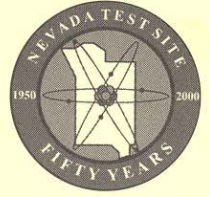




NEWS NOB



Vol. 3, Issue 8

Newsletter for Members of the Nevada Test Site Historical Foundation

Summer 2000

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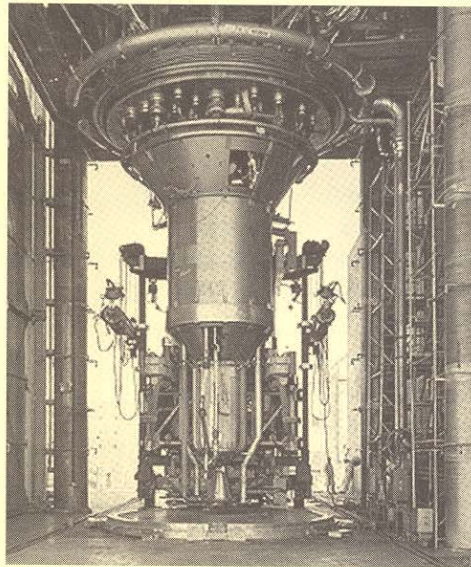
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NTS 50th Anniversary Calendar Still Available

Copies of a one-of-a-kind, full-color commemorative year 2000 calendar with color photographs highlighting 50 years of the Nevada Test Site remain available at the NTS History Center gift shop for \$7 (reduced from \$15). See details on page 9. If you wish to order by mail, see the memorabilia order form included in this issue of the News Nob. Order forms can also be obtained by calling 295-1198 and leaving the following information: your name, address, and telephone number.

Project Rover Reunion

A 5th reunion of Project Rover workers will be held on September 22 and 23 in Las Vegas, Nevada. Project Rover, conducted at the Nevada Test Site from the late 1950s through the early 1970s, was a series of tests to develop a nuclear-powered rocket engine to be used in space exploration.



An NRX nuclear rocket engine in 'space flight configuration' (exhaust nozzle pointed down) prior to testing in an Engine Test Stand at the Nuclear Rocket Development Station. The nuclear reactor, about 5 feet in length, was contained in the canister seen just above the cone-shaped nozzle at the bottom of the engine assembly.

"We're expecting a really good turnout," reports Roger Noyes, an organizer of the reunion. "Please ask all 'Roverites' to spread the word and feel free to contact Madelyne Hayes, Pat Mulhall, or me for more information." (Telephone numbers are provided at the end of this article.)

Project Rover History

The experimental engines were assembled and tested in an area of the NTS designated

the Nuclear Rocket Development Station, or the NRDS, on Jackass Flats in the the southwest corner of the NTS. Project Rover was a joint project of the National Aeronautics and Space Administration and the U.S. Atomic Energy Commission. A joint AEC-NASA Space Nuclear Propulsion Office, known as SNPO, or "Snipo," was formed to conduct the project.

The three-phase project consisted of:

- a Kiwi program to develop basic graphite reactor technology and design concepts, by the Los Alamos National Laboratory;
- a Phoebus series of ground testing higher-powered reactors by the Laboratory; and
- a NERVA (Nuclear Engine for Rocket Vehicle Application) program for testing nuclear rocket engines based on the Kiwi and Phoebus technology.

The NERVA reactor experiments, or NRX, were conducted by Aerojet-General Corporation and Westinghouse Electric Company. Aerojet was to develop a flyable engine, and Westinghouse was to supply the nuclear reactors.

By 1955, proposals for nuclear space propulsion engines had been defined, and Project Rover began. By 1958, construction of a test cell, a control building, and an assembly-disassembly building about 2 miles apart was underway on Jackass Flats. A railroad, which soon acquired the name of Jackass and Western, was constructed to transport the experimental engines between the assembly-disassembly building and the test cell. An operating scale model of this railroad can be seen at the Nevada Test Site History Center.

(see "Rover Reunion" page 2)

Hi Everyone,

As the Nob was getting ready to go to press this past spring, I found myself flat on my back with a condition I had never heard of, Cellulitis. This is a staphylococcus infection of the leg (generally) and really made me appreciate good health as I lay on my bed for six weeks with my leg in the air. My empathy for all suffering from disease or poor health. I found we really don't appreciate good health when we have it.

I have to thank the Nob editors for filling in for me with the nice note about Bob Kuckuck's article in the spring issue. This was a significant effort for Bob to write, mainly because of the concern and checking of potential classified information. We all owe a debt of gratitude to him for documenting the information on our behalf.

You will note that much of this issue is devoted to recognizing the Rover project, as alumni of the project prepare for a reunion this September. Being an alumni member myself, I have many memories of the program. As I began looking for employment upon completion of graduate school at Colorado State University, I interviewed with the Atomic Energy Commission in Las Vegas concerning a job with the nuclear weapons testing program, and with Pan American, the support contractor for the Space Nuclear Propulsion Office.

(see "President's Corner" page 6)

Rover Reunion

(continued from page 1)

The first reactor, Kiwi-A, was tested in July 1959. Kiwi tests ran through September 1964, leading to Phoebus and NRX tests of more advanced systems. The NRX-A6 operated for a period of 60 minutes during its test run in December 1967. By 1972, the nation's strategy for powering rockets for space exploration had changed, and funding for nuclear rocket engine development was curtailed. Thus, the NRDS chapter of Nevada Test Site history came to a close, and the workers scattered elsewhere.

The Reunion

The Project Rover workers reunion will be headquartered at the Santa Fe Hotel & Casino in Las Vegas. Reunion organizers have reserved a block of rooms for reunion attendees. Attendees should call the hotel directly (800-872-6823) to make a reservation before August 20, 2000, and identify themselves as part of the Rover Reunion for the special room rates.

On Friday, September 22, 2000, there will be a bus tour to the Nevada Test Site, including a visit to the NRDS and

other historical areas. A social hour (for three hours) is planned for that evening back at the hotel, with appetizers and an open bar. A banquet dinner with speakers, door prizes, a raffle, and "a fun time," according to Roger Noyes, is planned for Saturday evening, September 23, 2000. The NTS Historical Foundation will also set up its Traveling Gift Shop so reunion attendees can pick up their favorite memorabilia items.

Anyone interested in attending or wanting more information should contact Roger at (702) 658-0038, Pat Mulhall at (702) 259-6816, or mail a note to Madelyn Murray Hayes at 7345 Cameron Street, Las Vegas, NV 89139, enclosing a \$10 deposit to help defray the cost of appetizers at the Friday evening social hour, and letting her know if you plan to take the Nevada Test Site bus tour and/or attend the Saturday evening banquet.

"We expect to hear a lot of 'I remember . . .' stories," says Noyes, "like the one I suggested that Arnie Fowkes tell in this issue of the *News Nob*."

Profile ... Roger Noyes

Roger Noyes spent 1961 through 1974 working on Project Rover. "I am really looking forward to this fifth reunion of Project Rover workers coming up in September," says Roger. "It'll be good to see all the Rover folks again."

Roger started work for EG&G on March 13, 1961 as a senior electronics technician in the old original EG&G building on A Street in Las Vegas, and two weeks later made his first trip to the Nuclear Rocket Development Station. During that first summer, he worked the second shift installing equipment and wiring in rocket engine test cells and a control room. By September of that year, he had been assigned to the task of calibrating transducers for measurements of liquid hydrogen temperatures, pressure, vibration, and other conditions during testing of the experimental nuclear rocket engines in Test Cell A and Test Cell C at the NRDS. Some of the transducers were used to measure ground motion affects on the large hydrogen tanks from the man-made 'earthquakes' created by underground nuclear weapons testing in neighboring areas of the Nevada Test Site.

Later, Roger was assigned to EG&G's Escondido Facility on Sunset Road along the south side of the McCarran

International Airport in Las Vegas. He also spent a tour of duty at the Lawrence Radiation Laboratory, working with Jesse Smith, helping set up instrumentation to measure radiation, pressures, and temperatures during underground testing of nuclear explosives. This led to more transducer calibration work for the Los Alamos Special Measurements group. By 1979, Roger became an 'Engineer II' and continued working in this field, eventually ending up as a member of the last calibration group to work in the high-rise Atlas Building located at the Department of Energy's building complex in North Las Vegas, Nevada.

Roger officially retired from EG&G as a senior engineer in July of 1996, after devoting a continuous 35 years and 3 months of a working career on Nevada Test Site and NRDS programs. "Before I joined EG&G in 1961," reminisces Roger, "I was working for Rocketdyne, then North American Aviation, in Santa Susana, California. At that time, I had no idea I would end up in the Nevada Test Site world all those years. I'm glad I did, because I got to work on some one-of-a-kind projects in the world. Besides, I sure met a lot of fine, dedicated people along the way."

Foundation's Annual Meeting Scheduled for October 24

Foundation President Bruce Church has announced that the Foundation's 2nd annual meeting will be held on Tuesday, October 24, 2000 at the Nellis Air Force Base Officers' Club. The event will begin at 5 p.m.

The format for the meeting will be similar to the last annual meeting, including a buffet of hot and cold hors d'oeuvres, a short business

meeting with election of Board members whose terms expire, and a keynote speaker. The Executive Committee has appointed Trustee Terry Vaeth to chair this important event. Selection of the keynote speaker will occur in the near future.

All active members will receive more detailed information in the mail for their R.S.V.P.

NTS Historical Foundation Board of Trustees

Troy Wade, Chairman

Executive Committee

Bruce Church, President
Robert Agonia, Vice President
John Trujillo, Treasurer
Linda Smith, Secretary

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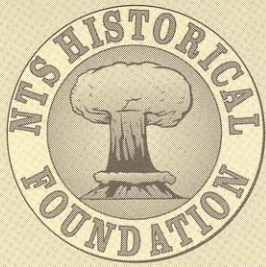
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Dina Titus
John Trujillo
Terry Vaeth
Bill Vasconi
Mark Vincent
Stephen Wells
Ernest Williams
Donald Wruble
Peter Zavattaro

Ex Officio Members

Susan Haase, NTSDC
Alan Austin, DRI
Elaine Mew, Bechtel Nevada
Loretta Helling, DOE
Darwin Morgan, DOE

Board Changes

New Member: John Trujillo



The Nevada Test Site Historical Foundation was established on April 15, 1998 to establish, promote, and support a nuclear testing research center and exhibits for scientific, historical, educational, and charitable purposes.

The Foundation organizes volunteer services, acquires and donates monies, exhibits materials, and assists in land/building acquisitions for a Nevada Atomic Testing History Institute (NATHI). The NATHI will consolidate, preserve, and make accessible to the public historical and archival records, films, photographs, testing, and archaeological artifacts associated with the Nevada Test Site.

Nevada Test Site History Center

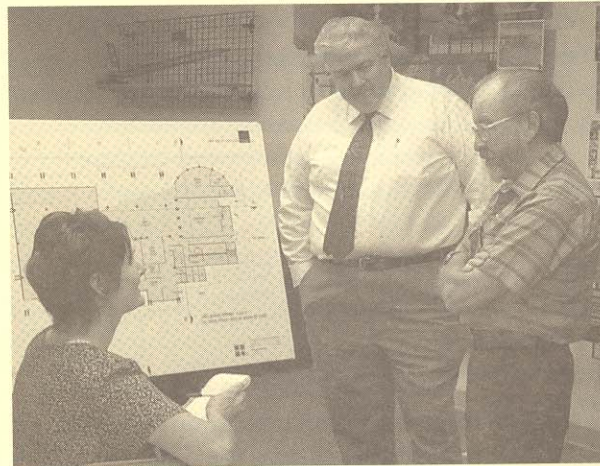
Open noon to 4:00 p.m.
Tuesday, Wednesday, and Thursday.

2621 Losee Road
North Las Vegas, NV 89030

(Located at the southeast corner of Building B-3 at Losee Road and Energy Way.)

Telephone: (702) 295-1198

Foundation News



A Northwest View newspaper reporter interviews NTSHF president Bruce Church (center) and NTS History Center volunteer host coordinator Layton O'Neill (right) at the Center. The Las Vegas Sun newspaper also carried a full-page story and photographs about the NTSHF in its July 15, 2000 issue. The Nevada Museums Association also now displays information and a photograph of the History Center on its Web site at nevadamuseums.org.

The Nevada Test Site Historical Foundation has recently been designated as an affiliate of the Smithsonian Institution -- a "first" for the state of Nevada. The Foundation joins 49 other historical organizations in achieving this recognition.

At a recent Affiliates' Conference in Washington, D. C., the Foundation was pleased to learn that the expansion of the affiliates' network is a "number one" priority of Smithsonian Secretary Lawrence Small. Affiliates have preference in borrowing and exchanging exhibits, archival materials and artifacts with the Smithsonian and other affiliates. In addition, affiliates are featured on a new Smithsonian web site - www.affiliates.si.edu - and have access to Smithsonian membership privileges, product lines, and publications. The Foundation plans to enhance membership benefits to include some of these advantages for the Calendar Year 2001 recruitment drive.

Planning continues for the commemoration of the 50th Anniversary of the establishment of the Nevada Test Site. The Foundation is working closely with the DOE Nevada Operations Office and the Desert Research Institute to sponsor a groundbreaking ceremony for the new

Nevada Atomic Testing History Institute on December 18, 2000, exactly 50 years from the December 18, 1950 letter by President Harry S. Truman establishing the Nevada Test Site as this nation's first on-continent test facility. The Committee is also working on plans for a family day at the Nevada Test Site on January 27, 2001 for employees, retirees, and associates.

The Nevada Test Site History Center, located at the intersection of Losee Road and Energy Way in North Las Vegas, is now open three days a week: Tuesday, Wednesday and Thursday afternoons. The History Center features a "timeline" of exhibits depicting the 50-year history of the Nevada Test Site and features a gift shop with an array of products related to the NTS. Thanks to the Bradbury Science Museum at Los Alamos, a Davy Crockett projectile, as used in 1962 at the Nevada Test Site during test-firing of live nuclear artillery, is now on display. The Center recently received some nice newspaper publicity (see accompanying photograph) that will hopefully bring more visitors.

The Foundation's Web site - www.geocities.com/ntshistorical - provides more detailed information about the organization's activities.

Smithsonian Partnership Offers Foundation Many Benefits

After attending a three-day conference in Washington, D.C., hosted by the Smithsonian Institution for its affiliate organizations, NTSHF representatives who attended are very excited about the many benefits offered by this partnership.

The conference, held in Washington, D.C., in the Smithsonian complex on June 14-16, included representation from all 50 affiliates located in 22 states. Foundation Chairman Troy Wade, Trustee Linda Smith, and NATHI Project Manager Loretta Helling of the DOE Nevada Operations Office, represented the Foundation.

The affiliations program was initiated in 1997 with twenty organizations designated as affiliates. The program has grown considerably, as have the benefits offered to those who are so designated. The purpose of the program is to provide a network of cultural institutions that will bring the resources of the Smithsonian to many communities across the country.

In addition to exchanges of exhibits, archival materials and artifacts from various Smithsonian collections, the affiliate organizations have been given other significant benefits. For example, a new Web page from the Smithsonian Web site has been launched, featuring activities and links to the affiliate organizations. The Web address is www.affiliates.si.edu. Affiliates may also offer Smithsonian

membership benefits, at reasonable cost, to their members. Various Smithsonian product lines, including gift shop items and publications, will be made available as well.

The new Secretary of the Smithsonian, Lawrence M. Small, has made the affiliations program one of his top priorities. In his keynote address to the affiliates, he made this very clear: "America is blessed with thousands of museums, and there is in those museums an abundance of the resource we're short of which is display space. At the same time, because many of the museums are young and live on tight budgets, they lack the very resource of which we have an abundance which is objects. The circumstances are perfect for a win-win situation."

Michael Carrigan, Director of the Affiliations Program and his staff, designed the conference for maximum participation with the attendees. Lectures and workshops focused on a range of subjects relevant both to the emerging and established institutions. For example, one session focused on "Managing Museum Collections" while another dealt with "Planning the Plan." Attendees were also offered special tours and events, including a Congressional reception for members of Congress with affiliates in their communities. Representatives of Senator Harry Reid and Congressman Shelley Berkeley attended for Nevada.

Join Us

Annual membership (January through December) in the Nevada Test Site Historical Foundation is open to anyone interested in preserving the history of the Nevada Test Site.

All members will receive a membership card, newsletters, and invitations to special events and tours.

Membership Level	Annual Year 2000 Dues
Individual	\$25
Family	\$50
Sustaining	\$100
Corporate	\$500

Your tax-deductible contribution will be used to support the development of exhibits. For information on membership, contact the Foundation office at (702) 317-0775. If you would like more information or would like to volunteer on a committee, please contact Bruce Church at (702) 398-3910.

Many Areas to Volunteer...

How can you get involved with the Nevada Test Site Historical Foundation?

Volunteers:

Layton O'Neill
(702) 648-4144

Gift Shop:

Ernie Williams
(702) 870-2243

Staffing:

NTS History Center Retail Sales
(Gift Shop, etc.)

Layton O'Neill
(702) 648-4144

President's Corner

(continued from page 2)

"Much is happening with plans for a groundbreaking for the new Nevada Atomic Testing History Institute building this December and celebrating the 50th anniversary of establishing the NTS."

I had previously worked at the Nevada Test Site for the U.S. Public Health Service and was at the NTS when the test moratorium was in effect. I remember the NTS being like a ghost town, so when the recruiters said to me, "You don't want to work for a short-term program like the nuclear weapons testing program, because we have at least a 25-year program on the books." They then impressed me with artist concept drawings and blueprints showing Engine Test Stands 2, 3, and 4, and excited my young scientist's mind with visions of manned space travel to Mars and beyond.

You can imagine my surprise when, with the next new President, learning of the program's cancellation after being at the NRDS for only little more than a year. So I decided to go to work for that existing short program after working at NRDS three-plus years. The rest is history. However, I have to say being 25 and having my own laboratory to measure radioactive materials and do dosimetry experiments connected with the nuclear rocket program was exciting and interesting.

We are continuing to grow, albeit slowly. Keep up your assistance in finding new members. Joanne Thomas has taken hold of running our office and spends most of her week attending to our administrative needs at the NTS Development Corporation complex. We have recently acquired a new Gateway computer and loaded it with special software to assist in organizing and administrating the requirements of running a Foundation and an historical artifact collection and display center. This software, Past Perfect©, allows us to track all the nuances of keeping up with members as well as track donated artifacts and exhibit pieces of any type. Once the various mailing lists we have developed and plan to develop are loaded on the Gateway, it will be a great assistance. This task is a primary one for Joanne this summer, along with her volunteer assistant Nicole Anderson.

We also loaded new bookkeeping software. Our new Treasurer, John Trujillo, is loading the financial data and getting ready to take up the baton from Linda Cook, over in Troy Wade's office of the Nevada Alliance for Defense, Energy and Business.

Linda has been our financial agent, bookkeeper, and advisor for the last two plus years. We owe her a lot. I have constantly expressed my thanks for the many things that she has done in keeping all our financial information available, perfect, and always up-to-date. On behalf of the Foundation, we offer Linda an expression of gratitude and a sincere "thank you."

Things have gone well in the gift shop at the Nevada Test Site History Center this spring and summer. We have expanded our product line and the number of days open. The revenue from the gift shop is now making a difference in assisting with the financial needs of the Foundation. This is happening because of the hard work and lots of hours devoted to the Foundation by Ernie Williams, Phyllis Donaldson, Layton and Melva O'Neill, and the many Foundation Volunteers who give their time to keep the History Center open. A recent *Las Vegas Sun* full-page article of pictures and prose on the Foundation (see page 4 of this *News Nob*) has made an impact, I am told, in the increased number of visitors at the Center.

Much is happening with plans for a groundbreaking for the new Nevada Atomic Testing History Institute building this December and celebrating the 50th anniversary of establishing the NTS. We will keep you informed as we learn of the planned events. You can read about some of them in various pieces in this issue of the *Nob*.

Sincere Regards,

Bruce W. Church

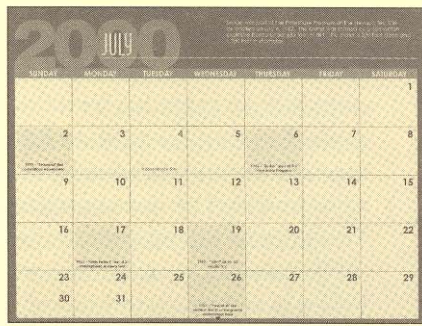
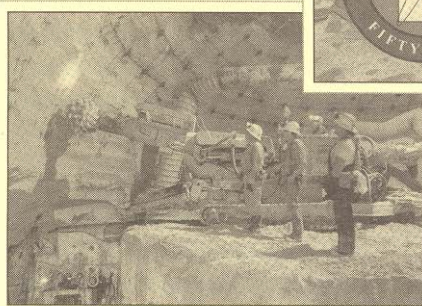
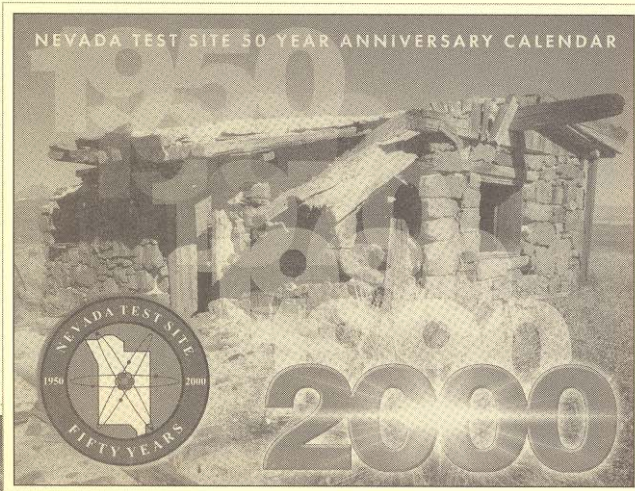
Thanks to NTS History Center Hosts

Many thanks to those who have volunteered to be an NTS History Center Host. We appreciate your patience in weathering the four-hour shifts during our getting established period. Because of you we have been able to open the History Center on Tuesday, Wednesday, and Thursday each week. We are also opening to receive most bus tours and have met all special requests for the Traveling Gift Shop to accommodate various groups at their on-location meeting sites.

Current active volunteers are: Phil Allen, Ed Beecher, Jack Busick, Bob Clemenson, Larry Crooks, Phyllis and Jerry Donaldson, Helen Draper, Bud Forry, Leo Flores, Dick Howard, Larry and Marjorie Krenzien, Chuck Neagle, Elmer and Jeanie Sowder, Ron Stearns, and Ernie and Inas Williams.

Thanks again from Melva and Layton O'Neill.

Anniversary Calendar Still Available



Copies of this year's Nevada Test Site 50th anniversary calendar remain available at the NTS History Center gift shop for \$7 (reduced from \$15). Each calendar features 12 beautifully colored 8 1/2-inch by 11-inch keepsake photographs of the Nevada Test Site. These photographs, that include the Sedan cratering experiment and the underground nuclear test chamber construction, appear over monthly calendars carrying annotated dates of historical events that have occurred at the NTS.

See page 1 for ordering information.

News Nob is published quarterly for all members of the Nevada Test Site Historical Foundation.

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Loretta Helling
Robert Friedrichs
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*Editing:
Vicki Crowley*

*Design and Layout:
Diane Gunter*

I Remember... A Unique Perspective of

About the Author

Arnie Fowkes was employed by Aerojet General Corporation from 1966 through 1969, working on the NERVA program portion of Project Rover. During this time, Arnie worked as a nuclear quality control technician at the nuclear rocket engine test facilities in Area 25 (Nuclear Rocket Development Station) of the Nevada Test Site. In 1970, Arnie signed on with Reynolds Electrical & Engineering Company (REECO), the primary contractor for operating and managing the Nevada Test Site under contract with the U.S. Department of Energy. Arnie spent the next 25 years at the Nevada Test Site in various quality control engineering positions. Since 1996, Arnie has continued his NTS working history employed by PAI Corporation, as PAI's manager of performance assurance support services to Bechtel Nevada, the NTS operations and management contractor since 1995.

My earliest years at the Nevada Test Site were spent at the NRDS inspecting the construction and assembly of nuclear rocket engines for use in Project Rover.

For testing purposes, a nuclear rocket engine test assembly consisted of an aluminum test car mounted on railway

engine was test fired, it pushed down against the earth. This positioning eliminated the cost of constructing expensive hold down or tethering structures.]

During my time there, we went through three phases of Project Rover development (Kiwi, Phoebus, and



Arnie Fowkes (at right) stands next to a 2/3-size cut-away scale model of a Project Rover nuclear rocket engine on display in the NTS History Center. Ed Beecher, volunteer host at the Center, listens to Arnie's 'head down in the reactor' story in disbelief. (The inverted rocket engine nozzle on top of the engine, into which Arnie hung head-down to make nozzle diameter measurements, is not included in this model.)

wheels, atop of which sat a nuclear reactor encased in an aluminum pressure vessel. Crowning the entire assembly was a specially designed rocket nozzle through which liquid hydrogen flowed downward to act as a coolant for both the nozzle and the reactor pressure vessel, and upward (in super heated gaseous form) to act as the rocket's propellant. This seemingly impossible task could be accomplished because the nozzle was carefully engineered and designed with a double wall and internal cooling tubes through which the liquid flowed before exiting as gas through the nozzle venturi proper. [Editor's Note: These test assemblies were essentially upside down rocket engines, with the exhaust gas nozzle pointing up. Thus, when the

NRX). It was in the Phoebus series of tests that I gained perhaps the most unique perspective of a nuclear rocket engine anyone has ever had.

After many months of constructing the test car, pre-assembly of the reactor at the Los Alamos National Laboratory and final assembly at NRDS, we were finally nearing the time for testing at Test Cell C. It was only then that we learned the rocket nozzle had been stored for an extended time in a horizontal (on its side) position instead of the vertical (upright) position recommended by its manufacturer. This became a great concern for some of the Laboratory scientists involved. Volumes and characteristics of propellant flow through the nozzle

Project Rover *by Arnie Fowkes*

were highly important for determining the success of the tests, and anything that might change or impede the flow was considered to be detrimental. Many people thought that because of 'improper' storage, the throat (venturi) of the nozzle would have 'taken a set' and become oval instead of the nearly perfectly round that was required.

Many conferences and differences of opinions ensued, and in the long run, the 'powers that be' determined the only thing we could do was measure the venturi to see if it were still round, or if it had indeed become oval. Only one problem - the nozzle was already firmly assembled to the top of the reactor on the top of the test car.

Disassembly at this time would be costly, difficult, and would seriously impact the test schedule. What should we do? The obvious answer was, 'inspect it in place!' Easy to say; not so easy to do. The nozzle was approximately five feet tall, with the throat about three feet down from the exit end, and it was in place directly over an assembled nuclear reactor!

Please remember, over thirty years ago we didn't have the remote electronic sensing and measuring devices that today would make simple work of the job. It had to be done manually! So, the few of us that were involved with the inspection activity were called together, the situation explained, and a 'volunteer' was called for.

This resulted in blank stares, sudden silence, and several people bolting for the nearest door. Not the expected reaction. Once we were all reassembled, the seriousness and need for this operation was thoroughly explained again. Still no stalwarts stepped forth bravely to accomplish the job. It was obvious the only way to resolve the impasse was to impartially select the chosen 'volunteer' i.e., we drew straws.

Now, my luck has been reasonable through the years. Not too good, and

not too bad. However, this time I got the 'short end'. I remember vividly the friends and co-workers around me, helping me into the 'anti-Cs' (coveralls) necessary for the job. I remember, too, the taping at wrists, ankles, collar, and over all pockets to prevent anything - even scraps of lint - from falling into the top of the reactor. Me, they didn't worry about. They'd already measured my shoulders and hips, and had determined I was



Cut-away scale model of a Project Rover nuclear rocket engine at the NTS History Center, showing the nuclear fuel rods stacked through the center of the engine cylinder, surrounded by turnable neutron absorption and reflection control rods. In the inverted testing mode, hydrogen gas was fed into the bottom of the engine, and exited as high temperature rocket propulsion gases through an inverted rocket nozzle placed on top of the engine.

'slightly' too large to fit through the nozzle throat. At the time, I thought, "This must be what a Matador feels when he's putting on his 'suit of lights' before going to face the bull."

There I hung, my hands over my head, using an inside micrometer to

"Soon, my two best friends on the job and I were being lifted to the top of the test assembly. Once there, the two of them each grabbed one of my legs, lifted and up-ended me, and lowered me upside down into the nozzle."

measure the diameter of the venturi in eight spots around its circumference, and calling out the dimensions to a third co-worker who was graphing the results.

Although the job didn't take long, it seemed like an eternity until my friends pulled me back up, and we were on our way to the ground. Once there, I thought, "Wow, I'm glad that's over. I sure don't ever want to do that again!" I was just getting ready to get out of the 'anti-Cs' when the shift supervisor stopped me. "Hold it," he said. "We've got a problem. The engineer down there says these measurements are wrong. Did you measure the venturi at the top of the cooling tubes or at the bottom?" "From top to top," I replied. "That's the closest distance across the throat." "Well", he said, "the engineer says these measurements aren't right, and you've got to do them again! This time, run from bottom to bottom."

Well, as the saying goes, "Once more into the breach, my friends." I soon found myself again upside down in the nozzle calling out measurements. This time, the engineer believed me.

So, it's this little episode that leads me to believe I have a 'unique perspective' of Project Rover. That of viewing a Rover reactor up close while hanging upside down in its rocket nozzle. Not once, but twice!

P.S. The throat *was* round - to within one one-thousandth of an inch.

Welcome New Members

Jerry Beatty
Byron Ristvet
Robert Clemensen (S)
Corry Clinon (F)
Sidney Stone
Jessie & Kate White (F)
Ben Diven (F)
Charles Fuller
William Edwards
William Bradley (F)
William Chambers
Clinton Webb
Robert Fitzbugh
Everett Holmes
Fred Morse
Billy Claybrook
Paul Duke
Dick Olwin
John Birely (S)
Carol Royal
Ben Gillespie
Thomas Ackerman
Allen Valentine
Richard Blake
Lawrence Germain (F)
Margaret Herndon
G.R. Papazian (S)
Jack Roeder
Bill Earnest
Russell Church
Robert Kirby (F)

F = Family S = Sustaining

Our Corporate Members

JMA Architecture Studios
Science Applications
International Corporation
PAI Corporation
Bechtel Nevada
NTS Development
Corporation
Desert Research Institute
Wackenhut Services, Inc., NV
IT Corporation

Membership Update . . . Oops!

Murphy's Law (if anything can go wrong, it will) struck and you may have received a Nevada Test Site Historical Foundation membership brochure in the mail recently. The brochure should have been accompanied with a midyear membership recruitment letter. The letter was to offer discounted memberships (until the end of 2000) to members who haven't renewed their membership for 2000, and discounted memberships to former employees, associates, and friends of the Nevada Test Site who are not yet members. We apologize for any confusion.

Active membership recruitment is ongoing at the three national laboratories – Sandia, Los Alamos, and Livermore – resulting in increased awareness of the Foundation and in memberships.

The membership year runs from January through December each year. The membership drive (including renewals) for 2001 will begin the end of September 2000. You will receive membership information in the mail. The membership benefits are being reviewed and will be enhanced for the 2001 membership drive to include Smithsonian Institution benefits as a result of our affiliation with the Smithsonian. The Foundation has recently acquired membership software that will assist in accounting for all memberships and their current status.

Current members can assist in increasing memberships by active recruitment and getting the word out about the Foundation. Call (702) 317-0775 for additional membership brochures or information.

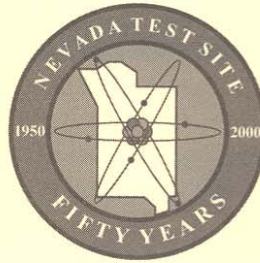
Foundation's Membership Goal May Not Be Reached Without Your Help

So much has been accomplished, but the Historical Foundation is losing new membership momentum. Additional membership is badly needed to help keep the Foundation functioning.

As of June 2000, there were 334 individual and corporate members of the Foundation. We have a long way to go to reach our goal of 1,000 members by the end of year 2000.

All members are asked to "spread the word" about the important work of the Foundation and to encourage membership. Members are encouraged to provide mailing lists of interested friends and associates to the NTS Historical Foundation, 230 Paseo del Prado, Suite C-101, Las Vegas, NV 89102, Fax (702) 257-7999.

Planned NTS 50th Anniversary Activities



December 18, 2000 will mark 50 years from the date that President Harry S. Truman signed a letter designating the Nevada Proving Grounds (now known as the Nevada Test Site) as this nation's on-continent test site. December 18, 2000 will also mark the groundbreaking ceremony for the new Nevada Atomic Testing History Institute (NATHI).

The Foundation has been working closely with the Department of Energy (DOE) and the Desert Research Institute (DRI) to build the new facility on the DRI campus on Flamingo Road in Las Vegas. The NATHI will be comprised of a public reading facility and the Coordination and Information Center (over 350,000 historical radiological

documents), a curation facility housing an extensive archaeological collection, and an exhibit center with gift shop. The ceremony will highlight the past and future history of the NTS and celebrate the new facility and the partnership between the Foundation, DOE, and DRI.

Another NTS 50th anniversary activity is being planned for Saturday, January 27, 2001 (50 years from the date the first atmospheric test,

Able, was conducted at NTS). The NTS Family Day for current and former employees and their families will include special NTS tours, exhibits, food, and much more. Registration forms will be available through the Foundation later in the year.

*December 18, 2000
NTS 50th Anniversary*

*December 18, 2000
Nevada Atomic Testing
History Institute
Groundbreaking
Ceremony*

*January 27, 2001
NTS Family Day*

A Place to Hang Our Hats

The NTS Historical Foundation's office space is provided by the NTS Development Corporation (NTSDC), thanks to the generosity of Tim Carlson.

The NTSDC is also providing a furnished office, including computer support to the Foundation. The office is staffed Tuesday through Thursday.

Our address is:
2330 Paseo del Prado
Suite C-101
Las Vegas, NV 89102

Telephone:
(702) 317-0775

Fax:
(702) 257-7999

E-mail address:
jthomas@ntsdev.com

Web Site: <http://www.geocities.com/ntshistorical/>

Webmaster:
sowelu@geocities.com
Sean Crawford
Telephone: (702) 295-3381
Fax: (702) 295-1810

NTS Historical Foundation
Point of Contact:
churchbw@comnett.net

History Center Volunteer Staffers Meet

A Volunteer Recognition and get-together was held at the DOE's Nevada Operations Office on June 20, 2000. Since the volunteers work on different

days, this was an opportunity for them to all meet each other and discuss any problems and concerns.

Great Gift Shop Items Available

A wide variety of items are available in the NTS History Center Gift Shop in Building B-3 at the corner of Losee Road and Energy Way in North Las Vegas.

See page 14 for order form.

- Coffee mug:
 - With the NTS Historical Foundation logo
- Photographic postcards:
 - "Grable" atmospheric nuclear test
 - Fremont Street (downtown Las Vegas), circa 1950s, with an artist's drawing of an atomic test in the background
- Videos by Peter Kuran:
 - "Trinity and Beyond"
 - "The Atomic Filmmakers"
 - "Atomic Journey"
 - "Nukes in Space"
- Water bottles:
 - Plastic, with screw-on cap and drinking straw, and soft foam insulating jacket emblazoned with Nevada state and NTS locator map
- 2000 NTS 50th anniversary calendar
- Badge lanyards/tote bags from the Test Ban Treaty Seminars
- T-Shirts (white, black or grey)
 - With the image of a house exploding after the "Annie" nuclear blast during part of a civil effects test named "Operation Doorstep"
- Computer Photographic Mouse Pads:
 - Railroad Bridge on Frenchman Flat
 - Atmospheric Test
 - Sedan Crater
- Nevada Test Site postcards

History Center's Traveling Gift Shop Big Success

The History Center's Traveling Gift Shop was well received by UNWTOP attendees at Mercury.

Upon the invitation of Don Felske, Acting Resident Manager of Lawrence Livermore National Laboratory (LLNL) nuclear test operations at the Nevada Test Site, Layton and Melva O'Neill worked with C. P. Williams of LLNL to set up the NTS History Center's Traveling Gift Shop at Mercury on May 16, 2000.

LLNL was hosting 30 to 40 out-of-state Department of Energy personnel

for the Underground Nuclear Weapons Testing Orientation Program (UNWTOP). The LLNL hospitality to the Traveling Gift Shop was outstanding, and we were well received by the UNWTOP attendees who happily shopped to the tune of approximately \$750 in purchases.

Don Felske advised that he will invite the Traveling Gift Shop back for the fall UNWTOP meeting.

History Center Donations Continue

Recent History Center acquisitions from various donors are:

- Two new oil paintings of the Nevada Test Site were donated by artist and former LANL employee *Dale Cox*.
- Assorted pictures and plaques were donated by *Perkin Elmer, Inc.*
- Two framed NTS photographs were donated by *Nevada Supreme Court Justice Bill Maupin* in memory of Clinton and Claire Maupin. Dr. Maupin was head of the Department of Health, Medicine and Safety for REECo in the 1960s.
- *Charles Neagle* donated assorted patches and a Geiger counter.
- *Steven Behrends* donated a booklet, "Testing and Taming of Nuclear Weapons."
- *Bob Friedrichs* donated several Joint Verification Experiment t-shirts.
- Participation certificates dating back to 1956 were donated by *Claude Cooke*.
- *Clint Webb* donated his 1953 Las Vegas High School yearbook which has an atom symbol on the cover.

Thanks to the generosity of many donors, the History Center has received some great historical items.

Dust Off That NTS Memorabilia and Bring It On In

The following items are wanted for historical exhibits and displays:

- Cash register for the History Center! Urgent need!
- Mannequins from 1950's era to portray civil effects tests at the NTS.
- Menu from the Mizpah Hotel in Tonopah, circa 1960s or early 1970s, which has menu items like "atomic stew."
- Memorabilia representing past or present NTS activities, such as participant certificates, stickers, patches, and pins.
- Board games with an atomic theme; examples are "Nuclear War" and "Up an Atom—Game of the Atoms."
- Everyday items/memorabilia with an atomic theme; atomic beer, atomic cheese, etc.
- T-shirts or sport jackets from NTS or Pacific nuclear weapon test activities.
- Newspapers or magazines with front page headlines or articles about the Nevada Test Site or related test sites from the 1950s to the present.
- Joint Verification Experiment 10th Anniversary Celebration memorabilia or gifts presented by representatives of Russia.

Contact Loretta Helling at (702) 295-3372 or by e-mail at helling@nv.doe.gov if you have memorabilia to donate or loan to the Foundation.

NTS Historical Foundation Memorabilia Order Form

Send order and check payable to:

NTS Historical Foundation

2330 Paseo del Prado
Suite C-101
Las Vegas, NV 89102

(702) 317-0775
www.geocities.com/ntshistorical

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-Mail: _____

T-SHIRTS

Fireball \$12

Small shoulder imprint

Size	Qty.	Size	Qty.
<input type="checkbox"/> Small	_____	<input type="checkbox"/> X-large	_____
<input type="checkbox"/> Medium	_____	<input type="checkbox"/> 2X-large	_____
<input type="checkbox"/> Large	_____	<input type="checkbox"/> 3X-large	_____

Large front imprint

<input type="checkbox"/> Small	_____	<input type="checkbox"/> X-large	_____
<input type="checkbox"/> Medium	_____	<input type="checkbox"/> 2X-large	_____
<input type="checkbox"/> Large	_____	<input type="checkbox"/> 3X-large	_____

Large back imprint w/front pocket

<input type="checkbox"/> Small	_____	<input type="checkbox"/> X-large	_____
<input type="checkbox"/> Medium	_____	<input type="checkbox"/> 2X-large	_____
<input type="checkbox"/> Large	_____	<input type="checkbox"/> 3X-large	_____

**NTS Historical Foundation
NV and NTS Outline** \$12

Small shoulder imprint

Medium _____
 Large _____
 X-large _____

Large back imprint w/front pocket

Medium _____
 Large _____
 X-large _____

"Operation Doorstep" \$12

Grey White Black

Medium _____
 Large _____
 X-large _____

CAPS \$12

One size fits all. Qty.

Fireball logo imprint _____
 NV & NTS outline imprint _____

VHS VIDEOS (By Peter Kuran)

"Trinity and Beyond" _____
(92 minutes - \$20)
 "The Atomic Filmmakers" _____
(45 minutes - \$16)
 "Atomic Journey" _____
(52 minutes - \$16)
 "Nukes In Space" _____
(52 minutes - \$16)

OTHER ITEMS

Tote Bags (\$5) _____
 Badge Lanyards (\$10) _____
 Water Bottles (\$5) _____
NV/NTS Outline -Teal, red, green, yellow, and black
Pins: _____
 Fireball logo (\$3) _____
 Fat Man / Little Boy (\$5) _____
Earrings: _____
 Fatman/Little Boy (\$20) _____
 Belt Buckle (\$17) _____
 Mug w/logo (\$5) _____
 Pencils - NV/NTS (\$2/\$1) _____
Postcards: _____
 Atomic Cannon (2/\$1) _____
 Grable Shot (2/\$1) _____
 NTS Postcard (2/\$1) _____
Photo-decorated Mouse Pads: _____
 Railroad Bridge (\$14) _____
 Badger Tower Shot (\$14) _____
 Sedan Crater (\$14) _____
 NTS Anniv. Calendar (\$7) _____

Order subtotal: \$ _____

Postage & handling -
add: \$ 5.00

Order total: \$ _____

NTS Historical Foundation Membership Form

Name(s) or Company/Corporation: _____

Address: _____

City: _____ State: _____

Zip: _____ Telephone: _____

Fax: _____ E-Mail: _____

Comments/Suggestions: _____

Mail this form and a make check payable to:

Nevada Test Site Historical Foundation
2330 Paseo del Prado, Suite C-101, Las Vegas, NV 89102

Membership Category:
(Check One)

- Individual \$25
 Family \$50
 Sustaining \$100
 Corporate \$500

I would like to:

- Donate or loan historical items
 Volunteer as a docent or gift shop attendant at the NTS History Center

NTS History Center Volunteer Sign-Up Form

Name: _____ D.O.B.: ____ / ____ / ____

Address: _____

Home Phone: _____ Work: _____

E-mail: _____ Fax: _____

Emerg. Contact/Phone: _____

Physician & Phone: _____

I can volunteer as Host: Anytime Once a month Never

I am not available at this time, but try me after: _____ (date)

I could help for brief (1-2 hour) periods to open Center & Gift Shop for tours:

- Early in the a.m. before bus tours depart (approximately 6:30 a.m.).
 Late in the afternoon for bus tours returning to Las Vegas (3:00 - 6:00 p.m.).
 I'm flexible. Will a spouse or friend accompany you? Yes No

Background/Interest: _____

Day(s) I am available to work from noon to 4p.m.
(Check those that apply)

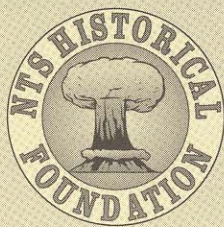
- Sunday
 Monday
 Tuesday
 Wednesday
 Thursday
 Friday
 Saturday

Volunteer Coordinators:

Layton & Melva O'Neill
Phone: (702) 648-4144
E-Mail: ljomjo2@juno.com

Mail to:

NTS History Center
2621 Losee Road
North Las Vegas, NV 89030



Nevada Test Site
Historical Foundation

2330 Paseo Del Prado,
Suite C-101
Las Vegas, NV 89102

The Nevada Test Site Historical Foundation was established on April 15, 1998 to establish, promote, and support a nuclear testing research center and exhibits for scientific, historical, educational, and charitable purposes.

The Foundation organizes volunteer services, acquires and donates monies, exhibits materials, and assists in land/building acquisitions for a Nevada Atomic Testing History Institute (NATHI). The NATHI will consolidate, preserve, and make accessible to the public historical and archival records, films, photographs, testing, and archaeological artifacts associated with the Nevada Test Site.

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