

The Redstone Rocket

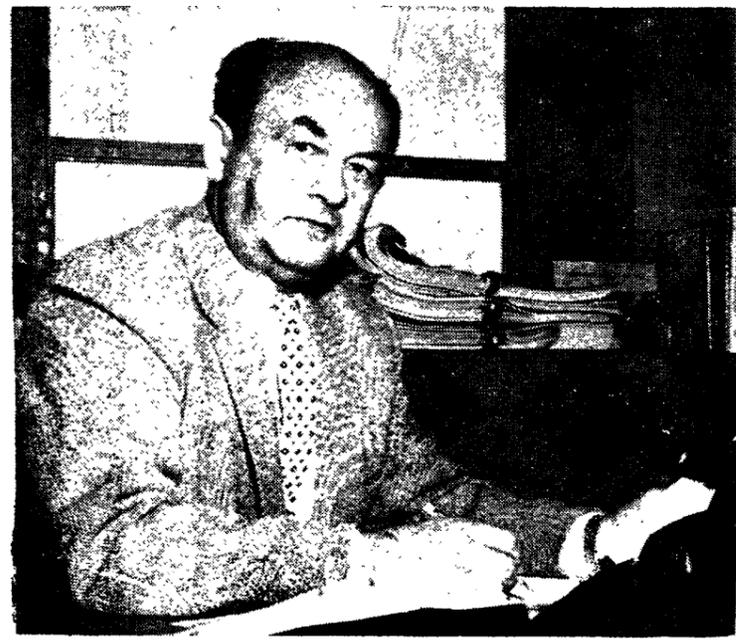
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VOL. VII; NO. 13

REDSTONE ARSENAL, HUNTSVILLE, ALABAMA

JULY 30, 1958

Army Bats .750; No. IV Orbits Successfully



JOSEF BOEHM

* * *

Josef Boehm Sees Dream Materialize in Explorer

GEN. TOFTOY DAY PLANS COMPLETED

Huntsville Citizens Arrange Ceremonies For 'Mr. Missile'

Maj. Gen. H. N. Toftoy, who is perhaps the foremost United States' pioneer military officer in the field of rockets and guided missiles, will be honored by the citizens of Huntsville during General Toftoy Day to be held in Huntsville on Thursday, July 31.

After six years of service at Redstone Arsenal, Gen. Toftoy leaves next month to assume his (See GEN. TOFTOY on Page 3)



AIR FORCE SEES EXPLORER IV — Brig. Gen. J. M. Colby, (seated right) Deputy Commander, AOMC, shows Maj. Gen. Ben I. Funk, (left) Ballistic Missile Manager, Air Materiel Command, a diagram of the newest Army earth satellite, Explorer IV. Col. Edward J. McRay, Jr., Deputy Program Control Office, Air Force Jupiter Liaison Office, Eberhard Rees, Deputy Director of Development Operations and Col. Thurston T. Paul, Deputy Commander, Army Ballistic Missile Agency look on. Air Force Gen. Funk recently visited AOMC at Redstone Arsenal in connection with the Jupiter IREM program. (U.S. Army Photo).

SATELLITE STUDIES HIGH RADIATION

Dr. James Van Allen Designed Package Of Four Counters

The newest U. S. scientific earth satellite, EXPLORER IV, is designed to conduct an extensive investigation of radiation in space at latitudes not previously attained by American satellites.

EXPLORER IV, unlike the two earlier satellites launched by the Army, is devoted entirely to radiation studies. Micrometeorite and temperature experiments carried in EXPLORERS I and III, as well as the tape recorder in the latter satellite, were eliminated to allow a greater concentration of advanced radiation detectors.

EXPLORER IV has four separate radiation counters instead of the single counters carried by EXPLORERS I and III. The four-detector package was designed and fabricated by the State University of Iowa Physics Department, headed by Dr. James A. Van Allen. Van Allen's associates in the program were George Ludwig and Carl E. McIlwain.

This instrumented satellite is identical in size, but is more than seven pounds heavier than the previous ones. The extra weight of the satellite proper was made possible by an increase in propellant performance of the upper two stages of the JUPITER C.

On its first pass the satellite (See SATELLITE on Page 2)



PAYLOAD TEST—An ABMA employe, R. M. Christmann of the Guidance and Control Laboratory, observes a spin test of the completed payload. The satellite was added to a fourth-stage motor which is orbiting with it. (U. S. Army Photo)

IOWA SCIENTISTS DEVISE COUNTERS

Four-part Package Increases Capacity For High Radiation

The advanced instrumentation carried in the Army's Explorer IV earth satellite is the work of a small group of physicists at the State University of Iowa, Iowa City, Ia.

Heading the physics department at Iowa is Dr. James A. Van Allen, a world pioneer in high altitude research. Van Allen, a lead- (See IOWA on Page 3)

Jupiter C Slings Aloft Four Radiation Counters



MARTIN SCHRADER

* * *

Army Private Makes Major Contribution To Explorer's Flight

A 26-year-old Army private made a significant contribution to the success of EXPLORER IV. He is Martin Schrader, son of Mr. and Mrs. Herman W. Schrader of Rt. 1, Columbia, Ill. He entered the Army in September, 1957.

Pvt. Schrader, who is assigned to the Aeroballistics Laboratory of ABMA, carried out his unique assignment under direction of Dr. Rudolph F. Hoelker, chief of the Future Projects Analysis Branch.

Schrader established the flight performance capability of the JUPITER C missile which carried EXPLORER IV and determined the optimum four-stage missile flight program which calculated the minimum apogee altitude, safe lowest perigee, tilt program requirements, and which met range safety conditions.

Based upon his determinations, (See ARMY PVT. on Page 3)

Teamwork Produced Army's Explorer IV

The successful launching of the Army's EXPLORER IV scientific earth satellite was made possible through the combined efforts of several organizations within the Army, a great number of industrial fabricators and suppliers, and the cooperation of the Navy and Air Force.

Under ARPA sponsorship, the project was undertaken by ABMA, the developer of the REDSTONE Ballistic Missile, which in modified form is the main stage of the JUPITER C launching vehicle. ABMA's partner in the under-taking was the Army's Jet Propulsion Laboratory, Pasadena, Calif.

Scientific experiments were assigned to the Physics Department of the State University of Iowa by the Satellite Panel of the National Academy of Sciences IGY Committee. Iowa State has been a world leader in radiation research for several years.

Thousands of industrial firms from coast to coast played important roles in supplying hardware for the missile and its satellite payload and the ex- (See TEAMWORK on Page 10)

Satellite Expected To Remain in Orbit For Several Years

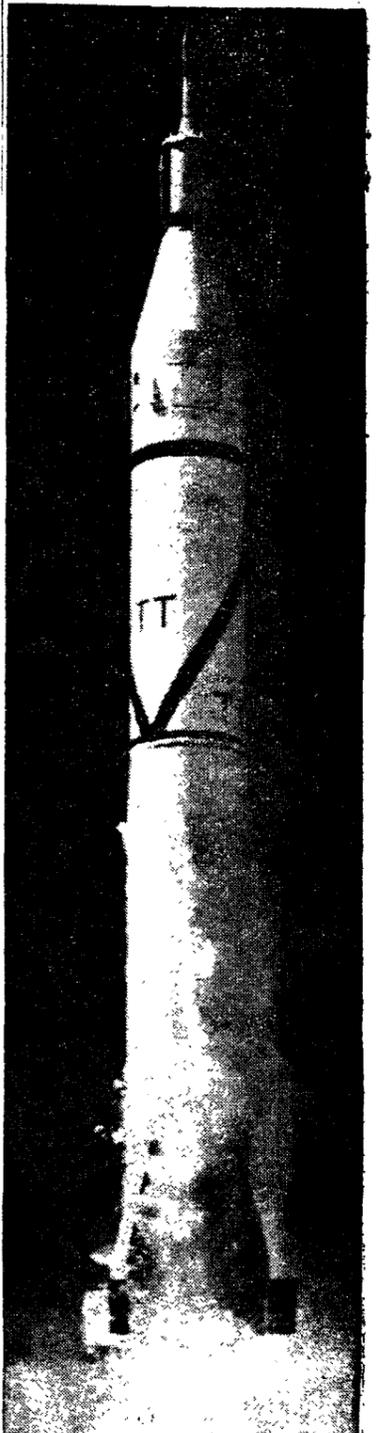
The U. S. Army successfully launched a scientific earth satellite, which has been named Explorer IV, at 10 a.m. Saturday.

The Explorer IV was launched as an Army contribution to the overall Department of Defense program in cooperation with the International Geophysical Year research program which is sponsored in the U. S. by the National Academy of Sciences. Following are the weights and dimensions of Explorer IV:

- Weight of satellite proper—25.76 pounds.
- Weight of final stage—12.67 (after burnout).
- Length of satellite proper—34 inches.
- Length of final stage motor — 46 inches.
- Diameter of satellite and final stage—6 inches.
- Total weight orbiting — 38.43 pounds.

(See ARMY BATS on Page 2)

* * *



ORBIT BOUND — Dependable Jupiter C roars skyward in bright sunlight from Cape Canaveral, thrusting EXPLORER IV into orbit. —U. S. Air Force Photo.

The Redstone Rocket

The Redstone Rocket is a privately owned newspaper published every Wednesday by Jack W. Hoffhaus, Hartselle, Alabama, with exclusive regard for the reader interests of personnel at Redstone Arsenal, Alabama, in accordance with an agreement between the publisher and the Public Information Office, Army Ordnance Missile Command, Redstone Arsenal, Alabama.

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COMPARISON OF THE ARMY SATELLITES

Dimension	Explorer I	Explorer III	Explorer IV
WEIGHT			
Shell	30.80 pounds	31.00 pounds	38.43 pounds
Instrumentation	7.50 pounds	7.50 pounds	7.50 pounds
Final rocket (empty)	10.63 pounds	10.83 pounds	18.26 pounds
	12.67 lbs.	12.67 pounds	12.67 pounds
LENGTH	80 inches	80 inches	80 inches
DIAMETER	6 inches	6 inches	6 inches
HIGH-POWER TRANSMITTER			
Power	60 milliwatts	60 milliwatts	30 milliwatts
Frequency	108.03 megacycles	108.03 megacycles	108.03 megacycles
Life expectancy	2 weeks	2 months	2 months
LOW-POWER TRANSMITTER			
Power	10 milliwatts	10 milliwatts	10 milliwatts
Frequency	108.00 megacycles	108.00 megacycles	108.00 megacycles
Life expectancy	2 months	2 months	2 months
LAUNCHED	Jan. 31, 1953 (still on orbit)	March 26, 1958 (Re-entered June 28, 1958)	July 26, 1958

SATELLITE

(Continued From Page 1)
travelled along the eastern coast of the U. S. and Newfoundland, over England, central Europe, southern Russia, India, Australia, and up across the Pacific to the United States.

This orbit, attaining 51 degrees north and south latitude, was chosen to provide data from areas in space not yet sampled. The orbital band includes all of the U. S. and southern Canada. Earlier Explorers had not reached beyond 35 degrees latitude.

Concentration of EXPLORER IV on radiation studies resulted from the extremely high cosmic ray counts detected by the earlier Explorers. Information obtained from the far reaches of their orbits — beyond 1,000 miles out — indicated that the particle pulses per second scored to rates hundreds of times greater than had been expected.

EXPLORER I's radiation counts ran about 30 to 40 per second some 200 to 300 miles above southern California. This was the anticipated rate. But the counts climbed to more than 35,000 per second at the highest altitudes of both satellites when they were above South America and adjoining waters.

The new satellite carries two Geiger-Mueller tubes and two scintillation counters to measure radiation intensities. The G-M tubes are similar to the one each flown in the earlier satellites.

One each of the tubes and scintillators are shielded with lead to eliminate data below certain energy levels.

EXPLORER IV thus will handle not only a far greater range of radiation data, but will break down the information into levels of intensity. Previous

satellites reported only the gross amount of radiation they encountered.

The new satellite will be able to differentiate between the energy levels of radiation that strike its four counters. The data will show not only the total amount of radiation but also variation of this total falls within certain pre-selected energy ranges.

Scientists suspect that only a small portion of the high-altitude radiation encountered by the earlier satellites was caused by high-energy radiation which has been known and identified previously as cosmic rays. This suspicion implies that most of the radiation was of a little-known low-energy type.

However, since EXPLORERS I and III could not differentiate between energy levels, this suspicion could neither be proved nor disproved.

In EXPLORER IV the shielded counters will respond only to high-energy particles, while the unshielded counters will detect everything. Also, the unshielded scintillation counter has special pick-ups which can further differentiate between energy levels.

The new instruments are capable of detecting radiation accurately up to the range of 60,000 particles per square centimeter per second, which is several thousand times greater than the former experiments.

EXPLORERS I and III encountered radiation so heavy that their instruments were jammed — completely overwhelmed — at about 35,000 counts per second. The present equipment has a capability several orders of magnitude higher.

George Ludwig, one of the physicists responsible for the experiments, said "We believe this is more than adequate."

With such instrumentation it will be possible to determine the relative quality and the energy level of the "new" type of radiation discovered by the earlier satellites. With this knowledge scientists hope to gain a better understanding of the nature and origin of these particles.

The aluminum oxide strips carried on the outer shell of EXPLORERS I and III have been eliminated on the new satellite. These strips served to reduce internal temperature to an average of 20 degrees Centigrade. For the new satellite, however, scientists desired to attain a

ARMY BATS

(Continued from Page 1)
Total length of orbiting vehicle—80 inches.

External cylindrical configuration of the newest satellite is identical to the earlier Explorers. Instrumentation is more advanced and specialized and is devoted to the investigation of corpuscular radiation at extreme altitudes and latitudes. Explorer IV is in a highly elliptical orbit and its orbital band covers most of the earth's surface. Its extremities are the 51st latitudes North and South, compared to the 35 degrees latitudes North and South attained by Explorers I and III.

Within the Army, the Explorer IV project was undertaken jointly by the Army Ballistic Missile Agency, Redstone Arsenal, Ala., and the Army's Jet Propulsion Laboratory, Pasadena, Calif. Both organizations are elements of the Army Ordnance Command, headquarters of which are at Redstone Arsenal.

The satellite was launched by a modified Jupiter C missile, the Army's composite reentry test vehicle which played a major role in the solution of the aerodynamic reentry heating problem associated with the Jupiter IRBM development program.

The main stage of the Jupiter C is a modified Redstone ballistic missile booster, supplied by ABMA. The upper three solid propellant stages were furnished by JPL.

Explorer IV's elliptical orbit, and its total concentration on radiation studies, were prompted by the findings of earlier Explorers. They detected high corpuscular radiation intensities — much greater than had been anticipated — at the higher altitudes. The new IGY satellite is to continue the investigations begun by its predecessors, using instrumentation designed to measure and define this radiation more accurately. IGY Scientists hope to determine its source, whether the particles come from the sun or from interstellar space far beyond the sun.

Four radiation counters are carried in the satellite instead of the single counter in Explorers I and III. This experiment is designed to provide up to many thousand times the accurate counting rate of the other two. It was designed, as in the case of the earlier ones, by the Physics Department of the State University of Iowa, Iowa City, Ia. The satellite's components, which include communications equipment furnished by JPL and the Naval Research Laboratories, were assembled and thoroughly tested to assure proper operation at the Army Ballistic Missile Agency.

Explorer IV carries two radio beacons, both of which are transmitting information continuously to ground stations over five common channels. A low-power beacon is transmitting on 108.00 megacycles with 10 milliwatts of power, while a high power transmitter is operating at 108.03 megacycles with 30 milliwatts of power.

To attain the desired orbit, the satellite was launched in a northeasterly direction over the Atlantic Ocean. All previous space vehicles were fired over the southeast Atlantic.

The orbit thus attained assures

temperature average somewhat higher. The entire surface of EXPLORER IV is sand-blasted stainless steel.

Like the earlier satellites, the temperature range for EXPLORER IV is expected to be between 0 and 65 degrees Centigrade.

Both the high-power and the low-power radio beacons, similar to those carried in the other EXPLORERS, will transmit continuously for about two months. The low-power beacon radiates 10 milliwatts of power and will be used mainly for tracking, although it will report the same data as the high-power transmitter. Its frequency is 108.00 megacycles. The high-power beacon radiates milliwatts at 108.03 megacycles.

Five channels of information are being provided both beacons. If a malfunction occurs in one transmitter, the same data will be provided by the other.

The satellite is being tracked and data is being received from several series of ground stations, among which are the Army Ordnance Missile Command's Microlock network and the Minitrack Stations of the Naval Research Laboratory. The Smithsonian Astrophysical Observatory and a large network of Moonwatch teams are also tracking and photographing the satellite.

BOEHM

(Continued From Page 1)
came up with a cylindrical satellite design. It was to have been used in Project Orbiter, which was the Army-Navy effort to develop and launch a satellite. The project was started in 1955, and was cancelled shortly afterward in favor of the Vanguard project.

Several other prominent members of the development agency were working privately on other aspects of the orbiter project; Boehm's area of responsibility was the configuration of the satellite itself.

His work produced the first design of a satellite in this country, and maybe in the world. It was that design that has been employed in the EXPLORER series.

Boehm was the project engineer on the assembly and testing program of EXPLORER IV. He had the satisfaction of seeing his design employed in all three of the satellites, and personally directing the preparation of the most recent orbiter. The first two Army satellites were assembled by the Jet Propulsion Laboratory, ABMA's partner in the space program.

Boehm and his co-workers in the Agency's Guidance and Control Laboratory assembled the various instruments of the satellite and conducted myriad tests to assure that it would function properly.

Boehm is chief of the Electro-Mechanical Engineering Branch of the ABMA Guidance and Control Laboratory. He received B. S. M. S. degrees in mechanical engineering from the Technical University at Dresden, Germany.

During 1933-34 he was employed in German industry in the field of automatic machinery. The following five years he served as a research associate in the department for kinematics and automatic machinery at the Dresden institution.

In 1939, he joined Dr. Werhner von Braun at the German Rocketry Center at Peenemuende, where he was in charge of design engineering for control systems of long-range rockets.

Boehm came to this country in 1945 and worked for the Army Ordnance Corps at Aberdeen Proving Ground, Md., and Ft. Bliss, Texas. He moved with the von Braun team to Redstone Arsenal in 1950.

that the entire U. S. and the southern part of Canada will be within the orbital band. The earlier Explorers only traveled over approximately the southern one-fourth of the U. S.

The declination of the orbit against the Equator is 50.82 degrees.

The final stage and payload, or satellite, are orbiting together as a single unit. Micrometeorite and temperature experiments of the predecessor Explorers are not included in Explorer IV.

The vehicle travelled over water during the entire launching period.

Preacher: "In times of trial, what brings us the greatest comfort?"

Voice From Back Pew: "An acquittal!"



FINAL CHECK HERE — final test is performed on the big JUPITER C missile in the Systems Analysis and Reliability Laboratory, ABMA. The missile and its satellite were completely checked out at the Arsenal then flown to Cape Canaveral for further testing in preparation for the firing. (U. S. Army Photo).

ABMA PRAISED FOR IGY ROLE

Scientists Pleased With Data Gained From Satellites

The scientific community has expressed its thanks to the Army Ballistic Missile Agency for its assistance in the International Geophysical Year program.

Hugh Odishaw, executive director of the U. S. National Committee, IGY 1957-58, wrote a follow-up to Maj. Gen. J. E. Medaris, commanding general of the U. S. Army Ordnance Missile Command here:

"I am happy to have this opportunity to thank the Army Ballistic Missile Agency for its magnificent contribution to the IGY earth satellite program. The two Explorer satellites launched by ABMA as part of this program, and the invaluable data which they have made possible have been a source of gratification to the scientific community everywhere."

Replying to Gen. Medaris Brig. Gen. Joseph M. Colby, his deputy, told Odishaw that "it has been a most rewarding and enjoyable relationship with the U. S. National Committee and has given our fine missile development team opportunity to demonstrate their superb capabilities in the interest of scientific knowledge. I am sure that they have derived more personal satisfaction from the Explorer launchings than from any other of the challenging projects they have undertaken to date."

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(Continued From Page 1)
ing figure in the U. S. International Geophysical Year research program, has been sending radiation equipment into the upper atmosphere since 1946 when he became the first scientist to launch scientific equipment aboard one of the Army's captured V-2 rockets.

His principal assistants in the Explorer IV program were Carl E. McIlwain and George H. Ludwig, research assistants and graduate students at Iowa State. Both men are working on advanced degrees in physics at the University, and their studies largely concern the experiments contributed to the Army Explorer satellite series.

For Explorer IV Dr. Van Allen and his associates designed and fabricated a four-part radiation package which has many thousands of times the counting capacity of radiation equipment flown in the earlier Explorers.

The package is composed of four separate, advanced radiation detectors. Only one detector each was carried in Explorers I and III. These instruments also were provided by the Iowa group.

The experiments were built and tested in the physics lab at Iowa and brought to the Army Ballistic Missile Agency, Redstone Arsenal, Ala., for further extensive testing and inclusion in the satellite.

Dr. Van Allen is a member of the IGY technical panels on Cosmic Rays, Aurorae, Rocketry and the Earth Satellite Program. He is chairman of the Working Group on Internal Instrumentation (of the Technical Panel on Earth Satellites).

He is also chairman of the Rocket and Satellite Research Panel, an independent group of American scientists.

The 44-year-old scientist is a native of Mt. Pleasant, Ia. He was educated at Iowa Wesleyan College and the State University of Iowa, having obtained his doctorate for the latter institution in 1939.

Dr. Van Allen joined the Iowa faculty in 1951, prior to which he was associated with the Applied Physics Lab, Johns Hopkins University. Since 1948 he has led a number of scientific expeditions to Peru, Gulf of Alaska, Greenland and the Antarctic, firing cosmic ray sounding rockets into the upper atmosphere.

Dr. Van Allen developed the radio proximity fuse for the National Defense Research Council. In 1949 he received the C. N. Hickman Medal from the American Rocket Society for his work in developing the Acrobee rocket.

During World War II he served as a lieutenant commander in the Navy.

Carl E. McIlwain, 27, has been at Iowa State as a graduate student and research assistant since 1954. He is the son of Mr. and Mrs. Glenn W. McIlwain, 1410 Munger St., Houston, Texas.

McIlwain received a bachelors degree from North Texas State College in 1953. He obtained a masters in physics at Iowa and is continuing his doctorate studies.

George H. Ludwig, 31, is a native of Sharon, Ia. He has been associated with the Iowa State physics department for several years as student, graduate stu-



DR. FRIDTJOF A. SPEER

DR. SPEER DEVISES ORBIT TECHNIQUE

Doppler Effect Of Radio Signals Aids in Tracking

A new evaluation technique developed by ABMA experts was utilized for the first time after launching of EXPLORER IV to determine data about its orbit.

Dr. Fridtjof A. Speer, chief of the flight evaluation branch in the Agency's Aeroballistic Laboratory, originated the technique with the assistance of Herman F. Kurtz and Clarence R. Fulmer.

The technique utilized the Doppler effect of radio signals transmitted by the satellite and received by ground stations. In advance of the launching, expected standard data was furnished to the tracking stations in order to increase the chance of acquiring the JUPITER C missile during the ascending and tilting phases of trajectory.

Dr. Speer's branch operated the evaluation method in conjunction with personnel of the Agency's Computation Laboratory and utilized that Laboratory's electronics computers.

Dr. Speer is a graduate of the Berlin Technical Institute where he received his doctorate in engineering. He has been employed by the Army since March 1, 1956.

Kurtz is a Vanderbilt University alumnus who studied at the University of California in physics. His contribution was to suggest means to optimize station configurations and the particular system of differential corrections which was followed.

Fulmer is a graduate of Newberry, South Carolina College in mathematics. His section furnished a simple back-up method for quick evaluation of the EXPLORER IV orbit and supplied many complicated transformation equations required for the method originated by Dr. Speer.

Dr. E. D. Geissler is the director of the Aeroballistics Laboratory, one of 10 supervised by Dr. Wernher von Braun.

dent and research assistant.

Ludwig served as pilot and electronics officer in the Air Force from 1948 to 1952. Since the Spring of 1955 he has been engaged in the development of satellite instruments for observing radiation intensities.

Registration Aug. 14 For Post Kindergarten

Registration for Rocket Kindergarten will be held at 7 p. m. August 14 in the social room of the Chapel Center.

Children of military personnel residing on or off the post are eligible. The age group is 4½ years to 6 years. Further information may be obtained from Mrs. James Black, Jefferson 6-3804, or Mrs. David W. Swearingen, ext. 7451.

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GEN. TOFTOY

(Continued from Page 1)

new duties as Commanding General of Aberdeen Proving Ground, Md. The former Deputy Commander of the Army Ordnance Missile Command will have a plaque dedicated in his honor in Huntsville's Big Spring Park at 7 p. m. during the ceremonies.

Frank Pace, former secretary of the Army, will be guest speaker at a banquet to be held in the Huntsville Electric Service Center at 8 p. m. on Gen. Toftoy Day. The speaker, who was secretary of the Army from 1950 to 1953, was described as a personal friend of Gen. Toftoy, whose long experience in the missile field earned him the nickname throughout the Army as "Mr. Missile."

The citizens of Huntsville have made extensive preparations for the observance of Gen. Toftoy Day. Flag bunting and banners proclaiming, "Good Luck, Mr. Missile" are strung high across all main intersections in the city.

Gen. Toftoy was instrumental in the reactivation of Redstone Arsenal and its establishment as the permanent Army Ordnance commodity arsenal for rockets and guided missiles in 1949.

He has been associated continuously with the Army's missile program since its inception. He became interested in rocketry during World War II and is credited with obtaining support required to keep the program from dying on several occasions during the pioneering years.

At the end of World War II, he recommended bringing to this country German scientists who had developed the V-1 and V-2 rockets at Peenemunde, and later was charged with the task of selecting and getting to the U. S. some 130 of the top scientists and engineers. This project was the now-famous "Operation Paperclip."

Gen. Toftoy came to Redstone Arsenal in May 1952 as a Colonel. He was promoted to brig gen. six months later. His promotion to maj. gen. came on Sept. 20, 1956.

Gen. Toftoy was commanding general of Redstone Arsenal from Sept. 1, 1954, until his appointment on March 31, 1958, as Deputy Commanding General, AOMC.

Regarded in scientific circles as one of the men responsible for encouraging and stimulating universities and other private concerns to engage in missile research, Gen Toftoy has supervised the development of most of the Army's rockets and guided missiles. Among these are the Corporal, Honest John, Little John, Lacrosse, Dart, Hawk, Nike-Ajax, Nike-Hercules, Nike Zeus and Redstone.

ARMY

(Continued From Page 1)

the flight program was fed into the missile by intricate guidance and control systems before the launching.

Pvt. Schrader attended Valmeyer Community High School in Valmeyer, Ill., Southern Illinois University at Carbondale where he received a Bachelor of Science degree in mathematics and a Master of Science degree in mathematics. He also pursued graduate study at the University of Michigan. He will spend about 14 more months in Army uniform.

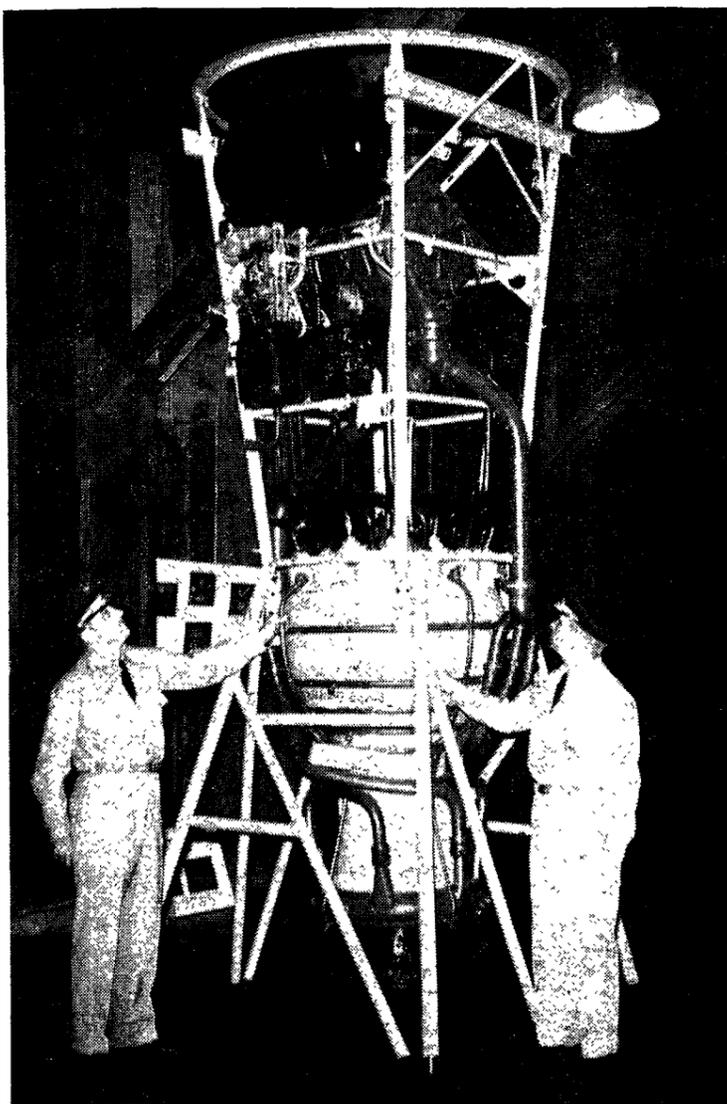
Because of his professional background, Schrader was selected for military duty as a scientific and professional specialist after completion of basic training. His work is highly regarded by Dr. E. D. Geissler, director of the Aeroballistic Laboratory, one of 10 supervised by Dr. Wernher von Braun. Schrader's EXPLORER contri-

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V-2 ENGINE IN MUSEUM—Maj. C. E. Hammett, Ordnance Corps, USAR, left above, and Maj. J. S. Hillenbrand, Corps of Engineers, USAR, are shown beside the engine of Germany's V-2 missile, one of several displays now in the Museum, Bldg. 5415. Maj. Hammett is the commanding officer of the 3353rd Research and Development Unit, USAR, which has assembled the rockets, missiles, and other exhibits as a unit project. Redstone Depot and the 283rd Ordnance Detachment, Technical Intelligence, keep the building open to visitors during duty hours. Several vacancies exist in the 3353rd, organized under AR 140-305. Interested officers should contact Maj. Hammett at Ext. 7417. The unit meets in the Museum building each Monday night.

tribution included a study of the expected dispersion pattern for pitch, altitude and variations on the basis of which he recommended the best set of parameters for the standard trajectory of the JUPITER C.

He calculated the exact history of the expected flight and this basic data was used as reference for the actual launching. He also made a study of the range safety situation at the Atlantic Missile Test Range, where the launching occurred.

Schrader spent a year at the University of Hannover, Germany, studying theoretical physics under a Fulbright Scholarship. He has been a member of the Future Projects Analysis Branch since December 1, 1957.

To tie Army missile-launching facilities to fixed, concrete sites is to invite their destruction as a first priority of enemy attack.

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MRS. TOFTOY HONORED — A silver card tray was presented to Mrs. H. N. Toftoy (center) last Wednesday during a ceremony held at Redstone Arsenal's Post Chapel. Mrs. Keith T. O'Keefe, Chapel Guild president, presented the gift in the presence of Maj. James H. Goewey, Post Chaplain. During this same ceremony, a Hymn Board for the Chapel auditorium was presented to Chaplain Goewey in honor of Mrs. Toftoy.

Guild Honors Mrs. Toftoy By Gifts for Post Chapel

A farewell party was given for Mrs. H. N. Toftoy last Wednesday morning at the Redstone Arsenal Post Chapel by the Chapel Guild.

Mrs. Toftoy will leave Redstone Arsenal soon with her husband, Maj. Gen. Toftoy, former deputy commanding general at the Army Ordnance Missile Command, who has been assigned the duties of Commanding General of Aberdeen Proving Ground, Md.

During a ceremony held in the auditorium of the Post Chapel Mrs. Toftoy, wearing a melon-pink suit decorated with a pink rubrum lily corsage, accepted a silver card tray as a gift from the members of the Chapel Guild. Mrs. Keith T. O'Keefe, Guild president, made the presentation.

During the same ceremony a Hymn Board for the Chapel auditorium containing a brass plaque at the base reading "Presented by RSA Chapel Guild in honor of Mrs. H. N. Toftoy, 23 July 1958" was, in pretense, presented by Mrs. O'Keefe to Post Chaplain James H. Goewey.

The Hymn Board, delayed in shipment, will be hung immediately upon arrival.

During the ceremony Chaplain Goewey, in accepting the Hymn Board, recalled that it was Mrs. Toftoy who had established the Redstone Arsenal Chapel Guild.

The ceremony was opened with the Lord's Prayer by Chaplain John A. Zwack.

Mrs. R. W. Elder, accompanied by Mrs. Henry Clanton, Organist, sang "He Shall Feed His Flock."

Refreshments were served in the banquet room of the Chapel immediately following the ceremony.

Mrs. Joseph Colby and Mrs. John Barclay served coffee and tea from a table covered with a lace cloth over a green background. A silver bowl holding

yellow gladioli and purple and white asters was the centerpiece. Silver candelabras holding yellow candles were at each end of the long table.

Approximately 75 attended the affair, which was coordinated by Mrs. A. E. Dean.

Officers Wives Club Plans Coffee Party To Greet Newcomers

The Redstone Arsenal Officers Wives Club will hold a welcome Coffee Party for newcomers at 10 a. m. on Tuesday, Aug. 12, at the Redstone Room, Squirrel Hill Officers Club.

The coffee will spotlight various Club activities and provide the newcomers with an opportunity to meet the Club officers and activity chairmen. The Club's Hospitality Committee is sponsoring the event.

Wives of officers and wives of Officers Club associate members who have joined the Command since January 21, 1958, are invited to attend. Reservations must be made not later than noon on Monday, Aug. 11. To place reservations call Mrs. A. H. Williams, 7753, Mrs. J. H. Longbottom, Ext. 7049, or Mrs. John Roby, ext. 7953. For nursery reservations call ext. 8745.

Missilemen Supreme

SEOUL, Korea — What's in a name? Atlas, Thor, Jupiter, Explorer are common ones used in news releases from Cape Canaveral, Fla., missile firing test center.

So a member of the signal Section of Headquarters, U. S. Army Advisory Group, Korea, here did a double take when he read bold newspaper headlines proclaiming, "Thor Firing a Success."

The reader was Major Thor M.



MEDIC!—Betty Frazee displays some lovely curves despite the fact that her angling is not up to par.

Texas Post Uses Camera to Aid Highway Safety

FORT SAM HOUSTON, Tex. — Photography is being put to use on this Army post as its contribution to the Texas highway safety program.

A car, equipped with camera calibrated to a speedometer, will film driving habits. The films will help determine the "driver of the month" and will be used during safety lectures.

Among factors determining the winner will be courtesy to other drivers, giving right of way to pedestrians, positioning of car on road and during turns, and distance interval.

Sponsored by the Brooke Army Medical Center's Safety Council, the project is headed by Major Frederick J. Deyoso of (6924 Randolph St.) Landover, Md., Center safety officer, and Major John D. Redding of (307 N. Front St.) Breckenridge, Tex., motor officer.

(for "Missile" maybe?) Firing of (2019 Maple Ave.) Evanston, Ill.

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America's first surface-to-surface ballistic guided missile, the Army's Corporal E, was fired in May 1947. This research test vehicle attained the range of 62.4 miles.

Shaggy Dog Dept.: A leopard visited an optometrist, complaining that he saw spots in front of his eyes every time he looked at

his wife. The optometrist tried to explain that anyone looking at a leopard would see spots. "But doctor, you don't understand," growled the leopard. "I'm married to a tiger."

Daffynitions: Conference — a meeting of the bored.



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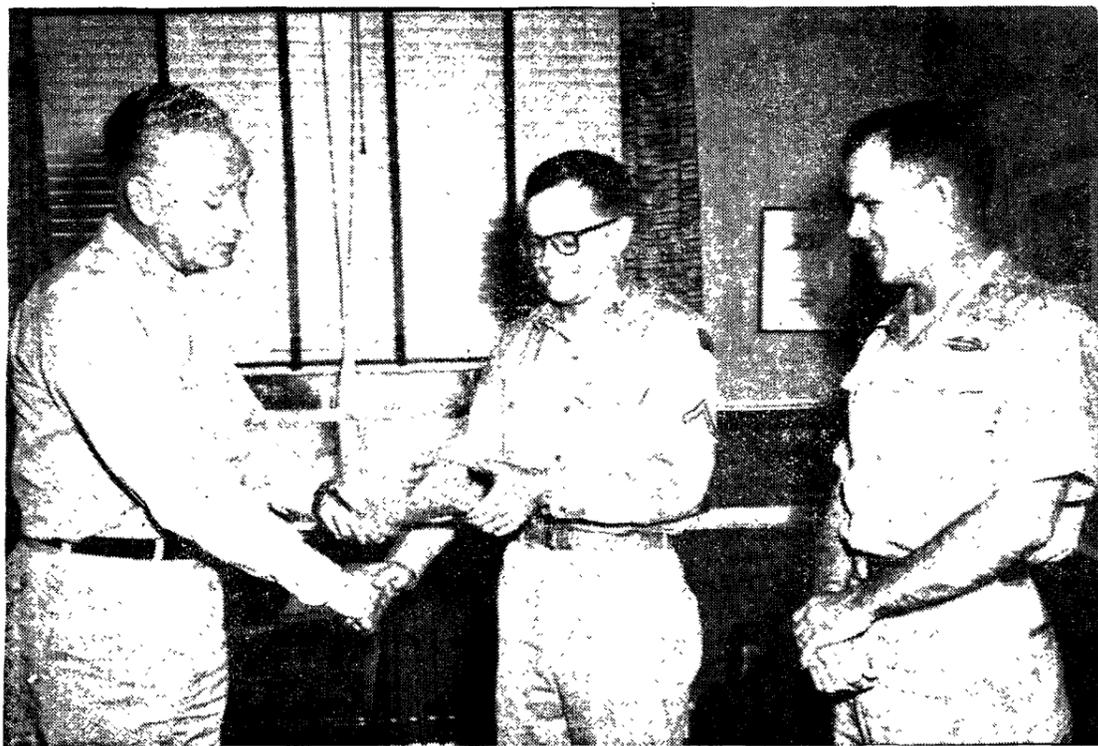
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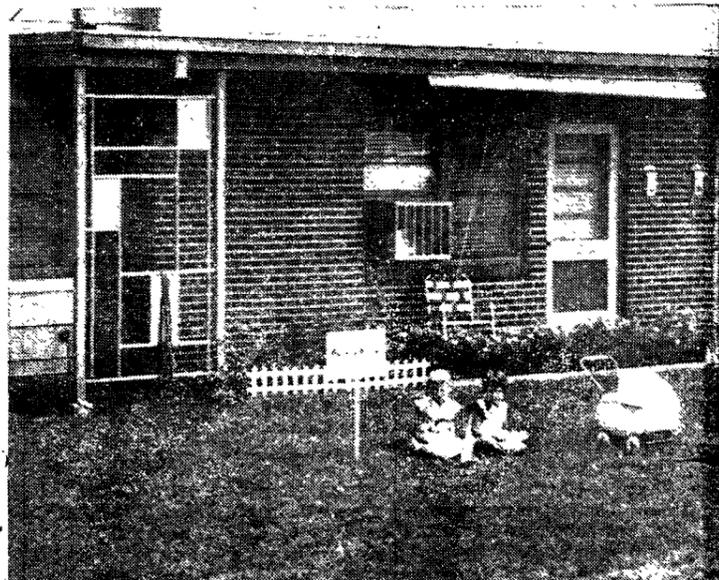


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SUGGESTION AWARD WINNER — Pfc. Carlos H. Christensen (center), an S&P (Scientific and Professional) soldier at Redstone Arsenal, receives a check for \$100 as first-place winner in a quarterly Suggestion Contest for military personnel sponsored by the Arsenal's Incentive Awards Committee. Presenting the award is Col. Owen T. McCloskey, Deputy Post Commander. Looking on is Capt. B. H. K. McCord, Operations and Training Officer, Troop Command, RSA, who was formerly commanding officer of Christensen's unit, Det. B, U. S. ABMA. Christensen's suggestion was a technical proposal which increased the efficient utilization of the two huge IBM-704 electronic computers in the Computation Laboratory at the Army Ballistic Missile Agency, where he works as a mathematician. A native of Hollywood, Calif., Christensen has a B. A. degree in physics from Reed College, Portland, Ore., and has also studied advanced physics at the University of Illinois Graduate School.



YARD OF THE MONTH — Mrs. Lowell D. Twitchell, whose daughters, Lucinda (left) and Melanie are shown playing 'dolls' on the grassy lawn, was awarded the "Yard of the Month" plaque by the Redstone Garden Club today. Capt. and Mrs. Twitchell, who call Illinois home, moved into their apartment at 225 B Capehart last December.

Army-Navy Deal Saves Six Million

FORT RUCKER, Ala. — The Army and the Navy got together here recently and made a deal that's saving the taxpayers about \$6 million.

Back in 1951 the Army began buying H-25 helicopters—"Mules;"—at a cost of \$178,000 each for troop and cargo transportation. As time went on the H-21, better suited for the Army's needs, was developed. By 1954 the "mules" were headed for the corral except for training purposes.

The Navy liked the "chopper" though, because its compactness makes it useful aboard aircraft carriers. So all last month Navy crews arrived at the Army Aviation Center here to pick up 34 of the helicopters and ferry them to the Norfolk, Va., Naval Air

Sation. Reconditioned and redesignated the Navy HUP-4, they will be used for rescue missions.

Speaking of trade relations, almost everyone would like to.

FOR SALE!
AIR MATTRESSES --- \$3.98
New Army Type
FOLDING COTS --- \$5.40 Up
MINNOW BUCKETS, 98c Up
Army-Navy Surplus Co.
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 Phone JE 4-6991
 Open All Day Wednesday
 & 'Til Late Thursday Night

Reserve School To Start Classes In Intelligence

Plans are being made to start classes on Sept. 2 in 1st Year Basic and 1st Year Advanced courses in Military Intelligence for the Huntsville US Army Reserve School and August 11 has been set as a deadline for Reserve Officers to fill out applications for enrollment in the above classes.

An assigned student can receive 39 point credits for retirement per year and will receive 15 days active duty training on pay status during the summer for the practical application of the principles learned in classes. The instruction in the USAR school is designed to parallel the resident associates courses at the Military Intelligence School at Ft. Holabird. The purpose is to provide progressive branch C&GS Training for Reserve Officers in the duties of Unit Commanders

and Staff Officers. Six years are required to complete the basic and advanced courses. All newly arrived officers in Huntsville and nearby cities are urged to send in a change of address form immediately (DA 603). Enrollment and DA 603 forms may be obtained by calling Pete Redding at JE 6-1376 or RSA Ext. 2934; or contact Mac Atkins at 904 Meridian St., headquarters for the Huntsville Army Reserve Training Center (Ph JE 6-5631).

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BRAND NEW PRECISION MADE
 Designed for a lifetime of sewing pleasure! A precision built machine that will give maximum satisfaction. Needles, bobbin and other parts are interchangeable. Simple mechanism . . . Trouble-free operation!

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Sterchi's
 THE SOUTH'S LARGEST HOME FURNISHERS
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INCENTIVE AWARDS

A number of AOMC employees have recently been recognized for outstanding and superior performance of duty. They include:

Oscar Dean, Finance and Accounting, RSA, received an Outstanding Performance Rating.

James S. Loy, chief of the Protocol Office, AOMC, received a Sustained Superior Performance Award, and check which this award automatically carries.

Robert Labbe, of the Redstone Arsenal Provost Marshal Office, recently received a Sustained Superior Performance Award, with cash award of \$200.

John Brynn, of the Redstone Arsenal Post Commissary, received a Sustained Superior Performance Award and \$200.

An Outstanding Performance Rating, a Sustained Superior Performance Award, and a check for \$200 went to Miss Georgia L. Walls, of the ABMA Civilian Personnel Office.

James L. Moses, a co-op student in ABMA's Structures and Mechanics Laboratory, received a Sustained Superior Performance Award and \$100.

James Solmon, of the Redstone Arsenal Post Commissary, won a Sustained Superior Performance Award, with cash award of \$200.

Cecil B. McAllister, of the RSA Civilian Personnel Office, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$200.

Frank Godfrey, of the Ordnance Missile Laboratories, ARGMA, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$200.

A suggestion Award of \$330 went to Jefferson Herring, of the ARGMA Industrial Division, estimated savings resulting from Herring's suggestion total \$30,380, it was announced by the Incentive Awards Committee.

Henry Dihm, of ARGMA's Rocket Development Laboratory, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$300.

Charles W. Nestor, of Purchasing and Contracting Office, RSA, was the recipient of an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$300.

Dr. Burton Shook, of the RSA Medical Division, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$300.

POST ACTIVITIES COUNCIL DIRECTS VARIED PROGRAMS

Redstone Arsenal's Joint Activities Council is having a highly successful year in its supervision of the programs of the Scouts, Teen-age groups, Little and Babe Ruth league baseball and other functions providing constructive activities for military personnel and their dependents.

But recent transfers have taken some enthusiastic committee members who must be replaced in the near future, according to Col. Thomas E. Wood, chairman.

The Council solicits the help and cooperation of parents when they are asked to serve on committees of the various activities sponsored by the council.

The Joint Activities Council was formed to assist the Arsenal Commander in carrying out his responsibilities in all non-governmental types of technical, social, and welfare activities on the post.

Activities supervised by the Council include Girl and Boy Scouts, Teen-age activities, Little and Babe Ruth baseball, Thrift Shop, Post Nursery, Red Cross volunteer activities, and many others.

Membership of the Council consists of a chairman appointed by the Post Commander, the Chaplain, and representatives appointed by the NCO Wives Club, the Officers Wives Club, the NCO Open Mess, and the Officers Open Mess.

Responsibilities of the Council include fund-raising to support these activities, control and apportionment of funds raised, and auditing of the various activity funds. It also forms committees to plan and carry out the activities, and provide the parental guidance and leadership for the various youth groups.

ance Award, and \$200.

Mrs. Theda Akins, of the RSA Medical Division, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$200.

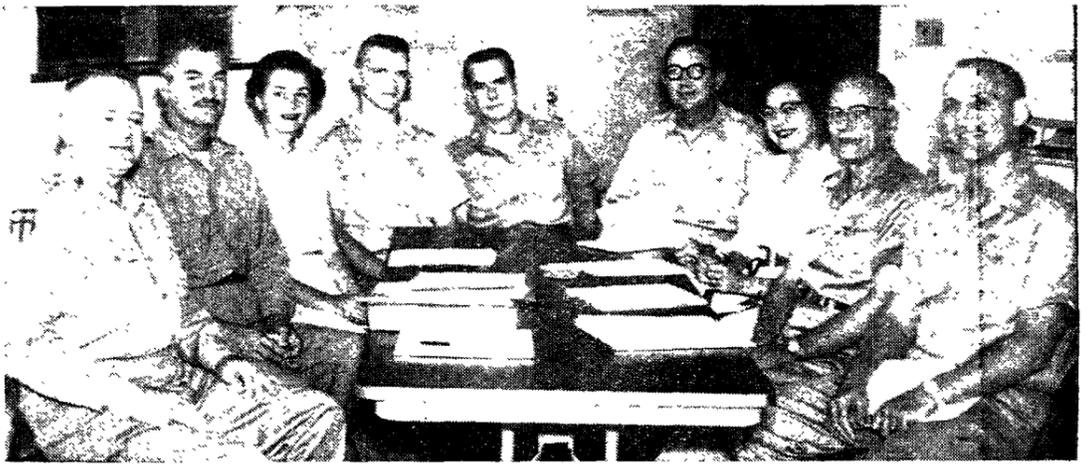
George Rainey, of the RSA Billeting Office, won a Sustained Superior Performance Award and \$200.

William P. Morrow, Deputy Chief of the AOMC Transportation Office, received a Sustained Superior Performance Award and \$300.

Lewis L. Aycock, Deputy Comptroller, AOMC, received an Outstanding Performance Rating, a Sustained Superior Performance Award, and \$300.

Al Muller, Chief of the Procurement Branch, ABMA Industrial Division, won a Sustained Superior Performance Award and \$300.

A fleet of "Flying Boxcars" can drop the entire battle-ready assault echelon of an airborne division on a target area 750 miles from its base within a few hours.



COUNCIL MEETS—Members of Redstone Arsenal's Joint Activities Council are shown above at a recent meeting at the Post Chapel. They are, left to right: Col. Thomas E. Wood, chairman; Lt. Col. George H. Wenzel, Adult Committee and Teen-age Club; Mrs. Thurston T. Paul, Jr., Officers Wives Club; Lt. Wilber G. Bemis, recorder; Lt. Col. F. W. Dill, Chairman, Sports Committee; Maj. L. W. Conner, Council Fund Custodian; Mrs. G. A. Kennedy, representative, NCO Auxiliary; Chaplain (Maj.) James H. Goewey, Post Chaplain; Maj. William R. Hahn, representative, Scouting Committee. M-Sgt. Jack Greenwood, NCO representative, was not present when the picture was made.

Who Gave the Blood -- And What Type Was It?

By: J. G. McNeil

The June visit of the Red Cross Bloodmobile netted 512 pints of blood from 521 Arsenal blood donors. Nine volunteers were rejected for a reason, however, these nine people did volunteer, so they will receive the same benefits as the actual donors; free blood transfusions in the event of the need, for themselves and families for the next six months.

Who were these 521 people? A study of the case cards of the 14 million blood donors since 1943 revealed that the typical donor is a man, thirty five years old, who works in an office or an industrial plant. This data could be favorably applied to the Arsenal. This typical donor's blood is identified as Group O or Group A, RH positive.

What is this Group A, O, and B, RH business: It A thicker than B, is O redder than AB and is RH "red heart?"

Sp2 Roy Marrero and Neb Shackelford, laboratory technicians at the USA Hospital, raised the curtain on the mysticism of blood typing—at least on part of it. They were very patient as they explained: All people have blood, almost eight quarts of it, however, some if it is different. About the Group A, AB, B and O, it appears that they could just as well be called Groups Apple, Banana and Orange or Groups Four, Five and Six and seven-eighths, so long as the identification remains constant.

But how are the Groups different? There is a substance on, in and/or around a blood cell (the

curtain was only partly raised here) and the difference in the reaction of this stuff determines the type of blood.

Comparatively simple so far, however, the technicians went into orbit. They threw in that old word BUT. But, they said, it's not quite that simple. We have to deal with another factor, a substance known as RH. All people have a congenital condition (they said), people are born with it or without it. With it, the blood is RH positive; without it RH negative. Eighty-five percent of the people are RH positive.

At this time this discourse came down to the perigee and some of the explanations came into focus. It seems that, even though Type A blood was given to patient having Type A, the transfusion was not always successful. A lot of scientists, Doctors Weiner and Lancaster, were curious about this situation so they started experimenting, as usual, on a key. They used a Rhesus monkey, did some mysterious work on the animal and then transferred some of its blood to a rabbit. It is understood that this first unsuccessful experiment resulted in the birth of the now famous statement "Dr. Weiner, we're a hare short."

The experiments were conducted and in 1940, it was announced that blood types could be positive or negative, that is, there could be a Type A (RH) Negative and a Type A (RH) Positive. Just when the explanations appeared to become comprehensive and logical, bang! they shot off into apogee! Identical types of blood are compatible; that is (they explain

Type A positive blood is compatible only with Type A positive and Type A negative is compatible only with Type A negative. Simple! Except, of course (of course?) Type O negative could be given to any person having any type of blood. And any negative blood is compatible with any positive in the same blood group (A, B, AB, and O), although the converse is not true.

At this point all attempts to keep pace with the information and statistics coming from the well-versed technicians were "scrubbed." Here are a few of the interesting facts: prior to transfusion, all blood is treated to prevent the possible transfer of an allergy. Imagine one waking up from a transfusion and finding strawberry ice cream now caused a rash!

Blood is typed three times before it is transfused; at room temperature, body temperature, and ice box temperature. This is probably done to reassure that one could be transferred to Guam or Greenland. Cross tests are made of the blood cells and blood serum of both patient and donor's blood. The most important test, the major, is between the patient's serum and the donor's cells, most important because it is the blood cells that are needed by the patient.

All of this may sound like a lengthy process and it would be in the hands of the inexperienced, but the technicians assured that it only took a matter of minutes. They also assured that the loss of a pint of blood to a healthy person should only make him feel better.

Any healthy individual doubting these words or wanting to prove them, may do so first hand by volunteering to donate a pint of blood at the Arsenal Bloodmobile, Post Gym, Building 5663, 11 August, 1958.

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Al Muller, Chief of the Procurement Branch, ABMA Industrial Division, won a Sustained Superior Performance Award and \$300.

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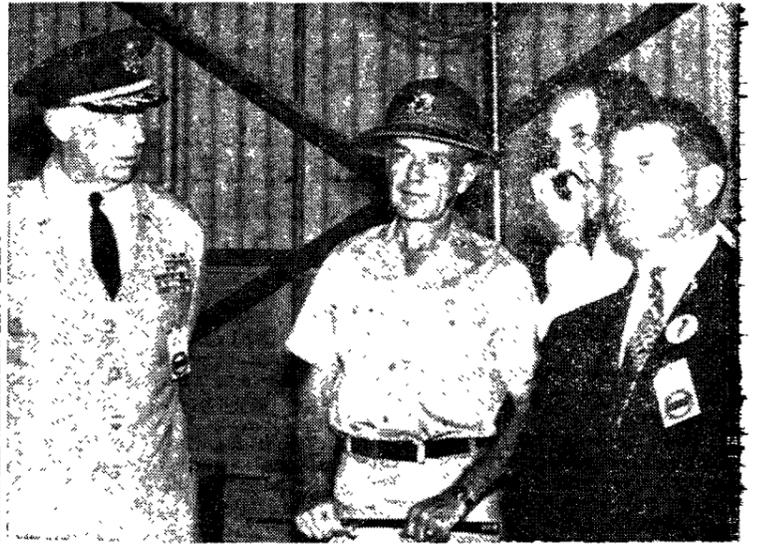
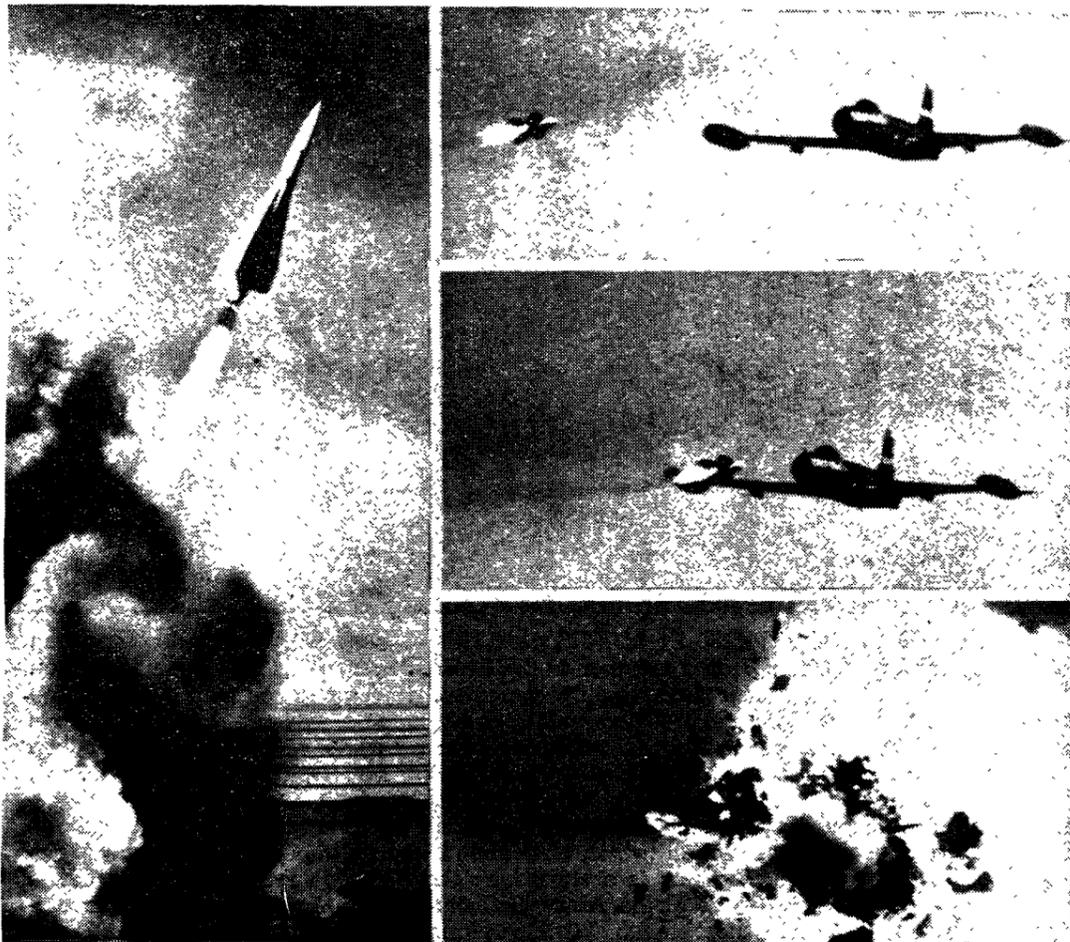
REMEMBER, the 1958 Chevrolet is the only completely new car brought out in 1958—and is leading its nearest competitor by over 125,000 sales to date this year.

REASONS: Styling — Economy — Exclusive Features — High Resale Value, HILL'S SERVICE and Lowest GMAC Terms.

Remember to get the whole story as to finance charges, and compare before you buy—it will save dollars for you.

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VISITORS — (Cong.) Olin E. Teague, (right), Representative from Texas, and Maj. Gen. T. L. Harrold, (left), new commander of the Army War College, are shown in the Fabrication Laboratory being briefed by Col. C. G. Patterson (center) and Vern Cummins (rear). Rep. Teague and Gen. Harrold saw demonstrations of the Jupiter IRBM ground equipment and a firing of a Jupiter engine on the Static Test Stand during their recent tour at the Army Ordnance Missile Command.

FIRST HAWK PHOTOS — These White Sands Missile Range photographs are the first released pictures of intercept by the Army's Hawk anti-aircraft missile with a drone aerial target. The sequence demonstrates the deadly accuracy of the new supersonic guided missile, designed for use against low-flying aircraft. The target, an F-80 jet fighter fitted with electronic instruments for remote control, was completely destroyed when the fully-armed Hawk scored a direct hit. The Hawk guided missile has been undergoing research and development tests at White Sands for more than a year. The system was developed under direction of the Army Rocket and Guided Missile Agency, with Raytheon Manufacturing Co. of Massachusetts as prime contractor, and Northrop Aircraft as a major sub-contractor. The Hawk employs a solid fuel engine developed by Thiokol Chemical Corporation.

RELIGIOUS SERVICES — POST CHAPEL BLDG. 3714

<p>PROTESTANT</p> <p>Sunday—0945 hours, Sunday School, first session through Junior High 1000 hours — Adult Bible Class in TV Room of Service Club.</p> <p>1100 hours — Sunday School, 2nd Session — 3 years of age through 3rd grade.</p> <p>1100 hours — Morning Worship. The nursery for babies and small children is open during this service.</p> <p>1430 hours — Morning Worship in Hospital Mess Hall.</p> <p>Wednesday — 1845 hours — Chancel Choir Rehearsal.</p> <p>CHAPEL NO. 2—PROTESTANT</p> <p>Sunday — 0930 hours — Morning Worship</p> <p>JEWISH: Friday Night Services will be held in Huntsville at the Temple B'Nai Shalom (Corner of Clinton and Lincoln Sts.) at 2000 hours. O'Neg Shabbot (Sabbath Social) at the Temple Annex following services.)</p>	<p>CATHOLIC</p> <p>Sunday — 0745 and 0845 hours— Mass.</p> <p>Monday — 1900 hours — Convert Class in Chaplain's Office.</p> <p>Tuesday — 1930 hours — Novena in honor of Miraculous Medal followed by Choir Rehearsal.</p> <p>Friday — 0900 hours — First Friday Mass and Conference.</p> <p>1000 hours — Ladies Sodality and Breakfast.</p> <p>1130 hours — Distribution of Holy Communion.</p> <p>2000 hours — Holy Name Smoker.</p> <p>Saturday — 1300-1900 hours — Confessions.</p> <p>CHAPEL NO. 2 — CATHOLIC</p> <p>Sunday — 1100 hours — Mass.</p>
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at the Service Club

How about some "Good Table Talk?" I believe I can safely say that my trip to Birmingham was very successful. Vulcan Park, high up Red Mountain, was one of the points of interest. We saw Vulcan, mythical God of the forge, the second largest statue in the world, surpassed only by the Statue of Liberty. We received a breathtaking view from the top of the Vulcan Tower. The dance at the YMCA was enjoyed tremendously.

DANCE: Tuesday night an enormous group enjoyed the dance by the music of Tommy Martin's Orchestra. "MUSIC" is the theme of the dance. The Club Lounge was decorated throughout, giving emphasis to this theme. Hats off to the decorating committee: Rich Zummo, Elliott L. Pomerantz, Leliace, Norm and Paula Raffish. The Birmingham, Nashville and Huntsville Hostesses were guests of the dance. The Beginner's and Advanced Dance Classes will get back in full swing tonight. Ray, instructor, will be back from vacation and he will get us back in the swing of things again. The reservation lists for the August 20th classes have been started, therefore, if you are interested in FREE dance classes contact the office immediately.

BINGO: Every Monday night 8:15 in the cool lounge. We have many interesting prizes

available each week for the lucky winners. We have grand prizes too.

MEETINGS: Junior Hostess Meeting will be on August 7th at 7 o'clock. This will be a very important meeting and we hope all members will make it a point to attend the meeting. Who will be the Junior Hostess of the Year? The Junior Hostess, who has the most honor points by December, will be recognized at the Christmas Ball.

The Pool Club meets every Tuesday night at 7 o'clock.

The Bridge and Chess Clubs meet every Thursday at 7 o'clock. All members are urged to attend the regular meetings and also to participate in the tournaments. The Bridge Club has a Duplicate Bridge Tournament every week.

PARTIES: Betty Williams, John Williams, Jack Dickey and guests enjoyed a Birthday Party Sunday night.

COFFEE CALL: Every night at 8:30 p. m. coffee will be served. How about a cup?

FRANCES

On the future battlefield, junior commanders will have to be capable of shouldering great responsibility and exercising almost unlimited initiative.

READ THE WANTADS

THE POST LIBRARY
ANNA L. FARRAR
Librarian

The titles listed have been added to the collection of the Post Library recently:

Herbert Agar, "The Price of Power; America Since 1945."

Eugene Block, "The Wizard of Berkeley."

Mark Brown, "Before Barbed Wire."

George Chisolm, "Can People Learn to Learn?"

Gordon Clapp, "The TVA; an Approach to the Development of a Region."

Frank Cross, "The Ancient Library of Qumran and Modern Biblical Studies."

Marcus Cunliffe, "George Washington, Man and Monument."

Mazo De La Roche, "Centenary at Jalna."

Eric Dominy, "Judo, Basic Principles."

Fairfax Downey, "The Guns at Gettysburg."

"The E. U. P. Concise Russian and English Dictionary."

Robert Ergang, "Europe Since Waterloo."

Harry Fosdick, "Riverside Sermons."

Brian Glanville, "The Bankrupts."

Ernst Gombrich, "The Story of Art."

Good Housekeeping, "Good Housekeeping Party Book."

Frank Gruber, "The Marshall."

Louis Halle, "Choice for Survival."

Edith Heal, "The Young Executive's Wife."

Ronald Hewitt, "From Earthquake, Fire and Flood."

Joseph Hofmann, "The Story of Mathematics."

Emily Kimbrough, "... It Gives Me Great Pleasure ..."

Walter King, "The Airbrush Technique of Photographic Retouching."

Andre Leroi-Gourhan, "Prehistoric Man."

Ada Lewis, "The Longest Night."

Victoria Lincoln, "A Dangerous Innocence."

Melissa Mather, "Rough Road Home."

Hazel Meyer, "The Gold in Tin Pan Alley."

Eric Northrup, "Science Looks at Smoking."

Wilfrid Noyce, "The Gods Are Angry."

Sean O'Casey, "Sunset and Evening Star."

Augusto Pi Suner, "Classics of Biology."

Herbert Prochnow, "American Financial Institutions."

Ishbel Ross, "First Lady of the South; The Life of Mrs. Jefferson Davis."

Bertrand Russell, "Understand-

It is only when invading forces pile up against the barrier of Army tactical formations on the ground that military targets begin to form.

No weapon, however powerful, no vehicle of land or air, how-

ing History, and Other Essays."

James Scott, "The Lady and the Corsair."

John Selby, "The Days Dividing."

Henry Smith, "The Master Book of Fish."

David Taylor, "Sycamore Men."

Leo Tolstoi, "Tales of Courage and Conflict."

Robert Updegraff, "All the Time You Need, the Greatest Gift in the World."

Lillian Watson, "Standard Book of Letter Writing and Correct Social Forms."

Henry Wells, "One Thousand and One Poems of Mankind."

William Whyte, "The Organization Man."

Percival Woodcock, "Short Dictionary of Mythology."

ever swift, is more effective than the men of trained courage who control it in battle.

Electronic simulators already available enable the Army to train its missile crews more quickly, efficiently and economically than if they trained on actual missiles alone.

A sack dress is like Prohibition—the joints are still there but they're harder to find.

WRECKER SERVICE

In case of an accident ask for our new wrecker. Courteous operator, reasonable charges. Day Phone JE 4-4561, nights JE 4-0808.

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Sometimes a well-timed loan will help clean up a troublesome situation in "nothing flat." Come in and talk the matter over with us. You'll be glad you did.

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Amazingly Light Touch—Fully Electrified

Automatic totals and sub-totals. True credit balance. Two-color printing. Direct subtraction.

Light — Compact Quiet

MAKES FIGURES FLY! SEE IT DEMONSTRATED.

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HUNTSVILLE, ALABAMA

THIOKOL HAWKS TAKE DISTRICT SOFTBALL CROWN

The Thiokol Hawks, Thiokol's Redstone Division softball team, fought its way through a strong entry list to win the North Alabama Championship softball tournament in Decatur.

Bobby League, with three hit pitching, led the Hawks to an 8-1 victory over Davis Construction Co. of Decatur in the finals. Earlier in the tournament it was Bobby who hurled a no-hitter against a strong Athens team. This was Bobby's third no-hitter of the season.

Including tournament victories the Hawks now have a season record of 17 won and 6 lost. They still face the completion of the regular season's schedule and the Huntsville City Championship which, if they win, will lead to the State Championship tournament in September.

Arsenal Marksmen Take Seven Prizes

Members of the Redstone Arsenal Pistol Club won a total of seven prizes at the monthly National Rifle Association Pistol Match held in Birmingham July 27. They were:

Mr. R. W. Ekis, ARGMA took first expert in the .22 Cal. National Match Course.

SP3 Fred Newton, OGMS, was the winner of the .22 NMC with a score of 288 out of a possible 300. SP3 Newton was Second Expert in the .22 Timed Fire and Centerfire NMC and was First Expert in the Grand Aggregate.

SP3 Donald Watkins, USA Gar., won First Sharpshooter in the .22 NMC and .22 Timed Fire Matches.

SPORTS QUIZ

(AFPS Weekly Feature)

1. What is the score of a forfeited football game?
2. Who was the last heavyweight boxing champion of the world who was not an American?
3. What great football player made the number "77" famous?
4. What term describes the situation in which a golfer is trying to putt the ball into the cup and there's another ball in the way?
5. What is the distance between the baseball pitcher and home plate?

Answers To Quiz)

1. One to nothing.
2. Primo Carnera, champion in 1933 and Italian.
3. Red Grange.
4. "Stymied."
5. Sixty feet, six inches.

Knights of Columbus Invited to Picnic

All military members of the Knights of Columbus and their guests are invited to a picnic at the Redstone Arsenal Boat Dock on Saturday, Aug. 2, from 1 to 4 p. m.

Steaks broiled to order, hot dog platters, coffee, beer and soft drinks will be available. Tickets may be purchased from any KC member.

READ THE WANTADS

STRUCTURES LAB AIDS EXPLORERS

First-State Booster And Spin Launcher Are Contributions

The group of scientists, engineers and technicians comprising the Structures and Mechanics Laboratory, ABMA, were among those contributing to the success of the Explorer series.

Complete engineering of the first-stage booster, a modified Redstone Missile, including the spin launcher for the high speed upper stages, and overall engineering responsibility for the entire missile configuration were achievements of the Laboratory. It performed the same functions for the Explorer I project.

Employing about 600 personnel, the Laboratory is third largest of ten supervised by Wernher von Braun, director of the Development Operation Division.

The Laboratory is responsible for research and development aspects of the structures, materials, and mechanical components of Army long-range rockets and missiles. This includes design and development of fuselage, propulsion system, cooling system, and propellant feeding system. In addition, the Laboratory also is responsible for design integration of the complete missile system.

The complex program is directed by William A. Mrazek, missile development veteran, who has been part of the Army missile team since its beginning in 1946. Then including 40 members, the group was originally designated the Design Office, Research and Development Division, Sub Office Rocket at Fort Bliss, Texas.

Mrazek supplied unequalled experience in missile development, having been active in the development of the V-2 and the Wasserman anti-aircraft rocket at Peenemuende.

While the group has been considerably enlarged since 1946, the basic mission remains the same. In 1950 the Design Office moved to Redstone Arsenal, Huntsville, Ala., where it was placed in the Guided Missile Development Division. In 1952, then 120 strong, the unit was designated the Aerodynamics and Structures Laboratory. This name was employed until 1954 when two major changes occurred.

It was titled Structures and Mechanics Laboratory and, because of increased size, 250 personnel, was moved from its former location at the Arsenal into larger quarters.

Early in 1956 it became part of the newly formed Missile Agency's Development Operations Division. In April, 1956, a further shift occurred as some of the 430 personnel were moved into the Agency headquarters and Mrazek became lab director.

Prior to his designation, Mrazek served as chief, Layout and Assembly Section, responsible for preliminary design and layout studies.

Additional programs brought further growth. A new complex of buildings to house the entire Laboratory is under construc-



A MARKED IMPROVEMENT IN MARKSMANSHIP—When he first started competition shooting in the Spring of 1957 as a member of the Redstone Arsenal Pistol Team, SP3 Don Watkins (left) fired little better than qualifying scores. However, since then, he's become good enough to bring home no less than 51 trophies, medals, and plaques from various matches he's entered. In photo above, Watkins shows off some of his "shootin' loot" to Capt. E. F. Hargis, Commanding Officer of Watkins' unit, Det. D, U. S. Army Garrison, Redstone, and Lt. Col. Dean H. Jones, Redstone Provost Marshal. As a result of his improvement in marksmanship, Watkins has now achieved the classification of "Sharpshooter" in the National Rifle Association (which also includes pistol-shooting members.) A native of Ocean City, Wash., Watkins is assigned by the Redstone Provost Marshal Office to the Security and Safety Office of the Army Ballistic Missile Agency. Upon his discharge from military service next month, Watkins plans to go into police work.



THIOKOL HAWKS—The Thiokol Hawks softball team is shown above with the trophy won recently for first place in the North Alabama Championship softball tournament in Decatur. Players are, left to right, front row; W. E. Buford, manager; Donald Grider, Neal White, Marion Price, H. T. Waston, and John Gaught. Second row: Bobby League, Pete Childress, Richard Wilson, Lee Jordan, Robert Lynn, Hurtis Mathis, Floyd Fann, and Leroy Cunningham.

Nothing New for Him Getting Out on a Limb

FORT BRAGG, N. C. — The 82nd Airborne Division here has in its ranks a private who is a qualified surgeon.

Private First Class Michael G. Kinsella of (35 Hickory St.) Monroe, N. Y., left his job with the city of Rochester for climbing duties as a wireman. Kinsella is

still in his element. He's a tree surgeon — and remembers more about living trees than climbing dead ones.

During maneuvers last winter he recalled that the pitch of some trees is highly inflammable. "The carcasses of those Bragg pines sure produced the heat when it was needed," he says.

tion. The first building was occupied in January, 1958. The Redstone Ballistic Missile, the Jupiter IRBM, the Jupiter C satellite launching rockets, and the newly authorized Pershing solid propellant missile have or will have undergone engineering phases in the Structures and Mechanics Laboratory. One of the best-known achievements was the reentry and recovery of nose cone, carried by Jupiter C and Jupiter missiles. Two full scale Jupiter nose cones have been successfully recovered in the past two months following flights into outer space.

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LOANS!!

"Fastest Loan Service in Town"

MONEY IN 10 MINUTES

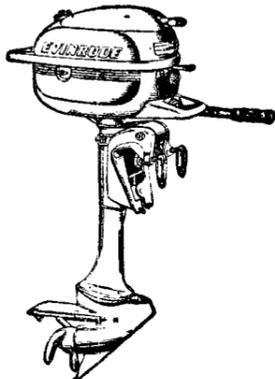
LOANS MADE ON YOUR SIGNATURE TO MEN AND WOMEN THAT HAVE REGULAR JOBS AND SALARY

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there's life
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HUNTSVILLE, ALA.

KING OF BEERS
ANHEUSER-BUSCH, INC. • ST. LOUIS • NEWARK • LOS ANGELES

Safety Scoreboard

(As of 28 July)

Days since last civilian disabling injury—44.	Our Goal	45
Days since last military disabling injury—12.	Our goal	33
Days since last contractor personnel disabling injury—39.	Our Goal	100
Days since last government vehicle accident—3.	Our Goal	30

SCOREBOARD "SIDELIGHTS"

The number of days since the occurrence of a disabling injury to civilian personnel continued to grow. Every day without injury establishes a record. As of 28 July the record stands at 44 days (3,300,000 manhours), just one day short of the present goal. This record is very impressive and all civilian employees are to be congratulated.

Minor accidents, caused mainly by inattention on the part of the operator, has prevented any possibility of approaching the established goal in the Government Vehicle Category. It is important that minor vehicle accidents be prevented; in most cases the only difference between a minor accident and major accident is "luck."

Rocket to Feature Safe Supervisor, Worker of Week

Beginning with next week's issue of the Rocket, there will be featured each week an employee selected as the Safe Worker of the Week and a supervisor selected as the Safety Supervisor of the Week.

Selection of these employees will be based on recommendations of supervision after a careful review of post records. All selections will be coordinated by the Safety Office.

The Safety Office says that there are many fine employees and supervisors at Redstone who could be featured and that

Thiokol Consultant Receives Franklin Institute Medal

Dr. Joseph C. Patrick of Yardley, Penna., the chemist whose discoveries led to the production of the first synthetic rubber in the United States, has been named recipient of an Elliott Cresson Medal, the president of the Franklin Institute announced recently.

A consultant of Thiokol Chemical Corporation of Trenton, Dr. Patrick will receive the medal at formal ceremonies Wednesday, Oct. 15, in the Institute's Franklin Memorial Hall.

He is being honored for his discoveries in the field of polysulfide polymers, and for the new processes devised by him involving the combination of chemical compounds for the manufacture of a synthetic rubber having special properties adapted to critical uses and to the manufacture of a solid rocket fuel." Dr. Patrick has 50 patents to his credit.

Former winners of the Cresson medal include Lester A. Pelton, in 1895, for a water wheel; Professor and Madame Curie, in 1909, for the discovery of radium; and Dr. Willard F. Libby, Commissioner, U. S. Atomic Commission, in 1957, for his development of the radiocarbon dating technique.

Dr. Patrick's discoveries led to the establishment of one of the largest industries in the Huntsville area, Thiokol's Redstone Division. This division employs

those selected should not necessarily be regarded as the best. In other words, it isn't a contest but simply a means of recognizing good people with good records who have a sincere interest in preventing accidents.

If you have knowledge of a really safe employee, or if you feel that your supervisor is extra safety conscious and is deserving of recognition, let the Safety Office know and it is possible that he (or she) may be featured in a future issue of the Rocket.

This feature is not limited to any category of personnel — it could be civilian, military or contractor — just so long as they are employed at Redstone Arsenal.



PEACHY — It's a case of a "peach" picking a peach as this week's Rocket Pin-up. Miss Gisela Vowe, reaches for some of that luscious fruit. A native of Detmold, Germany, Miss Vowe was graduated from Butler High School and attended the University of Alabama, where she studied business education. She is employed now in the Officer Training Division of the Ordnance Guided Missile School. (Photo by Tom Thrasher)

more than 1500 people and has been a leader in research and development of solid propellant motors for guided and free flight ballistic missiles.

Special Services Activities

Post Gymnasium Operating Hours
Monday thru Friday 1400-2200
Saturday, Sunday and Holidays —Closed.

Craft Shop Operating Hours
Monday and Tuesday—Closed.
Wednesday thru Friday 1400—1630 and 1730—2200.
Saturday 0800-1630.
Sunday 1230-1930

Golf Driving Range and Archery Range Operating Hours
Monday thru Friday 1400-2100.
Saturday 1300-1900.
Sunday and Holidays 1400-1900.

LIBRARY OPERATING HOURS
Monday thru Friday 0900-2200
Saturday and Holidays 1000-2200.

Sunday 1200-2200.

Post Service Club Operating Hours
Monday thru Friday 1600-2200.
Saturday 1000-2200.
Sunday and Holidays 0900-2200.

Post Swimming Pool
Monday thru Saturday 1000 - 2000.

Sunday 1200-2000.

Odd days of the month are reserved for Enlisted personnel, their families, and guests. Even days of the month are reserved for Officers, their families and guests.

GUNTERSVILLE RECREATION-AL AREA
Saturday, Sunday and Holidays —0900-2100.
Monday thru Friday — 1400-2100.

Movie Schedule

Wednesday 30 July 1958, "The Little Hut" starring Ava Gardner, Stewart Granger and David Niven (M) Time 1315, 1830 and 2030.

Thursday and Friday 31 July and 1 August, "The Badlanders" starring Alan Ladd, Ernest Borginine (M) Time 1315, 1830 and 2030.

Saturday 2 August 1958, "Everything but the Truth" starring Maureen O'Hara, John Forsythe and Tim Hovey SPECIAL MATINEE (F) Time 1000.

Saturday 2 August, 1958, "The Littlest Hobo" starring Buddy Hart and Wendy Stuart (F) Time 1830 and 2030.

Sunday 3 August 1958 "Ride a Crooked Trail" with Audie Murphy and Gia Scala (M) Time 1400, 1830 and 2030.

Monday 4 August 1958, "Hot Car Girl" with Richard Bakaljan and June Kenney (M) 1315, 1830 and 2030.

Tuesday 5 August 1958, "Saga of Hemp Brown" starring Rory Calhoun and Beverly Garland (F) 1830 and 2030.

READ THE WANTADS

GRAND THEATRE

WED., THURS.

"Rock-A-Bye Baby"

● Jerry Lewis
● Marilyn Maxwell

Friday Only

ALIVE ON STAGE

Mighty "GARGANTA"

The Giant Gorilla—
Direct from his jungle lair!
EXTRA! EXTRA!
See the ethereal form of
Marilyn Monroe materialized

—plus—

The Earthly Apparition of
ELVIS PRESLEY

—plus—

2 SCREAM PICTURES

SATURDAY



—PLUS—

"Thundering Jets"

REX REASON

STARTS SUNDAY

The great love story
of World War II by
the author of 'All Quiet
on the Western Front'



ERICH MARIA
REMARQUE'S

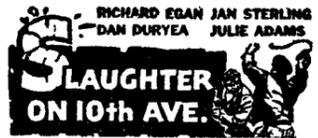
A TIME TO LOVE AND A TIME TO DIE



A Universal International Picture starring
JOHN GAVIN · LILO PULVER
co-starring
JOCK MACHONEY · DON DUFORE · KEENAN WYNN
and ERICH MARIA REMARQUE, himself, as The Professor
Directed by DOUGLAS SIKK · Screenplay by ORIN JANNINGS
Produced by ROBERT ARTHUR

WOODY'S DRIVE-IN

THURSDAY & FRIDAY



— PLUS —

"BAYOU"

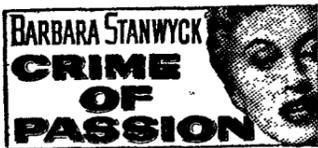
PETER GRAVES
LITA MILAN

SATURDAY

Double Feature



— Plus —



STARTS SUNDAY



WHITESBURG DRIVE-IN

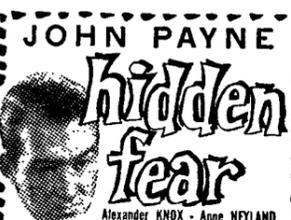
LAST TIMES TODAY



THURSDAY & FRIDAY



SATURDAY



— Plus —



SUN., MON., TUES.



LYRIC THEATRE

"HUNTSVILLE'S FINEST"

WED., THURS., FRI.



SAT., SUN., MON., TUES.



STARTS WEDNESDAY



"No Time For Sergeants"

ANDY GRIFFITH
MYRON MCGORMICK · JEAN WILLES
A WARNER BROS. PICTURE

PARKWAY

LAST TIMES TODAY



Lafayette Escadrille

Directed by WILLIAM A. WELLMAN
from Play by A. S. Fleishman Presented by WARNER BROS.
Music by Leonard Bernstein

Wednesday, Thursday,
'Unguarded
Moment'

—with—
ESTHER WILLIAMS
— plus —



FRIDAY & SATURDAY



—Plus—

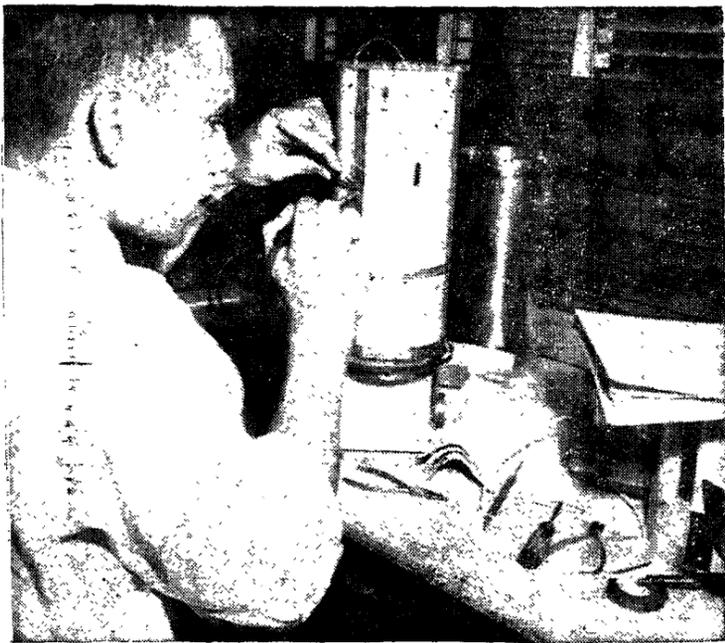
The Life... The Loves... The Adventures Of Omar Khayyam

STARTS SUNDAY
"Don't Go Near
the Water"

—with—
GLENN FORD
in color



GEN. TOFTOY FETED — Maj. Gen. H. N. Toftoy, who assumes command of Aberdeen Proving Ground the first of August, was guest of honor at a reunion of pioneers in rocketry, once stationed at Ft. Bliss, Texas, recently. Shown above, left to right, are: Gen. Toftoy, Dr. Wernher von Braun, and Eberhard Rees.



WIRING INSTALLED — Don Enemark of the Guidance and Control Laboratory, ABMA, installs wiring in the Explorer IV instrument package. Guidance and Control Lab was responsible for assembling the satellite and conducting rigorous tests to assure proper functioning.

100 Ft. Bliss 'Old Timers' Honor Gen. Toftoy at Farewell Banquet

The Methuselahs of missiledom recalled the early efforts in the rockets and ballistic missile field when some 100 "old timers" originally based at Fort Bliss, Tex., held a reunion at the Russell Erskine Hotel in honor of Maj. Gen. H. N. Toftoy last night.

Dr. Wernher von Braun, Director of the Development Operations Division at the Army Ballistic Missile Agency and former project director of the guided missile development unit at Ft. Bliss, praised Gen. Toftoy's accomplishments in the missile program and told the group that had it not been for Gen. Toftoy's big heart and sense of duty here would be no Redstone, no Jupiter and no Explorers."

Gen. Toftoy was presented with a scale model of the Jupiter C missile and a model of the Explorer earth satellite during the dinner meeting. A color drawing of the buildings which housed the Peenemuende group that made the Research and Development Division (Sub-Office) Rocket established at Fort Bliss in October 1945 was also presented to Gen. Toftoy.

Lt. Col. James B. Hamill of the Ballistic Research Laboratories, Aberdeen Proving Ground, who commanded the Research and Development Division at Fort Bliss, was told of his promotion to Colonel in a surprise announcement by Gen. Toftoy. Eberhard Rees, Deputy Director of Development Operations at ABMA, acted as master of ceremonies at the dinner reunion which gathered perhaps the greatest array of rocket experts in the free world under one roof.

It was during World War II that Gen. Toftoy helped to bring this country the scientists and engineers who developed the V-2 at Peenemuende. He was signed the task of selecting the approximately 130 missile experts who came to the United States and employing them in the Research and Development

TEAMWORK

(Continued from Page 1)

tensive network of ground tracking and communications stations.

The satellite project was carried out under the direction of ARPA and AOMC.

Work at the Missile Agency in providing the main stage of the missile and its operating systems involved all 10 laboratories of Dr. Wernher von Braun's Development Operations Division ABMA. The Guidance and Control Laboratory prepared the satellite for launching.

Assembly and testing of the satellite was under the direction of Josef Boehm, whose cylindrical satellite design has been employed in all three of the Army's EXPLORER orbiters. This phase

of work at the Missile Agency included rigorous testing to insure the successful launching and functioning of the vehicle and its instruments. This required balancing, vibration, shock, spinning and temperature tests.

The Agency's Aeroballistics, Research Projects, Computation and Guidance and Control Laboratories cooperated in establishing the satellite's orbit and providing the launching program.

In addition to furnishing the three high-speed upper stages, JPL supplied one radio beacon and subcarrier oscillators, and the steel shell of the satellite. ABMA provided the nose cone.

The second of the two radio transmitters was contributed by

Division (Sub-Office) Rocket established at Fort Bliss.

Army missile development continued at Fort Bliss until 1950, when it was relocated at Redstone Arsenal. Gen. Toftoy assumed command of the Arsenal in 1954. In March 1958 he was named Deputy Commander of the newly organized U. S. Army Ordnance Missile Command.

The reunion came shortly before Gen. Toftoy's departure for Aberdeen, Md., where he will assume command of the Aberdeen Proving Ground.

Out of town guests present for the dinner were: Dr. Joachim Muehlner, Sunnyvale, Cal.; Dr. Erich Manteuffel, Ithaca, N. Y.; Dr. Helmut Schmid, Darlington, Md.; Helmut Zoike, Redondo Beach, Cal.; Herbert Cuendel, Buffalo, N. Y.; Oscar Bauschinger, Long Island City, N. Y.; Werner Gengelbach, Pacific Palisades, Cal.; and Lt. Col. J. C. Miller.

Local guests included: Maj. G. E. Ledford; W. G. Tiller, K. K. Dannenberg, F. Kraemer, H. Luehrs, E. K. Kaschig, H. Weidner, W. A. Mrazek, H. Fichtner, H. W. Fuhrmann, A. E. Heck; H. R. Bergeler; W. Angele, Dr. R. F. Hoelker, H. F. Beduerftig, W. Voss, Dr. E. D. Geissler, K. L. Heimburg, H. E. Kroh, W. P. Jacobi, H. F. Haukohl, T. K. Vowe, E. K. Klauss, W. K. Dahm, F. A. Vandersee, A. J. Finzel, F. K. Mueller, W. A. Schulze, R. K. Paetz, E. H. Hellebrand, G. P. Drawe, M. E. Nowak, G. W. DeBeek, F. Duerr, A. B. Stein; B. K. Helm, B. K. Heusinger, K. A. Lindner, H. H. Hosenstien, A. E. Whittmann, O. C. Holderer, H. H. Maus, W. R. Kuers, A. E. Schuler, W. Wiesman, O. Hirschler, E. K. Ball, W. K. Rosinski, H. H. Hueter.

E. W. Neubert, E. M. Rees, A. Urbanski, A. Beier, C. H. Mandel, T. A. Poppel, O. K. Eisenhardt, Dr. W. Haeussermann, G. R. Reising, J. J. Fagan, G. Heller, G. H. Appler, Dr. W. Sieber, A. Zeiler, H. K. Horn, Dr. E. Stuhlinger, and H. W. Milde.

Gen. Toftoy's son, 2nd Lt. Charles N. Toftoy, was also present for the occasion.

the Naval Research Laboratory. The Army Signal Corps was responsible for the compact battery arrangement which powers the instrumentation.

JPL and ABMA cooperated in setting up the Microlock ground radio network, which is composed of 10 stations. The NRL's Minitrack network is also receiving telemetered data from the new satellite. Optical tracking from a series of IGY stations, conducted by the Smithsonian Astrophysical Observatory is providing a photographic record of the passes over the earth. The Observatory's Moonwatch teams are cooperating in this effort.

A large number of industries were involved in fabrication of the huge main stage of the launching vehicle. These are the same firms which are engaged in producing the Army's REDSTONE Ballistic Missile, developed by the Missile Agency and now deployed by field units.

Prime contractor for the

REDSTONE missile is the Chrysler Corporation Missile Division. Major subcontractors include the Rocketdyne Division of North American Aviation, the Reynolds Metals Company, and Ford Instrument Company. These subcontractors supply, respectively, the power plant, ballistic shell, and guidance and control equipment.

The launching missile underwent certain modifications and was thoroughly tested at the Missile Agency prior to shipment to Cape Canaveral.

Did you hear about the fellow who spent his entire enlistment throwing stones at gull-like birds? He didn't leave a tern unstoned.

ENJOY "OK" USED CAR SAVINGS BUY WITH WARRANTED CONFIDENCE HILL CHEVROLET CO.

We've Changed The Day of the Auction Sale TO THURSDAY — 8 P. M.

— At —

ARTHUR COLE AUCTION BARN

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ROTARIAN AWARD — The Soldier of the Quarter and the Soldier of the Month at Redstone Arsenal, received gifts from A. A. Armstrong recently on behalf of the Huntsville Rotary Club. Left to right above are: SP3 Richard C. Wilson, military policeman chosen Soldier of the Quarter; Mrs. Wilson, PFC Saxon S. McRae, technician at the Ordnance Guided Missile School, the Soldier of the Month; and Mr. Armstrong. The Club helps sponsor a weekend "on the town" for the outstanding soldiers at Redstone Arsenal each month. Among the special privileges offered these soldiers by businessmen and civic groups in Huntsville are: a car with gas for the weekend, the privilege of staying in the Russel Erskine Hotel with all expenses paid, (including baby sitters and tips), and meals at many of the restaurants and clubs in town. (U. S. Army Photo.)



WENZEL PROMOTED — Lt. Col. George H. Wenzel (right), Executive Officer of the Field Artillery Instructional Detachment at the Army Ballistic Missile Agency, receives his new silver oak leaves in a recent promotion ceremony. Pinning on the leaf is Lt. Col. Richard McEwan, Commanding Officer of the Detachment, which is actually a part of the Ft. Sill (Okla.) Artillery and Missile School, but now under ABMA cognizance. Col. Wenzel came to Redstone Arsenal in November, 1957, from Ft. Sill, where he had commanded the 247th Field Artillery Missile Battalion (Corporal). A native of St. Paul, Minn., Col. Wenzel entered military service in 1941. He is a graduate of the Command and General Staff School, Ft. Leavenworth, Kan. His decorations include the Bronze Star with three Oak Leaf clusters, the Air Medal, the Commendation Ribbon, and 10 battle stars for service in Europe and Korea. He is married and the father of two daughters, Claudia, 10, and Dianne, 15.

WALTER REED SCIENTISTS STUDY TICKS TO GUARD TROOP HEALTH OVERSEAS

WASHINGTON—A world traveler might happen upon an Army scientist examining a rat's body in the Malayan jungle, a Rockefeller Foundation scientist inspecting the coat of a monkey in India, or a Navy researcher picking through the hairs of a camel in Egypt. All are looking for ticks.

The results of their efforts eventually meet in a laboratory of the Walter Reed Army Institute of Research here where extensive research is under way to combat diseases borne by the blood suckers.

While the insects are breeding here, their development and methods of reproduction are studied in the hope that some means may be found to control them.

The study of tick-borne diseases is a much-neglected field, according to Major Herbert C. Barnett of (10418 106th St.) Ozone Park, N. Y., Chief of the Department of Entomology at the Institute.

"Since World War II there has been diminished interest and decreased emphasis on infectious diseases in this country, but the Armed Forces have an important stake in the field throughout the world. These diseases are rampant in many areas where we have troops. Natives of these regions

are often immune to their local infectious diseases, but many of them could cripple a military organization foreign to the land."

Ticks are dangerous, second only to mosquitoes as transmitters of infectious diseases. Their bites cause many varieties of rickettsial or virus diseases, usually named after the areas in which they occur.

Some of them are the South African tick bite fever, Russian spring-summer encephalitis, Crimean hemorrhagic fever and Rocky Mountain spotted fever. Others are louping ill, found in Great Britain, and Kyasanur fever, recently discovered in India and presumably tick-borne.

The tick is hardy. Although some controls are available against ticks found in the U. S., their foreign cousins are frequently unaffected. Another major problem is the tendency of insects to develop strong resistance to insecticides.

An important part of the Walter Reed project is testing of insecticides, repellents and cloth impregnants in the hope that a permanently effective tick killer will be discovered, and methods for protecting troops from tick bites developed.

'Tell It to the—' Who Said It?

New York (AFPS) — "Tell it to the Marines!"

Ask any man on the street—Marines included—and he'd be likely to say the salty old retort was part and parcel of the US Leathernecks' proud history.

But England's King Charles II, who reigned from 1660-85, said it first.

According to Douglas Edwards, arbiter on CBS's "Answer, Please!" his majesty had heard a story about flying fish, and was highly skeptical. He called in an officer of his Royal Marines who said oh, yes, there certainly were such creatures. In fact, in the South Seas he had seen more flying fish in one hour than he had hairs on his head.

This tickled Charles. "No class of our subjects have so wide a knowledge of seas as the officers of our royal maritime regiment," he said. "Henceforth, whenever we cast doubt upon a tale that lacketh likelihood, we will tell it to the marines. If they believe it," he added, "it's safe to say that it is true."

In the development of missiles, mobility is a characteristic which the Army has insisted upon from the outset.

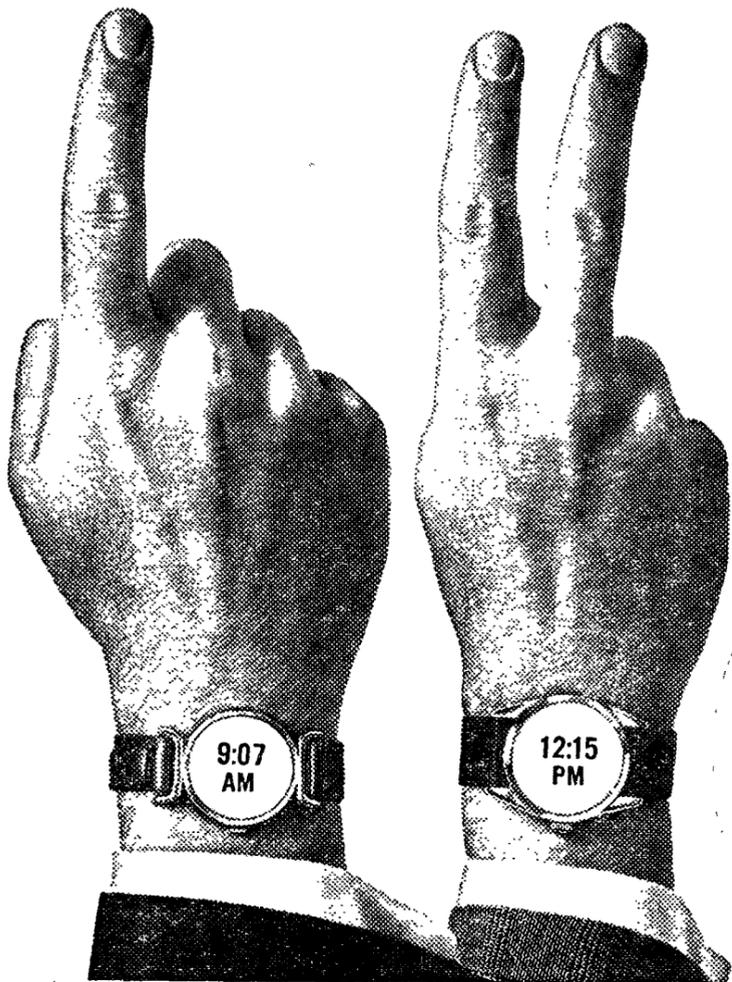
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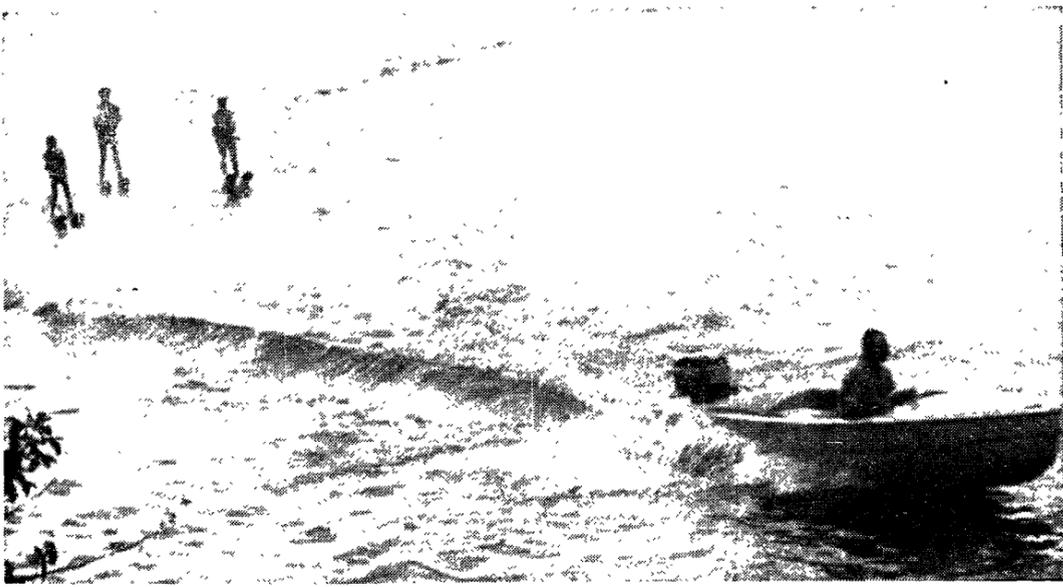
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REDSTONE'S PICNIC AREA — Many military families in the area enjoy a Sunday afternoon at Redstone's riverside picnic area. Following a tasty lunch and a short nap, some even enjoy water skiing as Pilot Col. T. J. Seigler clearly demonstrates as he cuts a path with his 30-horsepower motor for his three children, Chiefie, Ginny, and Kit shown above (left of right).

* * *

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Military Personnel and Dependents Find Arsenal a Good Place to Play

With the growth of Redstone Arsenal's military personnel strength comes an ever-increasing demand for more and better on-post recreational activities for the wives and children of these men. There are at present over 5,000 enlisted men and officers physically located at this installation. This number multiplied by 3½, the average per family, places approximately 15,750 men, women, and children here looking for something to do during their leisure hours . . . and more are expected to arrive within the next year.

The summer season has found many of the children participating in the Little League, Boy Scouting, Cub Scouting, Girl Scouting, Brownie activities and the Teen Age Club.

Would-be Robin Hoods have steadied their aim with practice at the archery range near the Service Club on Patton Road which they are allowed to use when accompanied by their parents.

The golf driving range adjacent to the Service Club and the tennis courts, located at the corner of Madison Pike and Patton Road, are open to the youngsters at all times.

The post gymnasium is open to the boys on Monday, Wednesday, and Friday and to the girls on Tuesday and Thursdays from 2 until 5 p.m.

The Little League teams, the White Sox and the Red Sox, are in contest with Huntsville teams and are making a pretty good showing although they've been rained out a couple of times.

Many of the games are played on the post at Explorer Field on

Goss Road. Though the field is still under construction by Post Engineers, Col. Neal Haggard, Capt. James M. Bishop, 1st Lt. Donald L. Gothard and 1st Lt. Richard E. Hineman keep the teams in tip-top shape with practice sessions there every Saturday morning and a game of six fast innings on Monday, Wednesday, and Friday. The field is located within walking distance of Wherry, MCA and Capehart housing.

The teams are completely outfitted with uniforms provided by funds from the Joint Activities Fund Council.

This is the first year Redstone's Little League has participated in the nation's Little League activities as contestants. They are affiliated with the Madison County League. At the end of the season, the best players of the Madison County league will be chosen to make up the team which will compete in the national contest.

1st Lt. Laurence D. Smith and Chaplain W. J. Hughes have fun aplenty planned for the Boy and Cub Scouts this summer. Camporees, hikes, swimming, and cook-outs are planned. There's no time like the summertime to practice Scouting, Chaplain Hughes believes.

The Scouts meet each Wednesday at 7 p.m. at the Scouthouse, Bldg. 114. The Cubs hold their meetings there too—each Tuesday at 6:45 p.m. on Squirrel Hill.

The Craft Shop, located in Bldg. 3617 offers sons and daughters of military personnel with artistic ability, the time, place, and materials to express themselves in ceramics, paints, or sculpturing. Groups such as Boy and Girl Scout Troops are encouraged to use these facilities.

There is a fully equipped automotive maintenance shop available — stocked with spare parts for almost any make of car.

There are machine-powered tools for boat and cabinet making, lapidary, leathercraft, and photography equipment available without charge.

Located at the south border of Redstone Arsenal is a picnic area complete with barbecue pits, tables, and shade trees. Boating, fishing, and camping may be enjoyed here.

With a portable radio or record

player — a few hotdogs and Cokes — a teen-age platter-party could be held with ease.

A new launching ramp is being built at the picnic area which will make it easier to load and unload craft whether it be a fishing boat, runabout, or cabin cruiser.

There are sand banks for miles up and down the Tennessee River and islands here and there suitable for overnight camping and picnicking — for those who want to get away from it all.

At the Post Pool there is a swimming course for registered members of the Girl Scout and Brownie Troops.

Classes are conducted from 10 until 12 each morning by Mrs. Peter L. Horne. Buses pick up the children each morning and return to take them home safely after each meet.

Other than the swimming classes, the Girl Scouts are holding meetings occasionally this summer. They have lost almost all their leaders, says Mrs. Everett M. Amos, Scout leader, and are in dire need of new ones to continue the program.

In the Fall they hope to organize again with an adequate number of leaders and a program chock full of fun.

A notice will be placed in the daily bulletin prior to their organizational meeting.

For the wives of military personnel there are several bridge clubs, garden clubs, a sewing circle, a book club, the Chapel Guild and the Gray Ladies organizations . . . not to mention the swimming pool, tennis courts, Officers Wives Club, Servicemen Wives Club, and the International Wives Club with their teas, coffees, and dances.

Mambo classes are being conducted at the Service Club every Wednesday night. There, too, they're enjoying platter parties, patio picnics, and nights of games. There's something interesting going on there every night.

Adults with common interests can find "togetherness" in clubs of all descriptions at Redstone.

For the weekend athletes there are archery, tennis, basketball, football, volleyball, swimming, pistol, and rifle teams; aviation, sports car, spelunkers, and hiking clubs. Those of a more relaxed, sedentary nature can find a number of chess, astronomical, book, theatrical and singing groups.

With the coming of winter frosts Redstone's hills, valleys and streams seem to swell with wild game.

The enthusiastic sportsman can hunt rabbits, squirrels, quail, ducks, and geese before worktime if he gets up early enough.

"For years I've been weighing myself on one of those scales that print those little cards," said the man at the bar. "When I started I weighed 142 pounds. Now I weigh almost 175."

"How come you weigh so much?" the bartender asked.

"I don't know," came the man's reply. "I guess it's because my pockets are full of those little cards."

READ THE WANTADS



YOUR MOVE—Beckie Gilbert (left) and Kit Seigler are shown above during a checker game at the Teen Club on Redstone Arsenal. The Club is open every Friday night from 7 'til 11. Games, dancing and singing are enjoyed there. Beckie is the daughter of Lt. Col. and Mrs. W. T. Gilbert and Kit's parents are Col. and Mrs. T. J. Seigler. Sgt. and Mrs. Howard R. Wynn are the Club's managers.



EXPLORERS MEET—Members of America's first group of Science Explorers examine a prototype model of the U. S. Army's Explorer I satellite in Rocket Auditorium, as Capt. Rudy Nottrodt, Executive Officer of the Ordnance Missile Laboratories, ARGMA, answers their questions. The youths were among 37 Science Explorers of Post No. 501, Van Nuys, Calif., who visited AOMC and OGMS recently while on a 10,000-mile nation-wide tour. Left to right are: Capt. Nottrodt, Explorers William A. Collins, Larry Adams, Paul Meyer, and L. J. Markwitz, one of two advisors. Marquardt Aircraft Co. and the Benevolent and Protective Order of Elks co-sponsored the trip, with each boy financing his share of the expenses.

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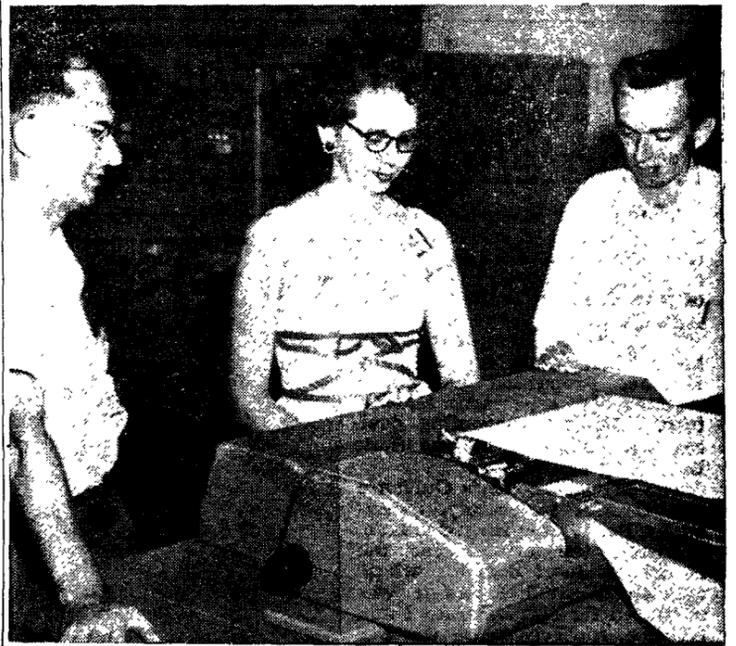
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DATA REDUCED—Paul Hurst (left) and Jerry Peddycoart check the 704 console unit which visually reports the operation of the intricate IBM computer. Hurst and Peddycoart, employed in the Data Reduction Branch of the ABMA Computation Laboratory, are compiling and reducing Doppler data received from the Explorer IV satellite. (U. S. Army Photo.)



ORBIT PLOTTED—Miss Mildred Letherwood, together with J. H. Golmon (right) and F. W. Seubert, observes the printer of the 704 Computer and notes results which will be used in determining the orbit of Explorer IV. Miss Letherwood, Golmon and Seubert are three of seven Computation Laboratory personnel calculating the refined orbit of the Army's latest satellite. These calculations are being made jointly by ABMA and the Smithsonian Institute, Cambridge, Mass. (U. S. Army Photo.)

Women in Computation Lab Help Plot No. IV's Orbit

Team of Seven Plans Calculations For Weeks to Come

Pioneers in a brand-new field of endeavor for the fair sex, three women employed in the Computation Laboratory of ABMA helped to determine the orbit of EXPLORER IV, newest in the Army series of earth satellites.

They are Miss Joan Kassner, Miss Mildred Letherwood and Mrs. Doris E. Roden.

During the hours immediately following the launching of EXPLORER IV, Miss Kassner helped to make a rapid determination of the elements of the satellite's orbit.

She is a graduate of the University of Alabama and a mathematician in the Digital Projects Branch. She lives at 1505 Randolph St., Huntsville.

Working with her was William Smythe of 4105 Toftoy St., Huntsville, employed by the Huntsville Computer Center operated by General Electric in the Army laboratory.

The Computation Laboratory, equipped with the IBM 704 computer and many other computing devices, was the focal point for early orbital calculations. The problem of determining the refined orbit will be approached through a joint effort between the Laboratory and the Smithsonian Institute at Cambridge, Mass.

Miss Kassner, Miss Letherwood and Mrs. Roden are members of a seven-member team calculating the orbit. The work will continue for several months, so long as the instrumentation carried in EXPLORER IV continues to furnish data to ground stations.

Miss Letherwood is a mathematician in the Digital Projects Branch also. She received her mathematics degree at Jacksonville State College. She lives at 402 E. Holmes St., Hunts-

ville. Mrs. Roden, a resident of Arab, is a tabulating project planner in the same branch and has received a special IBM training.

Miss Kassner is the daughter of Mr. and Mrs. James L. Kassner of 1620 Second Ave., Tuscaloosa. Miss Letherwood is the daughter of Mrs. Sudie V. Letherwood of 802 W. 54th St., Anniston.

Male members of the team include Charles P. Hubbard, chief of the Digital Projects Branch; James H. Golmon, F. W. Seubert and C. L. Cozelos, branch mathematicians.

Hubbard is a graduate of Miami University and holds a master's degree from the University of Illinois. He resides at 715 Stanhope Dr., Huntsville.

Golmon received his bachelor's degree from Mississippi College and his master's degree from the University of Mississippi. Seubert is a graduate of Washington University in St. Louis and did graduate work at Illinois University. Cozelos is a graduate of Athens College. All reside in Huntsville.

The Computation Laboratory is also responsible for compiling and reducing Doppler data obtained from the satellite at the ground tracking stations.

Evaluating this information are John C. Lynn of 1704 Bierne Ave., Huntsville; Paul O. Hurst, 420 E. Longwood Dr., Huntsville and Jerry Peddycoart, of Madison, all mathematicians of the Data Reduction Branch. Lynn is a graduate of Lincoln Memorial University; Hurst, an alumnus of the University of Denver and Peddycoart received his degree at Berry College.

The Laboratory, in cooperation with the Aeroballistics Laboratory, established the propelled and coasting trajectories for the JUPITER C launching vehicle prior to the actual launch.

Taking part in this phase

District Engineer Names Col. Dawley Missiles Officer

The Army District Engineer at Mobile has announced the addition of a field grade officer to his staff to represent him at Redstone Arsenal to coordinate the extensive Army Engineer activities of the Mobile District at the U. S. Army Ordnance Corps Missile Command.

Col. Jay P. Dawley has been designated Assistant District Engineer (Missiles Officer) of the Mobile, Alabama, U. S. Army Engineer District, and will be stationed at Redstone Arsenal, where he will act as coordinator for the facilities assigned to the Mobile District.

His duties also include work by the Mobile District for the Air Force BOMARC missile program at Elgin Air Force Base.

Col. Dawley assumed his new duties last week.

The newly-assigned engineer is a graduate of the U. S. Military Academy, and completed the General Staff Course at the Command and General Staff School, Ft. Leavenworth, Kan., in 1946. He is also a graduate of the Industrial College of the Armed Forces in Washington, D. C., and holds a master's degree in nuclear physics from the University of Chicago.

Holy Name Smoker To Plan Picnic

A Holy Name Society Smoker will be held at the Post Chapel Social Room at 8 p. m. Friday Aug. 1. Frank Buckley, AMOC Legal Office will be guest speaker.

Plans for a Parish picnic will be discussed and all members are urged to attend. Snacks and cold beer will be served.

When couples park on lonely roads
The prudes get quite disgusted.
But who can say—perhaps
they've parked
To get the clutch adjusted.

were the following GE employees: F. R. Calhoun, 2316 Bob Wallace Dr., Huntsville; William Martin, 4106 Toftoy Dr., Huntsville; Ralph Roddy, Pleasant Dr., Winchester, Tenn.; Daniel Harton, Monto Sano Trailer Park; Benjamin T. Kay, Lacey's Springs and William Smythe.

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REFINED ORBIT—Mrs. Doris E. Roden watches results of the 704 Computer as recorded by the printer. Mrs. Roden is one of three women included in the group of ABMA's Computation Laboratory personnel who are working on the refined orbit of Explorer IV. The work is expected to continue for several months, so long as instrumentation in the satellite furnishes data to ground stations. (U. S. Army Photo.)



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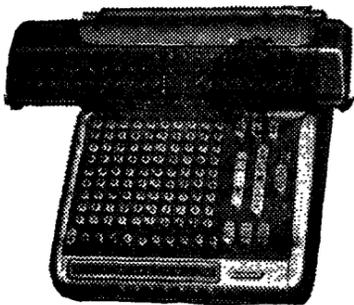
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Teamwork Triumphs Again In Satellite's Launching

The newest member of the Army's family of scientific earth satellites, EXPLORER IV, was designed and assembled by experts of the Army Ballistic Missile Agency.

Radio transmitters carried in the satellite were furnished by the Jet Propulsion Laboratory and the Naval Research Laboratory. Radiation counting devices were supplied by the State University of Iowa.

The Missile Agency's Guidance and Control Laboratory, directed by Dr. Walter Hauessermann, prepared the orbiter for the launching. Josef Boehm, whose cylindrical satellite design was employed for EXPLORERS I and III also, supervised the work.

Boehm and his co-workers conducted a rigorous testing program to insure the successful launching and functioning of the satellite and its instrumentation. This required balancing, vibration, shock, spinning and temperature tests.

Thermal constancy of the satellite had to be determined because the temperature within the device must be controlled to assure proper performance of the instrumentation. Temperatures inside EXPLORER IV are expected to range between 0 and 35 degrees Centigrade.

Boehm is chief of the Electro-mechanical Engineering Branch.

He is a graduate of Dresden Technical Institute where he received a master's degree in mechanical engineering. Later he served as research associate at Dresden in kinematics and automatic machinery.

He joined Dr. Werner von Braun and the Peenemuende rocket development group in 1939 and had charge of design engineering for control systems of long-range rockets. He came to the U. S. in 1945 and was employed by the Army at Aberdeen Proving Ground and Ft. Bliss. He moved to Redstone Arsenal, Ala., in 1950 and joined the Missile Agency Feb. 1, 1956.

Project officer for the under-



VIBRATION TEST — Lee Ramsey of the Guidance and Control Laboratory, ABMA mounts the EXPLORER IV satellite on a vibration table for one phase of the exhaustive testing process. When the satellite left the laboratory, everything that could be done to assure correct operation had been taken care of (U. S. Army Photo)

taking was Maj. Gerald E. Ledford of the Missile Agency's Control Office. A Georgia Tech graduate in mechanical engineering, Ledford has more than 12 years experience in Army missile development.

Samuel R. Stevens, an Aeronautical Research Engineer and graduate of Delta State College, was engineer in charge of the environmental and functional test program at the Army Ballistic Missile Agency and Patrick Air Force Base. An arsenal employe since 1953, he prepared test schedules, reported test results and coordinated test activities of the participating laboratories and agencies involved.

Assisting with the coordination of the environmental and functional testing program at the Army Ballistic Missile Agency was Richard M. Christmann, a University of Kansas graduate.

Heinz W. Kampmeier, graduate of Mittweida Engineering College in electronics, coordinated the efforts of other laboratories of the Missile Agency, the Jet



SIXTY-THREE BIRTHDAYS — The Army Exchange Service management at Redstone Arsenal celebrated the 63rd birthday of the Service by serving free coffee as long as the canteens and cafeterias were open last Friday. Guest of the management for the first cup is Miss June Slaton (second from left). Around the birthday cake, baked for the event, are: Matt Green, food supervisor; Miss Slaton, Mrs. Edna (Chick) Turner, cafeteria manager; George J. Geiger, Exchange manager; and Tom Davis, assistant food supervisor. (Photo by PFC Cassidy)

Propulsion Laboratory, Iowa State, Naval Research and Army Signal Research Laboratories, all of whom contributed to EXPLORER IV.

Kampmeier's assistant was Charles H. Chambers, a graduate of Howard College who has been employed at the Arsenal since June 1952. Chambers participated in the earlier development of the apex prediction device for Army satellites.

Three of the group represented the Guidance and Control Laboratory in liaison capacity at the Jet Propulsion Laboratory and Iowa State. They were Harlan D. Burke, a graduate in physics of Mississippi College, Frank H. Emens, electrical engineer and graduate of Alabama Polytechnic Institute, and George M. Campbell, a mechanical engineering graduate of the University of Tennessee.

Helmuth Pfaff, who earned BS and MS degrees from the German Technical Universities at Dresden and Darmstadt, was responsible for engineering analysis, preparation of test specifications, test apparatus and evaluation of test results for prototype and flight model payloads.

He was assisted by Hermann R. Wagner, a graduate of the Technical University at Dresden, and Manfred E. Kuebler, who holds BS and MS degrees from the German Technical University at Stuttgart. Wagner contributed measurably to the testing program by developing new test apparatus to determine thermal constants of completed payload.

Test engineers assisting Wagner and Kuebler were Thomas A. Despres and John A. Chambers. Despres is an industrial engineering graduate of the University of Michigan. Chambers was graduated in physics from Georgia Tech.

Testing of the satellite instrumentation under simulated environmental conditions was supervised by Robert M. Simpson, Delta State College alumnus and William N. Allen, who attended the Universities of Tennessee and Alabama.

James W. Harper, a graduate engineer, University of Alabama, had charge of radio frequency environmental testing and saw the project through actual launching.

An electronics major at Auburn, Paul M. Swindall, aided the radio frequency environmental testing. Also he designed and constructed major parts of the satellite tracking station installed at the Missile Agency.

Lee Malone, who studied at Mississippi State, Illinois Tech and Athens College supervised laboratory tests of the radio frequency equipment.

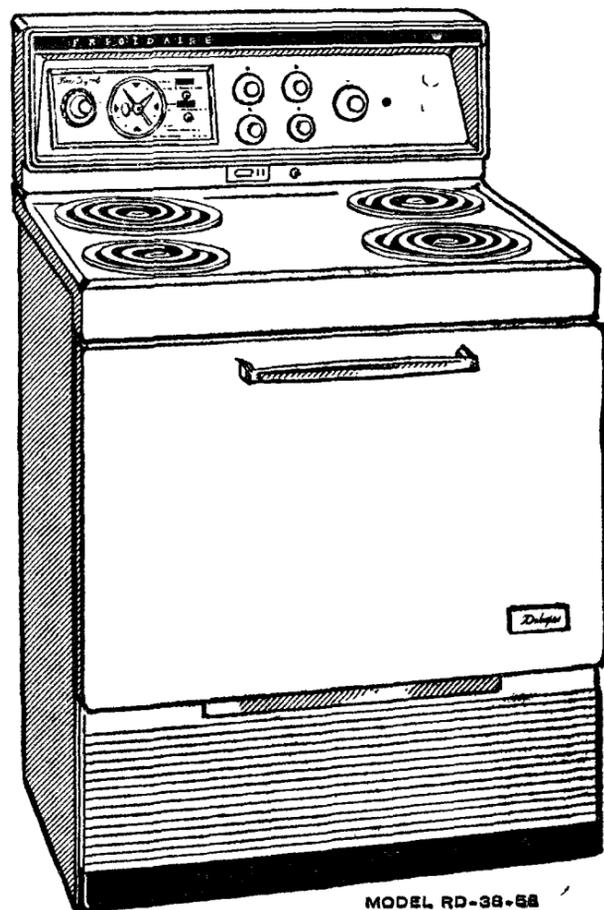
For Boehm, the launching was the culmination of several years of work. Long before the Army had a satellite launching mission he had spent hours of his time in designing and assembling a satellite vehicle and his experience was of material benefit to the EXPLORER series.

Hunter: "Are you sure we're not lost? I was told you were the best guide in the state of Maine."

Guide: "I am, only I think we're in Canada now."

The Army has the problem of improving its ability to overcome obstacles, both natural and man-made. A rapid means of detecting and disposing of mines, for example, would as surely increase battlefield mobility as would a device for the more speedy bridging of a river.

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FOR SALE — 1957 Buick "Century," 4 door hardtop, automatic transmission, power brakes and steering, tinted glass, radio and heater. Low mileage, in A-1 condition. Price \$2250. Call JE 2-2066. 1tc

FOR SALE—14-ft. plywood boat, 40 h.p. Scott-Atwater motor, electric starting, tilt-type trailer, steering wheel, windshield, running lights. See at Hale's Trailer Court, lot No. 1, Phone JE 2-5881. 8-30p

FOR SALE — 1957 47-ft. Zimmer Mobile Home. Cost \$8,100 new. 13 months ago. May be purchased for approximately 1/2 price or will trade for livestock or farm equipment or cash. Terms to suit. Phone JE 6-0011. 2tp

FOR RENT — Attractive furnished three-bedroom, air-conditioned home in Guntersville, near lake, shopping, schools, churches, TV, all electric kitchen including automatic dishwasher utility room with automatic washer and dryer, everything furnished except bed linens. Mrs. John Fohner, Redstone, Ext. 6530 or JU 2-4547 or JU 2-5245 Guntersville. 8-30c

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GUNTERVILLE LAKE—Water front lots for sale. \$1,000.00 to \$2,500.00 Will finance to suit your terms. See ED NEELY, BROKER, Broad Street, Guntersville. Phone 2-3914 or 2-3230

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FOR RENT, modern 6 lot, trailer park in good neighborhood, city utilities, close to schools, shopping and churches, landscaped yard, plenty parking, play area, and concrete patios. \$20 per month. 30 minute drive to Gate 9. Call 248R, Athens, Ala., or see MRS. R. F. SMITH, 513 Sanders St. 8-20p

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FOR SALE — Johnson Sea Horse V50 Outboard Motor, electric starting, controls, cables, gas tank, \$725.00. New motor, never been in water. Call Ernest D. Williams, JE 6-4411, Ext. 4407, or JE 4-7605. 1tp

FOR SALE — A.K.C. Pekingese puppy, also Springer Spaniels. Phone JE 2-2461. 1tp

FOR SALE — Maytag Automatic Washer in good condition, \$50. Can be seen anytime at Quarters 227, Redstone. Phone Arsenal extension 2832 days, after 5 p.m. extension 8045. 1tc

FOR SALE IN THE SHADE UNDER CONSTRUCTION, in east Morgan County, a 6-room 3-bedroom frame house nearing completion. Two acres land. House fully insulated, wired for electric heat. Carport, bath, utility room. On Highway 67, one-fourth mile north of intersection of Highways 36 and 67, only 13 miles from Gate 2. Priced at \$9,000.

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TRAILER SPACE available at Decatur Trailer Park, concrete patios, laundry facilities on Highway 31 South, also at Uptown Trailer Court, Decatur, Ala. Convenient to churches and schools, business district. Five blocks south of river bridge on Highway 31. Modern laundry facilities. Wiring adequate for any kind of electrical appliance. For reservation write P. O. Box 239, Decatur, Ala. tfc

FOR SALE — 12 ft. Plywood Runabout, 25 hp Johnson motor and trailer. \$400. Phone Redstone, ext. 4840 days or JE 2-3743 after 5 p.m. 8-6c

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RYMES OF THE TIMES



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112 Warner Ave.—Real Nice Living room, dining room, kitchen, 2 full baths, carport, beautiful birch cabinets, range, drapes, venetian blinds, antenna included.

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Modern home in Athens—1 block south of new junior and senior high school, on Huntsville and Decatur road. All large rooms, modern kitchen, large dry basement with shower and utilities. Large upstairs for bedrooms, bath and storage. Beautiful lawn and shrubbery, lighted tennis court, large lot, good shade trees. Priced to sell; qualifies for GI and FHA loans. Inspection by appointment. Call or write: MELVIN L. HYATT, Athens, Ala., phone: office 969; home 1088.

Guntersville Home SALE OR RENT
Owner Moving out of City
\$20,000.00 Value

Lot 100 ft. by 140 ft. Main St. 8 rooms, 3 full baths, 11 closets, servant room, garage, abundant flowers and shrubbery, large shade trees, 4 blocks schools, churches, business section.

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Chamber of Commerce
Guntersville, Alabama
Office Phone: JUstice 2-3612
Home Phone JUstice 2-3710

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P. O. Box 473, Huntsville
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—or—
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3 Bedroom Bricks
Small Down Payment on F. H. A. — 809
400 Houses Already Sold
78 UNDER CONSTRUCTION
TO CHOOSE FROM
"You get more for your money"
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LAKWOOD
Call JE 6-1554 or come out N. Memorial Parkway

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Complete Selection of Baby Furniture, Shower Gifts, Nursery Accessories.

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With ALL CITY CONVENIENCES

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- Extra Large Lots
- Beautiful Views
- 1 1/2 & 2 Ceramic Tile Baths
- Forced Air Natural Gas Heat
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Beautiful
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56 FT. LONG - 10 FT. WIDE Four Bedrooms, Front Kitchen, Washer, Colored Appliances

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Huntsville's Largest Mobile Home Dealer
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NEXT TO HOLIDAY INN HOTEL
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7 Days a Week
From
8 a.m. to 10 p.m.

KEY DEFENSE AND SOLON LEADERS VIEW LAUNCHING

AOMC, ABMA, JPL Witness Countdown

Several key Defense and Congressional leaders were present at Cape Canaveral, Fla., Saturday for the countdown and launching of the Army's EXPLORER IV Scientific Earth Satellite.

Heading the Defense group was Rear Admiral J. E. Clark, Deputy Director of the Advanced Research Projects Agency of the Department of Defense. ARPA sponsored the launching in co-operation with the U. S. International Geophysical Year Research Program.

Thirteen Congressmen witnessed the firing. They were Representatives Houfield (D-Calif.), Schivner (R-Kan.), Norbald (R-

Ore.), Price (D-Ill.), Teague (D-Tex.), Bray (R-Ind.), Van Pelt (R-Ind.), O'Konski (R-Wis.), Flynt (D-Ga.), Huddleston (D-Mia.), Wright (D-Ga.), Boyle (D-Ill.), and McIntosh (R-Mich.). They were accompanied by Maj. Gen. W. P. Fisher, Chief of Air Force Legislative Liaison.

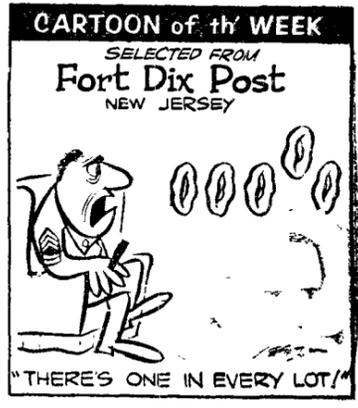
Others included Brig. Gen. J. M. Colby, Deputy Commanding General of the U. S. Army Ordnance Missile Command; Brig. Gen. J. A. Barclay, Commander of the Army Ballistic Missile Agency; Dr. Wernher von Braun, Director of ABMA Development Operations; Dr.

Walter Haeussermann, Director of Guidance and Control Laboratory, ABMA; Mr. W. A. Mrazek, Director of Structures and Mechanics Laboratory, ABMA; Professor Hermann Oberth, Chf. Special Effects Section, Research Project Lab, ABMA; Dr. Ernst Stuhlinger, Director Research Projects Laboratory, ABMA; and Dr. W. H. Pickering, Director of the Jet Propulsion Laboratory.

The JUPITER C was launched by ABMA's Missile Firing Laboratory. In charge was Dr. H. F. Greene, Deputy Director. Maj. Ballard Small and 1st Lt. Peter Couzelman were the firing coordinators.

Firing Lab personnel playing key roles in the launching were: Terry D. Greenfield, in charge of the Cluster Control Panel; C. Downing Sweat, Propulsion Panel; Isom A. Rigell, Power Panel; Carl A. Whiteside and Charles A. Turner, Gyro Control Panel; Grady Williams and Russell P. Clay, Measuring; Waldon P. McKim, DOVAP; and Leroy R. Sheerer, Scales.

Others present for the firing included George Ludwig of the State University of Iowa and the following from JPL: Dr. J. E. Froehlich, JPL Project Director; A. E. Wolfe, JPL Firing Operation Chief; and W. J. Talbert, Liaison Engineer.



Microlock Network Follows Progress Of Explorer IV

An intricate communications network established under direction of the Army Ordnance Missile Command provided much of the early data about the performance of the Jupiter C launching vehicle and the Explorer IV earth satellite.

It involved 10 microlock tracking stations along the east and west coasts and inland. Information was channeled from these points to the Evaluation Center established for the project at the Army Ballistic Missile Agency at Redstone Arsenal, Alabama.

The Missile Agency instantly relayed information on progress of the countdown, beginning at 15 minutes prior to the launching and continuing through ignition of the high-speed Jupiter C upper stages, to the tracking stations.

The stations were located as follows:

Cape Canaveral, Florida, operated by the Jet Propulsion Laboratory; Redstone Arsenal, operated by the Missile Agency; Fort Monmouth, operated by the Signal Corps; Van Buren, Me., also operated by the Signal Corps; Aberdeen Proving Ground, Md., operated by the Ballistic Research Laboratories; White Sands, N. M. Missile Test Range, operated by the Ballistic Laboratories and the Jet Propulsion Laboratory; Pasadena, Calif.; Cedar Rapids, Ia., Collins Radio Co.; and the following three stations in California, Temple City, Amateur Radio Operators; China Lake, Naval Ordnance Test Station; and Goldstone Test Station at Camp Irwin, JPL.

Teletypewriter and other ground networks provided the means by which information was relayed.

The Evaluation Center was established in the Missile Agency's Computation Laboratory where giant 704 IBM Computers and other types of computation equipment were employed to analyze raw data fed back from the tracking stations, who received radio transmission from the satellite.

Army Economy Do-Nuts Are Not For Eating

ZAMA, Japan — Both security and economy are served in the making here of but 30 to 40 doughnuts a day.

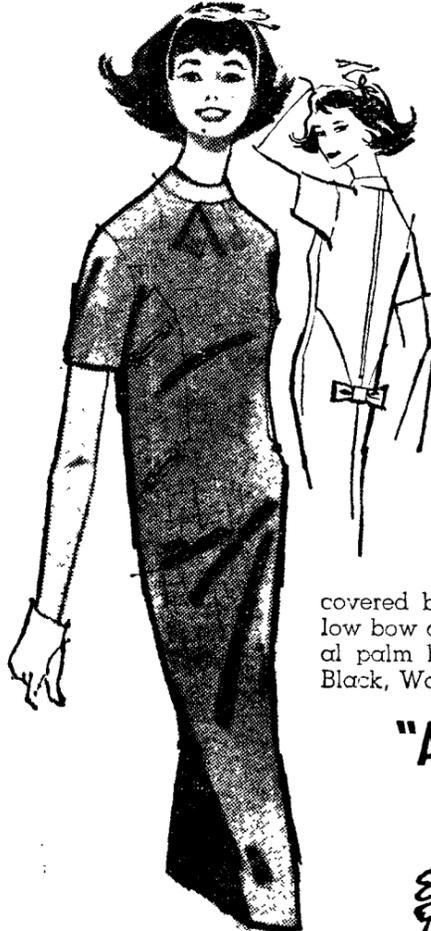
The "doughnuts," however, weigh 25 pounds each, and the recipe is simple if the process isn't — a mash of classified documents no longer needed at this headquarters of the U. S. Army, Japan.

The machinery, supplied by the Japanese contractor, chews up paper by the armload and spits it out as soggy pulp into a press that squeezes out the water, leaving a doughnut.

Dried, the doughnut slims to ten pounds, is cooked up again, and flattened into small sheets of pulp paper which are sold on the Japanese market.

As foolproof a method of disposing of classified papers as burning, the operation turns a profit to the Army and the contractor. The area in which the documents are fed into the mace-rator is accessible only to authorized persons, including a witnessing office.

ON THE Back-to-School



SLOW FIT

junior set DALLAS

\$12.95

Dress up in this slow and easy fitting chemise with diagonal side pockets. Self covered buttons, fringe tab at neck and low bow at back. Sizes: 5-15. Colors: Royal palm blue, Russet red, Persimmon, Black, Walnut.

"A TOUCH OF ELEGANCE"

Quality Hill

\$19.95

Refinement, grace and symmetry describe this quality hill two piece dress fashioned in a rich blend of silk, cotton and rayon. Smartly fitted front jacket with a softly draped panelled back. Colors of black, copper, royal slate and moss green. Sizes 10 to 20.

BLOUSON

For Afternoon Affairs

\$19.95



Lorch OF DALLAS

For bridge parties and the like you'll want this LORCH of Dallas printed Dip N' Don cotton blouson frock. Self sash tie. It's soft and feminine and you'll love it. Sizes: 10-20. Colors: Green, Brown, Blue.

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