

Faster than a speeding bullet

On October 14, 1947, the experimental Bell XS-1 aircraft – piloted by Chuck Yeager – became the first plane to fly faster than the speed of sound. Yeager flew at a speed of over 700mph, shattering the notion that supersonic flight was technically impossible

“All-moving” tailplane maintains control above speed of sound

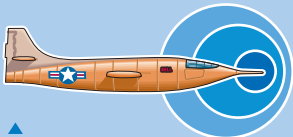
USAF Captain Charles E. “Chuck” Yeager named his rocket-powered plane **Glamorous Glennis** in honour of his wife



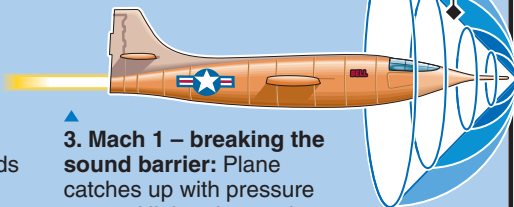
“Bullet with wings”
design: Resembled shape of Browning .50-calibre machine gun bullet that was known to be stable in supersonic flight



1. **Subsonic:** Air pressure waves travel at speed of sound away from aircraft's leading edges, like 3-D ripples



2. **Transonic:** As plane speeds up, waves get progressively closer together. Air ahead of plane becomes compressed



3. **Mach 1 – breaking the sound barrier:** Plane catches up with pressure waves. Hitting dense air barrier causes conical shock waves to dissipate around plane, causing sonic boom

“Mach cone”