



# Hands Across History



A joint newsletter for the White Sands Historical Foundation and the White Sands Pioneer Group.

Volume II, Letter III

August 2006

## Three Will Be Inducted Into The Hall of Fame During A Luncheon & Ceremony On Sept. 18

Pioneers and Foundation members are invited to attend the annual Hall of Fame induction on Sept. 18 to see three great Americans receive their due for dedicated service to White Sands. Also, it will be a great time to get together and renew old friendships.

The three men being inducted during the luncheon ceremony are: Joe Gold, an early leader in data collection and instrumentation development; Melvin Lux, a manager with Land-Air that provided range support services; and Moises Pedroza, an expert in telemetry engineering.

Induction into the missile range hall of fame is the highest honor White Sands can give an individual locally. It was established in 1980 to recognize those who have made outstanding contributions to White Sands during their tenure on the range.

Tickets for the 11:30 a.m. luncheon ceremony are available from the Public Affairs Office, Bldg. 1782, for \$9. **Call 678-1134 for more information.** They are tired of holding the bag for no shows so you'll have to prepay for a ticket - they'll mail you your ticket or leave it at the door after they receive your check or credit card #. The deadline for purchasing a ticket is Sept. 13.

Joe Gold will be inducted into the Hall of Fame for his contributions in the areas of early data collection, as a program manager for numerous missile systems and their targets and for representing the U.S. in evaluating foreign missile systems for possible purchase.

Gold first saw White Sands Proving Ground in 1946 when he was a student employee with the fledging Physical Sciences Lab at New Mexico State University and a group from the lab went to watch an early V-2 firing. He graduated from NMSU in 1949 with a bachelor's degree in mechanical engineering. See more about Joe in this issue, page 2.

After graduation, Gold went to work at White Sands as a camera operator. Gold retired from White Sands in 1979 and lives in Las Cruces with his wife Fern.

Melvin Lux will be inducted into the White Sands Hall of Fame for his leadership as a manager at Land-Air (later Dynalectron and DynCorp). As a contractor on the WSMR

team, Lux oversaw everything from highly-technical services such as timing, telemetry and radar to providing everyday functions such as security forces and standing up a cafeteria in a remote area.

Lux came to White Sands in 1950 after six years with the U.S. Coast Guard and four years at the University of Colorado where he earned a bachelor's degree in electrical engineering.

During his 37-year career on White Sands and Holloman, Lux saw everything from V-2s and WAC Corporals to Pershing, Lance, Athena, Patriot and the Space Shuttle landing at Northrup Strip. His Hall of Fame nomination package states Lux "is the creator and father of the Land-Air attitude that is: "Whatever it takes, wherever it's needed, for the good of the Range and DoD."

Lux lives in Alamogordo with his wife Zumi.

Moises Pedroza is being inducted for his pioneering efforts in modernizing the White Sands telemetry capability for the past 40 years. During his career he was also noted for his willingness to share his expertise with others in the field and became known as a special teacher and mentor.

Pedroza came to White Sands in 1968 after graduating from the University of Texas at El Paso with a bachelor's degree in electrical engineering.

Pedroza's work on interferometer systems and tracking was recognized all over the United States.. William Tincup, President of Systems Engineering & Management Company, said Pedroza "was truly a pioneer in the telemetry field, and led the WSMR range modernization program with innovative and effective telemetry tracking and data reception techniques that will be the "standard" by which all flight test facilities in the U.S. inventory will be measured against."

Pedroza died in 2005. His wife Cecilia lives in El Paso.

The luncheon menu is Mesilla Chicken with green chile. It includes beans and rice as well as a salad.

Immediately following the ceremony in the club, there will be a reception at the Museum with complimentary cake, coffee and punch..



# Joe Gold Remembers Clyde Tombaugh -- Part 1

*This is the first installment in a series of articles created by cutting them from Joe Gold's personal recollections of Clyde Tombaugh. They couldn't come at a better time with the Little Bright Eyes piece on page 7 and Joe being inducted into the WSMR Hall of Fame next month. The segments will run in future newsletters until Joe's article is complete.*

On 18 February 1930, Clyde Tombaugh, working at the Lowell Observatory in Flagstaff, Arizona, discovered the ninth planet of the Solar System.

My first awareness of the name Clyde Tombaugh came in grade school around 1934 or 1935 when I read in our Weekly Reader about his discovery of Pluto. This, along with my having previously been shown the Milky Way by my mother, helped create my interest in astronomy.

Years later while a college student at New Mexico A and M College (later to be New Mexico State University), I learned that Clyde Tombaugh lived in the same town, Las Cruces, and was employed in the Missile Program at White Sands Proving Ground, located nearby. By now, I was acquainted with his name and face as an astronomer; as my interest in astronomy had continued from grade school. The college offered only one course in astronomy, an elementary course, which I took at my earliest opportunity.

A short while later, in September 1947, I found that I could arrange a ride to Flagstaff at a time when classes were in recess. This seemed a good opportunity to see the Lowell Observatory where Tombaugh had done the work that made him famous. So one evening I went to visit Clyde Tombaugh at his home to inquire about the possibility of my seeing the observatory. Naturally I made an appointment before just showing up at his home.

I found Mr. Tombaugh (this is how I addressed him) to be a very friendly person, considering that he had no idea who this young kid was who was taking up his time. He wasn't very tall, no taller than me, wore glasses and had a small mustache. He introduced me to his wife, Patsy, and made me welcome. Later I learned that he liked to talk to young people about astronomy. I told him about my oppor-

tunity to go to Flagstaff and asked if he thought I would be able to see the observatory if I went there. He smiled and said "certainly."

Then he told me, "Ask for Dr. Lampland and tell him that I told you to ask him to see the observatory." He spent some additional time answering my questions until I decided I had better not overdo a good thing, and left. I did as he said.

Upon arriving at the observatory, I asked the first person I found for Dr. Lampland. When finally I was in the presence of Dr. Lampland he looked at me inquiringly and said "Yes?" I told him I was from Las Cruces, New Mexico, and that I had talked to Mr. Tombaugh and that Mr. Tombaugh had told me to see him.

The mention of the Tombaugh name immediately changed Dr. Lampland's somewhat formal demeanor to one of friendliness and, I thought, became rather conciliatory. But thinking back on it, it was probably caused by his high regard for Mr. Tombaugh. I found out later that it was somewhat a situation of a mutual respect they held for each other.

Dr. Lampland then gave me a personally directed tour of Lowell Observatory, started by showing me duplicates of the large glass photographic plates used by Clyde Tombaugh to record the images from the telescope used for the Pluto search. He showed me how two plates (they were very large, I thought) were mounted on a comparator called a "blink" comparator and how the plates were examined.

My memory tells me that I was looking at copies of the original plates from which Tombaugh had made his discovery and I think, with Dr. Lampland's directions, I "rediscovered" Pluto.

Then Dr. Lampland showed me the telescope that Tombaugh had used in the search for Pluto. Compared to the other larger telescopes at the observatory this telescope was less impressive, but still impressive to this young kid who had never seen astronomical telescopes before. It was a 13-

see JOE, page 3

## Statement of Purpose and Membership

The "Hands Across History" newsletter is published by the White Sands Missile Range Historical Foundation and the White Sands Pioneer Group (WSPG). Both nonprofit organizations aim to preserve the accomplishments of White Sands Missile Range.

The newsletter is intended to keep members of both groups informed about current events and share information of common interest. The editor

is Jim Eckles. He can be contacted by email at [nebraska1950@comcast.net](mailto:nebraska1950@comcast.net) or at either address below.

Membership to either organization is open to anyone who shares their goals. However, details of membership (dues, etc.) differ between the two groups. For more information, please contact the appropriate organization and we will send it via the Post Office or email.

White Sands Pioneer Group  
P.O. Box 318  
White Sands, N.M. 88002

White Sands Historical Foundation  
P.O. Box 171  
White Sands, N.M. 88002

inch diameter telescope with an enclosed tube and housed in a special building with an observing part that rotated as needed for observing.

Dr. Lampland must have spent at least two hours with me. (As an interesting note here; I remember even today how I traveled to Flagstaff but I have absolutely no recollection of how I returned to the College campus. Was I so busy digesting what I had seen?)

After returning to Las Cruces, I again went to visit Mr. Tombaugh to thank him, give him a report on my visit to Lowell Observatory, and ask a few questions that had come to mind as a result of the trip.

After graduation in June 1949 I went to work at the White Sands Proving Ground. On my first day at White Sands Proving Ground (later White Sands Missile Range) I was told to go to some building and report to Mr. Clyde Tombaugh. He was the same, smiling, pleasant individual I had talked to previously and seemed pleased that I was to join his organization. After several minutes of visiting and small talk he introduced me to Mr. Art Dittmar, his operational supervisor, who was to give me my specific job assignment.

Art Dittmar was a younger man than Clyde, was an engineer, and came from a German community near Fredericksburg, Texas. He was physically larger than Tombaugh and had what I would call a square face and he, too, had a small mustache. I learned to like Art Dittmar and later we also became friends. Art had a sometimes-hesitant manner of speech, almost as if he had paused to think of what he was about to say.

Soon, I found that titles such as Mister were not much used by the senior employees (senior in time on the job, not necessarily age) when referring to these two bosses. It soon became "Clyde" and "Art" for me also. Both Clyde and Art were people persons and were much liked and respected by all the workers in the Optical Measurements Branch

In those days, much of the activity of White Sands Proving Ground was the V-2 program, but other missiles were also being launched at the range. I was assigned to operate an optical data collection instrument that was one of the closest to the missile launch site. There were several exciting moments for those of us near the launcher caused by failure of the missiles soon after launch. At times we even had pieces of a failed V-2 raining down as the result of an

explosion shortly after launch.

As I said earlier, it was June 1949 when I went to the Missile Range to work in Clyde Tombaugh's organization. When Thanksgiving came, Clyde came to me and invited me to Thanksgiving dinner at his home. He invited another new employee who was also single, Paul Travis. Paul, a physicist, had come to White Sands shortly after me and was therefore a relatively new kid on the block also.

Thanksgiving Day turned out to be, for me, an exceptional experience. Clyde's wife, Patsy, a fine hostess, had a great dinner for the occasion. I found they had two children, Annette and Alden, both rather young; Annette was about 10 and Alden about 6 years old.

Also present was Patsy's brother, James Edson. He was a physicist and while at Johns Hopkins University had quite a bit to do with setting up the Proving Ground initially and who was instrumental in getting Clyde to come to the Proving Ground from Lowell Observatory in 1946. James (Doctor) Edson had presented the first detailed proposal for upper air research using the V-2 rockets and had introduced the tracking telescope to use in instrumenting the range to support the missile program. He also brought the first tracking telescope, Little Bright Eyes, to White Sands. He and his brother-in-law, Clyde, were quite a pair to visit with on this Thanksgiving Day.

I visited the Tombaugh home later when I joined the Astronomical Society of Las Cruces, formed by Clyde and a few other astronomers in the area. Early meetings were held in his and other members' homes. However I did not remain a member beyond the first year and thus didn't become a charter member of the organization. Lately I have rejoined after an absence of over 50 years.

Clyde's Optical Measurements Organization had five tracking telescopes spread around the range for use in gathering data on the missile flights. Of all the instruments Clyde had, I wanted most to work with these and envied those who were assigned to the telescope operations.

Clyde had frequent discussions with us about "film density" and "image quality" so the importance of the subject made an impression on me. In checking with the data reduction folks, I became aware of a problem involving the quality of images of the calibration targets used in the field of view. It seemed that under some weather conditions these target images were so indistinct that it adversely affected the accuracy of the reduced data.

*In the next installment you'll learn how Joe fixed this problem and won a promotion.*



Clyde and his homemade telescope used on the family farm in Kansas for his observations of Mars. Those drawings produced from these "backyard" observations got him the job with Lowell Observatory in Arizona.

## Way Back When

# The Sprint Missile Was Fast, Really Fast

By Doyle Piland  
From the WSMR Museum Archives

If you drive out Nike Avenue a couple miles and turn left on Range Road (RR) 202 and head Northeast, past RR-21, on past RR-257, past RR-251, to the next intersection. Then turn left at this intersection and drive about a half mile then around a large, fenced mound on the left to the entrance at the Southwest part of the complex. You have now arrived at Launch Complex (LC) 50. Over the last several years, different small missiles have been, and continue to be tested at LC-50. Not a lot of sustained exciting activity.

That is not the way it was Way Back When..... LC-50 is also known as Sprint Site. It is called that for good reason. The site was originally built for the Sprint missile test program, which was a part of the Nike X and later Safeguard System.

The photo below shows a conceptual drawing of the Sprint Launch site. You can see a transporter loader driving up the ramp from the Southwest (left) to the top of the mound, where the underground launch cells were located. You can see the light colored concrete area running diagonally across the top of the mound.

In that area, there are four cells. From left, the first two are launch cells, the third is an instrumentation cell, and the fourth one, on the far right, is another launch cell. On the near side of the ramp embankment, you can see the entrance to a bunker area, which was a control room and was used for instrumentation and recording equipment, as well as, a personnel shelter.



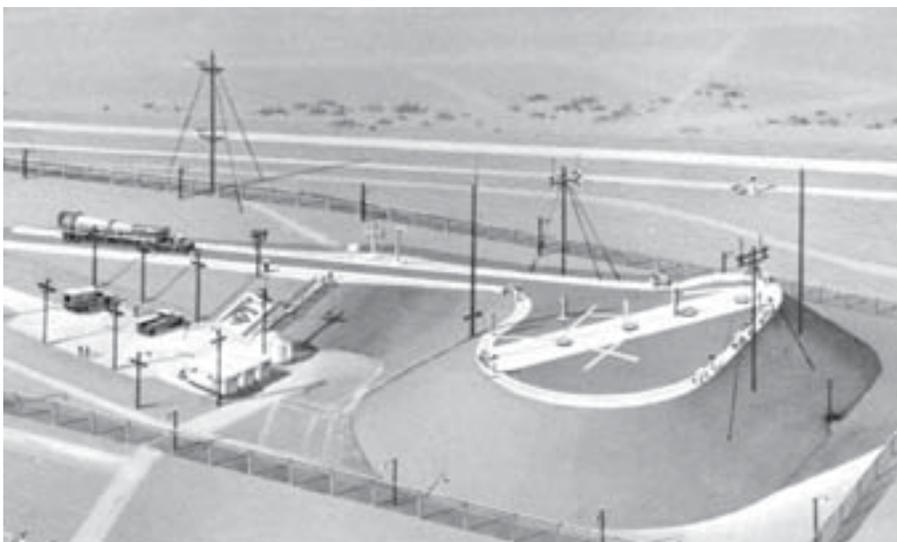
Sprint missile on transporter / loader at LC-50.

The Nike X/Safeguard system was an anti-ICBM system with the Spartan Missile used for intercepts outside the earth's atmosphere and the quick reacting Sprint Missile was to intercept anything that the Spartan failed to destroy.

The Sprint was an awesome missile. At the time, it was considered the fastest accelerating object built by mankind, and may still be. Unclassified information released indicates that its acceleration was over 100G (force of gravity). In unclassified briefings, they would say that the time from launch until it had traveled a mile was less than a heartbeat. The words fast, quick, etc. are grossly inadequate to describe the Sprint. Sudden, and instant are more appropriate words.

The Sprint was a cone shaped missile almost 27 feet long and about 4 feet, 5 inches in diameter at the bottom built by Martin Marietta, now a part of Lockheed-Martin. At White Sands, the Sprint was checked out and assembled at LC-38 and transported to LC-50 on a transporter-loader as seen in the photo above. The photo shows a Sprint on the transporter-loader already at LC-50 ready to load into the launch cell. Note the two foam wedges just to the right of the fins. There are two on the other side as well. These wedges will be discussed later.

The missile was lowered into the launch cell and positioned on top of a giant dome shaped device, which acted somewhat like a piston. A large explosive charge was placed under the domed piston. When launched, the explosive charge was ignited and the Sprint was literally blown out of the cell vertically.



Concept drawing of LC-50 - Sprint Site.

see SPRINT, page 5



Sprint missile launch and flyout.

The first stage motor ignited after the missile had cleared the cell by approximately three feet. It immediately began its initial turn toward the target.

You can see a slide show on the Museum's website at URL <http://www.wsmr-history.org/SprintAction1.htm>. The photo above shows the initial turn and fly-out of a Sprint missile. The dark smoke is staging, which is the end of first stage burn, cutting charge separating the stages, and the second stage motor ignition. Although you can't see it in this photo, the second stage is completely white hot and glowing from the air friction at the speed that is going.

LC-50 construction began in 1964. The first launch from there was 17 November 1965 and, although it flew only 5.1 seconds, it was considered a success and demonstrated the ejection, first stage ignition, initial turn and staging.

But, as with many projects starting out at White Sands, all was not happiness and continued success. The next eight were successful only in that they discovered problems, which needed investigating. As an example, the third launch scheduled for 15 March 1966 got peoples attention.

As launch time approached, final checks on the mound were made and all personnel moved into the control room in the bunker. The countdown went smoothly and the launch command was sent ..... nothing!!

There they were with what is commonly called a "hang-fire." So, they dug out the procedures and checked them. The first thing to do was wait 30 minutes before approaching the missile in the cell.

At the end of the 30 minutes, the crew exited the bunker and started loading into

vehicles to drive around and up to the pad area. At that exact time, there was a huge explosion up in the area of the cells. There was suddenly no need for the hang-fire procedures now!

People that were in that crew said that immediately after the event was over, the wait time for a hang-fire was extended to two hours.

As it turns out, while the missile was going through its launch sequence, which was really only a few milliseconds, it started a hot gas generator used to supply power to move the control fins. However, sometime before the actual launch, it detected a fault and stopped the sequence and did not launch.

Now, remember those foam wedges mentioned earlier? Well, the exhaust from the hot gas generator, which kept running, eventually ignited the wedges. The wedges then burned and caught all sorts of things on fire, which burned until one of the motors or something else exploded causing everything to explode.

The photo below shows the destruction caused by the explosion of the missile in the northern most launch cell.

Over the next four plus years, 39 more Sprint missiles were launched from LC-50, making a total of 42, with the last one on August 12, 1970.

There was no repeat of the missile number three incident, but there were some thrilling successes and some spectacular failures. The failures included one, where the missile was ejected, the first stage motor ignited, the initial turn started, and kept turning, and kept turning, and turning. The missile did a complete loop plus another half loop - totaling a 540 degree maneuver - and flew into the ground not far from where it was launched.

According to Charles R. Shaw, who worked on some of the Sprint design, the information sent back to Martin Marietta was "Flight terminated due to ground interference." But, regardless, success or failure, things were always exciting at LC-50 Way Back When.



Damage to Sprint launch cell at LC-50 from missile explosion on March 15, 1966.

# War Hero And Movie Star Audie Murphy Visited WSMR To Film “Broken Bridge”

By Jim Eckles

On January 26, 1945, a young second lieutenant named Audie Murphy found himself in France facing an attack of German tanks and infantry. Murphy’s subsequent actions earned him the Medal of Honor.

Murphy ordered his men to withdraw into the woods while he stayed behind to call in enemy positions for artillery units. When the German tanks came crashing up to his position, he manned the .50 caliber machine gun from a nearby burning tank destroyer. Using this weapon he proceeded to clear the area of German infantry, killing at least 50 of the enemy.

The tanks retreated without infantry support and Murphy, even with a leg wound, organized his troops to counterattack. They forced the Germans to withdraw and were able to hold the woods.

Murphy’s Medal of Honor citation states, “Murphy’s indomitable courage and his refusal to give an inch of ground saved his company from possible encirclement and destruction, and enabled it to hold the woods which had been the enemy’s objective.”

Murphy went on to become the most decorated U.S. soldier from WWII (33 awards to include decorations from France and Belgium) and something of a movie star in Hollywood. He appeared in more than 25 films which were mostly westerns.

In 1949, Murphy’s autobiography *To Hell and Back* became a best seller. He then starred in the film version, also called *To Hell and Back*, in 1955. The movie was Universal’s highest grossing movie ever until it was surpassed by *Jaws* in 1975.

On Sept. 23 and 24, 1960 Murphy visited White Sands Missile Range as part of an Army movie production. The Army was filming *Broken Bridge* which was described by the *Wind and Sand*, the White Sands newspaper in 1960, as a “full-length color documentary.”

According to the *Wind and Sand*, “The film takes Murphy back to Europe to revisit his wartime unit. The visit grows into a tour of today’s Army defenses, the hardware undreamed of when Murphy and millions of other GIs were battling from the coast of Normandy to free Nazi-occupied Europe.”

At White Sands, the crew filmed Murphy watching the firing of the Sergeant, HAWK and Honest John missiles. Also, mobility was demonstrated as a Little John missile was airlifted by helicopter and two soldiers hand carried a Redeye for the cameras.

Accompanying Murphy was Lt. Gen. Arthur Trudeau who was the Chief of Army Research and Development. The film was produced by the Office of the Chief of Research and Development for worldwide release in theaters and on television.

Maj. Gen. John Shinkle, missile range commander, also appeared in the film with Murphy and Trudeau.

Murphy was killed in a plane crash in Virginia on May 28, 1971. He was buried with full military honors June 8 in Arlington National Cemetery.



Audie Murphy poses with MG John Shinkle in front of Honest John missile launchers.

## Sugerman Fund Set

Len Sugerman was one of the most generous patrons of the White Sands Museum. To continue his work, the Historical Foundation is accepting donations to the Museum Capital Fund in memory of Len.

Contact Jon Gibson at (505) 382-8292 or email him at [gibson\\_jon@msn.com](mailto:gibson_jon@msn.com), if you would like to help out .

# Little Bright Eyes Recorded Trinity Test

By Ken Bellinger

The emergence of range optical instrumentation coincided with the birth of the atomic age at White Sands.

The first range optical tracking mount was referred to as Little Bright Eyes and later as “Telescope One” or T-1. It was a standard military issue M45 gun mount, sans the quad 50 caliber armament and outfitted with optical systems instead.

Its mission was to scan and record the travel and propagation of the anticipated fallout cloud at Trinity Site during the test on July 16, 1945.

Actually, the T-1 mount shown here is the second edition of Little Bright Eyes, as the first had a chair mounted on the side of the mount for an observer/pointer. This was removed and replaced with a second optical system. The observer/pointer was then left standing alongside the mount with a radio link to the mount operator.

All components for Little Bright Eyes were reported to have been either “begged, borrowed, or stolen.” For the two optical units, a five inch refractor acquired from “who knows” by “who knows” and a six inch refractor was acquired from the Smithsonian Institute. The two 35mm cameras came from some now unknown post, camp or station supply and the five inch tracking binoculars were liberated from the Imperial Japanese Navy.

This development, for it really was a new concept, was brainstormed for months by a group of military and civilian collegians, engineers and several civilian astronomers. Dr. James Eden, the responsible team member, recruited

his brother-in-law, Dr. Clyde Tombaugh to join him to review and resolve a multitude of difficulties with the optical performance of Little Bright Eyes. Clyde later became Chief of the Optics Branch at WSPG.

Clyde’s reputation as the discoverer of the planet Pluto gave him instant credibility. In addition to the hardware, Clyde taught his trackers to use astronomy in their tracking missiles work.

When the Fat Man bomb was detonated, the Manhattan Project had a success that would quickly end the war and Little Bright Eyes performed as anticipated, paving the way for more uses at place like a missile range.

As a postscript, it should be noted that T-1 became the forerunner of a series of improved M45 gun mount tracking devices. T-4, the last of the “T” family, was physically different, but still a variation of it’s predecessors. The M45 gun mount, highly modified through the ingenuity of field personnel to meet ever changing requirements, was a workhorse on most missile ranges through the 1980s and many are still in use today.



Little Bright Eyes in use at White Sands Proving Ground.

**Hands Across History**  
**P.O. Box 171**  
**White Sands, NM 88002**

## **The Back Page**



Charmed!!! This November 1953 photo shows the “bridal” party from a scene in “The Womanless Wedding” presented by the WSPG non-commissioned officers at their club. The play was directed by Mrs. Marion Houseknecht, vice-president of the NCO Woman’s Auxiliary and obviously a woman with some influence.