



1958-1977: THE JET AGE

Although the jet engine inspired excitement immediately with its introduction in World War II, 13 years passed before a military transport was revamped as the first U.S. passenger jet – the Boeing 707.

The new jet flew at speeds up to 550 miles per hour and carried up to 181 passengers. It was 1958. The Jet Age had begun.

That year, for the first time, more people crossed the Atlantic by air than by sea. From 1958 to 1977, passenger travel grew by more than 1,000 percent, an unprecedented increase.

Meanwhile, in response to the crash over the Grand Canyon two years earlier, Congress passed the Federal Aviation Act of 1958. The law created the Federal Aviation Agency (later the Federal Aviation Administration) and gave it broader authority to combat aviation hazards. It also gave the FAA sole responsibility for a common civil and military system of navigation and air traffic control.

In 1960, the FAA began to require the use of transponders, which send a radar beacon — or “squawk” — identifying the aircraft. With secondary radar, this squawk helped controllers identify each radar blip as an individual flight. The controllers would write this information on plastic “shrimp boats” that they pushed along with sticks on tabletop radar scopes.

Meanwhile, computers were beginning to transform air traffic control and usher in the Age of Automation. Computers were first introduced experimentally in 1956; within a few years, the FAA was developing complex systems.

From 1965 to 1975, the FAA installed a computerized system that for the first time wedded data from the flight plan with readings from the radar and transponder, producing alphanumeric screen readouts of data on the plane’s position, speed, and altitude. Controllers could at last “see” flights in three dimensions, and do so continually. With the new automation, controllers could also connect transponder signals with flight plans and detect and correct any variations. By 1975, all Air Route Traffic Control Centers (ARTCCs) plus the 61 busiest airports were receiving this real-time, in-flight data on computers. This allowed controllers to place their scopes upright, finally making the shrimp-boat markers obsolete.

Meanwhile, in 1970, the FAA established a prototype Central Flow Control Facility to prevent clusters of air traffic congestion from disrupting nationwide

transportation flow. Today's facility in Herndon, Va., provides a nationwide picture of air traffic flow and allows large-scale adjustments to reduce delays.