AERONAUTICS

Here Come the Jets!

The new jet age spells out a revolution in transportation, with more people traveling farther and faster than ever before.

By DAVID PURSGLOVE

➤AMERICA'S CIVIL jet age which dawns this fall will be the most carefully prepared "revolution" of all of civilization's great advances.

To accommodate an age in which more people will travel faster, farther, and in greater comfort than ever before, the United States has deliberately lagged behind some other nations in order to plan, test and re-plan a complete overhaul in the aviation industry.

To be economical, jets must be big. They must fly high, and they must fly at certain "best" speeds.

These huge planes, carrying many more passengers than any of our existing airliners, call for longer runways, new airports and, above all, ground facilities for enormous numbers of persons clamoring for baggage, breakfast and transportation to town.

As soon as the passenger realizes part of the jet airliner's great speed advantage is being wasted by the bumper-to-bumper trip between town and airport, the wait at the terminal, the wait for clearance at the end of the runway and the unproductive round-and-round landing pattern flight at busy airports, he will demand improvements that transcend the airplane itself.

Better Air Travel Planned

These improvements already are being planned, and some of them put into service.

When the first civilian jet, a Boeing 707 delivered to Pan American World Airways, leaves New York's International Airport on a scheduled passenger-carrying flight to London in November, it will climax countless man-years of preparation by the airlines, aircraft manufacturers, Government civil aviation agencies and the U. S. Air Force.

Jet service between points within the United States will be inaugurated shortly thereafter by American Airlines and National Airlines also using the 707's, the civilian counterpart of the Air Force's KC-135 jet tanker.

The first change to be noticed by the new jet-age traveler is the airplane itself. Three basic models are scheduled for near-future delivery to U. S. airlines. The Boeing 707, Convair 880 and Douglas DC-8.

All the new civil jet airliners feature extremely swept-back wings, with at least as much of the fuselage protruding in front of the wing as behind the wing.

Even more striking is the enormous size: ranging from 124 feet to 150.5 feet long. The shortest jet is longer than seven modern station wagons and the longest is longer than a 12-story building is tall.

Something the passenger will not see, but will undoubtedly hear about from stewardesses who already are learning the planes like books, are the enormous fuel tanks. The average jet will carry 17,400 gallons of kerosene. If this were gasoline, it would power a car for 22 years, driven 12,000 miles per year.

Kerosene has long been a standard jet fuel. It is much cheaper than gasoline, and a little bit safer should an accident occur.

The chairman of the Civil Aeronautics Administration's Jet Planning Group, Bart Spano, collected volumes of data on kerosene. Then, as a final test, he took samples of kerosene, JP-4 military jet fuel, and aviation gasoline to his home where he personally determined the ease of ignition at 70 degrees Fahrenheit of spilled fuel by bringing flames near small saucers of the fuel.

However, Mr. Spano pointed out, kerosene has a drawback that adds slightly to the difficulty and expense of using it. It has a greater affinity for water than do the other fuels. This means that its ground storage, pumping, and storage within the plane must be handled with great care to prevent a tendency to freeze at the 25,000 to 40,000 feet altitudes at which jets operate best.

The CAA's jet planning expert credits the Air Force with a major assist in preparing for the new civil jet age.

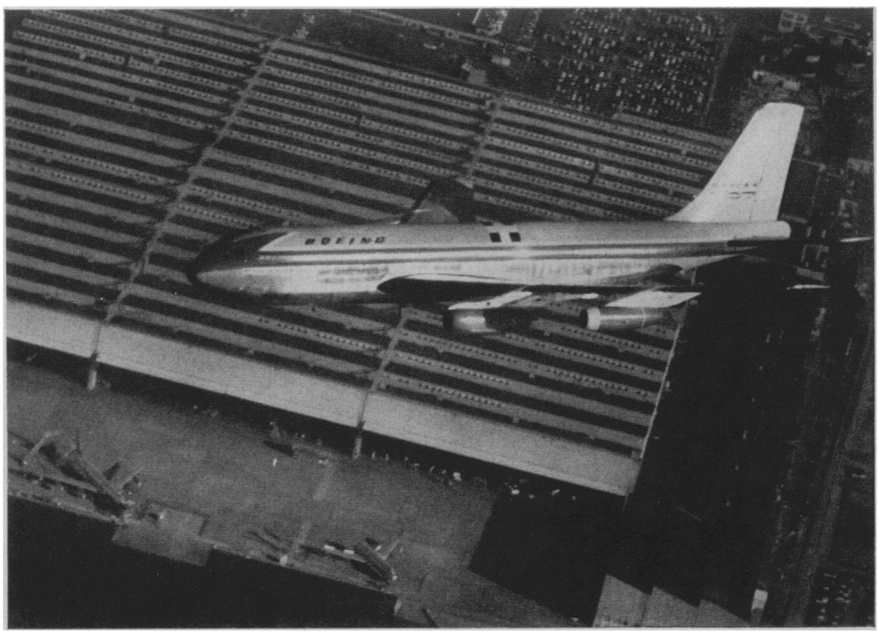
The Air Force not only has made available its vast store of information gathered through years of jet operation, but has actually trained personnel in jet operation and has turned over to the CAA several jet planes for familiarization and orientation use.

In Mr. Spano's words, "Air Force help has been invaluable—without the Air Force, there would be no civil jet age now."

The Air Force began helping the airlines prepare for the jet age in the spring and summer of 1954 when about 50 airline chief pilots were trained at the T-33 instrument school at Moody Air Force Base, Ga.

The Strategic Air Command has carried many airline chief pilots on orientation flights in its jets, and all branches of the Air Force have helped train future crews of the jet liners in various schools, symposia and meetings.

In the meantime, makers of the planes also have been training crews of the airlines which will use the planes. Typically, the Boeing Airplane Company, Seattle, Wash., uses a prototype 707 to train and check-out a few key chief pilots of Pan American World Airways. These in turn train a corps of "training pilots" who then train the crews who will use the 707 in routine flight.



REVOLUTION IN TRANSPORTATION—After four years' testing, the Boeing 707 will go into service this fall. Pan American World Airways will use it to shrink flight times between the U.S. and Europe by 40%. Soon afterward American Airlines and National Airlines will use it to shrink similarly the travel time between cities within the U.S. Experience gathered by the Air Force of the 707's military sister ship, the KC-135 jet tanker made famous by the Strategic Air Command, is credited with making the civil jet age possible in America.

Besides pilots, navigators, engineers and stewardesses, other people also are being trained for the new civil jet age.

Since new devices for handling unprecedented cargo loads have been developed, cargo crews are undergoing training.

The jet age is symbolized by speed, and waiting in line for a ticket has no place in the new scheme of air transportation. New ticketing systems and mechanical and electronic devises to speed all the operations of ticketing have been developed and employees are being trained to operate them.

Even airport police and terminal detectives are undergoing retraining to handle larger crowds imbued with the spirit of moving faster than before.

There will be much more to the new civil jet age than just larger, faster airplanes carrying more people greater distances in a shorter time.

The nature of the airplane itself necessitates basic changes in civilian air transportation. And, to the passenger, air transportation includes ground transportation as well, for he cannot divorce the taxi trip from city to airport from his flight between cities.

Modern Roads, Terminals

Already, ground travel constitutes a significant percentage of the time involved in an "airplane trip" between many cities. The air portion of a trip between cities 500 miles apart now requires about two hours in many standard airliners. The new jets could cut this time nearly in half if ground taxiing, warm-up, waiting, landing pattern, and various other non-productive times can be reduced in proportion to the actual air time reduction.

However, ground travel between airports and cities on most of these flights requires 20 to 40 minutes at each end. The fastest jets cannot reduce the time it takes taxis, limousines or buses to thread their way through traffic.

Herein might very well lie one of the greatest contributions the jet airplane will make to civilian air travel: airline and Government aeronautic officials seeking to realize the jet plane's advantages to the utmost already are urging semi-restricted freeways between airports and the hearts of major cities.

Another characteristic of jet planes, besides their airtime savings, that may help bring about better ground transportation is their great size.

Such huge airplanes, landing at speeds greater than that of piston engine planes, require runways longer than those existing at many major terminals.

Cities faced with the choice between enlarging present airports and building new ones may feel, airline officials hope, that the necessity for improvement will merely present the appropriate opportunity many officials have been awaiting to build new airports.

It then will be much easier, economically and politically, to construct new ground freeways than it would be to enlarge and restrict streets already in use.