

# Away He Goes . . . First Rocket Sled Photos



**THERE GOES HURRICANE SAM!**—As the rocket sled atop Hurricane Mesa in southern Utah stops after a supersonic ride, the dummy known as Hurricane Sam hurls into the air in a jet plane ejection seat (arrow).

After he cleared the edge of the mesa in Friday's test, Sam's parachute didn't open and he hurtled to earth in the Virgin River Valley 1,500 feet below. The sled test track was shown to newsmen first time Friday.

## A.F. Bares Details Of Plane Ejection Tests

# 'Sam' Hits Jet Speed On Utah Sled

Special to the News

**HURRICANE MESA** — The Air Force's ejection seat experiment, using a rocket powered sled to simulate the speed of a jet plane, went off right on schedule here Friday.

There was only one hitch.

'Hurricane' Sam, the dummy used for the experiment, was "killed" when his parachute failed to open.

Instead of being lowered gently by his white and orange parachute to the bottom of the mesa, Sam went over the cliff with his legs and arms flailing wildly.

The parachute attached to the ejection seat carriage, which simulates a plane's cockpit, also failed to open.

In spite of the disastrous finish to the test, the viewing was profitable to observers.

Friday marked the first time the Air Force released details on its faster-than-sound rocket sled track.

And the center of attention—even before his "fatal" plunge—was Hurricane Sam, the world's fastest land traveler.

Prior to Friday's test, Sam had ridden the track 10 times. And once before his chute failed to open.

Whether the Sam used Friday was therefore a Sam II could not be learned immediately. Neither would the condition of the dummy used Friday be known until a retrieving crew could make its way to the bottom of the mesa and pick up its "victim."

One thing seemed certain. The test Friday probably proved very little. "He must have got busted up pretty bad," moaned George Smith, North

American Aviation test pilot who is the only man to survive an actual supersonic bailout.

Sam was observed Friday by more than 100 of the nation's top newsmen and aeronautical research experts. It was the first press showing of the \$2 million installation which was started in 1954 and completed in July 1955.

Hurricane Sam takes quite a beating on each trip—even when his parachute opens. So far, he's been ejected from the sled at speeds of more than 900 miles per hour, and some day he may

travel as fast as 1,500 miles an hour across the southern Utah mesa. After he's thrown out of the sled, he plummets over the end of the mesa and parachutes 1,500 feet to the Virgin River Valley below.

The purpose of the research project and the dummy's rides is to develop and test escape mechanisms for the pilots of the Air Force's supersonic planes.

Sticking from Sam's chest is a small aerial attached to a transmitter inside his body. As he rides and is thrown into the

air, his transmitter is sending back data on wind blast and rate of deceleration. As the Air Force's scientists learn more and more about these forces, they hope to be able to develop better ejection seats and parachutes.

No human being has ridden the Utah rocket sled, and it is not contemplated at present that anyone ever will ride it. Lt. Col. John Paul Stapp has ridden a similar sled in New Mexico at a speed of more than 600 miles per hour.

Highest speed so far attained on the 12,000-foot Utah track is 937 miles per hour. That is the highest speed attained by any rocket sled of the double rail type such as that on Hurricane Mesa. Eventually, engineers expect to boost the sled speeds to 1,500 miles an hour—twice the speed of sound.

In the Friday test, only 4,000 feet of the 12,000-foot track was used. This ride over one-third of the track took only five seconds.

Thirty-eight previous runs have been made but Sam has gone along on only 10 of these runs. The other 28 runs were to test the rockets, etc.

Many of the construction details of the Hurricane Mesa test track were disclosed for the first time Friday by the Air Force and Coleman Engineering Co. of Los Angeles, which built and now operates the test track for the Air Force.

Among interesting details were:

Each 12,000-foot rail is a single welded unit, each weighing 420,000 pounds. The rail sections were hauled up the narrow-gauge track. See **ROCKET** on Page A-6

## Chute Failure Baffles A. F. After Perfect Conditions

Special to The News

**HURRICANE MESA** — Officials operating the Air Force's ejection seat experiments here had no explanation for the failure of a parachute to open after a dummy was ejected over the mesa Friday.

"We won't know what happened to the parachute and what caused it not to open until we retrieve Sam (Hurricane Sam, the dummy)," said John Lechner. Mr. Lechner is base administrator for Coleman Engineering Co., Los Angeles, operators of the test track.

The chute of the cockpit itself also failed to open.

Track operators said the rockets propelling the sled down the two steel rails had performed perfectly.

Less than 4,000 feet, or only about one-third, of the test track

was used in Friday's test. The sled reached a speed of more than 600 miles an hour during its run of five seconds.

At the end of the track Sam's cockpit was thrown from the sled and headed over the end of the mesa.

The planned operation called for Sam's parachute to open a second after ejection when the dummy was about 35 feet over the top of the mesa.

Instead, Sam went over the mesa and down, and down, and down—accompanied by a loud "oh" from the crowd—and finally crashed into the rocks and sand some 1,500 feet below.

Project officials were obviously disappointed but had a philosophical word about the failure.

"That's the way we learn things," one of them said. "That's why we are here."

# First Pictures Of World's Fastest Sled Ride On Utah Track

## Rocket Sled

### 'Sam' Hits Jet Speed In Utah Test

Continued from First Page

row, steep cliff road on trucks. The 39-foot lengths of rails were welded together on top of the mesa. Welding apparatus was set up in one spot near the northern end of the track site. Rollers moved the rails as they were welded into solid lengths and heavy tractors pulled them southward as rapidly as the welds were made.

The track is constructed to provide two types of braking devices to stop the sled after the dummy is ejected. One is a water brake, by which the sled is stopped as a scoop hits into a trough of water underneath the south end of the track.

#### Second System

The second braking system, and the one usually used at present, involves the use of "retro-rockets" which fire in the opposite direction from the sled's direction, thereby slowing it down. Combined with the use of these rockets is an arresting gear similar to that used on the flight deck of an aircraft carrier. This device consists of a series of tapered steel tubes filled with water. Within each tube is a piston. As the sled passes this device, hooks on the sled pick up a cable attached to these pistons, forcing them to move against the water, and arresting the sled's speed.

To assure minimum vibration during the sled's ride, the track base extends as deep as 17 feet in some areas of the run.

#### Water Source

Water for the project is pumped from the Virgin River through a 15,000-foot pipeline. A system of pumps lifts the water at the rate of 100 gallons a minute to the mesa 1,800 feet above the river.

The 18,000-foot roadway to the mesa is a real thriller. It has an average gradient of 10 per cent, and has several hair-pin turns as it climbs the sheer cliff wall.

Speed data are derived from magnets spaced 100 feet apart along the track. These produce a "pulse" as the sled passes, and these "pulses" are transmitted by radio from the sled to the control blockhouse, where they are recorded on film along with precise time markers which register one one-thousandth of a second.

#### Nerve Center

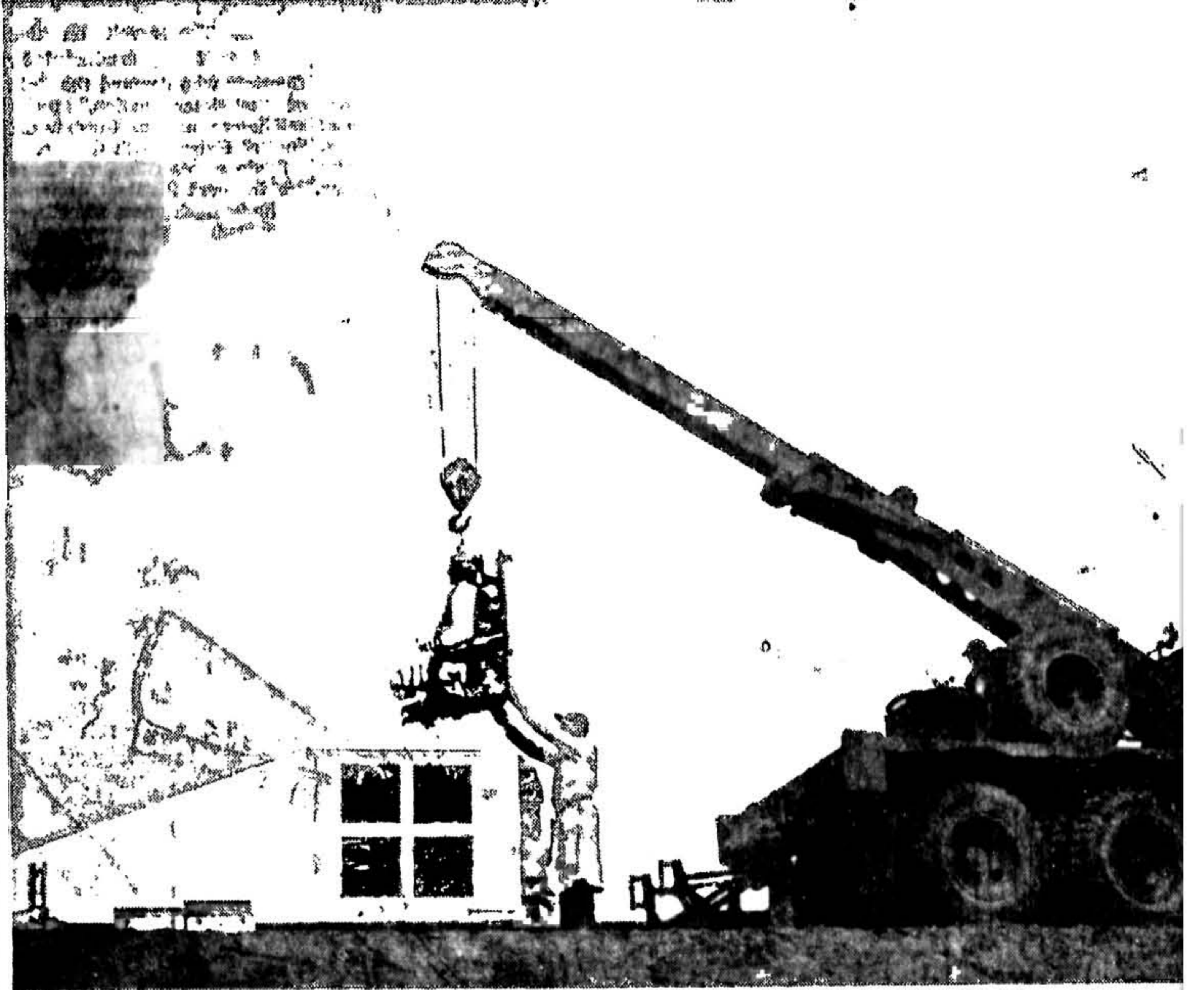
Nerve center of the SMART (supersonic military air research track) project is a block house control room. It has concrete walls, roof and floor and is protected on its side and overhead by earthen bunkers. The blockhouse provides protection in case a rocket "gets loose" and starts in the wrong direction.

In official language, the Air Force and Coleman Engineering Co. had this to say about the Utah project Friday:

"Heretofore, attempts to gather accurate data on physiological and related aspects of high-speed ball-outs, testing seat-ejection equipment, various types



**HURRICANE SAM**—"Hero" of Project SMART is this dummy known as Hurricane Sam. He rode the rocket sled on the 12,000-foot test track atop Hurricane Mesa in Southwestern Utah. Getting Sam ready for his 11th ride are Jerry Kane and James A. Stapenhill, both of LaVerkin.

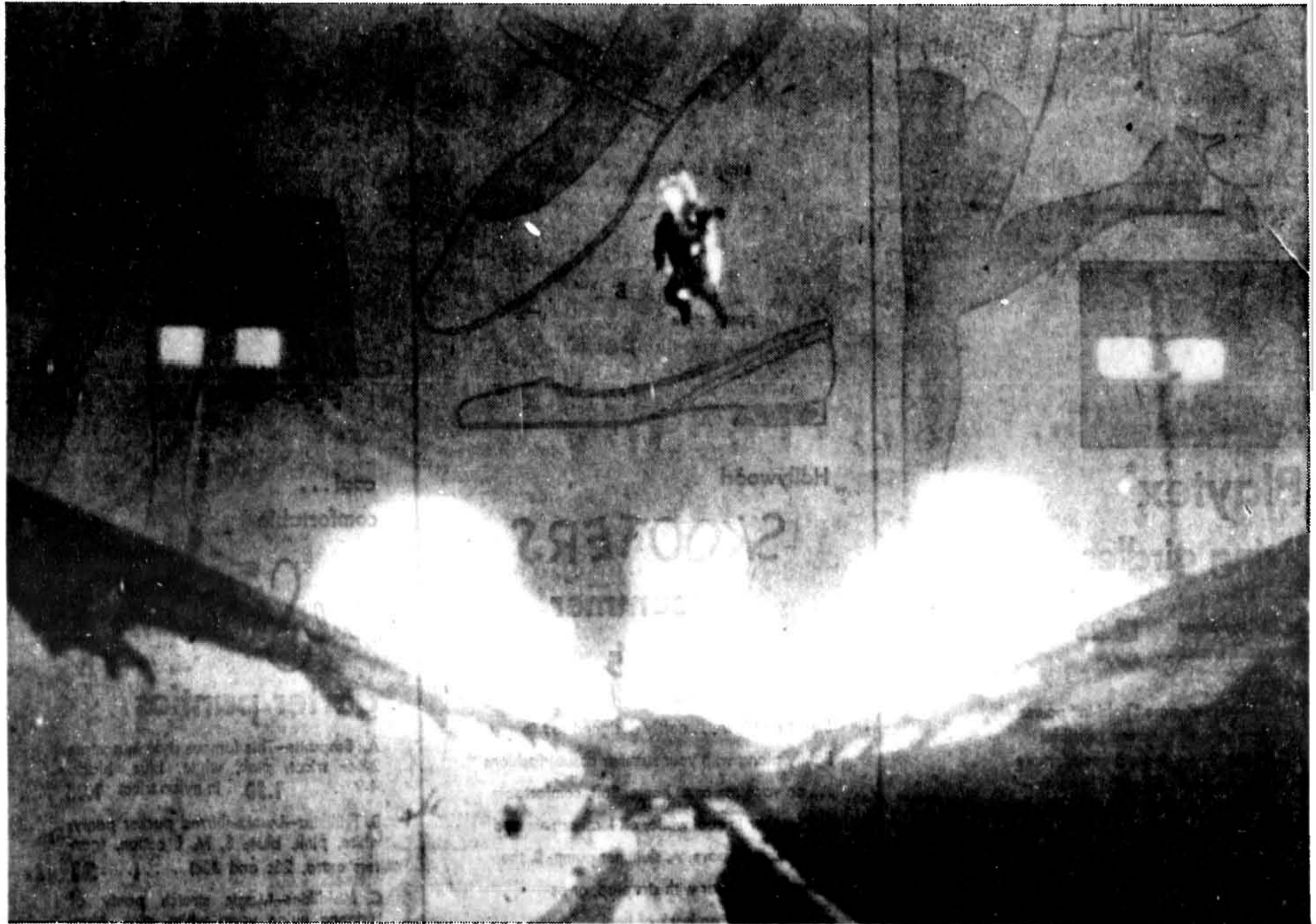


**LOWER AWAY**—Sam, outfitted carefully as if he were a human being, is being placed inside the sled. He is sitting in an ejection seat which goes into the cockpit of a simulated plane. Sam is an old hand at riding the

sled. Friday's run made the eleventh time he has taken the jolts for the benefit of future airmen. His parachute has only failed to open twice in those tests, but it could have meant two human lives.

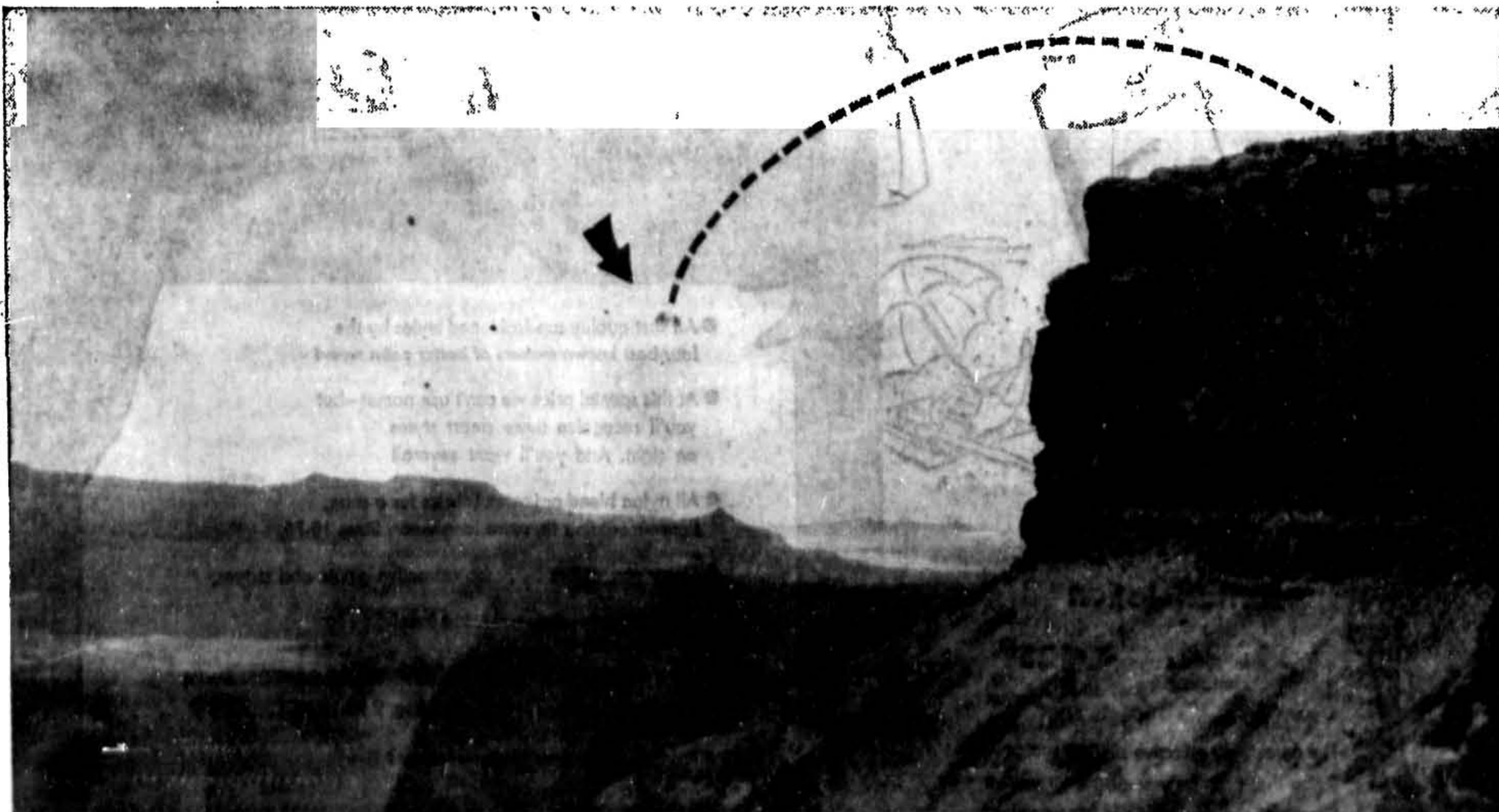


**WHOOSH-H-H-H—HE'S OFF**—Five seconds after this picture was taken Sam had traveled 8,000 feet at about 600 miles per hour, had been ejected—cockpit and all—over the end of the mesa and was hurtling, arms flailing wildly, toward bottom of the mesa.



**WORM'S EYE VIEW**—Sam, still strapped in the cockpit, has been hurled from the sled high in the air. He appears to be going up. Actually he's hurtling forward toward the end of the mesa. Friday when his para-

chute failed to open his instrument filled "body" was expected to be battered bad enough to ruin the instruments. The first spectacular test open to public observers, therefore, failed to provide expected results:



**AND THERE HE IS**—In photo of earlier test, Sam floats gently toward the ground. Observers saw something quite different Friday when his parachute or the carriage parachute failed to open. Had the test gone

as expected, Sam would have been examined thoroughly after reaching the ground by parachute so the Air Force could learn more in its huge testing program. Mesa drop is about 1,500 feet.



**TRIP'S OVER**—Workers at Project SMART recover Sam from mesa floor in previous test. Friday the "rescuers" expected to find Sam in pretty bad shape. His parachute failed to open once before.