STATEMENT OF MR. N. E. HALABY, ADMINISTRATOR, FEDERAL AVIATION AGENCY, PRESENTED ON FRIDAY, JANUARY 10, 1964, BEFORE THE SUBCOMMITTEE ON PUBLIC HEALTH AND SAFETY, OF THE HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

Dear Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear today before your Subcommittee, Mr. Chairman, to discuss the questions of aviation safety which are set out in your Committee's statement of December 20. We share very much the concern of the Committee related in that statement over the public confidence in air travel, particularly their confidence in jet air travel.

To the men and women of the FAA, air safety is a 24 hour-a-day, year round business. No accident or incident is taken for granted. Our foremost and constant aim is to prevent accidents and incidents; if they occur, to see that they do not recur. Like the Committee, we believe it is an appropriate time to discuss the safety of jet aircraft since we have just passed the 5th anniversary of their introduction into commercial airline service. These five years have been years of growth and change in technology and traffic. There has been growth in passenger acceptance of jets, a growth in commercial use of and revenues from jets, and, of course, compared with the piston and turboprop fleets, a significant growth in speed of air travel.

At the end of 1958, turbojet aircraft flew 1.1 percent of all passenger miles flown by U. S. carriers. In mid-1963 jets flew about 75 percent of those passenger miles. Over 400 jets are in use today by U. S. carriers and they logged over a half a billion miles in fiscal year 1963 alone. The flight from New York to San Francisco which took about 8-1/2 hours in a DC-7, has now been reduced to about 5 hours.

The growth of most concern to us at the FAA, of course, is the growth in the safety of air travel. As Chairman Boyd has indicated, since mid-1959 the jet accident rate has been coming down steadily. The statistics now establish jets as the safest form of commercial air travel.

It would be useful, I believe, to compare the accident record during the first five years of civil jet operation with the five-year period beginning with the introduction of the pressurized piston fleet -- the Connies and DC-6's -- into airline service shortly after World War II. Both periods represent a transition by the airlines to larger, more complex and faster aircraft. These are the only periods in airline operating history where such extensive replacements were made to the airline fleet. For this comparison I have used only the fatal accidents which occurred during scheduled passenger service by the U. S. certificated route carriers in all types of aircraft.

The average fatal accident rate for the five-year period 1946 through 1950 was 1.58 fatalities per 100 million passenger miles. The average rate from 1959 through 1963 was 0.45 per 100 million passenger miles, or a rate about 1/3 that of the earlier period of transition. It is also noteworthy that the number of passengers carried during the 1959-1963 period was almost four times greater than 1946-1950 -- 306 million as compared to 78 million.

Further, here is how the 5-year jet accident record looks when comparing it with the first 5 years of operations in turboprop aircraft -- 1955 through 1959. The cumulative accident rate of the turboprops for

both fatal and non-fatal accidents during 1955-1959 was 4.1 accidents per 100,000 flying hours. The cumulative fatality rate for these aircraft was 0.6 per 100,000 flying hours. For the first five years of jet operations -- 1959-1963 -- the cumulative total accident rate for the jets was 2.2 per 100,000 flying hours and the cumulative fatality rate for these aircraft was .03 per 100,000 flying hours. Thus, the total cumulative rate of the jets was less than half that of the turboprops and the fatality rate was exactly one-half.

This record was made despite the fact that the transition to jets was a far more complex undertaking by industry, labor, and government. We believe the record of the jets is a significant testimonial to progress in aviation safety. It only indicates, however, what can be done by management, labor, and government in working hard toward a national solution of a national problem. It also suggests that there is more to be done.

The safety record of the jets is due to a number of things. First, the powerplant is a significant improvement over the piston engine from the standpoint of safety. With the greater simplicity and improved reliability of the jet engines and with higher quality maintenance, the approved overhaul period for the jet engines has now been extended to as many as 4600 hours as compared with 2500 hours for the piston engines. The statistics on in-flight engine shutdowns also establish the superiority of the jet powerplant. In-flight shutdowns of jet engines for all causes average .25 per 1000 hours versus .75 per 1000 hours on the less modern piston engines.

The safety record of the jets is also due in part to the background technology and experience with high speed aircraft structures which was available when the predecessor of this Agency, the CAA, first began type certification on the earliest of the big jets, the Boeing 707. Although this airplane presented a radical new type of machine as compared with existing commercial aircraft, an elaborate background of NASA research on high speed and high altitude flight structures was available as a solid basis for our evaluation and analysis of this airplane.

Considerable military experience with jet powered swept wing aircraft was also available to the CAA. In fact the Boeing 707 was a direct descendant of the B-47-B-52 family, and a younger brother of the KC-135 tanker which has flown one million hours in military service. This experience with jet structures of many kinds under many flight conditions was extremely useful to us in evaluating the first commercial jets. In many cases it enabled us to anticipate problems before they arose.

We also were able to use experience with the first British Comet in establishing realistic fatigue requirements and fail safe requirements for United States commercial jets.

The outcome is a structure fully tested and tried in more than 3 million flying hours and an aircraft with a substantially superior powerplant to the piston engine. Add to this constant surveillance by the industry and the FAA since the initial certification, and continuing attempts to improve both the equipment and the techniques by which it is operated, and the statistical figures on jet safety are not at all surprising.

None of this, of course, should suggest that we are satisfied with the record, that our vigilance can be relaxed, or that new problems do not continue to arise. In dealing with those problems we work in harness with the CAB, whose able, energetic and cooperative Chairman, Alan Boyd, addressed the Committee earlier. During our three years of working together, Chairman Boyd and I have been able to prevent or avoid serious friction between two of the agencies established in the field of air safety investigation. Of course, we have had to agree to disagree on the merits of a few complex cases; but we have always tried to stick to the facts and the principles, avoiding the frictions and the personalities. This era of mutual respect and occasional professional difference between the CAB and FAA has helped to advance aviation safety.

Chairman Boyd has reviewed the two major trunk carrier accidents of 1963, the Northwest accident at Miami and the Pan American accident last month at Elkton, Maryland. Both of these accidents involved large jet aircraft operating under adverse weather conditions. There have also been incidents or near accidents which when reported to FAA have been as carefully investigated as accidents. The concern expressed in the Committee's statement over whether these cases reveal any pattern of structural deficiencies in these aircraft is an appropriate concern and one which we at the FAA share.

Jet Structure and Turbulence

Where adverse weather is encountered in the form of severe turbulence a question of structural strength is immediately raised in the mind of the public. Our aircraft certification and airworthiness programs -- which provide rigorous examination and testing at every

stage in the aircraft's development from the drawing board to the passenger gate -- were based as I have indicated on a large background of prior research and experience with high speed aircraft structures. The standards we have imposed for the certification of the civil jets -- standards operating as guides within a matrix of designer and manufacturer integrity -- are intended to insure the production of aircraft capable of withstanding all known forces of atmospheric turbulence into which an aircraft may be expected to fly.

The operation of the Agency's certification program is fairly complex, and I needn't go into it in detail here except to note that a structure's ability to withstand turbulence has always been of major concern. I have here some pictures of the kind of testing which was involved; one picture showing a Boeing jet fuselage about to be crushed by a hydraulic press to determine its breaking point. The other picture shows a test in which the wing of a Boeing military jet was bent to determine the maximum possible load this wing could carry. You will note in this case that the wing tip was deflected a total of 22 feet upward and 10 feet downward.

We have had a number of indications that as high as our standards were for structural strength, the aircraft themselves were even tougher than our requirements. For example, the aircraft must be designed to sustain air loads of 3-3/4 times the flying weight (3.75 G's); yet jet aircraft have been subjected to loads in dives well over 5 G's, without seriously damaging their flight capability.

These aircraft have proved remarkably rugged in turbulence. They are not designed to operate successfully in a tornado, of course, and in severe turbulence special flight procedures must be followed. But we do not have in these cases -- and this is worth emphasizing -- any known, basic structural defect. Our continuing study of turbulence incidents has not disclosed any fundamental structural flaw as was the case with the Electra and the first British Comet.

Nor do we believe there is any structural inadequacy relating to the gyroscopic effect of the turbine engines or to sonic phenomena. The high speed revolutions of the mass which makes up a turbine rotor acts to some degree like a spinning gyroscope. These gyroscopes may produce resistance when the aircraft is forced into changed attitudes by turbulence. Our certification standards have, since early 1956, required the design of engine supporting structure which could withstand all of the maneuver and gust conditions which would result in significant gyroscopic loads.

The kind of acoustial load on aircraft structures which can result in sonic fatigue has also been accounted for in our certification process. Sonic fatigue is a form of vibration damage occurring when rapidly fluctuating pressures -- such as those produced by the noise from jet exhausts -- induces high frequency vibrations in the aircraft structure. Much of our knowledge in this area derives from military experience with jet aircraft, and we are, of course, continually reviewing our fatigue design criteria. No pattern of fatigue problems has occurred even though some of the jets have accummulated over 15,000 flying hours.

With what we consider to be a basically sound airframe, our attention has been given to improving the methods of anticipating and operating within what you might call the hostile environment presented by turbulence. I have personally discussed with the foreign and domestic designers, test pilots, manufacturers, airline managers, and crew men, techniques for further improving the safety of bad weather flying. Last summer I convened a confidential conference of all principal operators and associations concerned with one of the large jet transports to review all incidents as well as fatal accidents involving it. The results, while not conclusive, were made available to all.

Within the FAA we have a committee of expert technicians working exclusively on the standards, techniques, and procedures relating to turbulence flight. We have required airborne radar on all jet aircraft since 1960, which is useful in avoiding areas of weather disturbances. In conjunction with the industry we have recently revised the recommended jet speeds for flying in turbulent areas. In a series of directives going back to 1962, we have required our inspectors to reivew the airline pilot training programs to insure that pilots are thoroughly familiar with the recommended procedures for avoiding turbulence and for operating in turbulence when it cannot be avoided. These directives place particular emphasis on the margins available for maneuvering jets in high altitude turbulence areas. As we learn more about the atmosphere, we will continue to modify and update these recommendations.

Lightning

Another kind of problem associated with adverse weather arises when that weather is encountered in the form of electrical disturbance. As Chairman Boyd indicated in discussing the Pan American accident over Elkton, Maryland, there is no evidence that turbulence was involved. Indeed, that aircraft was deliberately given a holding pattern away from areas of reported turbulence.

There is reason to believe that a fuel tank explosion occurred which may have been caused by a lightning strike. It is worth noting that lightning strikes on aircraft in flight are relatively common occurrences. Contrary to what one might suppose, the all-metal structure of an aircraft makes it capable of conducting a surge of electricity associated with a lighting strike without damage or harm to the occupants.

A survey of reported strikes shows that jet aircraft are struck once every 10,400 flight hours, turboprop aircraft once every 3,800 hours and piston aircraft once every 2,500 hours. The reason for these differences, incidentally, is the typical flight altitude of these three types of aircraft. Jets operate typically above the kind of weather which exposes them to lightning. The jet involved in the Elkton accident, of course, was operating at a lower altitude (5000') in preparation for landing.

Until recently, the history of jet operation in lightning discharges shows no confirmed case of sustained damage which would threaten safety. The investigation of an accident involving a Lockheed Constellation aircraft at Milan, Italy, on June 26, 1959, directed suspicion to the possibility of fuel vapor ignition, but left serious doubt as to the

origin of the ignition. In this case, modifications were made to the tank venting system as a precautionary measure.

The certification standards for the Boeing 707 aircraft included a requirement that adequate protection against lightning strikes be provided. Standards were based upon extensive tests and investigations by the manufacturer. All other jet transport aircraft were similarly investigated for adequate protection.

Extensive tests and investigations have been conducted by both industry and government organizations. The FAA and NASA jointly carried out research work which focused on the problem of fuel vent protection.

The preliminary findings from the Elkton accident tell us that we must again review our requirements for protective measures. We are not waiting for the final conclusions from the Board's inquiry. We are moving ahead to apply certain precautionary changes to aircraft in service, and proceeding with a program of investigation and testing to find and evaluate positive protective measures. We are further examining fuel properties, fuel tanks, bonding techniques, vent locations, flame arresters, flame propogation, inerting techniques and skin thickness.

Our Government also has a group of technically qualified representatives of NASA, CAB, USAF, USN, and USWB to serve as a technical committee with FAA on the lightning protection program. This committee is reviewing and monitoring our program, providing guidance in the form of expert advice and serves as a coordinating body to make sure that all facets of the problem are properly explored.

Meanwhile, and again not waiting for all the expert opinions to

come in, we issued on December 13, 1963, a Notice to Airmen which alerted both pilots and traffic controllers to the lightning hazard and encouraged the use of pilot information reports to assist in identifying electrical disturbances.

On December 18, 1963, we recommended to the airlines that static dischargers be installed on all aircraft not so equipped. The static discharger is a slender metal and plastic rod about 8 inches long mounted on the trailing edges of the wing and tail assembly. Dischargers are currently installed on about 75 percent of our jets. While their function is to bleed off electrical charges which create interference with the electronic and radio equipment aboard the aircraft, some persons feel dischargers can reduce to some degree the danger of lightning strikes. Many experts disagree about this. Nevertheless, if the Elkton accident teaches us that lightning can be a hazard, we believe prudence requires the installation of these devices for whatever conceivable protection they may afford.

The Agency's Air Traffic Service and Bad Weather

A problem never very far from any discussion of adverse weather flying concerns the FAA's abilities and responsibilities in assisting pilots to avoid weather conditions in the form of turbulence or electrical storms.

This is a broad subject and I will try to limit my remarks in this area to those aspects in which this Subcommittee has expressed its interest.

The foremost precept -- one which must be clear before there can be real understanding of pilot-controller relationship -- is that the pilot, like a ship captain, is master of his craft and has the ultimate responsibility for all decisions affecting safety in flight. The pilot alone knows his own capabilities, the current weight and fuel availability of his aircraft, as well as any operating peculiarities of that aircraft and its instruments or equipment. He has available through the Weather Bureau and, in the case of airlines, through company forecasters and dispatchers, all the various weather data and forecasts which may affect his flight. He alone has a close-up view (either out the cockpit window or through his airborne radar) of the actual weather he is about to meet. In addition, of course, he has the advantage of the thousands of hours of experience aloft which enable him to add that necessary judgment to make the information useful in the specific situation he faces. Logic as well as the law, therefore, places upon a pilot the final responsibility for the safe operation of his aircraft.

In discharging this responsibility, the pilot is not alone. He operates in a system in which he is the final active, mindful agent or component. The system provides him a great deal of information and technical assistance. The FAA is a responsible part of that system but the FAA does not own nor actually operate air carrier aircraft. The role of the FAA can be likened to that of a system's governor or monitor, because the system is cooperative rather than dictatorial or directed.

As Chairman Oren Harris recently stated, "Government controls can and should go only so far in this area." Airline managers and pilots are properly concerned about their authority and responsibility because they have available the vast resources and facilities of free corporate enterprises. Foremost among these resources, in this context, is the company's own weather and flight information gathering system and its up-to-the-moment familiarity with flight and traffic conditions and requirements. In fact, the release, or dispatch, of an aircraft for a particular flight has always been and can only be the company's responsibility. The Government cannot and should not run the airlines nor make operational decisions. Before a pilot departs from an airport, he receives company clearance from the company's dispatcher. That clearance includes the fullest information available to the company about weather conditions en route and at the destination of the flight. No pilot, therefore, is in the position of taking off without a very extensive briefing on conditions he is likely to meet. The airlines have the responsibility under the regulations for operational control.

Also, by regulation, the pilot in command and the aircraft dispatcher are jointly responsible for preflight planning, delay, and dispatch release of the flight.

The company's dispatcher is responsible under the regulations for monitoring the progress of each flight and the issuance of information necessary for the continued safety of the flight; and for the cancellation or redispatch of a flight, if, in his opinion

or in the opinion of the pilot in command, the flight cannot operate safely as planned. No flight may be started without specific authority from the aircraft dispatcher and no dispatcher may release a flight unless he is thoroughly familiar with the reported and forecast weather along the route to be flown. The dispatcher is required to furnish to the pilot all current information concerning meteorological conditions which may affect the safety of the flight.

The primary role of the FAA controller in this web of coordinated responsibilities and capabilities is to plan and control the air traffic situation so as to assist the pilot in maintaining separation from other aircraft while flying in bad weather. The controller will, to the extent of his time and abilities, provide the pilot with advice and helpful information. But his primary responsibility is in authorizing the flight of aircraft in such a manner that aircraft under his jurisdiction shall be safe from the hazard of collision with each other. His basic concern, therefore, is not only with each aircraft individually, but with the inter-relationship of numbers of aircraft. He must keep the total air situation under surveillance and control while informing and guiding the pilot in command of each aircraft in the system. In other words he is primarily concerned with separating aircraft while the airline is concerned with operating them.

The airspace for which a given air traffic control facility is responsible is divided into small portions based upon anticipated traffic volume. Each segment will contain a portion of the air traffic that will not exceed the capacity of the controller or controller-team responsible for maintaining separation. The traffic load in such a segment may vary from as few as five to as many as twelve aircraft or more in that area at any one time. Some of these aircraft will be navigating along regular routes, with well above the minimum spacing, requiring only routine surveillance. With other aircraft, the controller will be actually spacing from close by traffic or will be giving radar vectors (giving navigational help from his radar scope) requiring careful, almost constant watch of each aircraft.

Not only is the controller's time limited, his present equipment is not ideally suited to weather reporting. Some weather phenomena, such as areas of heavy rain, snow, clouds with high moisture content, and thunderstorm clouds containing large amounts of hail and rain, do show on the scope as large irregular shaped targets like large "blobs."

It is worth emphasizing that from the earliest development of air traffic control radar, the effort has been to minimize or eliminate the "clutter" made by weather -- since aircraft targets are blotted out by such returns. Some weather data does, however, show up on today's air traffic control radars. Some storms, rain showers or clouds can give such a strong radar return that the radar cannot "see" through a storm area and no returns, weather or aircraft, may be received from the area behind the storms.

There is no available electronic device to add radar weather information to a controller's radar scope in a manner which will not limit the ability of a controller to properly track aircraft. We are trying to develop such a device, however, and if successful, it would enable a controller to keep pilots more accurately and precisely informed as to the movement of thunderstorms, areas of heavy precipitation and probable areas of strong turbulence.

Because of our need to identify aircraft on our radars, then, these radars are not the most reliable source of weather data. It is possible to place greater reliance upon the information from the Weather Bureau radars (designed, like the pilot's airborne radar, to detect weather phenomena), from the surface weather observations, and from PIREPS -- weather reports made by pilots in flight. The first two can only give us an indication of where turbulence might be encountered, whereas pilot reports tell us where turbulence (and the relative severity of it) was actually encountered. Even these are far from ideal since they are "spot" reports representing conditions in only a small area and at only the altitudes of the reporting aircraft; further, the effect of turbulence on one pilot in one type aircraft is not necessarily the same as what another pilot, flying at a different speed in a different type aircraft, would experience.

Another problem is the very nature of thunderstorms and turbulence. Individual thunderstorms vary considerably in area, in height, in intensity and in the severity of turbulence encountered. Also these storms move fairly rapidly, are changing in nature as they move, and their precise track is not readily predictable. Turbulence in the storms varies in intensity in different parts of the storm and varies at the

various altitude levels -- but is not confined within the cloud itself. One recent flight encountered very severe turbulence about 30 miles from the storm.

Within these limitations, the controller does what he can. In controlling air traffic, thunderstorms, line squalls, and turbulence are types of weather data that are considered. Normally, however, such information is passed to the pilot for decision as to the proper course of action, and the controller then does everything within his capabilities to help him carry out the necessary action. Except in very severe cases, the controller will not arbitrarily re-route the aircraft or change its altitude unless the pilot requests the action. Not having all the knowledge available to the pilot, nor his vantage point, the controller could easily direct the flight into a far more hazardous situation. When a controller is vectoring an aircraft (providing navigational guidance by radar) he will attempt to give course guidance between the storm returns that do appear on his scope. In those cases where the pilot is doing his own navigation and the controller observes storm returns on his scope, he is limited to advising the pilot and awaiting his decision before turning the pilot off course. Mutual understanding of capabilities and limitations is essential here and we see some opportunity for additional information and education in this area of collaboration.

We have inaugurated a program (with the assistance of Weather Bureau and aircraft operators) of encouraging more frequent pilot reports of thunderstorm activity, lightning and turbulence. With these reports and increased data in these areas from weather observers, particularly Weather Bureau radar operators, controllers will be able to provide pilots with more complete information on such weather conditions. Also, to the extent possible controllers will not clear flight through or holding in areas of strong turbulence or frequent lightning and will do everything possible to aid pilots in avoiding such severe weather conditions. Alternate routes will be suggested by the controller where possible and, other traffic permitting, routes selected by the pilots will be cleared.

Conclusion

In conclusion, Mr. Chairman, we believe progress has been made in aviation safety particularly in the case of jet flight. We also believe that much remains to be done, and, to the best of our ability we are doing what we know can and should be done. At the same time I can say sincerely and gratefully that we welcome your help in defining and solving the problems in the path of perfect safety.

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AS PREPARED FOR DELIVERY BY
N. E. HALABY, ADMINISTRATOR
FEDERAL AVIATION AGENCY
OKLAHOMA CITY PRESS CLUB
AUGUST 3, 1964

CONGRESSMAN STEED, LT. GOVERNOR WINTERS, MR. MOSIER, PRESIDENT FARRELL AND MEMBERS AND GUESTS OF THE OKLAHOMA CITY PRESS CLUB AND SIGMA DELTA CHI.

FOR THE PAST SIX MONTHS, THE GOOD CITIZENS OF OKLAHOMA CITY HAVE BEEN PARTNERS WITH THEIR FEDERAL GOVERNMENT IN AN EXPERIMENT HAVING GREAT TECHNICAL, ECONOMIC, SOCIAL AND POLITICAL RAMIFICATIONS. TOGETHER WE HAVE CROSSED A NEW FRONTIER IN AVIATION AND GLIMPSED THE HARD REALITIES OF LIFE IN THE SUPERSONIC ERA.

NOT ALL OF US, HOWEVER, HAVE CONSIDERED THIS EXPERIMENT NECESSARY AND IMPORTANT. A FEW OF US EVEN LOOK UPON IT AS OUTRAGEOUS.

BUT GREAT ADVANCES IN TRANSPORTATION -- AS IN MANY OTHER FIELDS -- HAVE ALWAYS BEEN VIEWED WITH SUSPICION AND ALARM. THE TRAIN, THE STEAMBOAT, THE HORSELESS CARRIAGE AND THE FLYING MACHINE ALL HAD TROUBLE GAINING THE PUBLIC CONFIDENCE.

EVEN THE COLORFUL OLD STAGECOACH HAD ITS PROBLEMS. ITS CRITICS CHARGED IN THE EARLY DAYS OF OUR NATION THAT THE STAGECOACH WOULD PUT CANAL MEN OUT OF WORK, MEN WHO TRAVELED BY IT WOULD BECOME EFFEMINATE, IT WOULD DESTROY GOOD HORSEFLESH AND, FINALLY, STAGECOACH TRAVELERS WOULD SPEND MORE TIME ON THE ROAD AND LESS DRINKING BEER AND ALE IN THE INNS WHICH WOULD BE DETRIMENTAL TO THE NATIONAL TREASURY.

BUT THE STAGECOACH MANAGED TO SURVIVE THIS OPPOSITION UNTIL A MORE EFFICIENT MEANS OF TRANSPORTATION, THE RAILROAD, BEGAN CROSSING OUR NATION.

AND WHAT FORM OF WELCOME DID THE NOISY, SPEEDY STEAM LOCOMOTIVES RECEIVE? THIS POSTER WHICH APPEARED ON THE STREETS OF PHILADELPHIA MORE THAN A CENTURY AGO WILL GIVE YOU AN IDEA. LET ME READ FROM IT.

"MOTHERS LOOK OUT FOR YOUR CHILDREN! ARTISANS, MECHANICS, AND CITIZENS, WHEN YOU LEAVE YOUR FAMILY IN HEALTH, MUST YOU RETURN HOME TO MOURN A DREADFUL CASUALTY? PHILADELPHIANS, YOUR RIGHTS ARE BEING INVADED! REGARDLESS OF YOUR INTEREST OR THE LIVES OF YOUR LITTLE ONES! THE CAMDEN AND AMBOY, IS LAYING A LOCOMOTIVE

6508

RAILROAD THROUGH YOUR MOST BEAUTIFUL STREETS TO THE RUIN OF YOUR TRADE, ANNIHILATION OF YOUR RIGHTS AND REGARDLESS OF YOUR PROSPERITY AND COMFORT! RALLY PEOPLE IN THE MAJESTY OF YOUR STRENGTH AND FORBID THIS OUTRAGE!"

YET THE PEOPLE OF PHILADELPHIA LEARNED TO LIVE WITH THE CAMDEN AND AMBOY LINE. MORE IMPORTANT, THEY CAME TO ACCEPT IT AND TO USE IT.

THE SAME IS TRUE OF THE AUTOMOBILE AND THE AIRPLANE, IT IS DIFFICULT TO IMAGINE OUR WORLD WITHOUT THESE VEHICLES, FOR TO A GREAT EXTENT THEY HAVE MADE OUR WORLD POSSIBLE.

AND NOW COMES THE SUPERSONIC TRANSPORT BRINGING WITH IT THE CRITICAL PROBLEM OF THE SONIC BOOM. I WOULD LIKE TO DISCUSS TONIGHT WHAT THE SUPERSONIC TRANSPORT MEANS TO THE UNITED STATES AND WHY THE SONIC BOOM RESEARCH PROGRAM WAS NECESSARY.

LET ME BEGIN BY DISPELLING SOME OF THE FALLACIES THAT HAVE DEVELOPED ABOUT THE BOOM PROGRAM HERE IN OKLAHOMA CITY.

FIRST OF ALL, MANY PEOPLE BELIEVE THIS TO BE AN FAA PROGRAM. IT IS NOT. IT IS A NATIONAL GOVERNMENT PROGRAM; IT IS YOUR PROGRAM BECAUSE IT IS YOUR GOVERNMENT.

THIS HAS TRULY BEEN A COOPERATIVE EFFORT IN THE NATIONAL INTEREST. THERE HAS BEEN COOPERATION BETWEEN GOVERNMENT AND THE PUBLIC, GOVERNMENT AND PRIVATE INDUSTRY, AND FINALLY COOPERATION WITHIN GOVERNMENT ITSELF.

THE FEDERAL AVIATION AGENCY MANAGED THE PROJECT FOR THE FEDERAL GOVERNMENT.

THE AIR FORCE FLEW THE BOOM FLIGHTS AND HAS BEEN SETTLING THE CLAIMS.

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION HAS HANDLED THE INSTRUMENTATION AND DATA REDUCTION.

THE NATIONAL ACADEMY OF SCIENCES HAS BEEN PROVIDING SCIENTIFIC AND TECHNICAL ADVICE AND ASSISTANCE THROUGH ITS NATIONAL RESEARCH COUNCIL.

A SECOND MYTH ABOUT THIS PROGRAM IS THAT THE SONIC BOOM IS RELATIVELY UNIMPORTANT TO THE TOTAL SST PROGRAM AND THAT THE RESEARCH COULD BE CONDUCTED IN ISOLATED AREAS.

THIS IS NOT TRUE. IN FACT, JUST LAST WEEK MR. CLARENCE L. "KELLY" JOHNSON, DESIGNER OF THE 2,000 MILE AN HOUR A-11 AND RS-71, SAID "THE SONIC BOOM IS THE GREATEST REMAINING BARRIER TO THE DEVELOPMENT OF A SUCCESSFUL SUPERSONIC TRANSPORT."

MANY SUPERSONIC FLIGHT TESTS ALREADY HAVE BEEN DONE OVER ISOLATED AREAS. IN FACT, THAT IS WHY WE WERE CONFIDENT THAT NO MAJOR DAMAGE AND NO PERSONAL INJURY COULD OCCUR HERE.

THE FEDERAL AVIATION AGENCY WILL BE ASKED TO CERTIFY OUR OWN SST OR THE BRITISH-FRENCH VERSION FOR FLIGHT OVER CITIES AND TOWNS ALL OVER THE UNITED STATES. WE MUST KNOW THE REACTION OF THE CITIES BEFORE WE CAN TAKE THIS ACTION. AND THERE ARE SPECIAL PROBLEMS INVOLVED. THE VERY PRESENCE OF A GREAT MANY BUILDINGS TOGETHER WITH THE ACCUMULATION OF CLOUDS AND HAZE OVER CITIES ARE KNOWN TO AFFECT THE OVERPRESSURES ON THE GROUND.

A THIRD FALLACY THAT YOU MAY HAVE HEARD WAS THAT THE SONIC BOOM TEST OVER OKLAHOMA CITY WAS JUST TO FIND OUT WHETHER PEOPLE COULD ADJUST TO THE SOUND AND HOW MUCH THEY COULD TAKE.

THIS ALSO IS UNTRUE. WE DID NOT COME TO TORTURE BUT TO CONDUCT A CAREFUL SCIENTIFIC EVALUATION.

WE SET OUT TO LEARN MUCH MORE THAN JUST REACTION TO NOISE -- AND WE SUCCEEDED. FOR EXAMPLE, BOEING ENGINEERS HAVE BEEN STUDYING THE RELATIONSHIP OF METEOROLOGICAL FACTORS TO BOOM OVERPRESSURES. LOCKHEED ENGINEERS HAVE BEEN MEASURING TREMORS ON THE SURFACE AS THEY RELATE TO OVERPRESSURES. OF COURSE, MOST OF THIS DATA HAS NOT YET BEEN FULLY ANALYZED BUT WE HOPE TO KNOW HOW WE STAND IN THESE AREAS BY LATE SEPTEMBER.

WE ALSO HAVE BEEN TESTING TO DETERMINE EFFECTS ON SURFACE STRUCTURES. WE RENTED SEVERAL STANDARD HOMES AND INSTRUMENTED THEM TO LEARN IF THERE WERE ADVERSE AFFECTS AS A RESULT OF BOOM OVERPRESSURES. NOW WE DID NOT DO THIS TESTING OURSELVES, BUT WE HIRED A GROUP OF ENGINEERS WHO WERE SPECIALISTS IN THIS.

THESE HOUSES WILL BE OPEN TO THE PUBLIC TOMORROW SO THAT ANYONE WHO WISHES MAY WALK THROUGH THEM AND LOOK FOR SIGNS OF DAMAGE.

WE HAVE LEARNED FROM THIS PROGRAM THAT THERE CAN BE SOME SCATTERED OVERPRESSURES WHICH ARE NOT FULLY CONTROLLABLE OR PREDICTABLE. HOME OWNERS WHO HAVE

SUFFERED DAMAGES ARE "THE PURPLE HEART HEROES OF THIS EXPERIMENT." THEY ARE VERY FEW IN NUMBER BUT THEY MUST BE COMPENSATED. I HAVE ASKED THREE LOCAL CITIZENS TO ADVISE US AND ASSURE US THAT THE CLAIMS PROCEDURES ARE COURTEOUS AND THE PAYMENTS EQUITABLE IN ACCORDANCE WITH STANDARD GOVERNMENT REGULATIONS.

I AM PLEASED THAT A. MARK EUDALEY, DOW GUMMERSON, AND MRS. JOANN MC INNIS, ALL OF OKLAHOMA CITY, HAVE AGREED TO ADVISE ME PERSONALLY ON THIS.

FINALLY, SOME PEOPLE BELIEVE THAT THIS RESEARCH WAS DONE SOLELY FOR THE BENEFIT OF COMMERCIAL AIRLINES.

WHILE IT IS TRUE THE AIRLINES MAY STAND TO LEARN FROM THIS RESEARCH, THE PRINCIPAL BENEFACTORS ARE THE AMERICAN PUBLIC AND THE TRAVELLERS OF THIS UNIVERSE. UNDER THE CURRENT PROPOSAL, THE AIRLINES WILL EVENTUALLY PAY BACK TO THE UNITED STATES GOVERNMENT THE COST OF THE SUPERSONIC PLANES THEY PURCHASE OUT OF REVENUES FROM PASSENGERS WHO ENJOY SUPERSONIC-SWIFT PASSAGE IN THE '70S, '80S, AND '90S. BUT SOMETHING FAR MORE IMPORTANT THAN THIS IS INVOLVED.

A DYNAMIC PART OF THE ECONOMY OF THIS GREAT COUNTRY OF OURS IS AT STAKE IN THE SUPERSONIC AIRCRAFT DEVELOPMENT PROGRAM.

IN THE PAST, THE UNITED STATES HAS BUILT THE AIRLINERS OF THE WORLD. WE KNOW THAT THERE WILL BE SUPERSONIC AIRCRAFT. THE FRENCH AND THE BRITISH ARE WELL ALONG IN THE CONSTRUCTION OF THEIRS AND THE RUSSIANS TOO ARE IN THE COMPETITION. SO THERE IS NO QUESTION ABOUT WHETHER THERE WILL BE A SUPERSONIC AIRCRAFT INDUSTRY, THE ONLY QUESTIONS IS WHETHER IT WILL BE AN AMERICAN INDUSTRY AND WHEN.

THERE ARE SOME 50,000 JOBS A YEAR FOR 10 YEARS INVOLVED IN THIS ONE PROJECT WHICH WILL GENERATE AT LEAST 3 BILLION DOLLARS WORTH OF EXPORTS FOR UNITED STATES INDUSTRY. THIS NUMBER OF JOBS NOT ONLY AFFECTS YOUR POCKETBOOK AND MINE, BUT ALSO IS CLOSELY RELATED TO THE DEFENSE OF OUR COUNTRY. A VIRILE AIRCRAFT BUILDING CAPACITY IS ONE OF OUR BEST DEFENSES IN THE EVENT OF AN EMERGENCY. THE RUSSIANS WOULD INDEED LIKE TO OVERTAKE OUR WORLD AERONAUTICAL SUPREMACY.

FINALLY, THESE TESTS MANIFEST THE CARE AND CONCERN ABOUT THE INDIVIDUAL CITIZEN THAT YOUR GOVERNMENT FEELS. IF WE DIDN'T WORRY ABOUT THE FEELINGS OF PEOPLE, THE

TESTS WOULD HAVE BEEN UNNECESSARY AND ANOTHER HOT ROD OF THE AIR COULD HAVE BEEN BUILT. INSTEAD YOU ARE HELPING YOUR FELLOW AMERICANS DESIGN AND BUILD A SAFE SOUND TRANSPORT THAT WILL SERVE THE WORLD.

SO YOU CAN SEE THAT FROM ALL THIS:

A. A SUPERSONIC TRANSPORT IS RELATED TO THE SURVIVAL OF THE GREAT AERONAUTICAL INDUSTRY IN THIS COUNTRY WHICH AFFECTS OUR POCKETBOOKS.

B. THE SONIC BOOM PROBLEM IS A KEY FACTOR IN THE CONSTRUCTION OF A SUPERSONIC AIRCRAFT.

C. TESTING OVER A POPULATED AREA WAS A VITAL NECESSITY.

A GREAT MANY PEOPLE FEEL THAT WE ARE JUST BEGINNING SOME MIRACULOUS NEW PIONEERING EFFORT WHEN WE TACKLE THE SST AND THEIR CONCLUSION IS THAT THERE IS NO REAL FOUNDATION ON WHICH TO PROCEED. YOU GENTLEMEN KNOW THIS IS NOT SO. WE HAVE BEEN STUDYING SUPERSONIC FLIGHT FOR THIRTY YEARS AND WE HAVE BEEN PRACTICING IT FOR AT LEAST SIXTEEN. THE MILITARY AND NASA HAVE A HUGE FOUNDATION ON WHICH TO BUILD AND MANY THOUSANDS OF HOURS ABOVE MACH ONE (PROBABLY NEARING 200,000 HOURS) AND THERE ARE A NUMBER OF THOUSANDS OF HOURS AT MACH TWO OR ABOVE AND FINALLY A FEW HUNDRED HOURS WELL ABOVE THAT.

I SAY THAT WE DO HAVE A BASIS FOR PROCEEDING VERY LIBERALLY. YET THERE ARE THOSE WHO SAY WE ARE MOVING TOO FAST, WHILE OTHERS PROTEST WE ARE GOING TOO SLOW.

BUT IN VIEW OF ALL THE MANY AND VARIED PROBLEMS INVOLVED IN DESIGNING, BUILDING AND OPERATING AN SST, I THINK OUR PACE IS A SENSIBLE ONE. I CANNOT IMAGINE, FOR EXAMPLE, PROCEEDING WITH THE DEVELOPMENT OF AN SST WITHOUT A COMPANION INVESTIGATION INTO ALL ASPECTS OF THE SONIC BOOM PHENOMENON.

PRODUCING THE FIRST SST IS NOT REALLY AS IMPORTANT AS PRODUCING THE BEST SST. THIS WAS DEMONSTRATED TO BE TRUE WITH THE JETS. THE BRITISH COMET WAS IN THE FIELD SIX FULL YEARS AHEAD OF THE UNITED STATES JETS, YET TODAY AMERICAN MANUFACTURERS COMPLETELY DOMINATE THE FIELD. WE INTEND TO MAINTAIN THAT POSITION WHEN AVIATION GOES SUPERSONIC, AND I AM NOT CONCEDING ANYTHING TO THE BRITISH/FRENCH COMBINE OR THE RUSSIANS EITHER.

IT IS WELL WITHIN OUR TECHNICAL CAPABILITY TO BUILD QUICKLY AN SST WHICH WOULD BE LITTLE MORE THAN A MACH TWO OR MACH THREE FLAG POLE, SPEEDING THE STARS AND STRIPES TO ALL CORNERS OF THE GLOBE FOR PURELY PRESTIGE

PURPOSES. THE RUSSIANS MAY BE ABLE TO AFFORD THIS LUXURY - I DON'T KNOW. I DO KNOW THAT WE CANNOT AFFORD IT. OUR SST MUST BE A SAFE, SANE, OPERABLE, PRACTICAL ECONOMIC VEHICLE FOR TRANSPORTATION. IN OTHER WORDS, WE ARE TALKING ABOUT AN AIRPLANE THAT THE AIRLINES CAN USE -- ONE THEY WILL BUY. ONE THAT WILL BE THE PRIDE OF THE FREE WORLD. A TRAVELING DEMONSTRATION OF THE CAPACITY OF A GREAT DEMOCRATIC NATION. THE PRODUCT OF ITS FREE CITIZENS WORKING TOGETHER.

THIS IS PART OF THE DIFFERENCE BETWEEN A FREE ENTERPRISE SYSTEM AND A SOCIALIZED ONE. CONTRARY TO POPULAR OPINION, THIS GOVERNMENT IS NOT PROPOSING TO BUY A FLEET OF SST'S AND GIVE THEM TO THE AIRLINES TO OPERATE. OUR ROLE IS THAT OF PRIME MOVER AND CATALYST -- AN ADVANCER OF FUNDS. ECONOMIC CONSIDERATIONS ARE VERY IMPORTANT TO US. THE GOVERNMENT MUST INSIST AND WILL INSIST ON RECOVERING ALL OR A LARGE SHARE OF OUR INVESTMENT IN THE SST PROGRAM. I DON'T THINK WE CAN OPERATE ANY OTHER WAY.

OUR SST PROGRAM GOT UNDER WAY JUST ABOUT A YEAR AGO -- LAST AUGUST 15 TO BE EXACT -- WHEN WE ISSUED A REQUEST FOR PROPOSALS TO THE AVIATION INDUSTRY. WE GOT SIX TAKERS AND TWO OF THEM WERE LATER ELIMINATED ON THE BASIS OF THEIR INITIAL DESIGNS. THIS HAS LEFT US WITH BOEING AND LOCKHEED AS THE PRINCIPAL AIRFRAME COMPETITORS AND GENERAL ELECTRIC AND PRATT & WHITNEY IN THE ENGINE AREA.

THESE FOUR CONCERNS ARE NOW WORKING TO REFINE THEIR ORIGINAL DESIGNS UNDER COST-SHARE CONTRACTS TOTALLING $22 MILLION. THIS IS 75/25 PERCENT COST ARRANGEMENT WITH THE GOVERNMENT PICKING UP THE LARGER SHARE.

WIND TUNNEL TESTS OF THE IMPROVED DESIGN MODELS WILL BEGIN BY NOVEMBER 1 AT A NASA RESEARCH CENTER. ALL WORK, BOTH AIRFRAME AND ENGINE IS SCHEDULE FOR COMPLETION BY NOVEMBER 30.

THE GOVERNMENT'S DECISION TO PROCEED WITH THE NEXT PHASE OF THE SST PROGRAM -- THE CONSTRUCTION OF A PROTOTYPE -- WILL BE BASED IN LARGE PART ON THE FEASIBILITY OF THESE DESIGNS. IT WILL BE LEFT TO THE PRESIDENT HIMSELF, TO MAKE THE FINAL DECISION WITH THE COUNSEL OF HIS ADVISORY COMMITTEE ON SUPERSONIC TRANSPORT. I AM A MEMBER OF THIS COMMITTEE AND I REMAIN EXTREMELY OPTIMISTIC.

OKLAHOMA CITY HAS AN ENVIABLE WORLD REPUTATION FOR PIONEERING IN AVIATION. IN THE SMITHSONIAN INSTITUTION - ACROSS FROM MY WASHINGTON OFFICE HANGS THE FIRST SPACE SUIT - IT WAS DESIGNED BY YOUR WILEY POST. EVEN BEFORE THE FIRST SPUTNIK, OKLAHOMANS ESTABLISHED FRONTIERS OF SCIENCE FOUNDATION WHICH LED TO THE NATIONAL DEFENSE EDUCATION ACT FROM WHICH THE WHOLE NATION HAS PROFITED.

AGAIN OKLAHOMANS HAVE RISEN TO THE OCCASION AND CONTRIBUTED TO THE ADVANCEMENT OF AERONAUTICAL SCIENCE.

I'M SURE THAT IN TIME EVEN THOSE WHO OPPOSED THE TEST PROGRAM WILL COME TO FEEL -- ALONG WITH THE "SOONER BOOMERS" -- A <u>DEEP SENSE</u> OF CIVIC PRIDE IN A REALLY SIGNIFICANT AND IMPORTANT ACHIEVEMENT.

I NOTE THAT RALPH SEWELL IS A CANDIDATE FOR NATIONAL PRESIDENT OF SIGMA DELTA CHI. THIS IS A GREAT HONOR - AND ONE THAT IS BEFITTING THE CALIBER OF MASS-COMMUNICATION COVERAGE THAT HAS BEEN GIVEN TO A MOST UNIQUE PROJECT.

IN CONCLUDING, I WOULD LIKE TO READ FROM A CERTIFICATE WHICH WE ARE PRESENTING TO THE CITIZENS OF THIS FINE CITY AS A TOKEN OF OUR APPRECIATION FOR THE ASSISTANCE AND COOPERATION PROVIDED DURING THE SONIC BOOM TESTS:

"THE PEOPLE OF OKLAHOMA CITY, ACTING THROUGH THEIR MAYOR AND THE CITY COUNCIL, HAVE CONTRIBUTED SIGNIFICANTLY TO THE FUTURE OF AVIATION IN THE UNITED STATES BY PARTICIPATING IN SONIC BOOM STUDIES CONDUCTED UNDER THE NATIONAL SUPERSONIC TRANSPORT DEVELOPMENT PROGRAM FROM FEBRUARY 3, THROUGH JULY 31, 1964."

THANK YOU FOR YOUR KIND INVITATION.

# # # # # #

REMARKS PREPARED FOR DELIVERY BY
N. E. HALABY, ADMINISTRATOR
FEDERAL AVIATION AGENCY
AT THE
AMERICAN BAR ASSOCIATION CONVENTION
NEW YORK, NEW YORK
AUGUST 11, 1964

I AM VERY PLEASED TO BE HERE WITH YOU TODAY, ALONG WITH MY GOOD FRIEND STUART TIPTON. FOR BOTH OF US, THE LAW AND AVIATION HAVE BEEN AND ARE THE MAJOR ELEMENTS OF OUR PROFESSIONAL LIVES, AND SO BEING INVITED TO DISCUSS THE NATIONAL SUPERSONIC TRANSPORT DEVELOPMENT PROGRAM BEFORE THIS AUGUST GROUP SEEMS DOUBLY APPROPRIATE.

FOR MY PART, THIS OCCASION ALSO PROVIDES A GRATIFYING CHANGE OF VENUE. A COUPLE OF HOURS AGO, I LEFT AN OFFICE GEARED TO THE DAILY CHALLENGE OF OPERATING, AND IMPROVING, THE WORLD'S LARGEST AIRWAYS SYSTEM; AND IMPROVING THE AERONAUTICAL BREED; AND HELPING TO ASSURE THE SAFETY OF OPERATIONS AND MAINTENANCE OF ALL TYPES OF AIRCRAFT, IN ALL MANNER OF CONDITIONS, AROUND THE WORLD, DAY AND NIGHT, 365 DAYS EACH YEAR. TO DO THIS JOB, OF COURSE, WE HAVE MANY THOUSANDS OF SKILLED AND DEDICATED FEDERAL AVIATION AGENCY PERSONNEL SERVING ACROSS THE COUNTRY AND AROUND THE WORLD--AND I OFTEN FEEL THAT I PERSONALLY NEED EVERY LAST ONE OF THEM.

BY CONTRAST, AFTER THE SHORT FLIGHT FROM WASHINGTON, I NOW FIND MYSELF BACK IN THE LEATHERY LEGAL ATMOSPHERE OF DISCUSSION AND DEBATE AFFORDED BY THIS IMPORTANT ANNUAL FORUM. AS MUCH AS A POLITICAL, AND TECHNICAL, MANAGER MAY SAVOR THE CHALLENGE OF HIS DAILY TASKS, IT IS NEVERTHELESS DELIGHTFUL TO PAUSE FOR A MOMENT AT A FORENSIC OASIS IN THE COMPANY OF MY FELLOWS IN THE LAW. AND, IN ADDITION, NO RESPECTABLE ATTORNEY COULD HELP BUT ENJOY THE OPPORTUNITY FOR VERBAL VIRTUOSITY THAT YOU HAVE EXTENDED TO ME TODAY.

AS A CALIFORNIAN, I ALSO ALWAYS ENJOY VISITING THE GREAT STATE OF NEW YORK, THE SECOND MOST POPULOUS IN THE NATION AND CERTAINLY ONE OF THE MOST INFLUENTIAL.

NEW YORK CITY, I MIGHT OBSERVE MORE SERIOUSLY, SURROUNDED BY A COMPLEX OF GREAT AIRPORTS, IS THE WORLD'S BUSIEST HUB FOR AIR COMMERCE. AS SUCH, IT IS SERVED BY SOME OF OUR MOST THOROUGHLY OCCUPIED AND MOST TALENTED FEDERAL AVIATION AGENCY AIR TRAFFIC CONTROLLERS, WHO GUIDE THE AIRLINERS OF THE WORLD'S CIVIL CARRIERS, AS WELL AS OTHER TYPES OF TRAFFIC, IN AND

OUT OF THE AREA. MY OWN LOS ANGELES, I SHOULD ADD, RANKS RIGHT WITH NEW YORK AS A TRAFFIC CENTER FOR THE WONDERFUL FAMILY OF FLYING MACHINES THAT HAVE BECOME SUCH AN ESSENTIAL PART OF MODERN HUMAN LIFE OVER THE PAST SIXTY YEARS.

MY PRIMARY PURPOSE IN COMING HERE TODAY IS TO DISCUSS THE SUPERSONIC TRANSPORT PROGRAM, AND I WOULD LIKE TO ACQUAINT YOU GENTLEMEN IN SOME DETAIL WITH A PROGRAM THAT PRESIDENT JOHNSON HAS DESCRIBED AS "A VAST NATIONAL UNDERTAKING." PRESIDENT KENNEDY, AS YOU WILL RECALL, RECOMMENDED THIS PROGRAM TO THE CONGRESS EARLY IN 1963 AS "ESSENTIAL TO A STRONG AND FORWARD LOOKING NATION." HE ALSO CALLED IT "THE CHALLENGING NEW FRONTIER IN COMMERCIAL AVIATION."

DURING THE TWO YEARS BEFORE PRESIDENT KENNEDY UTTERED THESE WORDS, A CONCERTED PROGRAM OF GOVERNMENT AND INDUSTRY SUPERSONIC TRANSPORT RESEARCH HAD BEEN PUSHED FORWARD. SINCE THEN, THERE HAS BEEN INTENSIVE DESIGN WORK BY THE MANUFACTURING INDUSTRY, WHICH HAS BEEN INTERESTED IN THIS AREA FOR SOME YEARS, AND CONTINUING RESEARCH, DEVELOPMENT AND STUDY. IN ALL, THE GOVERNMENT HAS EXPENDED APPROXIMATELY $50 MILLION IN THE NATIONAL SUPERSONIC TRANSPORT DEVELOPMENT PROGRAM, INCLUDING PRESENT ENGINE AND AIRFRAME DESIGN UNDER CONTRACT, IN WHICH THE FOUR COMPANIES CONCERNED ARE MEETING 25 PER CENT OF COSTS. INDUSTRY HAS SPENT MILLIONS IN ADDITION TO THIS TOTAL, AND THE OVER-ALL GOVERNMENT INVESTMENT INCLUDES RELATED PROGRAMS BY THE FAA, THE DEPARTMENT OF DEFENSE, AND THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

OUT OF ALL THIS, I BELIEVE THE QUESTION NATURALLY ARISES, "WHERE DO WE STAND NOW?" THE ANSWER IS THAT FOUR OF OUR MAJOR INDUSTRIAL COMPANIES ARE NOW PROCEEDING MOST DETERMINEDLY WITH ADVANCED DESIGNS. TWO OF THEM ARE AIRFRAME, OR AIRPLANE, COMPANIES -- BOEING AND LOCKHEED. TWO ARE ENGINE BUILDERS -- GENERAL ELECTRIC AND THE PRATT & WHITNEY DIVISION OF UNITED AIRCRAFT. THESE COMPANIES AND TWO OTHERS SUBMITTED THEIR INITIAL DESIGNS AT THE START OF THE YEAR, IN RESPONSE TO A REQUEST FOR PROPOSALS -- RFP -- MADE AVAILABLE BY THE FEDERAL AVIATION AGENCY IN THE SUMMER OF 1963.

THIS RFP, ESTABLISHING DESIGN AND PERFORMANCE OBJECTIVES, WAS PREPARED BY FAA IN A PAINSTAKINGLY AND IMAGINATIVELY COORDINATED EFFORT WITH OTHER GOVERNMENT AGENCIES AND INDUSTRY. IT SOUGHT TO ESTABLISH FIRM ENOUGH GUIDELINES SO THAT WE DID NOT FIND COMPANIES RESPONDING WITH VAGUE BROCHURES IN FULL COLOR, BUT AT THE SAME TIME FLEXIBLE ENOUGH SO THAT THE GOVERNMENT WOULD NOT "DESIGN THE AIRPLANE." GOVERNMENT'S INTEREST, HERE AS ELSEWHERE IN THIS PROGRAM, IS TO STIMULATE AND ASSIST -- WHICH INCLUDES FINANCING AS APPROPRIATE -- NOT DESIGN, BUILD, SELL OR OPERATE.

THE INITIAL DESIGN PROPOSALS, WHEN THEY CAME IN, WERE TURNED OVER FOR ANALYSIS AND EVALUATION TO A GOVERNMENT AVIATION ALL-STAR TEAM. PERHAPS BLUE-RIBBON JURY WOULD BE MORE FITTING TERMINOLOGY IN THIS COMPANY. AT ANY RATE, THE MEMBERSHIP WAS MADE UP OF MEMBERS FROM FOUR CIVILIAN GOVERNMENT AGENCIES AND TWO MILITARY SERVICES. THERE WERE 210 MEMBERS IN ALL, REPRESENTING SPECIALIZED AREAS--TECHNICAL, OPERATIONAL, ECONOMICS, AND SO FORTH.

AT THE SAME TIME, TEN OF THE NATION'S AIRLINES, INCLUDING ALL OF THE MAJOR LONG-HAUL OPERATORS, EACH ALSO RECEIVED COPIES OF THE THREE AIRFRAME AND THREE AIRCRAFT ENGINE DESIGN PROPOSALS. THEY CONDUCTED THEIR OWN INDEPENDENT EVALUATIONS IN EACH INSTANCE.

AIRLINE PARTICIPATION IS, NATURALLY, A KEY ELEMENT IN THE UNITED STATES SUPERSONIC TRANSPORT PROGRAM. THE CARRIERS WOULD BE THE ULTIMATE USERS OF THE AIRPLANES, AND THEIR VERY EARNEST CONCERN TO HAVE A GOOD, SOUND, SAFE, EFFICIENT, ECONOMICAL PLANE TO OPERATE CLOSELY COMPLEMENTS THE GOVERNMENT'S CONCERN IN THESE PARTICULARS. THERE MAY BE SOME WHO FEEL THAT THESE ARE EVEN MORE SERIOUS CONCERNS FOR THE AIRLINES -- SINCE, AFTER ALL, AIRLINES CAN ACTUALLY LOSE MONEY, OR EVEN GO OUT OF BUSINESS, IF THEY ARE FLYING A BAD AIRPLANE. THE GOVERNMENT IS NOT LIKELY TO SUFFER IN EITHER OF THESE WAYS -- AT LEAST, IT DOESN'T APPEAR LIKELY.

I CAN WELL TELL YOU, HOWEVER, THAT THE AIRLINES, THE GOVERNMENT, AND THE MANUFACTURERS ALL FEEL THE GREATEST CONCERN FOR THE SUCCESS OF THIS PROGRAM, WHICH MEANS DEVELOPMENT OF A GOOD, SAFE, COMMERCIAL AIRPLANE. THIS IS A PROGRAM THAT, <u>IF</u> THE RIGHT DESIGNS ARE PREPARED.

AND IF THE DEVELOPMENT PROGRAM GOES FORWARD SATISFACTORILY, AND IF THE PLANE IS THEREFORE CERTIFICATED FOR COMMERCIAL SERVICE, AND IF IT IS OPERATED WITH WISDOM AND GOOD FORTUNE -- THEN, THIS IS A PROGRAM THAT WILL NOT ONLY PLACE A FEATHER IN THE CAP OF YANKEE DOODLE DANDY, BUT DOLLARS IN HIS NATIONAL TREASURY AND THE POCKETS OF INDUSTRY AND LABOR. AND BY PROVIDING SAFE AND EXTREMELY SWIFT TRANSPORTATION IN THE NEXT GENERATION OF AIRLINERS, IT WILL SERVE BOTH PASSENGERS AND AIRLINES AROUND THE WORLD. IT WILL ALSO, REALLY, BE FURTHERING THE PROGRESS OF MANKIND IN THE ETERNAL STRUGGLE TO OVERCOME TIME AND DISTANCE.

SO, IN THE BROADEST SENSE, THIS IS A PROGRAM IN THE NATIONAL INTEREST, AND PERHAPS IN THE INTERNATIONAL INTEREST. IT DOES NOT SERVE ONE SEGMENT OF OUR SOCIETY, NOR IS CONCERN FOR ITS CONDUCT AND SUCCESS CONFINED TO ANY SPECIFIC SEGMENT.

EACH OF THE WORKING PARTNERS, GOVERNMENT AND THE MANUFACTURING INDUSTRY AND THE AIRLINES, THEN, WAS A PARTICIPANT IN THE INITIAL DESIGN-EVALUATION PROCESS THAT WE SAW EARLY THIS YEAR.

AT THE CONCLUSION OF THIS EVALUATION BY THE GOVERNMENT AND THE AIRLINES, MR. TIPTON'S AIR TRANSPORT ASSOCIATION, ACTING FOR ITS TEN MEMBERS THAT PARTICIPATED, ISSUED A STATEMENT RECOMMENDING THAT THE NATION GO FORWARD WITH TWO AIRFRAME AND TWO ENGINE CONTRACTS. THEY TERMED THE INITIAL DESIGN PROPOSALS "PROMISING." THE AIRLINES THUS SUGGESTED THEY SAW HOPE THAT THE SUPERSONIC SEVENTIES WILL NOT BE DOMINATED SOLELY BY AIRCRAFT PRODUCED ABROAD -- IN PARTICULAR, THE CONCORDE SST THAT OUR BRITISH AND FRENCH FRIENDS ARE JOINTLY DEVELOPING IN AN ENTERPRISE THAT BRIDGES FOUR COMPANIES, TWO GOVERNMENTS, AND A 21-MILE-WIDE STRIP OF WATER.

THE EVALUATION FINDINGS BY BOTH GOVERNMENT AND INDUSTRY WERE STUDIED BY THE PRESIDENT'S ADVISORY COMMITTEE ON SUPERSONIC TRANSPORT, HEADED BY THE SECRETARY OF DEFENSE, AND OF WHICH I AM A MEMBER. AND I PERSONALLY REVIEWED THEM IN MY CAPACITY BOTH AS FAA ADMINISTRATOR AND THE AVIATION ADVISOR TO THE PRESIDENT.

THE PRODUCT OF THESE DELIBERATIONS, IN WHICH THE AIRLINES WERE ONCE AGAIN CONSULTED, WAS THE DECISION TO SELECT THE CURRENT TWO AIRFRAME AND TWO ENGINE

COMPANIES TO CONTINUE THEIR EFFORTS TO ACHIEVE OPTIMUM DESIGNS FOR AN SST. THE COMPANIES, WHICH HAD CONTINUED THEIR WORK AFTER SUBMITTING THE INITIAL PROPOSALS, NOW ARE CALLED UPON TO PUT THE PRODUCTS OF THEIR EFFORTS BEFORE US AGAIN TOWARD THE END OF THIS YEAR.

AMONG OTHER THINGS, THE AIRFRAME CONTRACTORS WILL BE MAKING WIND TUNNEL MODELS OF THEIR REFINED DESIGNS AVAILABLE FOR AERODYNAMIC ANALYSES. THE ENGINE MAKERS ARE PERFORMING DEVELOPMENTAL AND EXPERIMENTAL TESTING OF THEIR COMPONENTS -- COMPRESSOR, COMBUSTOR, TURBINE, AUGMENTOR -- AND PERFORMING SOME TYPES OF STATIC WIND TUNNEL TESTS.

THE THEME OF THIS WORK BY ALL FOUR COMPANIES IS OPTIMUM SAFETY AND ECONOMIC CHARACTERISTICS FOR THEIR DESIGNS IN DEVELOPMENT, PRODUCTION, AND OPERATION. FOR THE ENGINE MANUFACTURERS, FURTHER, THERE IS CONCENTRATION ON NOISE SUPPRESSION TECHNIQUES, AN EXTENSION OF WORK IN THIS DIFFICULT AREA THAT HAS GONE ON FOR SOME YEARS.

ONCE AGAIN POINTING UP THE COORDINATED NATURE OF THE OVER-ALL NATIONAL PROGRAM, THE AIRFRAME MANUFACTURERS ARE IN FREQUENT CONSULTATION WITH THE ENGINE MANUFACTURERS AS THIS WORK GOES FORWARD. BOTH AIRFRAME AND ENGINE MANUFACTURERS ARE IN FREQUENT CONSULTATION WITH THE GOVERNMENT AND THE AIRLINES.

WHEN THESE DESIGN CONTRACTS COME TO AN END ON NOVEMBER 30, THERE WILL ONCE AGAIN BE A PAUSE TO CONSIDER THE BEST FUTURE COURSE FOR THIS COUNTRY'S PROGRAM. ONCE AGAIN THE DESIGNS WILL BE JUDGED. THERE WILL ALSO BE FINDINGS TO JUDGE FROM SONIC BOOM RESEARCH AND ECONOMIC STUDIES IN WHICH THE DEPARTMENT OF COMMERCE IS A CENTER OF ACTIVITY.

UNDER THESE CONDITIONS, I CERTAINLY DO NOT WISH TODAY TO PREJUDGE OR PREDICT THE OUTCOME OF THE DESIGN WORK. I CAN SAY THIS, HOWEVER. I AM QUITE FAMILIAR WITH THE MANUFACTURERS' CONTINUING PROGRESS. I BELIEVE IT TO BE EXTREMELY ENCOURAGING. THE DECISION AS TO WHERE WE GO AFTER THESE CONTRACTS WILL, OF COURSE, HAVE TO BE MADE ONLY AFTER FULL ANALYSES OF DESIGNS FOLLOWING THE CONTRACT PERIOD. THAT IS WHAT FULL ANALYSES ARE FOR.

WHEN WILL A UNITED STATES SUPERSONIC TRANSPORT

BE FLYING, YOU MAY ASK. THE ANSWER IS, OF COURSE, WHOLLY DEPENDENT ON JUDGMENTS OF DESIGN AND OTHER FACTORS THAT LIE IN THE FUTURE. THE BEST AVAILABLE ANSWER, HOWEVER, MAY BE FROM THE TWO AIRFRAME COMPANIES NOW DOING DESIGN WORK. BOEING AND LOCKHEED HAVE EACH INDICATED THAT A PLANE COULD BE CARRYING PASSENGERS, IN THEIR VIEW, IN 1971 IF THE U.S. PROGRAM MOVED AHEAD AT ALL DELIBERATE SPEED. THE GOVERNMENT HAS NOT ESTABLISHED A SPECIFIC TARGET DATE FOR ENTRY OF AN AIRPLANE INTO SERVICE. BUT WE HAVE FELT THAT THIS SAME TIME PERIOD IN THE EARLY 1970'S WOULD BE THE NATURAL AND REASONABLE TARGET AREA.

BRITAIN AND FRANCE, IN THEIR SST PROJECT, ARE AIMING AT INITIAL DELIVERY OF AIRCRAFT TO AIRLINES BEGINNING IN 1971. THEY ARE DEVELOPING A SUPERSONIC TRANSPORT THAT IS SOMEWHAT SMALLER AND SLOWER, AND HAS LESS RANGE THEN THE AMERICAN MODEL. THEY REACHED A DECISION ON THEIR DESIGN SOMETIME AGO, BUT FOUND IT DESIRABLE TO BEEF UP THE DESIGN IN SOME REGARDS MORE RECENTLY. THEY HAVE ANNOUNCED AN INCREASE IN SIZE, CAPACITY, AND RANGE. IN ADDITION, THEY HAVE APPARENTLY REVISED UPWARD BOTH ESTIMATES OF DEVELOPMENT COSTS AND PLANNED UNIT COST FOR AIRLINES.

WE ARE NOT IN A RACE WITH OUR ALLIES ACROSS THE ATLANTIC. NATURALLY, THERE IS A SENSE OF COMPETITION, JUST AS THERE HAS BEEN COMPETITION IN MOST FIELDS WHERE MAN HAS ACHIEVED ANY PROGRESS OVER THE YEARS. CERTAINLY THERE HAS ALWAYS BEEN A SPIRITED COMPETITION WITHIN AVIATION. IT IS A FIRM ELEMENT OF OUR NATIONAL FAITH IN THIS COUNTRY THAT COMPETITION WITHIN REASONABLE LIMITS BREEDS PROGRESS, AND I HOPE THAT QUANTITY AND QUALITY OF COMPETITION NATIONALLY AND INTERNATIONALLY DOES NOT DIMINISH WITH TIME.

ON THE OTHER HAND, WE ARE NOT DESPERATELY CHARGING AHEAD IN A TRANSATLANTIC RACE. OUR FEELING FROM THE VERY START OF THE UNITED STATES PROGRAM SOME THREE-AND-A-HALF YEARS AGO HAS BEEN THAT WE MIGHT WELL NOT BE THE FIRST NATION TO FLY A SUPERSONIC TRANSPORT, BUT WHEN WE DID, WE WOULD WANT IT TO BE THE BEST SST IN THE AIR IN SPEED, SAFETY, ECONOMICS, AND SO FORTH.

WE ARE THEREFORE MOVING AHEAD WITH DELIBERATE SPEED, WITH PAINSTAKING RESPECT FOR THE TECHNICAL FACTORS

INVOLVED, AND FOR THE INVESTMENT OF NATIONAL RESOURCES INVOLVED IN A FULL-SCALE DEVELOPMENT THAT HAS BEEN ESTIMATED AT $1 BILLION. NOR WOULD WE WANT TO SEE THE AIRLINES IN THE POSITION OF REACHING DOWN FOR PERHAPS $25 MILLION PER AIRCRAFT FOR AN SST THAT DIDN'T QUITE MAKE IT.

TO BRING YOU UP TO DATE ON ANOTHER ELEMENT OF THE UNITED STATES SST PROGRAM, TWENTY OF THE WORLD'S AIRLINES HAVE ALREADY RESERVED NINETY-ONE DELIVERY POSITIONS FOR A UNITED STATES SST. THIS INCLUDES THIRTEEN OVERSEAS FLAG CARRIERS AND SEVEN U.S. CARRIERS, AND THERE IS ALSO ONE AIRCRAFT LEASING COMPANY IN WASHINGTON. FOR THESE RESERVED POSITIONS, THESE COMPANIES HAVE PLACED $9.1 MILLION IN "EARNEST" MONEY IN THE UNITED STATES TREASURY.

THE GOVERNMENT BEGAN ACCEPTING THESE REQUESTS FOR RESERVATIONS LAST AUTUMN. AIRLINES THAT WISHED TO SECURE POSITIONS ON THE DELIVERY LINE FOR THE U.S. PLANE WERE UNABLE TO DEAL WITH A MANUFACTURER BECAUSE THERE WAS NOT, NOR IS THERE NOW, ANY FINAL DESIGN SELECTION. IN THESE CIRCUMSTANCES, THE GOVERNMENT STEPPED IN TO ACT AS INTERMEDIARY IN THIS REGARD UNTIL A SELECTED MANUFACTURER APPEARS ON THE SCENE.

ACROSS THE ATLANTIC, NINE CARRIERS ARE REPORTED TO HAVE RESERVED FORTY-FIVE DELIVERY POSITIONS FOR THE CONCORDE. FOUR OF THESE ARE AMERICAN CONCERNS, THREE OF WHICH ALSO HAVE RESERVATIONS FOR A U.S. PLANE. TWO ARE AIR FRANCE AND BOAC, WHICH ALSO HAVE RESERVATIONS FOR THE AMERICAN SST. IN ALL, THERE ARE 136 SST'S RESERVED ON BOTH SIDES OF THE WATER, AND I THINK THIS IS A PRETTY SOLID INDICATION OF AIRLINE INTEREST IN FLYING THIS AIRPLANE WHEN IT COMES OFF THE PRODUCTION LINE.

LET US EXAMINE THE MANAGEMENT ASPECTS OF THE NATION'S SUPERSONIC TRANSPORT PROGRAM. I THINK IT IS AN EXTREMELY INTERESTING GOVERNMENTAL ORGANIZATION, PERHAPS UNPRECEDENTED IN SOME PARTICULARS. ALL OF THE GOVERNMENT AGENCIES CONCERNED WITH AVIATION ARE PARTICIPANTS, EACH PROVIDING ACCORDING TO ITS ABILITIES AND COMPETENCE IN RESEARCH, OPERATIONAL EXPERIENCE, ECONOMICS, TEST FLYING PROGRAMS, AND SO ON. THE FAA HAS THE BROAD OVER-ALL MANAGEMENT RESPONSIBILITY IN A PROGRAM THAT, IN ESSENCE, IS DESIGNED TO DRAW UPON THE BEST OF THE AVIATION RESOURCES

OF THE NATION IN BOTH GOVERNMENT AND INDUSTRY.

THE RECENTLY CONCLUDED STUDY OF THE SONIC BOOM PROBLEM IN THE OKLAHOMA CITY METROPOLITAN AREA PROVIDES A TYPICAL EXAMPLE OF THIS COORDINATED GOVERNMENTAL RELATIONSHIP IN PRACTICE. THE FEDERAL AVIATION AGENCY SET UP AND CONDUCTED THIS SIX-MONTH PROGRAM TO STUDY THE PUBLIC ACCEPTABILITY OF BOOMS AT THE INTENSITIES NOW EXPECTED FOR OPERATIONS OF BOTH THE BRITISH-FRENCH AND AMERICAN SST'S. AIR FORCE JET AIRCRAFT FLEW THE SUPERSONIC RUNS OVER THE CITY, EIGHT A DAY, TO GENERATE CONTROLLED BOOMS FOR THE STUDY. THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION PROVIDED TECHNICAL GUIDANCE AND OVER-ALL SUPPORT.

THE FINDINGS OF THIS STUDY PROGRAM -- IN TERMS OF THE NATURE OF THE BOOM PHENOMENON ITSELF, PUBLIC REACTION, AND STRUCTURAL EFFECTS -- ARE BEING ANALYZED AND EVALUATED NOW, SO THAT NO ANNOUNCEMENT OF CONCLUSIONS OR RESULTS AT THIS POINT IS POSSIBLE.

THE SONIC BOOM POSES A REAL CHALLENGE TO DEVELOPMENT AND OPERATION OF SUPERSONIC TRANSPORTS, AND THE UNITED STATES GOVERNMENT IS DETERMINED THAT SST OPERATION NOT PROVIDE A SOCIAL NUISANCE TO GROUND POPULATIONS. IN THIS CONTEXT, THE OKLAHOMA CITY PROGRAM HAS BEEN AN EXTREMELY IMPORTANT ONE FOR THE SST PROGRAMS HERE AND ABROAD. I DON'T KNOW WHETHER THE RUSSIANS HAVE BEEN PAYING TOO MUCH ATTENTION TO THE ACTION OVER OKLAHOMA CITY IN THE SST DEVELOPMENT PROGRAM THAT THEY ARE UNDERSTOOD TO BE PURSUING. BUT I DO KNOW THAT OFFICIALS OF THE BRITISH-FRENCH PROGRAM HAVE BEEN AS VITALLY CONCERNED AS WE ARE OURSELVES.

YOU ARE UNDOUBTEDLY INTERESTED IN SOME ASPECTS OF THIS OKLAHOMA CITY STUDY, AND HAVE READ VARIOUS REPORTS FROM THESE. AS YOU MAY KNOW, SOME OF THE CITIZENS OF OKLAHOMA CITY OPPOSED TO THIS STUDY PROGRAM WENT INTO FEDERAL COURT TO ATTEMPT TO HAVE THE COURT ORDER THE BOOM RUNS STOPPED. THE SUIT WAS DISMISSED IN UNITED STATES DISTRICT COURT IN OKLAHOMA CITY.

I THINK IT MIGHT BE OF SPECIAL INTEREST TO YOU IF I READ FROM BOTH THE FINDINGS OF FACT AND THE CONCLUSIONS OF LAW IN THAT COURT.

THERE WERE TWENTY-FIVE FINDINGS OF FACT THAT INCLUDED THE FOLLOWING:

1. PRIOR TO THE COMMENCEMENT OF THE TEST PROGRAM AT OKLAHOMA CITY, THE GOVERNMENT HAD ESTABLISHED THAT SONIC BOOM OVERPRESSURES OF 120 POUNDS PER SQUARE FOOT WERE NOT INJURIOUS OR PREJUDICIAL TO THE SAFETY OR HEALTH OF INDIVIDUALS AND THAT NO PAIN WHATSOEVER WAS EXPERIENCED BY HUMAN BEINGS AT LESS THAN 40 POUNDS PER SQUARE FOOT.

2. THE SONIC BOOM TESTS AT OKLAHOMA CITY ARE ESSENTIAL TO THE DETERMINATION OF THE OPERATING REQUIREMENTS AND FINAL DESIGN SPECIFICATIONS OF THE SST.

3. THE SONIC BOOM TESTS AT OKLAHOMA CITY, HAVE BEEN AND ARE BEING CONDUCTED ON A REASONABLE BASIS.

4. THE ARMED FORCES ARE RECEIVING INFORMATION FROM THE SUPERSONIC TEST PROGRAM AT OKLAHOMA CITY WHICH IS USEFUL TO THE DEFENSE EFFORTS OF THE UNITED STATES.

5. THE FAA'S CLAIMS PROGRAM HAS BEEN IN FORCE SINCE THE INCEPTION OF THE TESTS. CLAIMS FOR BOTH ALLEGED PROPERTY AND PHYSICAL DAMAGE ARE PROCESSED SPEEDILY.

6. INSTRUMENTS PLACED BY FAA AT THE FOUR WIDELY OPERATED SITES IN OKLAHOMA CITY ESTABLISHED THAT THE SONIC BOOM TESTS HAVE NO NOTICEABLE EFFECT ON THE STRUCTURES OF THE BUILDINGS IN OKLAHOMA.

7. PLAINTIFFS HAVE ESTABLISHED ONLY THAT MINOR PROPERTY DAMAGE IN A FEW INDIVIDUAL INSTANCES HAVE BEEN CAUSED BY THE SONIC BOOM TESTS AT OKLAHOMA CITY.

8. PLAINTIFFS HAVE NOT ESTABLISHED THAT THEY HAVE SUFFERED ANY PHYSICAL OR MENTAL HARM OR THAT ANY SUCH HARM ALLEGED BY THEM IS CAUSALLY RELATED TO THE SONIC BOOM TESTS. SUCH PHYSICAL OR MENTAL EFFECTS AS THEY HAVE ESTABLISHED AMOUNT AT MOST TO A SLIGHT INCREASE IN THE STRESS, IRRITATION AND INCONVENIENCE INEVITABLY ATTENDANT UPON LIVING IN A COMPLEX, MECHANIZED SOCIETY, WHICH INCREASE MIGHT BE TRACEABLE TO ANY OF A GREAT NUMBER OF FACTORS OTHER THAN THE SONIC BOOM TESTS.

9. THE DEFENDANTS' EXPERT MEDICAL TESTIMONY ESTABLISHES THAT THE SONIC BOOM TESTS NEITHER CAUSED, NOR COULD CAUSE, ANY INJURY TO THE HEALTH OF OKLAHOMA CITY RESIDENTS. FURTHER THIS TESTIMONY ESTABLISHES THAT THE TESTS NEITHER DID, NOR COULD, AGGRAVATE OR PRECIPITATE ANY PRE-EXISTING OR LATENT PHYSICAL, MENTAL,

PSYCHOLOGICAL OR NEUROLOGICAL CONDITION OF OKLAHOMA CITY RESIDENTS. (THIS UNCONTRADICTED TESTIMONY WAS GIVEN BY OUTSTANDING, LOCAL MEDICAL AUTHORITIES, WHOSE OPINIONS WERE BASED, AMONG OTHER THINGS, UPON A WIDE OBSERVATION AND STUDY OF PERSONS LIVING WITHIN THE OKLAHOMA CITY AREA DURING THE TEST PERIOD.)

THE CONCLUSIONS OF LAW WERE AS FOLLOWS:

1. 49 U.S.C. 1353 (B) AUTHORIZES FAA TO CONDUCT TESTS WHICH TEND TO THE CREATION OF IMPROVED AIRCRAFT AND DO NOT DEPRIVE THE RESIDENTS IN THE COMMUNITY OR COMMUNITIES INVOLVED OF DUE PROCESS OF LAW.

2. THE DUE PROCESS GUARANTY OF THE FIFTH AMENDMENT DEMANDS ONLY THAT THE LAW SHALL NOT BE UNREASONABLE, ARBITRARY, OR CAPRICIOUS, AND THAT THE MEANS SELECTED SHALL HAVE A REAL AND SUBSTANTIAL RELATION TO THE OBJECT SOUGHT TO BE ATTAINED. PORTER V. SHIBE, 158.2D 68, 73 (LOTH CIR. 1946).

3. THE SST IS AN IMPROVED AIRCRAFT WITHIN THE MEANING OF 49 U.S.C. 1353 (B).

4. THE FAA'S PROGRAM OF SONIC BOOM TESTS AT OKLAHOMA CITY ARE NECESSARY PRE-REQUISITES TO THE DESIGN AND CONSTRUCTION OF THE SST AND HAVE NOT CAUSED ANY SIGNIFICANT HARM TO THE RESIDENTS OF OKLAHOMA CITY.

5. THE FAA'S PROGRAM OF SONIC BOOM TESTS AT OKLAHOMA CITY IS REASONABLE UNDER ALL THE CIRCUMSTANCES AND HAS NOT DEPRIVED AND DOES NOT DEPRIVE THE PLAINTIFFS OF DUE PROCESS OF LAW.

6. SINCE 49 U.S.C. 1353 (B) AUTHORIZES THE SONIC BOOM TESTS IN QUESTION AND DOES NOT OFFEND DUE PROCESS, THE SUIT IS AN UNCONSENTED SUIT AGAINST THE UNITED STATES AND ACCORDINGLY THE COURT IS WITHOUT JURISDICTION.

7. IF THE COURT WERE DEEMED TO HAVE JURISDICTION, THE COURT WOULD STILL BE COMPELLED TO GRANT JUDGMENT TO THE DEFENDANTS BECAUSE THE PLAINTIFFS HAVE FAILED TO ESTABLISH IRREPARABLE INJURY, THE PLAINTIFFS HAVE AN ADEQUATE REMEDY AT LAW, AND THE PLAINTIFFS HAVE FAILED TO ESTABLISH THEIR RIGHT TO EQUITABLE RELIEF.

THERE ARE A FEW FURTHER ELEMENTS IN THIS SUPERSONIC TRANSPORT PROGRAM THAT I MIGHT MENTION BRIEFLY TO YOU.

ONE IS IN THE FIELD OF AIRWORTHINESS, A TERM SYNONYMOUS WITH SAFETY OF DESIGN AND OPERATION. HERE OUR PEOPLE, AND THEIR COUNTERPARTS ABROAD, BEGAN WORK

SOME THREE YEARS AGO ON DEVELOPING ADEQUATE SAFETY AND PERFORMANCE STANDARDS. ALL AIRCRAFT, BEFORE ENTERING SERVICE, UNDERGO A RUGGED PERIOD OF GROUND AND FLIGHT TESTING LEADING TO FAA CERTIFICATION FOR SERVICE. RIGOROUS SAFETY STANDARDS MUST ALWAYS BE MET FOR A PLANE TO BE APPROVED FOR SERVICE.

THE PROCESS OF DEVELOPING THESE STANDARDS FOR SUPERSONIC TRANSPORTS BEGAN IN 1961, SOME TEN YEARS BEFORE SUCH AIRCRAFT MIGHT ENTER SERVICE.

I THINK THAT I CAN PROMISE THE SUPERSONIC TRANSPORT WILL BE THE MOST THOROUGHLY TESTED COMMERCIAL AIRCRAFT WE HAVE EVER SEEN BEFORE IT CARRIES ITS FIRST PASSENGER -- STRUCTURES, DESIGN, PERFORMANCE, SAFETY FEATURES, ENVIRONMENTAL FACTORS. AND SONIC BOOM, OF COURSE, WILL ENTER THE PICTURE FOR THE FIRST TIME IN COMMERCIAL AVIATION.

AIR TRAFFIC CONTROL IS ANOTHER AREA WHERE IMPORTANT WORK IS BEING CONDUCTED. OUR AIR TRAFFIC SIMULATION LABORATORY AT THE NATIONAL AVIATION FACILITIES EXPERIMENTAL CENTER NEAR ATLANTIC CITY BEGAN TO LOOK AT THE SUPERSONIC TRANSPORT IN MOCK PROBLEMS EARLY IN 1963. MORE RECENTLY, THE PEOPLE AT ATLANTIC CITY WERE LINKED WITH A FLIGHT SIMULATOR AT NASA'S LANGLEY RESEARCH CENTER IN VIRGINIA FOR FURTHER STUDIES. IN SIMULATION WORK THIS SUMMER, IN FACT, OUR PEOPLE HAVE BEEN SIMULATING SST ARRIVALS AND DEPARTURES FROM KENNEDY INTERNATIONAL AIRPORT HERE IN NEW YORK. SO THE PROCESS OF GETTING THE FEEL OF THE SST IN THE ACTUAL AIRWAYS HAS BEGUN, AND THE EXPERIENCE GAINED IN THIS WORK AS IT MOVES FORWARD CAN OF COURSE BE EXPECTED TO FEED BACK INTO OTHER ELEMENTS OF THE PROGRAM AS APPROPRIATE.

I THINK THIS COMPLETES AN OVER-ALL REVIEW OF THE UNITED STATES SST PROGRAM IN ITS VARIOUS FACETS. ALL OF THIS SAID, THERE MAY BE SOME OF YOU WHO WILL STILL SAY, "YES, THIS WHOLE PACKAGE IS QUITE INTERESTING AND SEEMS TO BE FUNCTIONING QUITE REASONABLY. BUT STILL, WHO WANTS TO GO FASTER THAN SOUND ANYWAY?"

THE QUESTION, "DOES THE PASSENGER WANT TO GO FASTER THAN HE DOES TODAY?" HAS BEEN ASKED CONTINUALLY THROUGH THE YEARS IN WHICH FASTER AND FASTER PLANES HAVE COME TO SERVE AN INCREASING SEGMENT OF THE TRAVEL PUBLIC. IN EACH INSTANCE, THE FASTER NEW AIRCRAFT HAS BEEN SHOWN

TO THE DESIRED AIRCRAFT WHEN IT ENTERED SERVICE.

GIVE YOURSELF THIS TEST. YOU ARE IN NEW YORK. YOU WANT TO FLY TO PARIS. THE CHOICES OF PLANES ARE ONE THAT TAKES ABOUT SEVEN HOURS AND ANOTHER THAT CAN MAKE IT IN THREE AND A QUARTER. THE FARES ARE ABOUT THE SAME, WITH PERHAPS THE SST A TRIFLE HIGHER. BOTH ARE FINE, SAFE, COMFORTABLE AIRPLANES. WHICH ONE WOULD YOU CHOOSE?

I THINK YOU'LL AGREE THAT THE SST PASSES THIS TEST -- IF IT IS THE RIGHT PLANE, THE PLANE THAT OUR INDUSTRY IS NOW WORKING TO DESIGN AND THAT THE WORLD'S AIRLINES ARE LOOKING FORWARD TO INTRODUCING AS THEIR NEXT GENERATION OF AIRLINERS -- PERHAPS FIFTEEN YEARS AFTER THE FIRST OF CURRENT JETS JOINED THEIR FLEETS.

I WOULD LIKE TO READ TO YOU IN THIS REGARD, FROM A POSTER THAT WAS DISTRIBUTED AT THE TIME THE RAILROADS WERE ENTERING SERVICE. THE POSTER APPEARED ON THE STREETS OF PHILADELPHIA, PENNSYLVANIA, MORE THAN A CENTURY AGO:

"MOTHERS, LOOK OUT FOR YOUR CHILDREN! ARTISANS, MECHANICS, AND CITIZENS, WHEN YOU LEAVE YOUR FAMILY IN HEALTH, MUST YOU RETURN HOME TO MOURN A DREADFUL CASUALTY? PHILADELPHIANS, YOUR RIGHTS ARE BEING INVADED! REGARDLESS OF YOUR INTEREST OR THE LIVES OF YOUR LITTLE ONES! THE CAMDEN AND AMBOY RAILROAD IS LAYING A LOCOMOTIVE RAILROAD THROUGH YOUR MOST BEAUTIFUL STREETS TO THE RUIN OF YOUR TRADE, ANNIHILATION OF YOUR RIGHTS AND REGARDLESS OF YOUR PROSPERITY AND COMFORT! RALLY PEOPLE IN THE MAJESTY OF YOUR STRENGTH AND FORBID THIS OUTRAGE!"

THE POINT, I THINK, IS THAT THERE OFTEN IS A CERTAIN AMOUNT OF DOUBT WHEN A NEW VEHICLE OF TRANSPORTATION COMES ALONG. THIS WAS AS TRUE OF THE STAGECOACH AS THE RAILROADS, AND LATER ON TRUE OF THE FIRST PLANES, THE FIRST AUTOMOBILES, AND THEN THE JETS IN THE 1950'S.

EACH OF THESE MEANS OF TRANSPORTATION HAS CONTRIBUTED TO THE VERY FABRIC OF OUR MODERN CIVILIZATION. THE SUBSONIC JET HAS CONTRIBUTED MOST SPECTACULARLY IN RECENT YEARS, CHANGING OUR TRAVEL HABITS AND IN SOME WAYS CHANGING WAYS OF THOUGHT ABOUT THE WORLD AROUND US. THE SUPERSONIC TRANSPORT CAN CONTINUE THIS

STORY OF TRANSPORTATION PROGRESS, AND I EXPECT THAT IT WILL.

AERIAL CRIMES

I WOULD LIKE TO TURN FOR A MINUTE TO THE SUBJECT OF A STATEMENT ATTRIBUTED TO THE ATLBA'S (FORMERLY NACCA) AVIATION SECTION CHAIRMAN IN A RELEASE LAST WEEK. I CAN ONLY ASSUME FROM THE RELEASE THAT THE AUTHOR IS COMPLETELY UNFAMILIAR WITH THE MANY STEPS THE FEDERAL AVIATION AGENCY HAS TAKEN IN RECENT YEARS TO THWART DEMENTED SABOTEURS. THE FAA ACTUALLY HAS TAKEN A MULTITUDE OF STEPS AND WE HAVE OTHERS UNDER STUDY.

WHILE THIS IS FAR AFIELD FROM THE SUBJECT OF THIS MEETING, I WOULD LIKE TO ENUMERATE EXACTLY WHAT WE HAVE DONE TO PREVENT DELIBERATE SABOTAGE TO COMMERCIAL AIRCRAFT.

SABOTAGE OF AIRLINERS CAN, YOU KNOW, COME IN FORMS OTHER THAN BOMBING. A FEW MONTHS AGO AN AIRLINER WENT DOWN IN CALIFORNIA AFTER A PASSENGER APPARENTLY SHOT THE PILOT AND COPILOT. JUST LAST WEEK AN FAA REGULATION WENT INTO EFFECT REQUIRING ALL AIR CARRIERS TO KEEP THEIR COCKPIT DOORS LOCKED WHILE IN FLIGHT. THIS CERTAINLY SHOULD HELP PREVENT ANY RECURRENCE OF THIS TYPE OF SABOTAGE.

EVEN NOW CLARENCE PELL, AN INSURANCE AUTHORITY WHO HEADS THE AVIATION DIVISION OF THE MARINE OFFICE OF AMERICA AND IS A DIRECTOR OF THE ASSOCIATED AVIATION UNDERWRITERS, IS COMPLETING A STUDY FOR US TO DETERMINE WHAT DETERRENTS CAN BE PLACED IN THE WAY OF PERSONS WITH CRIMINAL OR SUICIDAL INTENT TO PURCHASE INSURANCE PRIOR TO BOARDING AIRCRAFT. I AM SURE MR. PELL'S REPORT WILL BE MOST HELPFUL.

I BELIEVE WE HAVE PLACED A VERITABLE THICKET OF OBSTACLES IN THE PATH OF A POTENTIAL SABOTEUR. HERE ARE SOME OF THEM:

IN 1961 THE CONGRESS ENACTED PUBLIC LAW 87-197 WHICH MAKES CRIMES OF THIS NATURE A FEDERAL OFFENSE PUNISHABLE BY DEATH IN SOME CASES AND BY HEAVY FINES AND LONG PRISON SENTENCES IN OTHERS. THE DEPARTMENT OF JUSTICE HAS BEEN GIVEN THE AUTHORITY TO PAY A

$10,000 REWARD TO PERSONS WHO PROVIDE INFORMATION LEADING TO THE APPREHENSION AND CONVICTION OF VIOLATORS OF THIS LAW.

IT IS NOW A FEDERAL CRIME FOR ANYONE OTHER THAN DULY AUTHORIZED PERSONS TO CARRY OR CONCEAL DEADLY WEAPONS ABOARD A COMMERCIAL AIRCRAFT. TO PREVENT AIRLINER HIJACKINGS, THE FAA ORGANIZED A SPECIALLY TRAINED GROUP OF SKY MARSHALS IN 1961 AND STATIONED THEM AT KEY POINTS AROUND THE COUNTRY. THESE OFFICIALS ARE ALL UNITED STATES DEPUTY MARSHALS WHO ARE AVAILABLE ON A MOMENT'S NOTICE TO BOARD ANY FLIGHT AT THE REQUEST OF ANY AIRLINE, THE FAA OR THE FBI.

WE NOW HAVE ADOPTED A REGULATION CALLING FOR THE INSTALLATION OF COCKPIT VOICE RECORDERS IN EVERY COMMERCIAL AIRLINER. SUCH A DEVICE WILL RECORD EVERY WORD UTTERED IN THE COCKPIT FROM TAKEOFF TO LANDING.

WE HAVE MADE ARRANGEMENTS WHEREBY UNUSUALLY LARGE PURCHASES OF FLIGHT INSURANCE CAN, IN SOME CASES, BE REPORTED TO AIRLINES AND TO THE FAA.

MOREOVER, WE HAVE THOROUGHLY INVESTIGATED THE DEVICE WHICH WAS REFERRED TO AS AN ANSWER TO SABOTAGE.

MANY OF OUR EXPERTS AND TECHNICIANS, INCLUDING THE ASSOCIATE ADMINISTRATOR FOR DEVELOPMENT, INVESTIGATED PERSONALLY AND FOUND IT WOEFULLY LACKING. I CAN ASSURE YOU THAT WE IN THE FAA, AS WELL AS THE AIR CARRIER INDUSTRY, ARE PRESSING EFFORTS TO FIND A WORKABLE BOMB DETECTION MECHANISM. WE ARE CONTINUING EXPERIMENTS WITH OTHER EXPLOSIVE DETECTION DEVICES AT LEAST TWO OF WHICH WE BELIEVE DO HAVE SOME MERIT. ONE CALLS FOR THE SEEDING OF DYNAMITE CAPS WITH RADIOACTIVE MATERIAL TO PERMIT THEM TO BE DETECTED BY A GEIGER COUNTER. THE OTHER DEVICE ACTUALLY DETECTS THE ODOR OF EXPLOSIVE COMPOUNDS AND FLASHES A WARNING SIGNAL. AS SOON AS WE CAN BE SATISFIED THAT WE HAVE SUCH A DEVICE THAT IS WORKABLE AND PRACTICAL IT WILL BE PLACED IN OPERATION.

WHILE I HAVE NO DESIRE TO MINIMIZE THE SERIOUSNESS OF AIRCRAFT SABOTAGE, I DO WANT TO POINT OUT THAT THE AUTHOR OF ATLBA NEWS RELEASE APPARENTLY HAD ERRONEOUS AND EXAGGERATED STATISTICS. THE RECORDS OF THE CIVIL AERONAUTICS BOARD DISCLOSE THAT SINCE OCTOBER 10, ~~1963~~, 1933 ONLY FOUR UNITED STATES AIRPLANES HAVE BEEN DESTROYED BY BOMBS.

EVEN THOUGH AIRCRAFT BOMBINGS COULD BE CONSIDERED A RARITY, I WANT TO EMPHASIZE THAT WE ARE DOING EVERYTHING IN OUR POWER TO MAKE IT AN IMPOSSIBILITY. I THINK WE WILL SUCCEED BUT WE DO NOT INTEND TO BE PRESSURED INTO A GOVERNMENT CONTRACT TO BUILD A DEVICE WHICH WE HAVE INVESTIGATED THOROUGHLY AND WHICH WE KNOW WILL NOT PERFORM THE JOB WHICH NEEDS TO BE DONE.

AS A FINAL WORD ON THIS SUBJECT, PERSONS WHO ATTEMPT TO VIOLATE ANY OF THE RULES AND REGULATIONS RELATING TO AIRCRAFT BOMBINGS, SABOTAGE OR PIRACY FIND THEMSELVES THE OBJECTS OF INTENSE FEDERAL GOVERNMENT PROSECUTION. THE SUCCESS OF THIS PROSECUTION CAN BEST BE JUDGED FROM THE FACT THAT WE IN THE FEDERAL GOVERNMENT KNOW OF NO PERSON WHO HAS ACHIEVED FINANCIAL GAIN FOR HIMSELF OR HIS HEIRS THROUGH AIRCRAFT BOMBINGS OR SABOTAGE.

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140.10

FEDERAL AVIATION AGENCY
Washington 25, D.C.

Speech

October 30, 1964

OFFICE OF
THE ADMINISTRATOR

Dear Air Traffic Controller:

On Monday, October 5th, I was privileged to speak before ATCA's Ninth Annual Meeting in Atlantic City. Arthur Godfrey was a delightful toastmaster and presidents Bresnick and Bostian headed a fine evening of camaraderie and fellowship.

My role was that of a "straight man" - few jokes because what I had to say was serious and heartfelt. It was my chance - and the opportunities are much too infrequent - to thank you for your superb performance. Unfortunately, each of you could not come to Atlantic City. Therefore, I am sending this letter with a transcript of my remarks so that you may know exactly what we think of you and what we're trying to do for you.

The theme of the evening was "Tools for Tomorrow." During my talk, I used some film clips illustrating alpha numerics, radar mosaics, flightstrip printers and the other innovations which will automate much of the "busy work" part of your job to permit you to concentrate full time on your life-or-death assignments. The narration for that footage has been deleted from the enclosed transcript, because it is almost meaningless out of context. However, as I promised in my talk, we are sending copies of the film clips, the narrative and a kinescope of the closed circuit telecast to all regions in November.

Sincerely yours,

N. E. HALABY
Administrator

Enclosure

14904

Speech by N. E. Halaby, Administrator
Federal Aviation Agency
ATCA's Ninth Annual Meeting
Atlantic City, New Jersey
October 5, 1964

Air Traffic Control Tools for Tomorrow

Our theme is "Traffic Control Tools for Tomorrow," and it couldn't be more pertinent. It's particularly important, I think, to recognize that what you have done this last year and what you are about to do in this coming year is strengthening NATO, and it is going all the way around the world by example and by the power of practice. We have not only Maurice Cerf of your International Air Traffic Controllers Association, but J. R. Campbell of the Canadian as well, and there are others not only from abroad but from the industry that feeds you -- that designs for you -- these tools for tomorrow.

So may I say, I recognize what you've done this past year on behalf of all those you serve and thank you deeply and sincerely for it.

Just a couple of things that might be worth mentioning tonight. The Controllers' Procedure Committees are working pretty well. The Committee of Controllers from the various regions met recently at our headquarters and the Committee members acted on a total of 300 individual proposals. It's a good beginning and it seems to me we will be getting more and more contributions -- contributions in skill, excellence and practice -- from the traffic controllers themselves, men who often live 24 hours a day at this job.

We're also encouraged by the System Error Reporting System and the reports coming from it. We are finding out that controllers are at work in solving their own problems and anticipating difficulties, and that errors are not solely the result of pilot or controller ineptness, as some are wont to think. We are discovering that the existence of error-inducing elements in the environments in which you work must be singled out and removed.

That program has been in effect only a short time, but the Facility Review Boards have been investigating the environmental weakness and recommending corrective action. We now have nine months of data collected and it is being processed on our automatic data-processing equipment. We don't have all the answers, but it's coming out to your advantage as well as to the advantage of those you serve.

The presence of a number of beautiful and enthusiastic and well-dressed wives here this evening is a testimonial in its way to LBJ. I am sure none of you object to the pay-raise. The full bloom of that pay-raise was sometimes nipped by retirement deductions, tax deductions, health plan deductions and check-offs of various kinds, but it was substantial and I have to pause a moment to thank my boss and yours -- that most persuasive of men - for what would never have been without his personal, enthusiastic, and intensive efforts to see that you got your rewards.

We have tried very hard to see that you are both recognized and rewarded. I don't want any thanks for that and I don't think the President does, but I do think that it is a measure of the public understanding of your job and what you're doing. So not only can you fold a little extra green, but more important, you can get a little more satisfaction out of the fact that you have been recognized, that you are appreciated and that your professional skill is now on a basis comparable to industry.

There is a tough job ahead and not too much alternative for a controller. You get into a narrow kind of road because after you have become a controller there aren't too many other jobs for which you are immediately and directly qualified. We have been working awfully hard to see if that, too, can't be recognized and that those who have given not only their hours and their months, but their whole careers, their whole mature lives to air traffic controlling, will have advanced to that terminal area of recognition. That means proper, early, and rewarding retirement.

Now this isn't easy because there are a lot of other civil servants competing for this kind of recognition and respect. Every time we have proposed it for the last three and a half years, we have been confronted by the charge "What about the pilot?" "What about the Border Patrol?" "What about this group and that one?" I think we're making progress by making the budget directors and Congress more aware of the problems. For example, three weeks ago I took the Chairman of the House Subcommittee on Manpower Utilization to the Washington Center to have him see that wonderful group of men there at Leesburg, representing so many other centers, towers, stations, and RAPCONS all over the country -- in fact, the world. We are making some progress.

I would like to read a letter from David Henderson, who is Chairman of that Committee and who may be on Capitol Hill a new champion of your early retirement aims. He said,

"Dear Mr. Halaby:

I was not only impressed by the responsibility of your Agency and its employees in promoting and maintaining air safety but also by the active role you are taking to insure this safeguard. I concur with you that a very important feature of this safety insurance revolves around the air traffic controller -- his workload, his working conditions, his compensation, and his promotional opportunities. All of these features I plan to study in more detail in the weeks ahead. This is an area in which our Manpower Utilization Subcommittee is quite interested, and I have asked our staff to make some on-site reviews in conjunction with your staff. In this connection, may I add, the Air Traffic Controllers Association officials have also indicated an interest in this problem and I feel sure the Association will be of material assistance in solving the problem.

There is one important area, as related to air traffic controllers, which I feel needs immediate legislative attention, namely retirement. Just as soon as the 89th Congress convenes, assuming the good people of the Third Congressional District of North Carolina so vote, I plan to introduce legislation which will recognize the air traffic controller's function in terms of retirement or change in duties. I have some definite ideas and have already made plans for drafting legislation.

Again, may I thank you for your courtesies and continued cooperation.

Sincerely,

David N. Henderson
Chairman"

My thinking and the staff thinking at FAA lean toward amending the Civil Service Retirement Act to authorize earlier retirement for those persons who are themselves engaged in - or who directly supervise others who are engaged in - active air traffic control duties. We have in mind controllers, coordinators, crew chiefs and watch supervisors. At the moment, we would expect that eligibility for early retirement would be based on length of service or a combination of age and length of service. Any proposal must have

the concurrence of the Civil Service Commission and the Bureau of the Budget. I have talked to individual members of the Commission and we plan another approach to them on November 6th. We have had the Budget Director and his key officials out to the Center and I believe this coming session offers our best hope of all to accomplish the aims that I know we are generally agreed upon.

Now I know this last year hasn't been all sweetness and light. The word "SCORE" used to mean what happened in a football game. Now it means something different to many of you. I am sure that some of the many management studies that you have endured may have created more fear than welcome. It is normal and natural that some of you would react in this way to "FOCUS" and "SCORE", but you have to think a little bit about the position that I occupy and those immediately around me occupy. We not only must think of safety, but safety with economy. We must not only think of raises in pay, but we must think of improvements and of the efficiency of the system.

Now, I guess we must, while reducing overtime and holiday pay to what appears to me to be a more proper level, also think about giving you improvements with the tools of tomorrow. Last week we had one of the best sessions between a public service agency and its shareholders - the users of the airspace - that has ever been held in Washington. The meeting was called the National Aviation System Sympoisum. We had 200 leaders of industry and labor and the academic world, airline presidents, union chiefs, aircraft manufacturers, association leaders such as Bill Bresnick and others. And we told them and then invited their comments or criticism on what you are doing and what we are trying to do.

The star of this show was the Washington Center Chief, Chet Watson, and the key presentation was a live TV presentation remoted into our Washington Headquarters from Leesburg.

For 90 minutes we told the world through the royalty of the aviation community, the top people, what you guys are up to, what you are doing, what you can do, what you cannot be expected to do, and what we are trying to do for you. It was an eye-opener to these people and we are going to reproduce this show and make it available through all the regions and through the public media and you will see in the end why the audience broke into spontaneous applause.

It was a great day for air traffic controllers and the whole Agency -- Bob Shank, Joe Blatt, Al Brown, Jimmy Dow and Bill Harrison really helped you put your best face and foot forward.

(At this point, motion pictures were shown depicting the newest techniques and equipment in air traffic control now emerging from the laboratory and becoming operational in the field.)

I hope you'll all get out to the Center (National Aviation Facilities Experimental Center) and see what's there. I really feel that during this last year so much of what we've been hearing about, and dreaming about and reaching for is coming within our grasp. We were so very glad to announce that not only are we going to have all of this equipment which is now hardware at the Center (you'll see it this week). Not only are we going to have it buckled together or programmed in the laboratory, but we are funded and I have approved installing an operating set for service test in the Jacksonville Center at the earliest practicable time.

So, gentlemen, change is coming and it is coming rapidly. These tools of tomorrow are going to have great meaning to you. You know, particularly the older heads here, that this ATC system of today has moved rapidly forward in the last few years. Since 1956 the number of controller positions has trebled -- 300% increase in the employment. In only six years since the Federal Aviation Agency began, $27 million has been invested in training 17,000 of you. In this same period the average salary for controllers has increased from about $5,000 to more than $9,000.

As we look around the world we have much to count in the way of blessings and for the way our Government has recognized this profession. We had to move fast because we neglected this area. Now as we enter an era of maturity with a system refined and controllers more and more experienced professionals, we are, as all are beginning to recognize, providing a quality service.

We have reached a period of maturity and are trying to pause, take a breath and brood over this system a little more than the rush and hurry of building it has permitted. The movie showing the tools of tomorrow simply means to me that we have completed one phase and are entering another. Those who are fearful of it -- if they could see it in the way that I can see it - will see it as a wonderful opportunity for advancement much more than the danger of displacement. There will be rich opportunities for those who want to continue learning, who want to be the victor rather than the victim of change.

The steady growth in the number of flight operations, the increasing intricacy and complexity of the system will mean that the nation needs better trained, more experienced and even more professional controllers than ever before. There won't be many more controllers hired, but the quality will, can and should increase each year. Instead of being a bunch of bureaucrats working for the Government, as many people think of us -- we are showing -- and we showed it last week at the Shareholders Meeting -- that this is a modern system

manned by modern men of the highest education and skills -- and that is the real reward of this work that we are doing together. If you don't want constantly to grow, constantly to have more and more important responsibility in our kind of society, then this may be the time to decide to do something that will be more enjoyable and more satisfying, because this is a system that must be getting more and more efficient, not just one that is getting more and more costly.

In our search for safety with economy we will have to look -- and you will be looking with me -- at further consolidation of centers over the next five years. As you look at these systems that you see here in hardware, you know that it is coming, and that utilization of higher productivity and more automation should be regarded as a challenge and an opportunity, not just a threat to you.

We have been able, as you know, to consolidate 29 Centers into 21 Centers and in, I think, a considerate and humane manner. There has been no reduction in force. There has been much moving and changing, and there is a need to adjust attitudes and aptitudes, but I believe that we should sincerely and earnestly try to help to face the future rather than to fear it. This isn't just because of compassion, but because of pure self-interest in the public service. We are determined to keep our trained personnel, to provide continual employment, so that those who chose to give their careers to this Agency and this Government will not suffer. The most valuable resource in the whole world is the individual motivated and trained and skillfully performing his task.

One of the most difficult challenges of government service with FAA is to take the time to care about each of the 45,000 people, to know that each one in himself or in herself is important, has something to cherish and love and train and protect, and that that career means most to him or her. If we ever stop and let the system overcome the individual, we are lost. In just the last week or so you had, I hope, an understanding and some proof that this Agency cares about each and everyone -- no matter where you came from, nor what mistakes you might have made during the past years. Each of you under God and under this kind of government that we love so well is most important.

I think President Johnson had this in mind when he wrote you this letter:

"You have my warm good wishes for the success of your Ninth Annual Business Meeting at Atlantic City, and my congratulations on your wise choice of a convention site.

As a frequent user of the nation's airways, I am very mindful of the exacting demands of your profession, and of the vital service that air traffic controllers perform for the flying public.

The theme of your meeting, "Air Traffic Control Tools of Tomorrow," reflects the vision and constructive planning which must be applied to aviation's rapidly advancing technology. In meeting its share of these challenges, your government in the recent past has acted to better equip you and to better compensate you for the important job you do.

I know that I speak for the thousands of our citizens whose lives are entrusted to your care each day, when I thank you for the careful vigil you keep, and wish you Godspeed in your deliberations.

Lyndon B. Johnson."

Thank you very much.

REMARKS BY LT. GENERAL HAROLD W. GRANT
DEPUTY ADMINISTRATOR, FEDERAL AVIATION AGENCY
AT DEDICATION OF LEESBURG MUNICIPAL AIRPORT
(GODFREY FIELD)
OCTOBER 10, 1964

Mr. R[illegible],

DISTINGUISHED GUESTS AND FRIENDS OF AVIATION —

ONE OF YOUR NEIGHBORS FROM NEARBY WASHINGTON CANNOT BE HERE TODAY. I REFER TO THE GENTLEMAN WHO LIVES IN THE BIG HOUSE ON PENNSYLVANIA AVENUE -- PRESIDENT LYNDON B. JOHNSON. BUT HE ASKED ME TO CONGRATULATE YOU FOR BUILDING THIS FINE AIRPORT — AND FOR DOING YOUR PART IN PROVIDING THIS NATION WITH AN ADEQUATE SYSTEM OF PUBLIC AIRPORTS. HE ALSO SENDS HIS BEST WISHES FOR THE CONTINUED PROGRESS AND ENRICHMENT OF YOUR COMMUNITY.

NOW I WOULD LIKE TO SAY A FEW WORDS ABOUT A MAN HERE ON THE PLATFORM WITH ME. YOU ALL KNOW WHO HE IS -- ARTHUR GODFREY. I'VE BEEN TOLD THAT, A LONG TIME AGO HE MAY HAVE BEEN A LITTLE OFF COURSE AND FLEW A BIT TOO CLOSE TO ONE OF OUR AIR TRAFFIC CONTROL TOWERS. IT MAY BE SO — BUT — FROM WHAT I'VE SEEN I WOULD LIKE TO SAY, THOUGH, HE HAS BEEN FLYING "ON COURSE" EVER SINCE. ARTHUR'S GENEROSITY TO THE PEOPLE OF LEESBURG IS SOMETHING I KNOW YOU APPRECIATE. WE IN THE FAA APPRECIATE IT JUST AS

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MUCH. HIS DONATION OF THE FORMER AIRPORT SITE TO THE CITY OF LEESBURG IS PARTLY RESPONSIBLE FOR OUR BEING HERE TODAY. THANK YOU, ARTHUR, FOR THIS LATEST OF YOUR MANY CONTRIBUTIONS TO AVIATION.

ALL TOO OFTEN CITY PLANNERS OVERLOOK THE ECONOMIC ASSET AN AIRPORT CAN BE TO A COMMUNITY. SOMEHOW, SEWERS, SIDEWALKS, PERHAPS A NEW CIVIC AUDITORIUM SEEM TO TAKE PRECEDENCE. THESE ARE UNQUESTIONABLY GOOD, THEY ARE NECESSARY, BUT THEY ARE NOT IN THEMSELVES GROWTH ITEMS. THEY ARE THE PRODUCT OF A COMMUNITY'S GROWTH WHICH IN TURN CREATES THE NEED FOR MORE SIDEWALKS, MORE SCHOOLS, MORE OF EVERYTHING.

COMMUNITIES THAT PLAN FOR, AND DO SOMETHING ABOUT PROVIDING AN ADEQUATE TRANSPORTATION SYSTEM -- ~~A SUB SYSTEM THAT DOVETAILS INTO THE NATIONAL TRANSPORTATION SYSTEMS~~ -- ARE THE COMMUNITIES THAT FIND THEMSELVES IN THE ECONOMIC MAINSTREAM.

AIRPORTS TODAY ARE VERY MUCH A PART OF OUR NATIONAL TRANSPORTATION SYSTEM, ~~SERVING A $7 BILLION AVIATION INDUSTRY~~. LEESBURG MUNICIPAL AIRPORT -- GODFREY FIELD, -- IS PART OF THAT SYSTEM.

THE FEDERAL GOVERNMENT HAS INVESTED MORE THAN $200,000 IN YOUR AIRPORT UNDER OUR FEDERAL-AID TO AIRPORTS PROGRAM. THE FAA CONSIDERS IT A GOOD INVESTMENT.

CONTINUATION OF THIS PROGRAM IS ONE OF THE MAJOR ACHIEVEMENTS OF THIS ADMINISTRATION. OFTEN IT HAS BEEN PROPOSED THAT THE PROGRAM BE PHASED OUT -- THAT AIRPORT DEVELOPMENT SHOULD BE SHOULDERED ENTIRELY BY LOCAL COMMUNITIES. CONGRESS, I AM HAPPY TO SAY, HAS SEEN THE NEED FOR THE ORDERLY DEVELOPMENT OF A NATIONAL AIRPORT SYSTEM AND AUTHORIZED THIS YEAR, AUTHORIZED ANOTHER THREE-YEAR PROGRAM PEGGED AT $75 MILLION A YEAR THROUGH FISCAL 1967. THESE FUNDS ARE USED TO MATCH THOSE OF LOCAL COMMUNITIES FOR NEW AIRPORT CONSTRUCTION AND FOR IMPROVEMENTS AND EXPANSION OF EXISTING FACILITIES.

THIS PROGRAM, CONCENTRATES ON THE SAFETY FEATURES OF AIRPORTS, AS DISTINGUISHED FROM THE COMFORT AND CONVENIENCE FEATURES. THE

[redacted] PROGRAM DOES NOT PROVIDE MONEY FOR TERMINALS ~~FOR THE COMFORT AND CONVENIENCE OF AIRPORT USERS;~~ BUT, AS AT LEESBURG, IT CONCENTRATES ON FEATURES THAT WILL MAKE IT A SAFE AIRPORT -- ADEQUATE RUNWAYS, TAXIWAYS AND LIGHTING TO SERVE THE TYPE OF AVIATION ACTIVITY THAT WILL USE THE AIRPORT. SAFETY IS OUR BUSINESS. COMFORT IS YOURS.

THE IMPORTANCE THE FEDERAL AVIATION AGENCY ATTACHES TO THE DEVELOPMENT OF GENERAL AVIATION OR NON-AIRLINE AIRPORTS SUCH AS LEESBURG IS REFLECTED IN OUR [redacted] PROGRAM. OF THE 452 AIRPORTS INCLUDED IN THE NOW BEING IMPLEMENTED [redacted] PROGRAM, 253 ARE BEING DEVELOPED FOR GENERAL AVIATION EXCLUSIVELY, WITH THE REMAINING 199 SERVING BOTH GENERAL AVIATION AND THE SCHEDULED AIRLINES. EMPHASIS ON THIS COMMING YEAR'S PROGRAM, WHICH OUR AIRPORT PEOPLE ARE WORKING ON RIGHT NOW, IS AGAIN SLANTED TOWARD GENERAL AVIATION.

LEESBURG AND OTHER COMMUNITIES BENEFITING FROM THIS PROGRAM ARE THE FORWARD LOOKING COMMUNITIES WHOSE CITY PLANNERS HAVE ANALYZED THE POSITION OF THEIR COMMUNITIES WITH RESPECT TO THE AREA AND THE NATIONAL INDUSTRIAL COMPLEX. THEY HAVE COME TO THE

INEVITABLE CONCLUSION THAT A CITY WITHOUT AN ADEQUATE AIRPORT IS A CITY CUT OFF FROM INDUSTRIAL GROWTH. IN THIS DAY AND AGE, THE COMMUNITY THAT IS NOT ACCESSIBLE BY AIR IS A COMMUNITY THAT WILL BE BYPASSED BY INDUSTRY, IN EXACTLY THE SAME WAY IN WHICH A COMMUNITY WAS BYPASSED BY INDUSTRY A SHORT TIME ~~HUNDRED YEARS~~ AGO IF IT WAS NOT ACCESSIBLE BY RAIL.

~~INDUSTRIES ARE MOVING AWAY FROM THE LARGE CITIES TO THE SMALLER COMMUNITIES WHERE LABOR SUPPLIES ARE AMPLE, WHERE THE LIVING IS MORE PLEASANT, WHERE THEY HAVE ROOM TO EXPAND. INDUSTRY NEEDS AIRPORTS TO LINK THEM WITH THE METROPOLITAN CENTERS WHERE THEY DO BUSINESS.~~

MORE AND MORE THE WORD TRANSPORTATION MEANS AIR TRANSPORTATION -- NOT NECESSARILY THE TYPE OF AIR TRANSPORTATION WHERE YOU BUY A TICKET IN SOME BIG AIRLINE TERMINAL, BOARD A BIG JET, AND FLY TO ANOTHER BIG TERMINAL. IT IS THE BRIEFCASE TYPE OF AIR TRANSPORTATION, A BUSINESSMAN FLYING HIS OWN OR HIS COMPANY'S AIRPLANE, THE TYPE OF AIRPLANE THAT WILL USE LEESBURG MUNICIPAL AIRPORT.

I DOUBT VERY MUCH IF TOMORROW, OR EVEN THE DAY AFTER, LEESBURG WILL BE PRESSED AND BADGERED BY NEW

INDUSTRIES SEEKING TO LOCATE NEW PLANTS HERE, DRAWN TO THIS LOCATION BY THE NEW AIRPORT WE ARE DEDICATING TODAY. BUT IN THIS BUSINESS OF AVIATION, WE BUILD FOR THE TOMORROWS FIVE TO TEN YEARS HENCE. IT IS THESE TOMORROWS THAT MAY BRING NEW INDUSTRIES, MORE PEOPLE TO WORK IN THEM, MORE PERSONAL INCOME, MORE AUTOMOBILES AND MORE BANK DEPOSITS TO HISTORIC LEESBURG. THESE ARE THE THINGS WHICH, IN TURN, BRING IN THE TAX DOLLARS WHICH CAN BE USED FOR NEW SIDEWALKS, NEW SCHOOLS, AND GENERAL ENRICHMENT OF THE COMMUNITY.

NEARBY DULLES IS AN EXAMPLE OF OUR LONG RANGE VIEW

ALL OF YOU HERE TODAY ARE REALLY MEMBERS OF THE AVIATION COMMUNITY. WHETHER OR NOT YOU ARE A PILOT, A PASSENGER OR OTHER DIRECT CONSUMER OF AVIATION, AS AN AMERICAN CITIZEN, YOU HAVE A GREAT STAKE IN THE TOTAL AVIATION PICTURE. THOSE RESPONSIBLE FOR BUILDING THIS AIRPORT AND, ABOVE ALL, THE PEOPLE OF LEESBURG WHO RECOGNIZE THE VALUE OF THIS AIRPORT IN YOUR COMMUNITY, ARE ENTITLED TO GREAT PRIDE IN ITS ACCOMPLISHMENT.

I CANNOT CONCLUDE WITHOUT SPECIFICALLY MENTIONING MR. GEORGE HAMMERLY, CHAIRMAN OF YOUR

AIRPORT COMMISSION, WHO PROVIDED MUCH OF THE IMPETUS TO GET THIS AIRPORT BUILT. AS YOU KNOW, YOUR FORMER AIRPORT DID NOT MEET THE FAA CRITERIA NECESSARY TO QUALIFY FOR FEDERAL AID. THE APPROACHES WERE BAD, TAKEOFFS MOSTLY OVER THE CITY, AND THERE WERE BUILDINGS THAT WOULD NOT ALLOW EXTENSION OF THE RUNWAY. MR. HAMMERLY CAME TO US AND SAID, "WE NEED BETTER AVIATION FACILITIES FOR LEESBURG. WHAT CAN WE DO?" AND -- LADIES AND GENTLEMEN -- THIS FINE NEW LEESBURG MUNICIPAL AIRPORT, THIS IS WHAT WE DID, YOU AND THE FEDERAL GOVERNMENT WORKING TOGETHER.

THANK YOU FOR INVITING ME TO BE WITH YOU TODAY.

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