

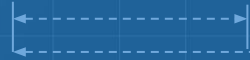
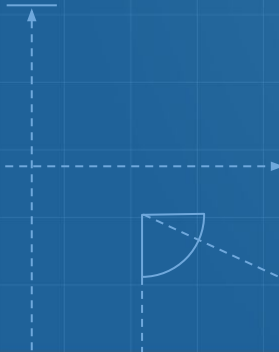


The Bell X-1

(The First Aircraft to
Break the Sound Barrier)



By Liam West and Shrey Rajesh
Dahl 2A, 8/20/24



01

The Jet



What was the X-1?

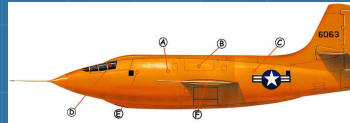
- Created in 1945 and took flight in 1947
- Developed in secret by the Bell Aircraft Corporation for the US Military
- Piloted by Chuck Yeager, it became the first aircraft to break the sound barrier
- Built to test the limits of a military aircraft
- Was financed by the Air Force after WW2 to create a plane capable of going faster than sound.



What Made the X-1 Possible?

Material

- Created from high-strength aluminum
- Heat-resistant metal prevented the aircraft burning up at high speeds

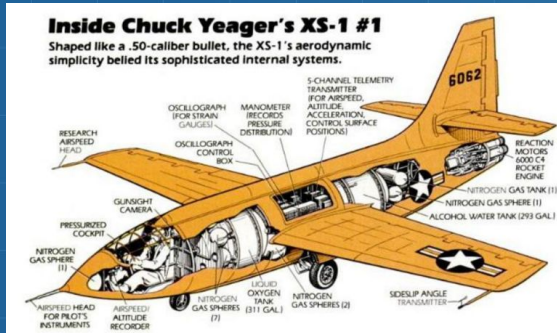


Design

- Unique .50 caliber bullet shape
- Super thin wings
- Adjustable horizontal stabilizer (first of its kind)

Engine

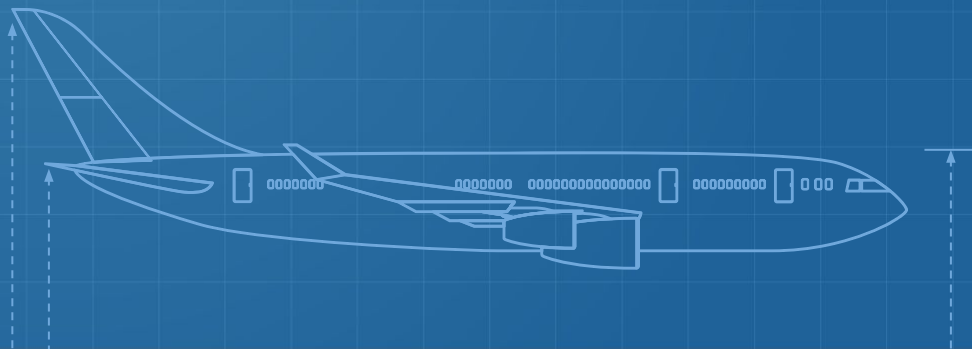
A quad-chambered Reaction Motors, Inc. XLR-11-RM-3 rocket engine was used to generate around 6,000 pounds of thrust. It had nitrogen injection to further pressurize and improve power to the engine.





02

The Pilot



Who was he?

History

- He was the Air Force's most experienced test pilot.
- Had a total of 11 airborne victories.
- Became an astronaut and test pilot later in life



Part on the Team

- Was able to uniquely gain data for the Engineering team.
- Flew the X-1, 78 times over its lifespan.
- Would talk to the Engineering team to provide suggestions and improvements on the design.

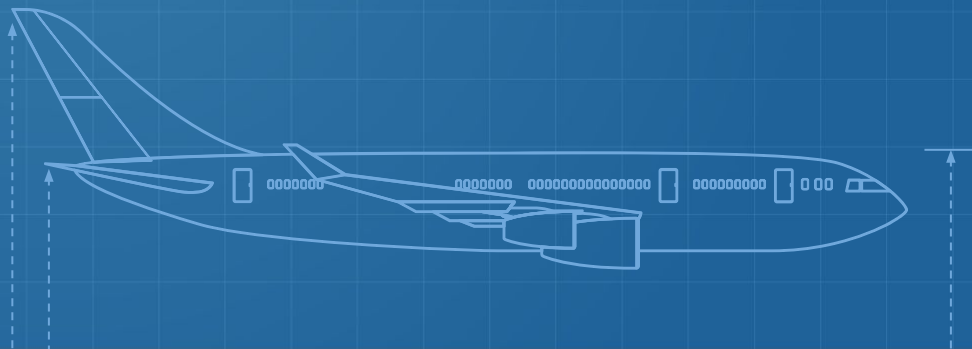
Famous Quote

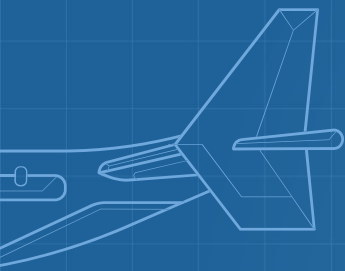
“I realized that the mission had to end in a let-down because the real barrier wasn't in the sky but in our knowledge and experience of supersonic flight.”



03

The Record





Mach 1.06

Fastest Speed of the Jet

957 mph

The Speed it was traveling

45,000 ft

The Height of the Jet

The record was achieved by dropping the Bell X-1 from a height of 23,000 ft out of a boeing B-29. The X-1 then went to its cruising altitude of 45,000 ft, where it became the first to break the record. The record took place at Pinecastle Army Airfield in Florida.

Legacy and Impact

- Chuck Yeager went on to become a respected test pilot and astronaut for future aircrafts and regarded as “a legend in military aviation” - avi-8.com
- The Bell X-1 remains a major milestone in the history of military aviation
- He was awarded a cluster to his Distinguished Flying Cross, the Mackay Trophy, and the Collier Trophy for his achievements in the field.
- The discovery that an aircraft moving at the speed of sound could hold a person led to major advances in space exploration and future military aircrafts
- Allowed for faster planes using the same technology, such as the NASA X-43A, which broke 9.6 Mach.
- Removed the stigma about going faster than sound.

Cites and Sources

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Thanks For Listening

Any Questions?

