

SOLVING EQUATIONS—Firestone engineers and scientists at Company's Los Angeles Guided Missile Division use intricate machines like this analog computer for solving complex equations and problems in producing the Corporal guided missile for the Army.

ASSEMBLY LINE—Parts of the Corporal—fuel tanks, engines, air cells—are assembled with care and precision. Throughout production, repeated tests are run and Government inspectors keep a watchful eye for possible defects. The missile contains 2,000 parts and seven miles of wire plus radar control and launching systems.

FIRESTONE COMPANY IN NATIONAL DEFENSE

Story Of The Corporal: U. S. Army's Guided Missile

FOR many years a veil of security has hung over the U.S. production of rockets, satellites and guided missiles. Only recently some of the "secret" and "confidential" labels were removed.

The story that can now be told about guided missiles is one that is especially interesting to Firestone employees, since the Company plays a vital role in our country's Corporal missile program.

The curtain on the Corporal has been lifted at the Company's Los Angeles, Calif., plant. The Army's battlefield knockout punch is a 46-foot-long, 30-inch-thick pencil that pushes through the atmosphere at speeds several times that of sound. The Corporal has a bullet-like nose that can carry a nuclear warhead.

Hugh Gibson, general manager of the Company's Guided Missile Division, said recently: "It is the only heavy bombardment ballistic guided missile in the hands of troops."

As for the destructive potential, President Eisenhower has said of the Corporal: "Four battalions . . . alone are equivalent in firepower to all the artillery used in World War II on all fronts."

THE STORY of the development of the weapon began several years ago.

Before the missile could become a reality, the brain power and mechanical skill of thousands had to be assembled and organized.

Years of research and development came from the Jet Propulsion Labs of the California Institute of Technology.

The production job was awarded to Firestone in 1951 and a year later the Company plant in Los Angeles was delivering the intricate weapons to the Army.

All this proceeded under cover of "hush-hush" security regulations that have been relaxed only recently.

"After we started production, it was two years before we could say we were making the missile," Mr. Gibson said.

Constant improvements have been made and new types of missiles have been devised, until today Firestone is packaging its third model of the Corporal.

In 1954 a new plant was completed and missile production was moved from the Los Angeles tire plant. The massive structure houses equipment, the cost of which far exceeded the cost of the building.

But one of the most valuable assets in the Corporal missile program is the brains of the men working on it. Engineers, scientists, technicians—armies of men—pore over charts and experimental devices, doubting, searching, failing, trying again. Succeeding.

TALENTS of the highest caliber are required for the challenge of engineering designs turned into practical production items for adoption to field use by troops. Men at the Company's plant must anticipate every conceivable shock, pressure or stress a missile would have to withstand in its arc-like soar into the stratosphere.

Extremes in heat, cold and humidity must all be considered in the calculations. On the testing grounds at White Sands, New Mexico, the payoff is made under a 100-degree sun.

Rocket motors of the Corporal scream to a pitch of unbelievable fury. The initial slow movement of the long, white tube is transformed to a supersonic speed. A battery of radar machines and computers gives the Corporal its "intelligence." Mounted on trucks, this equipment controls the missile from the firing site.

This complex "thinking" apparatus does its work in seconds. Thus, after being launched vertically, the missile is guided into a pattern of flight.

THIS WEAPON, designed to give an artillery battalion striking power far behind the enemy lines, has smashed into the test target many miles distant.

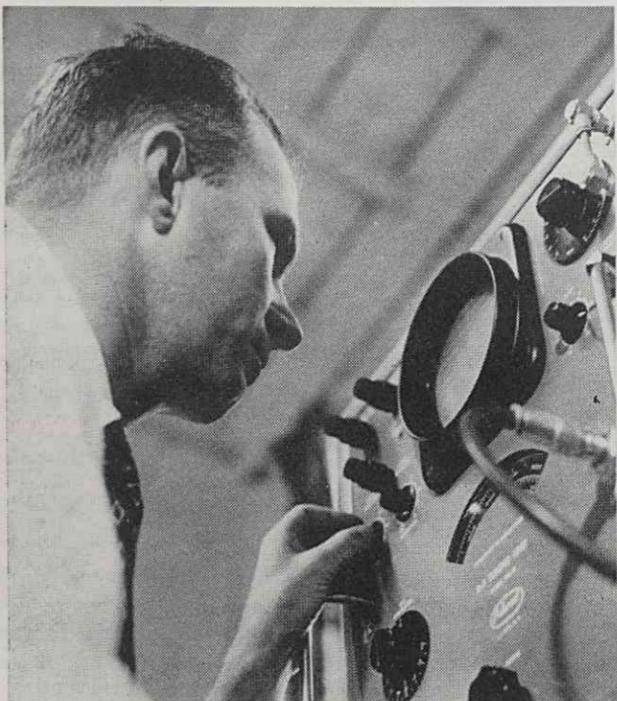
In addition to the Corporal itself, the Company manufactures other equipment in the Corporal system. These include:

A grasshopper-like erector, a self-propelled 50,000-pound vehicle, which transports the big tube and cradles it in place for firing.

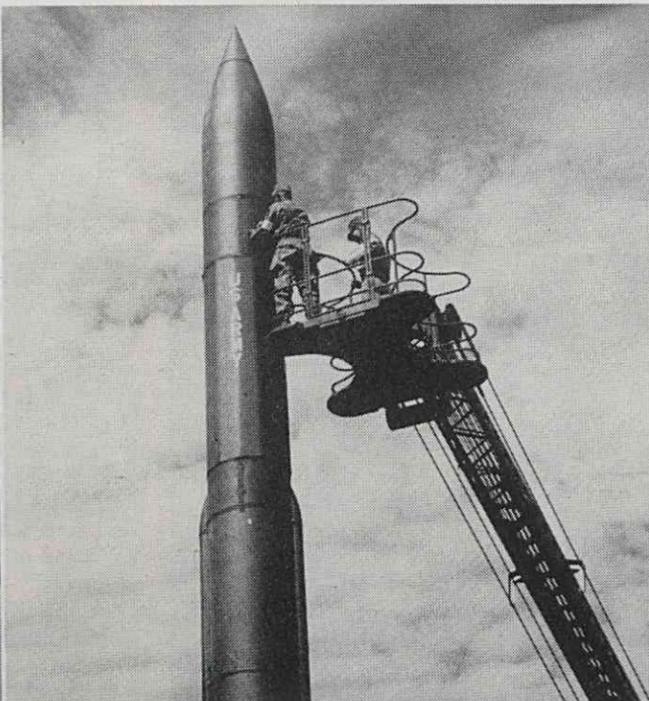
The launcher, a mobile take-off platform.

Trucks which carry missile propellant liquids, air supply, compressors and servicing platforms.

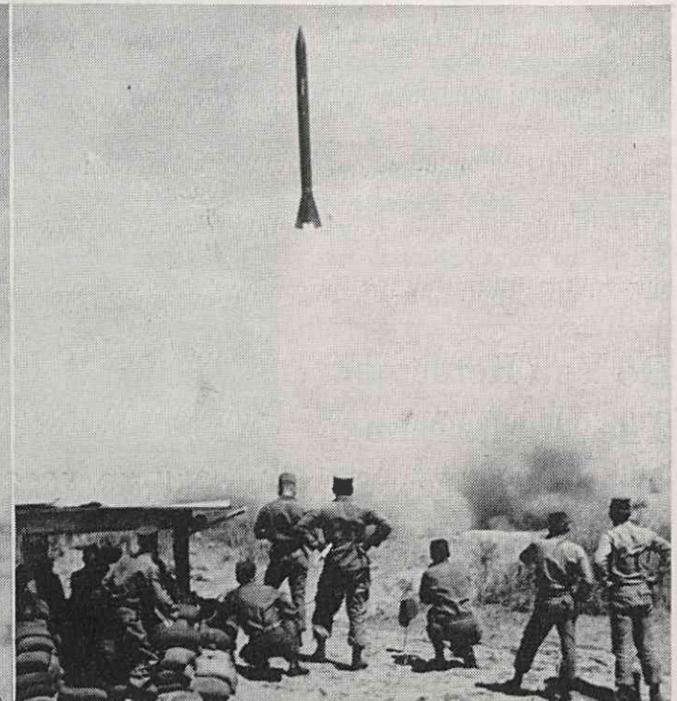
The Corporal is America's first successful ballistic artillery missile. It is a major bulwark in the Army's weapon inventory.



GAUGE CHECKING—Constant checking and testing are carried on with each successive step in the Corporal. Here an engineer checks gauges on a piece of electronic testing equipment.



ALMOST READY—Standing on a servicing platform, Army engineers are dwarfed by the 46-foot tube as they ready it for firing. Firestone also manufactures the servicing platform.



BLASTING OFF—In a flaming thrust upward, the Corporal's thundering rocket engine leaves a trail of white flame as the missile takes off for its flight into the stratosphere.