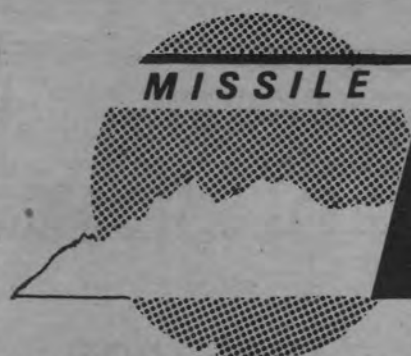




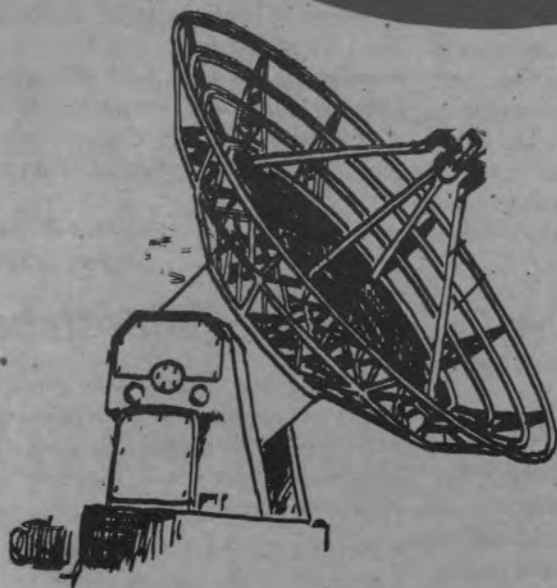
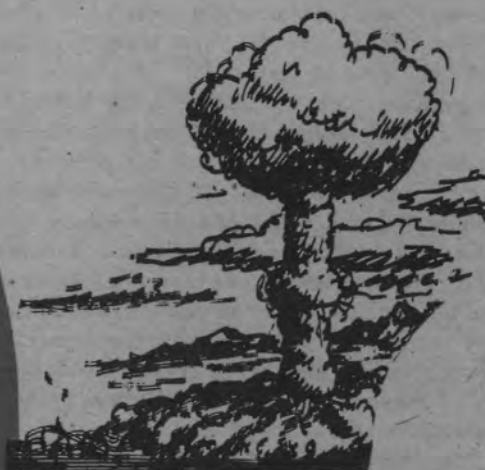
RANGER

VOLUME 38—NUMBER 27

Published in the Interest of Personnel at White Sands Missile Range

FRIDAY, JULY 4, 1985

Happy anniversary WSMR,
welcome pioneers



The Missile Ranger is published by E. E. White and M.J. White of Las Cruces, individuals in no way connected with the Department of the Army. Opinions expressed by the publishers and writers herein are their own and are not to be considered an official expression of the Army.

The appearance of advertisements in this publication does not constitute an endorsement by the Department of the Army of the products or services advertised. Delivery to the White Sands Missile Range housing area is provided by the publishers.

COMMENTARY

Opinions expressed on the editorial page are those of various writers and do not necessarily reflect the opinion of the Department of the Army or White Sands Missile Range. All letters to the editor (except those defaming identifiable individuals or containing obscenities) will be published. Names are withheld from printing upon request; however, all letters must be signed. The newspaper staff reserves the right to edit submissions for clarity and brevity.



Our Nation, range to note birthdays

The next two weeks are very special for White Sands Missile Range and for all who are a part of this community. On July 4 we not only celebrate our Nation's Birthday, but we also will celebrate the range's 40th Birthday with a gala Open House with all our neighboring communities invited to attend. During the week of July 8 the White Sands Pioneer Group will have its first reunion ever, and I have proclaimed that week to be "Pioneer Week" in their honor. Several hundred of our pioneers will return for the occasion. Let us welcome them warmly, because if it weren't for their early work, we wouldn't be here today! On July 9 (WSMR's Birthday) we will induct three more past employees into the range Hall of Fame as part of the festivities for that day. Finally, on July 16 I will open Trinity Site to the public to commemorate the 40th Anniversary of the first atomic explosion.

As we look back on 40 years of service to our nation, all those who have been a part of the White Sands story should feel very proud. Many historically significant events have occurred here which have helped to shape the course of human events, not only for this nation but for the world as a whole. The coming of the nuclear age which had its birth here has had an obvious impact on our world and its people. While we live under the threat of nuclear holocaust, we are at the same time challenged to find a way to use all the miraculous phenomena of the atom in yet untold, unexplored ways to the benefit of all mankind. We who are inheritors of this magnificent technological achievement must not fail in this challenge.

We must not forget, too, that it was here at White Sands where man took his first fledgling steps which were to take him to the moon and back, and no doubt before long, beyond the moon to outer planets and galaxies which have long beckoned to man's dreams and explorer spirit. America's space activity had its beginning here with the range's first decade of history. Those were the days of the German V-2 rockets, of primitive telemetry and optics and a consuming explorer spirit in those rocket and missile pioneers who came here and launched White Sands Missile Range into the Space Age. We have come a long way since those early days.

Today White Sands Missile Range stands as the largest and finest instrumented over-land test range in the free world. Nearly every day, highly sophisticated, complex missiles are launched uprange or into the fringes of space for astrophysical research. This range has established a reputation for excellence, professionalism and dedication which is second to none. We who are a part of White Sands today are inheritors of this legacy and I assure you we do everything possible to insure this legacy will continue unblemished.

White Sands Proving Ground, now White Sands Missile Range, has always been the leader in developing high technology. Indeed, through the years our dedicated engineers and scientists -- civilian and military -- have continually expanded the frontiers of technology. That tradition is continued today on the range as we begin testing and exploration at our National Laser Test Facility -- the only such facility in this country. This tradition is evidence, too, as we look for new and better ways to instrument, track and gather data. Indeed, expanding technology is the essence of the White Sands mission.

Looking at and working with "tomorrow's technology today" has ever been the tradition at White Sands. We have been blessed with great talent and great commitment by those past and present who have made White Sands what it is today. White Sands is a very special place -- made special because of the marvelous team of soldiers, civilians, contractors -- engineers and scientists -- who for 40 years have always put mission first and who at the same time were great patriots.

I salute all of you and consider it a great honor and privilege to be associated with the White Sands tradition and legacy. I know, too, that all America shares my pride for all the White Sands Pioneers -- past and present -- who have made so many significant contributions to the security of this nation and to the cause of freedom in the world.

On this occasion I also express the range's appreciation to our neighboring civilian communities who have always been good neighbors and whose support has been instrumental in the continuing growth of White Sands. You, too, are an important part of the White Sands story. We thank you for that!

As we look toward the range's next 40 years, let us be ever mindful that our work is not finished. We still have much to do for our nation and for peace. Let us continue to look upward and outward in the White Sands tradition. Let us continue to work together as a team the next 40 years to insure the accomplishment of the White Sands mission. Let us continue to be master of tomorrow's technology today. Let us continue to serve our beloved nation with pride and distinction.

Happy Birthday White Sands!

Niles J. Fulwyler
Major General, U.S. Army
Commanding

Letters to WSMR

Area leaders send greetings

Editor's note: The following letters were received by Maj. Gen. Niles J. Fulwyler, range commander, and he would like to share them with the WSMR community.

N.M. Governor

On behalf of the state of New Mexico, I wish to extend my congratulations to you and your staff on the occasion of the 40th anniversary of the White Sands Missile Range.

Since 1945, White Sands has played a crucial role in the development of our country's defense and space programs. As the alternate landing base for the Space Shuttle, it is recognized as home for returning astronauts and the millions of viewers following their exploits.

Naturally, New Mexico has benefited from this exposure as it has from the employment of approximately 8000 civilian and military personnel. Above and beyond this, of course, is White Sands' inestimable contribution to the peace and security of America, for which New Mexico is proud to be host.

Toney Anaya
Governor of New Mexico

State Representative

It is a distinct pleasure to add my congratulations to those you have received marking the 40th anniversary of White Sands Missile Range. White Sands Missile Range has contributed much to the history of our successful missile and space program. The achievements of today are grounded in the sacrifices made by so many in those first few years when missiles and space travel were considered fantasy.

Not only has White Sands contributed much to our national defense, it has been an integral part of the opportunities available to professionals in the West Texas/Southern New Mexico area. I commend you and all of those associated with the installation. I hope your celebration will be a memorable one.

Nancy H. McDonald
Texas State Representative

Texas Senator Gramm

On the 40th anniversary of the White Sands Missile Range, the birthplace of America's missile and space program, I would like to extend my congratulations and best wishes.

I appreciate having the opportunity to represent you and other Americans in the United States Senate. If I can be of service to you, please contact me.

Phil Gramm
United States Senator

TECOM CG

The personnel of Headquarters, U.S. Army Test and Evaluation Command,

offer their congratulations of the 40th anniversary of U.S. Army White Sands Missile Range on July 9, 1985.

White Sands Missile Range has established a tradition of operational excellence and superior performance enhanced by a model relationship with the nearby civilian communities. Since its establishment, White Sands Missile Range has played a key role in providing our nation with the finest in missile and rocket technology. You also are playing a vital role in America's exploration of space.

The exceptional record you have established has earned accolades from the entire Department of Defense, other state and federal agencies, and neighboring communities.

We at TECOM headquarters encourage you to continue to meet the high standards you have established and bid you every success for the future.

Andrew H. Anderson
Major General, U.S. Army
Commanding

Mayor of El Paso

It is with pleasure that I extend hearty congratulations to White Sands Missile Range on the forthcoming anniversary of 40 years of service to our country. El Paso is proud to have been associated with White Sands these many years and know that the activities of this installation are surely the basis for the success of the defense and space program of the United States.

White Sands Missile Range is a part of El Paso's livelihood as it is a major employer of thousands of El Pasoans. The City of El Paso is proud of the good relationship we have with White Sands Missile Range and its personnel. Best wishes from our City Council and citizens on this momentous occasion.

Jonathan W. Rogers
Mayor of El Paso

Senator Santiesteban

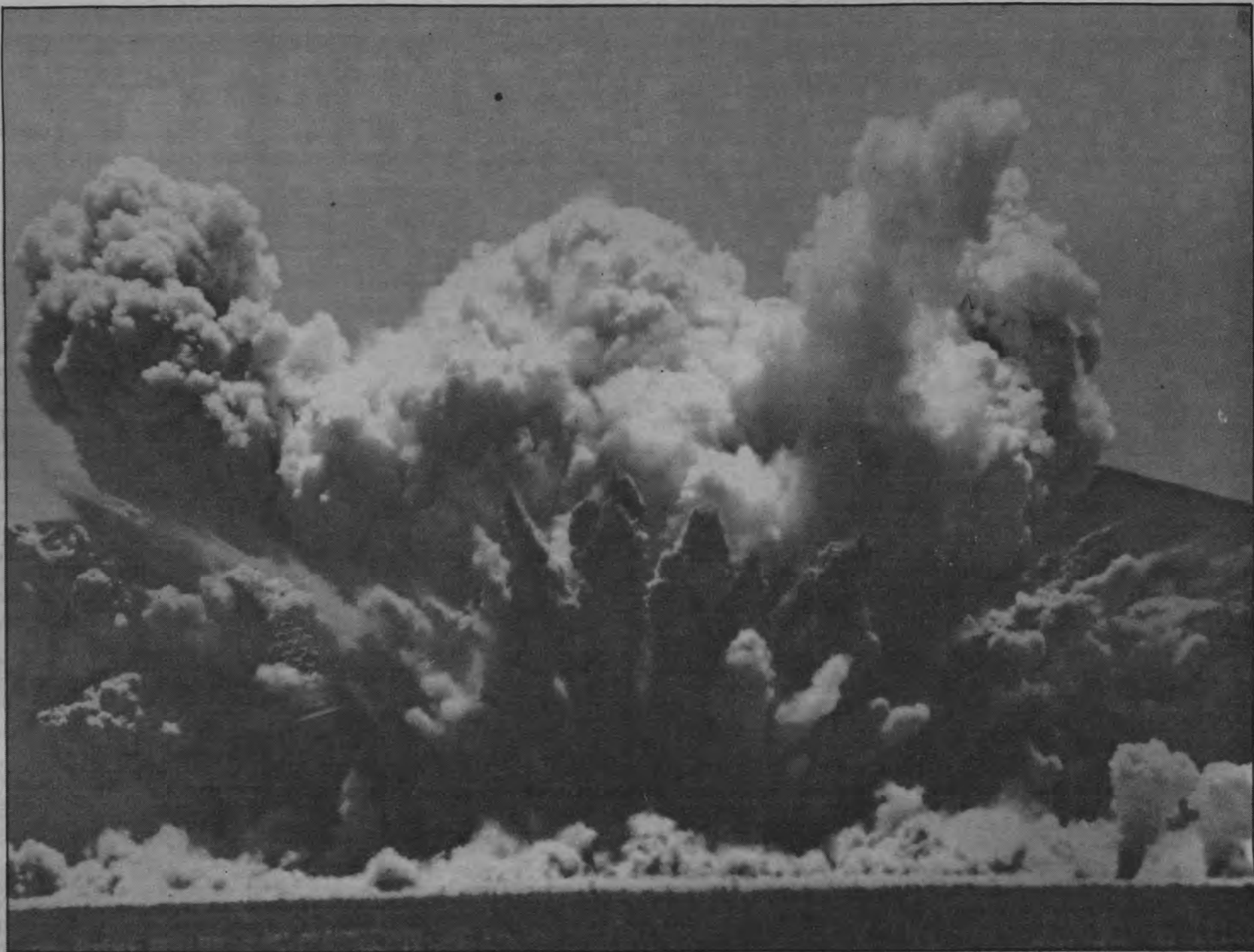
I would like to take this opportunity to extend congratulations to White Sands Missile Range, the birthplace of America's missile and space program, on its 40th anniversary.

Several thousand El Pasoans have been employed at the missile range over the years, and many former employees have chosen El Paso as their retirement home.

My heartfelt best wishes go to you and the other outstanding members of your staff at White Sands Missile Range on this momentous occasion.

H. Tati Santiesteban
Texas Senator

Continued on page 16



DUST CLOUDS BILLOW from the June 27 Minor Scale detonation. Minor Scale was third in a series of tests sponsored by the Defense Nuclear Agency. The more than 4,800 tons of ammonium nitrate and fuel oil used in the test created the largest planned non-nuclear explosion ever conducted in the Free World.

Huge blast successful

The Defense Nuclear Agency (DNA) successfully detonated a 4,800 ton high explosive charge in the northern portion of White Sands Missile Range June 27 at 12:20 p.m.

The purpose of the test, called Minor Scale, was to expose military hardware, vehicles, and structures to an air-blast and ground-shock environment. Appro-

ximately 300 experiments, sponsored by 10 United States agencies and six foreign governments, were on the testbed.

Marine Corps Maj. Michael G. Evinrude, Test Group Director for Field Command, DNA said the event was a success. However, the effect of the explosion on the test objects will not be known until sponsoring officials can examine their experiments.

South Carolina to process CHAMPUS SW claims

Military families in four Southwestern states will have their CHAMPUS claims processed by Blue Cross-Blue Shield of South Carolina, beginning Jan. 1, 1986.

The states in CHAMPUS' Southwestern Region are California, Nevada, Arizona and New Mexico. Families in these areas should continue to send claims to the current claims processor, Blue Cross of Washington-Alaska, through Dec. 31, 1985.

Information about mailing addresses and toll-free telephone numbers for the new Southwestern Region claims processor will be available soon.

The new \$4.2 million contract runs for one year, with four additional one-year option periods. The contract contains incentives for Blue Cross-Blue

Shield of South Carolina to perform well. This means that the firm will be subject to financial bonuses or penalties for speed and accuracy in paying claims. All CHAMPUS claims processors now operate under this type of contract.

Families should remember that claims go to the CHAMPUS processor for the state where they get medical care -- no matter where they live.

CHAMPUS -- the Civilian Health and Medical Program of the Uniformed Service -- is the Defense Department's health benefit plan for military families who receive medical care from civilian hospitals and doctors. Private insurance companies, under contract with the government, process the claims through which CHAMPUS shares the cost of these medical bills.



4th of JULY

Savings Explosion!

If You Anticipate Buying Carpet, You Can NOT Afford To Miss This Sale !!!

Prices Good Thru July 6th

\$8⁰⁰
A PIECE
3' & 4 by 12'

TAN 3'x12'
RUST 3'x12'
BLUE 4'x12'
BEIGE 4'x12'
AND MANY MORE

\$48⁰⁰
A PIECE
47 PIECES
IN STOCK

9 ft. to 11 ft. by 12 ft.
**ASSORTED
COLORS**

14 ft. to 16 ft. by 12'

\$89⁰⁰

CUT LOOPS
• PLUSHES
• SAXONY
AND
• SCULPTURED

**It's OUR Country's Birthday,
but YOUR Chance to Save**

Sale prices valid at Carpet City 1200 N. Copia, El Paso
and Malooly's Carpet City,
765 N. Valley Dr., at Picacho, Las Cruces

THE SECOND FRONT

Range Pioneer group sets first ever reunion

by Audrey B. Paczynski

The "first ever" reunion of the White Sands Pioneer Group to be held next week in conjunction with the 40th anniversary observance of the range is turning out to be quite an affair. Reunion committee chairman, Pat Higgins, announced that more than 300 pioneers from 23 states have registered for the event by the end of June. He went on to say that since the various activities in the week-long celebration planned by the Pioneer Group were all optional, including registration, the total number of participants at this point was probably closer to 400.

Higgins said, "I expect a large number of WSMR personnel and alumni to register during the coming week. I suspect there are local people who felt no urgency in preregistering as well as out-of-towners who weren't certain of their schedules until the last minute." He added that he now anticipates capacity crowds for the Hall of Fame Induction Luncheon at noon, July 9, at the Officers Club and the Pioneer Banquet the evening of July 10 at El Paso's Rode-way Inn. He suggested that those in-

terested in anniversary souvenirs or reunion details visit the Rodeway Inn, Sunday afternoon, July 7, or Monday July 8. The Rodeway is located next to Bassett Shopping Center in El Paso and will serve as reunion headquarters from July 7 through 13.

Higgins emphasized that tickets would not be sold at the door for the luncheon or banquet and needed to be purchased ahead of time. He also stated that the planning and transportation committees needed accurate indications of those planning to take tours or participate in other activities, even though they were free, to ensure adequate accommodations. He urged those interested in any of the reunion activities to complete the survey form and reminded everyone that 40th anniversary souvenirs will only be available at the Rodeway during reunion week.

Information can also be obtained from any of the WSPG executive committee. Officers are: Tom Starkweather, president; Hand Mabry, first vice president; Jack Giacomo, second vice president; Rod Smith, secretary; and Evie Jones, treasurer.

Only the prices have changed

by Bill Gross

The insert in today's 40th anniversary *Missile Ranger* should be of particular interest and is intended as a souvenir. It is a reprint of the very first WSMR newspaper, "Wind and Sand," Volume I, Number I, dated March 16, 1950.

With the range less than five years old at that time, it is interesting to note the "trend" of the times at White Sands Proving Ground and the similarity with the stories of today.

For example, on page one, see "Armed Forces Day Set; Will Stress Unification." And then look at "New Weapons Count, But Men Win Wars." What's new? Or exactly what President Reagan keeps saying all along: "U.S. Strength Prevents War -- General Collins."

One thing you will find is lots of names. Look at them carefully and see if you can find someone you knew or heard of. On

page six, in the column on Ballistics Statistics, find the little note about Don Risinger's new trumpet. Don is still with us at AudioVisual, he still has the trumpet and he still plays it sweet and hot. Look further in this paper to see what Don looks like today.

In the same column there is also mention of Clyde Tombaugh. Clyde put in many years at WSMR and in 1980 was one of the first five WSMR veterans elected to the Hall of Fame. He still makes the Pioneer Group meetings.

How about the prices? On page four, Collum Buick advertises a "New Buick for \$1895 Delivered in Las Cruces." Ladies shoes are advertised at \$2.98 and you can get a "luxurious Cheneille" bedspread for \$7.90.

Yep, folks, it looks like the only things that have changed are the prices. Happy Anniversary!



ALYCE PATTERSON, WINNER of the Suggestion Submission Contest, receives a \$50 gift certificate from Range Commander, Maj. Gen. Niles J. Fulwyler. Her name was selected by Fulwyler in a random drawing held June 28 in front of Building 100.

Patterson wins contest

from the Incentive Awards Office

Congratulations to Alyce Patterson.

Patterson is the lucky winner of the Suggestion Submission Contest which ran from April 1 through June 21. She works with the National Range Operations Directorate. Patterson received a \$50 gift certificate offered by the Incentive Awards Office and she plans to redeem it at the Desert Rose Cafe in Las Cruces.

The gift certificate was presented by Maj. Gen. Niles J. Fulwyler, range commander, on June 28. Fulwyler selected her name in a random drawing which was conducted in front of building 100. Several suggestors and evaluators attended the ceremony to support this event.

The campaign was held in an effort to encourage employee participation in the Suggestion Program and the campaign was a great success. A total of 269 eligible suggestions were submitted in the Incentive Awards Office throughout the duration of the contest.

An average of 89 suggestions per month were processed during the three month campaign period whereas statistics covering the first seven months of Fiscal 1985 produced an average of only 54 suggestions per month. Employee participation exceeded the normal average of 35 submissions each month.

Listed below are the total number of suggestions processed for each organization representing employees who participated in the contest between April 1 and June 21.

CD-6	NR-26	ATOR-31
CG-8	PA-17	USAISC-17
RM-3	PL-9	DALO-2
DP-5	PO-4	ASL-9
DE-3	PR-1	OMEW-4
ID-8	SD-27	MHC-1
IS-37	TC-1	TMDE-2
JA-11	TE-37	

The Incentive Awards Office extends their appreciation to all who supported the Suggestion Program by participating in this campaign to make it such a great success.

Excused absence OK'd July 9

Command has authorized excused absence for those employees that are not mission essential, who can be spared from the worksite, and wish to participate in some of the activities planned for Pioneer Day, July 9.

Among the activities planned on this day are a parade, equipment dis-

plays, Hall of Fame Induction Luncheon, a Command briefing, and tour of range facilities. Because of the large crowds anticipated, activities such as the luncheon will require advanced reservations so employees should make appropriate arrangements after clearing with their immediate supervisor.

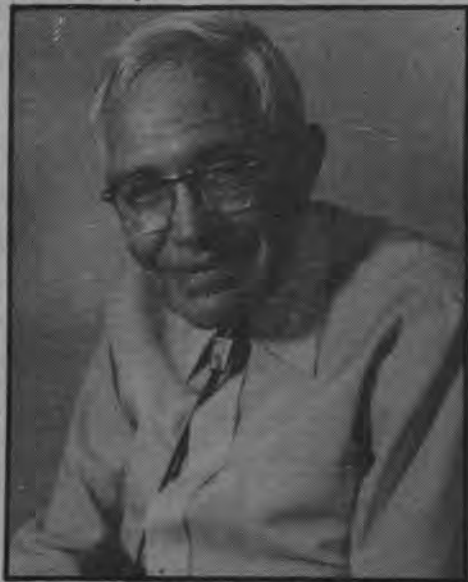
Pre-retirement orientation Monday

A Pre-Retirement Orientation Briefing will be held Monday at Fort Bliss, Kallman Recreation Center, building 2494, commencing at 1 p.m. Attendance is mandatory for service members eligible for retirement.

Guest speakers from the surrounding area will speak on various topics of interest to the potential retiree (Social Security, Income Taxes, Veteran Benefits, etc.) For more information call SSgt. Lucuab, MILPO at 678-5972 or 678-5982.



Don Risinger



Clyde Tombaugh

Three WSMRites to Hall of Fame

by Monte Creek

WSMR will observe its 40th anniversary July 9 with the induction of three men into the WSMR Hall of Fame and a day-long visit by range pioneers.

Being inducted into the Hall of Fame are Ozro M. Covington, Glenn E. Elder and Gabriel E. Galos.

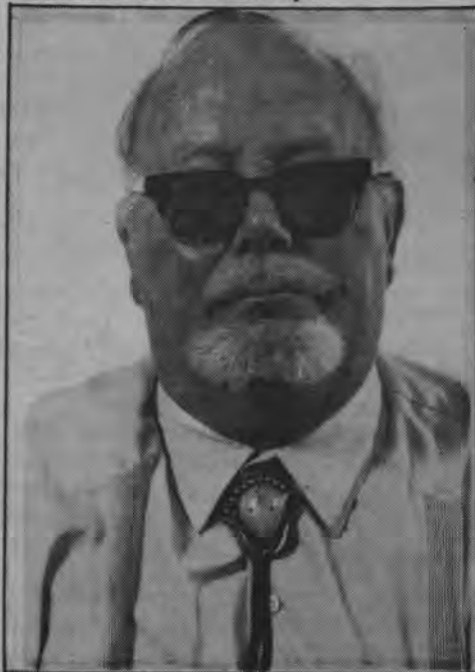
Activities begin at 9 a.m. at WSMR's JFK parade field with the monthly retirement and awards review. The Hall of Fame inductees will be the guests of Range Commander Maj. Gen. Niles J. Fulwyler.

Following the parade buses will take visitors to WSMR's historical Launch Complex 33. A tour of the V-2 gantry and Army block house will be conducted. A model V-2 rocket will be fired to commemorate WSMR's 40 years of rocket and missile testing.



Ozro M. Covington

At 10:40 a.m., buses will leave LC33 for the Officers Club. A Pioneer Group social will be held for 30 minutes followed by a no-host luncheon and the Hall of Fame induction ceremony.



Glenn E. Elder

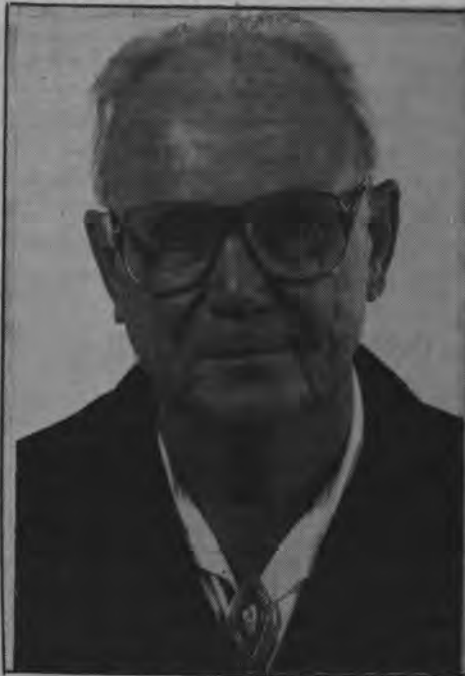
Covington, Elder and Galos will be inducted into the Hall of Fame by the range commander.

chief engineer and technical director of the Army Missile Support Agency. Notable achievements during his tenure include radar becoming the primary source for flight safety, chain radar as an acquisition aide and drone control using range instrumentation radar. He was instrumental in enabling the first U.S. guided missile to receive guidance com-

Covington came to White Sands Proving Ground in 1946. He served as senior civilian of the Signal Corps Organization. His titles included supervisory engineer,

mands from the ground. After leaving WSMR in 1961, Covington went on to a prestigious career with NASA.

Elder came to WSPG in 1955 as chief of the Environmental and General Branch, Electro Mechanical Laboratories. He later served as Assistant for Research of the same agency. Elder's most notable contribution to WSMR was as founder of the Nuclear Effects Laboratory. He proposed the concept to the Department of Defense in 1958. The following year he was named Chief of the NEL. He held that position until his retirement in 1974.



Gabriel E. Galos

Galos came to WSPG in 1952 as an electronics scientist for the Flight Determination Laboratory. He was among the first to realize the vulnerability of guided missiles to electromagnetic radiation effects. Because of his work in this area,

WSMR was named the official Army test agency for EMRE investigations. Galos pioneered the development of testing techniques and instrumentation to acquire and track missiles in flight. His efforts led to the development of the Remote Control Telescope. The Laser

Ranging and Tracking System was developed under his direction in 1973. This system is one of the earliest examples of a tracking system which is under the complete control of a mini-computer. Galos served as chief of the Optics Division of

the Instrumentation Directorate from 1975 until his retirement in 1977.

Following the induction ceremony, buses will take visitors to the Post Theater to view "Testing Tomorrow's Technology," the range orientation film. At 1:45 p.m., buses will leave the theater for building 1558. There a variety of equipment will be on display until 3:30 p.m. Following the tour of the displays, buses will take visitors back to the JFK parade field.

Tickets for the luncheon must be purchased in advance. The \$6.50 tickets are available from Joy Terpenning, 678-2719, Cindi Guerra, 678-2201, Betty Roberson, 678-1226 or Geneva Renegar, 678-4512.

The WSMR Command has authorized excused absences for employees who would like to attend some of the events and are not mission essential. Employees should clear their absence with their immediate supervisor before making luncheon reservations or leaving the work-site for any of the activities.

Computing machinery group to hear Johnston

The WSMR Section of the Association for Computing Machinery will have a regular meeting on July 11 at the NCO/Enlisted Club. Lunch will be at 11:15 a.m. and attendees may go through the regular serving line. The meeting will begin at 11:45 a.m.

The speaker at the meeting will be Bill Johnston. Johnston is the Chief of the Advanced Projects Branch, Computer Systems Directorate, and Project Manager of the WSMR Workplace Automation System (WAS). His degree is in mathematics, and he has worked in the computer field continuously for the past 23 years.

The WAS is a distributed processing system of ten computers connected in a local area network, with direct access to the worldwide Defense Data Network. The operating system is Unix System V, and most applications are written in the C language.

The Workplace Automation concept at WSMR is to provide a wide variety of automation "tools" to managers, engineers, scientists, administrative, clerical, and other personnel. These tools are made available through computer software, and include such facilities

as local and worldwide electronic mail service, electronic spreadsheet,

data base management system, word processing, graphics system, and other tools which lend themselves to implementation on computers.

Significant challenges have been encountered and overcome in the design and implementation of the WAS, especially in the areas of operating system security software, data communications, and equipment acquisition. At the present time, the system supports approximately 700 local users, plus

another 450 users located at remote DoD installations throughout the world.

If you are interested in being a speaker at one of our meetings or would like to recommend a speaker to us, let us hear from you. If you have any questions or desire more information, feel free to contact any of the officers. The 1985 WSMR Section officers are: Chairman, Elwood Baas, 678-5603; Vice Chairman, Chris McDonald, 678-2722; Secretary, Rudy Ayala, 678-5610; Treasurer, Donna Aranda, 678-5048; Area Representative, Ruth Channell, 678-4220; and Publicity, Mary Winter, 678-6257.

Range Cubbyhole helps relieve financial burden

The Cubbyhole is a volunteer organization that serves the families of junior enlisted personnel. The volunteers in the Cubbyhole accept donated items from the community and sort, clean and display them for the family members to take for their personal use. This helps to alleviate a financial burden on the junior enlisted families.

The Cubbyhole will accept any items that can be used by other family members. Items that can be donated are furniture, appliances, kitchen accessories, clothing, baby accessories, knick knacks, and toys. Anything that could be used by the junior enlisted family members will be accepted and appreciated.

Items that are especially useful are baby clothes, baby accessories, small

children's clothes and toys. The Cubbyhole holds many of the toys to be given out prior to Christmas. The Cubbyhole does not have the capability to do major repair work on donated items, the family repair work on donated items. The family members authorized to use the Cubbyhole.

Items that are beyond repair or remain in the Cubbyhole for an extended period of time are donated to Goodwill Industries. The Cubbyhole does not serve as a collection agency for old newspapers or aluminum cans.

Personnel that are authorized to use the Cubbyhole are family members of personnel in grades E-4 and below. Other family members may use the service as an exception on a case by case

basis only.

The Cubbyhole is in Building S434, at the corner of Joliet and Dyer streets. The Cubbyhole is open every Tuesday from 1 to 4 p.m. A drop box is behind the Cubbyhole and items to be donated may be placed inside the box anytime.

Personnel that have large items to be donated and need to have them picked

up may call the first sergeant, 259th MP Co. at 678-4105, or Bobbie Harris at 678-3950.

The Cubbyhole is in need of additional volunteers to keep it operating. Volunteers would be scheduled to work on Mondays and Tuesdays. Anyone desiring to volunteer may contact Bobbie Harris at 678-3950, or come to the Cubbyhole on a Tuesday afternoon.

WIC food program extended

Women, Infants and Children Supplemental Food Program (WIC) has been extended to include children three years of age and under to children up to age five with chronic diseases.

To find out if you qualify for WIC call 678-5106 on Wednesdays, the Dona Ana Field Office at 526-6617 or stop by either the Library, or McAfee Health Clinic, between 9 a.m. and 3 p.m. on Wednesdays.

White Sands Pioneer Group gets warm welcome

On behalf of all of us at White Sands Missile Range, I extend a warm welcome to all members of the White Sands Pioneer Group, and to all those other supporters and alumni who have come to help us celebrate White Sands' 40 years of distinguished service to this country, and to the free world.

The world has witnessed many changes these past 40 years, and the most momentous change of all had its birth here at White Sands. That was, of course, the dawning of the atomic age -- that historic day when in a fraction of a second a brilliance never before beheld by man illuminated the New Mexico sky -- and in that fraction of a second the course of human history was changed forever.

White Sands has been in the forefront of other changes as well -- particularly noteworthy has been the Range's involvement in man's journey into space. It was at LC 33 that man took his first fledgling steps that would take him to the moon and back. Many of you contributed to this magnificent achievement, and to America's present role in missilery and space activity.

For 40 years White Sands Missile Range has been the pioneer in high technology. You and your comrades, as well as our White Sands team today, continually

challenged the technological frontiers and truly made possible "tomorrow's technology today." This gave us new systems, new electronics, new optics -- new capabilities. White Sands has been, and is today, the leader in the area of testing. This has been made possible because of the great dedication, professionalism, and commitment of the White Sands team through the years.

White Sands has played a unique role in the defense of this nation. Each of you is a part of this White Sands heritage. I commend and applaud the White Sands Pioneer Group for their superb efforts in keeping this heritage alive. We who are on the Range today, and all of America, are proud of the White Sands story. I am confident that the special spirit and professionalism that characterized your work will continue to be the hallmark of White Sands Missile Range as it enters the 21st Century. Happy Birthday to you and White Sands Missile Range!

Niles J. Fulwyler
Major General, USA
Commanding

Tri-City mayors, reunion chairman send greetings

On behalf of the City of Las Cruces, it is a pleasure to welcome you to this exciting, impressive celebration commemorating the 40th Anniversary of White Sands Missile Range. Since its inception forty years ago, White Sands Missile Range has become the foremost test facility for rockets and missiles in the United States and around the world.

The credit for that position belongs to you. Whether you are military, civilian or contractor, you have been instrumental in shaping and creating the history of this range. And you have created a phenomenon that is without equal in the world.

As you participate in this celebration, we wish you the pleasure of renewing old friendships, the excitement of sharing old memories and the promise of creating another forty years that will be even more

illustrious than the past forty have been. Again, heartiest congratulations on this the 40th Anniversary of White Sands Missile Range.

David M. Steinborn
Mayor

From P.J. Higgins

As your program coordinator, I join with all the members of the program committee in extending a hearty welcome to El Paso and our first ever White Sands Pioneer Group reunion. It is most appropriate that this event commemorates the 40th anniversary of the White Sands Missile Range installation.

The program was planned to give all of us an opportunity to renew acquaintances with fellow pioneers, visit some of

the historic sites and learn something about the ongoing technical activities at WSMR. We invite you to participate in all of the program events and to be a part of the group in every way.

While we continue to take pride in past accomplishments, let us also look to the future with renewed interest and support for the WSPG and WSMR.

Patrick J. Higgins
Chairman, White Sands
Pioneer Group Reunion Committee

Alamogordo Mayor

Editor:

It is my pleasure on behalf of the City of Alamogordo to welcome the White Sands Pioneer Group to your first ever reunion.

Alamogordo is proud to have been a part of the 40-year history of the Missile Range and to be called home by many past and present White Sands Pioneers.

I hope that during the reunion you will take advantage of the opportunity to visit our Space Hall of Fame to see just how many of our nation's space accom-

plishments can be traced to your efforts at White Sands Missile Range.

Best wishes for an enjoyable and fun-filled reunion.

Donald E. Carroll
Mayor

From El Paso Mayor

Editor:

On behalf of the citizens of El Paso and members of City Council, I want to compliment the White Sands Pioneer Group on its first reunion of employees.

The success of our defense and space program is attributed to your hard and dedicated work. As White Sands Missile Range celebrates its 40th anniversary you can reflect back on that success and feel proud to have been part of that accomplishment.

The City of El Paso enjoys a pleasant relationship with White Sands Missile Range and its personnel and extends a hearty congratulations to the members of the White Sands Pioneer Group on this very special occasion.

Jonathan W. Rogers
Mayor

Expand Your Systems & Software Opportunities With The ORI Group A Major Force in C³I Systems ORI INTERCON CALCULON

ORI, with INTERCON AND CALCULON as wholly owned subsidiaries now represents a combined staff of over 1500 covering the entire spectrum of C³I.

This employee owned group, comprising the three high-tech professional services, of ORI, Inc., INTERCON and CALCULON, is looking for real time scientific systems personnel in:

- Military C³I Operations Analysis
- Systems Engineering
- Software Development and Programming
- Operational Test and Evaluation

Submit resumes to:

INTERCON Systems Corporation
9400 Viscount, Suite 115
El Paso, Tx. 79925

ATTN: Mr. Ray Day

Staff openings exist in El Paso and in most sections of the country.

The ORI group is an equal opportunity employer.

(U.S. Citizenship required)



IGOR, INSTRUMENT NO. 2, now on display at the WSMR Visitors Center is seen at the range's Don Site, on May 22, 1953. Later the tracking telescope was placed in an astrodome.

YOUTH ACTIVITIES

WEDNESDAY MOVIE NIGHT July 10, "Neverending Story" at 2 and 5 p.m. for pre-teens and "Poltergeist" at 7 p.m. for teens.

GAMES NIGHT Friday at 4:30 p.m. for preteens and 7 p.m. for teens.

BASKET FOR SWEETS. Compete with other teens and preteens Saturday, 4:30 p.m.,

for the greatest number of dunks. The prizes will satisfy your sweet tooth.

CHESS July 8 at 7 p.m.
ARTS AND CRAFTS at 3:30 p.m. Tuesday.

POOL TOURNAMENT begins at 4 p.m. July 10 and will continue through to the finals on July 12. Prizes will be awarded July 12 at 7 p.m.

COUNTDOWN

CROQUET MATCHES will be played at 4 p.m. Sunday.

SPORTS EQUIPMENT SWAP. Do you have any equipment you would like to swap? Bring it to the Recreation Center Monday at 7 p.m.

UNBIRTHDAY PARTY. Whether it's your birthday or not, join us for cake and ice cream Tuesday, 7:30 p.m.

PINOCHLE TOURNAMENT 6:30 p.m. July 10.

UGLY DOG CONTEST. Do you think you have the ugliest dog at WSMR? Bring him or her on over July 11 at 7 p.m. All dogs must be leashed and under contro. The Recreation Center lawn will be the site for this event.

Phone 678-4143 to register your dog.

MONTE CARLO NIGHT July 12, 7:30 p.m.

TICKETMASTER (CASH ONLY) Open Monday through Friday, 2:30 to 5 p.m. July 5, \$12.50, \$10.50, George Strait, Special Events Center, El

Paso; July 25-28, Aug. 1-14, \$12.50, \$10.50, \$5, \$3, Annie, Union Dinner Theatre, UTEP Campus, El Paso; July 27, \$11, \$9, \$7, Physique South-west, Civic Center, El Paso; July 27, \$6, Charlie Summons Blues Band, Complimentary Buffet, 109 Castellano Dr., Dr. "Chillys," El Paso; Oct. 22-26, \$7, \$5, Coors North American Championship Rodeo, Coliseum, El Paso.

POST LIBRARY

SHELL GAME by Douglas Terman is a powerful, high-voltage thriller set in Cuba during the revolutionary turmoil of the early sixties and the countdown to the missile crisis. The story is about two brothers divided by love and war and the most deadly deception of the nuclear age.

PICTURES FROM A TRIP by Tim Rumsey follows an old Bronco truck rattling into the Badlands with four young people determined to find the biggest dino bone in history. This novel concerns two brothers in love with the world and each other.

GENEVA ACCORD by John Whitman relates a gripping espionage story of distrust, danger, and high stakes and, in addition, provides an authentic insider's view of the critical Strategic Arms Limitation Talks in the late 1970s.

FITNESS AFTER FORTY by Hal Higdon gives guidance on how to get in shape and how to stay in shape for the best years of your life.

IRAQ: EASTERN FLANK OF THE ARAB WORLD by Christine Moss Helms examines the fundamental determinants of Iraqi policy, influences that lie deep in the cultural history, recent political developments and geographic configurations of the country.

INSCRUTABLE EARTH by

Ronald B. Parker is a rich and intriguing exploration of the evolving science of geology and the fundamental questions it raises about our planet, of research at the cutting edge of earth science and the author's highly original work in the field.

THE 25-YEAR WAR: AMERICA'S MILITARY ROLE IN VIETNAM by General Bruce Palmer Jr. tells not the story of how America became embroiled in a conflict in a small country half-way around the globe nor of why our armed forces remained there so long after the futility of our efforts became obvious to many. It is the story of what went wrong there militarily and why.

ALZHEIMER'S DISEASE by Barry Reisberg, M.D. describes the historical developments of the disease and reviews the fast-breaking and exciting research advances in the related fields which are opening the way to an understanding of the causes and mechanisms of the disease for families, spouses and friends.

DEMON by John Varley is a science fiction novel, the third book in The Gæan Trilogy. Certain events described in Titan and Wizard come to their conclusions.

Call 678-3375 or 678-5820 to reserve one of these titles or to renew a book.

4th of July Spectacular!

155R12	24.99
145R13	24.99
155R13	24.99
165R13	26.99
165R14	26.99
165R15	28.99
175R14	30.99
185R14	34.99
175/70R13	24.99
185/70R13	26.99
185/70R14	28.99

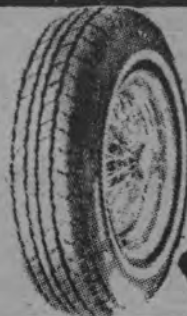


STEEL BELTED
Metric Radials from

24⁹⁹

FREE Mounting

P155/80R13	29.99
P165/80R13	34.99
P175/80R13	36.99
P185/80R13	37.99
P185/75R14	39.99
P195/75R14	40.99
P205/75R14	44.99
P215/75R14	46.99
P205/75R15	48.99
P215/75R15	47.99
P225/75R15	48.99
P235/75R15	50.99



CUSTOM AIRE
STEEL BELTED
RADIAL

Free Mounting - Free Balancing

TOYO

751

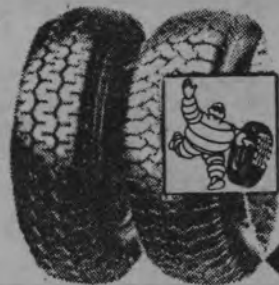
Steel Belted Radial
for Small, Mid Size,
and Larger Cars



Free Mounting, Balancing, Flats, Road Hazard Warranties

P155/80 R13	45.99
P165/80 R13	49.99
P185/80 R13	57.99
P185/75R 14	60.99
P195/75R 14	64.99
P205/75R 14	66.99
P215/75R 14	71.99
P205/75R 15	70.99
P215/75R 15	72.99
P225/75R 15	76.99
P235/75R 15	80.99

MICHELIN
XZX
and
MXL



39⁹⁹

165R 13 XZXT	45.99
175/70R 13 MXL	55.99
185/70R 13 MXL	61.99
185/70R 14 MXL	63.99
195/70R 14 MXL	65.99

Free Mounting

UNDER CAR SERVICES

Lube	4.95
Lube, oil	9.95
Lube, oil, filter	15.95
Lube, oil, filter, air filter	20.95

(most cars, pick ups)



WHEEL DEAL

CLOSE OUT ON
ROCKET WHEELS
FROM

14.95

Tires Since 1912



Locations

Shook 7 Day Tire Center
1920 E. Lohman • 524-3588

Hours

7 to 7 Mon-Sat
12 til 5 Sun

Shook Tire Co., Inc.

717 North Main • 523-8691

8 til 6 Mon-Fri
8 til 12 Sat

VISA/Mastercard OR 6 Months No Money Down On Approved Credit

Buy One, Get One Free!

Buy One Raspberry Cream
Supreme, Get Another of the
Same Size Free.

Just clip this coupon and present it to your local,
participating Orange Julius for our best deal on our
newest Cream Supreme. Offer expires 8/1/85

Mesilla Valley Mall

Orange Julius

MISSILANIA

Attend convention

Las Cruces Safe & Lock Company owners Leroy and Jean Lozier attended the Associated Locksmiths of America convention in Los Angeles June 19-22. They attended classes on special security products and advertising techniques and a trade show held in conjunction with the convention with exhibits of new security products.

Exchanges closed

All Post Exchange facilities will be closed July 4 except the following: the service station will be open from 10 a.m. to 2 p.m. and the Round Up will be open from 10 a.m. to 5 p.m.

Washington openings

The Paine Field Air National Guard Station in Everett, Washington, has vacancies for Palace Chase and Palace Front applicants. The applicants must have the following AFSC's or be willing to cross-train: 303X1, 304X0, 304X1, 304X4, 306X2, 361X1 and 362X1. Grades through staff sergeant can be accepted. Contact TSgt. Chris Berney at auto-von 355-7436.

Main PX re-opening

The Grand Re-Opening of the Main PX will be held Wednesday at 12 p.m. There will be door prizes, balloons, a beauty consultant, a VCR demonstration and many specials. Everyone is welcome to attend.

Special OOM dinner

On July 4, the Officers Club will serve a special dinner from 5 to 8 p.m. The dinner will be a Western Barbecue.

The Officers Club will reopen for regular business starting Monday. Lunch will be served Monday through Friday, from 11 a.m. to 1 p.m. Dinner will be served Monday through Friday, from 5 to 9 p.m.

A grand opening will be held July 12, to celebrate the opening of the renovated dining area at the Officers Club. There will be live entertainment, a Western style menu and refreshments. Members are free and each member will be entitled one guest only.

More Red Head Pin

The Red Head Pin promotion will be going on for the entire month of July, and is only valid for open bowlers. The bowler will have a chance for a "Free Game" if at anytime he/she should get a strike with the Red Head Pin in the number "One" position.

During any one game, the bowler will have five chances for the "Red Head Pin" to position itself in the number one spot. The bowler must notify the Control Counter Operator before shooting for a "Red Head Pin Strike." One free game only for one line bowled. For more information, contact the Bowling Center at 678-1294.

Commissary hours

The Commissary will open with normal duty hours on Wednesday and will be closed Thursday. The Commissary will resume normal duty hours Friday and Saturday.

Prayer breakfast

The monthly Prayer Breakfast will be held July 11, 6:30 a.m., at the Post Chapel. The guest speaker will be Navy Commander DeVon Love. The Prayer Breakfast is open to all military, civilian employees and dependents at no charge.

— SAVE ENERGY —

CAR POOL IT!

EFMP helps families

Soldiers with exceptional family members face unique problems, especially when being reassigned. In addition to the normal problems of moving a family, they must determine whether their dependents can receive the special care or training they need at the new duty station. The Exceptional Family Member Program (EFMP) helps soldiers solve these problems.

The EFMP is a voluntary Army program established to help soldiers with family members who require special educational or medical services. It was formerly called the Handicapped Dependents Program. Commanders should be aware of the EFMP and its benefits to the soldier.

An exceptional family member is defined as "a family member with any physical, emotional or intellectual need that limits the individual's capability to engage in pursuits with peers, and which requires special treatment, therapy, education, training, and counseling."

Soldiers enroll in the Exceptional Family Member Program at their medical treatment facility by completing the DA Form 5291-R Series of questionnaires. This ensures that the special needs of their families are coded, forwarded to MILPERCEN and reported in the assignment process.

Soldiers who have questions about enrolling in the program should contact the Army Community Service center, 678-3933. (APG News)

Army to buy computers

The Army will purchase nearly 12,000 personal computers over the next two years to help standardize the Army's computer network.

The Army Information Systems Management Activity (ISMA) is buying the systems for TDA activities (units resourced under Tables of Distribution and Allowances). Currently, Army units use several different systems, making it difficult to transmit information between units.

"This program potentially has more impact on the Army than most projects because it affects nearly every office in the Army," said Capt. Duane Christensen, Deputy Product Manager for ISMA Microcomputer Systems.

Single-user and multi-user computer models will be bought under contracts with SMS Dataproducts, Inc., and automated Date Management (ADM), Inc.

"SMS will provide multi-user 'Intel 310' microcomputer systems while ADM will supply single-user 'Wang' personal computers," said Lt. Col. Charles Gias-

son, ISMA Product Manager for Micro/Minicomputers.

"Training on the new computer systems will vary from refresher to indepth systems depending on requirements of the offices receiving the new systems," said Christensen.

"This contract should only be used when replacing existing equipment or when automating an office," he added.

Guidelines for ordering the microcomputer systems and catalogues listing system components have been sent to all major Army commands, according to Giasson.

For information and assistance in ordering the new systems, organizations should check first with their command's Automation Management Office (Directorate of Information Management). Additional assistance can be obtained by writing: Commander, U.S. Army Information Systems Management Activity, ATTN: ASM-SC, bldg. 283, Fort Monmouth, N.J. 07703-5501 (telephone: Auto-von 992-7917; Commercial (201)-532-7917). (ARNews)

Avoid Juarez during elections

The Mexican federal election will take place in Juarez Sunday. A number of candidates are members of the Marxist organization associated with the Mexican Communist Party which has been involved in violent demonstrations in the past.

Law enforcement agencies are ex-

pecting a large turnout of voters which could erupt in violence in the city of Juarez and affect the international bridges.

WSMR personnel are advised and cautioned to avoid the area during the holiday weekend of the Mexican election for their own safety.



Cub Canabearal a V.I.B. with
(The Right Stuffing) says:
Congratulations WSMR on your
40th Anniversary.

"Cub" and Edie's Toy Loft extend
a warm welcome to all visitors
and V.I.P.'s. Edie's Toy Loft
invites you to make a trip to Edie's.

A Must while in the
Las Cruces area.

"Unique gifts for the young
and the young at heart".



Edie's Toy Loft



10:00 - 5:30

Three Crosses Shopping Center
North Main At Three Crosses

523-8971

Starting at \$399. Reg \$420

HONDA

SENIOR CITIZENS DISCOUNT

4021 N. Mesa
El Paso, TX
FREE DELIVERY
533-7458

Army pilots, aircraft precede missiles

Five years ago, in the 35th anniversary edition of the *Missile Ranger*, we carried the Army Air Operations Directorate story citing two veteran civilian employees with unusual records.

At that time, we said any pilot who has been in the business long enough to get gray hair or bald will remind you that "there are old pilots and there are bold pilots, but there are no old, bold pilots."

We also said that Marvin Hedrick, affectionately called "Pappy" by his colleagues at AAOD, Holloman Air Force Base, must have been an exception to that rule.

On June 19 that year Pappy received recognition and a pin for 25 years of service as a pilot for the Army at WSMR. Well, here we are five years later and Pappy, who first came to WSMR as a first lieutenant and turned civilian in 1957, is 69 years young.

Getting back to the old, bold pilots, at his age it would seem Pappy never had to make any bold decisions. "No," says Pappy, "they were just stupid." Obviously his decisions were right. He's working on 14,000 flying hours and he has no plans for retirement yet.

The other fellow we talked about is Roy C. Overton, who singlehandedly operates Condron Field. As with Pappy, Overton's story five years later is still the same. There is more about Roy in the following paragraphs.

Much of the information about Army Air was either supplied or verified by Hedrick and Overton.

The history of Army pilots and aircraft at WSMR actually precedes the missile range itself. Conventional aircraft need considerable clear and level space in which to take off and land. These attributes are found in an old, dry lakebed about six miles southeast of the headquarters building here on post.

Rumored to have been once used by smugglers as an exchange point for contraband goods, the area first was used in 1942 as an emergency landing field by Army aviators towing targets for anti-aircraft training missions of Biggs Field at Fort Bliss.



2nd Lt. Max H. Condron

On Dec. 3, 1942, 2nd Lt. Max H. Condron, flying such a mission, died when his aircraft crashed in an attempted landing at dusk on the dry lakebed. From that time the area was called Condron Field. It was officially named in July 1945, almost simultaneously with the birth of White Sands Proving Grounds.

Condron's first "Operations Office"



A REPLICA OF a WWII Japanese dive bomber will be one of the Confederate Air Force aircraft on display at Condron Field. A number of aircraft will be shown, including a Beech C-45, a Stinson L-5, a BT-14, a PT-22 and a Fairchild PT-22. Other aircraft will be on display at Condron including the Army's Cobra attack helicopter.

was nothing more than a field telephone on a pole at one end of the field. As the proving ground developed with missile testing, Condron, too, eventually expanded into a modern Army operations center for light aircraft.

Artillery observation

In a tactical situation, the party with the highest vantage point usually has odds in his favor. Mountains, buildings, trees, poles, anything that would improve observation, have been used by the soldier to gain advantage over his enemy. Balloons and then airplanes finally put man in the air. In Louisiana maneuvers in 1940 a Piper Cub was first used by the Army as an observation platform for artillery observers.

Probably the best known and certainly the most remembered Army "liaison" aircraft was the Stinson L-5. A single engine with a wooden propeller pulled it along at 95 miles per hour -- top speed. The little monoplane with tandem seats served many purposes.

It was called a liaison aircraft because it was used extensively to transport commanders and liaison personnel from one unit to another, and simply as a courier. The L-5 could take off and land in as little as 300 feet.

For the artillery it became a "spotter" aircraft carrying a forward observer who could call for and direct artillery fire from a vantage point over the front lines, usually from an altitude out of range of rifle fire. If attacked by an enemy fighter plane, the little L-5 often could maneuver the faster aircraft into crashing into the ground.

Recovery

In 1946, when the missile range commenced operations, five L-5's were assigned to Condron Field. Their prime mission was to aid in recovery of missiles and debris impacting on the then very desolate range.

Sometimes it took several days (one took a year) to locate an impact site. Pilots flew dawn-to-dusk search missions,

returning to Condron to refuel when necessary. Later, refueling points were located at Holloman, Rhodes Canyon (in the central range) and at Stallion Site, in the 90-mile area.

In 1949 the L-5's were replaced with the new L-13's. This aircraft was faster and with added capabilities, but proved to be less reliable. Pilots were subjected to emergency landings almost daily. Logging 400 to 600 operations monthly, the safety record was remarkable with only two major crashes. Three L-13 aircraft, tethered and sandbagged, were lost in an 80-mile-per-hour windstorm in May 1950.

Larger aircraft

Early in 1946, Condron Field had a T-11 aircraft assigned. Later that year, the diminutive air base really went big-time with the addition of a C-47. This was the workhorse of the Air Force. Its prime purpose at Condron was to shuttle supplies and ranking military and civilians to and from White Sands Proving Grounds.

At one time in the late forties, two B-26 Marauders were assigned to the WSMR commanding general for range missions. The B-26, a bomber with an enviable war record, did not assist with recoveries -- its missions were more sophisticated.

In June 1952, the Air Force replaced the L-13 with the L-20, a versatile but much larger and heavier aircraft. This high-wing monoplane carried six passengers or as much cargo and was a delightful sensation to fly. Powered by a nine-cylinder radial engine, it had already served the touted Canadian bush pilots for many years.

Pilots enjoyed the L-20 for recovery missions but it lasted only a month. In July, the Air Force aircraft and pilots were released and replaced with ordinance L-19 aircraft and pilots.

The L-19 was a much more reliable aircraft than the L-13. Hundreds of missile recovery missions were logged and the aircraft figured in roadsweeping activities -- flights designed to monitor safety and security on the highway and range roads.

Rotary wing aircraft

In the fifties, helicopters found their way into Army Aviation and its mission at WSMR. The OH-13H (Sioux), the CH-21C (Shawnee), the CH-34C (Choctaw) and the CH-37B (Mojave) all played a major role in recovery operations for several years.

The helicopters did not merely fly over and identify an impacted missile or its parts. In many cases, these items could be put aboard or slung underneath and transported back to the base. Sometimes a missile could be lifted from a location inaccessible to a truck and carried back to base dangling from a steel cable.

At one time a new H-13 Bell and 10 Hiller H-23 helicopters were procured for the recovery missions. Pilots found these aircraft could not perform their intended mission at the range's altitude where the base is already at 4,100 feet. Local purchases were made to provide engines with higher power ratings before the aircraft could be used.

MARS

In the 1960's, Army Aviation at WSMR pioneered the Mid-Air Recovery System (MARS), which the Air Force continued to develop and which is still in use today. The objective was to perfect a system whereby an airborne parachute carrying a sensitive package, such as a drone or instrumentation, could be caught in mid-air and returned to base without damage or compromise. Credit is due Maj. Myron C. (Rusty) Wilson, then Army Aviation commanding officer, for conducting the entire series of recovery tests without accident.

Two Army aircraft figured prominently in these experiments, the CH-37B (Mojave) helicopter and the L-19. The big H-37 was the retrieval aircraft while the L-19 stood off a few hundred feet to monitor the action for safety purposes and to provide a camera chase plane.

Pilots change

Through the years, Army Aviation at WSMR has been staffed with a variety of pilots. The first five pilots assigned on Sept. 6, 1946, were non-commissioned officers, four master sergeants and a staff sergeant. In 1949 they were replaced by officer pilots. In 1957, Civil Service provided some pilots and in the mid-sixties, a large part of the recovery operation was let out to civilian contractors who furnished both pilots and aircraft to augment the military operation.

Outstanding record

In 1976 the Army Aviation Accident Prevention Award of Honor was presented to the AAOD for 20,000 accident-free flying hours. Officials said that the feat was exceptionally noteworthy because of the climatic conditions at WSMR. The lower density of high altitude lessens an aircraft's power and increases flight hazards. As of June 1985, AAOD extended its record to 65,000 accident-free hours.

AAOD today

The original Army air operation spawned at Condron Field in 1942 is alive and well today, having survived oscillating changes in command responsibility, personnel, aircraft, location and

Continued on page 12

The New Car Dealers' Association of Las Cruces

*Salutes
White Sands Missile Range
on its 40th Anniversary*

MESILLA VALLEY
LINCOLN • MERCURY  SUBARU • LAS CRUCES

MON/FRI: 8 to 7

1601 N. MAIN • 526-2481

SAT: 8 to 6

**Henderson
Baker**

VOLKSWAGEN • AUDI

1115 S. Valley Drive • (505) 524-3561
Las Cruces, New Mexico

JACK KEY MOTOR CO.
MERCEDES/NISSAN/JEEP-RENAULT

1840 N. MAIN Las Cruces
524-7741

SISBARRO
Buick • Pontiac • GMC • Inc.

West Boutz at Valley Drive 524-7707

UNIVERSITY
FORD *mazda*

490 N. VALLEY DRIVE / 526-3361

**STEVE
LOMAN'S**

CHRYSLER • PLYMOUTH • JEEP • ISUZU
WEST BOUTZ AT MAIN

WALLACE

CHEVROLET • OLDSMOBILE • CADILLAC
S. Main at Boutz • 523-7461

LAS CRUCES TOYOTA

523-5566

935 S. VALLEY DR.

524-8676

N.M. child passenger restraint law changed

from the New Mexico
Transportation Department

Judith M. Espinosa, Secretary of the Transportation Department, announces that on July 1, a major amendment to the Child Passenger Restraint Law will become effective in New Mexico raising the age limits and allowing active enforcement.

The new amendment requires children under 11 years of age to be properly secured in either child passenger restraint devices (safety seats) or by a safety belt when riding in a passenger car, van, or pickup truck. Law enforcement officers may now stop drivers and cite them for non-compliance. A fine of \$50 may be imposed by the court.

Espinosa said, "The main intent of the law is to protect children from injuries and death in motor vehicle accidents, especially children under the age of 11. We wish to encourage all motor vehicle drivers to voluntarily comply with the provisions of this amended law and to establish safe driving habits in order to protect children and all occupants of a vehicle."

Specifically, the law requires children under one year of age to be properly secured in a child passenger restraint device; children one year of age and older, but younger than five years of age, to be properly secured in a toddler safety seat or in the rear seat by a safety belt; and children five years of age and older, but younger than 11 years of age to be properly secured by a safety belt in either the front or rear seat.

Secretary Espinosa also stated compliance during the first year and a half of the Child Passenger Restraint Law the number of children killed in motor vehicle accidents had decreased by 30 percent. Compliance with the law was only about 40 percent.

The increased age requirements from under four years to under 11 will result in a larger number of children protected by a restraint device. Secretary Espinosa expects the amended law will allow for further decreases in the number of children killed and injured.

For further information, contact the Traffic Safety Bureau in Santa Fe at (505) 827-4776.

Early dental checks a necessity

from the Dental Clinic

Many people have crooked teeth or have a child who has or will have crooked teeth. The technical name for this condition is "malocclusion." Crooked teeth result from both inherited and acquired sources. In inherited cases, certain peculiarities present in the parents' teeth are transferred to the offspring. Typically, the child's teeth are too large and the jaws too small.

The cases of malocclusion due to inheritance cannot be prevented, but many of the acquired cases can. Early visits to the dentist are a vital necessity. Using the following means, your dentist can prevent many cases of acquired malocclusion.

- Prevent early loss of teeth. Starting dental visits at a young age allows your dentist the opportunity to fill decayed teeth while the cavities are small. Maintaining baby teeth (deciduous teeth)

until they are replaced by permanent ones will prevent many malocclusions.

- Preserve space for erupting teeth. A space maintainer is often indicated when baby teeth are lost early. If this is not used, the adjoining teeth will shift and reduce the space intended for the permanent teeth, resulting in malocclusion.

- Remove over-retained baby teeth. If baby teeth are retained beyond their normal shedding date, the permanent teeth may be prevented from erupting or may erupt in an undesirable position.

- Eliminate bad habits. Teeth can be displaced by the application of pressure. Prolonged thumb sucking habits, biting habits which interfere with the normal growth and development of the teeth and jaws must be eliminated. Eighty percent of children who suck their thumb usually stop due to peer pressure after beginning first grade.

YA summer doings

Registration is being held for the following Youth Activities Summer Programs:

FREE GOLF LESSONS. Ages 10-19. Tuesdays through Fridays from 9 to 11 a.m. July 8-12.

FREE TENNIS LESSONS. Ages eight to 19. Tuesdays and Thursdays at 5 p.m. Sessions are July 2-12 and July 15-26.

FREE RACQUETBALL LESSONS. Ages 10-19. Tuesdays and Thursdays at 7 p.m. Sessions are July 8-19 and July 22-Aug. 2.

GYMNASTICS. Ages six to 19. Tuesdays and Thursdays at 5 p.m. Cost is \$9 per month per person.

ARTS AND CRAFTS. Ages eight to 14. Classes are held at the Arts and Crafts Shop from 1:30 to 3:30 p.m. Mondays, July 1-22. Activities will include clay and God's eyes among others. Instruction is

free. Register at the Arts and Crafts Shop. Participation is limited to 20.

KARATE. Ages six to 19. Monday, Wednesday and Friday at 5:30 p.m. Cost is \$11 per month per person.

SEWING. Ages six to 19. Lessons on Mondays and Thursdays at 6:30 p.m. Cost is \$3.30 per person per month.

SUMMER DAY CAMP. Ages six to 11. Mondays through Fridays from 9 a.m. to 12 p.m. The third session is July 8-19. Limit is 40 youth. Fee is \$10 per child per session or \$20 per family per session.

SUMMER DAY CAMP FOR 12-14 YEAR OLDS. Registration is now open at the Youth Center for the last session, July 22-Aug. 2. Limit is 40. Fee is \$10 per child or \$20 per family.

Arts and Crafts will be closed Monday for quarterly inventory.

Nobody
Beats A
SISBARRO
Deal.

SISBARRO

Buick · Pontiac · GMC · Inc.



4TH OF JULY

ANNUAL

PICNIC OF VALUES

1985 GMC "ALL NEW"
SAFARI MINI-VAN
PEOPLE MOVER

5 & 7 passenger, automatic transmission, power steering and brakes, air conditioning, power windows and power door locks, tilt steering, cruise control, 27 gallon fuel tank, instrument gauges, plus much more!



Discount

\$2,500

1985 BUICK ELECTRA
PARK AVENUE

Full power and touch control air conditioning, base radio system, leather interior - 'The Ultimate Luxury Car!'



1985 PONTIAC
SUNBIRD

4-door, power steering and brakes, air conditioning, remote mirrors, automatic transmission, AM/FM ETR stereo radio, designer accent custom paint, European cloth bucket seats!

\$9,444



ANNIVERSARY SPECIALS
40 NEW TRUCKS IN INVENTORY

1/2 ton & 3/4 ton Pick-ups.
Small Pick-ups & 4x4's. Jimmys (large & small). Vans & Conversion Vans.

Some with 8.8% Financing. All priced at Sisbarro Low Low Anniversary Prices. Good Selection - Great Prices!

ONLY 7 LEFT

Factory Executive Cars
Buick Electras, Buick Centurys, Pontiac 6000's, Buick Regals, Pontiac Fiero & Buick Skyhawk.

HUGE SAVINGS

Come in now while they last.

1985 PONTIAC FIERO

The new exciting car from Pontiac - Air conditioning, 4-speed transmission, tilt steering wheel, AM/FM stereo radio, plus more!



\$10,594

W. Boutz at Valley Drive 524-7707

Army Air cont.

Continued from page 9

workload. Only the mission remains the same.

The AAOD, commanded by Lt. Col. Van T. Drake, is located in the north area at Holloman. The organization has 17 aircraft and 17 pilots. The times have changed as 15 of these aircraft are rotary wing or helicopters.

There are five Bell UH-1's or Hueys, each of which carry two crew members and 11 passengers. Ten OH-58's, small Bell helicopters, perform most of the missile search missions.

Two fixed-wing aircraft include a Beechcraft U-21 Kingair (UTE) and a Beechcraft Queenair U-8. These are similar in configuration with the exception that the U-21 is slightly larger and has twin turbine engines. The U-8 is an older model with twin reciprocal engines.

The UTE U-21A was designed to provide support to ground troops in or out of the combat zones. It is capable of performing aerial photography, geodetic survey and electronic warfare. It may also be used to deploy paratroops, conduct aeromedical evacuations and support special Army Security Agency missions. At WSMR the UTE is used mainly to transport personnel and cargo.

While the mission of search and recovery is still the same, with the advent of navigational equipment in the aircraft a new capability has been added: tracking. Missiles in flight can be tracked by Army

aircraft and the information relayed to stations on the ground.

Pappy Hedrick holds the longest tenure as an Army Aviation pilot at WSMR. Hedrick sums up the work history of Army Air Operations at WSMR when he says, "Most of the time it's not the same two days in a row." As an example of the variety of the daily workload, he described a mission when Army pilots airlifted scabies-ridden bighorn mountain sheep off the range for the State Game and Fish Department.

Condron field changed, too

Meanwhile, under the direct supervision of AAOD Chief Capt. Bruce W. Fox, Condron Field has only one full-time employee—civilian Roy C. Overton. Overton operates the entire field by himself and is physically responsible for all the activities of an operating airport. Overton answers the phone, communicates with flying aircraft in the area, coordinates incoming and outgoing flights, gives takeoff and landing instructions and meteorological information.

Condron Field's solitary inhabitant communicates on four radio frequencies, two of which are for emergency use. He must coordinate his flight activities with "Cherokee Control," Army Air at Holloman. Overton also must stay on top of field maintenance problems and arrange for modifications and repairs. These include physical properties of the field, the

landing lights, housekeeping, fuel -- everything.

There are no aircraft based at Condron other than those belonging to the WSMR Flying Club. Permission must be obtained to use the field. Overton also coordinates this function, briefing the pilots on how to approach the field in one of four authorized corridors. The field's normal operating hours are from 8 a.m. to 4 p.m. In the event of aircraft landing at night, Overton sets a timing device to turn the field lights on and off automatically.

Condron Field once logged 16,000 operations a year. A landing or a takeoff is each a single operation. Condron is now logging 250 to 300 operations monthly. The field is often used as a base of operations or an "objective" for airborne or cavalry maneuvers. This is possible

because Condron now boasts a 6,125 foot runway which can accommodate some of the largest convention aircraft and medium-sized jets.

In the past, for example, forces of the 18th Airborne Corps from Fort Bragg, N.C. airdropped troops south of Condron, later maneuvering north to "take" the field. All troops were evacuated in C-130 aircraft from Condron.

Condron Field's main mission is to support the movement of VIPs and cargo coming to and going from WSMR. Corporate aircraft of contractors using WSMR may also use Condron as a base of operations.

Even with no aircraft and a single airport operator, indications are that Condron Field will be active as long as there is something going on at White Sands Missile Range.

Award to Cheerleaders' leader

The Secretary of Defense Award for Outstanding Public Service was recently presented to the vice president and director of the Dallas Cowboys Cheerleaders.

Suzanne Mitchell was cited for her efforts in directing the Dallas Cowboys Cheerleaders since 1979 in annual Department of Defense/USO-sponsored entertainment tours around the world.

Every Christmas since 1979, the Cheerleaders' Variety Show Touring Squad

has entertained troops in the demilitarized zone in Korea. They've also carried their show to Navy ships in the Indian Ocean every New Year's Day since 1979.

Additionally, the cheerleaders have traveled each spring to other parts of the world to entertain U.S. servicemen and women. These tours have included shows in the Sinai Desert of Egypt, ships in the Mediterranean and outposts in Turkey, Greece, Italy and Spain. (ARNews)

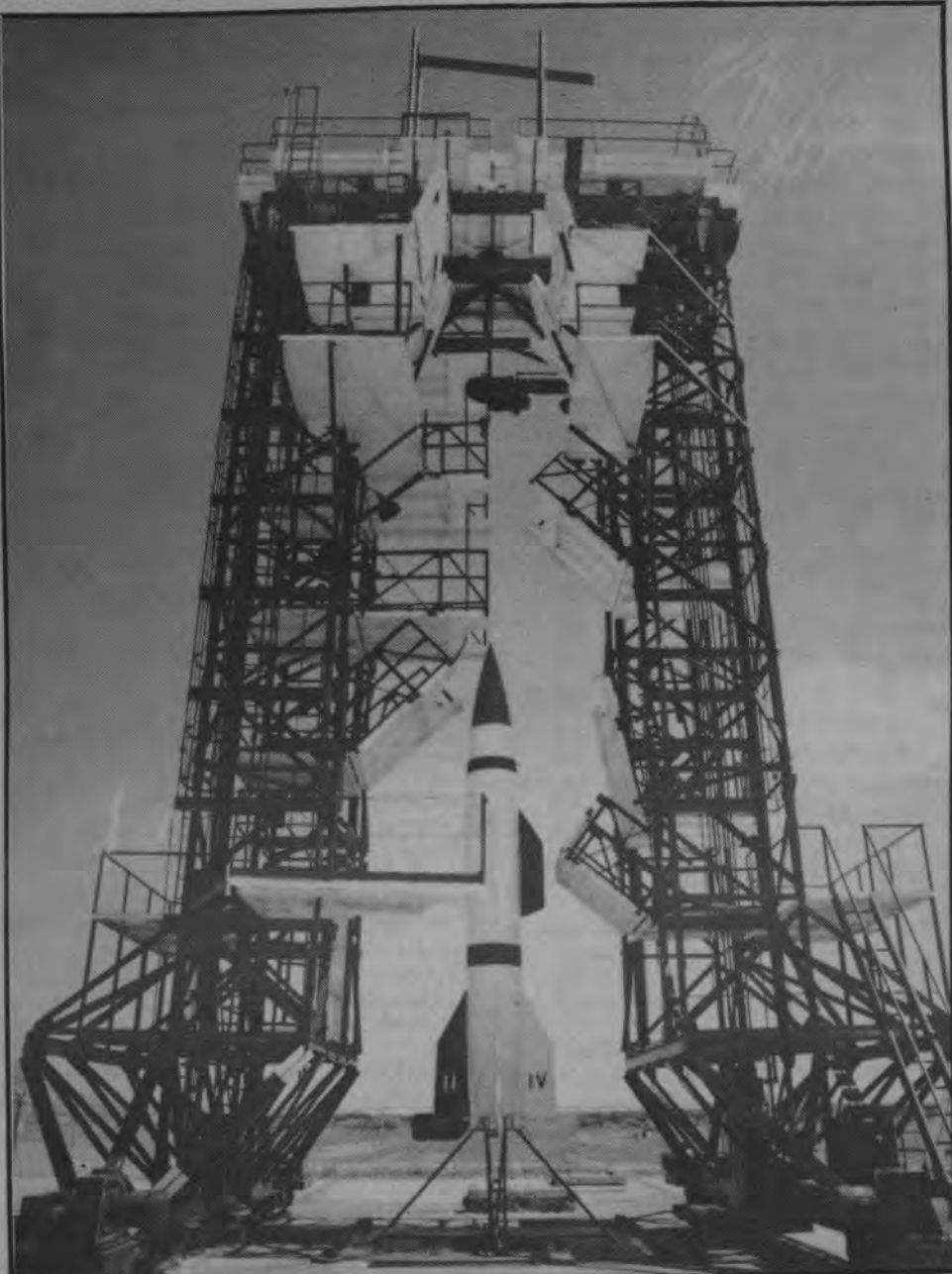
Congratulations on the 40th Anniversary of White Sands Missile Range!

The past 40 years have been instrumental
in the growth and development of
Southern New Mexico.

"We salute all the White Sands
personnel (past and present) for your
many contributions to our area."

UNIVERSITY
FORD *mazda*

Mesilla Valley Mall
490 N. Valley Dr.



THE V-2 GANTRY and a Hermes A-1 missile now mark time at the missile range's original launch complex. The gantry was used to service V-2 rockets as well as other missiles tested at White Sands. The Hermes A-1 was developed as a ground-to-ground weapon. Five of the missiles were fired in 1950 and 1951 when the range was White Sands Proving Ground. The missile in the gantry is on loan from the National Air and Space Museum in Washington, D.C. The launch complex will be open to the public during the missile range's Open House on July 4.

VALU+

Department Store
El Paseo at Idaho

Las Cruces
El Paseo at Idaho
9 A.M. - 9 P.M.
Monday - Saturday
10 A.M. - 7 P.M.
Sunday

Effective 7-3 to 7-4
Valu+ the True Valu Store
We will be open
9:00 to 7:30
July the 4th



Lucite Wall Paint

Lucite acrylic hides with one coat, dries in 1/2 hour, easy clean-up with water

Sale Price.....	8.88
Less Mfg. Rebate...	-2.00
Your Net Cost	6.88



Sale Price	10.88
Less Mfg. Rebate...	-2.00
Your Net Cost	8.88

Lucite House & Trim Paint

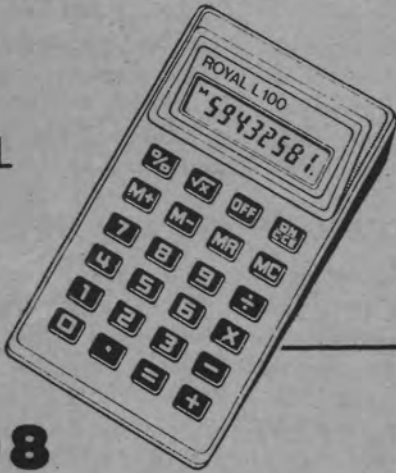
Long lasting flat house & trim paint resists cracking & peeling. Easy clean-up with water.



1.48
Foam Ice Chest

Lightweight 28 qt. foam chest is strong, buoyant, durable & easy to clean.
#109

ROYAL



3.98

Hand Held Calculator

Full featured performance plus 10,000 hours of operation on one set of batteries for a pocket-sized, economical price. #100



2.48
Kingsford Charcoal

10 lb. bag of fast, easy lighting charcoal briquets.



1.99
16 Oz. Kit Liquid

Get Kit Wax protection with J-Wax Kit liquid car wax & cleaner.

12 oz. Kit Paste Wax **2.49**



20% OFF
Camp Stools

Our entire stock of camp stools are 20% off.



4.99 Reg. 6.39
Astra Travel Alarm

Setting knob, pressed to set alarm, pulled to set time, on/off switch.



1.78
Son of a Gun Protectant

8 oz. - All purpose cleaner is safe, quick & easy to use on vinyl, rubber, plastic, tile & painted surfaces.

10.88 EACH
Sun Dresses

Choose from several pretty feminine styles & colors in sizes small, medium & large.



SPORTS

Artist designs 'fee' stamp

Artwork by Betty Nance Smith of Los Alamos graces a new stamp that hunters and anglers will purchase for \$10 before pursuing their interests on the 100,000-acre Valle Vidal west of Raton. The stamp represents the first "user fees" to be collected in New Mexico under the federal Sikes Act. Proceeds will go into managing this unique resource, donated to the U.S. Forest Service by the Pennzoil Company in 1982.

The State Game Commission selected Smith's artwork over that of other competitors in January. The scene is one of mountains, elk and meadow, much as the recreationist would find on the Valle Vidal.

Fishing season opens July 1 on the Valle Vidal. Anglers are cautioned, however, that water and fish are both limited there. There are no large lakes or extensive networks of trout streams. Special restrictions have been put in effect to protect a limited fishery.

Valle Vidal fishing is limited to artificial lures and flies, with a bag and pos-

session limit of two trout. For anglers under 12, it is one trout per day, two in possession. The Shuree lakes have a minimum trout size of 15 inches, and one Shuree pond is for children only.

Several hunts will take place on the Valle Vidal this fall. Bear hunting (10 permits) will be Aug. 15 to Sept. 30. Application deadline is June 26.

Cougar hunting (10 permits) will be Dec. 1 through Feb. 28, 1986. Application deadline is Sept. 11.

Elk rifle hunts will be Oct. 12-16, 19-23, 26-30 and Nov. 2-6. Elk bow hunting (10 licenses) will be Oct. 4-8. Elk muzzle-loader season will be Nov. 30-Dec. 4 (10 licenses). Application deadline for all elk licenses is July 10. A turkey may be taken during elk bow and muzzle-loader seasons, if the hunter has a turkey license also.

One \$10 Valle Vidal stamp covers a person's hunting and fishing use of the area for one year. Appropriate licenses are also required. Stamps are available from the Department of Game and Fish and selected license vendors.

Limited hunt deadlines near

July 10 is the deadline for applying for several limited hunts this season. Hunters intending to pursue ibex, elk or Zuni Mountains deer should note the date.

There are 75 licenses available for rifle, 75 for bow and 75 for muzzle-loader hunts in the Zunis, which has been closed to hunting for five years. Hunters use Form T to apply. The drawing date is Aug. 5.

A number of Persian ibex hunts are slated for the southwest between October and January, including two trophy hunts. There is also a year-round season for ibex off the main Florida Mountains, for which no drawing is required. A Siberian ibex

trophy hunt in the Canadian River Canyon is limited to eight licenses in February. Hunters use Form T to apply. The drawing dates are Aug. 29-30.

Elk hunts extend from October into December. In the Valle Vidal, a \$10 user stamp will be required of hunters in addition to the license. Hunters use Form S for public-land hunts and Form U for private-land hunts. Drawings will be on Aug. 5 and Aug. 29-30.

Applications are due at the Department of Game and Fish's Special Licenses Section by 5 p.m. on July 10. Forms and information are available from license vendors and department offices. (NMWN)

Parks brace for holiday crowd

The July 4 weekend is a four-day affair, and crowds of campers and fishermen are expected at many major lakes that claim good state park facilities. While there is no secret formula for escaping from all other people into an angling Shangri-La, some worthy tips are offered from Warren J. McNall, assistant chief of fisheries for the Department of Game and Fish:

Streams are still running at moderate to high levels, so lake fishing is your best option July 4. Bluewater Lake has been productive for trout in the daytime by trolling, and evenings and nights, from the bank. There will be plenty of room on Eagle Nest Lake, at its largest size in several decades. Trolling is the best approach there.

Navajo Lake should produce some

large kokanee salmon by trolling, and crappie are hitting jigs. At Abiquiu Lake catfish are being taken from the shore, but crappie fishing has cooled off. The temporary boat ramp at Abiquiu is functional.

There will be space for anglers on the large lakes that include Elephant Butte, Conchas and Ute. Crappie at Ute Lake may be hit at depths of 12 to 15 feet.

Clayton Lake has a very nice campground and offers fishing for channel cats and walleye. Charette Lake is productive for perch, using worms as bait, and for trout, using flies late in the day.

Bring an ice chest with you, along with plenty of ice or reusable freeze packs. All fresh fish should be cleaned and cooled immediately to preserve their delicious flavor, McNall said.

Warm water fishing special scheduled again

A 30-minute television special on warm-water fishing titled "Lure of the Lakes: Warm-Water Fishing," will be rebroadcast at 1 p.m. July 6 on Channel 7.

The special was produced by the Department of Game and Fish, with photography by Scott Brown, the department's broadcast media specialist, and Jim LeMay, free-lance production specialist.

The program features scenes videotaped at Elephant Butte and Cochiti lakes. Special guest is Henry Clopton, Albuquerque, well-known chef and angler. He will demonstrate techniques of filleting and cooking fish; productive lures; and the art of catching fish.

One segment, entitled "The Big One That Didn't Get Away," features close-up acting as Clopton reels in a large northern pike. (NMWN)

N.M. trout stocking times are not announced

Stocking catchable-size rainbow trout in New Mexico streams is an activity that accelerates in mid-summer, as anglers head for shorelines. Although stocking schedules are prepared a year in advance, based on estimates of fishing pressure, exact delivery times are not announced.

"This allows the fish to disperse in a stream or lake, and gives them time to acclimate to their new surroundings," said Gary Thorne, in charge of hatcheries for the Department of Game and Fish.

Rivers and lakes may be stocked once or twice a month through the summer, while small, heavily used streams may

required stocking once a week.

This year the Red River hatchery is being rebuilt; last year the Lisboa Springs hatchery near Pecos was reconstructed. The level of stocking has thus remained constant for the past two years; production should increase when all new construction is complete.

Catchable-size trout are generally nine inches or more in length. The New Mexico Department of Game and Fish plants 1.5 million of these fish into New Mexico waters each year. Hatchery operations are funded by the sale of hunting and fishing licenses and trout stamps. (NMWN)

Moonlight bowling at Roadrunner Saturday

Moonlight Bowling will be held at the Roadrunner Lanes Bowling Center Saturday, at 7 p.m. Awards "Galore" and a jackpot of "\$100" waiting for some lucky bowler. Men must have a female for their partners.

Military and their family members, civilians residing on post and their family members and civilians working at WSMR are eligible to bowl. For more information contact the Bowling Center at 678-3465.

Fishing Report

Southwest area

Quemado Lake-Fishing fair from bank using fireballs and from boats using wooly worms.

Snow Lake-Bank fishing fair using fireballs and corn. Some trout are being taken trailing Panther Martin spinners.

Lake Roberts-Water conditions and fishing poor.

Willow Creek-Fishing fair to good using small spinners and Panther Martin spinners. Some trout are being taken on fireballs.

Bear Canyon-Fishing poor due to water conditions.

Wall Lake-Trout fishing fair using fireballs.

Caballo-Fishing slow. Some white bass are being taken on minnows, Model A Bombers, Sassy Shad and Bayou Boogies. Troutlining for catfish is slow. Water level has stabilized.

Rio Grande(below Caballo)-Fishing slow. Some catfish are being taken on liver or worms in deeper parts of the channel.

Rio Grande-Catfish are being taken between San Aca-

cia Dam and San Antonio on nightcrawlers.

Elephant Butte-Fishing fair. White bass are being taken in early morning and evening hours on slab spoons, Sassy Shad and bombers. Some black bass are being taken on top-water lures. A 5 lb., 4 oz. black bass was taken at a recent tournament. Catfish are being taken with cut baits on trotlines.

Rio Grande (below Butte)-Some trout are being taken. White bass fishing poor. Recently stocked.

Southeast area

Ruidoso River-Fishing fair. Some rainbow trout are being taken on Panther Martin spinners, fireballs and worms, brown trout on worms. Recently stocked.

Alto Lake-Fishing slow. Some rainbow trout are being taken on floating cheese baits and fireballs off the bottom. Recently stocked.

Bonito Lake-Fishing slow. Some rainbow trout are being taken on garlic-flavored marshmallows and fireballs.

CENTURY 21 Hollingshead Agency, Inc.

JUST REDUCED — Below appraisal, 3 bedroom home, solar water, 5 years old, excellent location. Only \$51,500 - 1704 Seldon.

LARGE 3 BEDROOM, 1900 sq. ft. brick home, solar water and heat, close to NASA, WSMR. \$74,900. Only \$37/sq. ft. 6626 Hawk. Call for directions.

TWO BEAUTIFUL MOBILE HOME LOTS, 1/2 acre each in the Valley, water, electric and some gas, excellent locations.

Many other properties available at various prices. Call us anytime, Helen or Paul Whalen, 523-5451 (home) or 523-7551 (office).

Put Number 1 to work for you.

©1984 Century 21 Real Estate Corporation as trustee for the NAF. ® and TM - trademarks of Century 21 Real Estate Corporation. Printed in U.S.A. Equal Housing Opportunity. EACH OFFICE IS INDEPENDENTLY OWNED AND OPERATED.

**Respect
Integrity
Service
Efficiency**

**The
WSMR Creed**

Mental Floss

A variety of problems for children of alcoholics

Children of alcoholics have contributed to their being unnoticed. Most children of alcoholics have not openly shared their experiences or received help. For many children of alcoholics, more effort has gone into covering up the alcoholism than seeking help. In fact only five percent of children of alcoholics are in treatment specifically for those problems that arise from being a child of an alcoholic.

Many children of alcoholics are being noticed outside the family, but not for the direct efforts of alcoholism. Unfortunately, estimates indicate that as high as 20 percent of the caseloads of juvenile courts and child guidance clinics are children who come from alcoholic homes.

In these situations the children are being seen for problems other than for being a child of an alcoholic. Often the family alcoholism is not taken into consideration by others or it is hidden by the child.

All of these variables have resulted in a variety of problems for children of alcoholics. These problems are emotional, social, developmental and psychological. However, before any of these problems can be addressed the foremost problems of the majority of children of alcoholics must be overcome. This problem is that the needs of children of alcoholics are not recognized.

If the child of the alcoholic is "invisible" his or her problems are also invisible. Not only does this situation often exist in our society, but also in the alcoholic family itself. In homes with an alcoholic parent, even though all family members are affected, not all members are considered since the alcoholic is the center of attention. Often those remembered last are the children.

Last November I attended the Regional

Conference on Children of Alcoholics where I had the pleasure of meeting Claudia Black, Ph.D., who sees children of alcoholics, be they young, adolescent or adult -- yes, adult.

More than ten percent of the population of the United States is being or was raised in an alcoholic home. There are now between 25 and 28 million children of alcoholics in our society. Where are they? How can millions of people regardless of age be ignored?

First, although alcoholism has existed for thousands of years we are just beginning to understand, accept and assist alcoholics. It is only recently that we have begun to assess the magnitude of alcoholism and the problems of being an alcoholic. We are still centered on the problems of only the alcoholic and do not consider the impact on others, especially on the

children of alcoholics. It is almost as if we are just "discovering" that along with the existence of generations of alcoholism we have also had generations of children of alcoholics.

A second contributing factor has been the concept of alcoholism itself and ideas about the "typical" alcoholic. It has only been in the last 30 years that we have begun to accept and understand alcoholism as a disease. We have been hesitant to accept alcoholism as a disease and not a moral or deviancy problem. This hesitancy contributed to not only ignoring the alcoholic, but also his or her family.

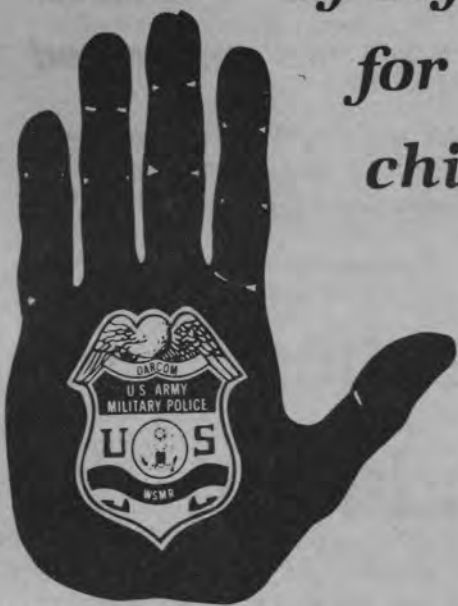
In fact, approximately 70 percent of so-called "average" alcoholics are men and women with a good home, job and family. Alcoholics are in reality our neighbors, our friends and the parents of children.



The Missile Ranger staff wishes our many readers and friends at White Sands Missile Range a Happy Birthday.



Harbor
of safety
for
children



OPEN

11:00-7:00
DAILY

4
MODELS

\$69,500 - \$115,400

From MESILLA VALLEY
MALL go east on Foothills
and follow signs.
522-8695



REALTORS WELCOME

candlelight
homes



Drive
Someone
Batty—
SMILE!!

Cross-Lites says:

"God is the opener
and closer of
life's doors."

COUPON

COUPON

COUPON

CARPET 3 ROOMS

Easy Credit Terms
Regular Price \$439.00

Your Price
With This
Coupon

\$359⁰⁰

Expires Sept. 30, 1985

100% Nylon Carpet In
Sculptured Multi-Colors Or
Solid Plush Styles. Many
Designer Colors To
Select From. Up To 40
Square Yards With This
Coupon

1200 N. Copia - El Paso

This includes
everything!
Malooly's will install
up to 40 square
yards of quality car-
pet & pad at this one
low price. Additional
carpet pro-rated at
sales price.
These Offers Are
Effective As Of
May 20, 1985

WALL to WALL!

FREE ESTIMATE 523-0633
Regular Price \$559.00

Your Price
With This
Coupon

\$469⁰⁰

Expires Sept. 30, 1985

- 10 YEAR GUARANTEE
- K-Tron Advanced Generation Nylon
- Soil Resistance
- Stain Protection
- Static Control
- Wear Protection
- Beautiful Colors



Malooly's Carpet City

765 N. Valley Drive At Picacho
523-0633
Open Mon.-Sat. 8 am-5:30 pm

Salem Carpets
color is our style!

765 N. Valley Dr. At Picacho - Las Cruces

COUPON

COUPON

COUPON

COUPON



Mr. & Mrs. Paul Benevidez

Stallion Camp marriage site

The marriage of Angela Moreland to Paul Benavidez took place June 1 at the Munch Box, Stallion Range Camp. The double-ring ceremony was officiated by Rev. Dennis McKinley of Socorro. The bride is the daughter of Frances Moreland of San Antonio and the granddaughter of Doris Winona, who is proprietor of the Munch Box. The groom is the son of Frances Benavidez of Socorro and employed by McDaniel Implement Co. of Socorro.

Both the bride and groom are graduates of Socorro High School.

Now That
Your First Career
Is Over . . .

LET'S TALK ABOUT YOUR SECOND CAREER

Litton Saudi Arabia Limited is a multinational systems engineering company. We are presently involved in executing, for the Kingdom of Saudi Arabia, one of the most extensive defense contracts ever awarded.

Your military training in the areas below has provided you with experience that is valuable . . . use it at Litton. It's a great place to start your second career.

COMMUNICATIONS FIELD ENGINEERS

You will provide field service maintenance support for HF/VHF/UHF. Microwave and Troposcatter Systems and advise on the technical aspects of communications operations and preventative maintenance to ensure maximum utilization of communications equipment.

AN/TSQ-73 FIELD ENGINEERS

Responsibilities include providing field service support and instruction for the AN/TSQ-73 system hardware, and advise on the technical aspects of the equipment operation.

RADAR FIELD ENGINEERS

You will provide field service maintenance support for the Defense Acquisition Radar to ensure maximum availability and advise on technical and operational aspects of the equipment. This includes initial radar equipment installation, checkout and modification.

POWER/AIR CONDITIONING FIELD ENGINEERS

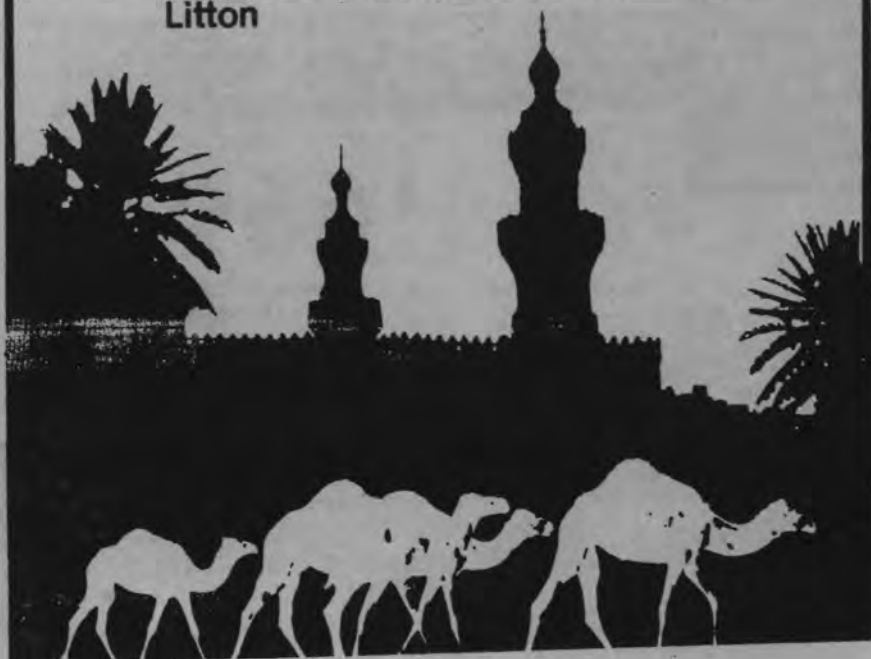
You will provide field maintenance support for all system motor generators and air conditioning equipment. You will also advise the site commander on the technical aspects of operation and preventative maintenance to ensure maximum utilization of equipment.

These positions require at least 8 years experience or a combination of 4 years experience and a directly related AS degree.

We offer an extensive overseas compensation and benefits package including company provided housing and transportation, special area and foreign assignment premium and completion bonus. Please send your resume with salary history to: Professional Employment, P.O. Box 5000, Dept. WSM630AB, Agoura Hills, CA 91301-0500. Equal Opportunity Employer.



Saudi Arabia Limited



Letters to WSMR

Continued from page 2

I want to take this opportunity to extend my heartiest congratulations as White Sands Missile Range celebrates its 40th anniversary.

White Sands Missile Range has certainly made major contributions to the well-being of the United States and New Mexico. From playing a vital role in the development of this nation's missile and space programs to providing employment and career opportunities to thousands of New Mexicans, White Sands has proven to be a great asset.

Again, I extend my congratulations and best wishes.

Joe Skeen
Member of Congress

As Governor of Texas, I am pleased to congratulate you and all those associated with the White Sands Missile Range during this observance of its 40th year. On behalf of all Texans, I extend best wishes for the future of this vital national resource.

The White Sands Missile Range is the birthplace of America's missile and space program and has played a tremendous role in our nation's history during the past 40 years.

You have my sincere best wishes for a memorable 40th anniversary and for continued success of the White Sands Missile Range.

Mark White
Governor of Texas

WSMR Week proclaimed in El Paso

The State of Texas County of El Paso: Know All Men by These Presents:

WHEREAS, on July 9, 1985, White Sands Missile Range will celebrate its 40th Anniversary; and,

WHEREAS, White Sands Missile Range is the birthplace of the United States Missile and Space Program; and,

WHEREAS, many thousands of valued El Paso citizens are employed at the White Sands Missile Range, and thousands of its former employees have chosen to retire in El Paso; and,

WHEREAS, White Sands Missile Range has proven to be an important and invaluable participant and leader in the American technological revolution; and,

WHEREAS, White Sands Missile Range and its people have become an integral part of the El Paso Community;

NOW, THEREFORE, BE IT RESOLVED that the El Paso County Commissioners' Court, in recognition of the important contribution the White Sands Missile Range has made to the United States and to El Paso, hereby proclaims the week of July 8, 1985 as "WHITE SANDS MISSILE RANGE WEEK" and extends best wishes for the future. SIGNED this 24th day of June, 1985.

County Judge Pat F. O'Rourke

Commissioner Charles Hooten, Pct. 1

Commissioner Rogelio Sanchez, Pct. 3

Commissioner Miguel Solis, Pct. 2

Commissioner Mary Haynes, Pct. 4

They forged the foundation

As we prepare to celebrate the 209th anniversary of the declaration of our independence from the British crown and our establishment as a free and sovereign nation, let us pause to remember and honor those who fought to establish and preserve that freedom.

In 1775, Americans rallied to answer freedom's call to arms, establishing the Army that would, less than a year later, be charged with the task of achieving the noble goals set forth in that declaration of 4 July 1776.

We in the U.S. Army Test and Evaluation Command are following the tradition -- forged in steel in the heat of battle -- set by these earliest patriots. They forged the foundation of our freedom; we in TECOM build upon it.

The work done at our headquarters, Installations, and field operating activities ensures those defending our freedom -- and the freedom of so many others -- have the finest weapons and equipment in the world.

As we fly our Nation's banner on this holiday, let us remember it is more than the symbol of our Nation. It represents hope, a dream, and an ideal longed for by billions of oppressed peoples throughout the world.

Our flag honors not simply those who have fought and died for our liberty. It flies in honor of all who struggle for life, liberty, and the pursuit of happiness.

My family and I join you today in celebrating the birth of our freedom and the kindling of the torch of liberty which now shines as a beacon to freedom-loving people everywhere. We ask that you join us in rededicating ourselves to maintaining the struggle for freedom for all mankind.

Andrew H. Anderson
Major General, U.S. Army
Commanding

Summer recreational hazards include insects

Editor's note: The following is Part IV of a 6-part series on Summer Recreational Hazards.

from the McAfee Health Clinic

The stinging insects belong to the order Hymenoptera. Those present in this area include the following:

Bees

Both honey bees and bumble bees are found in this area and inflict painful stings. The pain is due to the injected venom. The severity is greatly increased in the case of multiple stings; it has been estimated the lethal dose for an adult is 500 bee stings within a short time. Tolerance to bee stings, however, may develop in those long exposed to stings. This tolerance disappears when exposure is discontinued.

Wasps

The term "wasp" generally includes wasps, yellow jackets and hornets. These insects build their nests of "pap" (wood pulp) or mud, which are found beneath eaves, on porches, in outbuildings, shrubbery, trees, or in holes in the ground.

Ants

Certain species of stinging ants are quite formidable because of the danger of a mass attack by hordes of these ants.

In this area the red harvester ant may be encountered. They have a vicious sting and readily attack small animals and man if the unwitting victim disturbs their low, bare-mound-like nests. Small children could be in great danger if exposed at length to these ants. They should be told never to play near ant mounds.

Reaction to stings

Three general types of reactions to insect stings have been described. The names given below to these reactions were coined by John A. Flumo of the U.S. Department of Agriculture.

● **Hymenopterism Vulgaris:** There is pain, redness and swelling at the site of the sting. The severity of these manifestations varies from species to species. The pain, redness, and swelling may last for only a few minutes, or may persist for up to a few days. This reaction is not serious and subsides without treatment, although an ice pack may be used. It is not necessary for a physician to be consulted.

● **Hymenopterism Intermedia:** This type of reaction includes considerable swelling beyond the actual site of the sting; for example, an entire arm. The symptoms last for several days. If the insect has stung the tongue, neck, or throat, there may be enough swelling to impair breathing or swallowing. Medical aid should be obtained if this reaction occurs.

● **Hymenopterism Ultima:** This reaction is also known as anaphylactic

shock. It may result from only one sting. The patient goes into shock quite rapidly; the breathing is shallow, pulse and heart-beat are faint or undetectable, sweating occurs, and the patient loses consciousness. The body may break out in hives. A physician is needed at once, for this reaction often terminates fatally, sometimes in a matter of minutes.

The last two reactions indicate the person is allergic to the venom of the stinging insect. The occurrence of a Hymenopterism Intermedia reaction may mean the patient is likely to demonstrate Hymenopterism Ultima in the future, perhaps with the very next sting. The particular type of insect responsible must be strictly avoided; desensitization in-

jections by an allergist may be feasible.

Preventive measures

If nests of wasps, bees, or ants are found on WSMR, they should be left alone and the Pest Management Section of Facilities Engineering should be contacted. Rapid disposal of garbage, especially fruit, around quarters, yards, and picnic areas is very important, since some kinds of wasps and bees will gather around this sort of garbage. Watermelon seems especially attractive to yellow jackets. Certainly everyone should use the refuse facilities provided in public parks, but few people realize that this procedure may be a matter of life or death.

Surplus property sale

The Defense Property Disposal Office at Holloman Air Force Base has announced that a public Spot Bid Sale #41-5417 will be held on July 16. The sale will start at 8 a.m. in Building 112. The public is encouraged to bid.

Among the 248 items to be offered will be furniture, electrical and electronic components, photographic equipment, food preparation and serving equipment, clothing and individual equipment, appliances, wire and cable, compressed gas cylinders, plumbing fixtures, and vehicles.

The items will be on display for in-

spection beginning July 8, from 6:30 a.m. to 2:30 p.m. daily except weekends and holidays. A complete list as well as sale terms and conditions may be seen at Building 112, HAFB.

Registration will begin at 7 a.m. on the day of the sale. Bidders must be present and registered to bid; mailed bids cannot be accepted. Articles and terms posted at Sale Site. Items purchased may be removed on the sale date provided full payment is made by guaranteed instrument. For further details contact the Sale Section at Building 112, HAFB, or call 479-6511 ext. 3748.

HAPPY 40th ANNIVERSARY!

White Sands Missile Range





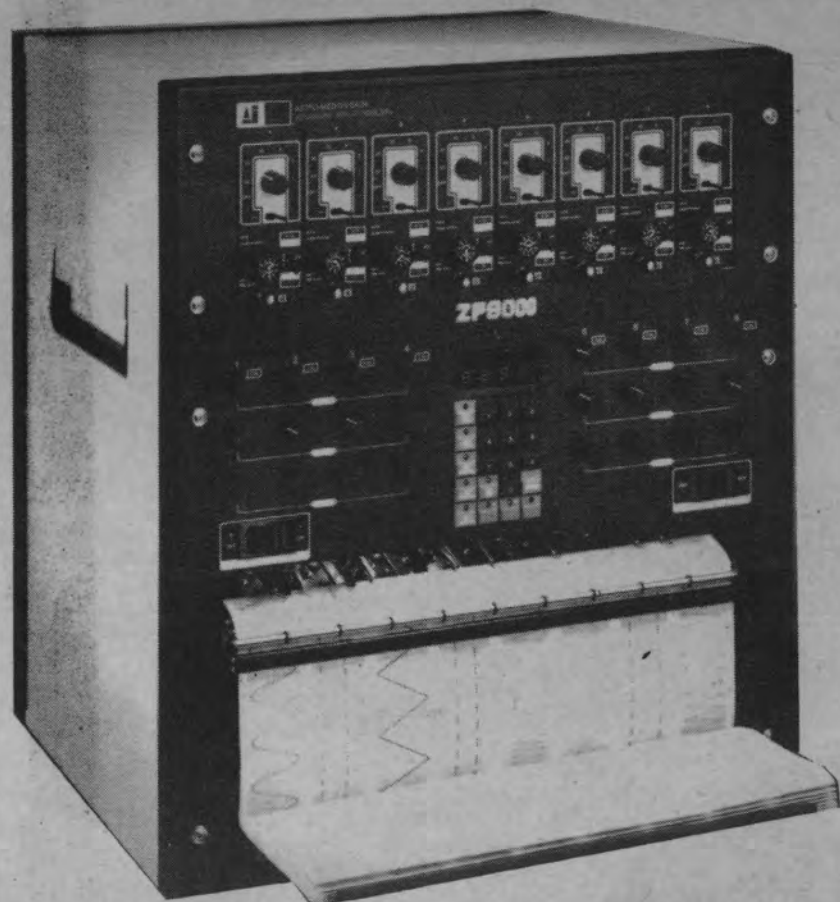
ASTRO - MED, INC.

WORLD LEADER IN MANUFACTURE OF HIGH - TECH GRAPHIC RECORDERS

Will Present A
**HANDS ON DEMONSTRATION OF
 STRIP CHART RECORDERS
 AT WHITE SANDS MISSILE RANGE**

Wednesday, July 10, 1985 9AM to 3PM

Building No. 464 Room No. 3



Astro - Med Model ZF - 8000

Features:

- ☐ D.C. To 5KHz Recording.
- ☐ 743 Chart Speeds
- ☐ Eight Channels of Waveform Recording and Nine Channels of Alphanumeric Printing.
- ☐ RS-232, IEEE-488, 8 Bit Parallel Interfaces
- ☐ IRIG Time Code Translator; IRIG A, B, or H
- ☐ Wide Range of Plug-In Signal Conditioners
- ☐ Easy To Load, Easy To Operate

Products on Display:

- * ZF-8000 mp Based 8 Channel Recorder (Shown Above)
- * Dash II 2-Channel Field Portable/Battery Recorder
- * Dash 8 New 8-Channel Field Portable Recorder
- * Astro-Graph 850 Digital Waveform Recorder/Plotter/Printer

If you are interested, you are invited to attend! Stop by Building #464, Room #3 any time from 9 a.m. to 3 p.m. on Wednesday, July 10, for a hands-on look at our latest analog and waveform recorders!

Refreshments will be served.

ASTRO-MED, INC.

Astro-Med Industrial Park

West Warwick,

R.I. 02893

Toll Free:

(800) 343-4039

The hijacked airliner scenario seldom changes

from the Security Office

The scenario we either hear about on the radio or view on television rarely changes. A lone terrorist or a group of terrorists hijack an airliner, kidnap a politically important person or may be not so important politically other than the person may be an American.

As we see the scenario unfold before us, we feel some sort of compassion, fear or anger at what is happening. The whole concept of violence and death is abhorrent to us and stirs within all of us a feeling of senseless waste of property or human life.

Recently, a hijacked airliner had a family from Albuquerque involved. This should also stir within each of us another sense, that of warning. It can happen to any of us. Whether we are on vacation or on a job related trip, we must all be aware that it no longer involves other people, it could involve you!

Merely being a military or civilian working with one of our armed forces is not the only manner in which you might be involved in a terrorist incident. As a student, mother or father, salesman, teacher, any profession may become involved.

Precautionary measures are taken by airlines and law enforcement authorities, but somehow the terrorist finds a way to play out his drama of the moment.

The terrorist gets the headlines and often demands are met, but what are the innocent victims who must be the wedge to make a civilized society bend or break, to do? They must silently sit in an aircraft while propaganda, theology or ideology in torrents is espoused to all. At the same time, staring at makeshift explosives or automatic weapons, hoping they will be able to see their loved ones as soon as the nightmare is over.

Hostages can do very little; however, there are some basic guidelines that are worth mentioning:

- Stay calm and be alert to situations that you can exploit to your advantage.

- Do not attempt to fight back or struggle physically. Remember that your objective and the objectives of the people looking for you and/or negotiating for your release are to get you back safely.

- Comply with the instructions of your abductors as well as you can.

- Don't discuss what action might be taken on your behalf, by your family, friends or business associates.

- Try to make a mental note of where you are being taken. If you are blindfolded, try to notice odors and sounds. Often these will give you a clue as to where you are, especially if you are familiar with the area of city.

- Try to be equally observant of the characteristics of the kidnappers.

- Avoid making provocative remarks to your abductors. No matter how reasonable they appear on the surface, they cannot be trusted to behave normally. They are likely to be unstable individuals who might react violently.

- Calculate your escape attempt. If it appears that you are going to be killed at any moment, as escape may be worth the risk.

- Establish communication with your abductor, but guard against identifying with him. Sometimes the victim develops what is known as the "Stockholm Syndrome" and actually becomes an ally of his abductors.

It should be noted that every situation is different. Only you can be the judge.

CHANNEL 3

MONDAY

8 a.m.-Forward Motion (60 min audio)
9:30 a.m.-Get in Shape (30 min video)
10 a.m.-World of Country (60 min audio)
12 p.m.-Music Makers (60 min audio)
2 p.m.-Carousel (60 min audio)

TUESDAY

8 a.m.-Forward Motion (60 min audio)
9:30 a.m.-Get in Shape (30 min video)
10 a.m.-World of Country (60 min audio)
12 p.m.-Old Time Radio (60 min audio)
2 p.m.-Carousel (60 min audio)

WEDNESDAY

8 a.m.-Forward Motion (60 min audio)
9:30 a.m.-Get in Shape (30 min video)
10 a.m.-World of Country (60 min audio)
12 p.m.-White Sands Week (15 min video)
2 p.m.-Carousel (60 min audio)

THURSDAY

8 a.m.-Forward Motion (60 min audio)
9:30 a.m.-Get in Shape (30 min video)
10 a.m.-World of Country (60 min audio)
12 p.m.-White Sands Week (15 min video)
2 p.m.-Carousel (60 min audio)

FRIDAY

8 a.m.-Forward Motion (60 min audio)
9:30 a.m.-Get in Shape (30 min video)
10 a.m.-World of Country (60 min audio)
12 p.m.-White Sands Week (15 min video)
2 p.m.-Carousel (60 min audio)



Now It's Easier Than Ever To Buy The Best!
**INTEREST FREE CREDIT...
90 DAYS SAME AS CASH!**

Ask For Details. Note: Not available at some locations.

EVERYDAY LOW PRICES

Whitewall Size	Everyday Low Price With old tire.
P185/80R13	\$47.45
P185/75R14	\$49.45
P195/75R14	\$53.80
P205/75R14	\$58.55
P205/75R15	\$59.55
P215/75R15	\$62.60
P225/75R15	\$64.60
P235/75R15	\$68.65

VACATION TIRE BUYS!

Get Your Car Ready For
Carefree Vacation Driving.

NEW TIEMPO RADIAL

\$38⁷⁵

P155/80R13 Whitewall.
And old tire.

- Flexible sidewalls deliver the smooth, comfortable ride so many car owners want
- Steel belted radial construction delivers strength, tread wear, and fuel efficiency
- Tread designed to dissipate heat for tire durability
- Steel and polyester...don't settle for anything less

BUY 3 EAGLES AT REGULAR PRICE...GET 4TH TIRE FREE!

EAGLE GT RADIAL			
Outline White Letter Size	Everyday Low Price Per Tire	SALE PRICE Four Tires (One Tire Free)	
P185/70R13	\$100.00	\$300.00	
P185/70R14	\$106.00	\$318.00	
P195/70R14	\$110.40	\$331.20	
P205/70R14	\$117.90	\$353.70	
P225/70R15	\$128.40	\$385.20	
P215/65R15	\$126.95	\$380.85	
P195/60R14	\$116.40	\$349.20	
P205/60R14	\$120.85	\$362.55	
P215/60R14	\$122.35	\$367.05	
P235/60R14	\$128.40	\$385.20	
P245/60R15	\$137.35	\$412.05	
P255/60R15	\$141.75	\$425.25	

No trade needed
Sale Ends July 13

EAGLE ST RADIAL			
Outline White Letter Size	Everyday Low Price Per Tire	SALE PRICE Four Tires (One Tire Free)	
P185/70R13	\$70.55	\$211.65	
P195/70R13	\$71.20	\$213.60	
P195/70R14	\$77.90	\$233.70	
P205/70R14	\$83.20	\$249.60	
P215/70R14	\$85.40	\$256.20	
P225/70R14	\$87.85	\$263.55	
P225/70R15	\$90.60	\$271.80	
P235/70R15	\$93.55	\$280.65	
P205/60R13	\$70.30	\$210.90	
P235/60R14	\$90.60	\$271.80	
P245/60R14	\$92.65	\$277.95	
P245/60R15	\$96.90	\$290.70	
P255/60R15	\$100.05	\$300.15	
P275/60R15	\$107.05	\$321.15	

No trade needed
Sale Ends July 13

SAVE!

GOODYEAR BIAS PLY
\$26⁷⁵

A78-13 Blackwall.
No trade needed.

Power Streak II

Blackwall Size	SALE PRICE No Trade Needed
E78x14	\$31.60
F78x14	\$34.15
G78x15	\$38.40
H78x15	\$39.45

Sale Ends July 13

SAVE!

STEEL BELTED RADIALS
\$49⁹⁵

P175/80R13 Whitewall.
No trade needed.

Custom Polysteel Radial

Whitewall Size	SALE PRICE No Trade Needed
P215/75R14	\$69.30
P225/75R15	\$74.30

Sale Ends July 13

SAVE!

LIGHT TRUCK AND RV RADIALS
\$89⁹⁵

27-8.50R14 Outline White Letter.
No trade needed. Load Range C.

Wrangler All Season Radial

Outline White Letter Size	Load Range	FET	SALE PRICE No Trade Needed
9R15	B	\$18	\$99.95
10R15	B	\$22	\$112.95
31-1150R15	B	\$160	\$119.95
33-1250R15	B	\$284	\$131.95

Sale Ends July 31

Lube, Oil Change & Filter

\$15

- Includes up to five quarts oil
- Special diesel oil and filter type may result in extra charges



QUICK CREDIT!

Credit card convenience from CitiBank for all your automotive needs. Pick up an application now at your nearby Goodyear retailer. Use The Silver Card nationwide at any participating Goodyear retail outlet. You may also use these other ways to buy: American Express, Carte Blanche, Diners Club, MasterCard, Visa.

It's Tune-Up Time!

Give your car easy starting, smooth running, less stalling and improved gas mileage with our precision engine tune-up. Call for an appointment today.



GOODYEAR 50 BATTERY

\$49⁹⁵ Maintenance Free Installed Battery



ABEL ALMAGUER
Store Manager
LAS CRUCES

526-2438

110 W. Picacho
Midway Shopping Center
Mon.- Fri. 7:30-6:00, Sat. 7:30-5:00

Commercial Activities Qs and As

Will early RIF retirement be offered?

This weekly column has been added to the *Missile Ranger* so that the CA Office can answer your questions pertaining to the CA study. Contact the CA staff at Building T-149, call 678-4500 or leave recorded messages on the CA Hotline, 678-4792. Questions will be answered as space permits.

Q: How does the CA process work? Where are we in the process now?

A: Performance Work Statements (PWS) are written, describing all the tasks that have been determined to be reviewable. The PWS's become part of the solicitation offered to potential contractors to bid on the work. The same PWS's are used by the CA Management Study Team to develop an in-house bid for the same work. WSMR will submit our sealed bid to the procurement Directorate with the in-house Most Efficient Organization (MEO).

After bids are received they will be opened, compared, and tentative award made to the low bidder. Any appeals are then resolved. If the in-house bid wins, the work remains in-house and the MEO goes into effect. If the contractor wins, a contract will be awarded, RIF procedures go into effect and the contractor begins operations.

At the present time the PWS's are being completed and the Management Study is underway. Solicitations will go to potential bidders in the spring of 1986. The in-house MEO bid will go

to Procurement shortly after that.

The Management Study Team is working closely with people in the reviewable areas to document current operations and solicit ideas for improvement. It will take the cooperation of everyone to make this a successful bid.

Q: Will early retirement be offered in the event of a RIF? Will there be a penalty if I haven't reached full retirement age?

A: If an employee is to be involuntarily separated by Reduction-In-Force (RIF), he/she would be eligible for discontinued service retirement provided certain conditions are met. Specifically, the employee to be separated must have 20 years of creditable service (including five years of civilian service) regardless of age.

In addition, the employee must not have declined a reasonable offer of another position for which he/she is qualified. A reasonable offer of another position is defined as a position in the employee's commuting area which is not lower than two grades below his/her current position.

Employees under age 55 who retire due to discontinued service will have their annuity reduced by two percent for each year they are under age 55. The annuity rate so determined will not be increased when the annuitant reaches age 55.

Q: What happens to temporary employees? Will they have the right of first refusal along with the permanent employees?

A: Any employees adversely affected by conversion to a contractor operation will have the right of first refusal for jobs

for which they are qualified and which the contractor is filling. This right is

accorded all employees affected by the decision, not just those in the function which is contracted. It includes employees "bumped" or displaced by RIF action and temporary employees.

Standard pay system set

Beginning Oct. 1, 1985, the Army will have a standard pay system for men and women entering the service after that date making "Sure-Pay" the only payment method available to them.

The new standard pay system will not affect soldiers on active duty before Sept. 30; they will continue to have the choice of all pay options now available. Over 70 percent of today's soldiers have voluntarily chosen the "Sure-Pay" system as the best way to receive their pay. "Sure-Pay" is a payment method whereby the Army directly deposits a soldier's pay into an account in a financial institution of the soldier's choice.

According to an Army report to Congress, "units involved in recent major training exercises and the Grenada operation -- which had a high "Sure-Pay" participation rate -- experienced far fewer pay problems and pay inquiries than units with low participation."

Soldiers who have their paychecks mailed home or receive them through their unit can have financial problems if

their units are deployed over a payday. Lt. Col. George Sumrall, executive officer of the "Sure-Pay" study group, said, "a lot had been learned during the Grenada operation. Some families had hungry children, empty cupboards and no cash, yet the soldier's pay check was laying on the kitchen table."

"Our Army's support systems such as Army Community Services (ACS) and Army Emergency Relief, helped those families out," said Sumrall, "but a lot of the anxiety for the family and the soldier could have been avoided if the soldier had planned ahead and deposited the check directly into a joint financial account."

"Sure-Pay" and joint accounts prepare Army families to better cope with their financial affairs during the soldier's absence. If you're concerned about how to handle a checking account or make a family budget, go to your local ACS office. They can teach you what you need to know about financial management for families. (APG News)

Kmart YOU CAN'T DO BETTER THAN
The Saving Place

Open Daily 9:30-9:30
Sunday 10-5

We Honor



Kmart COUPON

10% Off
Reg. Price

Any T.V. in stock.

Choose from G.E., Sharp, R.C.A., Zenith, Panasonic. 10" to 25" diagonal measurement.

Coupon Good Thru July 14, 1985

Kmart COUPON

20% Off
Reg. Price

Any Watch in stock.

Name brand watches like Timex, Waltham, Elgin, Casio, etc.

Coupon Good Thru July 14, 1985

Kmart COUPON

20% Off
Reg. Price

Any Ceiling Fan in stock.

36", 48", and 52". Sweep, flush mounts available, also a variety of light kits.

Coupon Good Thru July 14, 1985

Kmart COUPON

20% Off
Reg. Price

Any Garden Hose in stock.

From 1/2" x 50' to 5/8" x 75'. Flexlite, thermoflex, rubber/vinyl.

Coupon Good Thru July 14, 1985

Kmart COUPON

25% Off
Reg. Price

Any Bicycle in stock.

Choose from a variety of 20" BMX, 3 speeds, 10 speeds, etc.

Coupon Good Thru July 14, 1985

Kmart COUPON

25% Off
Reg. Price

Any Lawn Furniture in stock.

Stackable, wire mesh chairs, banana loungers, etc.

Coupon Good Thru July 14, 1985

1240 EL PASEO



FOR ALL MILITARY & GOVERNMENT EMPLOYEES

FREE FINANCING†

• HASSLE FREE INSTANT CREDIT

In most cases your credit can be approved within 60 seconds.

• NO DOWN PAYMENT

No deposit needed - take the item home the same day.

• FREE HOME DELIVERY

Within a thirty (30) mile radius, furniture, major appliances and console tv's.

• Choose from such famous names as Panasonic, Kenwood, Fisher, JVC, Pioneer, Sanyo, Frigidaire, G.E. and more!

Discover the
BEST
of everything
at
DEVON

Introducing the Soundesign audio/video
home entertainment center

- Dual cassette compact stereo system with 6½" full frequency tower speakers
- 13" diagonal color tv monitor with wireless remote control and 139 channel capability
- Custom designed rack with tinted glass doors and lift lid



Sampo 25" color
console tv

- Miracolor picture system
- Black stripe picture tube
- Auto fine tune
- Individual brightness, color and tint controls
- Large 6" audio speaker

ONLY \$799⁹⁹

Sampo 13" color tv

- Quick start picture
- Auto fine tune
- Simulated walnut woodgrain cabinet

ONLY \$379⁹⁹



Sanyo 100
watt dual
cassette
rack system

- 100 watts per channel
- Digital tuner with 12 pre sets
- Dual cassette deck with Dolby® NR. dubbing
- Semi automatic belt drive turntable
- 12" 3 way speakers
- Audio cabinet with glass front and top

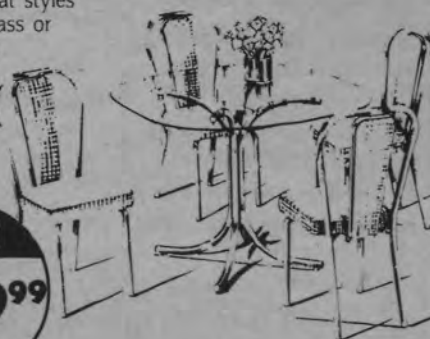
FREE BONUS
cassette walkabout
with purchase of
any Sanyo
rack system



Dinette Spectacular!

- Choice of 3 great styles
- Choose from glass or laminated tops
- Style shown is representative of selection
- Beige tones to blend with all decors

FROM \$399⁹⁹



G.E. 19" remote
control
color tv

- Direct access remote with programmable scan memory
- 112 channel cable ready
- Quartz electronic tuning
- Large illuminated channel numbers



†**NO INTEREST REFUND!**

If contract is paid within twelve (12) months from date of purchase, we will refund finance charges on that item.

HOME ENTERTAINMENT, STEREO'S, TV'S. VCR'S, CAMERA'S, FURNITURE, JEWELRY



ALAMOGORDO
811 1st Street
(505) 434-1614

Mon.-Fri. 10am to 8pm;
Sat. 10am to 5pm;
Sun. Closed



WE FINANCE ALL MILITARY & QUALIFIED CIVIL SERVICE EMPLOYEES

CLASSIFIED

• CARPOOLS

Driver for n/s, a/c carpool from NE El Paso. War Highway to McCombs, North of Salem. Don 678-1901, Dan 678-2021, Chuck 678-3422.

Alamogordo-WSMR. Form or join, n/s, a/c carpool. 7:30 a.m. to 4 p.m. Call Shaun, 678-3174 or 434-3037.

Need 1 driver to complete 4 person nonsmoking airconditioned carpool from West El Paso through Anthony Gap (O'Hara Road) to WSMR Main Post area. Hours 7:45 a.m. to 4:15 p.m. Call Sharp 678-2424, Rotchford 678-2034 or Jones 678-1368.

Paying rider or carpool needed from North Albertson area to WSMR, bldg. 700, 7:15 a.m. to 4:45 p.m. Call 678-5103/2146 J. English.

Need drivers to complete 4-person carpool from south LC. 7:15 to 4:45. Call Kathy 678-1838/2966 after hrs. 522-4649.

Carpool needed for paying rider. Missouri/Teleshor, L.C. 678-4992, or 522-7686 after 6 p.m.

Riders to complete vanpool from Fox Plaza, Trowbridge, Armory Hondo Pass I-10 N. Butterfield Apts., Danny 678-4039/4946.

Wish to become paying rider. Alamogordo to Main Post WSMR. 7:45 a.m. - 4:15 p.m. Call Herm, 678-1145.

Wanted: 1 driver for a 4-person n/s, a/c carpool from McCombs, Marie Tobin & Sun Valley areas to Main Post. Jim 678-2836, Lloyd 679-9400.

• CARPOOLS

Looking to join carpool as paying rider from North Main, L.C., to bldg. 1408. Bill, 678-4776.

• VEHICLES

1984 Toyota Pickup, A/C, low mileage. Call Tony at 524-3626. Must sell, can help finance.

1978 Buick La Sabre, low, low mileage, fully equipped, super clean, super nice. Hurry. Call Bi-State Auto Exchange, 525-0685.

1982 Rabbit diesel, top condition, many extras. \$4,700. Call 682-2425 (High Rolls, N.M.) during normal work hours. Toll-free call from WSMR.

Exceptionally clean 1978 Mercury Monarch. Priced to sell. \$1,900. Bi-State Auto Exchange, 1375 N. Main, Las Cruces.

1968 Datsun pickup, 58,900 actual miles, has never been abused, always garaged, excellent Check Point transportation and weekend helper. \$800. Call 382-5936 (Organ, N.M.)

Best Deal Anywhere! 1984 Dodge Daytona Turbo, top performance & economy. Beautiful showroom cond., only 9 mos. old and 6,500 miles. \$300 below loan balance - Samaniego - 678-5437 or 523-7196 after 6 p.m. (28-4)

1978 Chevy malibu wagon, auto/AC/PS/PB/AM FM Cassette. Nice pool car. \$2,200. Negot. Call 382-7240.

• VEHICLES

1964 Falcon Ranchero Pickup, 260V8, auto, runs good, \$650; 1972 Ply. Fury 360V8, 4-dr. HT, runs good, \$390. 524-2514.

1980 El Camino, super nice care. Hurry on in to Bi-State Auto Exchange, 1375 N. Main, Las Cruces.

1985 Audi 50003, fuel injection, AM/FM stereo radio/cassette, electronic climate control air, 5-speed, sunroof, excellent condition, less than 7,500 miles. \$17,000. Call 678-6022.

1972 Plymouth Duster, 6 cylinder, automatic, gas economy special. Hurry in; it won't last. Bi-State Auto Exchange, 1375 N. Main, Las Cruces.

• MOTORCYCLES

1981 Yamaha 550 Maxim, \$875. 1975 Honda CL360, \$400. 1981 Kawasaki KE 100, needs work, \$250. Call after 6 p.m. 434-0763, Alamo.

1981 motorcycle, 850 Suzuki, shaft drive, 4,500 actual miles, like new w/extras. Sam, 678-9135/4345 or 524-0588 after 6 p.m.

1981 Suzuki GN400X, excellent condition, low mileage. \$700. 522-3016 or 522-0806.

• FOR SALE

MOBILE HOME: New 16 foot wide, 3 bedroom, fully furnished, delivered and set up, \$900 down, less than \$250 per month. 523-2495. Lic #199.

• FOR SALE

Heavy duty steel ladder rack. Fits 8-foot Ford standard truck bed. \$150 or best offer. After 6 p.m., 526-3422.

Mercury Mark 58 outboard motor 45HP, being rebuilt, will sell as is for \$200 or best offer. Includes electric starter and parts, maintenance manual. Call 526-9037 or 678-2508.

PCS YARD SALE. Bicycle, old school desks, material, puzzles, clothes, assorted dishes and many misc. items. 103 Tooele, 9-5 on 4, 5, & 6 July.

\$1,000 moves you into a beautiful 1980, 28X70 Town & Country mobile home in Encatada Park. Call 523-5924, L.C. (4-12)

Mobile home, 14X78, furnished, 2 bedroom, paneled, skirted, appliances. \$1,500 - assume \$215, 6 years remaining. Robert Riehl, 679-9509/9510 or 821-8342.

19CF freezer, \$110; couch, \$35; captain's bed/mat, \$100; 25" col. TV, new pic tube, needs work, \$50; Zenith AM/FM console, \$150; camper shell W58XL82XH34, insulated, \$290, 524-2514.

MOBILE HOME: 14 by 70, 3 bedroom, 2 bath with fireplace, fully furnished, washer and dryer included, delivered and set up, \$800 down, less than \$235 per month. 523-2487. Lic #649.

35mm camera, Minolta SRT-101 w/1.4 lens, built-in light meter w/2Xconverter, \$125. 678-9135/4345 (Sam) or after 6, 524-0588, LC. (5-12)

New Panasonic 19" color TV, cable-ready, \$250; TV J.C. Penney, 19" color, remote control, cable-ready, \$310. Call 678-6022.

MOBILE HOMES: 8.99% interest rate with only \$500 down. Call now and save with low, low interest rates. 523-2487. Lic #198.

TRANSMISSION PROBLEMS?

Free Analysis-Free towing. Diesel-Front Wheel Drive, 4-wheel Drive Specialists. United Transmission, Inc. 8337 Dyer, El Paso. Call 751-4177 or 751-7941.

UNCONTESTED WAIVER DIVORCE FOR UNDER \$150 ATTORNEY FEES.

Also other legal work at reasonable fees.

Robert D. Clark
Attorney at Law
2145 N. Solano
Las Cruces
Call 523-2527

Classified ad rates for WSMR military and civilian personnel and retired military are \$1 for an ad of 20 words or less; \$1 for each additional 10 words or fraction thereof (e.g. \$2 for 21-30 words, \$3 for 31-40 words, etc.) There is no charge for carpool ads of 20 words or less.

Ads may be submitted on the form below to the drop box in the Public Affairs office (Bldg. 122) or mailed to the Missile Ranger, Box 51, Las Cruces, NM 88004. Additional forms are available at the PA Office. Ads must be submitted to the PA office by 4 p.m. Monday and mailed ads must be received by Tuesday morning to assure publication that week. Telephone ads are accepted until noon Tuesday when called in to 526-4851, Las Cruces. Do not call the PA office. There is an extra 50 cents service charge for telephone ads which are accepted with the understanding that remittance will be mailed without billing.

Ads are classified under one of the following classifications: Vehicles, Motorcycles, Carpools, Pets, Real Estate, For Rent, For Sale, Wanted, Help Wanted, Personal, Birthdays, Notices, Legal Notices, Business Opportunities and Miscellaneous. Please do not include items falling into more than one of these classifications in the same ad.

In using this service, the advertiser certifies that he or she is a WSMR employee or retired military person and he or she is not acting as a representative of another individual or a commercial business.

Regular commercial classified rates are 10 cents per word with a \$3 minimum charge. (\$2.50 for paid-in-advance orders).

• FOR SALE

MOBILE HOME: Buy a mobile home from us and you qualify for a one third acre lot. No down payment on lot, about \$114 per month. 523-1749. Lic #716.

We buy and sell clean used furniture, appliances and baby items. WYATT'S USED FURNITURE, 2109 N. Alameda, Las Cruces. Ph. 524-0939. (UFN)

MOBILE HOME: 3 bedroom, 2 bath double wide, only \$1,250 down, less than \$350 per month. This price includes delivery and set up. 523-2485. Lic #734.

MOBILE HOME: The number one name in mobile homes, a 14 by 80 Lancer Braeswood, 3 bedroom, 2 baths with zone 2 insulation, furnished, delivered and set up. \$1,000 down less than \$280 per month. 523-2486. Lic #199.

• WANTED

Elderly in El Paso without air conditioning. Need to borrow fans. Riehl, 679-9509 or 9510 or 821-8342. Jeff Glaves, 855-0440.

ADOBES

Thousands ready to pick-up or be delivered from our Las Cruces yard, or on site production as low as .19¢ each. Call Adobe Southwest, 382-5000. (UFN)

BARGAINS

in unredeemed merchandise, guns, stereos, diamonds, musical instruments, etc. Mama's Hock Shop 721 N. Mesquite Las Cruces

• NOTICES

July 9 at 7:30 p.m. Singles Scene of Las Cruces is having a seminar on Stress and the Single Person at Branigan Library, Room A, B. All welcome, single and/or divorced. Lic #716.

Astro-Med, Inc., will sponsor a product demonstration Wednesday, July 10, at the Education Center, Bldg. 464, Room #3. Hands-on demonstrations of Astro-Med Strip Chart Recorders will be featured. Literature will be distributed.

Our Tiffany table lamps (replica) with opal glass are hard to find—put yours in lay away. Calling all collectors of antique beaded bags! One from Germany, two from England with silver frames. The Serbian Peasant, 1106 Ohio, Alamogordo. Open from 10 a.m. until 5 p.m. No Exchanges or Refunds.

LEGAL PROBLEMS? Experienced lawyers, Attorney Villani, Law Systems Las Cruce 123 West Mountain, 523-4567. Uncontested divorce \$175, contested \$250 up. Wills \$45, DWI \$300, office visits \$15, adoptions \$250, accident cases, prompt service.

Free delivery to all WSMR residents every week on furniture, waterbeds, appliances. Save time and gasoline, call ahead for credit approval. Instant credit. (915) 821-8821, Northeast Furniture, 10400 Dyer, El Paso. Open 'til 8 p.m. Mon.-Sat., Sun. noon to 6 p.m. (UFN)

Weddings
Receptions
Seminars
Hold it at
Dos Lagos
Call Henry
882-2830

1979 Chrysler Lebaron SW, 8 cyl., automatic, tan
Sale price \$3,000

1984 Plymouth Horizon, 4 cyl., standard, front wheel drive, low mileage, gray
Sale price \$4,900

1979 Chevrolet Malibu Classic, V-8, automatic, A/C, 8 track, brown
Sale price \$2,200

1979 Subaru, 4 cyl., 2 door, 5 sp., am radio, air.
Sale price \$1,400

1983 Renault Alliance, 4 cyl., 4 door, AM/FM, A/C, maroon
Sale price \$4,900

CARS SOLD AS IS
CONDITION!!
Call Mary Sedillo
524-3663
BIDS WILL BE
ACCEPTED
100% FINANCING ON
APPROVED CREDIT

White Sands Federal
Credit Union
P.O. Box 99
Las Cruces, NM 88004

ATTENTION LAS CRUCES RESIDENTS.

Receive your UPS and parcel post items without a hassle. Rent a private P.O. Box at: 1906 Espina, Las Cruces Call 526-3771 for information

LIKE NEW

Reconditioned refrigerators, washers, dryers, etc. 90 day guarantee. Trade in your old one. Financing available. We also buy used appliances.

MONEY SAVERS
Corner of Valley Dr.
& Avenida de Mesilla
525-1234

Bee's Mini Mart

Hwy 70 Organ, N.M.
Open 7-7
Gas - Cigarettes - Ice
Pop - Food - Diesel

Second Genesis Thrift Store

1420 S. Solano
Las Cruces
Mon.-Sat. 10-5

Clothing-Furniture-
Books-Toys
And Lots More!



Slipping Transmission?

\$995 Service Special
Includes Oil, Parts & Labor

\$149 Exchange Automatics
Plus Instal.

Approximately 300 100 Units Left

For 65-80 Cars & Trucks

Car Trouble? Get Our Free Analysis

United Transmission

"El Paso's Most Recommended Shop"

751-4177 8337 Dyer 751-7941

●NOTICES

WE SHOOT PEOPLE!!
Specializing in weddings. We also handle wedding invitations. For appointments call **LOPEZ PHOTOGRAPHY**, 822 E. Lohman, 526-9408.
"We Aim To Please."

The second session of the Summer Dance Workshops for children and teens will be offered at the Las Cruces Dance Center in old Mesilla July 8-12 (teens) and July 15-19 (5-12 yrs.). Students will receive instruction in dance technique, improvisation and composition. For information call 523-2101.

LOPEZ PHOTOGRAPHY wishes you a SAFE and happy 4th of July. God bless you, Frank.

Alcoholics Anonymous meets at the Post Chapel (Rm. 5) Wednesdays and Fridays at noon.

Transmission slipping? No money down, credit by phone at United Transmission. El Paso's most recommended shop. Call (915) 751-4177 or 751-7941. Ask for John. (UFN)

Advertising in the **MISSILE RANGER** helps keep the bottom line in **SOLID BLACK**
Call 526-4851

●SERVICES

Going on leave? Need someone to care for your lawn & pets while you're away? Call Susie, 678-1341. (26 Jul.)

PET GROOMING
Free pick up and delivery. Good prices all breeds. Lots of loving care. Call 678-1341 for appointment. (26 Jul.)

Will babysit in my home weekdays. Very reliable (FCC Certified). Call 678-3957. (28-4)

For the Best Deal in Town
On your wedding pictures and on your wedding invitations please call **LOPEZ PHOTOGRAPHY** 822 E. Lohman, 526-9408. "We Aim to Please."

BARGAINS
in unredeemed merchandise, guns, stereos, diamonds, musical instruments etc.
Mat's Pawn Shop
325 Mesquite
Las Cruces

BARGAINS
in unredeemed merchandise, guns, stereos, diamonds, musical instruments, etc.
Mary's Pawn Shop
200 S. Solano
Las Cruces

●HELP WANTED

Excellent income for part-time home assembly work. For info. call 312-741-8400 Ext. 1294. (Jun 7-21, Jul 5)pd.

GOVERNMENT JOBS.
\$15,000-\$50,000/yr. possible. All occupations. Call 1-805-687-6000, Ext. R-4778 to find out how. (23 Aug.)

●FOR RENT

GRAND OPENING
Brand new 2 bedroom, fully furnished apartments. Laundry facilities, manager on premises. Month-to-month lease.
1500 E. Madrid
Las Cruces, N.M.
526-3290 (UFN)

●REAL ESTATE

Four acres with 1970 Tourite 3 br., mobile home, 2 storage sheds, 250 gal. propane tank, Mt. View, water, off of Holman Rd. & Hwy. 70 E. \$35,000. Call 382-5133, anytime. (28-4)

HOMESITE: 1/2 acre lot at Hacienda Acres; all utilities available, \$7,000. Sam, 678-9135/4345 or 524-0588 after 6 p.m. (5-7)



Butterflies are free — so are wild flowers, bird songs and mountain panoramas. If you like the quiet, inspirational calm of the desert, you may like a comfortable 2-bedroom mobile home on an acre in Northeast Moongate. Only 2 years old with quality extras: large propane & septic tanks, solar, 9' satellite dish. Very convenient to WSMR & NASA. Affordable too! \$35,000. Call me regarding low down payment & assumable loan. Anne Grace, 526-4191 7 days a week, 8:30 a.m. to 10 p.m.

"Move with Grace"

●REAL ESTATE

Home Can Be Only 5 Minutes Away...

Eat vegetables from your very own garden, already planted! Enjoy full views of the Organ Mountains from this prime valley location. Your family will enjoy living in one 3 Bdrm, 2 bath mobile home. Choose your own neighbors or family members to rent the other 2 Bdrm, 2 bath mobile home. All of this cool country living on 1 acre in North Valley. Or go partners with your parents and buy all of the above for only \$78,000.

Call Mary Gail Gwaltney 523-6866 or **SUNBELT REALTY** 524-1908

A MILLION DOLLAR VIEW for only \$35,000. This very clean and nice 2 bedroom 12X60 Mobile home sits on 5 city lots on N. 3rd Street in Organ with all city utilities. Bob Barnett 522-0335 **SUNBELT REALTY** 524-1908

INCOME PROPERTY OR GREAT 2 FAMILY BUY! This 1460 sq. ft. double wide (1978 Barrington) on 1.45 acres in Moongate features carpeting and paneling, a second trailer renting for \$250 monthly, a 2-car garage with finished room, view of the Organ Mts. and front yard landscaping. Or 2 families could split the \$65,000 price. Darwin Bennett 525-2432 **SUNBELT REALTY** 524-1908

TWO LOTS IN ORGAN. All utilities available to property. Furnace St., close to Fifth St. MH allowed. Owner will carry financing with 20% down. Olivia Rothchild 524-0483 **SUNBELT REALTY** 524-1908

OFF DONA ANA ROAD. One acre, mobile homes allowed. Horses allowed. Elephant Butte water rights. Beautiful view of the Mountains. Electricity near. Best buy in the county. Price REDUCED to \$11,500.

Bernice Sanner 526-1551 **SUNBELT REALTY** 524-1908



REALTY, Inc.

1065 S. Main, Bldg. E
Las Cruces, NM 88005
Office: (505) 524-1908

ACTION FURNITURE

●ECONOMY PRICED
●NEW ●USED

523-6485
1255 N. Main St.
Las Cruces, NM



ALL BILLS PAID

Unfurnished

Great View Pool

TELHOR APARTMENTS

999 Telshor Blvd., Las Cruces, 524-0444

BIKES PLUS

Expert Sales and Service

in
Bicycles, Alpine Shing, Backpacking

600 S. Solano
Las Cruces, New Mexico
(505)523-7982

Attention

For the convenience of retired WSMR military, civil servants and contractor employees living in the Las Cruces area, three local businesses have agreed to stock the Missile Ranger free of charge.

Starting today, Jon's Newsstand and Books, 605 East Lohman, the 7-11 Store at North Main and Madrid and Las Cruces Safe & Lock Co., 1906 Espina, will have the 'Ranger handy for those wishing to keep tabs on happenings at the national range.

In addition to the three listed businesses, a limited number of papers can be obtained at the Main Post Office, Las Cruces, on Fridays and at the Missile Ranger office, 1595 West Picacho, from Thursday evenings until the first part of each week.

Watch TV 3

SECURITY
IS...

A Fire, Money or Gun Safe

from

Las Cruces Safe & Lock Co.

N.M. License #21695
1906 Espina St.
Las Cruces, N.M. 88001

526-3771



Appointments Not Necessary For Styling

CITY BARBER SHOP

Conveniently Located At

1201 N. MAIN, LAS CRUCES

Not just a 'clip' joint
Concerned about your best looks
Specializing in Men & Women Styles
Henry Mirabel Nedra Mirabel

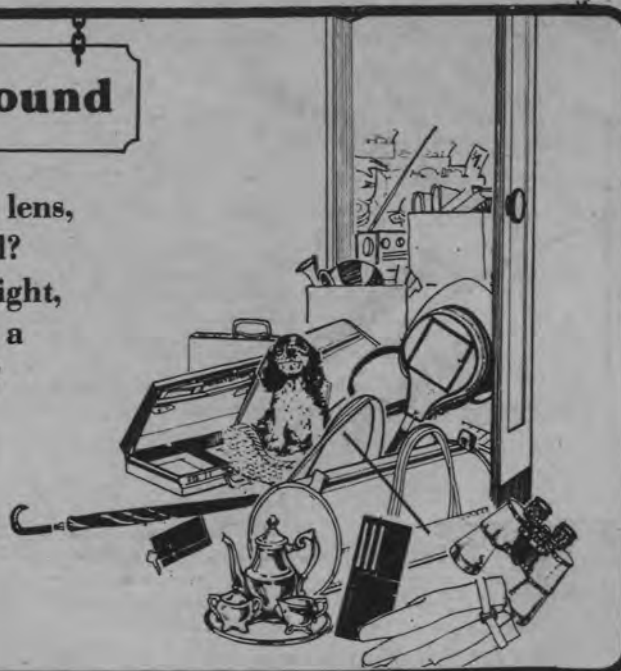


Lost & Found

Lost a lathe, a lens,
or a lunch pail?
Found a flashlight,
fishing pole or a
fatigue jacket?

The Missile Ranger now publishes FREE all lost and found items. The listings will be in the classified pages.

20 words or less, please



AARDVARK PEST CONTROL

Locally Owned by Veterans,
Operated by Veterans



**1210 LA FONDA
524-3777 LAS CRUCES**

Schwinn



OUR SPECIALTY SINCE 1948

Newmans Hardware

EXPERT REPAIR SERVICE-ALL MAKES

129 S. Downtown Mall

526-6441

Las Cruces

Our Hairstyles are Projections of Time —
Past, Present, Future. This is,
and will be the essence of

Team Hair Designs

Hairstyles by
Daniel P. Ruiz
(505) 522-1828

1494 So. Solano
Las Cruces, NM 88001

Anniversary, July 4th schedule of events

Help

First Aid and Lost and Found are located under the pavilion in Volunteer Park.

Buses

Buses for Condron Field and spots such as the Visitors Center, the NCO Club and Holland Pool leave from the Youth Center located just north of Volunteer Park.

Emergency phone numbers

Ambulance - 116; Military Police - 118; and Fire - 117.

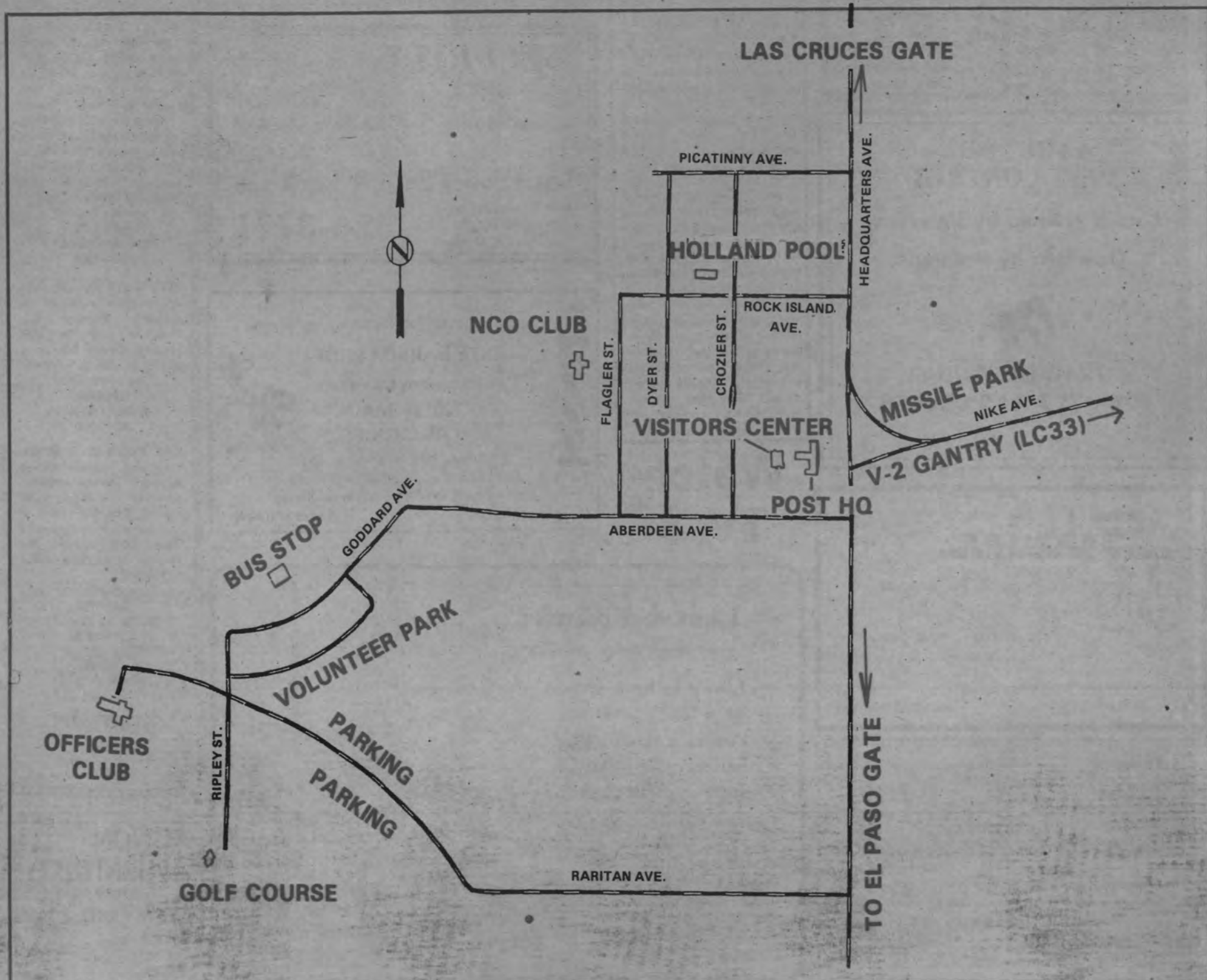
Photography

WSMR is a restricted installation where photography is allowed only in certain areas. On July 4, photography is unrestricted in Volunteer Park and around the Visitors Center. Photography is allowed in the Missile Park as long as the camera is aimed toward the Organ Mountains. In other words, the Organ Mountains should be in the background of any photo taken at Missile Park. Photography also will be allowed at LC33. Photos at the launch complex must be confined to just the gantry and Army blockhouse. While traveling to and from LC33, cameras must be stored and not used. No photography is allowed at Condron Field.



Times and Places

7 a.m.	Golf Tournament	Golf Course
7 a.m.	Family Fun Run	Bell Gym
8:30 a.m.	Horse Show	Range Stables
9 a.m.	Softball Tournament Finals	Goddard Field
9 a.m.	Skeet Shoot	Skeet Range
9 a.m.	Black Powder Shoot	Small Arms Range
10:30 a.m.	Parade	Housing Area
11 a.m.	Static Displays Open	Volunteer Park
11 a.m.	Food & Beverage Booths Open	Volunteer Park
11 a.m.	Swimming Pools Open	Clubs & Holland Pool
11 a.m.	Best Bet Jazz Band (until 2 p.m.)	Volunteer Park
11:30 a.m.	Concessions Open	Volunteer Park
11:45 a.m.	Air Police Helicopter Rappel	Volunteer Park
Noon	Aircraft Displays Open (Access by bus)	Condron Field
Noon	Shuttle Buses Start Running	Youth Center
Noon	Chili Cookoff	Volunteer Park
Noon	Visitors Center Open	Bldg. 122
Noon	LC33 Open	Nike Blvd.
2 p.m.	Raintree C/W Band (until 6 p.m.)	Volunteer Park
4 p.m.	Condron Field Closes	
5 p.m.	Confederate Air Force Flyover	Volunteer Park
5 p.m.	BBQ Dinner	O Club & NCO Club
5 p.m.	LC33 Closes	
6 p.m.	Swimming Pools Close	
8 p.m.	Showtime U.S.A.	Volunteer Park
9 p.m.	Fireworks	Volunteer Park



From Indian arrowheads to missiles

Within White Sands Missile Range boundaries may be found a fusion of the old and new in military defense of a nation, from Indian arrowheads to modern missiles and spacecraft.

The desert sands above which supersonic missiles now fly once knew the tread of Geronimo and his Apache warriors. Spanish explorers came this way from Mexico City, almost 40 years before the Pilgrims landed at Plymouth Rock. Billy the Kid and Sheriff Pat Garrett played cat and mouse, traversing dunes and arroyos during the bloody cattle wars which reached their bitterest climax right here in the Tularosa Basin.



Probably the single most significant event to occur here was the detonation of the world's first atomic bomb. At Trinity Site, 80 miles north of the missile range headquarters, scars of the historic blast are still visible on the desert floor. It was there, on July 16, 1945 that an incredible burst of light bathed the basin and a titanic explosion rocked the world into the atomic age.

The site is closed to the public, but the Alamogordo Chamber of Commerce, through the cooperation of WSMR, sponsors an annual tour to Trinity Site each October. The circle of Trinitite, the green glass formed when the bomb's blast fused the desert sand, has been crumpled, scattered and bulldozed under. Only a lava rock monument with a bronze plaque marks the spot where the nuclear age was born.

U.S. Highway 85, which follows the Rio Grande, is America's oldest road. It follows the original Spanish Camino Real, connecting Mexico City with Santa Fe, N.M. Blazed by Friar Rodriguez in 1581, Camino Real was travelled by Espejo the following year, and then in 1598, Don Juan de Ornate led his colonists over the route to Santa Fe. Eighty-two years later, descendants of Onate's colonists returned over the route in their tragic flight for their lives when the Pueblos revolted against Spain.

Some Historians hold that Cabeza de Vaca, who traveled from Florida to California circa 1536, followed a trail along the Pecos River to just north of Carlsbad, N.M. before entering what is now the missile range. His path led north to the Guadalupe Mountains, south of the Sacramento and then west through Oroganade to where post headquarters is today. Then his route passed over the Organ Mountains at San Augustine Pass and then continued on the west side of the San Andres Mountains into Jornada del Muerto.

The Santa Fe, Butterfield and Chisholm trails wove a new chapter of Southwest history as an expanding nation pushed west and tried to impose a more refined civilization. On the latter trail, which passed Ft. Stanton, near Carrizozo, N.M. is today, Colonel Christopher (Kit) Carson, with five companies of volunteers, operated against the Mescaleros. The campaign was bolstered with this order from higher headquarters: "Kill all Indian men of the Mescalero tribe wherever you find them." Women and

children were spared. The 100-mile radius of Carson's operations took in most of the present missile range.



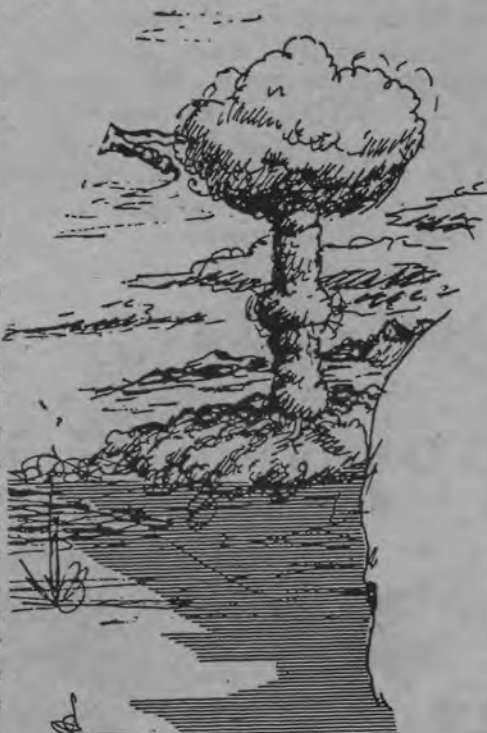
Geronimo, the Mescalero Apache chief, whose home was this area, and Dog Canyon, 20 miles east of the range, are synonymous with the last of the Indian wars. The Chief was a master of guerilla tactics and cost the United States \$38-million in attempts to thwart his band of fewer than 100 braves. From peaks surrounding Dog Canyon, Geronimo would observe approaching troops who were hunting him. The troops, tired, and often riding exhausted and shoeless horses, would be lured up the long, narrow and rugged box canyon. Then they were swept to the canyon floor by avalanches of rocks set in motion by the renegade chief and his warriors.

When not confronted with Indians, U.S. soldiers grappled with their Confederate counterparts. Major Isaac Lynde, Union commander, evacuated Ft. Fillmore, a few miles south of Las Cruces, to reach Union lines at Ft. Stanton, and traveled over the San Augustine Pass. His command, without water and struggling for miles to the rear, was surrounded by Colonel John R. Baylor's Mounted Rifles who picked up stragglers without resistance. Lynde's troops were in such disarray that when the cannons were turned to fire on the Confederates, there was nothing to fire because the ammunition was miles ahead in another part of the column. Outnumbering the aggressor, two-to-one, and holding the high ground, Major Lynde surrendered. While scarcely a shot was fired, the outcome was significant; the Confederacy needed gold to bargain with foreign merchants and now it was assured a large chunk of the mineral-laden Southwest.

The Lincoln County War, involving Billy the Kid and Sheriff Pat Garrett, became a gory conflict when a New Mexico cattle baron tried to drive one

Alexander McSween out of the county. The war attracted desperados from all parts of the Southwest, including the infamous Seven Rivers gang that sided with the baron. John H. Tunstall, an Englishman on the side of McSween and a friend of William "Billy the Kid" Bonney, was shot by a posse after surrendering his weapon. Billy the Kid, enraged, sought to right the wrong.

Boldly, the young cowboy inflicted, flirted with and escaped death in each scrape only to be caught eventually, and imprisoned in Mesilla, once the capitol of the New Mexico-Arizona territory. The courthouse in which he was held, tried and sentenced to be hanged, all in 1881, still stands at the corner of the Plaza where the Gadsden Purchase was confirmed in a flag-raising ceremony in 1854. Transferred to Lincoln County for execution, the Kid got away but was pursued and shot to death by Garrett. The Sheriff died violently, too, near Organ in 1908. A man named Brazel, claiming self defense, pleaded guilty to the shooting of Garrett and was acquitted.



For about 150 years, a nearby ranch has figured largely in Tularosa Basin history. The San Augustine Ranch has been refuge for pioneers, fort against Indians, inn of both fine and ill repute, haven for outlaws, scene of duels and one of the most successful cattle ranches. Its three-foot thick walls and protective patios hold many tales of yesteryear;

Jim Cox, the present owner, can point to mines, graves and other memorabilia which tell much about the Tularosa's wild and woolly days. It was the Cox family that moved to the site in 1888, and tamed excesses which drove scores of others away. Later they dealt 90 per cent of their land to the government for White Sands Missile Range.

was making the range safe for missilery,



a New Englander was making missilery safe for the world. Robert Goddard, the Father of Modern Rocketry, set off the first liquid fuel rocket near Worcester, Mass., in 1926. He set off others and their impact sometimes ignited fires. The Northeast's relatively cramped populace was apprehensive. Charles Linbergh convinced Goddard to move to the wide open spaces out West where his rockets would be less dangerous. Goddard came to Roswell, east of the range and spent more than a decade establishing record after record for altitude. His rockets of the early 30's were largely copied by German scientists in their V-1 and V-2 vehicles for World War II. Though his work was often scoffed, Goddard trail-blazed rocketry, especially gyro stabilization, deflector vanes for guidance, principles of thrust, landing devices, multi-stage launches and the mathematical theory for propulsion; his most advanced work occurred in proximity to today's missile range.

White Sands Missile Range opened July 9, 1945 and the first firing took place Sept. 26, 1945. The first intensive rocket program undertaken by this country commenced the following spring and continued until 1951. Sixty-seven captured V-2 rockets were fired; then we developed our own vehicles and the gates to modern missilery, defense and space opened.



Life on earth touched by Trinity test

by Jim Eckles

Trinity Site is where the first atomic bomb was tested at 5:29:45 a.m. Mountain War Time on July 16, 1945. The 19 kiloton explosion not only led to a quick end to the war in the Pacific but also ushered the world into the atomic age. All life on Earth has been touched by the event which took place 90 miles north of the range's main post.

The 51,500-acre area was declared a national historic landmark in 1975. The landmark includes base camp, where the scientists and support group lived; ground zero, where the bomb was placed for the explosion; and the McDonald ranch house, where the plutonium core to the bomb was assembled. Visitors to Trinity Site can now see both ground zero and the McDonald ranch house. This year the site will be open on July 16 for a 40th anniversary open house.

Manhattan Project

The story of Trinity Site begins with the formation of the Manhattan Project in June 1942. The project was given overall responsibility of designing and building an atomic bomb. At the time it was a race to beat the Germans who, according to intelligence reports, were building their own atomic bomb.

Under the Manhattan Project three

large facilities were constructed. At Oak Ridge, Tenn., a huge gas diffusion plant was built to separate uranium 235 from its more common form, uranium 238. Hanford, Wash. became the home for nuclear reactors which produced a new element called plutonium. Both uranium 235 and plutonium are fissionable and can be used to produce an atomic explosion.

Los Alamos was established in northern New Mexico to design and build the bomb. At Los Alamos many of the greatest scientific minds of the day labored over the theory and actual construction of the device. The group was led by Dr. J. Robert Oppenheimer who is credited with being the driving force behind building a workable bomb by the end of the war.

Theory

Los Alamos scientists devised two designs for an atomic bomb—one using the uranium and another using the plutonium. The uranium bomb was a simple design and scientists were confident it would work without testing. The plutonium bomb worked by compressing the plutonium into a critical mass which sustains a chain reaction. The compression of the plutonium ball was to be accomplished by surrounding it with lense-shaped charges of conventional explosives. They were designed to all explode at the same instant. The force

is directed inward, thus smashing the plutonium from all sides.

In an atomic explosion, a chain reaction picks up speed as atoms split, releasing neutrons plus great amounts of energy. The escaping neutrons strike and split more atoms, thus releasing still more neutrons and energy. In a nuclear explosion this all occurs in a millionth of a second with billions of atoms being split.

Project leaders decided a test of the plutonium bomb was essential before it could be used as a weapon of war. From a list of eight sites in California, Texas, New Mexico and Colorado, Trinity Site was chosen as the test site. The area already was controlled by the government because it was part of the Alamogordo Bombing and Gunnery Range which was established in 1942. The secluded Jornada del Muerto was perfect as it provided isolation for secrecy and safety, but was still close to Los Alamos.

Jumbo

One of the first things visitors see at Trinity Site is the hulk of Jumbo. The bomb design to be used at Trinity Site actually involved two explosions. First there would be a conventional explosion involving the TNT and then, a fraction of a second later, the nuclear explosion, if a chain reaction was maintained. The scientists were sure the TNT would explode, but were initially unsure of the plutonium. If the chain reaction failed to occur, the TNT would blow the very rare and dangerous plutonium all over the countryside.

Because of this possibility, Jumbo was designed and built in Ohio. Originally it was 25 feet long, 10 feet in diameter and weighed 214 tons. Scientists were planning to put the bomb in this huge steel jug because it could contain the TNT explosion if the chain reaction failed to materialize. This would prevent the plutonium from being lost. If the explosion occurred as planned, Jumbo would be vaporized.

Jumbo was brought to Pope, N.M., by rail and unloaded. A specially-built trailer with 64 wheels was used to move the trailer the 25 miles to Trinity Site.

As confidence in the plutonium bomb design grew it was decided not to use Jumbo. Instead, it was placed in a steel tower about 800 yards from ground zero. The blast destroyed the tower, but Jumbo survived intact.

Today it rests at the entrance to ground zero so all can see it. The ends are missing because of tests done later which involved trying to blow up Jumbo using TNT.

Ground zero, itself, is just a short walk to the north of the parking lot. A simple lava monument stands at ground zero and marks the spot where the 100-foot tower which held the bomb stood. The steel tower was anchored in the ground with concrete pilings. The explosion vaporized the tower but one of the pilings is still visible northwest of the monument.

The bomb was assembled under the tower on July 13. The plutonium core was inserted into the device with some difficulty. On the first try it stuck. After letting the temperatures of the plutonium and casing equalize the core slid smoothly into place.

Protective padding

On July 14 the bomb was raised to the top of the tower. As the bomb was being lifted by a slow moving hoist nervous workers stopped the operation. They drove to base camp and brought back as many mattresses as they could find. When the bomb raising continued they placed mattresses under it just in case it fell. Once on top of the tower the bomb's detonators were installed. Meanwhile, other technicians went about installing seismographic and photographic equipment at varying distances from the tower. Other instruments were set up for recording radioactivity, temperature, air pressure and other data. Many instruments had been calibrated on May 27, 1945 when scientists exploded 100 tons of TNT on a 20-foot tower just south of ground zero.

Observation points

Three observation points were established at 10,000 yards from ground zero. These were wooden shelters protected by concrete and earth. The south bunker served as the control center for the test. The automatic firing device was triggered from there as key men such as Dr. Robert Oppenheimer, head of Los Alamos watched. None of the manned bunkers are left.

Many scientists and support personnel, including Gen. Leslie Groves, head of the Manhattan Project, watched the explosion from base camp which was ten miles southwest of ground zero. All the buildings at base camp were removed after the test. Most visiting VIPs watched from Compania Hill, 20 miles northwest of ground zero.

The test was scheduled for 4 a.m. July 16, but rain and lightning early that morning caused it to be postponed. The device could not be exploded under rainy conditions because rain and winds would increase the danger from radioactive fallout and interfere with observation of the test. At 4:45 a.m. the crucial weather report came through announcing calm to light winds with broken clouds for the following two hours.

A new light

At 5:10 the countdown started and at 5:29:45 the device exploded successfully. To most observers the brilliance of the light from the explosion -- watched through dark glasses -- overshadowed the shock wave and sound that arrived later.

Hans Bethe, one of the contributing scientists, wrote "it looked like a giant magnesium flare which kept on for what seemed a whole minute but was actually one or two seconds. The white ball grew and after a few seconds became clouded with dust whipped up by the explosion from the ground and rose and left behind a black trail of dust particles."

Joe McKibben, another scientist, said, "We had a lot of flood lights on for taking movies of the control panel. When the bomb went off, the lights were drowned out by the big light coming in through the open door in the back."

Gen. Farrell, deputy to Gen. Groves, later wrote, "The effects could well be

Continued on page 5

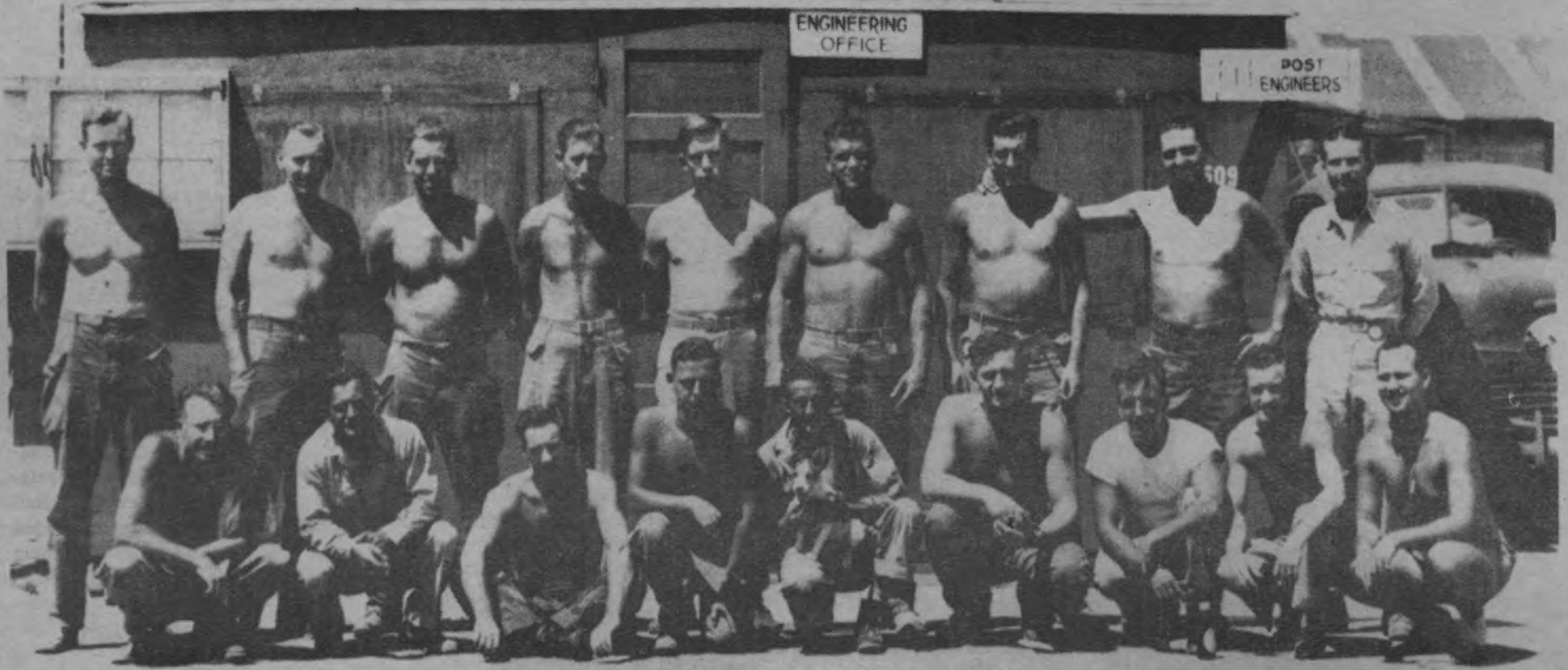


to WSMR and all its
employees & families



DYNASpan
SERVICES COMPANY

ARMTE SUPPORT CONTRACTOR



THE ENGINEERS WHO built and maintained the facilities at Trinity Site pose at base camp. The men are: (first row) Kilmer, Frenchie, Bentley, Leary, Spry, Raub, Kenny, Stockton, Rauldolph, (second row) Borden, Cox, Harrison, King, Bres, Zigler, Matthews, "Weedle-Walve," Capt. Gueary. The identifications on the men are from a scrapbook kept by Carl Rudder, one of the engineers who worked at Trinity. Rudder loaned his collection to White Sands so duplicates could be made. These men really preceded the scientists into Trinity and stayed long after the "long hairs" left. The scrapbook includes photos of men in winter parkas standing in snow at Trinity Site.

SINCERE THANKS

To The Personnel of White Sands Military Reserve on Your 40th ANNIVERSARY

We want to express our deepest appreciation to each one of you — military and civilian personnel alike — for the fine job you've done.

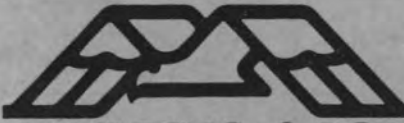
For the past 40 years you have given us a sense of security and an appreciation for the skill and knowledge with which you provide protection for this community and the nation.

Your scientists, engineers, technicians and all personnel devote their time and skills to the

advancement of science, and we especially applaud their achievements in the field of space.

As members of our community, you have contributed significantly to the growing economy of Las Cruces and the Mesilla Valley. You have proven to be good neighbors, good friends, and good customers.

We wish you happiness as you celebrate your 40th Anniversary. Congratulations!

 **MUTUAL**
BUILDING & LOAN ASSOCIATION F.A.
A STOCK CORPORATION
Las Cruces • Truth or Consequences • Anthony

Missile museum established 1955

A silent cluster of objects stands watch over Headquarters at the range. Mysterious monoliths seemingly frozen in time and space, which together form the nation's first outdoor "missile museum."

The park, a triangular shaped area at the intersection of Headquarters and Nike Avenues, was established in 1955. It contains actual examples and models of many of the missiles and rockets tested at the range.

The collection of Army, Navy and Air Force missile and rocket systems is displayed in typical firing attitude and is the focal point of interest of visitors to the range. It is the only place on post where visitors are allowed to take pictures.

The different rockets and missiles exhibited in this unique outdoor museum represent extensive test programs conducted at the desert installation since its establishment some 35 years ago.

The first three missiles that started the park were the German V-2, the American version of the German V-1 (known as the Loon), and the U.S. Army's Nike I, later known as the Nike-Ajax.

Holding center stage in Missile Park is a German V-2, one assembled from carloads of parts brought to the New Mexico missile range from Europe at the end of World War II. The V-2 was built by the Germans from findings of Dr. Robert Goddard, who did pioneer testing during the early 1930's near Roswell, N.M.

The V-2 experimental program during the early years of WSMR provided the basic research for America's array of modern missiles and rockets and for placing men on the moon less than 25

years later. America's missile program began in earnest on April 16, 1946 when the roar of the first V-2 shattered the desert stillness as it lurched from its make-do launch pad and careened across the sky.

Between then and June 28, 1951, a total of 65 reassembled V-2s were launched on White Sands range and two from ships at sea. During the program, the V-2 was used for hundreds of experiments and set numerous records, chiefly because it was the vehicle for the nation's first missile program. A V-2 with a WAC Corporal mounted on its nose was the world's first two-stage missile. One of these two stage rockets, on Feb. 24, 1949, set an altitude record of 244 miles. That was America's first step towards the moon.

Nike Ajax was America's first guided anti-aircraft missile. It was first tested at WSMR in October 1951 and became fully operational May 30, 1954. It was the world's first supersonic guided missile to become operational and 10 years later, in November 1964, the pen-shaped Ajax which had a "one shot kill" potential was withdrawn from active duty.

Other members of the Nike family in the park are Nike Zeus and Hercules.

Nike Zeus was the U.S.' original anti-ICBM missile system to reach advanced development. It was designed for defense against ICBM's and intermediate range ballistic missiles that could be launched against heavily populated areas, industrial centers and strategic military points.

The Nike Hercules was the U.S.' primary high altitude air defense weapon. The weapon was used successfully against high performance aircraft at a variety of altitudes.

Within a couple of years, a dozen or more missiles had been installed in Missile Park, each donated by the contractor who built and owned it.

Although the V-2, Loon and Nike Ajax were charter members of Missile Park, they were not the first missiles flown on the White Sands range. That honor belongs to a war-time Tiny Tim, modified to simulate a WAC Corporal and developed to probe the upper atmosphere. The Tiny Tim was launched Sept. 26, 1945.

Soon to join the ranks of weapons in the outdoor showcase was the Navy's Aerobee Hi sounding rocket used for upper atmosphere studies. Still a vital support vehicle today, Aerobee was first flown in 1947 and broke its own altitude record for a single-stage boosted rocket 10 years later, on April 10, 1957, when it zoomed to 190 miles. Through the years, Aerobee has kept pace with science and today supports numerous programs including several for the National Aeronautics and Space Administration.

Another making an early debut in the park was the Army Corporal, the tall, slim ballistic missile which preceded the Sergeant. Standing 45 feet tall, Corporal had a range of approximately 75 miles compared to some 400 miles for the Pershing. Corporal followed a ballistic trajectory and had a propulsion system

that utilized a liquid propellant rocket motor.

In addition to missile history, the WSMR Park-museum serves as a monument to missile progress. During late 1966 and early 1967, four of the United States' newest missile systems were added to the collection. These were the Army's long range Pershing, the Air Force Athena and Navy's Tartar and Terrier fleet air-defense missile.

The two-stage Pershing was first tested at WSMR in August 1963. Today operational in the Western World, the highly mobile Pershing is test fired from sites in southeastern Utah and impacts on the White Sands range some 400 miles away.

The Air Force Athena is one of the most dramatic missiles in the park. Named for the Greek goddess, Athena is a research vehicle to study atmospheric reentry phenomena and not a weapon. During the 1960s the 50 foot tall Athenas were launched in Green River, Utah, and impacted on the WSMR range. On reentry to earth's atmosphere over White Sands after its 400 mile flight, Athena puts on a spectacular show that is visible hundreds of miles. The first Athena was launched in 1964.

The Navy Tartar and Terrier took their places with the Talos in the southwest corner of the park in February 1967. Developed at WSMR by the Naval Ordnance Missile Test Facility (NOMTF), the sister missiles have been combined to form the Navy's long and medium range Standard missiles. Terrier, a two-stage system weighs approximately 3,000

Continued on page 6





THIS UNIDENTIFIED SOLDIER stands in the crater long after the Trinity explosion. To his left is a footing from one on the legs to the 100-foot tower which held the first atomic bomb. The tower was vaporized in the explosion but the footings, which were concrete and steel and buried in the ground, survived. At one time the crater floor was a fairly smooth surface of melted sands called Trinitite. In a photo taken in Sept. 1945 with Groves and Oppenheimer visiting ground zero, that glassy surface was still intact. It is obvious in the photo above that the Trinitite is all broken. Later it was graded and covered in an attempt to reduce radiation at the site. Part of one of the footings is still visible at ground zero. (photo by Carl Rudder)

All life touched by Trinity Site test

Continued from page 2

called unprecedented, magnificent, beautiful, stupendous, and terrifying. No man-made phenomenon of such tremendous power had ever occurred before. The lighting effects begged description. The whole country was lighted by a searing light with the intensity many times that of the midday sun."

Although no information on the test was released until after the atomic bomb was used as a weapon against Japan, people in New Mexico knew something had happened. The shock broke windows 120 miles away and was felt by many at least 160 miles away. Army officials simply stated that a munitions storage area had accidentally exploded.

The explosion did not make much of a crater. Most eyewitnesses describe the area as more of a small depression instead of a crater. The heat of the blast did melt the desert sand and turn it into a green glassy substance. It was called Trinitite and can still be seen in the area. At one time Trinitite completely covered the depression made by the explosion. Afterwards the depression was filled and much of the Trinitite was taken away by the Nuclear Energy Commission.

To the west of the monument is a low structure which is protecting an original portion of the crater area. Windows are built into the shelter and some Trinitite is visible through them.

George McDonald ranch house

The George McDonald ranch house site encompasses about three acres and

consists of a house and various outbuildings. The house sits with an 85' x 85' low stone wall. The house was built around the turn-of-the-century with an addition constructed on the north side in the 1930's.

The ranch house is a one-story, 1,750 square-foot building. It is built of adobe which was plastered and painted. An ice house is located on the west side along with an underground cistern which stored rain water running off the roof. At one time the north addition contained a toilet and bathtub which drained into a septic tank northwest of the house.

There is a large, divided water storage tank and a Chicago Aeromotor windmill east of the house. The scientists and support people used the north tank as a swimming pool during the long hot summer of 1945. South of the windmill are the remains of a bunkhouse and a barn which was part garage. Further to the east are corrals and holding pens. The buildings and fixtures east of the house have been stabilized to prevent further deterioration.

The ranch was abandoned in 1942 when the Alamogordo Bombing and Gunnery Range took over the land to use in training World War II bombing crews. The house stood empty until the Manhattan Project support personnel arrived in early 1945.

Inside the house the northeast room was designated the assembly room. Work benches and tables were installed. To keep dust and sand out of instruments

and tools, the windows were covered with plastic. Tape was used to fasten the edges of the plastic and to seal doors and cracks in the walls.

The assembly room was used by the scientists to put together the two hemispheres of plutonium, or P-239, and an initiator. According to reports, while the scientists assembled the initiator and P-239 hemispheres in the small room, jeeps were positioned outside the house for a possible quick getaway if problems arose. Detection devices were used to monitor radiation levels in the room as the core was assembled. The core created its own heat and was warm to the touch. When the core was completed it was driven to ground zero where it was placed in the bomb assembly.

The explosion did not significantly damage the house. Most of the windows were blown out, but the main structure was intact. Years of rain water dripping through holes in the roof did much more damage. The barn did not do as well. During the Trinity test the roof was bowed inward and some of the roofing was blown away. The roof has since collapsed.

The house stood empty and deteriorating until 1982 when the U.S. Army stabilized it to prevent any further damage. Shortly after, the Department of Energy and U.S. Army provided the funds for the National Park Service to completely restore the house. The work was done in 1984. All efforts were directed at making the house appear as it did on July 12, 1945.

After the blast

The story of what happened at Trinity Site did not come to light until after the second atomic bomb was exploded over Hiroshima, Japan, on August 6. President Truman made the announcement that day. Three days later, Aug. 9, the third atomic bomb devastated the city of Nagasaki, and on Aug. 14 the Japanese surrendered.

Trinity Site became part of what was then White Sands Proving Ground. The proving ground was established on July 9, 1945, as a test facility to investigate the new rocket technology emerging from World War II. The land, including Trinity Site and the old Alamogordo Bombing Range, came under the control of the new rocket and missile testing facility.

At first Trinity Site was encircled with a fence and radiation warning signs were posted. The site remained off-limits to military and civilian personnel of the proving ground and closed to the public.

By 1953 much of the radioactivity at Trinity had subsided. In September about 650 people attended the first Trinity Site open house. A few years later a small group from Tularosa visited the site on an anniversary of the explosion to conduct a religious service and prayers for peace. Similar visits have been made annually in recent years on the first Saturday in October. The visits are now made in October because it is generally so hot in July on the Jornada del Muerto.

'Missile museum' established

Continued from page 4

pounds and has a 15-mile range. The single-stage Tartar has a 10-mile range.

Claiming the title of the largest missile in the museum is the Army's Redstone which towers above all its cohorts. The 30-ton, 69-foot Redstone was replaced by the Sergeant and Pershing which are more mobile and adaptable as tactical weapons. However, Redstone is still fired in Australia. The liquid-fueled missile is a sister model of the propulsion vehicle that carried Commander Shepard, U.S. Astronaut, on America's first manned space flight.

The Missile Park's smallest missile, although not the smallest in existence, is the Loki which is still used for research, usually in combination with other missiles. the Loki frame measures 103 inches long and three inches in diameter and it weighs approximately 24 pounds.

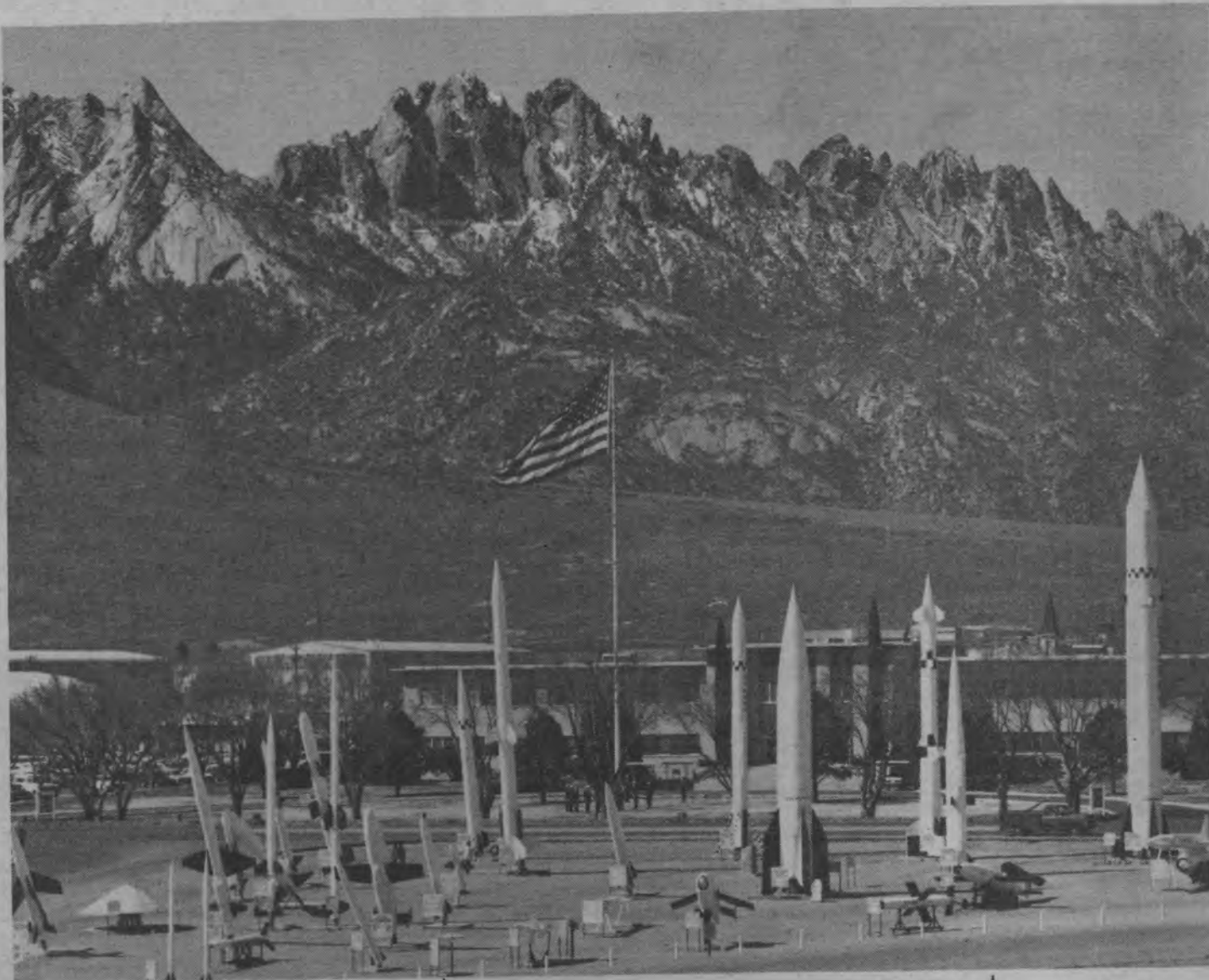
Also displayed in Missile Park is a bronze memorial plaque commemorating the visit of the late President John F. Kennedy to the National missile range in June 1963.

Recent additions to the park included and Army Lance artillery (surface-to-surface) missile, an Air Force SAGMI (Surface Attack Guided Missile), and Air Force Hound Dog air-to-ground missile and a NASA "flying saucer."

The Lance, designed to replace the Honest John and Sergeant artillery systems, is the first Army missile to utilize a prepackaged, liquid propellant. the Lance travels at supersonic speed and has a simplified inertial guidance system.

The SAGMI, produced by the Beech Aircraft Corp. for the Air Force, is 16.7 feet long and a fraction over one foot in diameter. It has a wing span of 3.3 feet. The SAGMI was first fired at the range in April 1972.

The Air Force first tested its Hound Dog air-to-ground missile at White Sands in 1960. In 1964 this large and highly



MISSILE PARK WAS established in 1955 and is the only place on post where visitors are allowed to take pictures. The park serves as a monument to missile progress, and is open daily.

accurate system made history when it was launched from a B-52 bomber in flight over Del Rio, Tex., and guided to impact on the range.

Among the displays in the park is a cone-shaped item know as the Pep Shell. It is said the Pep Shell resembles a small flying saucer. It is aluminum parafoil, or lifting body, that was dropped from

a balloon and impacted on the range in a test conducted by the National Aeronautics and Space Administration.

Other items acquired and soon to make their appearance in the park are the Army's Redhead/Roadrunner target missile, the Army's Cardinal target drone, a mock-up version of NASA's Mars Viking lander.

The missile museum is open daily with limited parking allowed around the perimeter of the park, except on Headquarters Avenue. Restrooms and drinking fountains are located in the Headquarters building directly across Headquarters Avenue from the park. Plans are now under way to expand the park northward toward the Las Cruces gate.

Congratulations W S M R the KNIFE SHOP Sportsman's Center

- Knives & Hatchets
- Kitchen Section
- Darts & Boards
- Martial Arts Supplies
- Fencing Equipment
- Archery Supplies
- Mt. Man & Blackpowder
- Trapping Equipment
- Guns, etc.
- Hunting Supplies

also

"Special gifts for special people"

- Special Orders

"Same old knife shop...new location"

919 New York Ave • 434-3596/434-2391

Alamogordo



Congratulations On 40 Years Of Service And Success.

Todd Travel

106 S. Water Las Cruces 523-6000

Many legends, dangers surround Victorio Peak

Located within the present boundaries of White Sands Missile Range is the Hembrillo Pass of the San Andres Mountain Range. Over the years, many legends have been circulated about a fabulous treasure trove hidden in the Hembrillo Basin. Most legends say the treasure is hidden either near or within the bowels of a small mountain known as Victorio Peak.

This small mountain, named for the Apache Chief Victorio, is in a tract of land owned by the state of New Mexico and leased to the Department of Army for exclusive use. It is in a missile impact area of WSMR and is also used by the Air Force for aerial gunnery practice. Admittance is prohibited without prior approval of the Army due to the dangers presented by the range's test activities in the area.

While there have been, and still are, many persons who lay claim to the purported gold treasure, there also are many legends as to how the treasure came about in the first place. Some of the stories follow.

The Lost Padre Mine

In this legend, the word "lost" may be applied equally to either "Padre" or "mine".

This most frequently told story has it that a French Jesuit priest named Felipe La Rue was a missionary assigned in 1796 to a village near the present city of Chihuahua, Mexico.

La Rue eventually led a small group of followers north to either the area of the Franklin Mountains near El Paso, or the Organ Mountains near Las Cruces. There, he and his followers discovered a rich gold deposit and mined the site for several years.

When Spanish and church authorities learned of the gold (there is no indication how), soldiers were sent from Chihuahua to confiscate the treasure. Alerted to the soldiers' plan, La Rue supposedly hid the gold in a mountain cavern and claimed it belonged to his followers, not the state or church. The soldiers reportedly tortured La Rue and his followers to learn the location of the gold but could not convince anyone to divulge the secret.

In the end, all of La Rue's party were killed leaving a legend of not just a lost mine but also a lost treasure trove.

Indian Gold

A less involved legend says the treasure was placed in Victoria Peak by Indians who accumulated gold and other valuables during the early years of encroachment by the White Man. Some of the claimants to the treasure, which will be discussed later, reported finding a treasure room with 27 skeletons, stacks of gold bars, Wells Fargo chests and Indian artifacts.

Villa's Gold

Some stories indicate the cache was the personal property of Mexican General Francisco "Pancho" Villa, the Mexican revolutionary at the turn of the century. The gold and other valuables, which could have been gained through plunder and confiscation, were hidden in the vicinity of El Paso and intended to help finance Villa's operations.

It also is rumored that the source of a gold stash could have been a fabulous pay-off to Villa by the Germans. In return, Villa would attack the United States (as he did at Columbus, N.M.) and perhaps, from Germany's point of view, draw the U.S. into a war with Mexico. This, then, would keep the U.S. occupied and slow to get involved in World War I.

Patton's Gold

Yet another legend says there were fabulous treasures discovered by General George Patton as Nazi Germany fell in World War II. These treasures were transported and stashed in New Mexico after the war ended.

This treasure, according to some, was to be safeguarded until needed for some reason by the armed forces. Supposedly, the treasure could then be drawn upon during times of severe cuts in the national defense budget.

Whose Gold?

Over the years, many people have searched for the legendary treasure. Some claim to have actually seen the cache where gold bars are "stacked like cord wood." Without fail, however, some misfortune prevented the finders from removing large quantities or relocating the gold after an initial discovery.

While there are varied legends about the possible source of a treasure trove, there are also varied stories about those who claim it.

Milton Earl "Doc" Noss

Perhaps one of the first modern day claimants to the alleged treasure trove

in the San Andres was "Doc" Noss, a self-styled foot doctor, prospector, sooth-sayer living in Hot Springs (now Truth or Consequences). The year was 1937 and Noss was hunting deer near Victorio Peak.

During a sudden rainshower, he claimed to have taken shelter in a cavern. Following the opening as far as 300 feet down a narrow shaft, Noss reportedly discovered a vast underground cavern "big enough to hold a freight train". In the cavern were hundreds of gold bullion bars, "stacked in rows like cord wood."

In addition, Noss said the cavern contained many artifacts, the remains of several Wells Fargo chests and 27 skeletons chained to heavy wooden posts. Noss would later refer to his find as the "Padre's Gold". He did not immediately make his find widely known.

During the next two years, Noss allegedly removed some 88 bars of gold weighing about 60 pounds each, a crown and a miniature gold statue.

In 1939 while attempting to widen the narrow shaft leading to the treasure cavern, Noss and a helper caused a cave-in that closed the passage. Though he reportedly worked for some 10 years afterward on clearing the collapsed passage, and gained financial assistance from numerous benefactors, Noss was never able to reenter the alleged treasure room.

One of the investors brought into the claim by Noss eventually proved to be his killer. Charles Ryan, the owner of a construction and oil drilling company, shot and killed Noss in 1949 after the two argued over Noss's failure to produce gold bars as promised. Ryan had invested some \$28,000 in Noss' "treasure". Ryan was later acquitted on the grounds of self-defense.

Leonard V. Fiege

In 1958, Leonard V. Fiege was an Air Force officer assigned to Holloman Air Force Base. While hunting in the Victorio Peak area, Fiege claimed he entered a small hole in a crevice and eventually

Continued on page 8



Congratulations for Forty Years of Progress

WARRANTY SERVICE CENTER BEAR AND JENNINGS ARCHERY

Bow Repair - Tuning - Custom Arrows - Straightening
Bear Sports Club Valuation Center
Bear Hunting Council for N.M.
Indoor Range

Dealer; Bear - Jennings - Pse - Golden Eagle - Ben Pearson

Powder Horn

213 Tenth Street • Alamogordo, N.M. 88310

Stu Ware

Home: 434-2592

1-505-434-3774

10% off on Archery Supply Equipment if you bring in ad during July

Congratulations

40th WSMR 40th

We won't send you to the party with a girdle over your ribbed longies! — Someone might laugh...



Shop with confidence at

THE TREND SHOP

the sensible place for better Men's and Women's Clothing.

910 New York Ave. Alamogordo

437-3909

Many legends, dangers surround

Continued from page 7

emerged in a large underground cavern filled with stacks of gold bars. Fearing someone else might discover the opening, he claimed to have filled up the hole and planned to secure permission to remove the gold.

Fiege and several others requested permission to search for and remove the Victorio Peak gold from the commander of White Sands Missile Range. Permission was denied initially, but an appeal to higher military authorities later secured approval for a five day excursion in 1961.

During this five day period, Fiege could not relocate the cavern entrance. By pressing his claim further to the Treasury Department and the Assistant Secretary of Army, Fiege gained authorization for an additional three month search period in late 1961.

Fiege had still not found the cavern when this second search was terminated prematurely by Mrs. Ova Noss ("Doc" Noss' first wife) when she filed a protest claiming that the Army was stealing her gold by such search action. Fiege left Holloman some time later.

Gaddis Mining Co.

By 1963, the Museum of New Mexico had been named custodian of the state-owned land in light of the escalating treasure claims. During that year, the museum obtained permission from the Army to make a search for the legendary gold. A contract was drawn up with the Gaddis Mining Company of Denver, Colo.

A 30-day exploration began in July with the Gaddis company using heavy mining equipment and some 25 to 30 men. Shafts were opened, core samples taken and seismographs provided readings.

When nothing was found by the end of the original 30-day search period, an additional 30-day extension was granted. By the end of 60 days, the museum had paid out \$250,000, the Gaddis Mining Company packed up and left and the legend lived on. No gold was found.

Ova Noss

Over the years until near death in 1980, Mrs. Ova Noss carefully watched legal and physical activities surrounding the Victorio Peak area and the alleged treasure trove. Mrs. Noss claimed to have seen first hand gold and other artifacts "Doc" Noss said he removed from Victorio Peak.

In August of 1973, she filed a suit in U.S. District Court against the Secretary of the Army, the commander of White Sands Missile Range, the State of New Mexico and unknown parties, alleging all were illegally taking property belonging to her from the Victorio Peak area.

Seeking damages in excess of a billion dollars, the suit listed the property as enormous amounts of gold bullion, gold coins and religious artifacts. This suit was dismissed, however, in December of 1973.

State of New Mexico

In the early fall of 1974, the State of New Mexico brought a suit against the Secretary of the Army and others seeking entry to the range to search for treasure at Victorio Peak. Under the land lease arrangements, the State enjoyed ownership rights to that parcel of land, but the Department of the Army had rights of exclusive use.

Therefore the State was unsuccessful. The U.S. District Court for the District of New Mexico ruled that concurrent consent was a necessary prerequisite for entry of any treasure seekers into the Victorio Peak area.

Expeditions Unlimited, Inc.

During the historic Watergate hearings, former White House Counsel John Dean testified about conversations regarding an alleged treasure trove in New Mexico. Much publicity was given to his remarks and the heat of gold fever intensified. In 1976, a firm known as Expeditions Unlimited, Inc. (EUI) of Pompano Beach, Fla., sought permission to search for the treasure trove. EUI first obtained the consent of the State of New Mexico and the Museum of New Mexico. Then approval was granted from the Department of Army and the commander of White Sands Missile Range.

EUI was to be allowed to search for the treasure on behalf of numerous claimants to the gold. The purpose, from both EUI's and the Army's point of view, was to either confirm the presence of a treasure trove or put the legend to rest.

Unfortunately, neither goal was achieved. The EUI permit was for a 10-day electronic survey of the Victorio Peak

area. Stanford Research Institute of California was contracted by EUI to provide mapping of underground features by use of ground radar. After several postponements, the search was finally conducted during March of 1977.

At the end of the search, however, no gold had been located. All the claimants represented by EUI had an opportunity to verify their reported location of the treasure trove, but no one succeeded. A detail report of EUI's survey and the underground features of Victorio Peak is contained in a paper published by Stanford Research Institute in 1977. No gold was located by EUI nor could any of the various claimants' stories be confirmed.

However, the ground radar survey reportedly did show the possibility of a large underground cavern. The cavern, if it exists, cannot be readily reached through any of the existing shafts, however. Those observing EUI's search included Mrs. Ova Noss and Leonard Fiege, as well as state officials and other claimants.

References

This general information is provided as a public service to those interested in the Victorio Peak gold legend. As with all legends, much of the information is based on hearsay and speculation. Wherever possible, dated and persons involved have been confirmed through existing records of searches.

Throughout the years, the White Sands Missile Range's position has been that of an observer and as custodian of the land area in which Victorio Peak is located.

For more information, interested persons may want to read the following books: "The Curse of the San Andres" by Henry James; "History of the Mesilla Valley" by H. Griggs; "Coronado's Children" by J. Frank Dobie; "100 Tons of Gold" by David Leon Chandler; and "A Soldier's Story" by General Omar Bradley.



T-Shirts, Caps,
Jackets, Decals,
Bumper Strips, Signs,
Banners, etc.

SOUTHWEST SCREEN PRINT
Call for appointment 523-5172



Paintings - Prints - Posters - Matting & Framing
also
Jewelry - Crafts - Pottery Workshops & classes in the Arts
207 Avenida de Mesilla
1 block west of Main at Idaho
523-0014

A Special thanks
to our friends at
White Sands Missile Range
on your 40th Anniversary



Sun City Furniture

437-5379

Alamogordo

1/2 Mile From Overpass On Hwy 54 South

**Greetings
to all our friends
at WSMR**



**Hayden's
Hardware
Inc.**

Hayden's is the Ace place

1210 Foster Rd.
522-7220
Las Cruces



Many stories detail origin of Las Cruces' name

There are many stories of the origin of the name "Las Cruces". One generally assumed for the truth tells of the first European who came north over the route later named Camino Real. The European found three graves marked with crosses. There was no clue as to who was buried there or who had marked the graves with Christian crosses in a land inhabited only by heathens. The uncanny find raised other questions. From where did the Christians come? Did one survive to bury the dead? Where did the survivor go?

The city of Las Cruces continues to mark the site with three large crosses which are lighted during Christmas and Easter seasons.

The legend supports the more recent contention that Cabeza de Vaca actually did pass through the Mesilla Valley about 44 years after Columbus discovered America.

Below Las Cruces, just off Interstate 10 near New Mexico State University, lies the Indian village of Tortugas, which means "land turtle", a native desert species. Guadalupe, as the Indians pre-

fer to call their village, was settled by Tigua Indians composed of two pueblos, the Guadalupe Pueblo and the San Juan Pueblo. The several hundred people are of mixed Indian and Spanish descent with very few pure-blooded Indians among them.

The Tiguas of Guadalupe (Tortugas) can trace their ancestry to Isleta del Sur and back to the Pueblo Isleta. Just when the Tiguas came to the Mesilla Valley is unknown. However, some of the elders say they have been told that when the Pueblo Indians revolted against the Spanish conquerors in 1680, the Tiguas were among the Indians from Isleta near Al-

buquerque, who fled for safety to the Guadalupe Mission in what is now Juarez, Mexico.

According to tribal history, some of the Tiguas found new homes in the Mesilla Valley while others travelled on down the Rio Grande to the area of Ysleta, Texas — the lower outskirts of El Paso. Consequently, there are two legends. However, they have no records of blood ties.

In 1967 the Tigua Indians were officially recognized as an authentic Indian tribe. Until that time, these people had no standing or rights as American Indians.

Custom work for WSMR military,
contractor units our specialty

Your One Stop Custom Shop



Las Cruces, NM 88001

CUSTOM TOPPER

Factory Showroom

Unique Customizing Especially For You!!

Immediate Installation

- Rovel
- Fiberglass
- Metal
- Financing Available
(Locally Manufactured)



523-6458

1114 E. Lohman

• Ample Parking (Also Located In El Paso)

- *Slide-In Interiors
- *Lightweight & Streamlined
- *For Appearance & Mileage



Four Decades of Progress!



Congratulations W S M R

DEL

Design Engineering Labs

2545 West 237th Street

Torrance, California 90505

(213) 530-4711

WE WRAP, PACK & SHIP...

ANYTHING TO ANYWHERE!

★ VIA: UPS, FEDERAL EXPRESS, PUROLATOR COURIER, EMERY, AIR AND GROUND FREIGHT CARRIERS AND BUS LINES.

★ OVERSEAS SHIPPING TOO!

★ EXPRESS MAIL CENTER
(overnight delivery to anywhere)

★ COMPLETE PACKAGING SERVICE
(packing supplies available)

★ SEND OR RECEIVE MONEY
IN 15 MINUTES

Western
Union
Agency



ALLIED
SERVICES

1215 EL PASEO
BRAZITO PLAZA

523-6315, 525-2553
Mon.-Fri. 9-6 Sat. 10-2



COL. HAROLD TURNER, seated center, the first commander at White Sands, poses with his staff in 1945. The building behind the group is the first headquarters building.

OUR SINCERE APPRECIATION

To The Personnel Of WSMR On The Occasion Of Your

40th Anniversary WSMR

If it were possible, we would like to meet each of you - military and civilian personnel - and express our deepest appreciation for a job well done.

Your engineers and your scientists - your technicians and all personnel - devote a lot of time and skill to bring us additional safety and protection. Your achievements in the field of space are something at which we all marvel.

And, your presence has contributed greatly to the economy of Las Cruces and the Mesilla Valley. You have proved good neighbors, good friends and good customers.

We wish for each of you a most happy Fortieth Anniversary.

Ikard and Newsom, Inc.

Las Cruces, N. M.



WSMR formerly a ranch

Various rendered as San Augustin, San Augustine and San Agustin, the land on which much of White Sands now stands was a prime part of the San Augustin Ranch, which was owned and operated by Mr. and Mrs. James W. (Jim) Cox, whose son and family now live in the old ranch house just two miles outside of the missile range boundary.

Named for the landmark peak and pass of the Organ Mountains through which today's U.S. Highway 70 passes, the ranch has been an intricate part of history and development of the west for more than 150 years.

While daily activities at WSMR write new pages in history, Jim Cox's San Augustin Ranch sits in retirement though not in total disuse. The house and grounds abound in history, a reflection of the old contrasted with new, a part of the past overshadowed by the present, the space age with missile testing on its doorstep.

Livestock still graze on the reduced acreage but Cox's herds are today a far cry from the thousands that ranged the original spread. Mr. Cox sold about 90 per cent of his 105,000 acres of land to the Army. It is now a prime part of White Sands Missile Range.

The design of the Cox ranch house has changed little in the past half-century. Its three-foot thick walls and protective patios are evidence of the mood of the land in the days it was built. Then,

home owners built in as much defense as possible. The old fort-home of the missile range's nearest neighbor was built to withstand assaults by roaming Apaches and murdering desperados.

The site of the house was once the only water hole between El Paso and Tularosa. A hillside of lush cacti and grass marks the location of the five San Augustin springs which flow from the edge of the mountain. Seven or eight small areas are identified as graves whose histories are buried along with the people. Although two headstones remain, only one story is known -- that of a girl who was buried in what is now the Cox corral.

Rancher Cox

Rancher Cox, the man of the San Augustin Ranch since 1895, knows much of the story of the house and area. There are tales of the San Augustin Inn, San Augustin Hotel and scraps of history about the girl buried in the ranch corral. The stories form a cross-section of Southwest history and bring to life happenings of the past 125 years.

In the late 1840s a tall personable young man, Thomas J. Bull of Indiana, returned to the Mesilla Valley to make his fortune. He had previously marched through the area enroute to Mexico City as a Quartermaster Clerk with the American Army in 1846.

Continued on page 16



UNTIL THIS PICTURE came to light there was some controversy about men swimming in the water tanks at the McDonald ranch house in 1945. One of the popular stories about Trinity Site was that the men cooled off after a hot day by taking a dip in the water tank. Some people doubted the story and said it was not true. This photo by Carl Rudder clearly shows men swimming in the north water tank at the George McDonald ranch house.

We Salute Those Who Are Making History...

It's a genuine privilege for us to salute those who are making history...at White Sands Missile Range.

Each of you have a duty to perform...from the beginner, the clerk, the sentry - the scientist...each of you stand guard over our country and contribute greatly to the protection and welfare of this nation.

Today, each of you perform a duty that is a link in the chain of vital force that is providing protection for all of us...each a part of the pioneering of the most fabulous frontiers in man's history.

We are, indeed, proud to serve you...honored to have you among us. We are thrilled that the wonderful awe-inspiring advances of our space-conquering age are in the hands of people like you!

*We Offer A Linen Service As Modern
As The Field In Which You Are Serving....*

AMERICAN LINEN SUPPLY

525 N. Church

Las Cruces, New Mexico

Hot on Las Cruces®

SERVING ALL YOUR FINANCIAL NEEDS

Regular Checking

Opening deposit of \$200.00 minimum. Balance under \$500.00 has a \$6 service charge. Over \$500.00, no charge.

Commercial Checking

Opening deposit of \$200.00. Balance under \$500.00 has a \$6 service charge. \$0.15 per check charge and \$0.25 earnings credit per \$100.00 of minimum balance.

Truncation Option

Applies on both regular and commercial accounts. No service charge on a balance over \$300.00. Under \$300.00 has a \$6 service charge. Checks are not returned to the customer.

24 Karat Club

Free Banking Services. Travel Discounts. Seminars and Financial Counseling. Minimum balance of \$5,000.00 in a checking, or \$10,000.00 in a savings, or \$15,000.00 in any interest-bearing account. (For Women Only)

Super Now Account

A \$1,000.00 minimum balance pays a variable interest rate. Under \$1,000.00 minimum balance is service charged \$6 and earns no interest. 20 checks per month free.

Cash Management Account

A minimum balance of \$2,500.00 earns interest based on the T-Bill rate. From \$2,499 to \$1,000 earns the current Super Now rate and is service charged \$10. Under \$1,000 earns no interest and is service charged \$10. CMA — Allows 3 checks and 3 internal transactions per month.

Savings Account

Opening balance of \$200.00 earns interest at 5½%. Under \$200.00 has a \$2 service charge per month.

Loan Services

Commercial Letters of Credit, Commercial Business Loans, Small Business Administration Loans, Agriculture Loans, Commercial Real Estate Loans, Construction Loans, Real Estate Mortgage Loans, Personal and Auto Loans, Home Improvement Loans

Customer Services

Traveler's Checks, Fund Transfers, Notary Services, Cashier's Checks

Collection Services

Checks/Dealer Drafts, Stocks/Bonds/Coupons, Foreign Currency Exchange

Investments

Certificates of Deposit, Safekeeping Services, Individual Retirement Accounts

**AUTOMATIC TRANSFERS
24-HOUR BANKING WITH THE CIRRUS NETWORK**

**Bank
of the Rio Grande**

Bank of the Rio Grande, N.A. FDIC
411 North Downtown Mall • 525-9595



INERTIAL PRODUCTS DIVISION
PIEZOELECTRIC PRODUCTS DIVISION

COLUMBIA RESEARCH welcomes you and joins
with you in celebrating White Sands Missile Range's
40th Anniversary

July 9, 1945 — July 9, 1985

**MANUFACTURER OF
OPERATIONAL AIRBORNE SENSORS FOR 28 YEARS**

1957
—
1985

FORCE BALANCE SERVO
ACCELEROMETERS & INCLINOMETERS

PIEZOELECTRIC ACCELEROMETERS
AND PRESSURE TRANSDUCERS



Post Headquarters 1945

THE MISSILE RANGE'S first headquarters building in 1945. This building no longer exists.



RAYTHEON COMPANY

White Sands Missile Range

New Mexico

Since 1948 . . .
Continuing to grow with
WHITE SANDS
MISSILE RANGE

HUGHES
 AIRCRAFT COMPANY

Digital acknowledges four decades of commitment by the White Sands Missile Range to the development and evaluation of essential technologies with broad applications. We share your enthusiasm and confidence in the future.

Digital Equipment Corporation

4100 Rio Bravo Street, Suite 200

El Paso, Texas 79902-1010

digitalTM

The Digital logo is a trademark of Digital Equipment Corporation.

STS-3 ends 8-day flight at Northrup Strip

At 9:05 a.m. MST, March 3, 1982, NASA astronauts Jack R. Lousma (commander) and C. Gordon Fullerton (pilot) landed their Space Shuttle Orbiter Columbia at Northrup Strip on White Sands Missile Range, New Mexico. This was Columbia's third orbital test flight. STS-3 lasted more than eight days, made 129 Earth orbits and covered a distance of 6.24 million kilometers (3.9 million miles).

Choosing Northrup Strip

In the early 70s, NASA initiated extensive engineering, design and cost studies of the Space Shuttle Program. Simultaneously, officials began looking at possible launch and landing sites. In the early stages, Northrup Strip was considered a candidate for both categories. After proper evaluation, NASA officials decided upon the Kennedy Space Center, Florida, as the launch site, and Edwards Air Force Base as the primary landing site. Northrup was not given a landing site role until much later in the program, in 1979 in fact.

For STS-3 the Rogers Dry Lake Bed in California's Mojave Desert (Edwards Air Force Base) was named the primary landing field. But heavy rains had drenched the dry lake. Nobody could predict how long it would take the Edwards runway surface to be dry enough to support Columbia's landing. The best alternate was Northrup Strip. The strip was sufficiently long and wide to provide the margin of safety needed until the characteristics of Columbia's aerodynamics and its new computer-based automatic land-

ing system were fully tested.

Northrup Strip history

Northrup Strip, in the salt/gypsum area called Alkalai Flats, became part of WSMR in 1952. The strip is centered in a 100 square-mile area located approximately 45 miles due north of WSMR Headquarters. In the late 1940's Northrup Aviation Corporation used the natural landing area for target drone projects apparently resulting in the strip being unofficially called "Northrup Strip" through association with the contractor (Northrup). An early press release contained a typographical error misspelling Northrup as "Northrup." The error was reproduced in subsequent releases, and later signs, route markers and official Army maps carried the name Northrup Strip, making it quasi-official.

Northrup actually has two strips crossing like an "x." The original and primary strip runs almost due north and south while the secondary (added for shuttle program use) strip runs northeast/southwest. These hard-packed gypsum strips, each 35,000 feet long, provide exactly what the shuttle needed in the early landings — a forgiving long, long runway. Later flights have terminated on the shorter concrete runways at Kennedy and Edwards. Northrup is virtually unobstructed, can be seen from space and is blessed with excellent weather 90 percent of the time.

Shuttle at WSMR

The first flight of the Columbia, Space

Transportation System-1, launched from Kennedy Space Center April 12, 1982. Piloted by astronauts John Young and Robert Crippen, the spacecraft landed April 14, 1981 at Edwards Air Force Base. Northrup Strip had been designated primary Abort-Once-Around (AOA) and contingency End-of-Mission (EOM) landing site. Despite full coverage by national and local media, preparation for spectator viewing and several weeks of exhausting work by WSMR personnel making Northrup Strip and the range ready, the Columbia ended its three-day flight at Edwards as planned. A flooded EAFB lakebed for a time made Northrup look like the landing site but a one-month launch delay occurred allowing the lakebed to dry.

STS-2: After several delays, STS-2, the Columbia's second flight, launched from Kennedy November 12 and again landed at Edwards on November 14, 1981. White Sands Missile Range had anticipated a lesser chance of a landing, having been designated contingency AOA and contingency EOM. Joe Engle and Richard Truly were the Columbia's STS-2 pilots. Again a one-month launch delay allowed the wet EAFB drying time.

STS-3: Five days prior to the scheduled launch of STS-3, NASA announced Northrup Strip as the primary End-of-Mission landing site for the flight piloted by Jack Lousma and Gordon Fullerton. WSMR and Northrup Strip personnel had spent many weeks in readiness preparation, but the EOM announcement still came somewhat as a surprise. The third time was a charm in that soggy runways at Edwards had forced NASA officials to make the

EOM decision for Northrup where aside from some predictable March winds, the weather was spring-like and balmy. The Columbia launched on schedule March 22, 1982, and drifted through an almost uneventful planned seven-day flight. On landing day, March 29, WSMR experienced one of the worst wind and sand storms in more than 25 years. STS-3 was extended one day, landing on Runway 17 (north to south) at 9:05 a.m. Tuesday, March 30.

A public viewing site had been set up about seven miles to the northwest where an estimated 7,000 spectators accumulated on Monday when the storm occurred. Some 4,000 returned for the landing on Tuesday. Another 900,000 spectators viewed the shuttle at Northrup Strip during its preparation for return to Kennedy Space Center.

In a two-week period, the Public Affairs Office received more than 3,000 phone calls from local, national and international media establishing themselves for coverage and from citizens around the country wanting information on public viewing of the landing. About 1,400 VIP's were invited and attended the first day. About two-thirds of them were able to come back the second day for the landing. By early Monday morning (the scheduled landing day), about 900 newsmen (writers, still photographers, television cameramen and cinematographers) had been accredited to cover the landing.

Some had been established at the Northrup press area for 10 days. Tuesday morning broke clear and sunny with

Continued on page 18

JOINING FORCES

For the past four decades White Sands Missile Range and The Electric Company have joined forces to provide the best in economic growth opportunities and safe, efficient service to their communities. Always complementing the goals and efforts of one another both the Missile Range and The Electric Company strive to continue their powerful tradition of excellence and performance. Helping to connect the past to the present for the future, your Mesilla Valley neighbors and friends salute you.

Partners for an efficient tomorrow

The Electric Company
El Paso Electric

Las Cruces, New Mexico, Thursday, March 16, 1980

Armed Forces Day Set; Will Stress Unification
Washington (APPS) — President Reagan has proclaimed Saturday, May 12 as the country's Armed Forces Day and the day to honor the men and women who serve in the armed forces.

U.S. Strength Prevents War
Gen. Collins

New Weapon But Men Will
Wars, in the final analysis, are won by men—not weapons alone. "In our increasing dependence upon the most advanced weapons, we must not lose sight of the increasing need for well-trained, clear-thinking men to operate them. We dare not forget that must meet an attack not with rifles aided by machines." This is the underlying theme of the Armed Forces Talk 312. T is a general discussion of the role of the armed forces and the importance of the men who serve in them.

BFA

SALES

Serving WSMR for 12 years

- Data Communications Equipment
- Computer and Presentation Graphics
- Data Acquisition and Control Systems

P.O. Box 1237
Las Cruces, NM 88004
(505) 524-9693

a division of

AQUILA TECHNOLOGIES GROUP, INC.



SCIENCE AND TECHNOLOGY CORPORATION

... providing timely solutions
to dynamic markets

SCIENCE AND TECHNOLOGY CORPORATION (STC) is a dynamic, high technology, minority-owned, small company that has a wide degree of integrated talents and resources ready to meet the varied needs of our customers.

Built on the principle of growth through customer satisfaction and the continuing ability to meet the unprecedented requirements of rapidly expanding high technology fields, **STC** is structured to provide **in depth** a wide variety of research activities, services, and equipment.

STC, which provides its services on a **worldwide** basis, consists of a group of scientists and engineers with varied backgrounds who maintain close working relationships with diverse groups of scientists and engineers from universities, research centers, government laboratories and agencies, and international research organizations.

Because of **STC's** rapid growth, its corporate offices, headquartered in Hampton, Virginia, occupy a modern new complex at **Langley Research and Development Park** near NASA's Langley Research Center.

With a rapidly expanding list of clientele comprising some of the nation's leading corporations and research agencies, and with offices located on both the East and West Coasts, **SCIENCE AND TECHNOLOGY CORPORATION** is ready to discuss your requirements and to provide you with the same unique and unexcelled services.

LIST OF CORPORATE CAPABILITIES

- RESEARCH AND DEVELOPMENT
- TEST AND EVALUATION
- INSTRUMENT DESIGN AND FABRICATION
- COMPUTER SERVICES
- IMAGE PROCESSING
- ELECTRONIC DATA PROCESSING
- MEETINGS SERVICES
- PUBLICATION SERVICES
- FACILITY MANAGEMENT
- VIDEO/PHOTOGRAPHIC DOCUMENTATION

Corporate Office:

101 Research Drive
Hampton, Virginia 23666-1340
Telephone: 804/865-1894

Our clients include:

- Army Atmospheric Sciences Laboratory (ASL)
- Army Chemical Research and Development Center (CRDC)
- US Army Engineer Waterways Experiment Station (WES)
- US Army Corps of Engineers (USACE)
- US Air Force Wright Aeronautical Laboratories
- Office of Naval Research (ONR)
- Naval Research Laboratory (NRL)
- National Aeronautics and Space Administration (NASA) Headquarters
- NASA Langley Research Center
- NASA Marshall Space Flight Center
- Jet Propulsion Laboratory
- Computer Sciences Corporation
- Physical Dynamics, Inc.
- Battelle Columbus Laboratories

Branch Offices:

- | | |
|--------------------------|--------------------------|
| • Las Cruces, New Mexico | • Pasadena, California |
| • Washington, DC | • Honolulu, Hawaii |
| • Vicksburg, Mississippi | • Hanover, New Hampshire |
| • Edgewood, Maryland | • Greenbelt, Maryland |



... a mark of excellence

WSMR formerly a cattle ranch

Continued from page 11

Bull settled at San Augustin springs on the Old Salt Trail. In 1851, he obtained a contract to provide lumber constructing Fort Fillmore. Much of the lumber was obtained from mountain slopes near the springs and in the immediate vicinity of today's White Sands Missile Range.

Affluent and ambitious, Bull decided to move on, so he sold his San Augustin holdings on the Old Salt Trail to Warren T. Shedd.

Shedd was a well set-up man financially who had ridden out of St. Louis, Missouri well before the Mexican War with a party of young men headed for Paso del Norte. Prior to the purchase of the San Augustin spread, Shedd had accompanied an outfit of pack-animals and oxcarts over the Old Salt Trail to the salt flats and soda beds between Carlsbad and El Paso. The San Augustin layout caught his eye and led to its purchase.

Soon after acquiring the San Augustin property, Shedd opened a small inn and commissary which indicated his modest beginning. But water, forage and fuel were available, and the Old Salt Trail was a main path to the west side of the mountains. Prospectors, Army troops, cattlemen and travellers stopped at the San Augustine Inn for food, water and forage. Shedd prospered.

Mining booms in the nearby mountains brought men of all classes along with pack animals. The mushroom gold camp at Brice, three miles west of Oro-

grande on the eastern slope of the Jarilla Mountains, brought many guests and many killings.

The San Augustin Ranch, back of WSMR and now the home of Mr. and Mrs. Robert Cox, was in the main erected by Warren Shedd. The house is solidly built around three sides of a patio. A second high-walled patio with gateway faces the Organ Mountains. All rooms of the house open onto the patios, a precaution against roving Apaches and outlaws.

Mining booms

A geological study of Dona Ana County by the New Mexico School of Mines at Socorro in the mid-1930s described the Organ mining district as including both the east and west sides of the southern end of the San Andres Mountains and all of the Organ Mountains down to Baylor's Gap. There were many mines being worked along the canyons and slopes at that time and the remains of some old shafts are still discernible today from U.S. Highway 70 which passes between the two mountain ranges at San Augustin Pass.

Several million dollars worth of copper, silver and gold were taken from the Torpedo Mine, just above the village of Organ. Tailings and rock leaching tanks are still visible there. Flooding and the high cost of mining finally forced the closure of this and most of the other mines which were worked until the early years of World War II.

Henry Foy discovered the Torpedo mine and sold his interest for several

thousand dollars. Among other productive mines of the area were the Memphis, Stevenson-Bennett, Moduc, Excelsior, Mormon and the Dona Dora.

The town of Organ was established as a mining camp and at one time had a population of more than 1,000 people. When the mines closed the population dwindled to several hundred. Today, with WSMR so near, retirees, plus the rapid growth of Las Cruces, the Organ

area is again nearing the 1,000 population mark.

On the east side of the Organ Mountains is the Gold Camp which can be seen among rocky outcroppings. The Gold Camp is located within the missile range and is off limits to prospectors and visitors. The best known and largest gold mine was the Maggy G. It produced approximately \$850,000 gold ore concentrate and about half again that much high grade ore.



SGT. MARVIN DAVIS, a military policeman at Trinity Site, poses with Argo and Peergo in the corral at base camp. Being a noncommissioned officer at Trinity, Davis was in charge of scheduling guards at checkpoints. When he arrived at the checkpoint, the guard commented to Davis on the great number of crawdads in the area. Davis first made sure the young man had not touched any of them and then proceeded to tell him about scorpions.

White Sands Pioneer Group is Proud to Present

The 40th Anniversary Limited Edition Commemorative Buckle



Limited Edition

Strictly a limited edition, only 7,000 of these special pewter finish commemoratives will ever be produced.

Individually Serial Numbered

On the back of your commemorative is a plaque showing the total quantity of the limited edition along with the individual serial number.

Certificate of Authenticity

The Certificate of Authenticity enclosed with your commemorative guarantees the limited edition quantity and the individual serial number along with protecting the value. A separate card enables you to register your buckle in our Archives for proper identification.

Three Dimensional Work of Art

A great deal of time and care has gone into the designing and sculpting of this limited edition belt buckle. The three-dimensional detailing makes this piece one of the finest works of art to be found today.

Descriptive Narrative Plaque

On the back of your buckle is a plaque that reads:

WHITE SANDS MISSILE RANGE is... a national resource with a 40-year record of excellence in scientific research and missile, weapon and space system testing... the biggest military reservation in this country encompassing more than 4000 square miles of the Tularosa Basin... the largest and most highly instrumented geographical area in the free world. This Department of the Army installation also supports Navy and Air Force programs, as well as NASA and other approved users. Entering its fifth decade White Sands Missile Range has been designated the high energy laser test facility for the Department of Defense. A proud past. A challenging future.

Sold on a first come, first served basis, we urge you to avoid disappointment by ordering today.

These magnificent Commemorative Buckles are only \$20.00 each

Belt buckles are available at these locations:

On Base:

Sato Airline Office, Bldg. 124

White Sands Federal Credit Union, Bldg. 143

In Alamogordo:

Space Hall of Fame

In Las Cruces:

White Sands Federal Credit Union, 2190 E. Lohman Ave.

In El Paso:

Texas Commerce Bank, Northgate Branch, formerly El Paso National Bank.

Fort Bliss Museum.

For information call (615) 755-0000.

Don't wait. Be sure to get yours before cut-off date is announced.

San Augustin Ranch has earned history niche

Benjamin E. Davies, Shedd's sheepman neighbor to the south, had long coveted the San Augustin properties and was actually encroaching on Shedd's pasture. Davies wanted to buy the place, but Shedd wouldn't sell although his life had been threatened. Threats in those days were not given idly, nor was Davies a man to give up easily.

From all information available, Shedd owned the San Augustin Ranch at the time Maj. Isaac Lynde led his Union troops and their families north from abandoned Fort Fillmore towards Fort Stanton to escape the Confederate force from Texas led by Col. John R. Baylor.

According to one story, Baylor took up pursuit of Lynde and his men by following the towering dust cloud they raised in crossing the desert. The head of the Union column had already passed through the San Augustin Pass when Baylor, aware of the Old Salt Trail pass just four miles south through the Organ Mountains, galloped through the gap and around towards San Augustin Pass. There, at San Augustin springs, Baylor dramatically confronted Lynde and his force who had paused for lunch. Lynde and his men surrendered, asking for nothing but water.

This was on July 27, 1861, that Col.

Baylor accepted the surrender of Maj. Lynde and his nearly 700 Union troops. As a result, Federal troops hearing of the surrender set fire to abandoned Fort Stanton and nearby stores, clearing the path for Confederate forces to Fort Craig and the battle of Valverde.

To this day the Old Salt Trail Pass through the Organ Mountains is known as Baylor's Gap.

On Jan. 2, 1865, Davies moved to the San Augustin Ranch. How he obtained the properties is unknown. Apparently he took possession of them piecemeal.

Bertha Wales Davies, only child of Benjamin E. and Julia Davies, died of rattlesnake poisoning. It is she who is buried in Jim Cox's corral. A small gravestone surmounted by the figure of a lamb is surrounded by an iron fence. The epitaph on the stone reads, "Bertha Wales, beloved daughter of B. E. and J. E. Davies."

The Davieses were people of refinement and culture who entertained graciously the prominent citizens of the valley. Young people from Mesilla and Las Cruces rode out to dance the moon down, making the trip on horseback, chatting from saddle to saddle.

But bad men still rode the Old Salt Trail. When Print Rhodes, a young

brother of Mrs. William W. Cox — relative of Jim Cox — was working for Davies, he was called early one morning with instructions to "bring the shovels". Young Rhodes found two unidentified dead men a mile south of the grove of trees fronting the house.

Today about the same distance north of the grove are two graves placed about six feet apart. Only one of the graves is marked. The epitaph reads, "W. M. Page, Beloved son of R. F. and Sarah W. Page. Born in Green County, Virginia, in the year 1848. Died May 27, 1888."

Further identity of Page, his connection with San Augustin Ranch, and circumstances of his death are unknown. The second grave, one of six or seven scattered in the area, is marked only by a wooden stub.

Benjamin Davies was a successful stockman. Large herds of sheep and cattle grazed his range. He died in the 1880s and John H. Wilde became manager and administrator of the Davies estate. Wilde, whose family owned property near El Paso, was related to the Dow family of the Pecos Valley. Wilde's well, eight miles east of Orogrande and 32 miles south of Alamogordo was drilled by him. When a devastating drought took heavy toll of the San Augustin

tin herds, Wilde moved the cattle to Texas where he was fatally injured when a horse fell on him.

Apparently, after Davies finally acquired all the property Warren T. Shedd had accumulated, Shedd was left penniless in his old age. Towards the end, members of the Shedd family found him and took him back to Illinois to live.

Shedd was gone, Davies was gone and Wilde was dead. The San Augustin Ranch was for sale.

William W. Cox bought the San Augustin property and the history of his family is intimately woven into the history of the ranch as well as the area surrounding it.

Back in 1873, W. W. Cox's father, J. W. Cox, was a U.S. Marshal for the district in which John Wesley Hardin, one of the most notorious gang leaders of frontier Texas, lived. In May of that year, Marshal Cox was killed in a fight with the outlaw gang. W. W., then only a youngster, found his father's body riddled with bullets and stripped of gun and personal belongings.

In later years the young Cox and his wife and daughter left that part of the country because of tragedies which had befallen members of his father's family.

Continued on page 24

PETER W. DAHL CO. Custom Transformers & Technical Services

Custom single & three phase plate, power and filament transformers from 100 VA to 150 KVA. Computer Aided Design.

Silicon bridge rectifier assemblies made to order. 1 to 7500 Amps with PIV to 100 KV.

Special High and Low Voltage DC power supplies.

Saturable Reactors and Magnetic Amplifiers.

RF Systems Engineering and Antenna Design.

Large stock of surplus electronic equipment and components.

All types of Military transformers and reactors rewound and or duplicated.

Target Missile Flight Services personnel with experience on the MQM-34D, MQM-61A, QH-50D and Vega Command & Control Systems at WSMR.

Relocating on August 1st, 1985
to a new 17,000 sq. foot manufacturing facility
at 5869 Waycross Avenue,
El Paso, Texas, 79924
(915-751-2300),
to better serve our customers needs.



PETER W. DAHL CO. INC.

4007 FORT BOULEVARD EL PASO, TEXAS 79930

(915-566-5365)

STS-3 ends 8-day flight at Northrup

Continued from page 14

winds averaging 10 knots. After the Columbia landed at 9:05 a.m. it rolled to a stop without incident and in about an hour astronauts Lousma and Fullerton were being applauded at the press area where they were greeted by New Mexico's Governor Bruce King, WSMR's commander, Maj. Gen. Alan A. Nord and New Mexico U.S. Senator Harrison "Jack" Schmitt.

Piggyback departure

A factor weighing heavily in NASA's decision for a landing at other than Edwards Air Force Base was the availability of a huge crane called a mate-demate device. This equipment hoists the shuttle aboard a 747 jet aircraft for transport back to Kennedy. While Northrup has no mate-demate device, it is equipped with a huge crane called the Stiffleg Derrick. This derrick, assisted by a large conventional mobile crane performs the same task.

However, when the operation is conducted away from Edwards, it involves moving equipment for deservicing the shuttle and personnel for both operations. For the STS-3 landing at Northrup NASA moved some 350 personnel and two trains of 23 and 21 cars from Edwards to Northrup.

The deservice and mating activity was accomplished in only seven days, a very significant accomplishment, and at 7 a.m. on Tuesday, April 6, the Columbia, firmly attached to the back of a 747 commercial type jet, lifted off from Northrup Strip. Six hours later, including a refueling stop at Barksdale Air Force Base, Louisiana, the Columbia arrived at Kennedy Space Center, where it underwent inspection and was prepared for another space flight.

White Sands Space Harbor

Shortly after the Columbia landed at White Sands Missile Range, N.M., Congress passed a bill introduced by Senator Schmitt which was signed by President Ronald Reagan on May 11, 1982 re-naming Northrup Strip as "White Sands Space Harbor."

Columbia Site

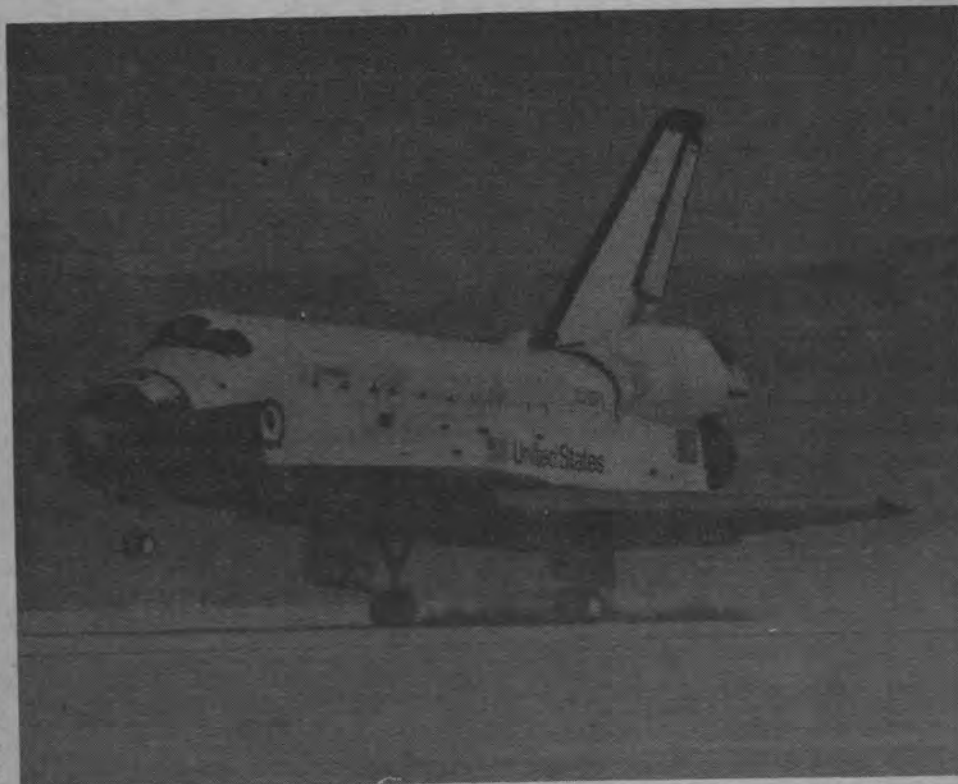
On September 15, 1982 in accordance with Army Regulation 1-33 the then commanding general of WSMR, Maj. Gen. Alan A. Nord, designated the area where astronauts Col. Jack R. Lousma and Col. C. Gordon Fullerton rejoined their families after the landing of STS-3 as "Columbia Site." This site is marked by a permanent survey marker at the south end of the White Sands Space Harbor near the location where NASA Officials had their temporary operations facility.

Equipment at the landing site

Northrup Strip is located on one of the most highly instrumented ranges in the world, with state-of-the-art tracking and recording capability; a professional labor pool of scientists and technicians familiar with missiles, rocket engines and flight experimentation; up-to-date data reduction and readout equipment capable of providing real-time information, and premier meteorological support.

White Sands has the Microwave Scanning Beam Landing System (MSBLS), considered essential to safe shuttle landings. MSBLS is the ground part of an all electronic automatic landing system which controlled the Columbia from 10,000 feet down to about 150 feet where commander Lousma assumed manual control. A Tactical Air Navigation System (TACAN), operated by the 1877th Communication Squadron, Holloman Air Force Base, N.M., provides longer range navigation aid.

Since the STS-3 mission the harbor has been outfitted with a night landing light system. This basically consists of six protable xenon landing lights on one of the runways. Each side has three lights positioned 50 feet from the runway, beginning 1,300 feet from the threshold mark. These lights, each of which are rated at 20 kilowatts, produce 900 million candle power each for a total of 4.8 billion candle power. The lights are only part of an elaborate visual landing aids system at the harbor.



The system also includes Inner Glide Slope lighting, strobe lights, the Precision Approach Path Indicator (PAPI) used for outer glide slope lighting and 300 reflectors (150 on each side of the runway), and approach lighting as found at large airports.

The strip has served as the initial training point for shuttle astronauts since October 1978, with the first landing practice taking place on Friday the 13th, August 1978. Since then practice landing missions at the strip have averaged about nine sorties a week to include both day and night time missions.

A Grumman Gulfstream II jet aircraft modified to react similarly to the shuttle, is used for this astronaut training. It was this training assignment which paved the way to Northrup being named, and outfitted, as an orbiter landing site.

Space Shuttle statistics

Shuttle Components: The space shuttle has three main units: the orbiter, the external tank (ET) and two solid rocket boosters (SRB's). Each booster rocket has a sea level thrust of 11,600 kilonewtons (2,600,000 pounds). The orbiter is the crew and payload-carrying

unit of the Shuttle system. It is 37 meters (121 feet) long, has a wingspan of 24 meters (79 feet), and weighs approximately 68,000 kilograms (150,000 pounds) without fuel.

It is about the size and weight of a DC-9 commercial air transport. The orbiter can transport a payload of 29,500 kilograms (65,000 pounds) into orbit. The orbiter's three main liquid rocket engines each have a thrust of 2,100 kilonewtons (470,000 pounds). They are fed propellants from the External Tank, which is 47 meters (154 feet) long and 8.7 meters (28.6 feet) in diameter. At lift-off, the tank holds 703 kilograms (1,550,000 pounds) of propellants. The external tank is the only part of the shuttle system that is not reusable.

Typical Shuttle Mission: In a typical shuttle mission, which could last from seven to 30 days, the orbiter's main engines and the boosters ignite simultaneously to rocket the shuttle from the launch pad. The shuttle is launched from the NASA John F. Kennedy Space Center in Florida for east-west orbits or from Vandenberg Air Force Base in California for north-south orbits.

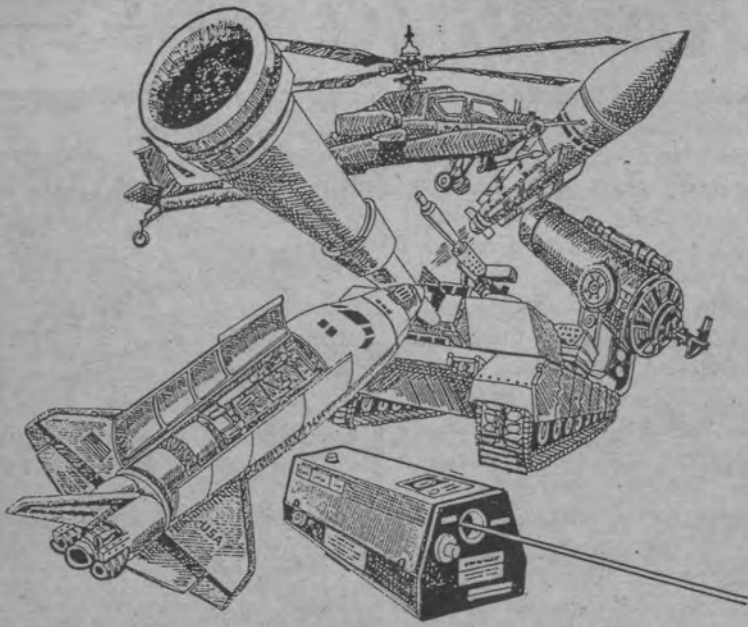
Future Shuttle support

Although STS-3 has been the only shuttle mission to date to land here, the missile range continues to support ongoing shuttle missions. This support includes preparation for a possible AOA landing on launch day. Likewise, should NASA list White Sands Space Harbor as a possible EOM landing site again, the missile range will be at a state of readiness.

During the mission, the range is prepared to accept a landing of the shuttle on a contingency basis with as little as a three-hour notification. Preparations during these times include monitoring the shuttle during its flight via tracking and telemetry.

In addition, all systems at the harbor are turned on and brought up to full operation. Throughout the entire shuttle mission, the missile range keeps NASA abreast of the harbor's weather conditions in case it is needed for a landing site. However, it is unlikely that NASA will ever again designate the harbor as an end-of-mission landing site.





Congratulations WSMR
on your 40th!

OptiMetrics, Inc.

**AMERICA
CELEBRATES**

**Congratulations To
White Sands
Missile Range**



Celebrating Their 40th Anniversary

	EVAN LUCAS	HOLIDAY INN DE LAS CRUCES
		201 E. UNIVERSITY
		LAS CRUCES, N.M. 88001
		(505) 526-3411
LUCAS PIPE & TOBACCO		
LARRY LUCAS	2330 SUDDRETH DR.	
	RUIDOSO, N.M. 88345	
	(505) 257-7193	



IGOR OPERATORS R. L. Holder and D. R. Arellano were responsible for this unusual photograph showing an Honest John rocket seemingly heading for the craggy moon 239,000 miles above their tracking station. The photo was taken in March of 1959 with the crew using the IGOR's 96 inch telescopic lens. In this case the target was on White Sands Missile Range; the moon was simply in the right place at the right time.



*Happy Fortieth
Anniversary
WSMR*

Pat Campbell Insurance
301 W. Las Cruces Ave.
Las Cruces

**Johnston's
True-Value Hardware**



**Salutes
White Sands
Missile Range**

On Their 40th Anniversary.

1002 W. Picacho Las Cruces 524-3586

Outstanding contributions to Missile Range

The White Sands Missile Range Hall of Fame was established in 1980 to honor past employees who made outstanding contributions to the range mission. In 1980 the first six inductees were elected. They were: Benjamin Billups, Gabriel Brillante, Frank Hemingway, Dr. Clyde Tombaugh, Col. Harold Turner and Dr. Wernher von Braun.

Range officials feel the hall of fame allows the range to recognize its outstanding past employees. "Through the years, White Sands has been privileged to have more than its share of highly talented people," one official said. "The hall of fame is one way to express our appreciation to these highly dedicated workers."

The hall of fame selection criteria, written and monitored by an ad hoc board, states the inductee must have been responsible for significant and lasting deeds or achievements in support of the range mission. The contributions may be in various areas such as research, cost savings, technological advances, safety, public relations, equal opportunity or heroic deeds. All personnel, military and civilian, who have served at the range sometime since 1945 are eligible.

The hall of fame is located in the range's Visitors Center, building 122. It is open to the public on regular workdays from 8 a.m. to 4 p.m. Photographs of the inductees, their commemorative medallions and certificates of induction are on display in the hall.

Currently there are 11 inductees in the hall of fame. They are:



Gabriel J. Brillante

Gabriel J. Brillante (1915-1976) held every assignment with the WSMR Public Affairs Office during his 21 years at the range, including chief of public affairs, command information chief, historian and information officer. He founded Missile Park, the post's outdoor display of historic rockets and missiles, and established closed-circuit television news programming at WSMR.

The principal interest of his career was Project Understanding, an off-range public relations program he initiated. The purpose of Project Understanding was to explain why missile flights over populated areas and occasional roadblocks of U.S. Highway 70 were necessary to defense testing. One of the more unusual aspects of the project was the commissioning of interpreters to explain the overflight program to Navajo Indians in their own language. A native of Brooklyn, N.Y., Brillante came to WSMR in 1953. At the time of his retirement in 1974, he resided in Ruidoso, N.M.

Benjamin E. Billups (1912-1979) played a leading role in the implementation of computer technology at WSMR. He came to the range in 1947 as chief of

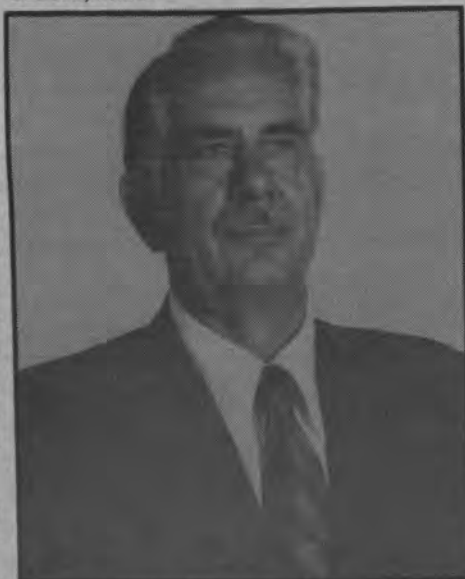


Benjamin E. Billups

the engineering branch of the Ballistics Research Laboratories. In 1952, when the first computers were installed at WSMR, Billups organized the processing hardware needed to produce data in volume. He also began training and recruiting programs that enabled WSMR to perform computer analyses of early rocket programs such as the V-2, Hermes, Nike and Loki Dart.

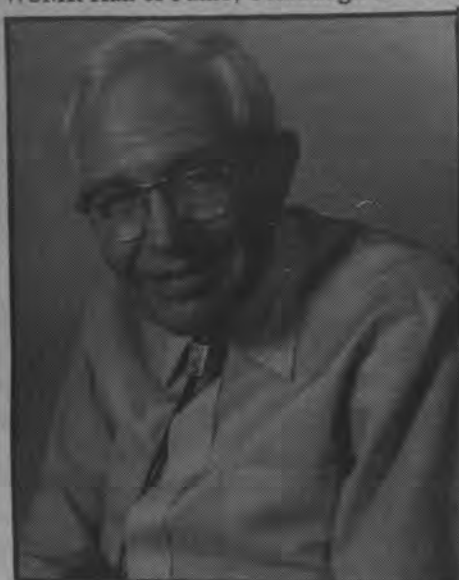
Appointed chief of WSMR data reduction branch in 1955, Billups began a study of commercial computers that resulted in the installation of a processing center that served all range contractors at a significant saving of manpower and money. Billups retired from civil service in 1973 as chief of the WSMR Plans Office. He was a native of Alamogordo, N.M.

Frank S. Hemingway (1920-) directed daily technical operations at WSMR from 1957 to his retirement in 1977. His readiness to adapt innovations in electronic instrumentation did much to transform WSMR from a crude facility for testing captured German V-2 rockets to a modern missile range. Hemingway introduced microwave technology to track missiles accurately and virtually instantaneously, and computer and optical equipment that enabled WSMR to expand its operations from less than 100 tests per year to over 6,000 annually by the '70s. Hemingway also directed the expansion of WSMR to include adjacent areas which provide additional space nearly equal in size to the range itself, when needed. He also arranged establishment of corridors from Texas, Arizona and Utah over which long-distance launches into the range are conducted. A native of Lapeer, Mich., Hemingway came to WSMR in 1947 as assistant chief technical supervisor of the Ballistics Research Laboratories. He lives in Las Cruces, N.M.



Frank S. Hemingway

Dr. Clyde W. Tombaugh (1906-), the man who discovered the planet Pluto, directed the development of optical tracking instruments at WSMR for nine years. Tombaugh first glimpsed Pluto in 1939 from the Lowell Observatory in Flagstaff, Ariz. He came to WSMR in 1946. Largely through his efforts, cameras were developed that could take highly-detailed photographs of the behavior of rockets moving at extremely high speeds. Tombaugh also conducted classes in astronomy, lens making, photography and film processing for WSMR engineers and technicians. He left WSMR in 1955 to accept a position on the faculty of New Mexico State University. An original member of the WSMR Hall of Fame, Tombaugh became



Dr. Clyde W. Tombaugh

the first astronomer inducted into the International Space Hall of Fame, Alamogordo, N.M., in September 1980. A native of Streator, Ill., Tombaugh resides in Las Cruces, N.M.



Col. Harold R. Turner

Col. Harold R. Turner (1898-1973) was a member of the group of soldiers and civilians which selected the site for WSMR in 1944. WSMR's first commander, he had the task of getting the post ready for rocket testing and human habitation. It was Turner who decided to put the administration and living areas at the foot of the Organ Mountains. He also gave the new installation its name so that arriving personnel would have a mailing address. Turner served as WSMR commander from June 1945 to July 1947. In 1974, when the WSMR Nuclear Effects Laboratory was named for Turner, Maj. Gen. Arthur H. Sweeney Jr., range commander, called him "... above all, a leader ... This great pioneer did what no man has ever done before. He established an installation that would become the birthplace of America's missile and space activity." The Waltham, Mass., native retired from

the Army in 1950. At his death, he resided in El Paso, Texas.



Dr. Wernher von Braun

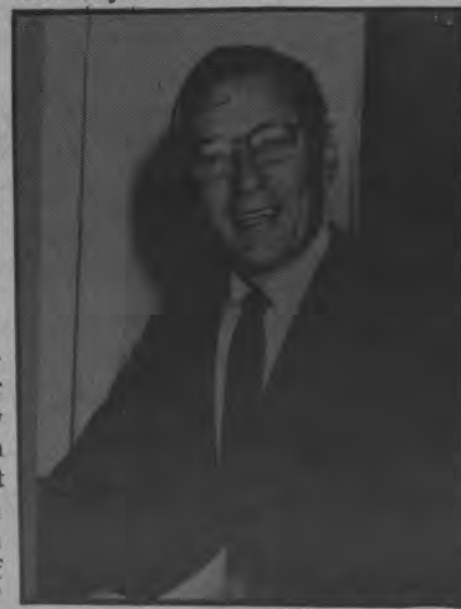
Dr. Wernher von Braun (1912-1977) led a group of about 125 German rocket scientists who were brought to WSMR in 1945 to help develop America's first generation of missiles. From 1945 to 1950 von Braun participated in the reassembling and launching of 67 German V-2 rockets. One of these was the first man-made object to penetrate outer space. Another was coupled with a WAC Corporal rocket to form the first multi-stage rocket ever launched into space.

One of this century's most renowned scientists, von Braun received more than 60 awards and tokens of official esteem from governments, universities, and scientific and social organizations in eight countries. He held more than 20 honorary doctoral degrees.

Born in Wirtitz, Germany, he was a graduate of Switzerland's Zurich Institute of Technology, the Berlin Institute of Technology and the University of Berlin. At the time of his death, he resided in suburban Washington, D.C.

E. Joseph Franczak (1926-1973) helped shape and develop White Sands into the best instrumented test range in the free world. He started work at the range in 1952 as an engineering aide. At the time of his death on Dec. 6, 1973, Franczak was a GS-12 civil engineering technician with the National Range Directorate. In 1973 Franczak had just completed work as project engineer for the range photo processing facility.

All of the engineering design criteria were based upon his work. He designed the facility so materials and data moved in a rational and simplified manner so processes were located to cut costs and time, so human errors had little effect, and so quality was emphasized and control easily maintained.



E. Joseph Franczak

Range mission earn 11 Hall of Fame

During his 21 years here, Franczak either designed or helped design and approve 90 percent of the range's 3,000 instrumentation sites. He is also responsible for naming half the sites. A native of Minnesota, Franczak lived in El Paso, Texas.



Brig. Gen. George G. Eddy

Brig. Gen. George G. Eddy (1895-1969) recognized early in his WSPG assignment that to perform the assigned mission a much broader technical and administrative staff was required, as well as vastly improved facilities. As a result of his efforts, two new divisions were established to provide a technical base for Army testing. In 1952, Gen. Eddy was successful in having the WSPG instrumentation responsibility transferred from Aberdeen Proving Ground, Md., to the Commanding General, SPG.

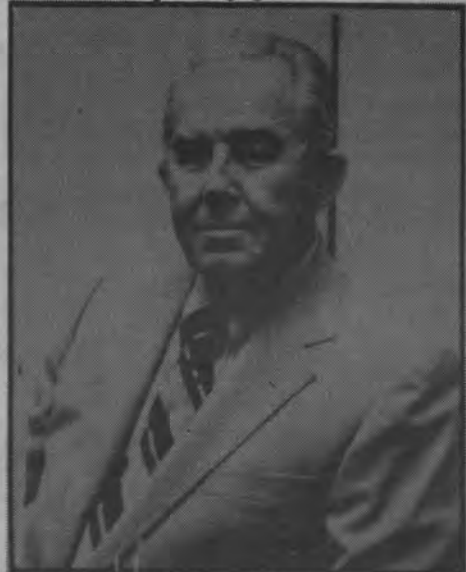
Later in 1952, Gen. Eddy succeeded in having the USAF instrumentation, research and development and operational functions at Holloman Air Force Base reassigned to the operational control and cognizance of the Flight Determination Laboratory. During Gen. Eddy's command, personnel strength at WSPG increased from 1,000 to more than 7,500 and missile firings increased from 63 in 1950 to 697 in 1954.

He was instrumental in providing greatly expanded post housing, new theater, PX facilities, fire station, commissary, elementary school and dispensary. The expansion of facilities, personnel and technical capability was probably greater during Gen. Eddy's tenure than any other commander before or since.

Herbert L. Karsch (1914-) played a large role in the development and analysis of many of WSMR's most significant early projects. Among these were the V-2, Talos and Nike missile programs. Karsch came to WSPG in 1945 as an ordnance technical intelligence officer. He participated in Operation Paperclip, the movement of German rockets, scientists and V-2 parts to WSPG.

He served as deputy commander of the proving ground from January to September 1946. From October 1946 to January 1954, he served in a civilian capacity as WSPG technical director. From January 1954 until he left federal service in September 1956, he was assistant to the commander for engineering.

Karsch was also responsible for providing support for technical facilities operated by the Army, Navy and Air Force at WSPG. He served as the WSPG liaison with the many government laboratories that provided technical services to the proving ground from 1945



Herbert L. Karsch

until WSPG began its own Flight Determination Laboratory in 1952.

Since leaving White Sands, Karsch has participated in military research, development and engineering with the Ford Motor Company, General Motors and other U.S. corporations.



Dr. Ernst A. Steinhoff

Dr. Ernst A. Steinhoff (1908-) was a key scientist with the V-2 program at White Sands Proving Ground. Steinhoff came to the United States with Dr. Werner von Braun and other German scientists and technicians at the end of World War II as part of Operation Paperclip. Prior to his arrival in America, he worked at the German Research Rocket Center in Peenemunde, where the V-1 and V-2 missiles were developed. There he was in charge of planning, development and testing of missile guidance systems and automatic controls.

At WSPG, Steinhoff continued his work on control guidance systems. Here he also was in charge of the operation of V-2 flight termination systems for firings in 1946 and early 1947. In 1949, Steinhoff transferred to Holloman Air Force Base, but continued to work closely with the WSPG. He was largely responsible for the early planning for range instrumentation to support missile firings from Holloman.

Steinhoff is widely recognized for his

work in real time computing for missile flight guidance and control. His work led to real time processing of data from White Sands instrumentation.

In 1972, Steinhoff retired from federal service. At that time he was the chief scientist of the U.S. Air Force Missile Development Center at Holloman. Steinhoff lives in Alamogordo.

Nathan Wagner (1921-) came to White Sands Proving Ground in 1947 as an engineer with New Mexico A&M's Physical Sciences Laboratory. He joined the proving ground work force in 1950. In March 1957, Wagner became the range's Missile Flight Safety Officer. His goal was to build a flight safety organization and develop the technology to control flights and make missile testing safer.

While serving as missile flight safety officer, Wagner proposed firing missiles from off the range to White Sands using flight corridors over sparsely-populated areas. This led to missile launches from Fort Wingate, N.M., Green River, Utah and a new launch point at Mountain Home, Idaho.

Because of his achievements, Wagner is known throughout the testing community as the "Father of Missile Flight Safety." A native of New York, Wagner resides in Las Cruces.



Nathan Wagner



THE FIRST REVEILLE at White Sands Proving Ground.

We applaud all WSMR employees Happy Anniversary

Summer Slices SIDEWALK SALE

CELEBRATE SUMMER SLICES SIDEWALK SALE.

July 4-7

A variety of fine stores will have merchandise galore at great savings just for you.

Don't forget our Biggest and Best Fireworks display ever Wednesday, July 3 at 9:15 p.m. There'll be fun, food and music on the southeast parking lot by JC Penney, beginning at 6:30 p.m. Join us!



Mesilla Valley Mall

Interstate 25 and Lohman Avenue

Ancient, frontier history surround missile range

The ruins of Fort Craig stand at the north end of the Fra Cristobal Mountains and Jornada del Muerto and just off the WSMR northwest corner.

Built originally to protect settlers against the Navajo and Apache Indians, Fort Craig today is little more than piles of eroded adobe brick and volcanic rocks.

Capt. Paddy Grayton, a commander of an independent company of scouts at the old fort, is alleged to have used a unique method in filling his rank—perhaps one of the first "involuntary induction" systems. According to legends, when one of his men was killed or deserted, the captain scouted the area for a peon or indigent person. Then, he accosted the man, calling him by the name of the missing scout, and hauled him back to the fort for duty.

Despite the unorthodox methods of induction, Fort Craig, in its heyday, was a favorite post for soldiers serving military duty.

The Civil War battle of Valverde was fought six miles north of Fort Craig on Feb. 2, 1862. Gen. Henry Hopkins Sibley led his Confederate forces against Union troops led by Col. Edward R. S. Canby. The Union forces retired within the fort in defeat while the Confederates bivouaced on the field. Twenty-five days later, after taking Albuquerque and Santa Fe, the Confederate forces met defeat at the Battle of Glorieta Pass and Apache Canyon west of Las Vegas, N.M.

The Union forces, having destroyed supplies which were irreplaceable,

drove the Confederate troops back towards Socorro, cut them off from water and forced them to find their way back to Texas in small groups.

On May 14, 1862, Gen. Sibley said goodbye to his troops at his headquarters at Magoffinsville near Fort Bliss, long since absorbed within the boundaries of El Paso.

Fort Stanton

On the Chisholm Trail southeast of Carrizozo, N.M., Fort Stanton was slated as the rendezvous for Civil War Union troops who abandoned Fort Fillmore, south of Las Cruces, ahead of the Confederate attack. Fort Stanton, however, was abandoned by its garrison upon receiving word that Fort Fillmore had surrendered enroute.

Fort Stanton was established in 1855. It was named in memory of Capt. Henry Whiting Stanton of the First Dragoons, who was killed by the Apaches in the Sacramento Mountains in January of that year.

Col. Christopher (Kit) Carson, with five companies of N.M. volunteers, was ordered to Fort Stanton in 1862 to operate against the Indians. The Indians had gone unchecked during the Confederate attempt to take the territory from the Union Army and were to be punished for their aggression.

Col. Carson was ordered to "Kill all Indian men of the Mescalero tribe wherever you find them." The woman and children were not to be harmed but were to be taken as prisoners to Fort

Stanton and held for further instructions.

The Carson troops hunted Mescaleros within a 100-mile radius of Fort Stanton, which took in the mountains and valleys surrounding today's WSMR.

Fort McRae

For McRae, another old Army post in the WSMR area, now lies beneath the surface of Elephant Butte Lake. The lake, formed by the damming of the Rio Grande, is west of Fra Cristobal Mountains in the Jornada del Muerto. Through the Elephant Butte and Caballo Reservoirs, water in the Rio Grande is stored and used for irrigation in the Mesilla Valley and along the Rio Grande

beyond El Paso towards Pecos, Texas.

Fort Selden

The ruins of Fort Selden, an important military post in its day, stands where U.S. Highway 85 crosses the Rio Grande northwest of Las Cruces. Established in 1865, Fort Selden's primary mission was to protect settlers from marauding Gila Apache Indians. Through the years, ruins of the old fort have been continually searched for buried treasures.

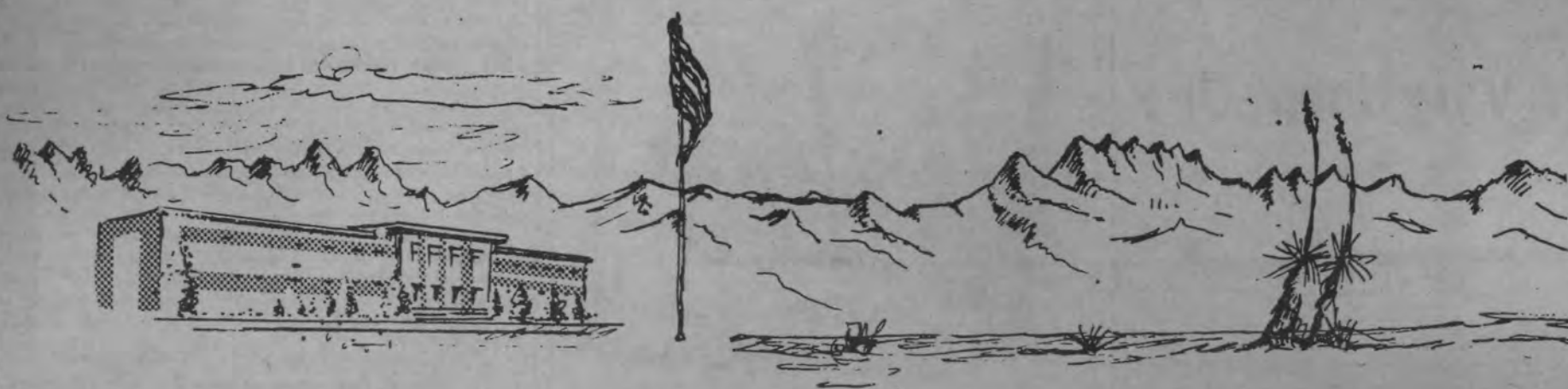
Stories are still told of treasures buried within the compound for safekeeping. With ordinary deaths, the Civil War

Continued on page 29



TWO SOLDIERS POSE in front of the military police stables at base camp, Trinity Site. Few people realize that the MPs at Trinity were a mounted unit. According to Marvin Davis, an MP at the site, they did not use the horses much because of the distances involved. He said they did ride them to play polo. Lt. Bush, who was in charge, got the men regular polo equipment for their games. Davis said it was more fun using brooms and a volleyball.

(photo by Carl Rudder)



White Sands Federal Credit Union

Thanks the Men and Women of
White Sands Missile Range
for 40 years of service.

Bldg. 143

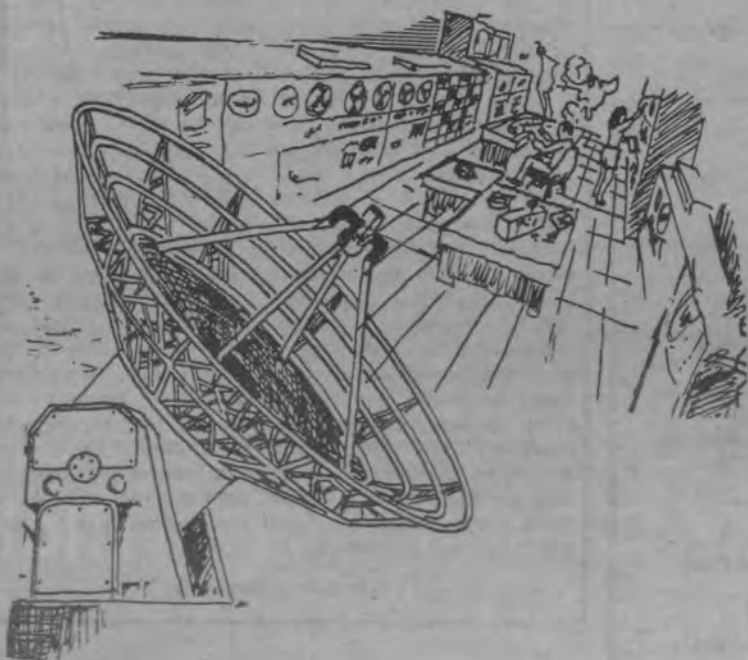
WSMR

678-1217

2190 E. Lohman

Las Cruces

524-3663



San Augustine Ranch has earned

Continued from page 17

In 1888 W. W. Cox and his family migrated to New Mexico. While looking for a location to settle in, the Cox family took up residence in Bear Canyon at Los Alamos Springs in the Black Mountains, the southern terminus of the San Andres Range. The family lived temporarily in a dugout — a shelter dug out on the hillside and finished with a lean-to.

It was here at Los Alamos Springs that Cox became acquainted with the rich rangeland and well-equipped properties of the San Augustin Ranch. In 1893, hearing that the San Augustin spread was for sale, Cox sold his sheep and swung the deal. Thus he and his immediate family and several close relatives moved into the house that Shedd had built on the Old Salt Trail.

At the time the San Augustin Ranch house looked like a fortress. Ladders for manning the patio walls in case of attack by the Indians were still leaning against the house; heavy wooden shutters with peepholes hung on the tall narrow windows. Having 15 rooms, the house was originally flatroffed in the old Spanish tradition. Heavy "vigas" — peeled log beams — stretched the length of each room, and the adobe mud provided both the roofing and insulation.

In 1903 the addition of a gabled roof directly over the flat roof was the major structural change in the house since the Cox family purchased it in 1893. During later years minor modernizations — elec-

tricity, plumbing and gas — have made the home a quiet, restful and enchanting place.

San Augustin Inn, little of which remains today, was built on the east slope of the hill below the ranch house. Overlooking the five springs, the inn stepped up the hillside on three different levels much in the now popular split-level style.

Several years after the turn of the century, in the early 1900s, the San Augustin watering place was visited by wandering Apaches in covered wagons. Jim Cox recalled, "They (Indians) caused some concern, especially among the women if

none of the menfolk were around the house. But they were always peaceful enough."

In time the Cox family increased range acreage by acquiring homesteads, railroad lands and squatter's rights until the holdings amounted to some 150,000 acres. They grazed several thousand head of cattle and some 100 mares for breeding range horses.

In 1910, the Cox family moved to Las Cruces for the children to attend New Mexico A&M (now New Mexico State University). A short time before W. W.

Cox's death in 1923, he purchased a large home in Las Cruces on the corner of North Alameda and Picacho.

For three years following W. W. Cox's death, the ranch was operated as an estate. Then it was purchased from the heirs by the Cox Brothers, Inc., which consisted of Hal, A. B. and Jim, sons of W. W. Cox, and J. E. Stablein, a brother-in-law.

In 1945 a big change was made. At that time a condemnation suit was filed in U.S. court involving thousands of acres of New Mexico land for military purposes. Included in this land was much of the San Augustin Ranch, the second largest in Dona Ana County.

Except for the area of the historical springs, the government now owns most of the Cox land north and south of U.S. 70 in White Sands Missile Range.

The Organ area was also ranched by other prominent people. In addition to the Cox ranch, which was pretty well absorbed by the missile range, there are the Isaac and Walters ranches. Pat Garrett, remembered for having killed Billy the Kid, owned a ranch on the east side of the San Andres.

Eugene Manlove Rhodes, well known Southwestern writer, owned a ranch on the west WSMR boundary at what is known today as Rhodes Canyon. For a number of years relatives and friends of Rhodes, through the cooperation of the Army at WSMR, were permitted an annual visit to the grave located on the ranch he owned and loved.



THIS AERIAL PHOTO of the main post was probably taken in early 1946. The Y in the road at the bottom of the picture is still there and is where Missile Park is located.

MAY YOUR 40th Anniversary Be A Very Happy One



We extend sincere congratulations and best wishes to all WSMR personnel.

**GRAHAM'S
MORTUARY**

555 W. AMADOR LAS CRUCES



STAHMAN FARMS, INC.

HOME OF PRODUCTS BEARING THE FAMOUS
DEL CERRO BRAND

Las Cruces, New Mexico

THE BUCKLE COLLECTOR

By Walt Byers

Naturally everybody saves or collects some type of memorabilia from baseball caps, patches, T-shirts and dozens of other collectibles. Mine happens to be belt buckles and I guess my only regret is that I did not start 12 or 15 years earlier. Just to give an example—a buckle that was made in 1974 by the Hesston Corp., makers of farm equipment. They made only 20,000 of these buckles and sold them for the unbelievably low price of \$1.00 each. Today only 11 years later these same \$1.00 buckles, in mint condition, are selling for \$400-\$500 each. Certainly not all commemorative or serial numbered buckles increase that much. But what really does make a particular buckle collectible? In many cases we only have to guess but here are a few guidelines I try to go by when purchasing a couple of buckles to add to my collection. Why do I say a couple of buckles? Basically, I like to have one buckle that I can wear and be proud of and show off and yet keep the other one in mint condition for my collection. Of course, I wind up buying more for gifts because it seems to be the one gift that is a little more personal than a type of gift that will sooner or later disintegrate to a worthless nothing. Back to what makes a buckle collectible. The manufacturer should be able to deliver a buckle of the highest quality and have a proven track record. Technical skills should allow their craftsmen to capture every detail. As to what it is made of being fine pewter, solid silver, brass or bronze, the buckle should be durable and long-lasting. Remember a finely made buckle reflects your own good taste and appreciation of

good craftsmanship. As to when to purchase the buckle, as soon as possible before the buckle begins to appreciate. Once a limited edition is sold out and closed it is available only on the secondary or open market where the price is determined by supply and demand. Limited edition and serial numbers on the back of the buckle as well as the manufacturer's name definitely increase the value plus being assured that the manufacturer destroys the mold when the last of the limited edition number is cast. And, I guess last but not least the ultimate factor to be considered is the appeal to the collector. Your collection should be a prized collection to display, enjoy and treasure and it should be a source of pleasure for you and your family for many years to come.

I was quite surprised the other day to receive some very complimentary letters from the Netherlands as well as West Germany on the White Sands 40th Anniversary Buckle and over there at this early stage it seems to have already become a collector's item. I have not heard when the White Sands Pioneer Group will have a cut off date on their 40th Anniversary Buckle; however, it seems to me that it might be smart to latch on to 3 or 4 of them before cut off date.

Incidentally, within a few months there will be a new buckle collecting club formed in the El Paso, Las Cruces, Alamogordo area and if any of you buckle collectors out there would like more information on this and/or if you have any questions about some of the buckles you now have in your collection or are looking for for your collection, please call: (915) 755-1115.

(Paid Advertisement)

**We're proud to be a part
of the WSMR tradition**



Alamogordo Federal Savings and Loan Association

400 TENTH STREET — POST OFFICE BOX 690 — ALAMOGORDO, NEW MEXICO 88310 — TELEPHONE (505) 437-9334

First National Salutes White Sands Missile Range On Its 40th Anniversary



It's no secret how important White Sands Missile Range is to our community, and to our country. First National salutes the efforts and achievements of the men and

women, past and present, who made contributions to the preservation of our nation's defense, welfare and freedom.

Since 1959, First National's White Sands branch has provided the consistent and progressive banking services that have made First National the leading financial institution in Southern New Mexico.

Whether it's staying open late on end-of-month payday, or the convenience of the OléCard Automated Teller Machine located at the Missile Inn, White Sands customers know they can count on First National for the service they expect, and deserve.

We're pleased to honor White Sands Missile Range on its 40th anniversary. And we're equally pleased to recognize our White Sands branch manager, Iris L. Meyers, and her staff for their continual dedication and support to the people who work and live in one of our nation's most vital regions.

Lobby Hours:	Mon.-Thurs.: 9am-2pm
	Fri.: 9am-4pm
	EOM Payday: 9am-4pm

Drive-In Hours:	Mon.-Fri.: 8:30am-2pm,
	3-6pm
	Sat.: 8:30am-12 noon



First National Bank of Dona Ana County

The more you look for in a bank, the better we'll look.

White Sands Branch: Bldg. 260, Rock Island Street
678-2244



HAPPY BIRTHDAY

WHITE SANDS MISSILE RANGE



*The White Sands Pioneer Group
Congratulates The Birthplace Of America's
Missile And Space Activity On 40 Years
Of Service To The Nation*

**The WSPG Salutes Forty Years of Scientific Achievements,
Technical Competence, Unparalleled Professionalism
and the Pursuit of Excellence by the Military, Civil
Service and Contractor Teams at WSMR.**

For information on membership, newsletter, 40th Anniversary souvenirs and mementoes write:

**The White Sands Pioneer Group
P.O. Box 1945-85
White Sands Missile Range, New Mexico 88002**

Ancient, frontier history surround

Continued from page 23

and frequent raids by the Apaches, various money and treasure caches were believed to have remained unclaimed. However, vandals have contributed considerably to the deterioration of the ruins, especially within the past few decades. The old fort is a New Mexico state historical site.

Fort Bliss

Fort Bliss, at El Paso, is today's Army Air Defense Center under the Fifth U.S. Army.

In 1849 after a year of reconnaissance, seven companies of the Third Infantry were ordered to the vital mountain pass, El Paso de Norte, which originally was a settlement divided by the Rio Grande. In time, the settlement became two separate cities, today's El Paso, and Ciudad Juarez, Chihuahua, Mexico. The troops came 673 miles from San Antonio, Tex., through hostile Indian country. Three months later they had established a military post on the banks north of the Rio Grande in an area north of today's Union Depot.

In 1854, the Army post was named Fort Bliss in honor of Lt. Col. W.W.S. Bliss, a brilliant scholar who was an aide to General Zachary Taylor.

During the first few decades of its existence, Fort Bliss was moved five times, twice abandoned as excess to military needs, and once, in 1861-62, flew the Confederate flag. Permanent buildings, of which three still stand, were constructed at the post in 1892.

For 1902 on through World War I, Fort Bliss was one of the nation's foremost cavalry posts. In 1914, Gen. John Pershing assumed command of Fort Bliss and its 60,000 troops. Early Signal Corps aircraft were stationed there and the First Cavalry Division made its headquarters there from 1921 until departing for duty in the South Pacific during World War II.

Before the end of World War II, Fort Bliss became an anti-aircraft artillery center and fully mechanized.

As the Army Air Defense Center, Fort Bliss firing and maneuver areas cover some 1,125,947 acres of land.

Geronimo and Dog Canyon

Geronimo, the Mescalero Apache chief, and Dog Canyon, in the Sacramento Mountains about 20 miles east of White Sands National Monument, are synonymous with the last of the Indian wars.

Geronimo was one of the most color-

ful and most dreaded Indians of all time. This area, including the national missile range, was his home territory.

Geronimo died in captivity in 1912 at an Indian Reservation in Florida. He was a master of guerrilla tactics and outwitted U.S. troops for many years. Historians credit him with being responsible for costing the U.S. Government some \$38,000,000 to end the depredations of fewer than 100 Apaches.

Ranging west into Arizona and south into Chihuahua, Mexico, to evade capture, Geronimo inflicted his most punishing defeats on his military hunters in Dog Canyon. From peaks surrounding the canyon, which was the Indian warriors' refuge, Geronimo and his men would observe the approach of troops from Fort Bliss or other military posts, who were out hunting them. The Federal troops, tired, shoeless and often riding exhausted and shoeless horses, would be lured into Dog Canyon.

As the troops travelled up the long, narrow and rugged box-canyon they were swept to the canyon floor by avalanches of rocks set in motion by the renegade chief and his warriors.

Through the years, the Mescaleros have accepted the white man's ways and today live peacefully among them. On a reservation in the Sacramento Mountains between Cloudcroft and Ruidoso, the Mescalero Apaches today are leaders in the state's cattle industry. Also, they are involved in lumbering, agriculture, and have modern homes and schools for their children. They have realized the importance of tourism and have extensive investments in skiing and resort inns.

Lincoln County War

Boiling over into the area that is now White Sands Missile Range, the Lincoln County War was no less bloody than other wars which have memorialized the area. This particular war arose from efforts of a New Mexico cattle baron to drive one Alexander McSween out of Lincoln County.

The infamous Seven-Rivers gang, of which Jesse Evans, a boyhood friend of Billy the Kid, was a member, fought for the cattle baron. In the fighting, an associate of McSween, John H. Tunstall of Rio Feliz, was killed. McSween's brother-in-law, the Reverend T.F. Early, a missionary and physician whom McSween brought west to serve Lincoln County, learned of Tunstall's death at Fort Stanton.

Tunstall, a wealthy Englishman who had befriended Billy the Kid, was murdered by members of a sheriff's posse after he surrendered his gun. According to the "code of the west" an unarmed man was not to be shot. So Billy the Kid rode in and out of the cattle war with the purpose of avenging Tunstall's murder.

The war attracted desperados from all parts of New Mexico, Texas, Colorado and south of the Rio Grande.

Billy the Kid was captured and imprisoned in Mesilla -- also called Old Mesilla and La Mesilla. The courthouse in which he was held, tried, and sentenced to be hanged still stands in Old Mesilla at the corner of the Plaza in which the Gadsden Purchase was confirmed in a flag-raising ceremony in 1854.

Transferred to Lincoln County for execution, the Kid escaped. Sheriff Pat Garrett of Lincoln County, later sheriff of Dona Ana County, shot and killed the Kid at Fort Sumner. The Kid was buried in a Military Cemetery at Fort Sumner that is still in existence. His trial, escape, and death all occurred in 1881.

Pat Garrett died violently near Organ, N.M., in 1908. A man named Brazel, claiming self-defense, pleaded guilty to the shooting of Garrett and was acquitted at his trial. The acquittal was celebrated by many ranchers and cowboys of the district with a barbecue at the San Augustin Ranch.

The Plaza at Old Mesilla is a state monument and the Gadsden Museum is nearby. Many descendants of the early settlers of Mesilla-Las Cruces are still prominent in the area.

In one of the last deadly feuds, District Attorney A.J. Fountain and his small son disappeared -- presumably murdered -- in 1896, while returning from Tularosa. They were never found nor accounted for. Some people believed their remains were buried within the White Sands National Monument, while others thought the lava beds probably claimed their bodies.

Fountain and Pat Garrett were associated as peace officers. At that time, Albert B. Fall, later Secretary of the Interior and a principal in the Teapot Dome oil scandal of the Harding administration, was a state political party leader. The territory was still wild and wooly.

AMERICA CELEBRATES



JULY 4TH

When we think of missile development,
we think of White Sands Missile Range

Jo-an Smith
Designer



Glenn Cutter Jewelers

Mesilla Valley Mall • Las Cruces, N.M. 88001

505/522-0531



When you think of jewelry,
you should think of Glenn Cutter

Keep up the good work WSMR

700 South Telshor
Suite 1154

Phone
(505) 522-3091

Las Cruces, NM 88001

FLOWERAMA

of Mesilla Valley Mall

DONNA and DAVID WATSON
Owners



Quality Floral Products at Reasonable Prices

10% Discount with this ad

Happy 40th Anniversary to all WSMR customers,
military, civil service and contractors

15% off any service



CLASSIC CUTS

MESILLA VALLEY MALL

LAS CRUCES, NM

TEL. 522-6875

Missile Range scene of history-making events

White Sands Missile Range covers a 40 X 100 square mile area of New Mexico desert. Within its boundaries may be found a fusion of the old and the new in the military defense of the nation -- from Indian arrowheads and ancient cannons to modern missiles and spacecraft. The entire area is interesting and historically important.

White Sands National Monument

White Sands National Monument is the world's largest inland outcropping of pure gypsum. The area stretches along the eastern portion of the missile range some 30 miles northeast of WSMR headquarters. It lies just off U.S. Highway 70 about 15 miles west of Alamogordo, N.M., 54 miles east of Las Cruces, N.M., and slightly less than 100 miles by way of U.S. Highways 54 and 70 from El Paso, Texas.

The monument consists of approximately 176,000 acres of pure white gypsum "sand" that shifts continually from one high dune to make another. The glaring white area is almost bare of vegetation. However, many species of plants have adapted to this unusual habitat, and through the gradual extension of roots and stalks, have avoided being buried by the drifting sand. A variety of plants fringe the edge of the park where they grow in weird shapes and forms.

Found also in the approximately 35-mile long and 15-mile wide snow-looking tract are several species of reptiles and rodents that have adapted to their strange environment by developing a bleached white protective coloration.

As the years pass the moving sand bares relics of the past. Among items brought to the surface in recent years was an ancient two-wheel cart believed to be an early Spanish carreta.

This isolated area was made a national park in the late 1930s and named White Sands National Monument. It was from this national monument that White Sands Missile Range took its name in 1945.

Roads and trails

U.S. Highway 85 which follows the Rio Grande from El Paso through neighboring Las Cruces and on to Santa Fe, is America's oldest road. It follows, in part, the original Spanish Camino Real -- Royal Road -- connecting Mexico City, the capital of New Spain, with Santa Fe, the capital of N.M., which was settled

in 1610 and is believed to be the oldest capital in the United States. The road ran north from Chihuahua City, Mexico, through the "Pass of the North," which is now the city of Juarez, Mexico and El Paso.

Opened by Friar Rodriguez in 1581, Camino Real was travelled by Espejo the following year and then in 1598 Onate led his colonists over the route to Santa Fe. Eighty-two years later descendants of Onate's colonists returned over the route in their tragic flight for their lives when the Pueblos revolted against Spain in 1680.

It is believed that Cabeza de Vaca, who walked from Florida to California circa 1536, passed through Mesilla, which is located three miles south of Las Cruces. Later Mesilla became a stop on Camino Real for east-west travellers.

Some Southwest historians hold that Cabeza de Vaca's route brought him northwest from San Angelo, Texas, along the Pecos River to a point north of Carlsbad, N.M. Then his path led north of the Guadalupe Mountains, south of the Sacramento Mountains which form the visible east boundary of WSMR, and then west through Fort Bliss' Organ Grande Missile Range to the site that is now WSMR headquarters building. From there, the path crossed the Organ Mountains into Jornada del Muerto.

From Jornada del Muerto, so the historians theorize, Cabeza de Vaca crossed the Rio Grande above Socorro, N.M., and crossed the Continental Divide to what was later called "Pie Town," near the Arizona border.

The early Spanish explorers and settlers apparently preferred the area around Santa Fe. For many years, the Dona Ana area remained only a stage-stop on Camino Real between Mexico City and Santa Fe.

Access to this southwestern region from the United States was by way of the Santa Fe Road which was surveyed from Fort Osage, Missouri, to Santa Fe in 1827 with funds provided by Congress. Traders and adventures then followed Camino Real south to Chihuahua City. Possibly the first American to traverse the Santa Fe - Chihuahua City link was Lieutenant Zebulon M. Pike of the U.S. Army who was taken to Chihuahua City as a prisoner of the Spaniards in 1803. (Pike was identified in Missouri as Montgomery Z., and in Colorado as Zebulon M.).



THE WEST WAS long known for its ability to form on quick notice sheriff's posses to track down and bring to justice such desperados as Billy the Kid, Jesse Evans, John Wesley Hardin and other outlaws of the day. But in the annals of White Sands Missile Range history -- perhaps the entire west -- there has been but one genuine "missile posse." It was formed in the summer of 1965 to find and retrieve an errant Pershing missile fired from nearby Hueco Range nine months earlier on Nov. 19, 1964. Shown above, the 12-man missile posse is ready to begin searching for its quarry in a rugged mountain area near Creede, Colo., where, nearly a century before, the likes of Bat Masterson was making his mark on history as a peacekeeper (in this case as a bouncer at the Creede Hotel). Relentless as they were, however, the missile posses returned to camp empty handed each day. The posse "broke up" after two weeks and returned to the range. In early October 1965 a geology student was credited with finding parts of the missile and claimed the \$500 in posted reward money offered by the Army. Seventeen years later, in October 1982, the remainder of the missile was found by the hunter and retrieved by a White Sands range recovery crew.

In 1846, General Kearny led Federal troops to Santa Fe over the Santa Fe Trail and annexed New Mexico bloodlessly as a territory of the United States. After the annexation, he proceeded west to California leading his main body over the Gila Trail from Santa Fe. Lieutenant Colonel Cook, in command of General Kearny's wagon train, chose the route crossing Jornada del Muerto to Rincon, New Mexico, and on to Deming, thus pioneering what became the first wagon road to the West Coast. This is the general route followed today by U.S. Highways 70-80-84.

Twelve years later, in 1859, the Butterfield Trail reached Las Cruces from the east by way of El Paso and continued west. Then in 1869 the Chisholm Trail was extended from the northeast. Me-

silla, then, was truly a transportation center and a veritable crossroad of the Old West, with all routes except the Santa Fe Road passing through it. It was in Mesilla that the Gadsden Purchase treaty was signed with a flag-raising ceremony in 1854; there a Civil War skirmish was fought; there the capital of the Territory of Arizona and New Mexico was established; and through there passed Confederate soldiers on their return to San Antonio, Texas.

The original inn at Mesilla, called La Posta, which was the stage-stop on Camino Real, is still operating today. However, now La Posta is a restaurant-Duncan Hines rated -- and host to travellers from all over the world. Descen-

Continued on page 32

Good Luck

to the Future W S M R Generations!



STORK TIME

926 NEW YORK 437-4002
ALAMOGORDO, N.M. 88310

Maternity wear

and

Infants to 6x

HAPPY ANNIVERSARY

To our Good Friends
at White Sands Missile Range



505-524-8691
Drawer L
Las Cruces, N.M. 88004

505-524-8691
White Sands Plant
Main Headquarters

505-257-4200
P.O. Box 1456
Ruidoso, N.M. 88345

Congratulations!

WHITE SANDS MISSILE RANGE



COLUMBIA RESEARCH LABORATORIES is pleased to be a part of your 40th anniversary celebration at White Sands and we wish you many more.

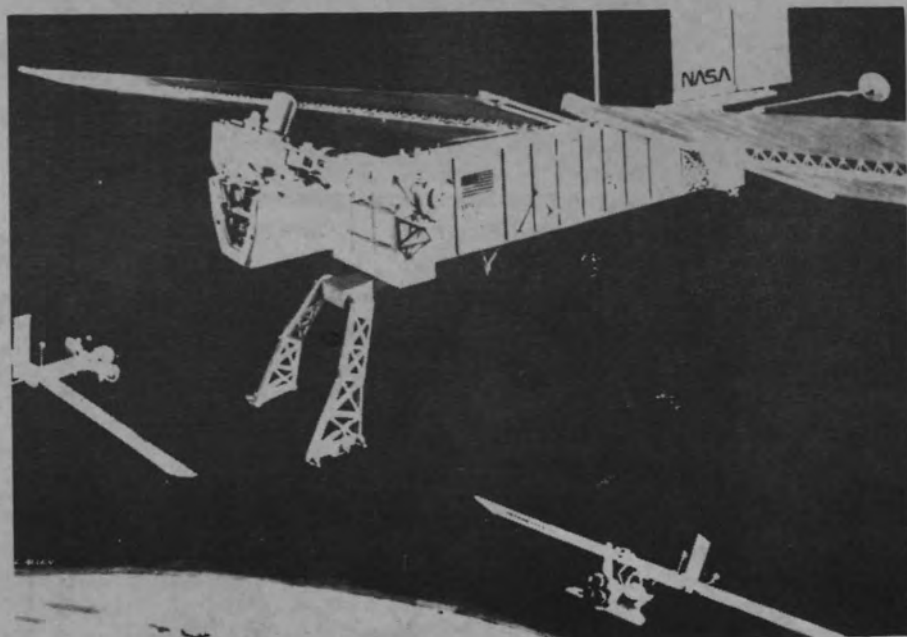
- ★ PIEZOELECTRIC ACCELEROMETERS
- ★ IN-FLIGHT AND LABORATORY CHARGE AMPLIFIERS
- ★ LINEAR "SERVO" ACCELEROMETERS
- ★ ANGULAR ACCELEROMETERS
- ★ FIBRE OPTIC ACCELEROMETERS
- ★ DC-DC DISPLACEMENT TRANSDUCERS

WRITE FOR
NEW COLUMBIA SHORT FORM
PRODUCT CATALOG

PHONE
215-872-3900

 **COLUMBIA**
RESEARCH LABS., INC.

Mac Dade Blvd. & Bullens Lane
Woodlyn, Pa. 19094





Congratulations
to the military,
civil service and
contractor personnel of
White Sands Missile Range
on your 40th anniversary.

**Management Assistance
Corporation of America**

P.O. Drawer 100

White Sands Missile Range, NM 88002

678-3288

MACA is an 8A firm specializing in providing realistic solutions to scientific, managerial, and operational problems through the application of research, analysis, and computer software techniques.



A sleepy hamlet in 1945

At one time Dona Ana County, which contains Las Cruces as the county seat and Old Mesilla, extended from the Colorado River to include most of the Arizona Territory and eastward to include most of what is today Otero County.

Today, Dona Ana County's only river is the Rio Grande which is quite tame due to water control by the Caballo and Elephant Butte Reservoirs. Dams across the Rio Grande hold the water in reserve for irrigation of farms along the Mesilla Valley and past El Paso and for use by Mexico. Very little water from this area ever reaches the Gulf of Mexico.

In the past, before the dam was built, the mighty Rio Grande in places was as much as a mile and a half wide. The site of the historical river today is a disappointing sight to most tourists.

WSMR headquarters is in Dona Ana County. Prior to the establishment of the missile range in 1945, Las Cruces was little more than a sleepy desert hamlet. Today it is a bustling city of nearly 60,000 population, a farming and transportation center.

Situated in the heart of the fertile Mesilla Valley, Las Cruces is a blend of Indian, Spanish and Anglo traditions, history and culture which lends a sophistication to its historical background.

Otero County, carved chiefly from the original Dona Ana County, lies some 10 miles east of WSMR headquarters with its boundary line running north-south and enclosing much of the Tularosa Valley.

The Tularosa Valley and Jornada del Muerto which have a mean altitude of 4,000 feet above sea level are separated by the Organ and San Andres Ranges. The verdant Mesilla Valley in the Las Cruces-Mesilla area is several hundred feet lower in elevation and, with the aid of irrigation, is noted for its cotton which

compares favorably with Egyptian cotton.

Cotton ginning is one of the major industries of the area. Also in the Mesilla Valley south of Las Cruces is one of the world's largest pecan groves, Stahmann Farms, Inc. The modern Stahmann Farm raises geese to protect the pecan orchard from weeds and insects.

At the same time, the feathers are sold for bedding while the pecans are marketed in the shells or shelled with the shells marketed for commercial use. The Mesilla Valley is known for its chile, sugar beet, tomato and other truck farming.

The United States Department of Agriculture maintains an experimental range station in the Jornada del Muerto with headquarters about 23 miles from Las Cruces. The Department of Interior maintains the San Andres Wildlife Refuge in the San Andres north of the historical old mining town of Organ on the west slopes of the Organ Mountains.

As part of the Department of Game and Fish program, an exotic game experiment is underway in which non-native animals are transplanted to the refuge. The most recent transplant was Oryx (gemsbok), African antelope. Some two dozen of these animals were put in the refuge in 1969.

In 1849, five years before the Gadsden Purchase extended the U.S. boundary across the Rio Grande to include the Mesilla Valley, Capt. R. B. Marcy, U.S. Army led an expedition from San Antonio, Texas, to Santa Fe. He returned to San Antonio by way of the Jornada del Muerto to Dona Ana, over the San Augustin Pass to Tularosa. In his reports he described Las Cruces as a "settlement of 300 inhabitants, mostly Mexican, dedicated to agriculture, who are obliged to irrigate."



Forty Years

Congratulations

office supplies furniture machines

THE INK WELL

9th & Delaware downtown

Alamogordo, N.M. 88310

437-7300

CONGRATULATIONS WSMR
On Your 40th Anniversary

406 NORTH MAIN

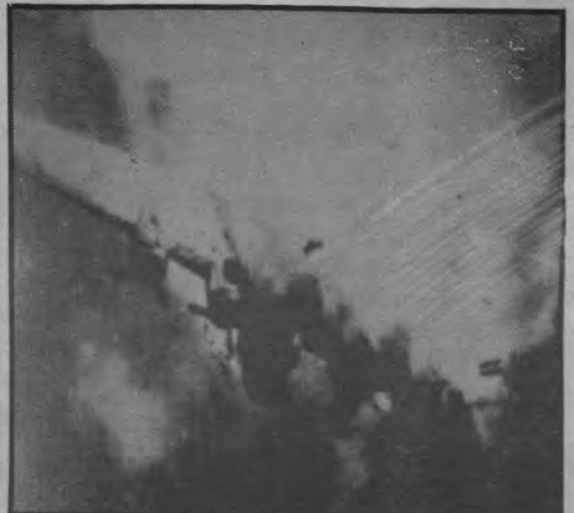
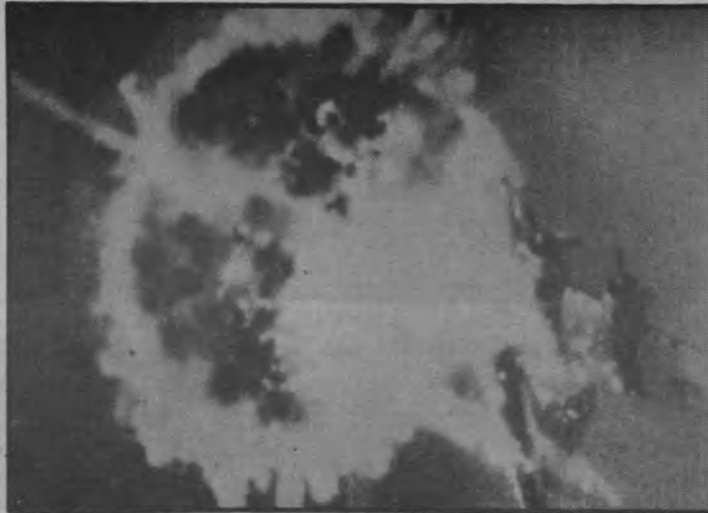
LAS CRUCES, NEW MEXICO

PHONE 526-9283 OR 526-5575



**ABC PRINTING
& OFFSET**





THESE PHOTOS DEPICT an early day Nike Ajax intercepting a droned B-17 bomber high over WSMR. It was 92nd round in the Ajax program and the first live warhead intercept. The sequence won Joseph Marlin, now retired and living in Las Cruces the Army's prestigious Ernie Pyle news photo award in 1952. The action took place on April 24 of that year. Marline used IGOR No. 2, now on display at the WSMR Visitor Center. According to Marlin and his co-worker Harold Shoppach of NR's date collection division, the debris impacted only one-quarter mile from their instrument site.

Congratulations WSMR
on your 40th anniversary



cma Inc.

GENERAL CONSTRUCTION/CONSTRUCTION MANAGEMENT
3814 MONTANA AVE EL PASO TX 79903 (915) 562-2890

We Have Been on Your Team for 40 Years.
You are Welcome to Join Our Team Anytime!
HAPPY ANNIVERSARY

burke

OUTDOOR ADVERTISING, INC.

P.O. BOX 2247

LAS CRUCES, NEW MEXICO 88004

- Wood - Neon & Electrical Signs •
- Erection - Boom Service •

We will continue to march
at your side WSMR.

Congratulations!



Sheffield's
FURNITURE
& CARPET

901 White Sands
Alamogordo

437-8948

Burke Properties
Burke Boxing

Phone (505) 523-2925

1101 E. Las Cruces

Sweet Lou
We ♥ You

Missile Range scene of history-making

Continued from page 28

dents of early owners still run La Posta. Following the Civil War, the California stage route ran west from Mesilla through Deming with the protection of troops from Fort Selden.

Onate led his colonists north across the arid Jornada del Muerto, translated as "Journey of the Dead." This stretch of desert is separated from the Rio Grande by the Caballo and Fra Cristobal Mountains. The 90-mile long tract of sand and lava beds is practically waterless. It extends northwest from Las Cruces due north across the upper reaches of what is now WSMR to Socorro, N.M. It is bounded on the east by the San Andres Mountains.

Livestock from ranches in the Tularosa Valley, much of which lies in the missile range boundaries today, were trail-driven over the Old Salt Trail which led through the Organ Mountains. Known then as Baylor's Gap, due to a Civil War incident, this pass allowed cattle and livestock to cross the mountain barrier and follow a path east along a route by the Salt Flats between El Paso and Carlsbad, N.M.

The Malpais

The Malpais or "Bad Lands" are lava

beds of relatively recent geological origin which flank WSMR's 90-mile impact area. These beds are found both in the Jornada del Muerto and east of the Sierra Oscura Mountains which extend north from the San Andres Mountains. The black broken and rough lava streams remain much as they were at the time formed. They are aptly described as "rivers of black basalt." According to Indian lore, the lava beds are the blood and bones of monsters from the Age of the Gods, an era in Indian prehistory in which all living creatures were believed to be giants.

The Malpais pose a thorny problem for WSMR recovery crews bringing out missiles impacting within their midst. Due to the nature of the lava streams, ordinary ground access is impossible. Deep crevasses appear to the eye as narrow fissures, and the lips of a crevasse are often crusts of volcanic ash which give way under a man's weight. Therefore, missiles that impact in the lava beds are sought out by helicopter. Then, recovery crews fly in and harness the missile parts to the helicopter which flies both crew and missile parts to headquarters area.

U.S. Highway 380 passes through one of the lava beds between Carrizozo

and Socorro, N.M. This highway, as well as U.S. Highway 70, is closed often during missile firings. The roadblocks

are a safety precaution for motorists travelling across the range where missiles fly across the highway.



A NAVY ROLLING Airframe Missile (RAM) is a surface-to-air missile. Unlike other Navy missiles, the 13-foot RAM rotates during launch and continues to roll throughout its flight. (photo by Frank Trevino)

YOU WON'T BELIEVE YOUR EYES!!



The Finest Quality Photo Finishing

- Kodak Paper
- Kodak Chemicals
- Noritsu Q.S.S.® Equipment (The Best)

Fast, Friendly Service

- One Hour on 135, 126, 110 and Disc Film (C-41 Process)
- Skilled Lab Technicians
- Drive Up Window (Or Walk in and Watch)
- After Hours Drop Off (Ready the Next Morning)
- Centrally Located

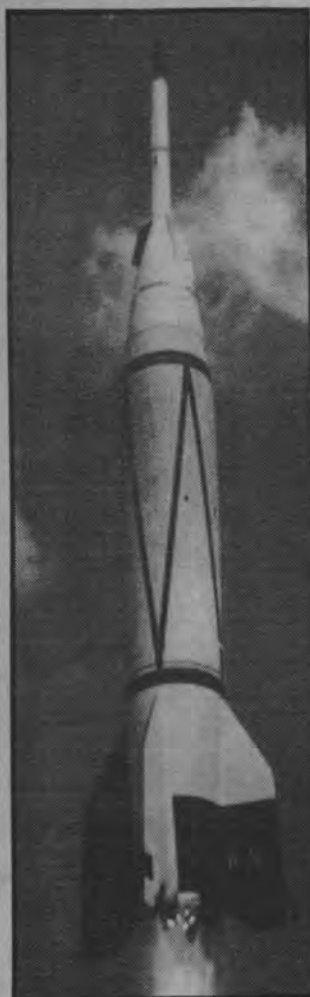
Competitive Prices

- Lower Than Many One Day or One Week Services
- Fresh Kodak Film Competitively Priced

1
P
D
Q
HOUR
PHOTO
FIRST IN QUALITY

1269 El Paseo
Brazito Plaza
Las Cruces, N.M.
(505) 525-2711

We use
Kodak
PAPER
...for a Good Look



BUMPER-5 EARNED A permanent niche in the history of rocketry on Feb. 24, 1949, when it reached a speed of 5,150 miles per hour and the phenomenal altitude of 248 miles above then White Sands Proving Ground. At the time, that proved to be the greatest speed and the highest altitude ever attained by a man-made object. The first Bumper, consisting of the German V-2 and the U.S.-built WAC Corporal, was fired nine months earlier on May 13, 1948, and was billed as the first large two-stage rocket to be launched in the Western Hemisphere. The purpose of Bumper-5 was to measure temperatures at extreme altitudes.

Dr. Goddard, father of U.S. rocketry

White Sands Missile Range owes a debt of gratitude to one man more than any other for its existence. For without the work of that man we probably wouldn't be here today.

That man, Dr. Robert H. Goddard, made most of the significant advances in the development of rocketry before the American people or the U.S. government, for that matter, even considered rocketry and the resultant space exploration seriously.

Rocketry really began in the 11th century, but early rockets were widely known in many parts of Europe, and several types of rockets were mentioned in a German military report dated in 1405.

In 1855 the first two-stage rocket was devised and used to project life-lines in sea rescue. Little was accomplished during the ensuing years until Dr. Goddard began his studies in the late 1800's.

Known as the father of modern rocketry, Dr. Goddard was born in Worcester, Mass., Oct. 5, 1882. At the age of 17, he had a dream of man's flying to the moon and to Mars.

Despite being sickly he finished high school, obtained a bachelor's and master's degree and pursued the science of space. He wrote numerous papers but for the most part was laughed at. After all, here was a man talking about rockets before most scientists even believed man could travel by airplane.

But Dr. Goddard was determined. He began his experiments with rockets in the basement of the Worcester Polytechnic Institute in 1908. He became an instructor of physics there while continuing graduate study at Clark University,

where he received his MA degree. In 1911 he completed his PhD also at Clark. During the next two years the doctor served as a research fellow at Princeton University.

Dr. Goddard's thinking was far too advanced for his time, and scientific periodicals to which he submitted his manuscripts, promptly returned them.

For instance, in 1907 a paper he prepared discussed the means of furnishing jet propulsion sufficient to permit navigation in interplanetary space. Two years later he conceived the idea of using hydrogen and oxygen as fuels for interplanetary rockets.

In 1914 he intensified his research into solid as well as liquid-fuel rockets. Using his own funds he constructed rockets of various types to use in his experiments.

When his resources were depleted in 1916, he submitted papers on his work to several foundations seeking financial backing for his research activities. The Smithsonian Institute supplied an \$11,000 grant, the investment which launched modern rocketry.

When the U.S. entered World War I in 1917, Dr. Goddard volunteered his services and was assigned the task of investigating the military possibilities of rockets. He successfully developed several types, one of which was the forerunner of World War II's successful "Bazooka."

At the close of the war, Dr. Goddard returned to his work on the development of high-altitude rockets, and on March 16, 1926, the world's first liquid propelled rocket took flight at Auburn, Mass.

This rocket was the true precursor of the German V-missiles of the granddad of the space age.

Goddard's achievement predated the use of liquid fuel in the German V-2 by nearly 18 years.

It wasn't easy to experiment with noisy rockets in densely populated Massachusetts. In 1929 Goddard's fourth liquid-propelled rocket brought problems.

The rocket flew 184 feet in 2.5 seconds. The roar of the fiery rocket startled citizens who thought a plane had crashed. The wire services picked up the story of the rocket, saying Goddard's rocket to the moon had exploded some 230,000 miles short of its target. The Massachusetts fire marshal forbade Goddard to fire his rockets within the borders of the state again.

Completely overlooked in the uproar was the fact that the rocket had carried an instrument package containing an aneroid barometer, thermometer and a camera triggered to operate when the parachute opened. All were recovered completely intact.

Through the assistance of Dr. Charles Abbott, secretary of the Smithsonian Institute, the War Department granted Goddard permission to use part of the artillery range at Camp Devens, now Fort Devens, Mass. However, he could only test after rains or when snow was on the ground.

As a result of his 1929 flight, Dr. Goddard's work attracted the attention of Col. Charles A. Lindbergh, first person to fly the Atlantic solo. He in turn called it to the attention of Harry Guggenheim and his father, Daniel Guggenheim.

The Guggenheim Foundation granted Goddard \$25,000 per year for at least four years. For the first time he had adequate financing, and he moved his work to Roswell, N.M., for comparative freedom in testing on the New Mexico desert.

At Roswell he established himself at Mescalero Ranch, just 100 miles from the site to be chosen later for the establishment of the White Sands Proving Ground, now White Sands Missile Range.

At Mescalero Ranch he fired the first gyro-stabilized missile in 1932. On July 28, 1937, he launched the first rocket to use a pivoted motor for steering.

In 1941, Dr. Goddard accepted an invitation to join the Naval Experimental Station at Annapolis, Md., and continued his research there.

He had planned to return to Roswell at the conclusion of World War II, but he died unexpectedly Aug. 10, 1945. He had lived long enough, however, to see the U.S. recognize the importance of his gigantic contribution to that science.

There are 214 patents granted or under consideration in his name. He was not only the first to develop liquid fuel rockets, but was also first to fire one which attained a speed faster than the speed of sound.

He was first to steer a rocket by the use of vanes in the blast of the rocket motor. He patented the idea of step rockets, made the first application of instruments to record conditions of the rocket during flight and developed the mathematical theory of rocket propulsion and rocket flight on which all military and experimental calculations are now based.

Congratulations On Your 40th Anniversary



RIGHT OR WRONG?

The same temporary worker can be right in one office environment, wrong in another. That's why the Manpower System is so important. It's a breakthrough in personnel science that eliminates guesswork in selecting the right temporary for each assignment. It's the reason to call Manpower when you have more work than workers.



Word Processing Operators, Secretaries, Typists, Data Entry

Serving White Sands Missile Range, Las Cruces & El Paso.

El Paso 778-6321

Las Cruces 525-0565

If only the range's gantry could talk!

During the late forties and early fifties, a casual conversation with a visitor who had caught sight of the original gantry crane at the V-2 launch site (LC33) might go something like this.

"What are you building over there?"

"Oh, that's the gantry crane from which large rockets were serviced. Platforms were lowered around the rocket at various heights to permit access to instrumentation, etc."

"But how did the rocket go through it on takeoff?"

Yes, that's the fabulous gantry, a structural steel monstrosity towering over 60 feet high and 30 feet wide, assembled on tracks on which it can be moved as much as 2,000 feet away from a rocket ready for flight. No rocket ever flew up through it.

If only that crane could talk, the items of historical interest in the field of rocketry and humorous incidents it could tell would fill a book.

For example, there was the famous escape cable. A one-half inch cable was stretched from the upper level platform to a pole on the ground approximately 500 feet away. On this cable were slings through which a worker could slip one arm, operate a brake with the other hand, and if he had nerve enough, shove off into space for the long ride down to the ground. Then the hand brake went bad so enough slack was left in the cable that in riding down, he would hit the ground before reaching the pole.

This was all right as long as a person hit running, but inexperienced riders would inevitably end up prone with their faces buried in the sand. Besides, the initial plunge into space on the slackened cable was so sickening that one time when the emergency siren switch (panic button) was accidentally tripped with a fueled V-2 undergoing pre-flight check-out, the mad scramble down the ladders resulted in everyone's fingers being trampled to a bloody mess on the ladder rungs by the next man above.

The escape cable was a cause for considerable exchange of money, though: "I'll bet \$5 you don't have enough guts to ride it down," and so on.

Then there was the difference in weather between the top of the crane and the base. It always seemed 20 degrees colder on top in the winter and 20 degrees hotter in summer.

And winds! The wind would howl around that crane making the entire structure sway and rock. There were plenty of lights on the various platforms for working all night to get a missile ready for an early morning shoot, but no protection from the elements. The air was sometimes turned blue with profanity by workers trying to troubleshoot a balky missile after dark with the icy wind numbing their fingers and shortening tempers.

Workers around the old crane looked more like construction men than the artists' conceptions of space engineers and technicians around the base of a towering rocket. Hard hats had to be worn by all men because the crew up above were forever dropping tools and parts which would come clanking down through the crane. No missile was launched that hadn't been witness to many exchanges of threats between the upper and lower crews.

Range scheduling in those days had to consider the time required to modify the old gantry in preparation for a missile and move it along the track. One day at quitting time the crane was being

moved down the track to make room for a Corporal missile scheduled to arrive at the launching area at 8:30 the next morning. Locomotion was provided by a pair of in-line wheels on each of the four corner supports individually driven by four electric motors operating from a generator mounted on the crane.

Before it had cleared the launcher far enough to allow room for the Corporal transporter, one of the wheels broke in half and with a sickening lurch the crane ground to a halt. The construction crew was called and told to have the crane ready to move by eight the next morning.

Some people think changing a tire on a car or truck is troublesome. They should have seen the two 15-ton jacks required to lift up one corner of the crane enough to install a new wheel which weighed in the neighborhood of 400 pounds and was mounted on a solid steel shaft about four inches in diameter and two feet long. It took all night long, but by 8:15 the next morning the gantry was rolling again.

The designers of the gantry, Cal Tech, would hardly recognize their original brainchild. It was modified from a standard shipyard gantry to fit the requirements of serving the original Corporal missile, but was used extensively in the V-2 program as well. It was erected on a track running through the Army Blockhouse area from southwest and northeast. It has since been moved to a north-south track and has been modified through the years to service other missiles including the Viking, Blossom, Bumper, Hermes A1 and Hermes II.

Since these varied from about 20 inches in diameter and 20 feet in length to 60-inch diameters and 60-foot lengths — some with wings, some with forward control surfaces and some with only tail surfaces, and all requiring access at various levels — outrigger platforms, hoists, ladders, sprinklers and guardrails sprouted out until the gantry looked like a structural steel designer's nightmare.

After all these modifications had been made, there was considerable anxiety over the possibility of the gantry collapsing. It sagged, the structural members bent, the wheel supports bowed and the wheel rims snapped off. But after beefing up the structure, spreading the tracks and removing excess weight, everyone relaxed again and it was a good many years before it was replaced by a new gantry crane — the old telescoping ladders on which only one man could work were replaced with platforms at various levels so that dozens of men could be working simultaneously.

In addition to being an antique of the missile range, it has the enviable reputation of having had a part in initial testing of numerous types of rockets whose flights varied from "just over the fence" to 250 miles above the earth's surface.

Picture, if you can, a weirdly painted rocket towering above the launcher, oxygen vapor trailing off, men scurrying about making last minute checks, intercoms buzzing, and the old gantry starting to creep down the track away from the rocket with the motors whining and the wheels screeching. What weird unearthly feeling when witnessed at daybreak on a

cold wintry morning, seemingly miles from civilization and surrounded by desolate wasteland. Those were the early days of man's attempt at space flight, and the pioneers will always remember with humor and affection the fabulous gantry at White Sands Missile Range.

In February 1983 the gantry and the Army blockhouse which sits nearby were dedicated as a New Mexico state monument. In August 1984 a Hermes A-1 missile was added to the site and placed under the gantry. The Hermes is on loan from the National Air and Space Museum at the Smithsonian Institution in Washington, D.C.

Project Hermes began in November 1944 when the General Electric Company of Schenectady, N.Y., was awarded a contract by the Ordnance Department to develop a longrange guided missile for the Army. Development of the Hermes surface-to-surface missile began in 1946. The General Electric contract covered the investigation, development and engineering work leading to the design of a series of longrange missiles. After a number of configurations were studied, it was decided to base the program on the German "Wasserfall" missile.

By the spring of 1949, the first Hermes, the A-1 vehicle, was ready for static tests. Five A-1s were fired at White Sands Proving Ground. These firings occurred in May and September 1950, and February, March and April 1951. The Hermes program continued for 10 years. However, participation by the General Electric Company ended by agreement in June 1951.



ON FEB. 16, 1983, the V-2 gantry crane and Army blockhouse at Launch Complex 33 was proclaimed as a state historical monument. Maj. Gen. Niles J. Fulwyler, range commander, and Thomas Merlan, state historic preservation officer, unveiled the New Mexico state historical marker at the entrance to LC33.

(photo by Frank Ontiveros)

From Chinese fire rockets to modern missiles

Sometime during the 11th century the Chinese discovered how to make a simple rocket using gunpowder for fuel. It didn't take the military leaders long to realize that the rocket could be used in defense of the great China Wall. They strapped the rockets to their arrows and greatly extended the range of the bow and arrow.

Centuries later at White Sands Missile Range rockets are used to push guided missiles to their targets. Rocket engines are also used to propel test instruments and experiments into the upper atmosphere over Southern New Mexico. These rocket engines used today work on the same principles that made the Chinese fire arrows so effective.

In the 20th century the term "rocket" has become a household word. Huge rockets carried man to the moon and back. Because of rockets, Americans enjoy instantaneous world-wide communication via satellite. We even get a daily cloud cover picture of our area taken from a satellite which was launched into space by a rocket. Soon people may be riding in rockets on a regular basis to get to work in a space station. In short, the rocket is the key to the exploration of the other worlds in the universe.

Chinese the first

According to historians, the Chinese built the first working rockets. They were also the first to use them for military purposes. In A.D. 1232 some ingenious military leader used arrows powered by small gunpowder rockets to successfully

defend the city of K'ai-Fung-Foo against the invading Mongols.

From that time until the 20th century, the rocket had its ups and downs. It was quickly introduced in Europe in the 13th century as a firework and as a weapon. During the Renaissance every army had a rocket corps. But artillery improvements eventually made the cannon more effective because of increased range and accuracy. Occasional improvements in the rocket would bring it back into popularity but usually not for long.

During this time one Chinese official hit on the idea of using rockets to propel a man through the air. It was around 1500 that Wan Hu rigged a pair of kites together with a chair attached in between. He then tied a series of military rockets to the kites and drafted a group of coolies to light the rockets. Not wanting to miss out on the chance for fame, Wan Hu decided to be his own test pilot. According to reports, he sat in the chair and gave the order to light the rockets. There was a lot of noise and a great burst of flame and smoke which blocked everyone's vision. When the smoke cleared, Wan Hu was gone. The story ends there and the reader is left to his own conclusions.

Military use

Used as a barrage weapon the rocket often proved effective for military purposes. In the late 1700's Haid Ali, Prince of Mysore, India, used iron rockets to defeat a top British unit in battle. The British, in turn, used the rocket

against the United States.

In the War of 1812 the British used rockets developed by William Congreve, one of the few men who worked to improve early rocket design. In "The Star-Spangled Banner" the reference to the "rockets red glare" is a description of the British bombardment of Fort Mchenry with Congreve rockets.

Congreve and an American, William Hale, did a lot during the 19th century to force armies to reactivate their rocket corps. Congreve's success came in his ability to extend the range of his military rockets to as much as 3,000 yards. Hale attempted to solve the problem of low accuracy by spin stabilization, a technique still in use today. As the century progressed artillery technology bypassed the rocket and in the beginning of the 20th century rockets were more a matter of speculation than reality.

Theory

Authors Jules Verne and H.G. Wells wrote about the use of rockets and space travel and serious scientists soon turned their attention to rocket theory. Konstantin Tsiolkovsky, a Russian, worked on rocket design and theory in the early 20th century. In his numerous writings he proposed space exploration by rocket, liquid propellants, the multistage rocket and space stations.

Hermann Oberth, a German scientist, also contributed to the theory and design of rockets. In 1923, he published a work in which he proved flight beyond the atmosphere is possible. In a 1929 book

called "The Road to Space Travel" Oberth proposed liquid-propelled rockets, multistaged rockets, space navigation, and guidance and re-entry systems. He also advanced the idea of a trans-Atlantic postal rocket for quick mail delivery. It was taken seriously at the time but never attempted.

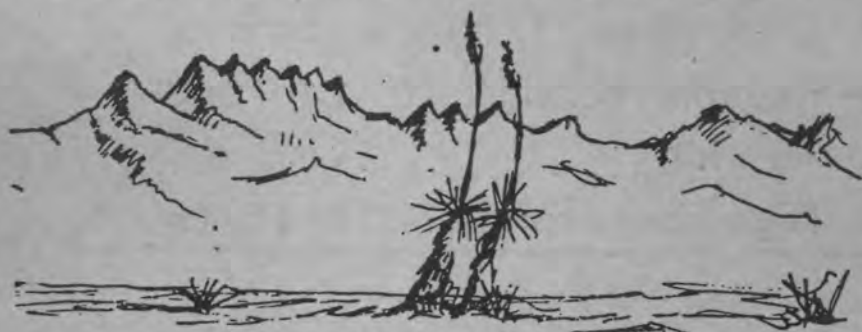
From 1939 to 1945 he worked on German war rocket programs with such notables as Wernher von Braun. After the war he came to the United States where he again worked with von Braun. During the war one of the weapons the scientists were designing was reminiscent of Oberth's postal rocket. The Germans wanted to build a rocket which would carry a bomb from Europe to strike New York City.

Father of the rocket

Most historians call Oberth and Tsiolkovsky the fathers of modern rocket theory. If that is so, an American, Dr. Robert H. Goddard, can be called the father of the practical rocket. His designs and working models eventually led to the German big rockets such as the V-2 used against England in WWII. All three men are enshrined in the International Space Hall of Fame in Alamogordo, N.M.

Goddard started working with rockets in 1915 when he tested solid fuel models. In 1917 when the U.S. entered WWI he worked on perfecting rockets as weapons. One of his designs turned out to be the forerunner of the bazookas, a tube launched, recoilless missile, 18 inches long and one inch in diameter. It was

Continued on page 37

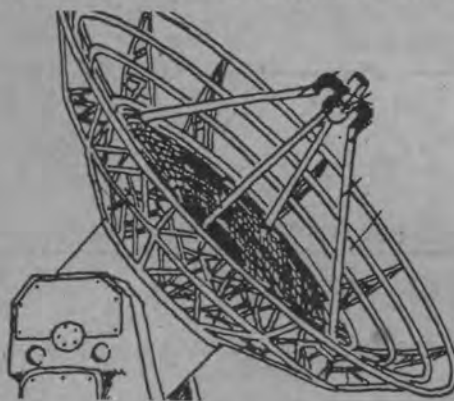


**Congratulations
to the WSMR
personnel for
40 years of
excellence**

**Vega
Precision
Laboratories**



**OAO CORPORATION
JOINS IN CELEBRATING
WSMR'S 40TH ANNIVERSARY.**



**CONGRATULATIONS TO THE MILITARY PERSONNEL,
CIVIL SERVICE AND ALL CONTRACTOR EMPLOYEES!
BEST WISHES TO ALL FOR THE FUTURE!!**

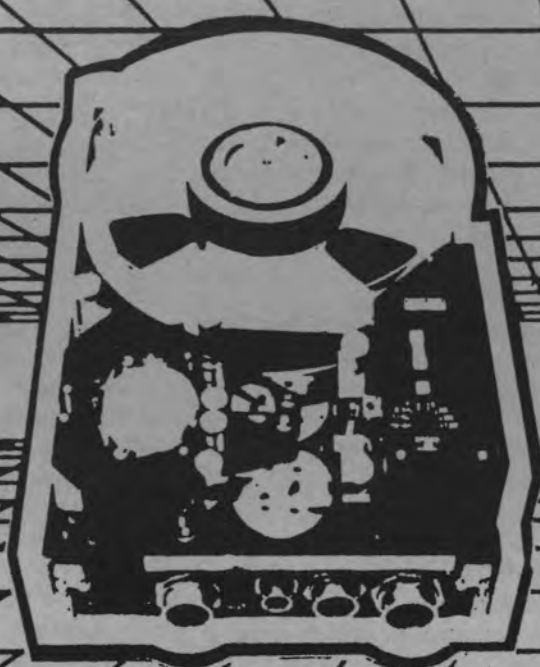


"WHERE THE TECHNOLOGY OF THE
FUTURE MEETES THE CHALLENGES OF TODAY"

P.O. Drawer F, White Sands Missile Range • New Mexico 88002
(505) 678-3076

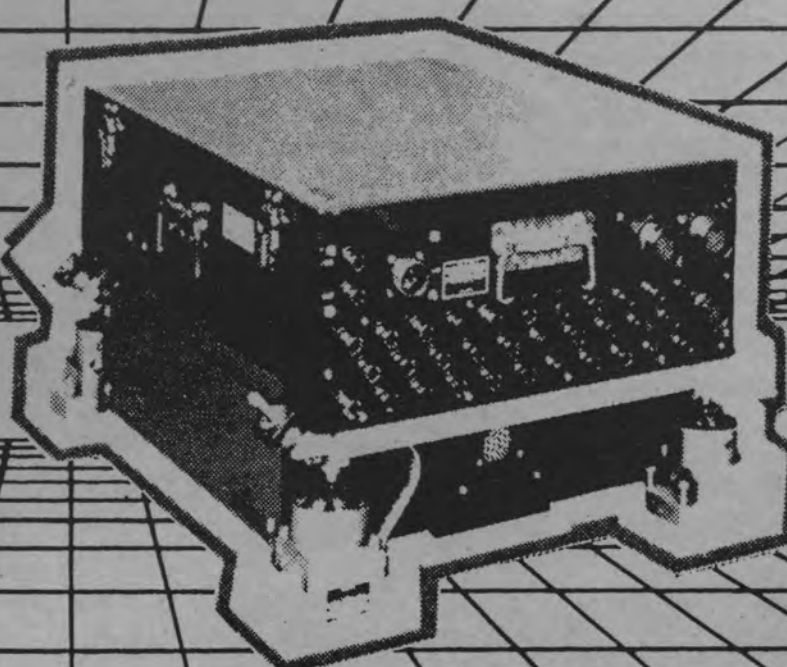
Fairchild Weston

**The NAME to know for quality
Airborne/High Environmental
Data Recorders**



MODEL 12B

- 7, 14 or 28 channel capacity
- Useable reel size of 10-1/2 inch
- Tape Speed Range 120 to 15/16 ips
- Bandwidth 2 Mhz DR, 500 kHz FM
- Serial and/or Parallel High Density PCM
- Raised zero loop tape path for maximum vibration resistance
- Self recovery from total power failure
- Operates from 18 to 30 VDC



MODEL 15

- 7, 14, 28 or 32 channel capacity
- Useable reel sizes 10-1/2, 14 and 15 inch
- Tape speed range 120 to 15/16 ips
- MicroP controls built in shuttle, stitch, monitor full auto test, etc.
- Low power consumption - 240 watts for 14 channel system
- Bandwidth 2 MHz DR, 500 kHz FM
- Serial and/or Parallel High Density PCM
- Compliance with MIL STD 1610
- TTL or RS232 remote control



**FAIRCHILD WESTON
SYSTEMS INC.**

FAIRCHILD WESTON
Schlumberger

DATA SYSTEMS DIVISION
P.O. Box 3041, Sarasota, Florida 33578
(813) 371-0811 • Telex 052-890 • TWX 810-864-0406

Dr. Goddard, father of U.S. rocketry

Continued from page 35

actually tested in 1918 but the war ended before it could be used against German tanks.

In 1919 he published a paper entitled "A Method of Reaching Extreme Altitudes." In it he concluded that a rocket would work better in a total vacuum than in our atmosphere. This was against the popular belief of the day that a rocket needed air to push against. He also suggested that a multistage rocket could reach very high altitudes and even reach the escape velocity of the earth. The press scoffed at his ideas and public reaction was poor.

Goddard went on experimenting and on March 16, 1926 he flew the first liquid-fueled rocket. After the initial success, he flew other rockets in rural Massachusetts until they started crashing in his neighbor's pastures. The local fire marshal declared his rockets were a fire hazard and ended his tests.

Stage is set

Charles Lindbergh came to Goddard's rescue by helping him get a grant from the Guggenheim Foundation. With it Goddard moved to Roswell, N.M. where he could experiment without endangering anyone.

There he developed the first gyro-controlled rocket guidance system and was eventually flying rockets faster than the speed of sound and at altitudes up to 7,500 feet. It was a huge improvement over the first liquid-fueled rocket which went 220 feet and was in the air only 2.5 seconds.

During WWII, the U.S. military saw little use for rockets. The Army did use bazookas but it was the Germans who took Goddard's ideas and turned them into real weapons. Goddard died in 1945 just as he started to receive some recognition for his work. One of his biographers said, "It is virtually impossible to design, construct or launch a rocket today without utilizing some idea or device originated by Goddard."

Under von Braun, the Germans perfected the large liquid-fueled rocket which culminated in the V-2 long range ballistic missile. It was the largest rocket vehicle at the time, being 46 feet long, 5.5 feet in diameter and developing 56,000 pounds of thrust or push. At the close of the war the allies captured V-2 components and the German develop-

ment team surrendered to the Americans. The team and components were sent to White Sands Missile Range, New Mexico.

A V-2, assembled and launched on the range, was America's first rocket to carry a heavy payload to high altitude. A V-2 set the first high altitude and velocity record for a single stage missile, and a V-2 was the first large missile to be controlled in flight.

Jointly, the American and German scientists at White Sands worked to develop missile and rocket systems. From their work came such missiles as the Corporal, Redstone, Nike, Aerobee and Atlas.

How does it work

Rockets have been around for centuries but no one has really understood how they worked until just recently. It was only 60 years ago when Goddard proposed that a rocket does not need air to push against. This is now obvious with the manned flights to the moon. But how do they work then?

Rockets obey Isaac Newton's third law of motion which says for every action there is an equal and oppositely directed action. When a hunter pulls the trigger on his rifle, a small gunpowder explosion occurs in the shell. One reaction to this explosion is the bullet and smoke being pushed out the end of the barrel. At the same time there is an equal reaction or push in the opposite direction which is the recoil into his shoulder. He doesn't feel much because the force or action is trying to push the whole rifle as opposed to the small bullet on the other action.

If the hunter was on roller skates when he pulled the trigger the recoil might be enough to push him backwards. And if he kept up a rapid rate of firing he might pick up speed and continue to move backwards.

The same thing happens in a rocket. The rocket is the same as the rifle and instead of firing bullets, the rocket shoots out a stream of hot gases at supersonic speeds. The gases are pushed out as a result of the burning of a fuel in the combustion chamber.

Action and reaction

Another way to look at this is to think of a long tank shaped like a short pencil. If the tank is filled with compressed air and sealed, nothing happens. The gas is inside pushing against the walls, but the

pressure is equally distributed. If one end of the tank is opened, the air pushes through the opening very quickly. According to Newton there should be an equal action in the opposite direction. There is. The air pushes on the front of the tank and if it is great enough the tank will move forward.

In a rocket engine the combustion chamber is very much like a rifle barrel or an air tank with one end open. In the rocket, a fuel, which can be burned like kerosene or a solid like gunpowder, is burned. The burning releases gases and heat which build up pressures in the chamber. The pressure pushes the gases out the exhaust nozzle. The reaction or push in the opposite direction drives the rocket forward.

The nozzle or exit hole for the pressurized gases is not just any opening. It is specially designed to open outward like an ice cream cone. This makes the gases go out even faster, which in turn gives more push at the other end of the combustion chamber.

Right conditions

Rockets do best in outer space where the gravitational forces are less and there is no air resistance to overcome. But there is also no air to keep the rocket fuel burning. Rockets work in space because they are completely self-contained. The rocket carries a fuel and an oxidizing agent like oxygen so it needs no outside air. This explains why Polaris missiles can be fired from submarines while they are under water.

The fuel and oxidizer can be in solid or liquid form. The huge rockets which hurl the astronauts and satellites into space used liquid fuels like kerosene or super-cold, liquid hydrogen and oxidizers like liquid oxygen. When the two liquids are sprayed into the combustion chamber, they ignite and burn with explosive force.

At White Sands Missile Range, most of the missile systems under test use solid fuels and oxidizers. In a solid propellant, the fuel and oxidizer are mixed together and placed right in the combustion chamber. This makes the missile smaller than one using liquid fuel because there are no storage tanks for the fuel. Some solid propellants like nitroglycerine don't even need an oxidizer mixed in with it.

The solid-fueled rocket engine has many advantages for the military. It is smaller which makes it very portable. The solid fuels are much easier to handle than the caustic and sometimes super-cold liquids. Also, solid fueled rockets are always ready to fire. They do not require the preparation which a liquid fueled rocket would need.

Much more than a rocket

Today's missile systems are much more than a rocket engine with a supply of fuel and oxidizer. There is usually some sort of payload. This can be a test package or a bomb. This missile will have some sort of guidance system to get it to its target and it has an airframe to hold all the parts together. The Missile Park at White Sands Missile Range has a wide range of missile airframes on public display. They include a V-2 along with missiles used by the U.S. Army, Navy and Air Force.

For the future scientists are looking for other types of rocket engines to replace the chemical ones now used. Any self-contained system which can push matter out an opening will produce push or thrust. Therefore, even a balloon could be considered a rocket.

One idea researchers are looking at is using a nuclear reactor to heat a gas so it expands and becomes pressurized. The gas can then be forced through a nozzle which would create the necessary opposite action to drive a vehicle forward. Scientists have contemplated using an ion beam to push a spacecraft. This system calls for accelerating charged molecular particles in magnetic field and then beaming them out the nozzle end of the engine. Another plan calls for thrust to be provided by ejecting photons or light from the engine. These devices are theoretically possible but they lack the powerful thrust necessary to escape earth's gravity pull.

Since the turn of the century the rocket motor has gone from being a firework and little used weapon to being the key to man's dreams. The rocket has made space exploration possible. Men have already walked on the moon and exploratory spacecraft have flown past several of the planets in the solar system, sending back valuable information. The rocket is the key to opening up new worlds for man to explore.

HAPPY FORTIETH

ARMY
SURPLUS

FRONTIER MERCANTILE
Buy—Sell—Trade
New—Used—Mdse.

JUNGLE & STEEL TOED BOOTS * PARKAS * FIELD-JACKETS *
HUNTING * CAMPING * HIKING * BACKPACKING SUPPLIES *
BOLT BINS * METAL SHELVING * BALL BEARING CASTORS * PONCHOS *
LOCKERS * FILE CABINETS * METAL GAS & WATER CANS * DESKS *
METAL & WOOD BOXES * TENTS * TARPS * BLANKETS * CHAIRS *

Melton & Jean Fuller 434-3075 2420 N. White Sands
Burl D. Gabrel Alamogordo, NM 88310

Acme Drive In Cleaners

Military Inspection Special

We do summer uniforms

"Mamason" Style

HAPPY

40th!

901 10th Street
Alamogordo, N.M. 88310
(505) 437-1430

Whatever you wear we clean it with care

Congratulations W S M R on your 40th Anniversary

The EAI Advantage in Computer System Services



EAI[®] Electronic Associates, Inc.

P.O. DRAWER P,

W.S.M.R.,

N.M.

88002

**THE TREMBLY ASSOCIATES INCORPORATED TEAM
CONGRATULATES
WHITE SANDS MISSILE RANGE
ON 40 YEARS OF SUCCESS**



**BILL TREMBLY
PRESIDENT**



**HELYN TREMBLY
VICE-PRESIDENT**



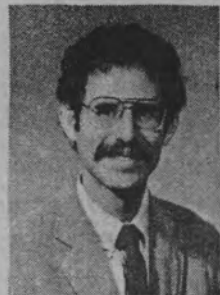
**ROD BLANCHARD
OPERATIONS MANAGER**



**HARRY VOLLMER
TEST EQUIPMENT SALES**



**JACK RICHARDSON
COMPONENT SALES**



**NEAL VAN BERG
COMPUTER PRODUCT SALES**



**BARBARBA JARAMILLO
INSIDE SALES**



**BEVERLY ALFONSO
SECRETARY**



**WENDY DONAHOO
ACCOUNTING**



**SHARON SCHRITTER
SALES SUPPORT**



**MARY LEE WIDNER
SALES SUPPORT**



**LISA SMITH
SALES SUPPORT**

We at Trembly Associates congratulate White Sands Missile Range on their 40th Anniversary. We feel that all Americans are indebted to those individuals who have dedicated their careers in a professional manner to keep America free and strong, including the military, civil service employees and contractors. We know that without strength, we would not have freedom. What greater contribution can this triad make than to achieve the freedom we all enjoy!!

We congratulate the entire team we have had the privilege and honor of interfacing with over the last 15 years at White Sands Missile Range and wish you the best of success in the future.

TREMBLY ASSOCIATES INCORPORATED

119 QUINCY N.E.
ALBUQUERQUE, NM 87108
(505) 266-8616
EL PASO (915) 533-9380

ALBUQUERQUE

DENVER

EL PASO

LAS VEGAS

PHOENIX

SALT LAKE CITY

Millimeter-Wave FREQUENCY MULTIPLIERS

MODEL NO.	OUTPUT FREQ (GHz) ^{Note 1}	INPUT FREQ (GHz)	CONV LOSS (MAX) (dB) ^{Note 2}	INPUT PWR (MAX) (dBm) ^{Note 3}	SPURIOUS OUTPUTS (dBc) ^{Note 4}	OUTPUT CONNECTOR ^{Note 5}	CUTOFF FREQ (GHz) ^{Note 6}	QTY 1-4 UNIT COST ^{Note 6}
K-2X	18-26.5	9-13.25	11.5	+23.0	23	WR42	14.1	\$ 800
K-3X	18-26.5	6-8.83	17.0	+23.0	18	UG595/U		950
Ka-2X	26-40	13-20	12.0	+21.5	23	WR28	21.2	960
Ka-3X	26-40	8.67-13.33	18.0	+21.5	15	UG599/U		1140
Ka-4X	26-40	6.5-10	22.0	+21.5	15			1160
Q-2X	33-50	16.5-25	12.5	+20.0	20	WR22	26.5	1120
Q-3X	33-50	11-16.67	18.5	+20.0	15	UG383/U		1330
Q-4X	33-50	8.25-12.5	23.0	+20.0	15			1400
U-2X	40-60	20-30	14.0	+20.0	20	WR19	31.6	1620
U-3X	40-60	13.33-20	20.0	+20.0	14	UG383M/U		1830
U-4X	40-60	10-15	25.0	+20.0	14			1900
V-2X	50-75	25-37.5	15.0	+18.0	18	WR15	40.1	2200
V-3X	50-75	16.67-25	21.0	+18.0	13	UG385/U		2700
V-4X	50-75	12.5-18.75	27.0	+18.0	13			2800

Note 1 — Integrated output filters available.
 Note 2 — Conversion loss specified at +17 dBm input power.
 Note 3 — Units available with +26 dBm input.
 Note 4 — Input connector SMA to 20 GHz; K Type to 40 GHz.
 Note 5 — Spurious outputs below cutoff frequency are 30-60 dBc without special filters.
 Note 6 — 1/85 Consult factory for quantity discounts.

18 to 26.5 GHz HI POWER DOUBLER

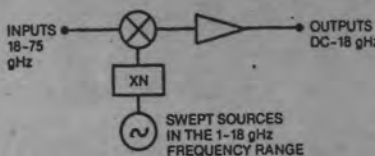


- BROAD BAND
- UNCONDITIONALLY STABLE
- BIAS NOT REQUIRED
- +10 dBm OUTPUT FOR +21 dBm INPUT
- OTHER HIGH POWER HIGHER FREQUENCY UNITS UNDER DEVELOPMENT



Spacek Labs millimeter-wave balanced doublers, triplers and quadruplers cover complete waveguide bandwidths and are unconditionally stable for any input or output VSWR.

Multippliers may be integrated with down converters for frequency extenders with considerable cost savings:



SPACEK LABS, Inc.
 Millimeter Wave Technology
 210 East Cota Street
 Santa Barbara, CA 93101
 (805) 564-4404, TLX 658340

50-75 GHz



MODEL PV-5 MIXER PREAMPLIFIER	MODEL MV-11 UP/DOWN CONVERTER
RF & LO: 50-75 GHz IF: 50-500 MHz DSB NF: 7 dB	RF & LO: 50-75 GHz IF: DC-22 GHz CONV LOSS: 9 dB

Models available with lower noise figure and conversion loss over narrower bandwidths.
 Write for literature on millimeter wave multipliers, mixers and complete front ends.

SPACEK LABS, Inc.
 Millimeter Wave Technology
 528 Santa Barbara St.
 Santa Barbara, CA 93101
 (805) 965-4291, TLX 658340

Spacek Labs V Band mixer-preamplifiers, down converters and up converters are available in models which provide continuous coverage from 50-75 GHz or in narrow band models optimized for the lowest noise figure and conversion loss in the industry.

Options include:

- Integral local oscillators
- Doublers or triplers on the LO port (see note 1)
- Integral power supply
- Preselectors and/or isolators on any port

MIXER PREAMPLIFIERS

Broad Band: Model PV-5

RF Input Freq: 50-75 GHz
 LO Input Freq: 50-75 GHz
 LO Power: +10 dbm (or see note 1)
 IF Freq: 10-500 MHz
 DSB Noise Figure (db): 7.0 db max
 RF/IF Gain: 25 db min
 Connectors: RF & LO - UG385/u; IF - SMA (F)

Narrow Band: Model PXX-5 Enter to (GHz)

	50	55	60	65	70	75
RF Center Freq (GHz)	50	55	60	65	70	75
2 GHz BW: DSBNF (db)	3.8	3.9	4.0	4.1	4.2	4.3
4 GHz BW: DSBNF (db)	4.1	4.3	4.5	4.6	4.8	5.0
LO Power: +10 dbm (or see note 1)						
IF Freq: 10-500 MHz						
RF/IF Gain: 25 db min						
Connectors: RF & LO - UG385/u; IF - SMA (F)						

UP/DOWN CONVERTERS

(The units listed below are available with microwave preamplifiers integrated at the IF port as well as the options listed above.)

Broad Band: Model MV-11

RF Input Freq: 50-75 GHz
 LO Input Freq: 50-75 GHz
 LO Power: +10 dbm (or see note 1)
 IF Freq: DC-18 GHz
 SSB Conversion Loss: 8 db max
 (see common specifications below)

Broad Band: Model MVW-11

RF Input Freq: 50-75 GHz
 LO Input Freq: 60-90 GHz
 LO Power: +10 dbm (or see note 1)
 SSB Conversion Loss: 8.5 db max
 (see common specifications below)

Narrow Band: Model MXX-YY Enter RF Center Freq (Microwave IF's)

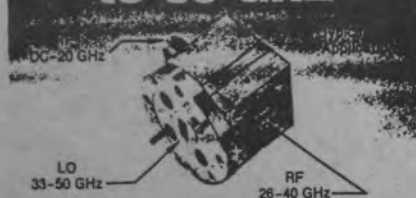
	50	55	60	65	70	75
RF Center Freq (GHz)	50	55	60	65	70	75
0-4 GHz IF SSB Conv Loss db	6.0	6.1	6.2	6.3	6.6	7.0
4-12 GHz IF SSB Conv Loss db	6.3	6.4	6.6	6.8	7.1	7.5
12-22 GHz IF SSB Conv Loss db	6.9	7.0	7.1	7.3	7.6	7.8

Common Specifications:

LO Power: +10 dbm (or see note 1)
 RF/IF Gain: Specify Amplifier Gain
 Connectors: RF & LO - UG385/u; IF - SMA (F)

Note 1: LO powers below 10 mW may be used provided a bias voltage is available for the mixer. NF slightly higher.

BROAD BANDWIDTH to 60 GHz



RF PORT: Full Waveguide Bandwidth
 LO PORT: Full Waveguide Bandwidth
 IF PORT: DC to 22 GHz

Until now, mm-wave mixers achieved broad bandwidth at only 2 ports simultaneously. Spacek Labs removes this restriction with broad bandwidth at all 3 ports.

Write for literature on millimeter wave multipliers, mixers and complete front ends.

SPACEK LABS, Inc.
 Millimeter Wave Technology
 210 East Cota Street
 Santa Barbara, CA 93101
 (805) 564-4404, TLX 658340

BROAD BANDWIDTH

Model No	RF Port Freq Range (GHz)	LO Port Freq Range (GHz)	IF Port Freq Range (GHz)	SSB Conv Loss (db)
MKK-6	18-26.5	18-26.5	DC-8.5	7.0
MKKa-7	18-26.5	26-40	DC-14	7.0
MKaKa-9	26-40	26-40	DC-14	7.5
MKaB-10	26-40	33-50	DC-20	8.0
MBB-11	33-50	33-50	DC-17	8.5
MBQ-11	33-50	40-60	DC-22	9.0
MQQ-11	40-60	40-60	DC-20	9.5

MODERATE BANDWIDTH

Model No	RF Port Freq Range (GHz)	LO Port Freq Range (GHz)	IF Port Freq Range (GHz)	SSB Conv Loss (db)
M20-4	18-22	18-26	DC-8	5.0
M24-4	22-26	18-26	DC-8	5.0
M28-5	26-30	26-40	DC-10	5.0
M32-5	30-34	26-44	DC-10	5.0
M37-6	34-40	34-52	DC-12	5.5
M42-7	40-44	33-50	DC-11	6.0
M44-7	42-46	40-60	DC-14	6.5
M53-8	50-56	40-60	DC-16	7.0
M58-9	56-60	42-60	DC-18	7.5

Many other frequency ranges available. Call for immediate quotation to your specifications.

18-40 GHz



MODEL M180Ka-9	MODEL M180B-9
RF: 18-40 GHz LO: 26-40 GHz IF: DC-18 GHz CONV LOSS: 8 dB	RF: 18-40 GHz LO: 33-50 GHz IF: DC-18 GHz CONV LOSS: 8 dB

Models available with LO port covering 18-40 GHz.

Write for literature on millimeter wave multipliers, mixers and complete front ends.

SPACEK LABS, Inc.
 Millimeter Wave Technology
 210 East Cota Street
 Santa Barbara, CA 93101
 (805) 564-4404, TLX 658340

Spacek Labs WRD 180 up and down converters provide continuous output or input from 18 to 40 GHz with IF inputs or outputs to 22 GHz. Three models are available with LO ports covering 26-40 GHz, 33-50 GHz and 18-40 GHz.

Options include doublers or triplers on the LO port and integrated microwave or UHF amplifiers.

Model M180Ka-9:

RF Input Freq: 18-40 GHz
 LO Input Freq: 26-40 GHz
 *LO Power: +10 dbm min; +13 dbm preferred
 IF: DC - 22 GHz
 Conversion Loss: 8 dB (IF to 18 GHz)
 9.5 dB (IF to 22 GHz)
 LO/RF Isolation: 20 dB min
 Connectors: RF: mates with UG1587/u
 LO: mates with UG599/u
 IF: SMA (F)

Model M180B-9:

RF Input Freq: 18-40 GHz
 LO Input Freq: 33-50 GHz
 *LO Power: +10 dbm min; +13 dbm preferred
 IF: DC - 22 GHz
 Conversion Loss: 8 dB (IF to 18 GHz)
 9.5 dB (IF to 22 GHz)
 LO/RF Isolation: 20 dB min
 Connectors: RF: mates with UG1587/u
 LO: mates with UG383/u
 IF: SMA (F)

Model M180-5:

RF Input Freq: 18-40 GHz
 LO Input Freq: 18-40 GHz
 *LO Power: +10 dbm min; +13 dbm preferred
 IF: DC - 6 GHz
 Conversion Loss: 9 dB
 LO/RF Isolation: 20 dB min
 Connectors: RF: mates with UG1587/u
 LO: mates with UG1587/u
 IF: SMA (F)

*The above models may be biased (+15 V, 1.5 ma typ) and accept LO powers down to 0 dbm with slightly higher conversion loss.