



# White Sands Missile Range Historical Foundation NEWSLETTER



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## The State of the Foundation

Ed Townley, President



**T**he past 6-8 months have been exciting times in the Foundation and the White Sands Museum.

Your Board of Directors has embarked on a fund-raising campaign for completing the new display hall (phase II) of the museum. The above picture is an artist's rendition of the proposed building. The exciting part of our effort is the fact that the Army has issued us a challenge grant (up to \$250,000) to provide matching funds for each dollar we raise towards this building effort. We have submitted several grant proposals and applications, but the primary source of our building fund continues to be YOU. The corporate sponsors and individual members of the Foundation are the backbone, and to date, have provided more than 90% of our building funds. Recent contributors and pledges to this new building fund include:

- Major General (ret) Niles J. Fulwyler, and Mrs. Gerald Epstein (in memory of Mr. Gerald Epstein)
- Mr. Chris McDonald (in memory of Ms. Mary Bochmann)
- Mr. Rob Cox
- Mr. Austin Vick
- Lockheed Martin Missiles and Fire Control, Mr. James F. Berry, President.

If you know any of these individuals, or have dealings with the corporation, please thank them for their very generous support.

It is time again for our annual membership meeting and election of Board members. The meeting is scheduled for 10:00 am, 11 October in the Frontier Club at White Sands Missile Range. Come for an update on the museum operations, as well as the latest efforts of the Foundation. Bring a friend who is not a member of the Foundation and encourage them to join us in our continuing quest to preserve the history of this unique national treasure. Please vote for our nominees (or write-in a candidate) for our Board of Directors positions for the October 2001-September 2002 term.

I have enjoyed this year as president of the Board, and thank all the board members for their support, encouragement, and hard work. Our museum volunteers continue to perform yeoman service to the Museum in identification, research, cataloguing, and similar tasks in preserving artifacts and archives. The key word in this paragraph is "Volunteers". All of the people on the Board of Advisors, the Board of Directors, and in the museum Lab or warehouse are performing these duties because they want to. Consider joining us in these efforts.

Contact any person associated with the museum or Historical Foundation to volunteer your services.

## The WAC Corporal

Jim Eckles, WSMR PAO

**O**ne of the most important missiles in the White Sands Missile Range outdoor display of rockets and missiles is getting a facelift thanks to one of the missile range contractors.

On October 11, 1945 a fully loaded and fully fueled WAC Corporal rocket blasted off from what is now Launch Complex 33 at White Sands. The American designed and built rocket far exceeded its planned capability of reaching an altitude of 100,000 feet when it topped out at 43 miles straight up.

So it was a WAC Corporal, built by the fledgling Jet Propulsion Laboratory (JPL), that was the first rocket launched at White Sands and not the German V-2. In fact, the JPL team, which was led by Frank Malina, developed and built the WAC Corporal in just 10 months. It was a remarkable achievement considering the years of painstaking work put in by the likes of Robert Goddard and Werner von Braun to build their rockets.

In the past few decades the V-2 has garnered most of the attention at White Sands from visitors and the employees themselves. Although a WAC Corporal was always on display in the range's Missile Park, its history has been neglected.

That changed when All Star Maintenance Incorporated, of San Diego, the missile range's housing maintenance contractor, volunteered

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## Bumper Class

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to refurbish the WAC Corporal and prepare it for display inside the White Sands Museum.

Ron Burkett, the museum curator, had the rocket available for the public to see in mid-May. He said All Star personnel stripped what looked like a dozen layers of old paint off the rocket. It was bare metal when initially put on display. Adding an original paint scheme will come later.

Old-timers are encouraged to offer any information about the rocket that they may have. Many people think the "WAC" in the title stands for "Women's Army Corps." It really stands for "Without Attitude Control."

The WAC Corporal had to be relatively simple in order to get it built quickly. Instead of a gyroscope or other advanced stabilization system, Malina relied on three fins on the rocket's tail. This required getting the vehicle up to speed very quickly so the fins would work in the atmosphere. To accomplish this

they used a solid propellant motor called the Tiny Tim as a booster. The Tiny Tim delivered 50,000 pounds of thrust to a vehicle that only weighed 665 pounds. It left its launch tower very, very quickly. Once the booster burned out, the WAC Corporal's liquid propellant motor kicked in. It used aniline as fuel and nitric acid as an oxidizer and provided 1,500 pounds of thrust.

According to Malina's account of the first launch, the engine stopped burning at 80,000 feet and then coasted up to 235,000 feet. At its maximum speed the rocket was traveling about 3,100 feet per second. The first round then came down less than 3/4 of a mile from the launcher proving that the flight was almost perfectly vertical.

The WAC Corporal was later mated to a series of V-2 rockets to create the Bumper. The most successful flight of the Bumper managed to place a WAC Corporal 250 miles above the earth. Many give the WAC Corporal credit as the first man-made object to escape earth's atmosphere.

### Fund Raising

Frances F. Williams, Vice President

**T**he Historical Foundation has a tremendous challenge - to raise \$700,000.00 to build phase II of the WSMR Museum. We have a challenge grant from the Army, if we raise \$250,000, the Army will match it. WSMR has always been known to do the improbable, and the impossible we did tomorrow. This is not impossible, and if contractors, current employees, retired military and civilians who worked on the range became members we could do it'. White Sands has a unique story to tell. We are the place of dreamers, of adventurers who braved the unknown, who forged new frontiers in the wilderness and on to frontiers in space. We can tell a story which no other museum can tell. But we need the support and help of our community and membership. We need people to make contributions to the mu-

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seum at levels they can afford. We need volunteers who can help with fund raising projects, printing, writing, cataloguing, and a dozen other tasks that make a museum run. We need the support of employees and retired military and civilian employees who helped make the Range the significant piece of history that it is today. Please call, write or e mail any member of the Board of Directors and give us the help we need.

**Congratulations**

due the White Sands Missile Range Museum Staff

**A** rmy Museum, Issue 29, August/September 2001 recognized members of the WSMR Museum staff in the following excerpt:

*The White Sands Missile Range Museum Director, Ron Burkett, is aggressively promoting the museum throughout the state of New Mexico. The museum's visitation has skyrocketed*

*from last year's 48,000 to 65,000 with two and a half months left in the current fiscal year. The museum staff says the additional publicity has really increased the visitation.*

The poster [WSMR collage] is being distributed to local tourist attractions such as the White Sands National Monument and the New Mexico Museum of Space History, and to all welcome centers at entry points into the state. Congratulations to Ron and Terrie Cornell, Registrar, for their combined efforts to promote the museum.



A Bumper (WAC Corporal atop a V-2) just after launch