

# Two Test Facilities Completed At NASA; Experiments Started

By A. L. McCALL

Although the rocket test facilities at Plum Brook are not scheduled for completion before next summer, scientists at the National Aeronautics and Space Administration (NASA) installation are already busy attempting to solve several missile and space vehicle problems.

Two of the test facilities have been completed for some time and are being used each week for experiments and research. Six other installations are nearing completion. The rocket testing facilities are in an area roughly bounded by Taylor, Fox and Ransom-rds. all familiar Perkins-tp thoroughfares of pre-war days.

At the "portable rig" site scale models of rockets or component parts are given tests in one or the other of two bunkers. When a test is being run a trailer is parked about 1,000 feet away. The trailer is connected to the bunkers by means of many cables that carry electrical impulses to start the test and bring back various reports which are recorded from dials and other instruments. Closed circuit television is also used to observe the tests, with cameras in the bunkers and viewing screens in the trailer. The site is off Taylor-rd near Fox-rd.

On Fox-rd west of Taylor-rd is located the "pilot lab" where full scale models of rocket pumps and turbines are given tests based on information received from portable rig experiments. When the "pilot" pumps and turbines are approved they are turned over to manufacturers for production. The full scale model pumps or turbines are made at the NASA Lewis Research Center, Cleveland, "parent" of the local facility.

The fluorine pump testing facility off Taylor-rd is scheduled to be in operation by Jan. 1. Other test sites to be completed between Jan. 1 and next summer are: hydraulics laboratory, turbine testing facility, dynamics facility, pump facility and turbo-pump facility. Each of these six facilities will be connected to a central control and instrumentation building by miles and miles of cable.

During the coming months employees of the Universal Marine Construction Co., Sandusky, will be busy connecting the miles of cable to instrument cabinets and control equipment in the central building. When completed each of the test facilities will be operated and observed by remote control for the protection of NASA scientists. Many types of rocket fuels are to be used in the various tests and extreme safety precautions are being taken to protect employees and equipment.

Approximately 600 control cables will radiate out from the central control lab on Ransom-rd to the six rocket facilities. Nearly 500 pairs of instrumentation cables and eight television co-axial cables will lead

from the various sites to the lab, where experimental data is to be recorded. After installation all of the cables and equipment will undergo countless tests before being put into use.

Another interesting installation of the rocket "lab" is the dynamics facility or "shake tower" as it is known to NASA personnel. The 30-foot square steel building is 117 feet high and will be used for two types of missile research: structural dynamic testing and fluid flow investigations.

Doors at five levels may be opened and beams removed so that a missile the size of an Atlas may be lifted into vertical or launching position by means of an overhead crane. The missile will be connected to a large vibration exciter, producing 15,000 pounds of force to excite or "shake" the test object in much the same manner as on take-off from a launching pad. A smaller, 200-pound force exciter will be used for lateral shaking.

One of the reasons for failure in missile launchings, it was said, has been the failure of structural components due to compressional and bending vibrations of the missile structure which are excited by the rocket motor. Steering control gyros, which measure the vehicle attitude can be misled by bending vibrations of the structure.

The "shake tower" will simulate missile free flight as nearly as possible so that scientists may study the missile or scale model and work out solutions to various vibration problems. The tower will also be used to study complete rocket systems. The tankage and related pressurization and flow systems, including the turbo pumps, will be investigated. The propellant will not be burned, however.

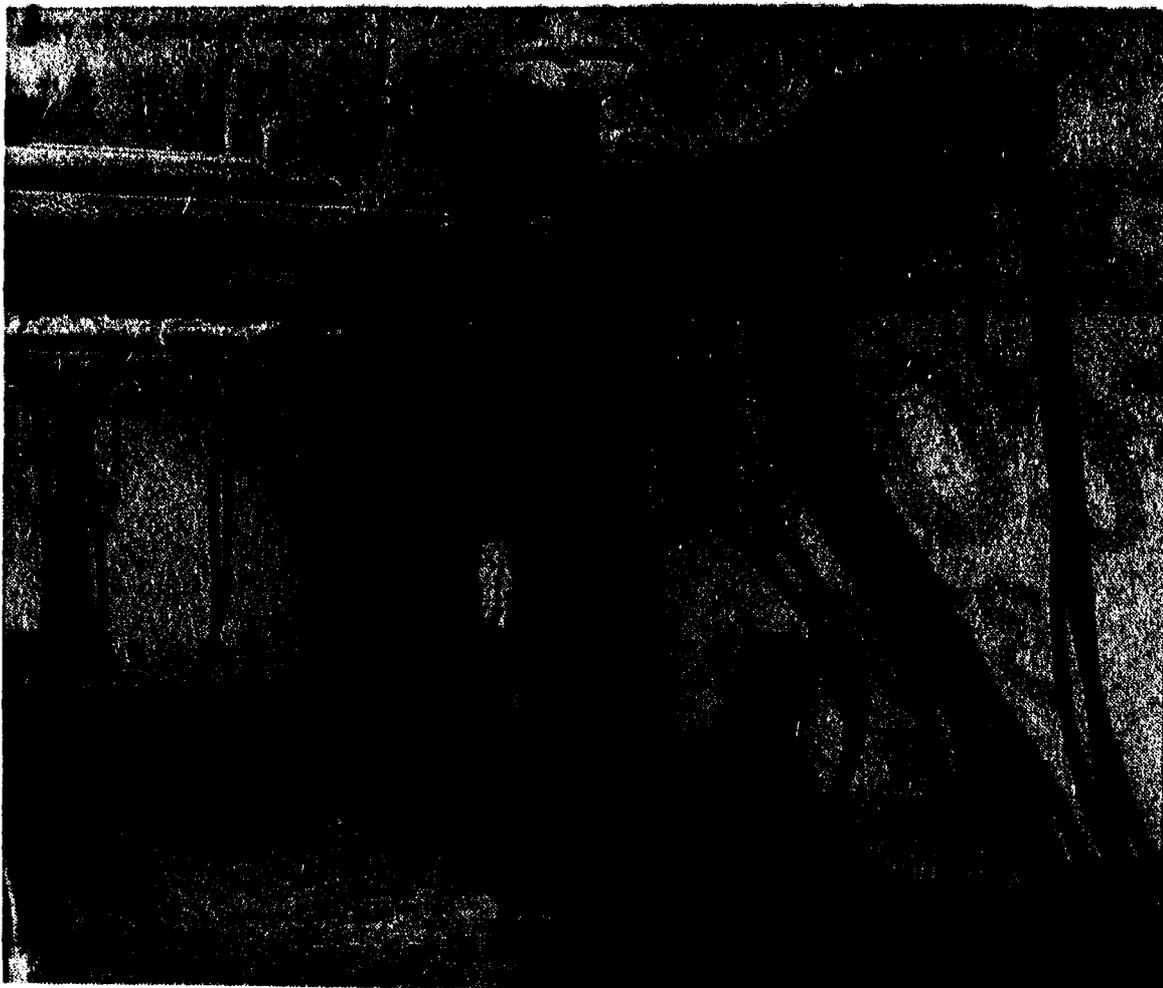
Scientists at Plum Brook and other NASA installations hope to provide the "acorns" from which the future U.S. space program will grow. The scientists are attempting to keep their research program about five years ahead of the current missile and space pace.

Future articles in the Register will keep readers abreast of the research program at Plum Brook, the only installation of its kind in the nation.

## Slight Change

LONDON (UPI)—Oops!

This week's edition of the humor magazine Punch contains the following note: "The title of Eric Burgess's thriller, reviewed in last week's issue, is 'Divided We Fall,' not 'United We Stand.'"



—Register Staff Photos

**THE DYNAMICS FACILITY** or "shake tower" at NASA's Plum Brook rocket laboratory is pictured at right and described in the story. Employees of Universal Marine Construction Co., Sandusky, face the task of hooking individual wires in the above tangle of cables to instrument cabinets in the central instrumentation and control building at the rocket lab. A quarter mile or more away the other ends of the cables will be connected to equipment in six experiment buildings.

## Blast, Fire Hits 8 Warehouses At Jersey City

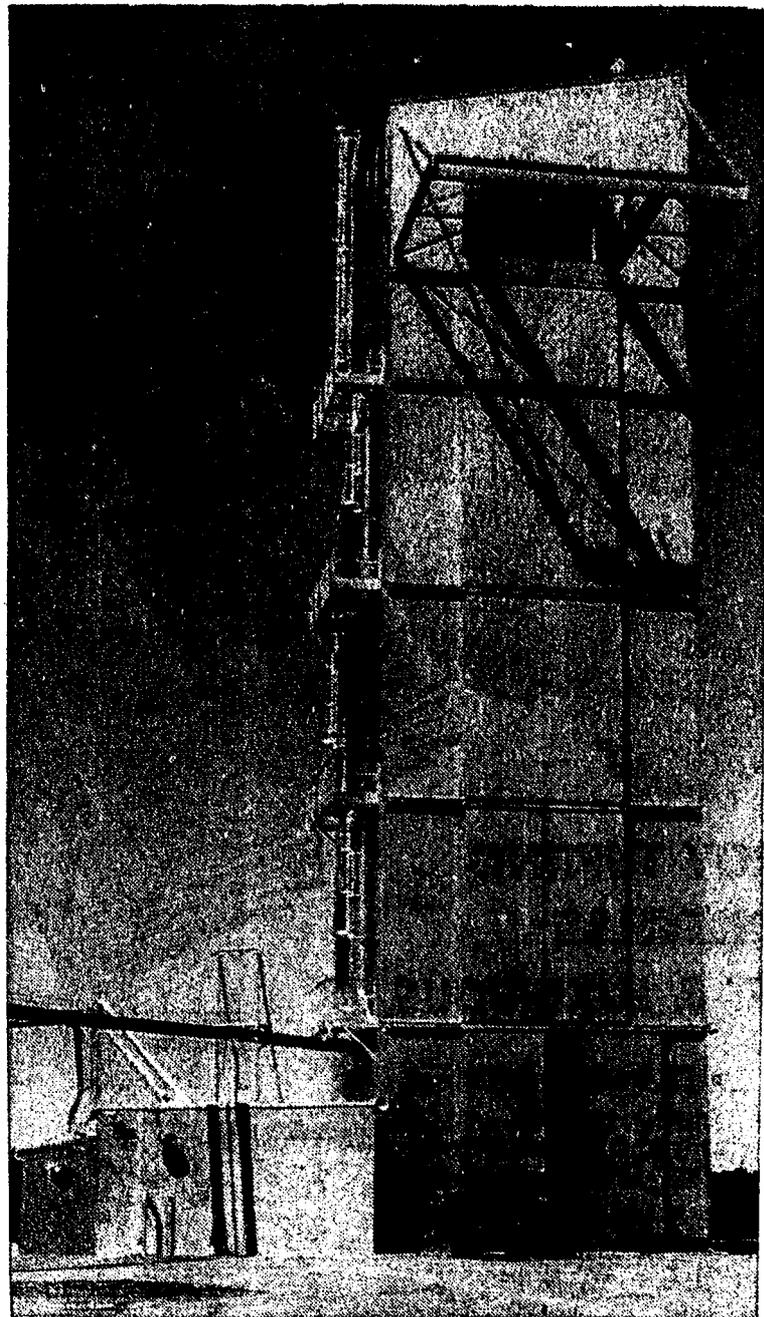
JERSEY CITY, N.J. (UPI)—An explosion and fire swept eight chemical warehouses along the Jersey City waterfront Wednesday, injuring 28 firemen and causing millions of dollars in property damage.

At the height of the blaze, a 1,000-foot wall of flames stretched along the waterfront across the bay from Manhattan and within sight of the Statue of Liberty.

Two thunderous explosions which set off the blaze reduced eight corrugated metal warehouses to rubble and shattered windows in homes a half mile from the scene. Flames, feeding on liquid anti-freeze, refrigerants and other highly volatile materials, shot hundreds of feet into the air at the center of a thick column of black smoke.

## SHIMMY'S LEGAL AGAIN

JAMESTOWN, N.Y. (UPI) — After more than 30 years, the bunny hug and the shimmy are legal again in Jamestown. They were banned during the jazz-age '20's by the outraged townfolk. Recently, the dances were removed from the prohibited list by the city council.



## Ohio Recreation Meet Dates Set

COLUMBUS—The annual Ohio Recreation Association will hold its conference here on Wednesday, Thursday, Friday, Nov. 4, 5 and 6. Headquarters will be in the Neil House.

Many of the sessions will cover the field of parks and recreation. To highlight the conference, topflight speakers are being con-

tacted, including Dr. Arthur Fleming, director of national health; the Rev. Robert Richards, Olympic champion, and Dr. R. C. Anderson, Ohio state director, Ohio Mental Hygiene Department. President of the Ohio Recreation Association is William "Bill" Willis. Convention chairman is Nick J. Barack and program director is Harry H. Feldman.

LOOK AT TODAY'S PICTURES



# SANDUSKY REGISTER

## WEATHER

Clear and quite cool tonight with the low about 56 near the lake and 45 inland. Friday sunny and pleasant, high 70 to 75.

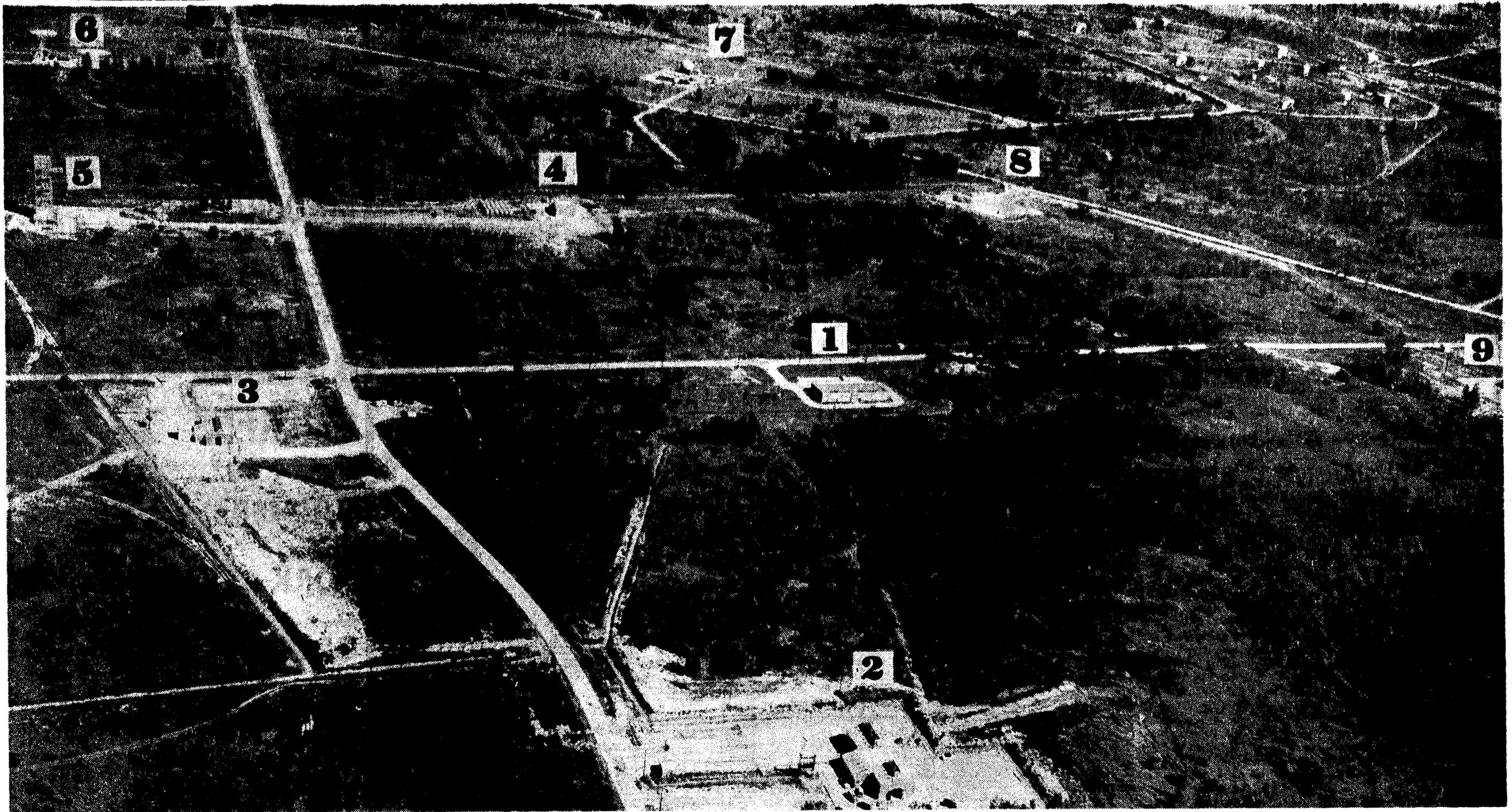
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### See Story, Pictures Page 22)

Nine buildings and other installations of the rocket testing facility of the National Aeronautical and Space Administration (NASA) at Plum Brook south of Sandusky are shown in this aerial picture taken by Dale Sprague, Register staff photographer, while riding in an airplane piloted by Harry Griffing. The view is towards the east.

Building 1 at center along Ransom-rd is the central control and instrumentation building from which is operated by remote control six other installations in the vicinity. Closed circuit television will be used at times to permit scientists to observe tests under way a quarter mile or more from where they are situated in the control building. No. 2 is the hydraulic laboratory. No. 3 is the turbine

test facility. No. 4 is the rocket pump testing center. No. 5 is the dynamics test tower. No. 6 is the pilot laboratory now in operation. These installations are beside Fox-rd. No. 7 is the portable rig site along Taylor-rd, which has been used for several months. No. 8 is the fluorine pump testing facility scheduled to be completed by year's end. No. 9 at the intersection of Taylor and Ransom-rds is the

turbo-pump test site.

At upper right are former TNT production buildings of Area B which have stood idle since the end of World War 2. About a half mile to the left of the above photo is located the multi-million dollar nuclear reactor facility of NASA, which is scheduled to be in operation late this year or in early 1960.