Hands Across History

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

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Truckloads Of Missile Artifacts Arriving To Expand The WSMR Museum’s Collection

It is already Christmas at the White Sands Missile Range Museum as the single largest acquisition of major artifacts is underway. According to Darren Court, the museum director, they are in the process of taking in over 30 museum pieces from Redstone Arsenal.

The items include a Hermes A-1 missile, a Little John and launcher, a Redstone launcher, a Nike Zeus on a trailer, a Nike Hercules on a trailer, a Lacrosse missile on a Studebaker launch vehicle, a jeep mounted SS-10, a Dragon, a Redeye and another German V-2. Court said it will be nice to get another V-2 but he has no idea how complete it is. Hopefully it will have its internal workings but it could just as easily be an empty shell.

Actually, the Hermes A-1 is probably a rarer bird than the V-2. They were built by General Electric and only five were launched at WSMR. There can’t be very many left anywhere else. There is another one on display at WSMR’s LC-33 but very few people see it.

This all came about when Court was contacted by the Curator of Collections for the Army’s Center of Military History several months ago. Court was told the Center of Military History wants White Sands “to be the primary hub for all rocket and missile technology in the Army.” Then they offered Court a list of excess items found at Redstone Arsenal.

It was a long list with many things unrelated to the mission at White Sands. Court pared the list down to 34 items. At the same time he had to convince upper management at White Sands that this was a mighty fine deal and get their support. What made it palatable to White Sands was that the Army paid to move all the stuff to New Mexico and is also funding the pads and mounts in Missile Park.

In summary, Court said, “This is fantastic for us as it will greatly enhance the collection.” He added that he hopes to have everything either in the Missile Park or the museum by the end of next year.

Editor’s Note: This whole event is a great boon to the missile range’s museum. The past year has been full of doubt and concern as plans were being made by the Center of Military History to cut and consolidate museums in response to budget slashes. Sending such a large number of artifacts to WSMR and stating the range should be the center of all Army missile material looks like a strong endorsement for our museum.
Missile Range History Detailed In New Book

Jim Eckles, longtime editor of Hands Across History, has published a book about the missile range’s history. It is called Pocketful Of Rockets and is intended to be both informative and entertaining.

Not only does Eckles delve into V-2 rockets, missiles gone astray into Mexico, and the introduction of African oryx, but he also tells how the Apache fought Buffalo soldiers at Hembrillo in 1880, how sheriff Pat Garrett investigated the Albert Fountain murder and how ranchers lived on the parched lands raising cattle and goats.

The history of the first atomic bomb test at Trinity Site is covered in detail as well as the various searches for the fabulous stash of gold bars at Victorio Peak. Eckles even provides some of the military history behind programs ultimately responsible for the continuing Roswell UFO phenomenon.

Basically, Eckles has chronicled two periods - what happened in the 3,200-square-mile region before 1942 and what happened after the military moved in during WWII.

The book is available from Amazon.com. In Las Cruces it can be found at Coas Bookstores and the Mesilla Book Center. In Alamogordo it is at the Tularosa Basin Historical Museum and the New Mexico Space History Museum. Also, the gift shop at the White Sands Missile Range Museum carries it.

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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 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.

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Satellites Zooming Around Earth Carry Some WSMR Real Estate

By Jim Eckles, Editor

Right now, three aluminum spheres containing a small amount of historical White Sands Missile Range are zooming around the earth going thousands of miles per hour. The spheres are part of an experiment to measure fluctuations in the density of the earth’s upper atmosphere in response to blasts of energy and particles from the sun.

The aluminum balls are all 10 cm (4 inches) in diameter but each has a different mass: 1 kg (2.2 lbs.), 1.5 kg (3.3 lbs.) and 2 kg (4.4 lbs.). The spheres are hollow and use ballast that is a mixture of bismuth shot (the same stuff put in some shotgun shells) and sand from three significant historical spots.

Gil Moore, the driving force behind this effort, put together the balls and paid for their launch into orbit. He collected sand from where Robert Goddard first launched his amateur rockets back in Massachusetts and from Goddard’s launch area near Roswell. Also, through the efforts of some WSMR pioneers, sand from Launch Complex 33 and an upper range rocket impact area was collected for the effort.

Moore included sand from WSMR for the obvious reason it is where America’s missile and space activity began with WAC Corporal and V-2 firings. Also, Moore has past connections to White Sands as a contractor employee.

Moore was an engineering student at what is now New Mexico State University when the V-2 flights began at White Sands. He has said he was fascinated by the contrails left by the V-2s. The idea of big powerful rockets was a kick and the idea that the atmosphere was doing a variety of things at different altitudes was intriguing.

In April 1947 he went to work for the school’s Physical Science Laboratory (PSL) and providentially he got to work the V-2 program. He reduced V-2 telemetry data (this means transforming the raw numbers and squiggly lines of measurements into concise and meaningful information), photographed the V-2 vapor trails to measure upper-level winds and got to install instruments and cameras in the rockets.

After graduation with a degree in chemical engineering, Moore signed on at PSL full time continuing his work with V-2s. Of course the V-2 program ended soon but Moore continued to work with research rockets such as the Viking and Aerobee and was eventually supervising teams launching his own Pogo and Speedball rockets.

In the fall of 1953, Moore served on a panel of local experts to talk about rocketry, jet propulsion and space travel during a forum in Las Cruces. The meeting was sponsored by the New Mexico-West Texas Section of the American Rocket Society and included others from White Sands. The Wind and Sand newspaper wrote the panel stated, “Mankind is on the verge of the most exciting, adventuresome and rewarding journeys he has ever made into the unknown” when referring to space travel.

Also on the panel were: G. Harry Stine and Edward Francisco, Jr., both with the White Sands Electro-Mechanical Laboratories; Herb Karsch, special assistant to the White Sands commander; and Major D.G. Simons from the Space Biology Lab at Holloman.

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Mr. Garwood Remembers A WSMR Career

By Robert Garwood

After basic training I was sent to Aberdeen Proving Ground for fuel induction school – I think because of my mechanical mind. I was in school about two months and then got orders to go to White Sands Proving Ground.

At Aberdeen, I was put on the Santa Fe Chief train which took me to El Paso. That was a trip of two days. At El Paso I was put on a Greyhound bus that went through Las Cruces.

As the bus headed for San Augustin Pass, the Organ Mountains got closer and closer. I didn’t believe what I was seeing. I had studied about these mountains in my geography class as a small child and the pictures of them stayed in mind. Now they were staring me in the face. How beautiful the colors were on the slopes. I knew then that some day I would climb those mountains. Later I did.

The bus went over the pass and came to a stop on the other side of the mountain, where the road went to White Sands Proving Ground. The bus driver pointed to where the base was. I just stood there with my duffle bag at my side looking around at the vastness of the desert with its cactus, yucca, sagebrush, rock and sand. My heart sank and I had a sad, disappointed, empty feeling. I asked God, “Where have you brought me?” It was like another planet compared to my beautiful Michigan with its trees, grass and beautiful lakes.

I looked at the road leading to the base and I knew I had to walk there. It was October and still hot in New Mexico. I put my duffle bag on my shoulder, carried my small bag in my hand, and walked to the base gate. The military police took me to the provost marshal’s office where I was given my clearance badge. Then I was assigned to my living quarters, which I would share with 12 other young men. For the first time in my life I felt secure. That was my home!

After being alone most of my life, being with men of different cultures and races was a learning experience. White Sands was the first base that integrated black men with white men. There were three black soldiers in my barracks. That didn’t bother me, as we were all family serving our country.

The very next day I was surprised to be sent to fuel missiles. Where did they get the idea that I was a rocket fuel technician? This country boy had never seen a missile, much less know how to fuel one.

Because I attended fuel induction school, my military occupation came out the same as for fueling missiles. A mistake was made and they sent me to the wrong place. But I don’t think God makes mistakes.

Captain Wentz liked me and decided I should stay at White Sands. He found a job for me in communications. I was assigned a truck loaded with radio equipment and a map to find all the stations on the range.

The map was very secretive. Everything was very secretive in those days. I was very proud that I had a top-secret clearance.

My regular job was to at a station, along with the surveyors, when a missile was fired. Our task was to provide the angles necessary to triangulate where the missile hit.

Sometimes I would park my truck in Tularosa across from the orphanage which later became the Sandoval grocery store. Today it is the police station.

While I parked there, a little boy by the name of Bennie Juarez became my little friend. He was nicknamed Peaty. He was a smart, ten-year-old kid who was clever for his age. Also, he was a little con artist. I enjoyed him because it was like visiting with an adult. At that young age, he was a survivor.

Bennie grew up to be a great lawyer and became the first Hispanic judge in Texas. He is now deceased but I still have the memory of that little boy keeping me company while I was in my radio truck in 1949.

One day, after spending many hours parked on the scenic loop in White Sands National Monument waiting for my next mission, I started to get hungry. I had no C rations in my truck as Bennie had conned me out of them in Tularosa. I radioed in for someone to bring me some food.

They sent an L-5 plane to drop me something to eat. The plane flew quite low and drooped some canned pears and a loaf of bread. The cans burst on impact and there were pears all over the sand. The bread wrap broke open and there were slices scattered about. Somehow I managed to salvage some of that great lunch and survived the long day in the desert.

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Almost Hit By A Missile —— CONTINUED FROM PAGE 4

I had many adventures in my radio truck. One day, when Dr. von Braun came into my truck I ordered him out because he didn’t have a badge. At the time I had no idea who he was - I was just following the rules.

Although I never fueled missiles, I had my part to play in the development of the space program and I am proud of that. I learned a lot and saw many firings.

Working out on the range was a routine I had for over two years. Some of the special friends I worked with were Richard Weis, Louis Gagnon and Bill Propsts.

One day during a missile firing, Bill was on a tower which was covered with and surrounded with glass. On the bottom of the tower was a transit to survey where the missile would hit. I was in my truck waiting for the missile to hit. Bill would survey where the missile would land and I would relay the information to army five. All of sudden, I see Bill coming off the tower and getting under my truck. Over the radio we heard, "Where is the missile?" Bill answered, "I don’t know. I’m under the radio truck." That day, we almost got hit by a missile.

Sometimes the Army had to help with local calamities. When there was a plane crash on top of the Organ Mountains, we had to go up and remove the remains of the victims.

(Editor’s Note: Sounds like the C-45 crash on Sugarloaf on April 5, 1951. Six men died instantly)

We helped fight the Capitan forest fire in May 1950. A little injured bear cub was found. The cub was treated for its burns, recuperated, and became Smokey the Bear.

I soon learned about the new wilderness I found myself in. The wildlife was different than it was in northern Michigan. There were mule deer instead of white tail and jackrabbits instead of snowshoe rabbits. Then there were mountain sheep and rattlesnakes that had nothing similar in Michigan.

I enjoyed the wild horses running so gracefully and their manes blowing in the breeze with so much freedom. They looked so beautiful against the blue San Andres Mtns.

The early morning sun would softly light up the mountains and give off every color of the rainbow. No artist could capture the picture that Nature sometimes painted.

I had the opportunity to find evidence of early humans on the range. I found many arrowheads and pieces of broken pottery. Working on the high desert was educating me in archaeology and I didn’t realize it at the time. I was fascinated by the history out in the desert.

Also, there is no way for me to describe spring in the desert. The flowers on the cactus are so beautiful and the bright reds, pinks and violets are awesome.

In the end, the Army’s mistake changed my destiny. While stationed at White Sands, I met a girl from Tularosa. I married Lucy and together we have experienced much.

I left White Sands in early 1952, anxious to take my family to my beloved Michigan. It didn’t last long as I returned in 1956 when Land Air hired me.

I started out as a mechanic, went to generator maintenance and eventually was responsible for some 200 generators out on the range. It was a great job and I couldn’t have done it without good men such as Jon Cadwelder, Earl Gardner, David Ash and Donald Montgomery.

Over the next few decades I got to travel all over the range, just like my Army days. I provided power for filming the movie The Man Who Fell To Earth and was involved in such projects as Athena launches from Green River, Utah and the landing of the Space Shuttle Columbia in 1982.

I retired after 35 years on White Sands.

WSMR Looking For Bldg. 300 Info And Old Post Papers

Bill Godby, an archaeologist with the Stewardship Branch of the White Sands Environmental Office, is looking for a little help. First of all, the missile range’s second control building, Bldg. 300, is scheduled for demolition. Before it disappears, Godby would like to collect as much information and as many stories about the place as possible.

There are some obvious questions about the building. For instance, was it built to protect data with all that concrete or was it a bit of a shelter for the personnel working there? What different organizations worked there and what were their missions? Why weren’t tourists allowed to photograph it from Missile Park, across the street?

Currently, there are plans afoot to erect some sort of sign commemorating the old building once it is gone. That sign could either be near the empty space that will be created by the building’s removal or in the lobby of the new range control building.

Secondly, it looks like Godby has funds to digitize the old post newspapers dating from 1950 when the Wind and Sand was born through 1989 - basically the time of the Cold War. According to Jim Eckles, a 30-year employee in Public Affairs, digitizing the papers is going to be wonderful. He said, “I used to look through the papers, page by page, searching for stories. Searching on a computer, using key words, will make it all a thousands times easier.” He pointed out the effort will also make the newspapers available for everyone to search and enjoy.

The Public Affairs Office has most of these years covered with bound copies. However, most of 1950 is missing as well as another year where someone apparently stole the bound issues. Also, there are instances where vandals razor-bladed stories out of individual issues.

Before the papers are copied, it would be nice to have a complete set. If you have old Wind and Sand or Missile Ranger newspapers stored away and would let WSMR copy them, please contact Bill.

Bill’s phone number is: 575-678-6003. His email address is: william.c.godby.civ@mail.mil
Studying The Sun’s Impact — CONTINUED FROM PAGE 3

Stine went on to become a prominent science and science fiction writer. Simons went on to direct the Air Force’s Man High balloon project out of Holloman. In fact he piloted the second Man High balloon flight that reached an altitude of 101,500 feet in August 1957. The balloon was launched near Crosby, Minn. and came down near Frederick, S.D. more than 32 hours later.

While at PSL, Moore continued his education with an emphasis in physics and astronomy. In 1962 he left Las Cruces to start a division of Thiokol Corporation in Utah. Since then he has served as an adjunct professor of physics at Utah State University and taught astronautics at the Air Force Academy in Colorado Springs.

After Moore retired professionally in 1997, he and his wife Phyllis set up an all-volunteer space education effort. This is where Moore’s years in the rocket and space business paid off with contacts all over the country.

Moore has become a bit of a wheeler-dealer using those contacts to develop educational programs that universities, small corporations and government agencies are willing to participate in, for free. For instance, the mechanism to deploy the spheres from the Falcon 9v1.1 rocket for this mission was donated by a company founded by one of Moore’s students from 20 years ago.

Prior to this he was able to get NASA to launch a couple of his satellites from the Space Shuttle and one from an unmanned vehicle launched from Kodiak, Alaska, as part of his Project Starshine. Kids and volunteers from all over the world helped build the satellites by grinding and polishing the array of mirrors mounted on the satellites. Then observers on earth were able to see and track the satellites at sunset as they orbited overhead.

The orbit for the current spheres is 80 degrees off the equator so it not a true polar one that would pass directly over the poles. Also, the orbit is very “elliptical.” That means it is not a circle but a very lopsided oval. At the closest point to the earth (the perigee) the spheres are about 200 miles overhead. At their furthest point (the apogee), they are more than 900 miles out.

These distances are only true at the beginning of the experiment. Because there is some atmosphere out there at distances of even 200 miles, those gas molecules provide drag on orbiting objects and shrink their orbits.

In addition, most of us probably think of the atmosphere as pretty consistent, especially as you get away from the surface weather manifestations. But it isn’t. Because of blasts of energetic particles from the sun, called coronal mass ejections, those upper levels compress and expand (dense and less-dense) and swirl.

If the sun is particularly active during the peak of its eleven-year sunspot cycle, the earth’s atmospheric gas molecules are closer together. That, in turn, affects the orbit of a satellite or space junk more than during “average” times.

The Air Force is very interested in this phenomenon because they are charged with keeping track of all the stuff in orbit – everything from the junk to the Space Station. This is critical to the health and welfare of manned vehicles like the Space Station and other valuable satellites. If you’ve seen the movie Gravity, you know why.

Using their radar observations and computer modeling, the Air Force is able to notify users like NASA that they might have to use on-board thrusters to move the Space Station a tad just to guarantee its safety. It is simple collision avoidance but involves valuable assets travelling at high speeds.

To make sure these computer models are as perfect as possible, the scientists need to understand the sun’s effect on things in orbit, especially as the sun’s output shifts.

Moore’s spheres are helping. During most of their orbit, the balls are outside the atmosphere and only dip into it on the approach to perigee. Powerful and precise Air Force radars are tracking the spheres over the next decade. The total time for each orbit will be well established. Then, as the density of the atmosphere changes during the unexpected second peak of sunspot cycle #24, researchers will be able to see how that changes the speed of the balls and in turn the actual orbit.

In addition to the Air Force’s radar tracking, students and amateur observers using “Go To” telescopes are being asked to provide optical tracking data. When married together, these many extra data points will provide an even better picture of what is happening.

Moore says over the years the balls will separate from each other because of their different masses. After about 10 years, depending on changes in the atmosphere, the lighter sphere should come out of orbit. The heavy one could stay up as long as 15 years.

According to Moore the new rules for manmade objects going into low-earth orbit is that they have to come down and burn up in 25 years. He says it is called “design for demise.” Since each of his spheres has a thin aluminum wall, they and the bismuth shot will burn up on reentry leaving a light scatter of sand to be spread over hundreds of square miles.

To see and hear Moore talk about his project, go to this short YouTube video: POPACS: Cooperative Science of Collision Avoidance in Space.

Pioneer Group Needs Contributions

The White Sands Pioneer Group is asking for additional contributions so the organization can meet its commitments in supporting WSMR. The group has two continuing obligations - pay for half of this newsletter and pay for the lunches of WSMR Hall of Fame inductees at the annual ceremonies.

The Hall of Fame costs can get expensive as the commitment includes past inductees who attend. This last luncheon saw many Hall of Fame members on hand.
Editor's Note: I thought I’d run part of an article from an old “Wind and Sand” newspaper to show how valuable the old papers can be. If you are looking for solid numbers on the early range, these newspapers can provide them and is why Bill Godby wants to digitize them. See page 5.

Strength of WSPG’s working population and size of its payroll reached new all-time high marks this month as the year 1956 neared its close.

Also at a new high was total value of WSPG’s physical plant, as the result of a construction program which has been under way throughout the year.

Although the rate of growth along all lines was not quite so spectacular as compared to some other 12-month periods in the post’s 11.5 year history, progress has been steady and continuous during the past year.

Total disbursements for 1956, the majority of it spent in this area, will be an estimated $50,873,415. That is another new all-time high and represents an increase of some $5,750,000 over the figure for 1955.

The WSPG physical plant is valued conservatively at well over $50,000,000 as of the end of 1956. That represents an increase of more than $10,000,000 in the last two years.

Latest figures show strength of the post now stands at 7,527 workers, including military personnel, civilians employees of the government and employees of private industry contractors. This is an increase of nearly 600 persons in the past year.

The payroll figure shows an increase of more than $2,000,000 over that of 1955. It is an average of slightly more than $4,200 for each of the 7,527 workers, which is well above the national average.

The per capita income of WSPG personnel and their dependents is well over $1,500. The per capita income for all of new Mexico is only $1,347, and for Texas $1,480 (based on 1954 figures). WSPG’s per capita income also compares favorably with the nation average.

With their families, the post’s 7,527 civilian employees and military personnel represent a total population of more than 20,000 persons. Approximately 4,100 of these live on the post in the housing areas, dormitories, barracks buildings, bachelor officer’s quarters and trailer court.

An estimated 12,000 more live in the Las Cruces area, including Mesilla Park, State College, Old Mesilla and other parts of Dona Ana County. Some 3,000 live in the El Paso area, and 1,000 in Alamogordo and vicinity.

It has been conservatively but reliably estimated that WSPG personnel and their families spend more than $22,000,000 annually in Las Cruces; more than $6,000,000 in El Paso; and some $2,000,000 in Alamogordo. This is in salaries alone and is exclusive of nearly $20,000,000 more expended annually by the post, most of it also in this area, on construction, “housekeeping” expenses and research and development by private industry.

Of WSPG’s $31,873,415 payroll for 1956, a total of $28,308,415 goes to Army military personnel and Department of Army civilians. This includes a military payroll of $10,703,500 and a Civil Service payroll of $17,605,115.

A further breakdown shows that approximately $1,500,000 goes to Navy civilian and military personnel; approximately $2,000,000 to contractor personnel and about $75,000 to the 22 Air Force members assigned permanently at WSPG.

(Note: None of the above figures on strength totals, payrolls and other disbursements includes Holloman Air Development Center and other Air Force activities at Holloman. Strength of Holloman now is approximately 7,400, with annual payroll of well over $30,000,000 and total disbursements nearly equal to the WSPG figure.)

A breakdown of this year’s total disbursements at WSPG shows the following:

Payroll - $31,873,415;
Construction completed in 1956 - $3,000,000 (estimate);
Construction still under way but financed with 1956 appropriations - $1,500,000 (estimate);
Research and development program carried out by private industry contractors (not including salaries) - $6,500,000 (estimate);
Food supplies, materials, equipment and other “housekeeping” expenses - approximately $8,000,000;
Total - $50,873,415.

A breakdown of the post’s present strength of 7,527 shows there are 3,744 Civil Service employees; 3,264 military personnel of all branches of service and 519 employees of private industry contractors.

Of the 3,744 Civil Service workers, 3,592 are employed by the Army Department and 152 by the Navy Department. The Army has 2,136 Class Act (GS) employees and 1,456 Wage Board (WB) workers, while the Navy has 31 Class Act and 121 Wage Board employees.

Of the 3,264 military personnel, 2,972 are members of the Army, 268 are members of the Navy, 22 are members of the Air Force and two are members of the Marine Corps. In all there are 357 officers and 2,907 enlisted men.

The Army has 316 officers and 2,656 enlisted men. The Navy has 31 officers and 231 enlisted men, and the Air Force (Air Weather Detachment) has two officers and 20 enlisted men. The Marines (in the USMC Liaison Officer at the WSPG Naval Facility) include one officer and one enlisted man.

Thus the Army at WSPG has a total of 6,564 personnel, military and civilian. The Navy Facility has a total of 422 military personnel and civilian employees, including two Marines. The Air Weather Detachment at WSPG has 22 Air Force military personnel but no civilian employees.

Of the 519 contractor personnel working on the post, 368 are employed by firms with contracts let by the Army Ordnance Corps, and 151 by firms under contract to the U.S. Navy.
This is a Pershing I launch from Black Mesa, Utah. A total of 80 Pershing missiles were fired from Black Mesa. The most interesting shot took place on Sept. 12, 1967 when two missiles were fired. The second Pershing, launched at 1:48 a.m., overflew the target at White Sands by about 150 miles. That put it just across the Mexican border south of Van Horn, Texas. The two missiles were fired by troops from the U.S. Seventh Army, stationed in Europe, as part of their annual service practice. The Black Mesa area was on public lands west of Blanding, Utah.