

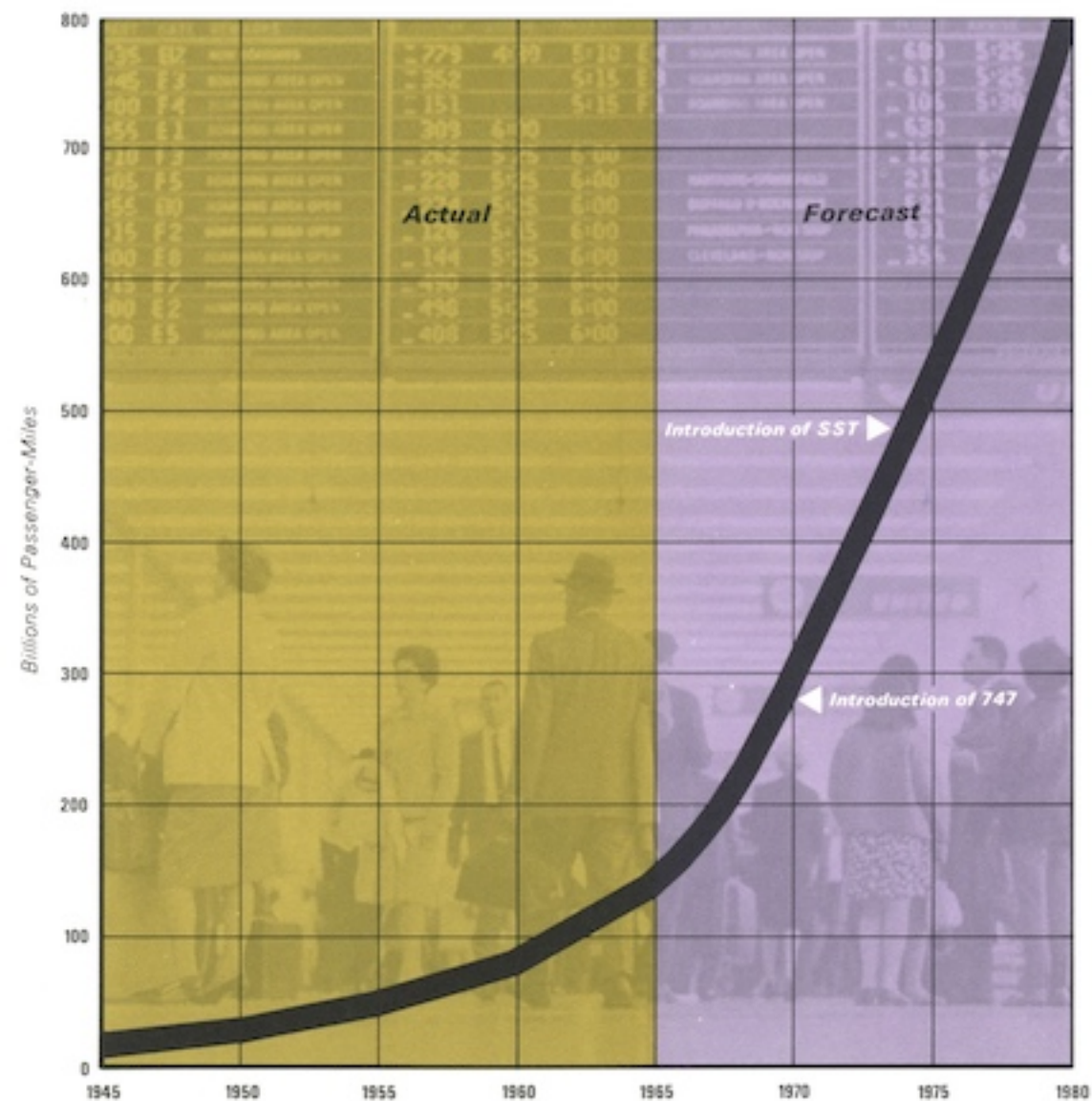


BOEING/SST





THE SUPERSONIC TRANSPORT — BOEING'S EVOLUTIONARY CONCEPT



BOEING'S EVOLUTIONARY SST CONCEPT...

The Goals, the Job, the Airplane

The vigorous growth experienced by air transportation can be attributed in large measure to constant innovation. Continuation of this growth trend will depend upon the presence of an effective SST. The forecast shown above recognizes the presence of such an airplane. ➤ Only an American SST which successfully meets the challenge presented by commercial airline needs will make this growth possible. It is this philosophy which has guided the evolution of Boeing's SST concept. This concept includes: The Goals, The Job and The Airplane. ➤

The Goals: A supersonic transport aircraft which is commercially successful for its operators everywhere; and, with it, the attainment of the broad economic, social and political gains evolving from development of any major transportation innovation.

➤ **The Job:** To direct all related capability toward the development, production and support of an SST which meets clearly defined airline needs, both operational and economic. ➤

The Airplane: A passenger vehicle which surpasses all contemporary aircraft in performance, reliability and profitability... and one which will be readily integrated into the airline systems of its time.



1975-1980 / INTEGRATED AIR TRANSPORTATION

This is a typical international airport on a day around 1975-1980. As can be seen, airport activity has increased, both in the number and variety of aircraft in operation. Each airplane fulfills its own specialized job in this integrated system. ➤

The twin- and tri-jet airplanes are operating domestically, carrying passengers and cargo on short and medium-range flights. They have brought jet-age speed and convenience to most of the smaller cities surrounding this metropolitan complex.

The large subsonic jets of the 747 type are heavily engaged in low-cost cargo and passenger transportation. New, large helicopters are carrying passengers between the airport and nearby city centers. ➤

The special job of the SST in this picture is to fly people over transcontinental and intercontinental distances at the highest possible speeds. It is this speed appeal which has made it the most popular of the long-range aircraft. And it is this speed which makes the air transportation system complete—with fast aircraft for every route category and with maximum service provided for passengers in all parts of the overall system.





NEW YORK TO PARIS

BOEING SUPERSONIC





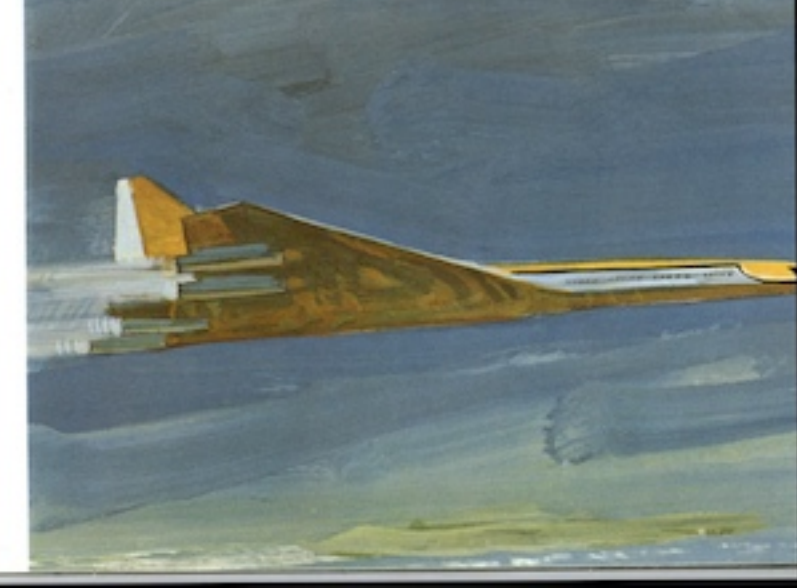
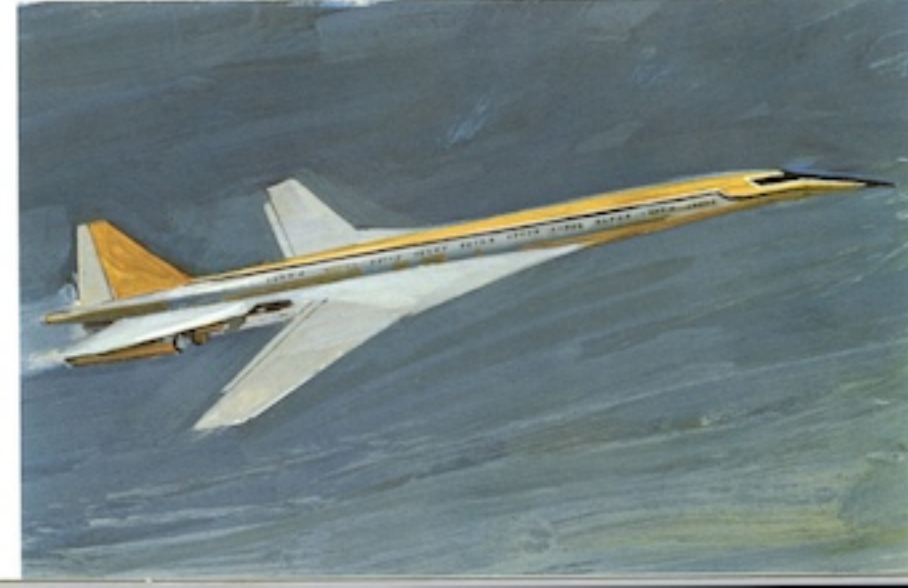
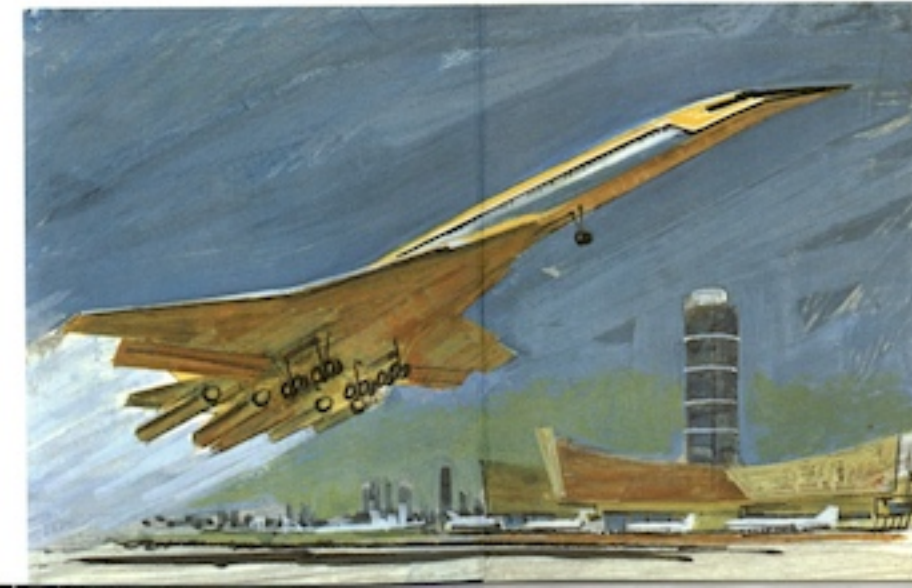
Departure: New York City This flight begins shortly after 2 p.m. on a day in New York. The year is 1975. The airplane, a Boeing SST, has been in commercial service for more than a year. Let's step aboard with one of the passengers on a supersonic trip to Paris. Many factors influenced our passenger's decision to "go supersonic," but the most important one was the time he would save on the trip. He was able to select a more convenient departure time because of better scheduling made possible by the SST's great speed. And this speed will save him a full day on the round trip over what it would have taken on subsonic jets. This speed could give him two extra evenings in Europe.

Welcome Aboard Our passenger finds his SST waiting for him in the same loading area used by large subsonic aircraft like the 747. His first impression upon entering is spaciousness. He enters through doors wide enough for two persons to pass side by side. The capacious entryway is made possible by the unusual width of the cabin fuselage at the doorways. He finds familiar four-abreast and six-abreast seating. Both feature newly-designed seats for more space and comfort.

Taxi and Takeoff Powerful new engines, each with more than 50,000 pounds thrust, with new, variable-geometry throat inlets, power the Boeing SST out onto the same taxi and takeoff pavements used by subsonic jets. It is quiet inside the cabin, quieter than in the big subsonic jets. Outside, the airplane's wings are fully extended to their 30° sweep position. All flaps and slats are extended. The SST gathers speed rapidly and, at 160 knots, lifts into the air, needing just 7,250 feet of runway.

Climb Our passenger knows his airplane is climbing; he feels the power push him back in his seat. He is comfortable, sensing that the airplane has the power, the positive control and easy handling characteristics to make it safe at all speeds. The airplane passes through Mach 1 at about 35,000 feet altitude with its wings in their 72° fully swept position. At sea level below the flight path and beyond the metropolitan area the sonic boom is first experienced as the SST accelerates through Mach 1.2.

Supersonic Cruise The SST cruises at an altitude of 60,000 feet or higher, above storms and conflicting winds and all subsonic aircraft traffic. Its wings are at their full 72° for minimum drag. Inside the cabin passengers are almost unaware they are flying. New, fail-safe air conditioning and pressurization systems keep the cabin cool and comfortable, even though the airplane skin temperatures exceed 300° F. The ride is smooth, familiar, comfortable.



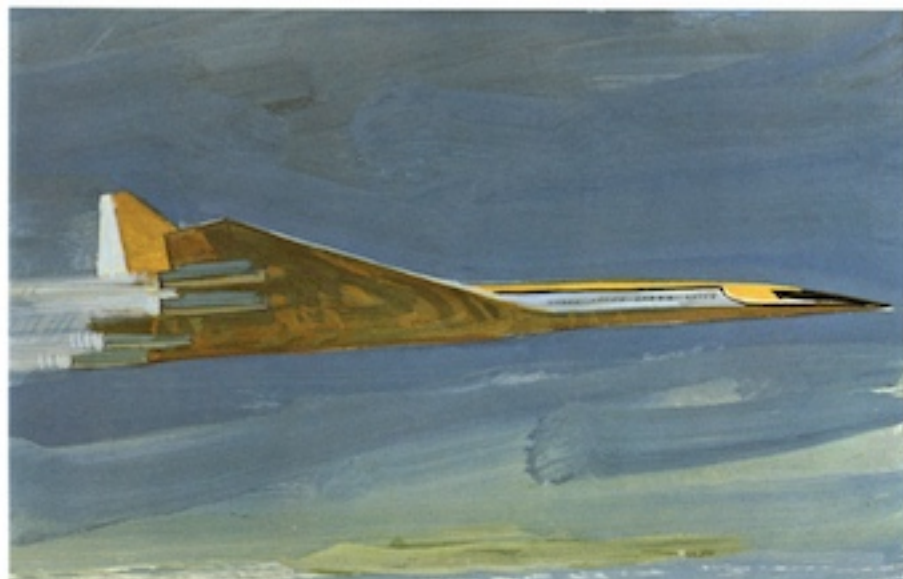
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Supersonic Cruise The SST cruises at an altitude of 60,000 feet or higher, above storms and conflicting winds and all subsonic aircraft traffic. Its wings are swept back their full 72° for minimum drag. Inside the cabin passengers are almost unaware they are flying. New, fail-safe air conditioning and pressurization systems keep the cabin cool and comfortable, even though the airplane skin temperatures exceed 400° F. The ride is smooth, familiar, comfortable.

Descent and Subsonic Cruise The airplane is brought down to subsonic altitudes as it approaches the European land mass. Wings are moved to their 42° intermediate position. In this configuration, flying at subsonic speeds, the airplane still has excellent range. And the airplane has even better handling characteristics than subsonic jets. The airplane maneuvers easily and efficiently at subsonic speeds. Its speed and flight performance are compatible with existing and planned subsonic aircraft.

Arrival: Paris Just two hours and 50 minutes after his SST flight left New York, our passenger leaves the airplane at Orly Field. The flight was short; more than four hours shorter than it would have been on a subsonic jet. The flight was comfortable; new air conditioning, pressurization and passenger service developments helped to make it so. The flight was smooth; the SST flew at 60,000 feet cruise altitude, high above storms and conflicting winds. And its variable-sweep wings and high-lift devices made takeoff, approach and landing level, slow and safe. Once again, a Boeing SST has delivered a full load of paying passengers quickly, comfortably, and on time at their destination.

Approach and Landing The SST slows for its normal approach. The nose has been lowered for better visibility for the pilot. The passenger is comfortable because the approach is level and slow. The airplane's wings are moved forward to the 30° sweep position; high-lift devices are extended, giving the pilot excellent control. The SST approaches the runway on the standard 3° ILS glide path at speeds equal to or lower than those of subsonic jets.





Seattle—Tokyo

Subsonic—9 hrs. 41 min. SST—4 hrs. 48 min.
non-stop one stop



New York—Rio de Janeiro

Subsonic—9 hrs. 13 min. SST—4 hrs. 45 min.
non-stop one stop



New York—Paris

Subsonic—7 hrs. 3 min. SST—2 hrs. 49 min.



New York—San Francisco

Subsonic—5 hrs. 8 min. SST—2 hrs. 20 min.



Chicago—Los Angeles

Subsonic—3 hrs. 34 min. SST—1 hr. 46 min.





New York—Los Angeles

Subsonic—4 hrs. 54 min. SST—2 hrs. 14 min.



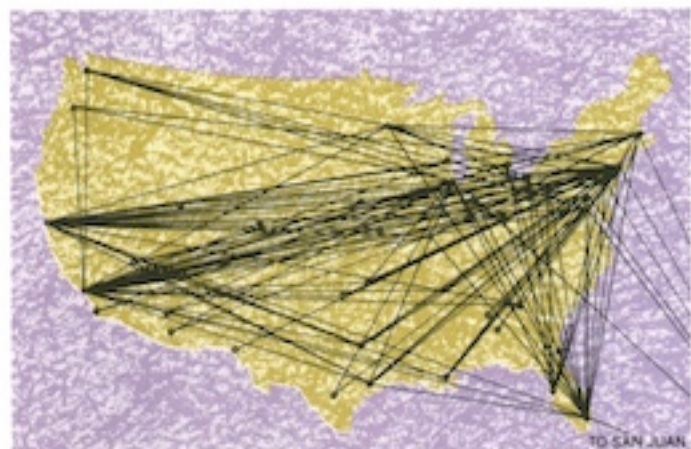
MACH 2.7: What it Means

It means traveling at almost three times the speed of sound. It means a dramatic shrinking of the globe, increased communications between all peoples of the world. It means untold travel hours and days saved for business and pleasure. It means all this and more. 

For airlines, it means they will be able to move up to three times the number of passengers in the same amount of time it now takes with subsonic jets. And moving more passengers means higher revenue. Higher speed is also a stimulant to traffic growth. Travelers have traditionally chosen the fastest and most efficient means of transportation available. And today they demand departures and arrivals scheduled to fit their needs (Because of its great speed, the supersonic transport permits more varied departure times). This is why they now want to "go supersonic." 

So Mach 2.7 means many things. It means speed, convenience, time saved and money earned. It means continuing realization of the advantages of air transportation. It means growth.

Domestic Routes



International Routes



THE AIRLINES' AIRPLANE:

Versatile, Adaptable, Profitable

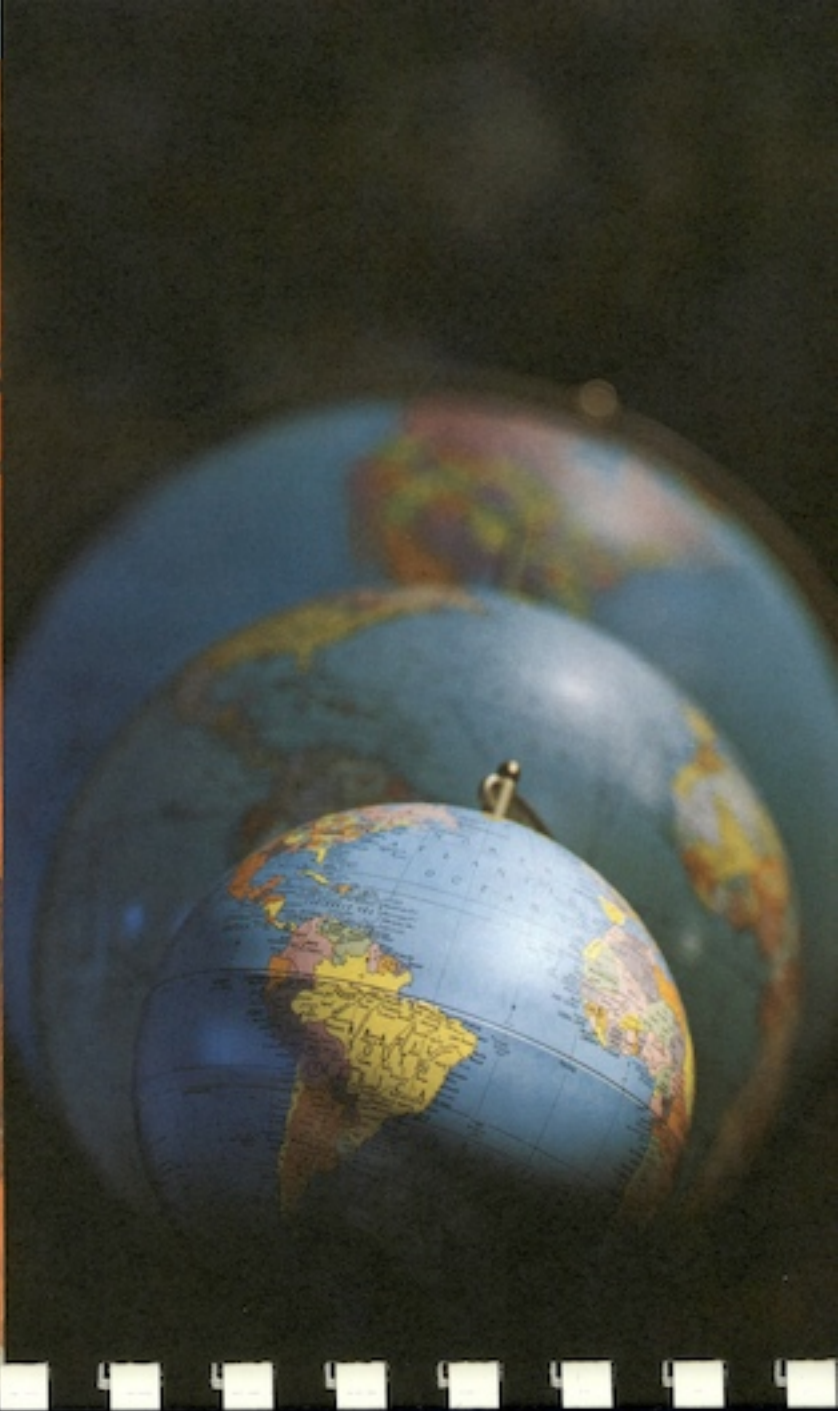
The Boeing SST is designed and built to be commercially successful. It is an airlines' airplane. It is big, holding up to 300 passengers in an all-economy configuration. Its wide cabin provides a variety of seating arrangements, permitting adjustment to market demands. ➤ On flight ranges above 1,000 miles, the

Boeing SST direct operating cost per seat-mile is equal to or lower than present subsonic jets. ➤ Profit potential is high. Because of its variable-sweep

wings, it can be flown conveniently at subsonic speeds, fitting well into airlines' tag-end domestic and world route structures. ➤ The airplane's high degree

of reliability and maintainability is projected from the experience gained in all other Boeing jet transports. And it will have the benefit of Boeing's global service and support organization. ➤ The Boeing SST has the passenger-carrying

capacity to satisfy the available market and stimulate growth. Its speed allows increased flight frequency with more convenient departure and arrival times. Its profitability is ensured through good aircraft utilization, high load factors, low operating costs and increased traffic for its operators.



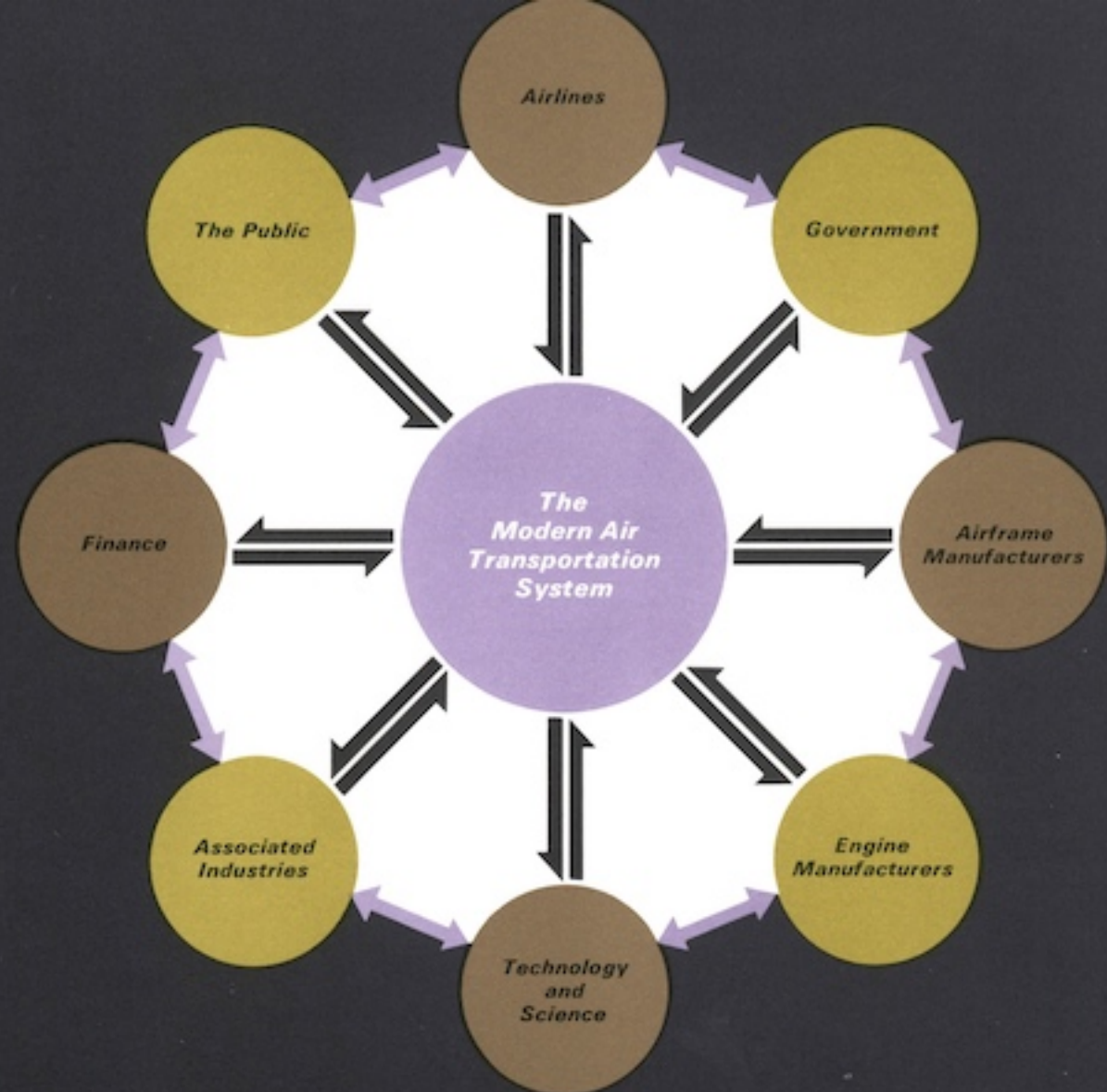
THE SST WILL BENEFIT EVERYONE . . .

Economically, Socially, Politically

A successful SST will ensure both growth and improved service in the air transportation system. It will be a source of vitality to business, industry and agriculture throughout the world. It will improve governmental as well as business communications. ➤

The manufacture and operation of the SST will have direct impact upon employment, incomes and tax revenue both at home and abroad, where thousands of firms are involved in subcontracting and service agreements with Boeing. These and all corollary social benefits will depend upon the commercial success of the SST. ➤

That is why it is important, in the broadest sense, that the airlines of the world be provided with an SST that will not only satisfy market and operational needs but also produce maximum profits.



BEHIND THE SST: Dynamic, Unified Enterprise

The design and successful introduction of a new aircraft is the result of a dynamic, unified creative system which involves the world's airlines, engine makers, airframe manufacturers, government, financial leaders, the public, subcontractors and associated industries. ➤ As each of these vital components of the air transportation industry has evolved new knowledge and experience it has been incorporated into Boeing-built jet transports. ➤ Working side by side with airlines and engine makers both in the field and the laboratory, Boeing has designed and built the world's most successful commercial jets. Government, through policy and research guidance, has contributed immeasurably to both product and operations. Boeing's long association with subcontractors and associated industries has resulted in continued refinement and advancement in aircraft technology. Through constant communication, financial leaders have been kept informed of all commercial aviation developments. The public's needs have been a basic consideration in every Boeing aircraft. ➤ Now, this same inter-relationship between Boeing and the dynamic enterprise that is air transportation has produced this Boeing SST design: the SST which best meets all the needs of everyone.



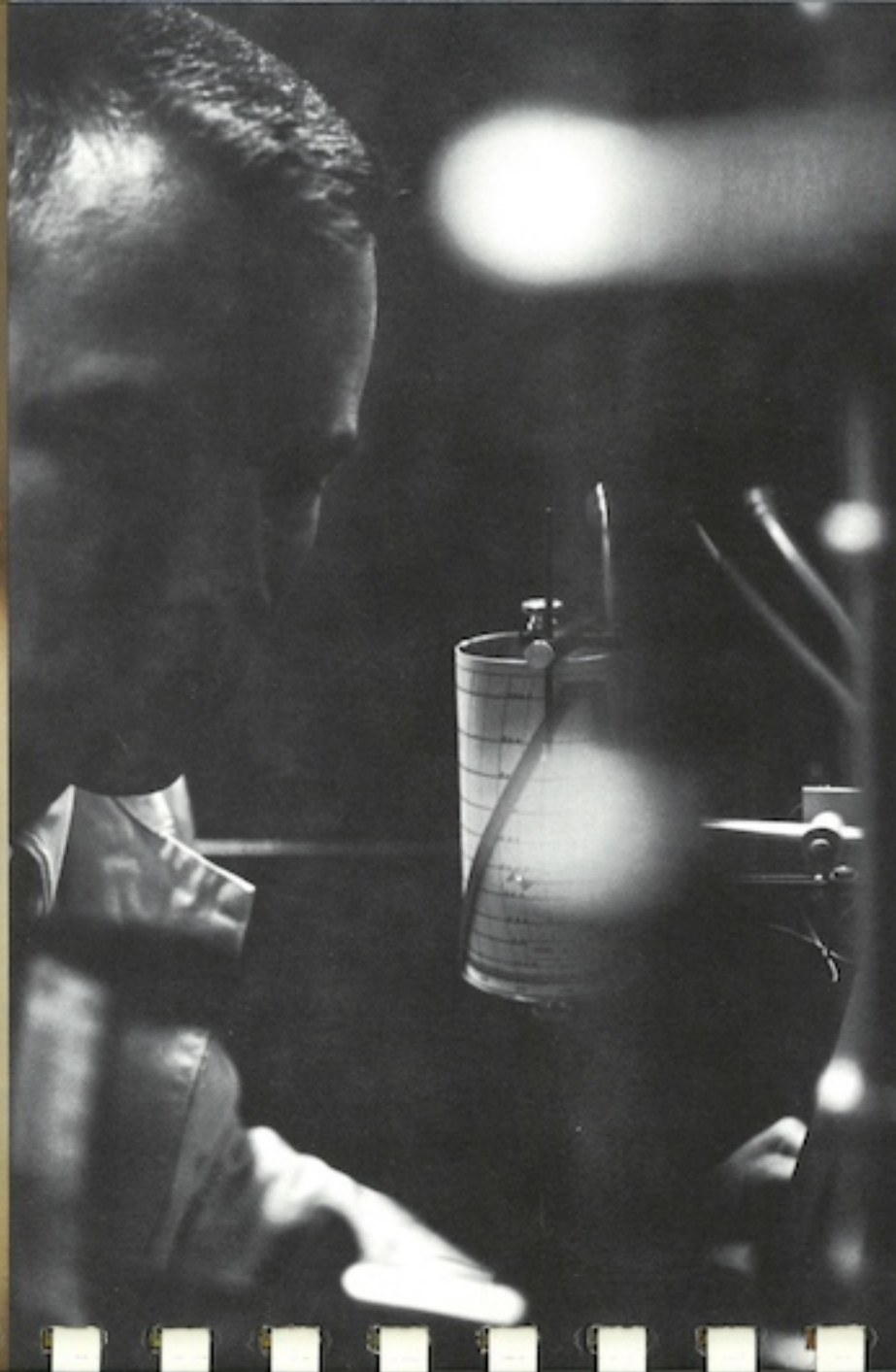
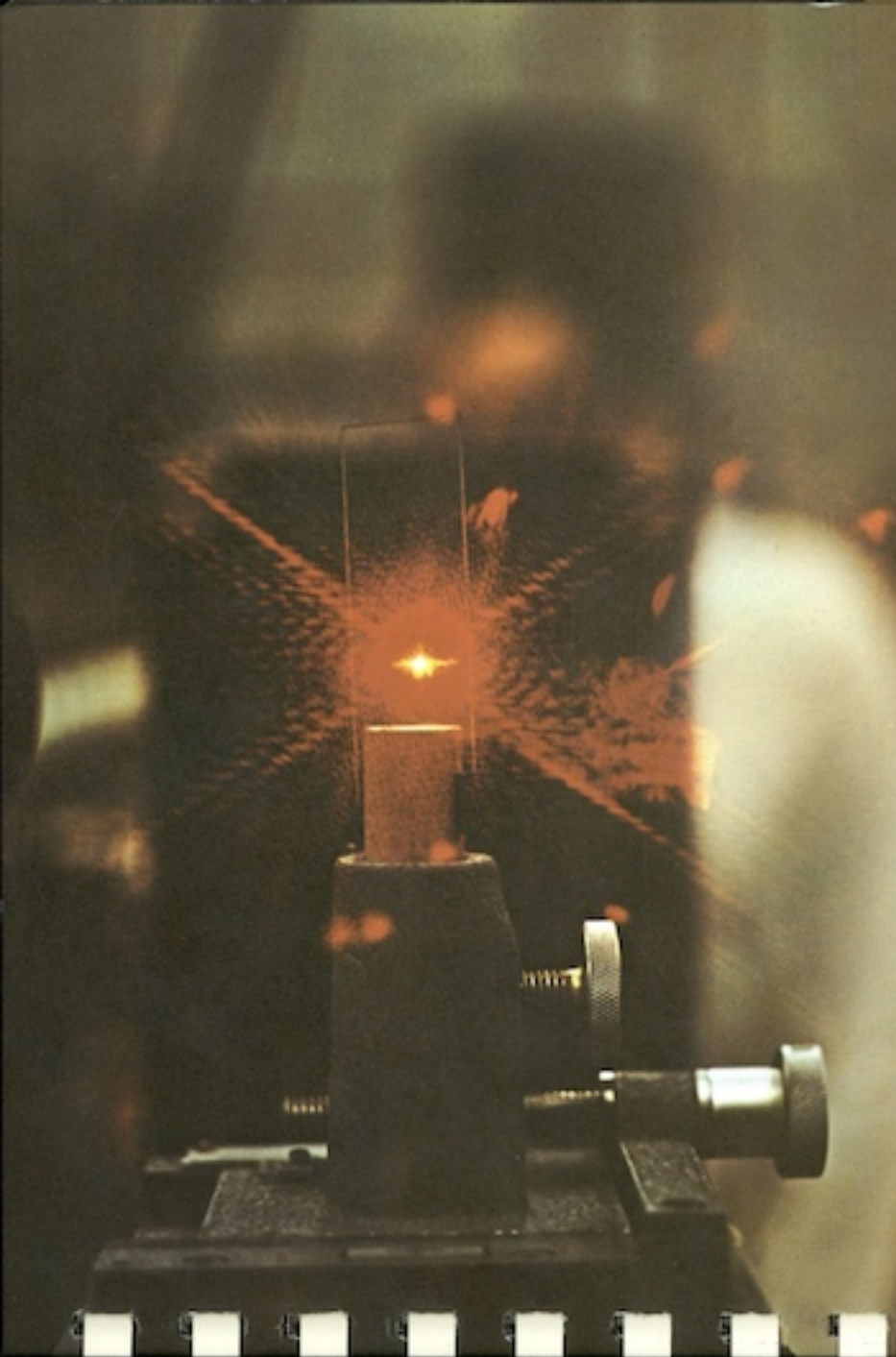
***BEHIND THE BOEING SST:
Working Knowledge of Airline Needs***

By the middle of 1966, more than 1,250 Boeing jets were on order or in service with 62 airlines. And Boeing jet operators were serving 313 cities in 124 countries all over the world.



➤ To back up the vast global operation that this represents, Boeing has developed a service and support organization which is represented wherever Boeing jets fly. The work of this organization includes field service, operational engineering, facilities planning, spares planning, technical support, flight and ground crew training, service bulletins and publications, and market research and route analysis.

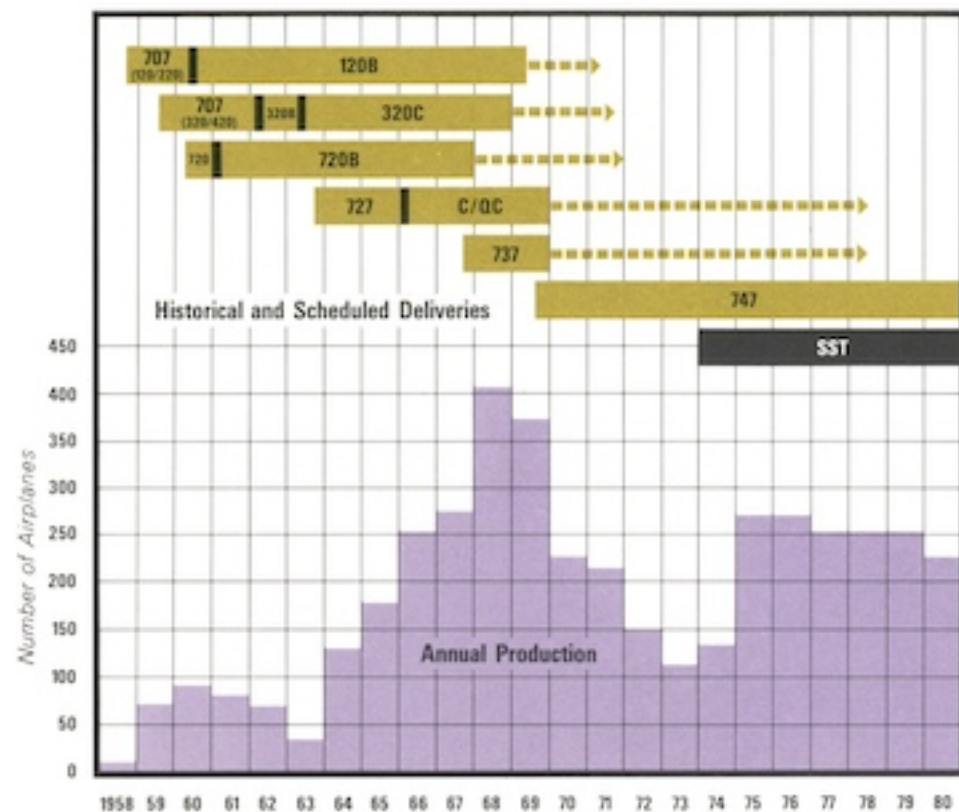
➤ These regular activities have led to steady engineering advances and new high levels of airplane performance, reliability and maintainability. They have also made each new Boeing model an airplane designed to earn money for its operators, with every feature founded upon practical experience.

➤ This is the background against which the Boeing SST will be developed, produced and serviced . . . as an effective, profitable commercial transport.

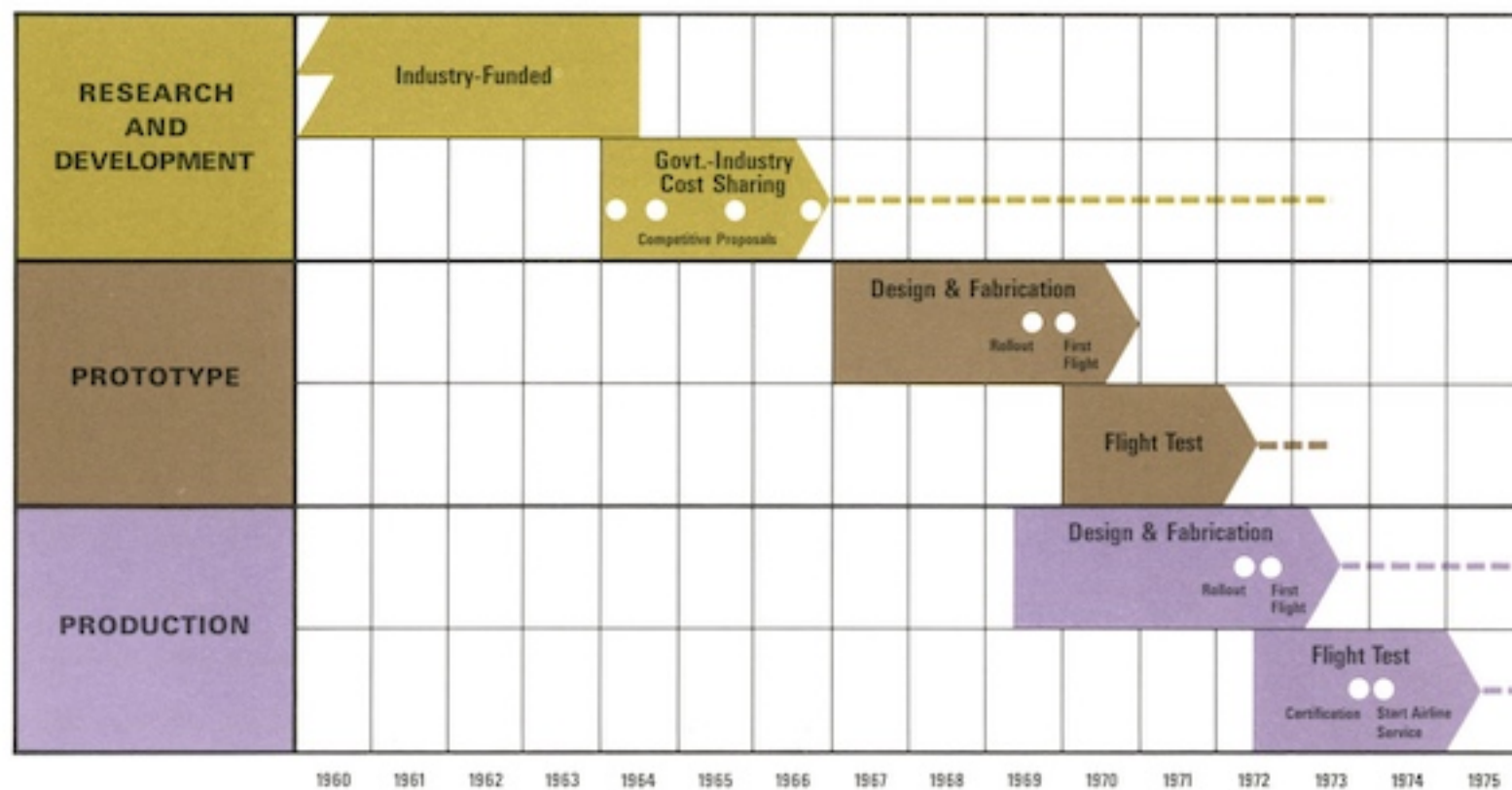


BEHIND THE BOEING SST: Total Capability

The natural consequence of Boeing's long experience in building thousands of large jet airplanes has been the forming of the broadest possible spectrum of *capability* to exist under one corporate roof.  The extensive pure and applied research in all areas affecting aviation constantly underway in the Boeing Scientific Research Laboratories is one band in this spectrum. Another is the continuity of design teamwork that has been in constant application to multi-jet, swept-wing technology for more than 20 years. Also contributing are: the industry's most complete test facilities; complete engineering and other technical talent in depth; skilled, experienced manpower; a great and growing manufacturing plant. All are present, organized, oriented and ready to build the finest, most successful SST possible.  Total capability also involves the willingness to commit the total resources of The Boeing Company to doing the complete job. Boeing has the capability and enthusiasm to tackle the job, the resources to do it.





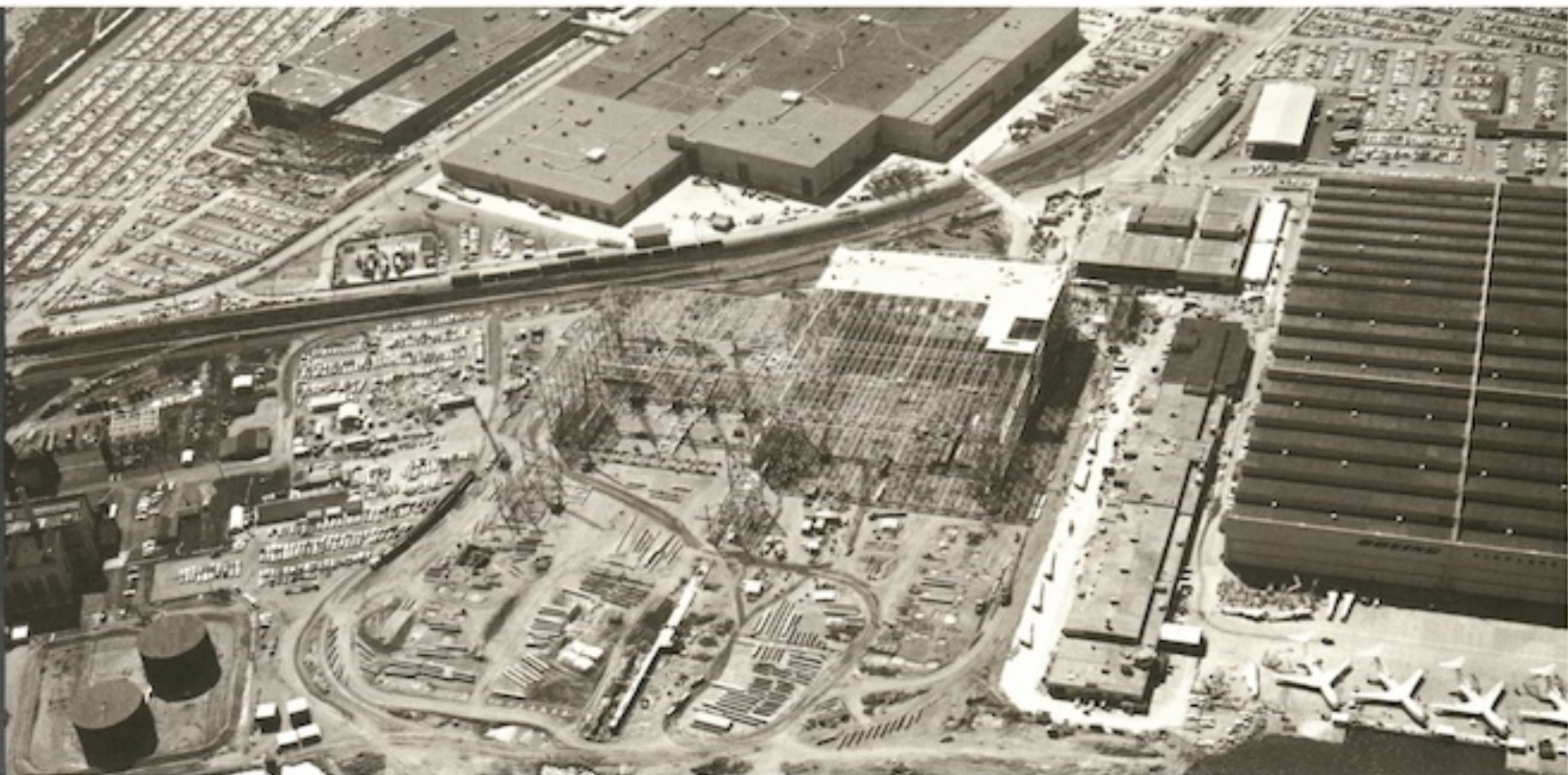
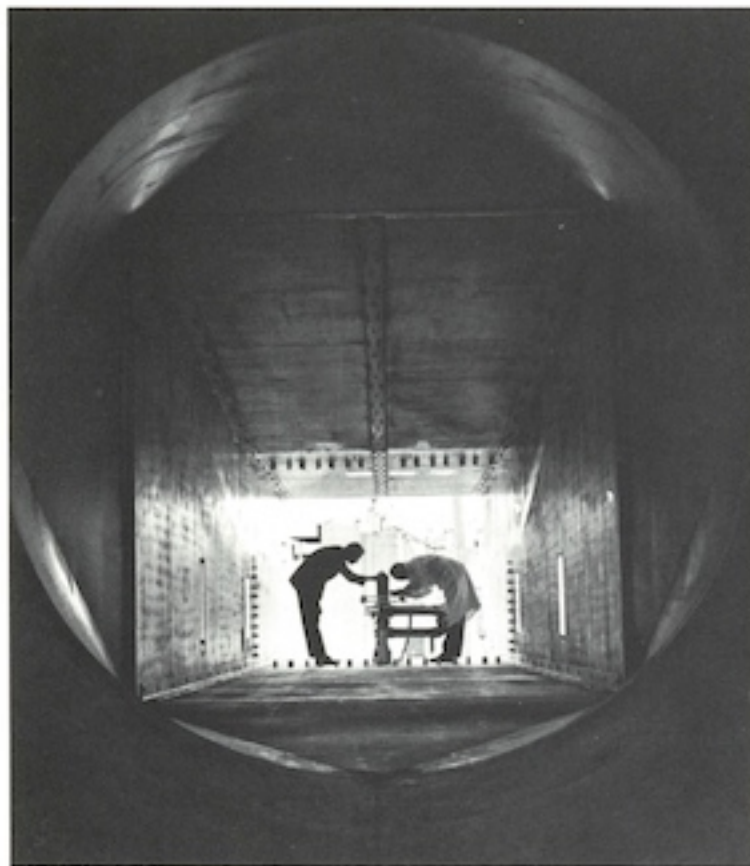
Jet Program Phasing



SST Program Phasing

BEHIND THE BOEING SST: Total Planning

Over the jet-age years Boeing's productive capacity has increased steadily. Each new jet transport program has generated new methods and attracted new trained people. New facilities have been installed as they were needed. New manufacturing structures have been built. More and bigger factory buildings are being constructed now to meet present program needs.  Represented in this steadily developing total capability is careful planning, an orderly process of matching resources to market requirements. These same resources, augmented as needed, and the planning experience of the jet-age years, will assure smooth integration of the SST into the overall Boeing jet program. They will also assure realistic programming of the SST itself.  The Boeing Supersonic Transport Division, headquartered at Seattle, Washington, is responsible for the development, planning, phasing and building of the Boeing SST. More than 3,000 people, mainly in the technical sector, are already assigned to the supersonic transport program.



BEHIND THE BOEING SST: Orderly Growth

Boeing jet transport programs (the 707, 720, 727, 737 and 747) have required constant expansion of plant, special facilities, manpower and support activity. This expansion has been geared toward meeting the needs of the airline industry.




➤ To the more than 10 million square feet of industrial plant already existing at Renton, Auburn and Seattle, Washington, an additional 3.8 million square feet of plant area was built or approved for construction in 1966. One new final assembly building at Renton alone contains more than 80 million cubic feet of space, making it larger than the Pentagon! ➤

More airplanes and new programs have also required increased manpower. The Boeing Company now has more than 100,000 employees, with additional personnel in all categories being added.

➤ Boeing is, and will continue to be, the world's most complete resource for orderly development and manufacture of the US/SST.



WITH THE BOEING SST:

-  *A concept evolved out of practical experience;*
-  *A design evolved out of a dynamic technology;*
-  *An airplane that meets the operational and economic requirements of the airlines.*

THE **BOEING** COMPANY / *Supersonic Transport Division* / *Seattle, Washington*