Name: _____ Date: _____

The X-15 Flight That Went Too Far

Reading level 8 (4th grade) · 629 words

On April 20, 1962, a rocket plane climbed almost forty miles above California. Its engine was already off. The pilot was Neil Armstrong, a test pilot for NASA. His job that day was to test a new control system. The flight would carry him far past the place where he planned to land.

The plane was the X-15. It was built to learn what happens to a plane at great height and great speed. Armstrong flew it seven times, from late 1960 to July 1962. NASA says he also worked with the engineers who built its new control system.

An X-15 could not take off from a runway. A huge B-52 carried it up and dropped it over Mud Lake, Nevada. Then Armstrong lit the rocket. NASA's flight log for that day lists a top speed of Mach 5.31, which is 3,789 miles an hour.

Mach tells you how many times faster than sound a plane is flying. Near the ground, sound travels about 760 miles an hour. Higher up it is slower. At 3,789 miles an hour, the X-15 crossed a mile in about a second. That is a very fast plane.

When the rocket shut off, the plane kept going up. It coasted like a ball thrown straight up. The log lists its top height as 207,500 feet. Then it started back down. High up, the air is too thin for a wing or a tail to steer. So the X-15 had small rocket jets for that job.

On the way down, Armstrong began to pull out of the dive at about 100,000 feet. NASA says he accidentally tipped the nose up. One report says the X-15 ricocheted off the thick air below. It climbed again instead of coming down.

Now the plane raced south at three times the speed of sound. It flew right over Edwards Air Force Base. That was the place where Armstrong meant to land. With the engine off, the plane could only glide. Every turn would cost it speed and height.

Armstrong turned the X-15 around. By then he was about 45 miles south of Edwards. He was high over the Rose Bowl, a big stadium in Pasadena. One report says there was real doubt that the plane could glide all the way back.

It could. NASA says he had just enough energy to land on the south end of Rogers Dry Lake. A dry lake is a flat, hard, empty lake bed. It makes a runway miles long. The south end was the far side from where he had meant to touch down.

Later, a NASA engineer studied this flight. He wrote that it taught lessons about flying home from space. A pilot coming back from space has almost no steering from the air at first. Then the air gets thicker, and the pilot must learn to use it.

The flight lasted a little over twelve minutes. One report calls it the longest flight in the whole

X-15 program. The flight came to be called "Neil's cross-country flight." The rocket had been used for only the first part of that time. The rest was coasting and gliding.

That same year, 1962, NASA picked Armstrong as one of nine astronauts in its second class. In March 1966 he commanded Gemini 8. It made the first docking of two vehicles in orbit. In July 1969 he commanded Apollo 11. He became the first person to set foot on the Moon.

During Gemini 8, Armstrong looked down at California. A NASA history says he spotted Rogers Dry Lake. He looked for Edwards Air Force Base, where he had spent seven years flying experimental planes. He was not certain he found it. Rogers Dry Lake is the same lake bed where the X-15 had landed.

Questions

1. How did the X-15 get into the air?

A. It took off from a long runway
B. A B-52 carried it up and dropped it
C. A rocket on the ground launched it

2. Where was the X-15 when Armstrong finally turned it around?

A. Over Mud Lake, Nevada
B. Over the Joshua trees
C. Over the Rose Bowl in Pasadena

3. Why could the X-15 not simply speed up again once the engine was off?

A. It had no power left to make up lost speed
B. Its wings had come off
C. The pilot did not know the way

4. In this book, what does "ricocheted" mean?

A. Slowed to a stop
B. Spun in circles
C. Bounced off and went on

5. Where did Armstrong finally land the X-15?

A. At Mud Lake, Nevada
B. On the south end of Rogers Dry Lake
C. On the field in the Rose Bowl

Words to know

ricocheted: bounced off
glide: fly without power
thin: not dense
coasted: kept moving

Mach: speed-of-sound measure

Answer key: The X-15 Flight That Went Too Far

1. B. A B-52 carried it up and dropped it
2. C. Over the Rose Bowl in Pasadena
3. A. It had no power left to make up lost speed
4. C. Bounced off and went on
5. B. On the south end of Rogers Dry Lake