liberate the Philippines from a brutal Japanese occupation, and the last great battle of World War II for the island of Okinawa in 1945.

A reluctant poker player, he finally agreed to play a few hands with buddies. That decision saved his life. He was in a different part of the ship when the Japanese "kamikaze" fighter plane crashed through three decks of the *Comfort.*

The ship, Bierbower noted in a legacy interview with Marine Corps veteran Jeff Collins, had an enormous red-cross marking, "like a target." It was years before he could discuss what happened.

The heavily damaged USS *Comfort* brought the wounded home to the West Coast and while it was in dock for repairs at port in Los Angeles, Bierbower married his fiancée, Dorothy Buhler, and they remained together for more than 70 years.

The couple settled in Quartz Hill, Calif., where they raised a family of five. After working with Southern California Edison, he started a television repair business, which over the decades following World War II eventually evolved into satellite dish systems. Along the way, he completed a doctorate in theology, then established and ministered a church in Quartz Hill.

The church and congregation later relocated to Cave Junction, Ore., his obituary stated.

"He was often invited to speak at churches across the country, including in the "Bible Belt" of the South." He toured the Holy Lands, and as a spiritual scholar published short volumes on Christian topics.

In recent years, Bierbower traveled to the beaches of Southern California, attended Dodger games, and shared with friends and family, "I've lived a good life. I have no regrets."

"He was just a great man," his Marine Corps buddy Collins stated. "And he had some great stories."

Collins was among the Marines, Navy veterans, Army friends, Air Force and other supporters who attended his memorial. They watched photos from his childhood in the Ozarks region of southern Missouri, to his service-era photos in sailor blues, and wedding photos with his beloved Dorothy.

Bierbower is survived by a brother, four children, seven grandchildren, 12 great-grandchildren, and nine great-great grandchildren, his legacy materials stated.

Courtesy photograph

The USS *Comfort.*

#1 Homebuilder in the Antelope Valley!

$5,000 INCENTIVE*

for active military, retired, and service personnel to use towards options or upgrades

PACIFIC CREEKSIDE ENCORE

Pacific Creekside Encore
FINAL OPPORTUNITY
2105 Cork Oak St.,Palmdale
(661) 742-6255

LARGE 1 & 2-STORY HOMES
West Palmdale
2,207 - 2,741 Sq. Ft.
Up to 5 Beds, Up to 4 Baths

From the high $600,000's

PACIFIC MARIGOLD Encore

Pacific Marigold Encore
FINAL OPPORTUNITY
1758 East Holguin St., Lancaster
(661) 946-3523

LARGE SINGLE-STORY HOMES
CHALLENGER WAY AND AVE. I
1,867-2,462 Sq. Ft.
Up to 5 Beds, Up to 3 Baths

From the Mid $500,000's

PACIFIC WILDFLOWER

Pacific Wildflower
NOW SELLING
E. Ave. R and 35th St.,Palmdale
(661) 733-8974

1 & 2-STORY HOMES
Close to Schools
2,179-3,230 Sq. Ft.
Up to 5 Beds, Up to 3 Baths

From the High $500,000's

PACIFIC MONTERA

Pacific Montera
COMING SUMMER 2023
Highland Ave.& W. Ave. P-12
West Palmdale
(661) 733-8974

1 & 2-STORY HOMES
Walking Distance to Schools
2,179-3,230 Sq. Ft.
Up to 5 Beds, Up to 3 Baths

Join the Intest List Online

PacificCommunities.com

PACIFIC COMMUNITIES
Old Traditions, New Innovations

Thunderbirds conduct winter training at Edwards

Air Force photograph by Tech. Sgt. Tabatha Arellano

A U.S. Air Force F-16 Fighting Falcon, assigned to the Thunderbirds, prepares for a practice flight at Edwards Air Force Base, Calif., Jan. 26, 2023. The Thunderbirds conducted part of their winter training at Edwards AFB, where new enlisted support teams perfected the ground show portion of the demonstration while the pilots perfected their roles in the air.

Air Force photograph by Tech. Sgt. Tabatha Arellano

U.S. Air Force F-16 Fighting Falcons, assigned to the Thunderbirds, fly over Edwards Air Force Base, Calif., Jan. 26, 2023.

The U.S. Air Force Thunderbirds were recently at Edwards Air Force Base, Calif., as part of the teams' winter training tour.

This leg of the tour enabled new enlisted support teams to perfect the ground show portion of the demonstration while the pilots performed their aerial roles.

While at Edwards, the team members met with children, students and the base population.

"We've not only had a blast training at Edwards Air Force Base the past two weeks, but we've also had a blast hanging with kids, students and the base members," said a Thunderbirds spokesperson on Facebook. "We've been thrilled by the warm welcome and great community out here, and appreciate them making our mission easy — recruit, retain, and inspire!"

Air Force photograph

While at Edwards Air Force Base, Calif., the USAF Thunderbirds aerial demonstration team took time to visit with the base population.

Air Force photograph

A member of the USAF Thunderbirds aerial demonstration team answers questions from school children during the team's winter training at Edwards Air Force Base, Calif.

Air Force photograph

During the USAF Thunderbirds aerial demonstration team visit to Edwards Air Force Base, Calif., as part of the team's winter training tour, personnel at Edwards had the opportunity to not only see the team fly in formation in the skies above the base, but also get a close up look at the team's F-16 Fighting Falcon.

HERE FOR YOU
WHEN YOU NEED US MOST

When skill, expertise, and compassion matter most, we bring our teams together to help turn your health around. We strive to provide quicker diagnoses, more efficient treatment, and most importantly, better outcomes.

KAISER PERMANENTE® thrive

Sergeant Alvin York, the greatest soldier, Part II

by Bob Alvis
special to Aerotech News

In the last issue I told the story of young Alvin and his rise from man to legend.

Thinking about the place where I left off, it occurred to me that at the time of his heroic acts he was almost 30-years-old, since he was drafted into the U.S. Army when he was 29. When York faced down overwhelming odds with just a handful of men, you may wonder what drove him.

For a backwoods country boy, Alvin was a very complicated man, while also a very humble man with simple convictions and an unwavering faith in God. Let's take up the story where I left off as the corporal and his small squad of soldiers faced an overwhelming German army.

As the initial blast of machine gun fire hit the Americans, York was standing out in the open. York wrote in his diary:

"Those machine guns were spitting fire and cutting down the undergrowth all around me something awful. I didn't have time to dodge behind a tree or dive into the brush, I didn't even have time to kneel or lie down as soon as the machine guns opened fire on me, I began to exchange shots with them.

"In order to sight me or to swing their machine guns on me, the Germans had to show their heads above the trench, and every time I saw a head, I just touched it off. All the time I kept yelling at them to come down. I didn't want to kill any more than I had to. But it was they or I. And I was giving them the best I had.

Courtesy photograph

Sgt. Alvin York with one of his grandchildren just before his death. Alvin C. York succumbed to the effects of the strokes in 1964 when the nation was on the verge of another large-scale war. He died most proud of his efforts to improve education and the quality of life of rural Tennessee, and the school that bore his name.

"Suddenly a German officer and five men jumped out of the trench and charged me with fixed bayonets. I changed to the old automatic and just touched them off, too. I touched off the sixth man first, then the fifth, then the fourth, then the third, and so on. I wanted them to keep coming. I didn't want the rear ones to see me touching off the front ones. I was afraid they would drop down and pump a volley into me."

By this time, a German major who had already been captured had seen enough. The major, who knew English, told York, "If you don't shoot any more, I'll make them surrender."

All but one of the Germans came down from the hills. That one German managed to throw a small hand grenade before York killed him. The Americans, whose number had dwindled to eight at this point, then had the complicated task of leading over 80 prisoners through German lines to the American side. York put the German major at the head of the column with him holding his Colt .45 to the major's back. The seven other men then surrounded the column as best they could.

As York and his men led the captured Germans back through enemy lines, German soldiers and machine gunners attempted to fire on the Americans, but York made the German major order them to surrender. All but one willingly gave up. According to York, "I made the major order him to surrender twice. But he wouldn't. And I had to touch him off. I hated to do it. But I couldn't afford to take any chances and so I had to let him have it."

York, with just eight men, was now becoming a legend that would be the talk of military men for generations. The southern drawl of this tall mountain man did not play into the heroics, for Alvin it was just a job that had to be done — emotions and swagger played no part in the episode. With his simple talk and low-key actions he marched columns of prisoners to the rear lines only to find stunned leadership having a hard time believing that the corporal and eight men captured an amazing amount of enemy.

By the time York and his small squad reached the safety of the American lines they had captured 132 Germans, including three officers. Word quickly spread that York had single-handedly "captured the whole German army."

An Army inspection of the battle scene revealed 28 dead German soldiers. According to the official Army report, York's description of the battle was accurate though "York's statement tends to underestimate the desperate odds which he overcame."

When a general asked the inevitable question of how he managed to accomplish his feat, York replied, "Sir, it is not manpower. A higher power than man guided and watched over me and told me what to do."

For his bravery, York was received the Medal of Honor, and was also promoted to the rank of sergeant.

You can just imagine on his return home that all the fame and fortune would start to change the corporal turned sergeant into something other than the quiet mountain man from the back hills. But Alvin was a man true to his heart and his country and did not seek the fame. Upon returning to America, Sergeant York was showered with offers of fame and fortune, including a nationwide tour, endorsements, and movie deals.

But such was not in York's character, who claimed, "I felt that to take money like that would be commercializing my uniform and soldiering." York wrote in his diary: "It was very nice. But I sure wanted to get back to my people where I belonged, and the little old mother and the little mountain girl who were waiting. And I wanted to be in the mountains again and get out with hounds, and tree a coon or knock over a red fox. And in the midst of the crowds and the dinners and receptions I couldn't help thinking of these things."

Alvin York went home to his mountains. He made his way to the same mountainside where he had prayed to God two years earlier for guidance, and there thanked God for bringing him home safely from the war.

When he came home, Alvin was also thankful for having his eyes opened to the struggling young people in those back road communities, and how living in all that poverty was unacceptable and that the gifts God had bestowed on him should be used to give a better life to those less fortunate. So, in 1927, York established the Alvin C. York Agricultural Institute for the boys and girls of the mountains who had few educational opportunities.

By 1937, York was no longer able to operate the school and it became a special part of the Tennessee public school system. In 1941, the story of Alvin York was made into a movie starring Gary Cooper, who won an Academy Award for the role. York acted as an adviser to the film. In 1952, he suffered a cerebral hemorrhage and became bedridden.

Courtesy photograph

Sgt. Alvin C. York, in uniform, at the end of World War I.

So many times when it comes to our nation's veterans, the government tends to lose focus on the overall spirituality of service of every man or woman who puts on the uniform of our country. They are not all Sergeant Yorks, but they serve in the same honorable way and hope that the nation they were willing to die for does not forget them or use them to fill in the bottom line.

By 1961, Alvin York, one of America's greatest military heroes, was partially paralyzed, almost completely blind, and virtually penniless.

The American government, through the Internal Revenue Service, repaid its debt by suing York for back taxes. The IRS claimed that York's royalties from the movie, most of which had gone to charity, should be taxed at a higher rate than York had used. In all, the IRS claimed York owed the U.S. government $85,442, plus an additional $87,155 in interest.

When it became apparent that all of York's assets totaled together did not equal the $172,597 sought, and when the American public was alerted to Sergeant York's plight, individuals chipped in over $50,000 — which covered the debt with money left over for a trust fund when President John F. Kennedy intervened on Sergeant York's behalf.

York lived on for three more years. On Sept. 2, 1964, at the age of 76, Alvin York passed away. His grave, near his home and within sight of the very church where he had been converted in 1915, is marked with a stone monument on which two books are carved — a Bible and a textbook.

Alvin Cullum York was one of the greatest heroes America ever produced. His faith in God, his modest and honorable character, and his sacrifice on behalf of his country continue to command the utmost respect and admiration from Americans. His life serves as a model for future generations of Americans and I can only hope and pray that the remarkable story of Alvin will find its way into classrooms of America where it can teach the real meaning of overcoming fear and doubt, being the best you can be in the faith and belief that a higher power is watching over you, and that service in uniform along with charity, is one of the greatest gifts a man can share with others.

Until next time, peace my friends …

Courtesy photograph

An honor guard removes the U.S. flag from the coffin of Medal of Honor recipient Sgt. Alvin C. York as his body is lowered into the grave at the foot of the hills surrounding his home on Sept. 5, 1964, near Pall Mall, Tenn.

ROSAMOND HOUSE FOR RENT

Westpark
2002 Home
3BR/2BA
1,750 Sqft.,
3-Car Garage
with 220V
Washer/Dryer
and Patio
Central Air/Heating
Quiet, Near K-12
Schools/EAFB
$2,300 /Mo.+
Security Deposit
No Smoking,
Dogs or Cats.
Call Paul
562-714-6686

ROSAMOND HOUSE FOR RENT

Santiago Estates
2006 Home
3BR/2BA, 1,450 Sqft.,
2-Car Garage
Recent Paint/Carpet
Microwave
Dishwasher
Laundry-hookups
Patio with a Vista
View past Palmdale
Community
Pool/Spa
Quiet, near
schools/EAFB
$2,100/mo + Sec
No Smoking,
Dogs or Cats.
Call Paul
562-714-6686

JDRF is committed to accelerating life-changing breakthroughs to

CURE ⋮ PREVENT ⋮ TREAT

type 1 diabetes and its complications

A CFC participant. Provided as a public service.

JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

jdrf.org

VICTORY Baptist Church

10173 South Loop
California City

Ron Smith, Pastor

• Sunday School 10:00 am • Morning 11:00 am
• Sunday Evening 6:00 pm • Wednesday 7:00 pm

For transportation from Edwards AFB call

(760) 373-7314

Independent - Fundamental
www.victory-baptist.org

Finding cures. Saving children.®
St. Jude Children's Research Hospital®
800-822-6344 • stjude.org/cfc A CFC Participant. Provided as a public service.

$20 OFF

PENNZOIL
Shell ROTELLA

ANY SIGNATURE OIL CHANGE
No other offer or discount applies

JIFFY LUBE ROSAMOND
3100 N. Sierra Hwy. • 661-256-6008
JIFFY LUBE TEHACHAPI
550 Tucker Rd. • 661-822-5300

FREE FITNESS CLASSES

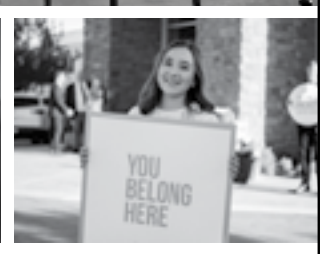
Here at Prestige Assisted Living at Lancaster, residents enjoy the innovative fitness program Ageless Grace,® which works both the brain and body.

Throughout February, we're hosting free Ageless Grace® classes, and you're invited to join us and take part in this enjoyable, challenging program. Ageless Grace® is performed seated, so it's perfect for almost every ability level.

For more information, contact us at **(661) 949-2177** or visit us online at **prestigecare.com/lancaster** for the full schedule.

Prestige Senior Living, L.L.C.
prestigecare.com/lancaster

Prestige Assisted Living at Lancaster
43454 30th St W
Lancaster, CA 93536
License No.: 197602540



Lancaster Baptist Church

Experience community. Understand truth.

Pastor Paul Chappell

Lancaster Baptist is a church with a friendly, family atmosphere, compassionate vision, and strong commitment to Bible truth. We offer small groups specifically designed for military families and singles.

lancasterbaptist.org
only 15 minutes from Edwards South Gate

Lancaster Baptist Church • 4020 E. Lancaster Blvd. • Lancaster, CA 93535
661.946.4663 • lancasterbaptist.org • Paul Chappell, Pastor

For military veteran caregivers, caregiving often starts earlier in life and lasts longer. **To better care for your loved one, you must also care for yourself.**

Get a **FREE** military veterans caregiving guide at
aarp.org/caregiving

AARP ad COUNCIL

Metro-floors
"The Floor Improvement Store"
Contractor's License # 482566

Carpet · Hardwood · Laminate
Tile · Waterproof Floors · Countertops

FREE ESTIMATES
Installation always available

44109 N. Yucca, Lancaster
942-1185
www.metrofloorsinc.com

NOTICE OF PUBLIC LIEN SALES
Business & Professional Code Section 21700-21707

Notice is hereby given by the undersigned that a public lien sale of the following described personal property will be held at the hours of **12 noon on the 15th day of March 2023** or thereafter. The auction is being held at **www.selfstorageauction.com** by competitive bid. The property is stored by **Nova Storage located 825 W Avenue L12., Lancaster, CA 93534**.

The items to be sold are generally described as follows: Furniture, clothing, tools and or other household items stored by the following persons.

0239 Mitchell, Anita
0047 Ratzi, John-Paul
0095 Cook, Katie
0343 Garcia, Arthur
0579 Whitney, Christopher
0301 Vargas, Paulina

Date: February 24, 2023 Signed NOVA STORAGE
This notice is given in accordance with the provisions of section 21700 et seq. of Business & Professional Code of the Sate of California. The owner reserves the right to bid at the sale. All purchased goods are sold "As Is" and must be paid for and removed at the time of sale. Sales subject to prior cancellation in the event of settlement between owner & obligated party. Auctioneer: Nova Storage

NOTICE OF PUBLIC LIEN SALES
Business & Professional Code Section 21700-21707

Notice is hereby given by the undersigned that a public lien sale of the following described personal property will be held at the hours of **12 noon on the 15th day of March 2023** or thereafter. The auction is being held at **www.selfstorageauction.com** by competitive bid. The property is stored by **3305 E. Palmdale Blvd., Palmdale, CA 93550**.

The items to be sold are generally described as follows: Furniture, clothing, tools and or other household items stored by the following persons.

F530 Baskerville, Tristan
D220 Vincent, Roland
E397 Medrano, Jorge
A003 Rodriguez, Martin
D142 Pratt, Emmanuel
F527 Smith, Paul

Date: February 24, 2023 Signed NOVA STORAGE
This notice is given in accordance with the provisions of section 21700 et seq. of Business & Professional Code of the Sate of California. The owner reserves the right to bid at the sale. All purchased goods are sold "As Is" and must be paid for and removed at the time of sale. Sales subject to prior cancellation in the event of settlement between owner & obligated party. Auctioneer: Nova Storage

Paid Public Announcement

Notice of Completion

Second Multisite Five-Year Review Report Includes 19 Sites at Edwards Air Force Base, California

The U.S. Air Force has determined that the existing cleanup remedies implemented at Operable Unit 2 South Base Sites 5/14, 76, and 86; OU4/9 South Air Force Research Laboratory, Detachment 7 (or AFRL) Sites 37, 120, 133 and 321; OU4/9 AFRL Soil and Debris Sites 6, 13, 36, 113, 115, 167, 312 and 318; OU7 Site 3 Main Base Inactive Landfill; and OU7 Chemical Warfare Materiel Site 442 are functioning as intended and remain protective of human health and the environment. The remedy for OU2 South Base Site 29 is expected to be protective upon completion.

The U.S. Air Force evaluated the cleanup remedies at the 19 sites and published the results in a Five-Year Review Report submitted to the U.S. EPA. The report validated the protectiveness and functionality of the current remedies in place. Based on the review, the U.S. EPA concurred with remedy protectiveness in the short term. The Air Force will address FYRR recommendations to ensure protectiveness in the long term.

The final Second Multisite FYRR is available online at *www.edwards.af.mil/About/Environment* and the Edwards AFB Administrative Record website at *https://ar.afcec-cloud.af.mil* (AR# 6184).

Records of Decision were signed in 2009 for the OU2 sites; 2007 for the OU4/9 South AFRL sites; 2008 for the OU4/9 AFRL Soil and Debris sites; 2012 for OU7 Site 3; and 2009 for OU7 CWM Site 442.

For OU2 Site 29, a ROD Amendment was finalized in 2012 and an Explanation of Significant Differences in 2020. An ESD was also finalized for AFRL Soil and Debris Site 312 in 2013 and the South AFRL sites in 2021. The remedies selected in these decision documents included land use controls (administrative and physical barriers), groundwater monitoring, groundwater remediation and landfill capping.

Contaminants of concern vary depending on historical site activities and consist of potentially hazardous debris, rocket propellant and fuel components, chlorinated solvents used as degreasers, polychlorinated biphenyls used to cool electrical transformers, polycyclic aromatic hydrocarbons (byproducts of the burning of a kerosene-based liquid fuel) and potentially explosive debris.

The cleanup activities at these sites — located within the western portion of the Mojave Desert, to the east and west of Rogers Dry Lakebed at Edwards Air Force Base — will continue to be evaluated every five years until the sites are cleaned to unlimited use and unrestricted exposure. The next five-year review is expected to be accomplished in 2027.

For more information or to obtain a copy of the Second Multisite FYRR, please contact Gary Hatch, 412th Test Wing Public Affairs, at (661) 277-8707 or email *412tw.pae@us.af.mil*.

Air Force Civil Engineer Center
Installation Support Section
Edwards Air Force Base, CA 93524

Discover the Comfort of Home

K. Hovnanian Homes

TWO EXCITING NEW COMMUNITIES IN ANTELOPE VALLEY

At K. Hovnanian Homes, we understand what **HOME** means. It's where your heart takes you at the end of a long day. It's where you enjoy your family and play with your dog. It's a place where neighbors connect and memories are made. If this is what you're looking for, consider West View Estates and Tehachapi Hills: two breathtaking new communities of spacious single-family homes, with up to 4 beds and 2,406 sq. ft. of versatile living space.

Both communities offer:

- Easy commuting to major employment hubs including Edwards Air Force Base, Air Force Plant 42, and Mojave Air and Space Port
- Our innovative Looks program, developing a cohesive interior design aesthetic that reflects your personal taste

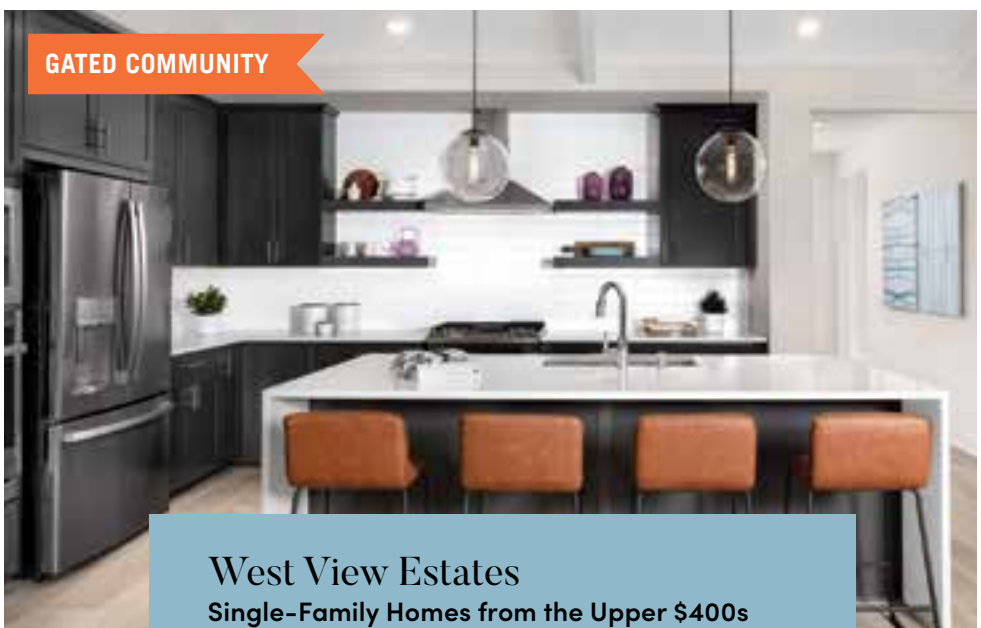
We also offer a range of financing incentives^ to fit your priorities and budget, including:

- Our Hometown Heroes promotion, offering $1,000 off of options or closing costs for military, aerospace employees, and others working for the safety of their community*
- Special interest rates, closing cost reductions, base price discounts, free refinancing^^, and more

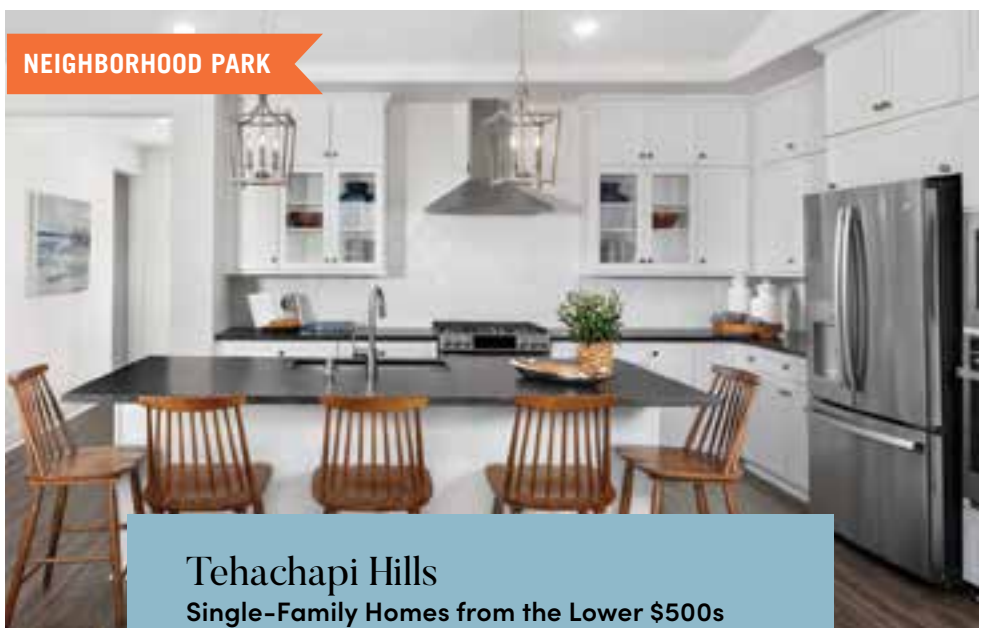
SCAN TO LEARN MORE

Contact us today to learn more and schedule an appointment—we'd love to hear from you!

VISIT US AT KHOV.COM/ANTELOPEVALLEY OR CALL US AT 888-807-0881



West View Estates
Single-Family Homes from the Upper $400s



Tehachapi Hills
Single-Family Homes from the Lower $500s

*Tehachapi Hills is offered by K. Hovnanian Communities, Inc.. Sales Consultant: Anna Banuelos DRE#01503709. West View Estates is offered by K. Hovnanian at West View Estates, L.L.C.. Sales Consultants: Damien Felix DRE#01985204 and Jesse Atondo DRE#01424978. ©2023 K. Hovnanian California Operations, Inc. DRE#01183847. All dimensions are approximate. Features and options may vary. Unless stated hardscape, landscape and decorator items not included. K. Hovnanian California Operations, Inc. reserves the right, at its sole discretion, to make changes or modifications without prior notice. Value of Heroes incentive not to exceed $1,000. Unless otherwise specified, incentives may be applied towards closing costs, upgrades or options. Offer may not be available in all communities. Incentive must be included at the time of contract. Offer valid for owner occupants only. Additional conditions or restrictions may apply. To qualify for the incentive, applicant must show proof of eligibility at the time of contract signing. To be eligible the applicant on the contract and mortgage must show proof of military or employment status with an ID card or other official documentation. Void where prohibited by law. Incentive is per applicant. Seller contribution limits may apply and affect maximum financing. Maximum closing cost assistance may vary based on the purchase price, product and occupancy. The incentives are based on the use of K. Hovnanian American Mortgage, L.L.C. ("KHAM") for financing or an all cash purchase. If KHAM or all cash is not used, the incentives will be reduced by $1,000. K. Hovnanian American Mortgage, L.L.C. 3601 Quantum Boulevard, Boynton Beach, FL 33426. NMLS #3259 (www.nmlsconsumeraccess.org). Licensed by California Department of Financial Protection and Innovation under the California Residential Mortgage Lending Act. Lic. #4130532

^Special Financing Incentives may vary and are subject to change without notice. Special Financing Incentives may not be combined with any other offers. Seller contribution limits apply and may affect maximum financing. Maximum closing cost assistance may vary based on the purchase price, product and occupancy. Special Financing Incentives are based on the use of K. Hovnanian American Mortgage, L.L.C. ("KHAM"). K. Hovnanian American Mortgage, L.L.C. 3601 Quantum Boulevard, Boynton Beach, FL 33426. NMLS #3259 (www.nmlsconsumeraccess.org). Licensed by California Department of Financial Protection and Innovation under the California Residential Mortgage Lending Act. Lic. #4130532

^^Offer is subject to program requirements, credit and underwriting approval, and use of K. Hovnanian American Mortgage, L.L.C.(KHAM) for the financing of your K. Hovnanian Home purchase. Limited to one-time refinance per household within the first three years from KHAM closing date. Offer excludes government recording costs or transfer taxes, funding fee, upfront mortgage insurance premium fees, interest per diem or escrow funds set up. Equal Housing Opportunity. K. Hovnanian American Mortgage, L.L.C. 3601 Quantum Boulevard, Boynton Beach, FL 33426. NMLS #3259 (www.nmlsconsumeraccess.org). Licensed by California Department of Financial Protection and Innovation under the California Residential Mortgage Lending Act. Lic. #4130532. See a Sales Consultant for full details. Equal Housing Opportunity.

The list price for qualifying quick move-in homes may reflect a portion or all of the base sales price reduction.