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DECLINING FEDERAL HEALTH AND SAFETY STANDARDS: AVIATION SAFETY

HEARING

BEFORE THE

SUBCOMMITTEE ON
INVESTMENT, JOBS, AND PRICES

OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

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MONDAY, JULY 21, 1986

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON INVESTMENT, JOBS, AND PRICES
OF THE JOINT ECONOMIC COMMITTEE,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room SD-562, Dirksen Senate Office Building, Hon. Paul S. Sarbanes (member of the subcommittee) presiding.

Present: Senator Sarbanes.

Also present: William Buechner, professional staff member.

OPENING STATEMENT OF SENATOR SARBANES, PRESIDING

Senator SARBANES. The subcommittee will come to order.

The Subcommittee on Investment, Jobs, and Prices of the Joint Economic Committee today opens a series of hearings on the current state of Federal health and safety standards and social and economic implications of lowering or relaxing them. The focus of this morning's inquiry will be air safety.

As individuals and as a society, in both families and communities, we have come to understand the importance of responsible standards. Indeed, we have come to rely on them in making critical decisions in our lives about how we live, what we eat, the conditions in which we work, the medication we take, how we travel, how we use our leisure time.

To cite just a few examples, we rely on, and at times even take for granted, standards with respect to drinking water, air quality, consumer and workplace safety, pesticides, food and drugs, fire hazards, and air travel. Not only have these standards made our lives healthier and safer on a daily basis; in terms of their long-term repercussions, they represent a prudent economic investment.

In recent months, however, there has been rising concern that health and safety standards in a number of critical areas are being eroded by irresponsible budget cuts and by sweeping, arbitrary deregulation. A July 1984 survey by William Drayton, former Deputy Administrator of the Environmental Protection Agency, concludes that the problem is not limited to a specific sector or sectors, but that, instead, the Federal Government is "failing pretty much across-the-board, irrespective of program or government agency."

Mr. Drayton attributes this trend to the complex interplay of budget cuts and deregulation. "Budget cuts," he writes, "which have been the Administration's chief policy weapon towards this

end, have fallen most unrelentingly on the relatively new and more vulnerable health and safety agencies." The result, he says, "is not the work of any one manager; it is a governmentwide pattern, with a resulting protection gap potentially enormous in scale."

Over the next several weeks, the subcommittee will examine this pattern as it has developed in different fields.

On July 28, in Frederick, MD, the subcommittee will review current fire safety standards.

On August 4, in Baltimore, MD, the subject will be child health standards.

And on August 7, here in Washington, DC, the subject will be environmental health standards, focusing on pesticides and hospital disinfectants.

We begin today these four hearings with an examination of national air safety standards. Although concern over air safety has grown and the subject has been much discussed in recent months, in fact the problem has been developing over a much longer period of time. "The terrible year of 1985 snapped the complacency engendered by the rarity of accidents in previous years," writes Jeremy Main in a Fortune magazine cover story last October.

U.S. commercial airlines carry more than 300 million passengers every year. Every person boarding an airplane puts his or her trust as to their life in the hands of the safety system that has become a source of concern. The responsibility, the Federal role in assuring aviation standards in keeping the Nation's airways safe lies with the Federal Aviation Administration.

Serious questions have arisen over the condition of our airports and safety equipment, and over the adequacy of the FAA work force in the three basic areas of airline inspection, system maintenance, and air traffic control. It is important to underscore that "adequacy" in this context applies to staffing levels and to staff training and experience in all three areas. A shortfall in one area will inevitably undermine safety no matter how high the standards in other areas may be.

Over the last 5 years, significant policy changes have reduced the resources available to the FAA. These pressures have been exerted during a period of rapid and fundamental change in the airline industry, where the process of deregulation set in motion in 1979 has meant an increase of more than 100 percent in the number of scheduled airlines and roughly 40 percent in the number of commercial U.S. aircraft.

In addition to budget cuts and the firing in 1981 of 11,000 air traffic controllers, these changes involve personnel reductions adopted by the FAA in anticipation of efficiency improvements under a projected National Airspace System Plan. The plan itself, however, still awaits implementation, and the personnel reduction in advance of the implementation of the plan represents, in my view, a clear case of placing the cart before the horse.

The testimony of today's witnesses will provide to the subcommittee and the full committee a broad review of the many aspects of assuring airline safety. The purpose is to draw together, and place in perspective, the numerous problem areas in which other congressional committees have focused their inquiries.

We are fortunate to have with us today witnesses with a long, continuing interest in the air safety field. We will hear from our distinguished Senate minority leader, Senator Robert Byrd, Democrat of West Virginia, and sponsor of S. 2417, legislation to establish a commission on aviation safety.

Following Senator Byrd, we will hear from Herbert McLure, Associate Director of the Resources, Community, and Economic Development Division at the GAO.

And finally we will have a panel of private sector witnesses who will survey the range of safety conditions in the airline industry. The panel will include:

John Enders, president, Flight Safety Foundation; Howard Johannssen, president, Professional Airway Systems Specialists; John Thornton, national coordinator, National Association of Air Traffic Controllers; John Baker, president of Aircraft Owners & Pilots Association; and Mark Brewer, airport manager, Salisbury-Wicomico County Regional Airport.

To lead off, we will now turn to Senator Byrd, who has made some very perceptive and forceful statements on this issue.

We are very pleased to have you with us this morning.

STATEMENT OF HON. ROBERT C. BYRD, A U.S. SENATOR FROM THE STATE OF WEST VIRGINIA

Senator BYRD. Thank you.

This morning, let me commend you for scheduling this hearing on the issue of aviation safety, an issue about which there has been growing public concern since the enactment of the Airline Deregulation Act of 1978. With each report of a commercial air carrier crash, as well as reports of other safety-related incidents, the American public has become increasingly concerned about aviation safety.

There is reason for concern. According to the National Transportation Safety Board, 1985, as you indicated earlier, Mr. Chairman, was the worst year for domestic commercial aviation since 1977. Last year, there were 526 fatalities from all U.S. air carriers, compared to 655 fatalities in 1977.

The FAA and representatives of the airline industry have argued that the safety of the domestic passenger carriers has improved in the years since deregulation, but this assessment is based solely upon the number of accidents and fatal accidents in any given year.

That approach is not necessarily the most useful indicator of the current status of aviation safety. Focusing exclusively on accidents is of limited usefulness because it ignores any consideration of incidents which did not become accidents. It is often only luck that separates incidents and accidents.

For example, on May 17, 1986, an American Airlines 727 passenger jet and a U.S. Air DC–9 came very close to a disastrous collision at Chicago's O'Hare Airport. Both aircraft were cleared by an air traffic controller for take-off at the same time from intersecting runways. It was only because the U.S. Air copilot happened to notice the on-coming American Airlines jet, and the pilot was able

to take last-minute emergency action, that a disaster was avoided for the 224 passengers and crew on board the two aircraft.

There are other data which should be included in any consideration of the status of aviation safety. A more complete picture of aviation safety is provided by considering data regarding accidents, as well as data on near midair collisions and surface operational errors, for example, runway incursions.

Such data, collected and reported by the FAA, indicate that the number of near midair collisions increased from 568 in 1980 to 758 in 1985, an increase of 33 percent. There are similar indications that the number of surface operational errors from 87 in 1980 to 103 in 1985, a 21 percent increase.

I believe that a more complete assessment of the status of aviation safety can be rendered by considering what I will call "aviation safety incidents." This broader concept includes all reported—and I underline "reported"—aviation accidents, reported near midair collisions, and reported surface operational errors involving sections 121 and 135 certificated air carriers.

From this perspective, since the enactment of the Airline Deregulation Act of 1978, FAA data, when adjusted to take into account the increases in traffic volumes since airline deregulation, indicate a dramatic decline in the margin of aviation safety. Specifically, the indications are that aviation safety incidents have been occurring more frequently since deregulation, relative to departures, relative to aircraft miles, and relative to aircraft hours.

These data are presented graphically in charts 1 through 3 of my prepared statement. The charts present data for three key indicators of airline activity: the number of revenue aircraft departures, the number of revenue aircraft miles, and the revenue hours flown. Aviation safety incidents are plotted against these indicators to provide a picture of the margin of safety.

However, it is important to point out that these graphs were based on very limited FAA data, and that the quality of the data which is available from the FAA may be limited as well. Indeed, FAA's data collection, verification, and data base maintenance and management practices have been identified by the National Transportation Safety Board and the GAO as a problem area. Without an adequate data base, FAA is severely limited in its ability to anticipate potential aviation safety problems, and to define approaches to the resolution of such problems.

Unfortunately, for the time being, anyone attempting to assess the status of aviation safety must use FAA data. Any such assessment must acknowledge the serious limitations in the quality and quantity of that data. With those caveats in mind, I believe, nevertheless, that the data do provide an indication of the margin of aviation safety.

Let me turn now to the charts in my prepared statement.

Chart 1 presents data from 1975 to 1985 on the number of airline departures per aviation safety incident. The chart, immediately to your right, Mr. Chairman, shows that in 1975, an incident was reported for every 12,805 departures. By 1980, an incident was reported for every 7,377 departures, a 42 percent decline in the number of departures between incidents during the period 1975–80.

However, during the period of 1980-82, the number of departures per incident increased from 7,377, the low point in the graph line in 1980, to 12,031 in 1982, a 63 percent increase. This is an indication that the margin of safety improved during that period between 1980 and 1982.

Then, during the period 1982 to 1985, the margin of safety drops again as the number of departures per incident decreased from 12,031 in 1982 to 5,323 in 1985, a 56 percent decline over the period.

Chart 2 will show the same thing. It presents a similar picture during that same time period, based on the number of airline revenue aircraft miles per safety incident.

The chart shows that during the period 1975 to 1980, the margin of safety declined as indicated by the 38 percent decrease in the number of miles between incidents. That is, in 1975, on the chart—the second chart to your right—an incident was reported for every 5.6 million revenue aircraft miles. By 1980, there were 3.5 million aircraft miles per incident.

From 1980 to 1982, again there was an improvement in the margin of safety as the number of miles per incident increased from 3.6 million miles in 1980 to 6 million miles in 1982, about a 71 percent increase.

During the period 1982-85, however, the margin of safety eroded again as the number of miles between incidents declined from 6 million miles in 1982 to 2.9 million miles in 1985, a 56 percent decline.

Chart 3 presents the decline in the margin of safety in terms of the number of revenue aircraft hours per incident. The data indicate a declining margin of safety as the number of hours per incident decreased from 13,868 hours in 1975 to 8,825 hours in 1980, a decrease of 36 percent.

So again then we see the chart showing that between 1980 and 1982, the margin of safety goes up as the number of revenue aircraft hours per safety incident increases. After 1982, however, there is a 53 percent decline in the number of hours per incident from 1982 to 1985. In 1982, there were 14,758 hours per incident; in 1985 there were 6,987 hours per incident.

All of the data on the three charts suggest an improvement in the margin of safety from 1980 to 1982. This may be a reflection of the 1981 PATCO strike when the FAA reduced the volume of air traffic by imposing limits on the number of flights at the busiest airports to compensate for the reduction in the number of air traffic controllers manning the towers during the strike. The result of such controls appears to have been a significant improvement in the margin of safety.

That has some interesting implications for the present situation. Indeed, based upon its assessment of the status of the Nation's air traffic controller work force, the General Accounting Office has suggested that the FAA should consider imposing controls on the growth of air traffic until that controller work force is adequately staffed.

Mr. Chairman, I believe the data presented here indicate that the margin of aviation safety has declined significantly. Simply put, the problem is that the skies have become more crowded since

deregulation, and there is no indication that the future will bring less crowded skies.

Senator SARBANES. Let me interrupt for a second because I think this is a very important point. Without going back over all three charts, I think it would be helpful at least to address the first one.

As I understand it, this chart shows the number of departures per safety incident.

Senator BYRD. That's right.

Senator SARBANES. The other two charts show aircraft miles and aircraft hours.

Senator BYRD. Yes.

Senator SARBANES. Without going over those, and just taking the departures per incident, in 1975 there were 12,805 departures per incident—that many departures for each incident.

Senator BYRD. Yes.

Senator SARBANES. Then the margin of safety worsened. In other words, the number of departures per incident declined, so there were more incidents in proportion to departures. Then it dropped down to this figure, 7,377.

Then you got an improvement, as you point out, and that occurred during the period when the number of flights was limited. In other words, you had fewer flights, more controls, and fewer incidents relative to the number of departures. Safety went up—we see an improvement.

Senator BYRD. Yes.

Senator SARBANES. Now in the last 3 years you have had a very precipitous drop, and in fact we are now down to a figure that is half as safe as we were in 1975 in terms of the number of departures per incident. We are now down to 5,323 departures per incident.

Senator BYRD. Less than half.

Senator SARBANES. Less than half.

Of course the other charts reflect the same trends. This is very instructive in indicating, as you put it, that the margin of safety air travelers now experience has been significantly narrowed. Travelers are at greater risk, according to these charts, significantly greater risk than was the case 10 years ago in 1975. In other words, the situation has worsened considerably.

Senator BYRD. Yes.

And Mr. Chairman, the charts with reference to aircraft hours and aircraft miles——

Senator SARBANES. Indicate the same thing?

Senator BYRD. Yes, they indicate the same thing. And they refer to revenue aircraft miles. In other words, we're talking about commercial aircraft there. We're not talking about the general aviation aircraft.

Senator SARBANES. Thank you. I think these charts are very helpful, and we appreciate the effort that has gone into preparing them.

Senator BYRD. Thank you, Mr. Chairman.

Since 1978, there has been a very significant growth in the number of commercial passenger airlines. This is another aspect, Mr. Chairman, to this whole safety problem. There has been a very

significant growth in the number of commercial passenger airlines, as well as in the number of aircraft operated by such carriers.

For example, prior to the enactment of the Airline Deregulation Act of 1978, there were a total of 29 carriers, including 10 major carriers and 19 commuter airlines. In 1985, according to the FAA, there were a total of 220 air carriers, including 60 major carriers and 160 commuter airlines.

In 1986, there are 307 passenger air carriers, an increase of almost 40 percent over the previous year. Of the 307 passenger air carriers, 116 are major air carriers, and 191 are commuters.

In addition, the number of aircraft operated by the major air carriers and the commuter airlines has increased steadily since deregulation. In 1984, the total commercial passenger fleet was 3,824 aircraft, a 78 percent increase over the 2,145 aircraft operated in 1978.

I should not neglect to mention—as I referred a little bit earlier—the approximately 220,940 general aviation aircraft estimated by FAA to be in operation in 1984, 24 percent more than the 177,964 general aviation aircraft operated in 1978. Let me repeat that:

I should not neglect to mention the approximately 220,940 general aviation aircraft estimated by FAA to be in operation in 1984, 24 percent more than the 177,964 general aviation aircraft operated in 1978. Think of it; 220,940 general aviation aircraft also flying in the skies.

Senator SARBANES. This is in addition to the major air carriers, and in addition to the commuter airlines?

Senator BYRD. Yes, it is.

They are not all flying at the same time, Mr. Chairman, but at one time or another. And don't forget the military aircraft. They fly, too.

The largest growth in the number of commercial aircraft has occurred in the commuter fleet. In 1978, commuter airlines operated a fleet of about 500 aircraft. By 1984, commuter airlines operated a fleet of 1,132 aircraft, an increase of 126 percent.

One disturbing phenomenon closely related to the growth of the airline industry is the declining level of pilot experience. The rapid expansion of the industry has resulted in record levels of pilot hiring by the airlines. For example, in 1985, the airlines hired more than 8,000 pilots, putting a severe strain on the existing pool of available experienced pilots.

The declining level of pilot experience is attributed in large measure to high pilot turnover at commuter airlines. Commuter airlines have been experiencing high pilot turnover as their pilots, trained at the expense of the commuter airline, are moving to jobs with the major air carriers. For example, Henson Airlines alone is reported to have lost an average of more than one pilot per week to the major airlines. In 1985, Henson lost 70 of its 220 pilots.

In an effort to cope with high pilot turnover, the commuter airlines have been lowering hiring standards. It would appear, based on comments made by the National Transportation Safety Board Chairman, Mr. Jim Burnette, on March 19, 1986, before the Transportation Appropriations Subcommittee, that the Nation's commut-

er airlines have been "scraping the bottom of the barrel" in their search for pilots.

A key indicator of the declining level of pilot experience is the number of hours a pilot or first officer has spent in the cockpit. In 1983, only 8 percent of the pilots flying for commuter airlines had fewer than 2,000 flight hours. By 1985, 23 percent of the commuter pilots had fewer than 2,000 hours.

It should also be noted that the problem of pilot experience is not confined to commuter airlines. According to Future Aviation Professionals of America, there has also been a steady decline in the experience of pilots hired by the major airlines.

For example, in 1983, pilots flying for major airlines had an average of 2,342 hours of flight experience in jet aircraft. In 1985, they had only 818 hours in jet aircraft. Compounding the problem is the fact that over the next 20 years, approximately 70 percent of the pilots employed by the major airlines are expected to retire.

The question for the future, then, is where, and how, will an expanding passenger airline industry find new pilots? Traditionally, the major airlines have relied on the American military for pilots. At one time, almost 75 percent of the pilots employed by the major airlines were former Navy or Air Force pilots. Today, less than one-third of the pilots employed by major airlines are former military pilots, in part because the military is training fewer pilots.

In view of the prospects for continued growth of the airline industry, declining levels of pilot experience may gain increasing prominence as a significant factor in aviation safety incidents.

According to the FAA's long-term forecast, the domestic airline industry is expected to continue the strong growth enjoyed since deregulation. For example, the FAA expects that enplanements for major domestic carriers will increase almost 62 percent during the forecast period of 1985–97. Enplanements for commuter airlines are expected to increase 102 percent over the forecast period.

The growth expected by the FAA in the airline industry will bring increased burdens on FAA traffic control systems, and other services necessary to manage the increasing volume of air traffic which will be using the Nation's airspace. For example, the FAA expects the number of aircraft operations at FAA towered airports to increase 46 percent over the forecast period of 1985 to 1997.

The question is whether the FAA has the resources and capability to handle the challenges posed by the growth in the domestic airline industry, and in the general aviation industry.

For example, serious concern has been expressed by the General Accounting Office about whether the air traffic control system is adequate to handle the greater workloads resulting from the increases in air traffic volume expected to occur between now and 1997. Indeed, there is concern that even at current levels of air traffic, the Nation's aviation safety system has been pushed to, and sometimes pushed beyond, its limits.

Consider, for example, that although the air traffic volume has increased in the years since airline deregulation, the number of air traffic controllers is down. Prior to the PATCO strike on July 31, 1981, the air traffic control system employed 13,205 full-performance level controllers. As of April 30, 1986, according to the FAA,

the system employed 8,861 full-performance level controllers, 4,344 fewer controllers than before the PATCO strike.

FAA officials have expressed confidence in the air traffic control system, and the FAA is in the process of trying to add 500 controllers per year to its work force for fiscal year 1986 and 1987. Nevertheless, the General Accounting Office's analysis of the FAA's air traffic controller work force suggests doubts about whether the air traffic control system will have an adequate number of full-performance level controllers to handle the increases in air traffic expected from now until the end of the decade and beyond.

The March 7, 1986, issue of the Washington Post contained a report on the results of a study of the Nation's air traffic controllers by the General Accounting Office. The GAO report is based upon a survey of 4,500 radar-qualified controllers and other personnel with the air traffic control system. According to the Post story, the GAO found:

One. "70 percent of controllers in a systemwide survey reported that they are handling more traffic than they should handle."

Two. "The FAA has met its goal of about 12,500 controllers, compared with 16,200 before the strike, but has fewer controllers at the highest experience level—8,300 today compared with 13,200 in July 1981."

Three. "Retirement of experienced controllers will be a greater problem than the FAA has estimated, because of controller disgust with management and fears of changes underway in the federal retirement system."

According to the Post account: "84 percent of the controllers and 81 percent of the supervisors eligible to retire in the next two years said they will do so."

Four. "Air traffic is growing rapidly so controller workload will likely continue to be a concern for some time."

Five. "60 percent of controllers said they are working too long daily without a break. A substantial number of supervisors agreed."

Six. "The FAA is heavily dependent on controller overtime—908,000 hours in fiscal 1985 compared with 377,000 hours in fiscal 1980."

Now speaking of the air traffic controllers, Mr. Chairman, the air traffic controllers are responsible for the monitoring and the control of end-route flights of civil and military aircraft conducted under instrument conditions to ensure safety and expedite the flow of traffic, and controllers are also responsible for the flow of traffic on the ground, air traffic on the ground.

Terminal control facilities are operated at major civil airports to guide traffic movements into the central airport.

Although the Federal Aviation Administration uses the term "air traffic controller" in its budget, controllers are actually broken down into three distinct groups, in other words, full-performance level, and if you will look on the chart, Mr. Chairman, that has been provided to the members, you will find—and I apologize for the chart, it is not a very clear one; the one bar graph is not very clear.

But it is broken down into three distinct groups: full-performance level controllers, developmental controllers, and air traffic control assistants. These are the definitions.

A full-performance level controller is one who is fully trained, fully certified to operate all positions in a control tower.

A developmental controller is one who is undergoing training.

The air traffic control assistant. The air traffic control assistant is a new position established since the strike. These individuals are not trained to control air traffic, and they do not control air traffic. They perform less skilled tasks of mainly a clerical nature.

Now on the bar graph we will find that on the far left of the graph it shows a total of 16,244 air traffic controllers before the strike in 1981. Of those 16,244 controllers, 13,205 were full-performance level controllers, 2,039 were developmental controllers. There were no air traffic control assistants included in this figure.

Senator SARBANES. If you could take that chart and hold it in your left hand, the one right in front of you, that way we can see the different colors from here, and as you describe it, I think it will become clearer.

Senator BYRD. Very well. That is a good suggestion, Mr. Chairman.

The second bar shows the after-the-strike situation in 1981. We find there on the second bar that there are 4,478 full-performance level controllers and 1,897 developmental controllers, making a total of 6,675 air traffic controllers.

Now in 1982, 1983, 1984, and 1985—let's go to 1985.

In 1985 we find a total of 13,998—we'll just say 14,000 in round numbers—air traffic controllers, of which only 8,000 represented in the red, only 8,315 are full-performance level controllers. In other words, these are the controllers who are certified to do any of the assignments that are necessary for air traffic controllers.

Now there are 4,217 developmental controllers. These are people who are in training.

And then there are 1,466 of the air traffic control assistants, 1,466, and yet they are included in the total of 13,998, the total number of air traffic controllers.

So again, the total number prior to the strike in 1981 for air traffic controllers was 16,244, the total number in 1985, 13,998. But in 1981 there were 13,205 full-performance level controllers. In 1985, there were 8,315 total-performance level controllers. In 1981, no air traffic control assistants; in 1985, 1,466. And in 1981 as to developmental controllers, 2,039, and in 1985, 4,217.

The General Accounting Office report confirms the uneasy picture emerging from other studies done on the air traffic control system since the PATCO strike in 1981. What is the FAA's response?

The New York Times of March 18, 1986, carried a story which bore the headline "Air Safety Chief Minimizes Survey Findings." The Times story indicated that the FAA has essentially disregarded the GAO study. Indeed, GAO representatives who conducted the study of air traffic controllers told a House subcommittee that: "Officials of the FAA had belittled their study of the air traffic control work force and later dismissed the findings of the study as just another survey."

At the beginning of its study, GAO presented the questionnaire to be used to gather information to the FAA for comments and suggestions. According to the Times story, the FAA's response was: "That the FAA could derive nothing of value from the questionnaire."

Incredibly, the FAA apparently dismissed the GAO findings as just another survey, and the FAA officials said that "Controllers were predictable complainers."

So there we have it, Mr. Chairman. There is nothing wrong with the air traffic control system, except that the controllers are "predictable complainers."

Senator SARBANES. Could I interject here?

I think this is a very important point that is being made because the FAA has tended to dismiss, as you point out, lightly these concerns about the air traffic controllers.

Now one of the things the FAA has done is it has tended to lump in its numbers together all three categories of these controllers. As your chart shows, if we go back to——

Senator BYRD. Before the strike.

Senator SARBANES [continuing]. Before the strike, back before 1981, there were a total of 16,244 controllers, there were only two categories at that time. You had full-performance level controllers, 13,205, in other words, this red line here, and you had 3,039 of developmental people in the stages of development.

Now what has happened—of course the figure dropped way down. They have been trying to build it back up. We are back up here now to this figure. But the important thing is the deterioration in quality that is taking place. In other words, while this bar is beginning to approximate this one, although it still falls short of it, the important thing is that the number of full-performance controllers has dropped markedly. It is barely over 8,000 here whereas before 1981, it was 13,000 over here.

So this is a very important comparison between those two parts of the chart.

The other thing is of course they are now including in it 1,466—that's this part up here—who are not really controllers. As I understand it, they do the paperwork for the controllers.

Senator BYRD. They are the air traffic assistants.

Senator SARBANES. They are the air traffic assistants. And there wasn't even such a category back before——

Senator BYRD. There might have been, but they weren't included in the full-performance level controllers, that 16,000-plus.

Senator SARBANES. That's right.

So I think it is very important in looking at this chart not only to compare the height of this bar with the height of this one, but to look at the composition of this bar, and particularly to notice that first, it includes a category that wasn't present back here, and second, the very sharp drop in full-performance level controllers that has taken place over the last 5 years.

Senator BYRD. Mr. Chairman, you have said it preeminently more clearly than I stated it. What we see there is before the strike the full-performance level controllers constituted 81 percent of the total controller work force. In 1985, the full-performance level controllers constituted 59 percent of the controller work force. And in

1986, the full-performance level controllers constitutes 63 percent of the total controller work force.

I have been concerned about what appears to be the deteriorating condition of the Nation's air safety system. I know many of my colleagues share my concern that the safety of the American public may be threatened by the weakening of the Nation's air safety systems as the result of overworked personnel, attrition, and other factors.

While we are talking about the air traffic controllers, Mr. Chairman, let me mention just a little about the aircraft maintenance budget and maintenance personnel.

In addition, concern has been expressed that the competitive economic environment established by airline deregulation may have created incentives for cost-conscious airlines—I say "may have created"—may have created incentives for cost-conscious airlines to reduce costs and improve profits by cutting aircraft maintenance budgets and maintenance personnel.

The growth in the number of airlines and the number of aircraft in the commercial passenger fleet makes it difficult for FAA to ensure that the airlines are conducting proper aircraft maintenance practices. The problem is compounded by the decreases in the number of FAA inspectors to do the job.

In 1986, there are 30 percent fewer FAA inspectors than in 1978. If we will look at the graph that has been supplied to the committee we will find that in 1978, there were 2,178 inspectors. This dropped to 1,600 in 1981, 1,423 in 1982, 1,374 in 1983, 1,450 in 1984, 1,475 in 1985, and 1,556 in 1986; in other words, 1,556 to day as against 2,178 in 1978.

This decrease in the number of inspectors has occurred while the number of air carriers has increased, as we have already indicated, over 100 percent.

In testimony before the Transportation Subcommittee of the Appropriations Committee on March 19, 1986, Mr. Jim Burnette, then the Chairman, who is soon to be again I hope, of the National Transportation Safety Board, commented that the FAA does not have an adequate airline maintenance surveillance system in place. Mr. Burnette noted that while the FAA has improved its efforts in airline inspections, without more inspectors, it is difficult for the FAA to be more aggressive.

It is clear that the FAA is facing significant challenges in the face of the explosive growth of the commercial passenger airline industry since airline deregulation. The adequacy of the FAA's efforts to conduct surveillance of the airline industry to ensure compliance with Federal regulations regarding aircraft maintenance and airline operations have been called into question by the GAO and others.

Over the years, FAA officials have reiterated the agency's policy that safety is a major responsibility and goal of the FAA. However, a statement of policy and its implementation are often not the same.

When the Airline Deregulation Act was enacted in 1978, Congress affirmed, as a matter of policy, that the implementation of the Act: "Result in no diminution of the high standard of safety in

air transportation attained in the United States at the time of the enactment of such Act."

Clearly 8 years after the enactment of that public law that essential policy goal has yet to be achieved.

Part of the difficulty may be in the conflicting statutory duties given to the FAA. These duties, to promote commercial aviation on the one hand and to promote aviation safety at the same time, form the core of the Nation's aviation policy.

Section 103(A) of the Federal Aviation Act of 1958 directs the FAA Administrator to consider: "The regulation of air commerce in such manner as to best promote its development and safety."

The Administrator is to consider the "promotion, encouragement, and development of civil aeronautics" to be in the public interest.

Shortly after the enactment of the Airline Deregulation Act, Congress expressed concern that the conflict between the FAA's responsibility to ensure safety and promote "civil aeronautics" could adversely affect aviation safety.

A 1980 congressional report entitled "A Thorough Critique of Certification of Transport Category Aircraft by the Federal Aviation Administration"—this is by the Committee on Government Operations, May 7, 1980—questioned whether FAA's dual responsibilities are appropriate to the agency's mission, or whether they represent contradictions that impair proper agency function in the context of the historical evolution of the airline industry.

The report concluded that the FAA's conflicting policy goals were providing inadequate policy direction, and that this was: "Hurting government efforts and could eventually lead to a situation that would endanger public safety.

Since that report was published 6 years ago, there is still reason for concern. For example, in January 1984, the General Accounting Office released a report which was critical of FAA's safety standards for small passenger aircraft. The report found that the FAA standards for such aircraft were lower than for larger commercial passenger aircraft.

The GAO report indicated that the FAA did not impose more stringent safety standards on small passenger craft because the cost of such standards would be too financially burdensome on the industry. The report included an FAA comment which noted that the imposition of such a burden would frustrate one of the basic purposes of the FAA; namely, to promote aviation in this country.

Indeed, Mr. Chairman, there are indications that FAA provides assistance to the very air carriers it shuts down for safety-related violations. A report on the FAA and its inspections of commuter airlines in the June 10, 1985, issue of U.S. News & World Report, reviewed several cases where the FAA had extended its help to the very airlines which the agency had cited for serious safety-related deficiencies. When the FAA shuts down a carrier, the U.S. News reported noted: "The FAA will try to get it back in operation."

In particular, the report noted that the FAA had played a major role in helping Provincetown-Boston Airlines back in service after the carrier's operating license was lifted for deliberately falsifying records. According to the U.S. News story, the airline resumed operations in a short period of time, and then was involved in a crash

near Jacksonville, FL, which killed 13 persons on December 6, 1984.

In view of the growing concerns about the adequacy of FAA resources in the face of significant growth in air traffic volume, let me raise one other important issue which will have a direct bearing on the future of aviation safety.

On February 3, 1986, the Aviation Subcommittee of the Commerce Committee held a hearing on the impact of Gramm-Rudman on the FAA budget and aviation safety. At that hearing, the FAA Administrator, Mr. Donald Engen, was asked to assess the impact on the FAA and aviation safety if, under Gramm-Rudman, the agency were forced to reduce its fiscal year 1986 operating budget by 15 to 20 percent.

Mr. Engen testified that there would be:

> No reasonable way in which the FAA could absorb that kind of reduction overall without serious deterioration of the current levels of safety services provided by the FAA.

On March 1, 1986, under the terms of Gramm-Rudman, the FAA was forced to achieve an initial reduction of its fiscal year 1986 operating budget, a cut of about $115 million. The Administrator testified that in adjusting its operations to accommodate the required Gramm-Rudman cut, the FAA's top priority was: "To minimize any adverse impacts on safety and system personnel."

However, several months later, the FAA requested an additional appropriation of $80 million to avoid furloughs for air traffic controllers, safety inspectors, and other FAA employees. In response to FAA's request, those funds were appropriated by the Congress in the fiscal year 1986 Supplemental Appropriations Bill, Public Law 99-349.

The congressional response to FAA's request underscores, once again, the willingness of the Congress to provide the FAA with the funding resources necessary to ensure aviation safety. Indeed, the Congress has consistently appropriated funds to meet the levels requested by the FAA for its operating budget.

For example, in fiscal year 1985 the FAA requested $2.7 billion for FAA operations, and the Congress appropriated $2.8 billion. In fiscal year 1986, the FAA requested $2.7 billion, and Congress appropriated $2.8 billion.

In view of the declining margin of aviation safety, and the questions raised about the ability of the FAA to meet the challenges brought about by airline deregulations, I believe, Mr. Chairman, that it is time for an intensive, objective reexamination of the FAA, the Nation's aviation safety policy, and the impact of airline deregulation on aviation safety.

In particular, it is time to consider whether the FAA has been requesting adequate resources, and has used such resources effectively and efficiently to ensure aviation safety, and whether the FAA's dual responsibilities as defined in section 103 of the Federal Aviation Act of 1958 impede aviation safety.

These concerns prompted me to introduce S. 2417, "The Aviation Safety Commission Act," to address the issues I have raised here today. Very briefly, the bill was introduced in May of this year and has among its cosponsors Senator Kassebaum, the able and distin-

guished Chairman of the Aviation Subcommittee, and the distinguished ranking member, Senator Exon.

The bill directs the President to appoint a seven-member blue-ribbon commission, the "Aviation Safety Commission," to make a complete study of the organization and functions of the FAA and the means by which the FAA may most efficiently and effectively enhance aviation safety.

The Commission is directed to consider whether the FAA has requested and been provided with adequate resources to ensure aviation safety, and to consider whether the dual responsibilities of the FAA are in conflict, and whether any such conflict impedes aviation safety.

The Commission is also to consider whether the FAA should be reorganized as an independent Federal agency with aviation safety as its sole responsibility, and whether airline deregulation has had an adverse impact on the margin of safety. This should include a review of whether the practice of airline self-compliance with maintenance standards is an outmoded approach in an environment designed to maximize cost savings.

One year from the date of enactment, the Commission is to submit a report to the President and the Congress containing the Commission's findings and recommendations.

Mr. Chairman, I believe the time has come for a thorough, independent examination of the aviation safety issues I have raised here today. I do not make this statement in derogation of the efforts that are being made by Mr. Engen, the Administrator, or by Secretary Dole of the Department of Transportation.

I think Secretary Dole has certainly put into place forceful and aggressive efforts to monitor and police airline safety and, as we both know, severe fines have been levied against several airlines, in particular Eastern and American Airlines.

So I offer the criticism I have offered today, submitted today, in a constructive fashion, believing that even with those good efforts, we are falling short of the goals that we should achieve, and falling short. While no system will ever be perfect, we are falling short of what the air travelers of this country expect, and that is that the air traffic control system be the very best that we can possibly have, and that every effort is being made to assure air travelers of the safety of their lives.

Such an assessment as has been made—or as would be made by the Commission would be a valuable contribution to congressional efforts.

Let me say that the work that this subcommittee is doing here now is exceedingly important to all of us. We are going to be reconsidering aviation issues beginning next year with the reauthorization of the Airway and Airport Improvement Act of 1982. And the work of this committee, this Joint Committee, is going to have a considerable impact upon those deliberations.

I thank the members of the committee. And that concludes my statement.

[The prepared statement of Senator Byrd follows:]

PREPARED STATEMENT OF HON. ROBERT C. BYRD

MR. CHAIRMAN, LET ME COMMEND YOU FOR SCHEDULING THIS HEARING ON THE ISSUE OF AVIATION SAFETY, AN ISSUE ABOUT WHICH THERE HAS BEEN GROWING PUBLIC CONCERN SINCE THE ENACTMENT OF THE AIRLINE DEREGULATION ACT OF 1978 (P.L. 95-504). WITH EACH REPORT OF A COMMERCIAL AIR CARRIER CRASH, AS WELL AS REPORTS OF OTHER SAFETY-RELATED INCIDENTS, THE AMERICAN PUBLIC HAS BECOME INCREASINGLY CONCERNED ABOUT AVIATION SAFETY.

THERE IS REASON FOR CONCERN. ACCORDING TO THE NATIONAL TRANSPORTATION SAFETY BOARD (NTSB), 1985 WAS THE WORST YEAR FOR DOMESTIC COMMERCIAL AVIATION SINCE 1977. LAST YEAR, THERE WERE 526 FATALITIES FROM ALL U.S. AIR CARRIERS, COMPARED TO 655 FATALITIES IN 1977.

THE FAA AND REPRESENTATIVES OF THE AIRLINE INDUSTRY HAVE ARGUED THAT THE SAFETY OF THE DOMESTIC PASSENGER CARRIERS

HAS IMPROVED IN THE YEARS SINCE DEREGULATION. HOWEVER, THIS ASSESSMENT IS BASED SOLELY UPON THE NUMBER OF ACCIDENTS AND FATAL ACCIDENTS IN ANY GIVEN YEAR.

THAT APPROACH IS NOT NECESSARILY THE MOST USEFUL INDICATOR OF THE CURRENT STATUS OF AVIATION SAFETY. FOCUSING EXCLUSIVELY ON ACCIDENTS IS OF LIMITED USEFULNESS BECAUSE IT IGNORES ANY CONSIDERATION OF INCIDENTS WHICH DID NOT BECOME ACCIDENTS. IT IS OFTEN ONLY LUCK THAT SEPARATES INCIDENTS AND ACCIDENTS. FOR EXAMPLE, ON MAY 17, 1986 AN AMERICAN AIRLINES 727 PASSENGER JET AND A US AIR DC-9 CAME VERY CLOSE TO A DISASTROUS COLLISION AT CHICAGO'S O'HARE AIRPORT. BOTH AIRCRAFT WERE CLEARED BY AN AIR TRAFFIC CONTROLLER FOR TAKE-OFF AT THE SAME TIME FROM INTERSECTING RUNWAYS. IT WAS ONLY BECAUSE THE US AIR CO-PILOT HAPPENED TO NOTICE THE ON-COMING AMERICAN AIRLINES JET, AND THE PILOT WAS ABLE TO TAKE LAST-MINUTE EMERGENCY ACTION, THAT A DISASTER WAS AVOIDED FOR THE 224 PASSENGERS AND CREW ON BOARD THE TWO AIRCRAFT.

THERE ARE OTHER DATA WHICH SHOULD BE INCLUDED IN ANY CONSIDERATION OF THE STATUS OF AVIATION SAFETY. A MORE COMPLETE PICTURE OF AVIATION SAFETY IS PROVIDED BY CONSIDERING DATA REGARDING ACCIDENTS, AS WELL AS DATA ON NEAR MID-AIR COLLISIONS AND SURFACE OPERATIONAL ERRORS (E.G., RUNWAY INCURSIONS). SUCH DATA, COLLECTED AND REPORTED BY THE FAA, INDICATE THAT THE NUMBER OF NEAR MID-AIR COLLISIONS INCREASED FROM 568 IN 1980 TO 758 IN 1985, AN INCREASE OF 33%. THERE ARE SIMILAR INDICATIONS THAT THE NUMBER OF SURFACE OPERATIONAL ERRORS INCREASED FROM 87 IN 1980 TO 103 IN 1985, A 21% INCREASE.

I BELIEVE THAT A MORE COMPLETE ASSESSMENT OF THE STATUS OF AVIATION SAFETY CAN BE RENDERED BY CONSIDERING WHAT I WILL CALL "AVIATION SAFETY INCIDENTS." THIS BROADER CONCEPT INCLUDES ALL REPORTED AVIATION ACCIDENTS, REPORTED NEAR MID-AIR COLLISIONS, AND REPORTED SURFACE OPERATIONAL ERRORS INVOLVING SECTION 121 AND 135 CERTIFICATED AIR CARRIERS.

FROM THIS PERSPECTIVE, SINCE THE ENACTMENT OF THE AIRLINE DEREGULATION ACT OF 1978, FAA DATA--WHEN ADJUSTED TO TAKE INTO ACCOUNT THE INCREASES IN TRAFFIC VOLUME SINCE AIRLINE DEREGULATION--INDICATE A DRAMATIC DECLINE IN THE MARGIN OF AVIATION SAFETY. SPECIFICALLY, THE INDICATIONS ARE THAT AVIATION SAFETY INCIDENTS HAVE BEEN OCCURRING MORE FREQUENTLY SINCE DEREGULATION, RELATIVE TO DEPARTURES, AIRCRAFT MILES, AND AIRCRAFT HOURS.

THESE DATA ARE PRESENTED GRAPHICALLY IN CHARTS 1 THROUGH 3 OF MY TESTIMONY. THE CHARTS PRESENT DATA FOR THREE KEY INDICATORS OF AIRLINE ACTIVITY--NUMBER OF REVENUE AIRCRAFT DEPARTURES, REVENUE AIRCRAFT MILES, AND REVENUE HOURS FLOWN. AVIATION SAFETY INCIDENTS ARE PLOTTED AGAINST THESE INDICATORS TO PROVIDE A PICTURE OF THE MARGIN OF SAFETY.

HOWEVER, IT IS IMPORTANT TO POINT OUT THAT THESE GRAPHS WERE BASED ON VERY LIMITED FAA DATA, AND THAT THE QUALITY OF THE DATA WHICH IS AVAILABLE FROM THE FAA MAY BE LIMITED AS WELL. INDEED, FAA'S DATA COLLECTION, VERIFICATION, AND DATA

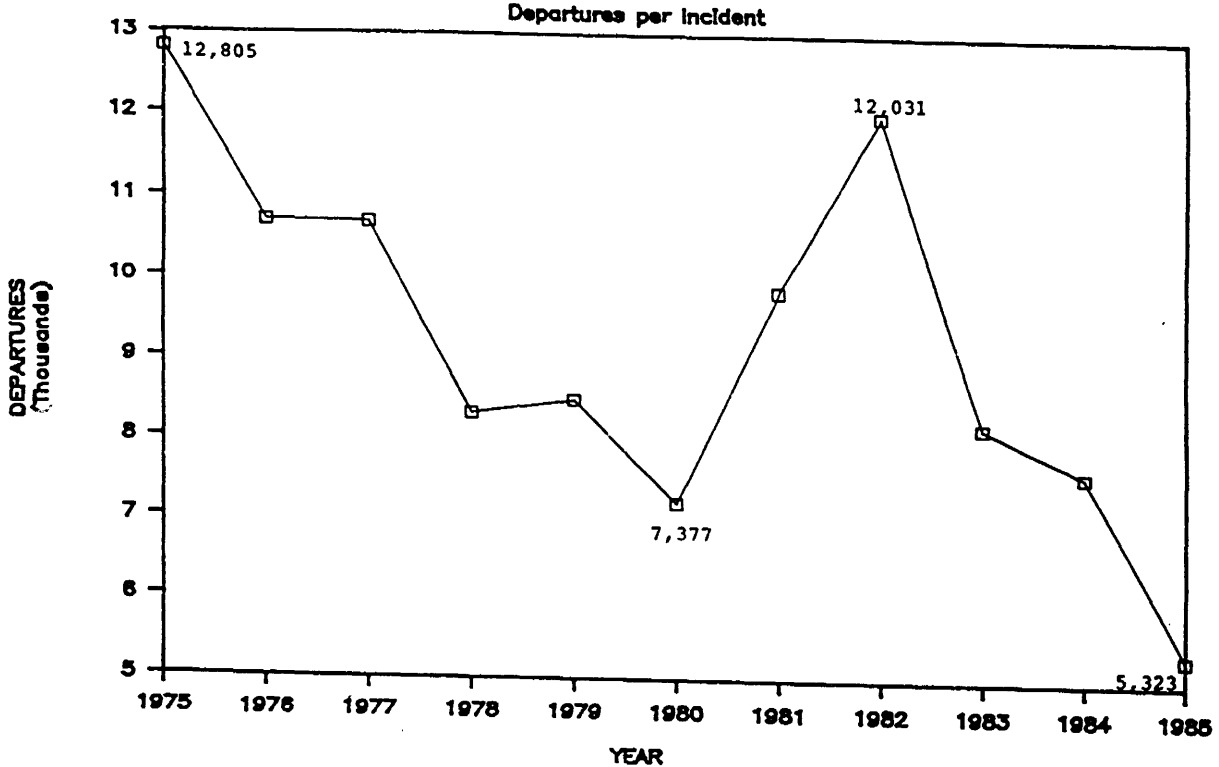
BASE MAINTENANCE AND MANAGEMENT PRACTICES HAVE BEEN IDENTIFIED BY THE NTSB AND GAO AS A PROBLEM AREA. WITHOUT AN ADEQUATE DATA BASE, FAA IS SEVERELY LIMITED IN ITS ABILITY TO ANTICIPATE POTENTIAL AVIATION SAFETY PROBLEMS, AND TO DEFINE APPROACHES TO THE RESOLUTION OF SUCH PROBLEMS.

UNFORTUNATELY, FOR THE TIME BEING, ANYONE ATTEMPTING TO ASSESS THE STATUS OF AVIATION SAFETY MUST USE FAA DATA. ANY SUCH ASSESSMENT MUST ACKNOWLEDGE THE SERIOUS LIMITATIONS IN THE QUALITY AND QUANTITY OF THAT DATA. WITH THOSE CAVEATS IN MIND, I BELIEVE THAT THE DATA DO PROVIDE AN INDICATION OF THE MARGIN OF AVIATION SAFETY. LET ME TURN TO THE CHARTS IN MY TESTIMONY.

CHART 1 PRESENTS DATA FROM 1975 TO 1985 ON THE NUMBER OF AIRLINE DEPARTURES PER INCIDENT. THE CHART SHOWS THAT, IN 1975, AN INCIDENT WAS REPORTED FOR EVERY 12,805 DEPARTURES. BY 1980, AN INCIDENT WAS REPORTED FOR EVERY 7,377 DEPARTURES, A 42% DECLINE IN THE NUMBER OF DEPARTURES BETWEEN INCIDENTS DURING THE PERIOD 1975-1980. HOWEVER,

CHART 1

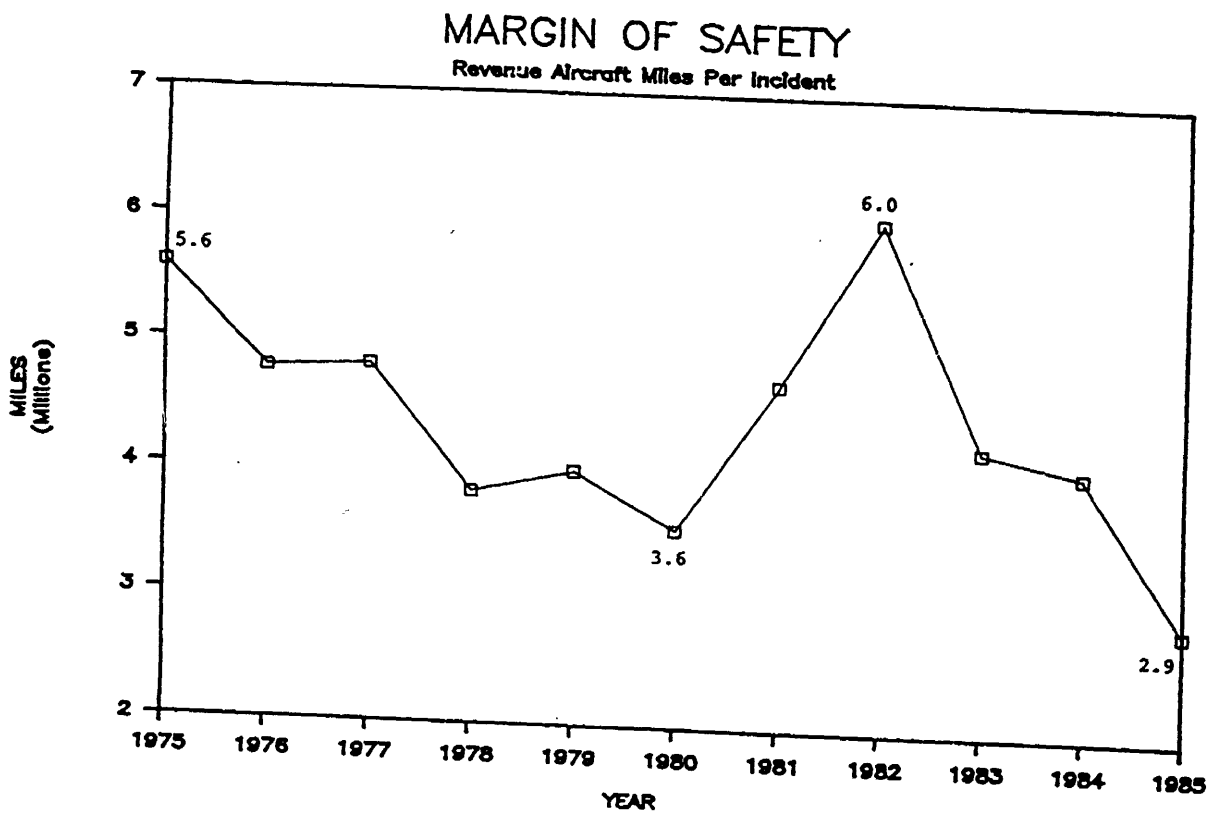
MARGIN OF SAFETY



DURING THE PERIOD 1980-1982, THE NUMBER OF DEPARTURES PER INCIDENT INCREASED FROM 7,377 IN 1980, TO 12,031 IN 1982, A 63% INCREASE. THIS IS AN INDICATION THAT THE MARGIN OF SAFETY IMPROVED DURING THAT PERIOD. THEN, DURING THE PERIOD 1982-1985, THE MARGIN OF SAFETY DECLINED AGAIN AS THE NUMBER OF DEPARTURES PER INCIDENT DECREASED FROM 12,031 IN 1982, TO 5,323 IN 1985, A 56% DECLINE OVER THE PERIOD.

CHART 2 PRESENTS A SIMILAR PICTURE DURING THE SAME TIME PERIOD, BASED ON THE NUMBER OF AIRLINE REVENUE AIRCRAFT MILES PER INCIDENT. THE CHART SHOWS THAT DURING THE PERIOD, 1975-1980, THE MARGIN OF SAFETY DECLINED AS INDICATED BY THE 38% DECREASE IN THE NUMBER OF MILES BETWEEN INCIDENTS. THAT IS, IN 1975, AN INCIDENT WAS REPORTED FOR EVERY 5.6 MILLION REVENUE AIRCRAFT MILES. BY 1980, THERE WERE 3.5 MILLION AIRCRAFT MILES PER INCIDENT. FROM 1980 TO 1982, THERE WAS AN IMPROVEMENT IN THE MARGIN OF SAFETY AS THE NUMBER OF MILES PER INCIDENT INCREASED FROM 3.6 MILLION MILES IN 1980, TO 6.0 MILLION MILES IN 1982, ABOUT A 71%

CHART 2


MARGIN OF SAFETY
Revenue Aircraft Miles Per Incident
MILES (Millions)
7
6
5
4
3
2
5.6
3.6
6.0
2.9
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
YEAR

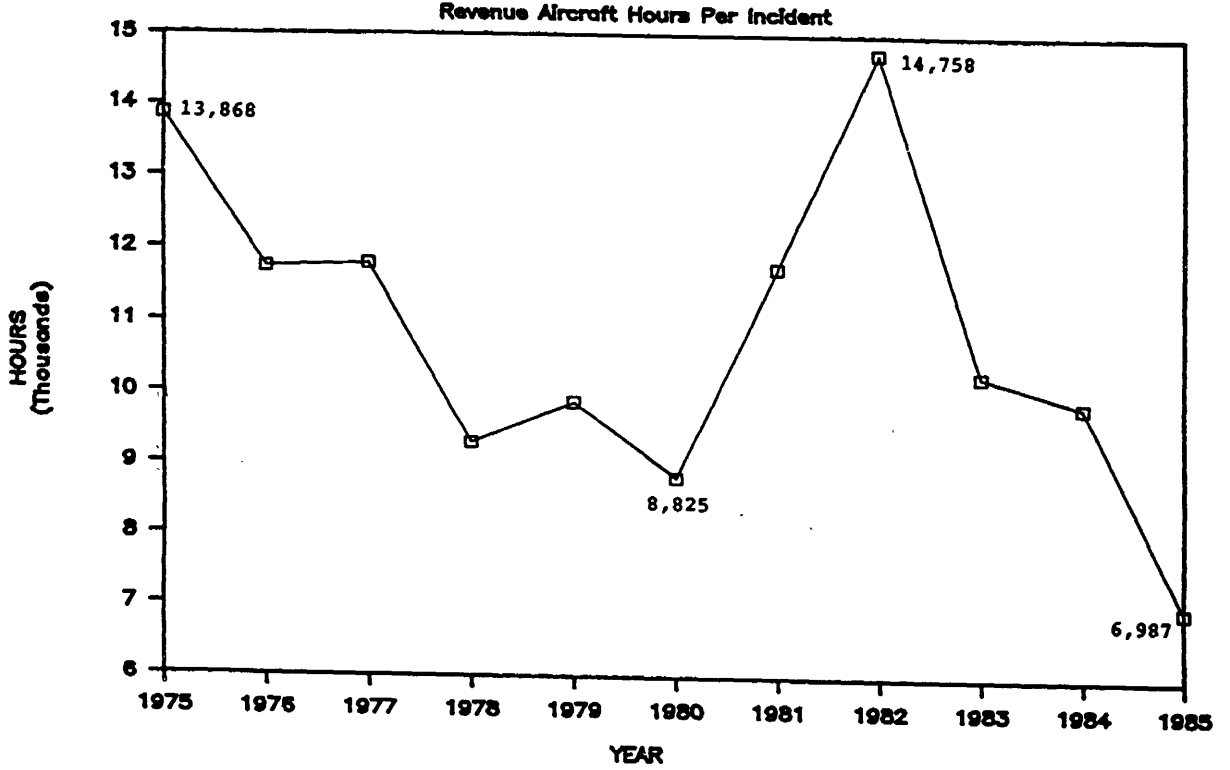
INCREASE. DURING THE PERIOD 1982-1985, THE MARGIN OF SAFETY ERODED AGAIN AS THE NUMBER OF MILES BETWEEN INCIDENTS DECLINED FROM 6.0 MILLION MILES IN 1982, TO 2.9 MILLION MILES IN 1985, A 56% DECLINE.

CHART 3 PRESENTS THE DECLINE IN THE MARGIN OF SAFETY IN TERMS OF THE NUMBER OF REVENUE AIRCRAFT HOURS PER INCIDENT. THE DATA INDICATE A DECLINING MARGIN OF SAFETY AS THE NUMBER OF HOURS PER INCIDENT DECREASED FROM 13,868 HOURS IN 1975, TO 8,825 HOURS IN 1980, A DECREASE OF 36%. ONCE AGAIN, THERE WAS A NOTICEABLE IMPROVEMENT IN THE MARGIN OF SAFETY AS THE NUMBER OF HOURS PER INCIDENT INCREASED FROM 8,825 HOURS IN 1980, TO 14,758 HOURS IN 1982. AFTER 1982, HOWEVER, THERE IS A 53% DECLINE IN THE NUMBER OF HOURS PER INCIDENT FROM 1982 TO 1985. IN 1982, THERE WERE 14,758 HOURS PER INCIDENT. IN 1985, THERE WERE 6,987 HOURS PER INCIDENT.

THE DATA SUGGEST AN IMPROVEMENT IN THE MARGIN OF SAFETY FROM 1980 TO 1982. THIS MAY BE A REFLECTION OF THE 1981

CHART 3

MARGIN OF SAFETY



PATCO STRIKE WHEN THE FAA REDUCED THE VOLUME OF AIR TRAFFIC BY IMPOSING LIMITS ON THE NUMBER OF FLIGHTS AT THE BUSIEST AIRPORTS TO COMPENSATE FOR THE REDUCTION IN THE NUMBER OF AIR TRAFFIC CONTROLLERS MANNING THE TOWERS DURING THE STRIKE. THE RESULT OF SUCH CONTROLS APPEARS TO HAVE BEEN A SIGNIFICANT IMPROVEMENT IN THE MARGIN OF SAFETY.

THAT HAS SOME INTERESTING IMPLICATIONS FOR THE PRESENT SITUATION. INDEED, BASED UPON ITS ASSESSMENT OF THE STATUS OF THE NATION'S AIR TRAFFIC CONTROLLER WORKFORCE, THE GAO HAS SUGGESTED THAT FAA SHOULD CONSIDER IMPOSING CONTROLS ON THE GROWTH OF AIR TRAFFIC UNTIL THAT WORKFORCE IS ADEQUATELY STAFFED. THE DATA I HAVE PRESENTED HERE INDICATE THAT SUCH AN APPROACH MIGHT HAVE BENEFICIAL RESULTS.

MR. CHAIRMAN, I BELIEVE THE DATA I HAVE PRESENTED HERE INDICATE THAT THE MARGIN OF AVIATION SAFETY HAS DECLINED SIGNIFICANTLY. SIMPLY PUT, THE PROBLEM IS THAT THE SKIES HAVE GOTTEN MORE CROWDED SINCE DEREGULATION, AND THERE IS NO INDICATION THAT THE FUTURE WILL BRING LESS CROWDED SKIES.

SINCE 1978, THERE HAS BEEN SIGNIFICANT GROWTH IN THE NUMBER OF COMMERCIAL PASSENGER AIRLINES, AS WELL AS THE NUMBER OF AIRCRAFT OPERATED BY SUCH CARRIERS. FOR EXAMPLE, PRIOR TO THE ENACTMENT OF THE AIRLINE DEREGULATION ACT OF 1978, THERE WERE A TOTAL OF 29 CARRIERS, INCLUDING 10 MAJOR CARRIERS AND 19 COMMUTER AIRLINES. IN 1985, ACCORDING TO FAA INFORMATION, THERE WERE A TOTAL OF 220 AIR CARRIERS, INCLUDING 60 MAJOR CARRIERS, AND 160 COMMUTER AIRLINES. IN 1986 THERE ARE 307 PASSENGER AIR CARRIERS, AN INCREASE OF ALMOST 40% OVER THE PREVIOUS YEAR. OF THE 307 PASSENGER AIR CARRIERS, 116 ARE MAJOR AIR CARRIERS, AND 191 ARE COMMUTERS.

IN ADDITION, THE NUMBER OF AIRCRAFT OPERATED BY THE MAJOR AIR CARRIERS AND THE COMMUTER AIRLINES HAS INCREASED STEADILY SINCE DEREGULATION. IN 1984, THE TOTAL COMMERCIAL PASSENGER FLEET WAS 3,824 AIRCRAFT, A 78% INCREASE OVER THE 2,145 AIRCRAFT OPERATED IN 1978.

THE LARGEST GROWTH IN THE NUMBER OF AIRCRAFT HAS OCCURRED IN THE COMMUTER FLEET. IN 1978, COMMUTER AIRLINES

OPERATED A FLEET OF ABOUT 500 AIRCRAFT. BY 1984, COMMUTER AIRLINES OPERATED A FLEET OF 1,132 AIRCRAFT, AN INCREASE OF 126%.

IN ADDITION, I SHOULD MENTION THE APPROXIMATELY 220,940 GENERAL AVIATION AIRCRAFT ESTIMATED BY FAA TO BE IN OPERATION IN 1984, 24% MORE THAN THE 177,964 GENERAL AVIATION AIRCRAFT OPERATED IN 1978.

ONE DISTURBING PHENOMENON CLOSELY RELATED TO THE GROWTH OF THE AIRLINE INDUSTRY IS THE DECLINING LEVEL OF PILOT EXPERIENCE. THE RAPID EXPANSION OF THE INDUSTRY HAS RESULTED IN RECORD LEVELS OF PILOT HIRING BY THE AIRLINES. FOR EXAMPLE, IN 1985, THE AIRLINES HIRED MORE THAN 8,000 PILOTS, PUTTING A SEVERE STRAIN ON THE EXISTING POOL OF AVAILABLE EXPERIENCED PILOTS.

THE DECLINING LEVEL OF PILOT EXPERIENCE IS ATTRIBUTED IN LARGE MEASURE TO HIGH PILOT TURNOVER AT COMMUTER AIRLINES. COMMUTER AIRLINES HAVE BEEN EXPERIENCING HIGH PILOT TURNOVER AS THEIR PILOTS, TRAINED AT THE EXPENSE OF THE COMMUTER

AIRLINE, ARE MOVING TO JOBS WITH THE MAJOR AIR CARRIERS. FOR EXAMPLE, HENSON AIRLINES IS REPORTED TO HAVE LOST AN AVERAGE OF ONE PILOT PER WEEK TO THE MAJOR AIRLINES. IN 1985, HENSON LOST 70 OF ITS 220 PILOTS.

IN AN EFFORT TO COPE WITH HIGH PILOT TURNOVER, THE COMMUTER AIRLINES HAVE BEEN LOWERING HIRING STANDARDS. IT WOULD APPEAR, BASED ON COMMENTS MADE BY FORMER NTSB CHAIRMAN, JIM BURNETTE, ON MARCH 19, 1986, BEFORE THE TRANSPORTATION APPROPRIATINOS SUBCOMMITTEE, THAT THE NATION'S COMMUTER AIRLINES HAVE BEEN "SCRAPING THE BOTTOM OF THE BARREL" IN THEIR SEARCH FOR PILOTS.

A KEY INDICATOR OF THE DECLINING LEVEL OF PILOT EXPERIENCE IS THE NUMBER OF HOURS A PILOT OR FIRST OFFICER HAS SPENT IN THE COCKPIT. IN 1983, ONLY 8% OF THE PILOTS FLYING FOR COMMUTER AIRLINES HAD FEWER THAN 2,000 FLIGHT HOURS. BY 1985, 23% OF COMMUTER PILOTS HAD FEWER THAN 2,000 HOURS.

IT SHOULD ALSO BE NOTED, THAT THE PROBLEM OF PILOT EXPERIENCE IS NOT CONFINED TO COMMUTER AIRLINES. ACCORDING TO FUTURE AVIATION PROFESSIONALS OF AMERICA, THERE HAS ALSO BEEN A STEADY DECLINE IN THE EXPERIENCE OF PILOTS HIRED BY THE MAJOR AIRLINES. FOR EXAMPLE, IN 1983, PILOTS FLYING FOR MAJOR AIRLINES HAD AN AVERAGE OF 2,342 HOURS OF FLIGHT EXPERIENCE IN JET AIRCRAFT. IN 1985, THEY HAD ONLY 818 HOURS IN JET AIRCRAFT. COMPOUNDING THE PROBLEM IS THE FACT THAT OVER THE NEXT 20 YEARS, APPROXIMATELY 70% OF THE PILOTS EMPLOYED BY THE MAJOR AIRLINES ARE EXPECTED TO RETIRE.

THE QUESTION FOR THE FUTURE, THEN, IS WHERE, AND HOW, WILL AN EXPANDING PASSENGER AIRLINE INDUSTRY FIND NEW PILOTS? TRADITIONALLY, THE MAJOR AIRLINES HAVE RELIED ON THE AMERICAN MILITARY FOR PILOTS. AT ONE TIME, ALMOST 75% OF THE PILOTS EMPLOYED BY THE MAJOR AIRLINES WERE FORMER NAVY OR AIR FORCE PILOTS. TODAY, LESS THAN ONE THIRD OF THE PILOTS EMPLOYED BY MAJOR AIRLINES ARE FORMER MILITARY

PILOTS, IN PART BECAUSE THE MILITARY IS TRAINING FEWER PILOTS.

IN VIEW OF THE PROSPECTS FOR CONTINUED GROWTH OF THE AIRLINE INDUSTRY, DECLINING LEVELS OF PILOT EXPERIENCE MAY GAIN INCREASING PROMINENCE AS A SIGNIFICANT FACTOR IN AVIATION SAFETY INCIDENTS.

ACCORDING TO FAA'S LONG-TERM FORECAST, THE DOMESTIC AIRLINE INDUSTRY IS EXPECTED TO CONTINUE THE STRONG GROWTH ENJOYED SINCE DEREGULATION. FOR EXAMPLE, THE FAA EXPECTS THAT ENPLANEMENTS FOR MAJOR DOMESTIC CARRIERS WILL INCREASE ALMOST 62% DURING THE FORECAST PERIOD OF 1985-1997. ENPLANEMENTS FOR COMMUTER AIRLINES ARE EXPECTED TO INCREASE 102% OVER THE FORECAST PERIOD.

THE GROWTH EXPECTED BY THE FAA IN THE AIRLINE INDUSTRY WILL BRING INCREASED BURDENS ON FAA TRAFFIC CONTROL SYSTEMS, AND OTHER SERVICES NECESSARY TO MANAGE THE INCREASING VOLUME OF AIR TRAFFIC WHICH WILL BE USING THE NATION'S AIRSPACE. FOR EXAMPLE, THE FAA EXPECTS THE NUMBER OF AIRCRAFT

OPERATIONS AT FAA TOWERED AIRPORTS TO INCREASE 46% OVER THE FORECAST PERIOD OF 1985-1997.

THE QUESTION IS WHETHER THE FAA HAS THE RESOURCES AND CAPABILITY TO HANDLE THE CHALLENGES POSED BY THE GROWTH IN THE DOMESTIC AIRLINE INDUSTRY. FOR EXAMPLE, SERIOUS CONCERN HAS BEEN EXPRESSED BY GAO ABOUT WHETHER THE AIR TRAFFIC CONTROL SYSTEM IS ADEQUATE TO HANDLE THE GREATER WORKLOADS RESULTING FROM THE INCREASES IN AIR TRAFFIC VOLUME EXPECTED TO OCCUR BETWEEN NOW AND 1997. INDEED, THERE IS CONCERN THAT EVEN AT CURRENT LEVELS OF AIR TRAFFIC, THE NATION'S AVIATION SAFETY SYSTEM HAS BEEN PUSHED TO--AND SOMETIMES BEYOND--ITS LIMITS.

CONSIDER, FOR EXAMPLE, THAT ALTHOUGH AIR TRAFFIC VOLUME HAS INCREASED IN THE YEARS SINCE AIRLINE DEREGULATION, THE NUMBER OF AIR TRAFFIC CONTROLLERS HAS DECREASED. PRIOR TO THE PATCO STRIKE ON JULY 31, 1981, THE AIR TRAFFIC CONTROL SYSTEM EMPLOYED 13,205 "FULL PERFORMANCE LEVEL" (FPL) CONTROLLERS. AS OF APRIL 30, 1986, ACCORDING TO THE FAA,

THE SYSTEM EMPLOYED 8,861 FULL PERFORMANCE LEVEL CONTROLLERS -- 4,344 FEWER CONTROLLERS THAN BEFORE THE PATCO STRIKE.

FAA OFFICIALS HAVE EXPRESSED CONFIDENCE IN THE AIR TRAFFIC CONTROL SYSTEM, AND THE FAA IS IN THE PROCESS OF TRYING TO ADD 500 CONTROLLERS PER YEAR TO ITS WORKFORCE FOR FISCAL YEARS 1986 AND 1987. NEVERTHELESS, GAO'S ANALYSIS OF THE FAA'S AIR TRAFFIC CONTROLLER WORKFORCE SUGGESTS DOUBTS ABOUT WHETHER THE AIR TRAFFIC CONTROL SYSTEM WILL HAVE AN ADEQUATE NUMBER OF FULL PERFORMANCE LEVEL CONTROLLERS TO HANDLE THE INCREASES IN AIR TRAFFIC EXPECTED FROM NOW UNTIL THE END OF THE DECADE AND BEYOND.

THE MARCH 7, 1986, ISSUE OF THE WASHINGTON POST, CONTAINED A REPORT ON THE RESULTS OF A STUDY OF THE NATION'S AIR TRAFFIC CONTROLLERS BY THE GENERAL ACCOUNTING OFFICE. THE GAO REPORT IS BASED UPON A SURVEY OF 4,500 RADAR QUALIFIED CONTROLLERS AND OTHER PERSONNEL WITH THE AIR TRAFFIC CONTROL SYSTEM. ACCORDING TO THE POST STORY, THE GAO FOUND:

1. "70 PERCENT OF CONTROLLERS IN A SYSTEMWIDE SURVEY REPORTED THAT THEY ARE HANDLING MORE TRAFFIC THAN THEY SHOULD HANDLE."

2. "THE FAA HAS MET ITS GOAL OF ABOUT 12,500 CONTROLLERS, COMPARED WITH 16,200 BEFORE THE STRIKE, BUT HAS FEWER CONTROLLERS AT THE HIGHEST EXPERIENCE LEVEL--8,300 TODAY COMPARED WITH 13,200 IN JULY 1981" (EMPHASIS ADDED).

3. "RETIREMENT OF EXPERIENCED CONTROLLERS WILL BE A GREATER PROBLEM THAN THE FAA HAS ESTIMATED, BECAUSE OF CONTROLLER DISGUST WITH MANAGEMENT AND FEARS OF CHANGES UNDER WAY IN THE FEDERAL RETIREMENT SYSTEM." ACCORDING TO THE POST ACCOUNT, "84 PERCENT OF CONTROLLERS AND 81 PERCENT OF SUPERVISORS ELIGIBLE TO RETIRE IN THE NEXT TWO YEARS SAID THEY WILL DO SO" (EMPHASIS ADDED).

4. AIR TRAFFIC IS GROWING RAPIDLY SO CONTROLLER WORKLOAD WILL LIKELY CONTINUE TO BE A CONCERN FOR SOME TIME."

5. "SIXTY PERCENT OF CONTROLLERS SAID THEY ARE WORKING TOO LONG DAILY WITHOUT A BREAK. A SUBSTANTIAL NUMBER OF SUPERVISORS AGREED."

6. "THE FAA IS HEAVILY DEPENDENT ON CONTROLLER OVERTIME--908,000 HOURS IN FISCAL 1985 COMPARED WITH 377,000 HOURS IN FISCAL 1980."

BASED ON THESE FINDINGS, THE GAO HAS SUGGESTED THAT IT WOULD BE PRUDENT TO LIMIT THE GROWTH IN AIR TRAFFIC BEFORE THE AIR TRAFFIC CONTROL SYSTEM LOSES "ITS PROPER MARGIN OF SAFETY."

THE GAO REPORT CONFIRMS THE UNEASY PICTURE EMERGING FROM OTHER STUDIES DONE ON THE AIR TRAFFIC CONTROL SYSTEM SINCE THE PATCO STRIKE IN 1981.

WHAT IS THE FAA'S RESPONSE TO THE GAO REPORT? THE NEW YORK TIMES OF MARCH 18, 1986, CARRIED A STORY WHICH BORE THE HEADLINE "AIR SAFETY CHIEF MINIMIZES SURVEY FINDINGS." THE TIMES STORY INDICATED THAT THE FAA HAS ESSENTIALLY DISREGARDED THE GAO STUDY. INDEED, GAO REPRESENTATIVES WHO

CONDUCTED THE STUDY OF AIR TRAFFIC CONTROLLERS TOLD A HOUSE SUBCOMMITTEE THAT "OFFICIALS OF THE FAA HAD BELITTLED THEIR STUDY OF THE AIR TRAFFIC CONTROL WORKFORCE AND LATER DISMISSED THE FINDINGS OF THE STUDY AS JUST ANOTHER SURVEY" (EMPHASIS ADDED).

AT THE BEGINNING OF ITS STUDY, GAO PRESENTED THE QUESTIONNAIRE TO BE USED TO GATHER INFORMATION TO THE FAA FOR COMMENTS AND SUGGESTIONS. ACCORDING TO THE TIMES STORY, FAA'S RESPONSE WAS "THAT THE FAA COULD DERIVE NOTHING OF VALUE FROM THE QUESTIONNAIRE." INCREDIBLY, FAA APPARENTLY DISMISSED THE GAO FINDINGS AS JUST ANOTHER SURVEY, AND FAA OFFICIALS SAID THAT "CONTROLLERS WERE PREDICTABLE COMPLAINERS."

SO THERE WE HAVE IT. THERE IS NOTHING WRONG WITH THE AIR TRAFFIC CONTROL SYSTEM, EXCEPT THAT THE CONTROLLERS ARE "PREDICTABLE COMPLAINERS"!

I HAVE BEEN CONCERNED ABOUT WHAT APPEARS TO BE THE DETERIORATING CONDITION OF THE NATION'S AIR SAFETY SYSTEM.

I KNOW MANY OF MY COLLEAGUES SHARE MY CONCERN THAT THE SAFETY OF THE AMERICAN PUBLIC MAY BE THREATENED BY THE WEAKENING OF THE NATION'S AIR SAFETY SYSTEMS AS THE RESULT OF OVERWORKED PERSONNEL, ATTRITION, AND OTHER FACTORS.

IN ADDITION, CONCERN HAS BEEN EXPRESSED THAT THE COMPETITIVE ECONOMIC ENVIRONMENT ESTABLISHED BY AIRLINE DEREGULATION HAS CREATED INCENTIVES FOR COST-CONSCIOUS AIRLINES TO CUT COSTS, AND IMPROVE PROFITS, BY CUTTING AIRCRAFT MAINTENANCE BUDGETS AND MAINTENANCE PERSONNEL. THE GROWTH IN THE NUMBER OF AIRLINES AND THE NUMBER OF AIRCRAFT IN THE COMMERCIAL PASSENGER FLEET MAKES IT DIFFICULT FOR FAA TO ENSURE THAT THE AIRLINES ARE CONDUCTING PROPER AIRCRAFT MAINTENANCE PRACTICES. THE PROBLEM IS COMPOUNDED BY THE DECREASES IN THE NUMBER OF FAA INSPECTORS TO DO THE JOB. IN FACT, IN 1986, THERE ARE 30% FEWER FAA INSPECTORS THAN IN 1978. THIS DECREASE IN THE NUMBER OF INSPECTORS HAS OCCURRED WHILE THE NUMBER OF AIR CARRIERS HAS INCREASED OVER 100%.

INDEED, IN TESTIMONY BEFORE THE TRANSPORTATION SUBCOMMITTEE OF THE APPROPRIATIONS COMMITTEE ON MARCH 19, 1986, JIM BURNETTE, THEN CHAIRMAN OF THE NATIONAL TRANSPORTATION SAFETY BOARD, COMMENTED THAT THE FAA DOES NOT HAVE AN ADEQUATE AIRLINE MAINTENANCE SURVEILLANCE SYSTEM IN PLACE. MR. BURNETTE NOTED THAT WHILE FAA HAS IMPROVED ITS EFFORTS IN AIRLINE INSPECTIONS, WITHOUT MORE INSPECTORS, IT IS DIFFICULT FOR THE FAA TO BE MORE AGGRESSIVE.

IT IS CLEAR THAT FAA IS FACING SIGNIFICANT CHALLENGES IN THE FACE OF THE EXPLOSIVE GROWTH OF THE COMMERCIAL PASSENGER AIRLINE INDUSTRY SINCE AIRLINE DEREGULATION. THE ADEQUACY OF THE FAA'S EFFORTS TO CONDUCT SURVEILLANCE OF THE AIRLINE INDUSTRY TO ENSURE COMPLIANCE WITH FEDERAL REGULATIONS REGARDING AIRCRAFT MAINTENANCE AND AIRLINE OPERATIONS HAVE BEEN CALLED INTO QUESTION BY GAO AND OTHERS.

OVER THE YEARS, FAA OFFICIALS HAVE REITERATED THE AGENCY'S POLICY THAT SAFETY IS A MAJOR RESPONSIBILITY AND GOAL OF THE FAA. HOWEVER, A STATEMENT OF POLICY AND ITS

IMPLEMENTATION ARE OFTEN NOT THE SAME. WHEN THE AIRLINE DEREGULATION ACT WAS ENACTED IN 1978, CONGRESS AFFIRMED, AS A MATTER OF POLICY, THAT THE IMPLEMENTATION OF THE ACT "RESULT IN NO DIMINUTION OF THE HIGH STANDARD OF SAFETY IN AIR TRANSPORTATION ATTAINED IN THE UNITED STATES AT THE TIME OF THE ENACTMENT OF SUCH ACT." (SECTION 107) CLEARLY, EIGHT YEARS AFTER THE ENACTMENT OF P.L. 95-504, THAT ESSENTIAL POLICY GOAL HAS YET TO BE ACHIEVED.

PART OF THE DIFFICULTY MAY BE THE CONFLICTING STATUTORY DUTIES GIVEN TO THE FAA. THESE DUTIES, TO PROMOTE COMMERICAL AVIATION AND AVIATION SAFETY, FORM THE CORE OF THE NATION'S AVIATION POLICY. SECTION 103(A) OF THE FEDERAL AVIATION ACT OF 1958 (P.L. 85-726) DIRECTS THE FAA ADMINISTRATOR TO CONSIDER THE "REGULATION OF AIR COMMERCE IN SUCH MANNER AS TO BEST PROMOTE ITS DEVELOPMENT AND SAFETY." (EMPHASIS ADDED) THE ADMINISTRATOR IS TO CONSIDER THE "PROMOTION, ENCOURAGEMENT, AND DEVELOPMENT OF CIVIL AERONAUTICS" TO BE IN THE PUBLIC INTEREST.

SHORTLY AFTER THE ENACTMENT OF THE AIRLINE DEREGULATION ACT, CONGRESS EXPRESSED CONCERN THAT THE CONFLICT BETWEEN FAA'S RESPONSIBILITY TO ENSURE SAFETY AND PROMOTE "CIVIL AERONAUTICS" COULD ADVERSELY AFFECT AVIATION SAFETY. A 1980 CONGRESSIONAL REPORT, ENTITLED "A THOROUGH CRITIQUE OF CERTIFICATION OF TRANSPORT CATEGORY AIRCRAFT BY THE FEDERAL AVIATION ADMINISTRATION" (COMMITTEE ON GOVERNMENT OPERATIONS, MAY 7, 1980), QUESTIONED WHETHER FAA'S DUAL RESPONSIBILITIES ARE APPROPRIATE TO THE AGENCY'S MISSION, OR WHETHER THEY PRESENT CONTRADICTIONS THAT IMPAIR PROPER AGENCY FUNCTION IN THE CONTEXT OF THE HISTORICAL EVOLUTION OF THE AIRLINE INDUSTRY. THE REPORT CONCLUDED THAT THE FAA'S CONFLICTING POLICY GOALS WERE PROVIDING INADEQUATE POLICY DIRECTION, AND THAT THIS WAS "HURTING GOVERNMENT EFFORTS AND COULD EVENTUALLY LEAD TO A SITUATION THAT WOULD ENDANGER PUBLIC SAFETY."

MR. CHAIRMAN, SINCE THAT REPORT WAS PUBLISHED SIX YEARS AGO, THERE IS STILL REASON FOR CONCERN. FOR EXAMPLE,

IN JANUARY, 1984, THE GENERAL ACCOUNTING OFFICE RELEASED A REPORT WHICH WAS CRITICAL OF FAA'S SAFETY STANDARDS FOR SMALL PASSENGER AIRCRAFT. THE REPORT FOUND THAT FAA STANDARDS FOR SUCH AIRCRAFT WERE LOWER THAN FOR LARGER COMMERCIAL PASSENGER AIRCRAFT. THE GAO REPORT INDICATED THAT FAA DID NOT IMPOSE MORE STRINGENT SAFETY STANDARDS ON SMALL PASSENGER CRAFT BECAUSE THE COST OF SUCH STANDARDS WOULD BE TOO FINANCIALLY BURDENSOME ON THE INDUSTRY. THE REPORT INCLUDED AN FAA COMMENT WHICH NOTED THAT THE IMPOSITION OF SUCH A BURDEN WOULD FRUSTRATE ONE OF THE BASIC PURPOSES OF THE FAA--TO PROMOTE AVIATION IN THIS COUNTRY.

INDEED, THERE ARE INDICATIONS THAT FAA PROVIDES ASSISTANCE TO THE VERY AIR CARRIERS IT SHUTS DOWN FOR SAFETY-RELATED VIOLATIONS. A REPORT ON THE FAA AND ITS INSPECTIONS OF COMMUTER AIRLINES, IN THE JUNE 10, 1985, ISSUE OF U.S. NEWS AND WORLD REPORT, REVIEWED SEVERAL CASES WHERE FAA HAD EXTENDED ITS HELP TO THE VERY AIRLINES WHICH THE AGENCY HAD CITED FOR SERIOUS SAFETY-RELATED

DEFICIENCIES. WHEN THE FAA SHUTS DOWN A CARRIER, THE U.S. NEWS REPORT NOTED, "THE FAA WILL TRY TO GET IT BACK IN OPERATION."

IN PARTICULAR, THE REPORT NOTED THAT THE FAA HAD PLAYED A MAJOR ROLE IN HELPING PROVINCETOWN-BOSTON AIRLINES BACK IN SERVICE AFTER THE CARRIER'S OPERATING LICENSE WAS LIFTED FOR DELIBERATELY FALSIFYING RECORDS. ACCORDING TO THE U.S. NEWS STORY, THE AIRLINE RESUMED OPERATIONS IN A SHORT PERIOD OF TIME, AND THEN WAS INVOLVED IN A CRASH NEAR JACKSONVILLE, FLORIDA WHICH KILLED 13 PERSONS ON DECEMBER 6, 1984.

MR. CHAIRMAN, IN VIEW OF THE GROWING CONCERNS ABOUT THE ADEQUACY OF FAA RESOURCES IN THE FACE OF SIGNIFICANT GROWTH IN AIR TRAFFIC VOLUME, LET ME RAISE ONE OTHER IMPORTANT ISSUE WHICH WILL HAVE A DIRECT BEARING ON THE FUTURE OF AVIATION SAFETY.

ON FEBRUARY 3, 1986, THE AVIATION SUBCOMMITTEE OF THE COMMERCE COMMITTEE HELD A HEARING ON THE IMPACT OF GRAMM-RUDMAN ON THE FAA BUDGET AND AVIATION SAFETY. AT THAT

HEARING, FAA ADMINISTRATOR DONALD ENGEN WAS ASKED TO ASSESS THE IMPACT ON THE FAA AND AVIATION SAFETY IF, UNDER GRAMM-RUDMAN, THE AGENCY WERE FORCED TO REDUCE ITS FY 1986 OPERATING BUDGET BY 15-20%. MR. ENGEN TESTIFIED THAT THERE WOULD BE "NO REASONABLE WAY IN WHICH THE FAA COULD ABSORB THAT KIND OF A REDUCTION OVERALL WITHOUT SERIOUS DETERIORATION OF THE CURRENT LEVELS OF SAFETY SERVICES" PROVIDED BY THE FAA (EMPHASIS ADDED).

ON MARCH 1, 1986, UNDER THE TERMS OF GRAMM-RUDMAN, THE FAA WAS FORCED TO ACHIEVE AN INITIAL REDUCTION OF ITS FY 1986 OPERATING BUDGET, A CUT OF ABOUT $115 MILLION. MR. ENGEN TESTIFIED THAT, IN ADJUSTING ITS OPERATIONS TO ACCOMMODATE THE REQUIRED GRAMM-RUDMAN CUT, THE FAA'S TOP PRIORITY WAS "TO MINIMIZE ANY ADVERSE IMPACTS ON SAFETY AND SYSTEM PERSONNEL." HOWEVER, SEVERAL MONTHS LATER FAA REQUESTED AN ADDITIONAL APPROPRIATION OF $80 MILLION TO AVOID FURLOUGHS FOR AIR TRAFFIC CONTROLLERS, SAFETY INSPECTORS, AND OTHER FAA EMPLOYEES. IN RESPONSE TO FAA'S

REQUEST, THOSE FUNDS WERE APPROPRIATED BY THE CONGRESS IN THE FY 1986 SUPPLEMENTAL APPROPRIATIONS BILL (P.L. 99-349).

THE CONGRESSIONAL RESPONSE TO FAA'S REQUEST UNDERSCORES, ONCE AGAIN, THE WILLINGNESS OF THE CONGRESS TO PROVIDE FAA WITH THE RESOURCES NECESSARY TO ENSURE AVIATION SAFETY. INDEED, CONGRESS HAS CONSISTENTLY APPROPRIATED FUNDS TO MEET THE LEVELS REQUESTED BY THE FAA FOR ITS OPERATING BUDGET. FOR EXAMPLE, IN FY 1985 THE FAA REQUESTED $2.7 BILLION FOR FAA OPERATIONS, AND THE CONGRESS APPROPRIATED $2.8 BILLION. IN FY 1986, THE FAA REQUESTED $2.7 BILLION, AND THE CONGRESS APPROPRIATED $2.8 BILLION.

IN VIEW OF THE DECLINING MARGIN OF AVIATION SAFETY, AND THE QUESTIONS RAISED ABOUT THE ABILITY OF THE FAA TO MEET THE CHALLENGES BROUGHT BY AIRLINE DEREGULATION, I BELIEVE IT IS TIME FOR AN INTENSIVE, OBJECTIVE RE-EXAMINATION OF THE FAA, THE NATION'S AVIATION SAFETY POLICY, AND THE IMPACT OF AIRLINE DEREGULATION ON AVIATION SAFETY. IN PARTICULAR, IT IS TIME TO CONSIDER WHETHER FAA HAS BEEN PROVIDED ADEQUATE

RESOURCES, AND HAS USED SUCH RESOURCES EFFECTIVELY AND EFFICIENTLY TO ENSURE AVATION SAFETY; AND WHETHER THE CONFLICT BETWEEN THE FAA'S RESPONSIBILITIES DEFINED IN SECTION 103 OF THE FEDERAL AVIATION ACT OF 1958 (P.L. 85-726) IMPEDES AVIATION SAFETY.

THESE CONCERNS PROMPTED ME TO INTRODUCE S. 2417, "THE AVIATION SAFETY COMMISSION ACT," TO ADDRESS THE ISSUES I HAVE RAISED HERE TODAY. THE BILL WAS INTRODUCED ON MAY 7, 1986, AND HAS 15 COSPONSORS, INCLUDING SENATOR KASSEBUAM, THE ABLE AND DISTINGUISHED CHAIRMAN OF THE AVIATION SUBCOMMITTEE, THE DISTINGUISHED RANKING MEMBER, SENATOR EXON; AS WELL AS OTHER DISTINGUISHED MEMBERS OF THE SUBCOMMITTEE, SUCH AS SENATORS GOLDWATER, AND FORD.

IN ADDITION, THE BILL IS COSPONSORED BY SEVERAL MEMBERS OF THE COMMERCE COMMITTEE, INCLUDING THE DISTINGUISHED RANKING MEMBER OF THE COMMITTEE, SENATOR HOLLINGS; AS WELL AS SENATORS ROCKEFELLER, KASTEN, LONG, AND RIEGLE. IT SHOULD BE NOTED THAT THE CHAIRMAN OF THE APPROPRIATIONS

SUBCOMMITTEE ON TRANSPORTATION, SENATOR ANDREWS; AND THE RANKING MEMBER, SENATOR CHILES, ARE ALSO COSPONSORS OF THIS LEGISLATION.

MY BILL DIRECTS THE PRESIDENT TO APPOINT A SEVEN-MEMBER "BLUE RIBBON" COMMISSION, THE "AVIATION SAFETY COMMISSION," TO MAKE A COMPLETE STUDY OF THE ORGANIZATION AND FUNCTIONS OF THE FEDERAL AVIATION ADMINISTRATION AND THE MEANS BY WHICH THE FAA MAY MOST EFFICIENTLY AND EFFECTIVELY ENHANCE AVIATION SAFETY.

THE MEMBERS OF THE COMMISSION ARE TO POSSESS EXTENSIVE EXPERIENCE AND EXPERTISE AT THE HIGHEST LEVELS OF CORPORATE MANAGEMENT. TO ENSURE THE INDEPENDENCE OF THE COMMISSION'S DELIBERATIONS AND JUDGMENT, MY BILL PROVIDES THAT MEMBERS OF THE COMMISSION SHALL HAVE NO TIES TO THE COMMERCIAL AVIATION INDUSTRY, OR TO THE FEDERAL AVIATION ADMINISTRATION.

THE COMMISSION IS DIRECTED TO CONSIDER WHETHER THE FAA HAS BEEN PROVIDED ADEQUATE RESOURCES TO ENSURE AVIATION SAFETY; AND TO CONSIDER WHETHER THE DUAL RESPONSIBILITIES OF

THE FAA ARE IN CONFLICT, AND WHETHER ANY SUCH CONFLICT IMPEDES AVIATION SAFETY. THE COMMISSION IS ALSO TO CONSIDER WHETHER THE FAA SHOULD BE REORGANIZED AS AN INDEPENDENT FEDERAL AGENCY WITH AVIATION SAFETY AS ITS SOLE RESPONSIBILITY, AND WHETHER AIRLINE DEREGULATION HAS HAD AN ADVERSE IMPACT ON THE MARGIN OF SAFETY. THIS SHOULD INCLUDE A REVIEW OF WHETHER THE PRACTICE OF AIRLINE SELF-COMPLIANCE WITH MAINTENANCE STANDARDS IS AN OUTMODED APPROACH IN AN ENVIRONMENT DESIGNED TO MAXIMIZE COST-SAVINGS.

THE COMMISSION IS DIRECTED TO CONSIDER WHETHER IT IS DESIRABLE TO REQUIRE THAT, WHEN THE NATIONAL TRANSPORTATION SAFETY BOARD ISSUES RECOMMENDATIONS RELATED TO AVIATION SAFETY, SOME OR ALL OF THOSE RECOMMENDATIONS BE MADE MANDATORY.

IN THE EXERCISE OF ITS DUTIES, THE COMMISSION IS TO CONSULT WITH A BROAD SPECTRUM OF REPRESENTATIVES OF THE AVIATION INDUSTRY, AND TO CONSULT WITH THE NATIONAL TRANSPORTATION SAFETY BOARD.

ONE YEAR FROM THE DATE OF ENACTMENT, THE COMMISSION IS TO SUBMIT A REPORT TO THE PRESIDENT AND THE CONGRESS CONTAINING THE COMMISSION'S FINDINGS AND RECOMMENDATIONS, INCLUDING ANY RECOMMENDATIONS FOR LEGISLATION.

FINALLY, MY BILL AUTHORIZES $2.5 MILLION TO SUPPORT THE ACTIVITIES OF THE COMMISSION.

MR. CHAIRMAN, I BELIEVE THE TIME HAS COME FOR A THOROUGH, INDEPENDENT EXAMINATION OF THE AVIATION SAFETY ISSUES I HAVE RAISED HERE TODAY. SUCH AN ASSESSMENT WILL MAKE A VALUABLE CONTRIBUTION TO CONGRESSIONAL EFFORTS DURING THE CONSIDERATION OF AVIATION ISSUES WHICH WILL BEGIN NEXT YEAR WITH THE REAUTHORIZATION OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982 (TITLE V OF P.L. 97-248).

I THANK THE MEMBERS OF THE COMMITTEE FOR THE OPPORTUNITY TO EXPRESS MY CONCERNS ON THIS IMPORTANT ISSUE. THAT CONCLUDES MY STATEMENT. I WILL BE GLAD TO ANSWER ANY QUESTIONS YOU MAY HAVE.

Senator SARBANES. Thank you very much. It was a very powerful statement. I just wanted to make two or three observations about it.

First of all, I think your use of a concept of incidence to see the trend line on the safety questions is much better than the use of the tallies of actual accidents. As you pointed out in your statement, you may have some near misses, by sheer fortune that you do not actually have an accident, and the number of those incidents is on the increase, as these charts have indicated.

In fact, this one on the margin of safety here shows it has really been cut in half over a 10-year period from 1975. I think there is a tendency—and I'm going to ask in a minute how you came to address this issue sort of as it were ahead of its time, because there is a tendency to wait until the bad things have actually happened. Of course last year was a bad year in actual accidents.

You have been on this issue for some time, and you point out the number of incidents, the near misses, near mid-air collisions, and surface operational errors like one-way incursions which raise the high possibility of an accident have been sharply on an increase. Of course these charts indicate that.

What was it that brought you to this issue sort of ahead of most people? Is there anything specifically that called it to your attention?

Senator BYRD. Mr. Chairman, I suppose I was one of the earlier cowards insofar as flying is concerned. I used to drive 8, 10 hours, before we had the interstates crossing West Virginia east, west, north and south, from Washington to West Virginia.

In fact, when I was a member of the House of Representatives and subsequent thereto as a member of the Senate, I could have flown. My senior colleague at that time, Senator Randolph, was one who enjoyed flying, didn't have any fear of flying, and so he would fly while I would drive my automobile.

I had one experience in which the lady behind me in the aircraft became ill, apparently overly intoxicated, and I started looking around for the stewardess, and I couldn't find the stewardess. I went up into the cabin and found the stewardess sitting in the copilot's seat with her hands on the controls.

And I said to the pilot, "Captain, what is this lady doing here, operating the controls?"

And he said, "Well, what are you doing up here in the cabin?"

I said, "Well, I'm looking for the stewardess because there's a lady in the back, in the rear of the plane who needs some help." And I said, "Well, what is your name?"

And he said, "What is yours?"

And I said that I'm Senator Byrd.

He immediately wanted to show me how to operate the airplane. [Laughter.]

Well, that was just one little incident that happened a long time ago.

Then I became less fearful about riding airplanes. I came to know more about the ground tracking systems, the instrument landing systems, the glide scope, and a lot about the safety that is cranked into flying through these very complex systems. I became

quite confident of the aircraft, and it didn't bother me much to get into turbulence.

But in the last 2 or 3 years, I have become afraid again to fly. I still do some flying; of course I have to. And I don't think there is any question that flying is safer than driving automobiles from here to West Virginia, but somehow or other, I am just afraid any more to get on aircraft.

When I read about a door falling off an airplane, or an engine falling off a plane, or a screw being loose, or a bolt being off here or there, or a plane landing without sufficient fuel to proceed more than 60 seconds, it scares me.

Let me give two or three extracts from a story here by the Knight-Ridder newspapers entitled "Inquiry Finds Breakdown in Maintenance Standards":

Once reknown for its standards of mechanical excellence, U.S. commercial aviation is now in danger of developing a new reputation for haphazard repairs, penny-pinching maintenance at a time which includes putting passengers at risk. The 1978 deregulation of commercial aviation opened the industry to brand-new carriers, encouraged fare wars, and forced established airlines to slice costs.

A two-month inquiry by the Miami Herald found disturbing evidence that this has created a climate in which standards of aircraft maintenance have fallen and margins of safety have shrunk. From the nation's biggest transcontinental airlines to its tiny in-state commuter carriers come disturbing reports of maintenance problems and breakdowns. Some examples:

November 23, 1984, a Northeastern International Airways jet liner, headed from Fort Lauderdale, Florida, to New York, makes an unscheduled stop in Jacksonville, Florida, after the pilots have trouble controlling the airplane. They discover one tank is 5,000 pounds short of fuel, partly because the fuel gauge is broken, and the plane would never have made it to New York reported the pilot, Captain Stan Bidden.

An American Airline pilot notes in a logbook aboard a Boeing 727, "Be careful on landing the aircraft. Pulls to the right when the nose wheel touches."

Another pilot complained that the plane pulled so hard to the right that the left rear rudder produces no left turn.

Federal records show after 14 pilots . . .

Here's the problem. Here's the thing that troubles me.

After 14 pilots complained and 27 days had passed, repairs were made, according to a federal complaint.

Now here's one that would be interesting.

April 21, 1985. An Eastern Airline DC-9 is climbing to its cruise altitude near Atlanta when a thrust reverser deploys on one of two engines, effectively throwing it into reverse: "That this airplane did not crash can only be attributed to the crew acting in a minimum of time, coupled with superb airmanship."

A Federal inspector said mechanics found that the reverser control valve had been installed backward. That one would be one to curl your hair. Imagine one of the two engines suddenly going into reverse.

Well, Mr. Chairman, I cite also the tragedy that occurred in 1978, September 25, where a Pacific Southwest airliner crashed over San Diego. A small plane collided with a 727. The small plane was piloted by a student pilot. One hundred forty-four people were killed. And one of those persons killed was the husband of a staff member who was on the Democratic Policy Committee of the Senate.

These are a few things, what has impelled me to become interested, Mr. Chairman, not only because I'm a member of the Appro-

priations Subcommittee on Transportation but more so because of my own instinctive fear of traveling on airliners. And this fear has been caused by these weird stories about bolts falling off, doors falling off, and bulkheads collapsing under pressure.

And also as I watch following these terrible air crashes, the FAA spokesman gets on the television and he says all is well. And I said this to him when he appeared before the Transportation Appropriations Subcommittee earlier this year, so I am not speaking in derogation concerning the man. He's doing the best he can. I'm sure he believes what he says.

But all of this smooth velvet talk about how safe it is, and not that so much as saying that it is safer than ever, the system is safer than ever, I don't believe it. I don't believe the American people out there believe it.

But when it comes to air travel, one I think has to be concerned about the air traffic controller system, and I just don't believe it is safer than it was. I don't believe the air traffic controller system is prepared to handle the greatly increased air traffic that we have talked about here this morning.

And I find it difficult to believe that the FAA can wear two hats, one to promote aviation safety, and the other to promote civil aviation. It seems to me that at times this must prove to a contradiction, this dual responsibility.

So in summation, I don't believe the FAA can do this job. I don't think it can wear two hats.

Second, I don't believe, as we have indicated, that the number of inspectors, the number of controllers is up to doing the job.

And third, I am just plain afraid. Of course I manage to board the plane and get along all right on the ride, but to be very frank about it, I worry the night before about what the weather will be, and I worry about whether or not something will go off in the cargo portion of the craft that will cause the plane to break down, or some motor or engine will drop off on the way, or that there will be some pilot error or some mechanical error. I am just afraid.

Now what shall we do when one is afraid? Well, I'm thinking of not only my own life but I'm think of the millions of Americans who fly the airlines every year. That says nothing about the general aviation aircraft. The skies out there are full of them, full of those aircraft, and they all have to be controlled. All of these have to be controlled by those people who are in the towers.

I think I have a responsibility. I think we all have a responsibility. I just don't believe the FAA, Mr. Chairman. I don't believe it when the Administrator stands up there on that tube and says everything is better than ever. I don't believe it. And again I say I think the FAA has taken some forceful actions, but I'm not sure that it is capable of handling this job, especially wearing two hats.

And I'm afraid that some of these near misses are going to become accidents, are going to become fatalities. And since deregulation—I voted for deregulation. I was Majority Leader when we enacted that law. And I'll tell you, I have been beating myself over the head ever since. In public, I've been criticizing Robert C. Byrd for doing it. A lot of people think it's the best thing. I don't.

My senior colleague voted against it, and he's been with the airlines for a good many years, Senator Randolph, so every time I see Jennings I say, "You were right and I was wrong I think."

I just think that deregulation has caused—I have to be concerned that the airlines may be, and probably are—and maybe I'm wrong—probably are cutting corners, cutting costs in order to make profits and stay afloat. There is such competition out there. We see all of these competitive air fares. You can fly from New York to California for $98 on one airline, $248 on another one, there and back.

And from here to West Virginia, the costs have quadrupled. Since deregulation, ten major airlines have pulled out of West Virginia. They didn't even give us a kiss when they left. They just took off. They didn't care any more. They took off. Piedmont still does a good job there.

And some commuters are giving the best service they can give. But costs have gone up and these people going from here to Charleston, WV, from here to Clarksburg, WV, from here to Elkins, WV, are paying, making up for those cut-rate fares, for our friends who take off to the Caribbean, go to California on a weekend and back. We don't like that.

In West Virginia we have mountainous roads, and we have had most of our rail service taken away from us. We still have Amtrak that goes into southern West Virginia. We still have the Blue Ridge commuter that helps us to get over to Martinsburg and around. But we have to depend upon air service, and air service by the major airlines has gone down since deregulation, and the costs have gone up, skyrocketed.

I thank you, Mr. Chairman. I think you have done a very fine job, and I appreciate the courtesies extended to me.

Senator SARBANES. We thank you very much, Senator Byrd. I want to commend you for a very powerful and thoughtful statement. You sounded the warning, and you documented it in detail very well indeed. I think you have anticipated the situation and, in that sense, we all need to listen to you.

In that regard I think the proposal you have come forward with for an Aviation Safety Commission is a very responsible proposition. You have said, in effect, let's have a high-level commission to conduct this study and take a careful look at the FAA and how it is carrying out its responsibilities assigned by law—whether the two hats it tries to wear, watching safety on the one hand, but encouraging air travel on the other, are in conflict; whether it's getting enough resources; and whether it is using wisely the resources it's getting.

I think the idea of such a study and commission, which could lay before the Congress and the country what the situation is and what might be done about it, is a very good one. I am remiss in not having joined in cosponsoring that piece of legislation sooner, and I would like to go on it as a cosponsor. It is a small thing, but is a tangible reflection of the effort you are making in terms of bringing this issue to the attention of Members of Congress and to the country.

I think the American people owe you a great debt of gratitude, until we can really focus attention on this issue and address it

properly, because you may have moved ahead of the catastrophes and prevented them from happening, rather than coming after them. That is, in a true sense, what statesmanship is all about.

So we thank you very much for your testimony, for the leadership you are taking on this issue.

Senator BYRD. Thank you, Mr. Chairman.

Let me just add that the proposal of course would provide for an objective probing, in-depth study by the Commission over a period of a year. It seems to be this is the way to do it. It is very hard to get data, and much of the data that we get is conflicting. And as I indicated in my statement, we have to depend for the most part on the data the FAA has supplied.

I welcome your cosponsorship of the legislation. I am delighted to hear you say that you want to be a cosponsor. And you will be a powerful cosponsor.

May I just add one final note?

The supporters of that legislation are the following:

Airline Pilots Association, Air Transport Association, Professional Airway Systems Specialists, Regional Airlines Association, National Air Traffic Controllers Association, and the Aviation Safety Institute.

Thank you again, Mr. Chairman.

Senator SARBANES. Thank you very much.

We will now hear from Herbert McLure, the Associate Director of the Resources, Community, and Economic Development Division of the GAO.

Mr. McLure, let me say at the outset, before you start, we are very pleased to have you before the committee. We know that the GAO has conducted a number of studies with respect to aviation safety, airline inspections, air traffic control, aviation funding of deregulation.

I know you have just recently completed a study of the problems in the air traffic control work force. I must say to you, you know, if the responsible officials would take all of the GAO recommendations to heart and implement them, I am not sure we would be even having these hearings. Certainly the need for them would be markedly diminished.

We are very pleased to have you before the committee. We know you are one of the most knowledgeable people in the country on this issue, and we look forward to your testimony and that of your colleagues. You may introduce them.

STATEMENT OF HERBERT R. McLURE, ASSOCIATE DIRECTOR, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY CHARLES COTTON, GROUP DIRECTOR, AVIATION; AND JOSEPH McGRAIL, ASSIGNMENT MANAGER, PHILADELPHIA REGIONAL OFICE

Mr. McLURE. Thank you very much.

To my right is Charlie Cotton. He manages all our work at the FAA and is here today because he is up to date on where things stand with the NAS plan and the many improvements that FAA is attempting there.

Joe McGrail is on my far right. He managed the work that we have done in connection with the air traffic controllers. So, anything further you would like to know about that, he is our expert.

My prepared statement today summarizes the safety-related work we have done over the past several years, and we have done quite a bit of it. Our comments today are organized along the lines of four questions, mainly:

Whether aviation is as safe now as it has been in the past; whether FAA is fulfilling its safety mission; whether deregulation has affected aviation; and what the proper level of funding for FAA really is.

And to give you an idea of how much work we have done over the past few years, we included a bibliography with our prepared statement.

Commencing with air traffic system safety, we reported in March that the growth in air traffic is straining the controller work force at many major facilities, especially "en route centers" that control flights between airports.

Controllers believe that they are overworked and that the situation could eventually impair their ability to maintain the proper margin of safety.

FAA data on staffing, overtime use, and air traffic activity support the controllers' contention that their workload has grown to a level where they are being stretched too thin.

Our consultant who is here today, the Flight Safety Foundation, compared the conditions we found with the results of a study it did for FAA in 1981, concluding that conditions within the controller work force has changed since their study and that the present system does not provide the same level of safety as before the August 1981 strike.

Similarly, in May testimony before the House Subcommittee on Aviation, we reported that FAA cannot at present say with assurance that airlines are complying with Federal safety regulations. Recent FAA studies, as well as those conducted by the Office of the Secretary of Transportation, the Department's Office of Inspector General, and by us, show FAA's airline inspection and followup activities are often insufficient to indentify major safety problems or to ensure that problems are corrected once they are detected.

For example, FAA's 1985 Safety Activity Functional Evaluation—we all refer to that as Project SAFE—found FAA's surveillance of airlines was often ineffective and that broad changes in FAA's inspection program were needed to improve aviation safety.

Moreover, several recent National Transportation Safety Board investigations criticized FAA's inspection program and concluded ineffective FAA inspections contribute to aircraft accidents.

FAA's role in aviation safety is defined in the Federal Aviation Safety Act of 1985, which charges the Secretary of Transportation with regulating air commerce in such a manner as to best promote its development and safety. The Act makes the safety of air travel the joint responsibility of the airlines and FAA. Individual airlines are responsible for operating and maintaining their aircraft safety.

FAA carries out its safety responsibility by issuing regulations that set minimum acceptable standards of safety by monitoring air-

line compliance and by taking enforcement action when noncompliance is found.

It is against this legislative background that the adequacy of FAA's efforts to meet its safety role should be measured.

FAA has acknowledged that it has not adequately fulfilled its safety role and has begun to respond. Recognizing problems inherent in this inspection program, FAA is increasing the size of its inspector work force, has issued staffing standards and national guidelines that set forth minimum numbers of inspections, and it affirmed that inspections—not certification of potential new airlines—are the inspectors' No. 1 priority. FAA has also instituted a National Inspection Plan using large, specially assembled teams to inspect targeted airlines. That has resulted in many of the findings that you heard about recently.

The FAA is, however, not very well prepared to absorb the increase in inspector work force. In fact, it will be several years before FAA's examination of the available options for management controls, inspector training, regulations and guidance, and supervisory and managerial oversight will be completed.

Meanwhile, FAA needs an effective plan for dealing with its shorter term problem of ensuring airline compliance with safety regulations while it puts its long-term strategy into place.

Our review to date suggests several actions FAA needs to take to address its short-term problems. These include:

Revising its nationwide minimum standards for the type and frequency of airline inspections to help inspectors target airlines by using proxies or surrogate measures to suggest which airlines are likeliest to need surveillance. The indicators might include such things as a relatively large amount of contract maintenance being done by the airlines, or training, inadequate internal management controls, and management experience and philosophy incompatible with sound safety practices.

Another thing FAA could do is better identify who is inspecting which airlines and how frequently, so it can better allocate its existing inspector work force and the personnel it plans to add.

They need to ensure that inspectors have the training and experience they need to carry out their assigned duties.

And they need to sequence all these actions to upgrade the inspection program so that improvements are in place when they can do the most good.

At the hearings before the House Subcommittee on Aviation in May and again before the Senate Subcommittee on Aviation last week, the FAA agreed to revise its guidance to inspectors to provide them with criteria based on airline characteristics that affect safety compliance so that inspectors have a more consistent basis for determining the minimum necessary number and mix of inspections.

FAA has now also acknowledged that some changes are needed in its air traffic control functions, and has agreed to increase its controller work force by about 1,000 people by the end of fiscal year 1987. FAA will, however, need more than 4 years at its present rate of gain to increase its complement of qualified controllers, and even longer to provide new equipment and other measures to reduce controller workload.

We recommended, therefore, that the FAA restrict air traffic at facilities where controllers are overworked until it meets its staffing goals.

Our March report includes several other recommendations of actions the FAA should take to reduce work load pressures on controllers.

In its response this month, the Department generally agreed FAA needs to increase controller staffing and reduce overtime, particularly at the centers. Using the facility-specific information we developed during our survey, the Department has also agreed to take additional action where it believes it is warranted, and to review the Agency's traffic management programs with an eye toward expediting, as much as possible, planned system enhancements.

Having provided the Department with facility-specific information we developed, we look to FAA to take further action commensurate with our findings.

These might include evaluating the effectiveness of its traffic management system at centers where the controllers and supervisors identified inadequate flow control procedures as a reason for their being required to deal with more traffic than they thought they could safely handle.

Our work also demonstrated FAA's difficulty in balancing its dual responsibilities for promoting commercial aviation and, at the same time, ensuring aviation safety, goals that may well entail at least some measure of conflict.

FAA did not respond effectively to the changes deregulation brought to the airline industry. Our review of airline operations before and after deregulation, through 1984, showed that most passengers benefited as the industry became more competitive. Fare increases were lower, on average, than might have been expected under continued regulation. The numbers of flights and available seats increased—at least in some places. Airlines have been more responsive to consumer preferences through a wide range of price and service options. And operating efficiency has also increased.

While the 1978 Deregulation Act removed government control over fare costs and schedules, FAA remained responsible for assuring that airlines comply with Federal safety regulations. FAA did not recognize that a fiercely competitive, deregulated environment highlights aircraft maintenance and other safety-related activities as controllable expenses that directly affect an airline's financial health—a situation requiring greater oversight.

Until recently, FAA took few steps to monitor and address the impact deregulation had on its inspection work load or staffing requirements. Between 1978 and 1983, when the number of airlines and aircraft grew substantially, FAA's inspector work force was cut by a third from over 2,000 to about 1,330.

Similarly, and also as Senator Byrd pointed out, while air traffic has now reached record levels and is expected to continue to grow, the size of the controller work force remains about 2,000 people below what it was at the time of the 1981 strike. Although improved automation and air traffic control methods can help improve the level of air safety, the first major labor-saving features of FAA's planned automated air traffic control system, the NAS plan,

will not be operational until the mid-1990's, at the earliest, thereby delaying up to 8 years the FAA's planned productivity gains.

In terms of dollars spent, FAA's NAS plan is the largest single civil procurement plan since the lunar landing effort in the 1960's. It will cost over $16 billion by the year 2000.

FAA believes the plan represents a practical way to achieve a significantly safer and more efficient system. One of the plan's goals is to reduce the risks of midair and surface traffic collisions, landing and weather-related accidents, and collisions on the ground.

We have worked with the House Appropriations Subcommittee on Transportation over the past few years to monitor many aspects of FAA's NAS plan activities. Our reviews to date have addressed a number of NAS plan programs for which FAA has not adequately identified the technical, operational, and economic risks associated with their implementation.

Further, for many of these programs, FAA's acquisition strategy does not include a plan to minimize risks by adequately demonstrating a system's performance in an operational environment before committing it to production.

Because of the problems noted in our reviews of specific NAS plan programs, we also reviewed how well FAA and the Department of Transportation are managing this acquisition. Our findings are encouraging for the future, but disappointing for NAS programs already committed to production which have experienced cost increases and schedule delays.

We would expect a major system acquisition program with significant technical, operational, and economic risks to require strict adherence to the phasing and competition principles fundamental to OMB Circular A-109. This directive established a process of decisionmaking at four critical points in a system's acquisition, including requiring an agency to demonstrate that a technology will actually work in an operational environment before it commits to production.

A 1984 FAA report on its acquisition process noted little regard for the procurement policy set forth in the OMB Circular A-109. Further, a 1984 study of several major systems acquisitions conducted by an FAA consultant found that failure to adequately test operational systems in the field prior to full procurement is a major cause of FAA's subsequent performance problems.

In the past year, both DOT and FAA have made progress in incorporating the requirements and principles of A-109 into the NAS plan acquisition process. However, 6 of the 11 major NAS plan systems are already in the final production phase, and two other systems are currently scheduled to go to production. None of those eight have benefited from the recent acquisition improvements and all have experienced cost increases, schedule delays, or both.

There is, however, hope that other major systems will benefit. The three remaining major NAS plan systems have still not reached the final production phase. Still other systems are scheduled to become major systems in the near future. And a few systems that are already in final production phase may have to return to the development and testing phase because of problems encountered in production.

Accordingly, we believe that all these systems should be subjected to FAA's revised acquisition process.

FAA does not have current, accurate work standards for all its safety functions and therefore cannot give a very good estimate of how much money they need to provide the best level of air traffic control and surveillance over airline compliance with safety regulations.

Current funding levels involve guesswork about how many people are needed, and, as we pointed out earlier, FAA's increases and decreases in staffing have not been consistent with changes in air traffic. In addition, the NAS plan is behind its original schedule and still involves many unknowns and possible changes.

There is pressure, however, to spend more because of the current size of the unused balance in the airport and airway trust fund—the funding source for the NAS plan and a percentage of FAA's operations and maintenance costs.

We reported in May that the current unused balance in the trust fund is $3.2 billion. This balance could increase to $12.4 billion by the end of fiscal year 1990 if the trust fund and aviation taxes are reauthorized without change and revenues and expeditures materialize as projected.

Gramm-Rudman requirements may result in further increases in the size of the unused balance. Unless reauthorized by the Congress, however, the trust fund expires at the end of 1987.

The trust fund's unused balance represents a reserve that can be made available by the Congress as appropriate to cover unforseen circumstances and other contingencies.

However, the experience of the fund over its 15-year history demonstrates that balances lower than the current level have always been adequate. If Congress decides the current and projected unused balances are too high, it could consider a range of options during the reauthorization deliberations. These options and the competing policy considerations or issues associated with each are discussed in our May report. All the options, of course, would require changes in the existing law.

Though the options available are numerous, they generally fall into one of two broad categories: either reducing the fund revenues or increasing the fund expenditures.

Increasing expenditures for the NAS plan does not to us, however, appear appropriate at this time. Even though fiscal year appropriations for the plan have lagged behind the amounts authorized in the Airport Improvement Act of 1982, as pointed out, FAA's end of fiscal year unobligated balance has steadily increased to about $1.3 billion and none of the NAS plan's major acquisitions have experienced any shortage of funding. FAA simply has not been able to accomplish as much as it originally planned.

Further, we believe any spending increases should be justified from the standpoint of feasibility, benefits, and costs. Because FAA has neither adequately identified the risks associated with a number of NAS plan programs nor demonstrated their performance in the operational environment, we have recommended that the Congress assure that the systems work before they buy them.

Conversely, although the exact number is not known, there is a clear need for additional air traffic controllers and commercial aviation safety inspectors.

Congress has responded to FAA's need by appropriating the moneys to meet FAA's fiscal year 1986 controller and inspector staffing requests and has expressed a willingness to support further increases in these work forces, if it is justified. But, FAA does not at present have all the information it needs to establish clearly how many people it should have and FAA's requests for funding must also be consistent with DOT's overall requirements.

The bottom line seems to be that nobody can say exactly how much money FAA needs to do its job. What can be said is that FAA has received funding for maintaining aviation safety whenever its proposals have been adequately justified.

That concludes our statement, Mr. Chairman. We will be happy to answer any questions you might like to ask us.

[The prepared statement of Mr. McLure follows:]

United States General Accounting Office
Washington, D.C. 20548

PREPARED STATEMENT OF

HERBERT R. McLURE, ASSOCIATE DIRECTOR
RESOURCES, COMMUNITY, AND
ECONOMIC DEVELOPMENT DIVISION

BEFORE THE

SUBCOMMITTEE ON INVESTMENT, JOBS, AND PRICES
OF THE CONGRESSIONAL
JOINT ECONOMIC COMMITTEE

ON

AVIATION SAFETY

Mr. Chairman and Members of the Subcommittee:

We appreciate this opportunity to appear before you today to discuss the current condition of aviation safety in the United States. In response to several congressional requests, we have, over the past 3 years, addressed many aspects of this issue, including the status of the Federal Aviation Administration's

(FAA's) air traffic controller and airline inspector work forces; FAA's $16 billion plan to modernize, automate, and consolidate the nation's airways--the National Airspace System (NAS) plan; FAA's response to the changes deregulation brought to the airline industry; and the unused balance in the aviation trust fund.[1] We have reported our findings and recommendations to date to the Congress and have been working with FAA to correct identified problems.

SYSTEM SAFETY

We reported in March that the growth in air traffic is straining the controller work force at many major facilities, especially "en route centers" which control flights between airports.[2] Controllers believe that they are overworked and that the situation could eventually impair their ability to maintain the proper margin of safety. FAA data on staffing, overtime use, and air traffic activity support the controllers' contention that their work load has grown to a level where they are being stretched too thin.

Our consultant, the Flight Safety Foundation, compared the conditions we found with the results of a study it did for FAA in 1981, concluding that conditions within the controller work force have changed since their study and that the present system does not provide the same level of safety as before the August 1981 strike and subsequent firing of 11,000 controllers.

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[1]See attached list of GAO reports and testimonies.

[2]Aviation Safety: Serious Problems Concerning the Air Traffic Control Work Force (GAO/RCED-86-121, March 6, 1986).

Similarly, in May testimony before the House Subcommittee on Aviation, we reported that FAA cannot at present say with assurance that airlines are complying with federal safety regulations. Recent FAA studies--as well as those conducted by the Office of the Secretary of Transportation, the Department's Office of Inspector General, and by us--show that FAA's airline inspection and follow-up activities are often insufficient to identify major safety problems or to ensure that problems are corrected once they are detected. For example, FAA's 1985 Safety Activity Functional Evaluation--Project SAFE--found that FAA surveillance of airlines was often ineffective and that broad changes in FAA's inspection program were needed to improve aviation safety. Moreover, several recent National Transportation Safety Board (NTSB) investigations criticized FAA's inspection program and concluded that ineffective FAA inspections contribute to aircraft accidents.

FAA HAS NOT FULFILLED ITS SAFETY ROLE, BUT HAS BEGUN TO TAKE CORRECTIVE ACTION

FAA's role in aviation safety is defined in the Federal Aviation Act of 1958, as amended, which charges the Secretary of Transportation with regulating air commerce in such a manner as to best promote its development and safety. The act makes the safety of air travel the joint responsibility of the airlines and FAA. Individual airlines are responsible for the safe operation and maintenance of their aircraft. FAA carries out its safety responsibility by issuing regulations that set minimum acceptable standards of safety, monitoring airline compliance, and taking

enforcement action when noncompliance is found. It is against this legislative backdrop that the adequacy of FAA's efforts to meet its safety role should be measured.

FAA has acknowledged that it has not adequately fulfilled its safety role and has, in the past few years, begun to respond. Recognizing problems inherent in its inspection program, FAA is increasing the size of its inspector work force, has issued staffing standards and national guidelines that set forth minimum numbers of inspections, and has affirmed that inspections--not certification of potential new airlines--are the inspectors' number one prioity. FAA has also instituted a National Inspection Plan using large, specially assembled teams to inspect targeted airlines.

FAA is, however, not well prepared to absorb an increase in its inspector work force; in fact it will be years before all the needed internal management controls, inspector training, regulations and guidance, and supervisory and managerial oversight are in place because examination of these issues and available options will not themselves be completed for several more years. Meanwhile, FAA needs an effective plan for dealing with its shorter term problem of ensuring airline compliance with safety regulations while it puts its long-term strategy into place.

Our review to date suggests several actions that FAA needs to take to address its short-term problems. These include

--revising its nationwide minimum standards for the type and frequency of airline inspections to help inspectors target airlines displaying characteristics that indicate possible

safety deficiencies. Such indicators include a relatively large amount of contract maintenance and/or training, inadequate internal management controls, and management experience and philosophy incompatible with sound safety practices;

--better identifying who is inspecting which airlines and how frequently, so it can better allocate its existing inspector work force and the personnel it plans to add;

--ensuring that inspectors have the training and experience necessary to carry out their assigned duties; and

--sequencing its actions to upgrade its inspection program so that improvements are in place when they can do the most good. For example, it would seem prudent for FAA to know what entry-level knowledge and skills are appropriate for aviation safety inspectors and to implement an effective screening program to identify applicants with maximum potential for successful performance as inspectors before it hires hundreds of new inspector candidates.

At hearings before the House Subcommittee on Aviation in May and again before the Senate Subcommittee on Aviation last week, FAA agreed to revise its guidance to inspectors to provide them with criteria based on airline characteristics that affect safety compliance so that inspectors have a more consistent basis for determining the minimum necessary number and mix of inspections.

FAA has now also acknowledged that some changes are needed in its air traffic control functions, and has agreed to increase its

controller work force by about 1,000 people by the end of fiscal year 1987. FAA will, however, need more than 4 years at its present rate of gain to increase its complement of qualified controllers and even longer to provide new equipment and other measures to reduce controller work load. We recommended, therefore, that FAA restrict air traffic at facilities where controllers are overworked until it meets its staffing goals. Our March report included several other recommendations of actions FAA should take to reduce work load pressures on controllers and to improve the quality of its reporting to the Congress on its controller staffing progress and the overtime being worked by controllers.

In its response this month to our report, the Department of Transportation generally agreed that FAA needs to increase staffing and reduce overtime, particularly at the centers. Using the facility-specific information developed during our survey, the Department has also agreed to take additional action where it believes it is warranted and to review the agency's traffic management programs with an eye toward expediting, as much as possible, planned system enhancements.

Having provided the Department with the facility-specific information developed during our survey, we look to FAA to take further action commensurate with our findings. This would include evaluating the effectiveness of its traffic management system at centers where controllers and supervisors identified inadequate flow control procedures as a reason for their being required to deal with more traffic than they thought they could safely handle.

FAA HAS NOT RESPONDED EFFECTIVELY TO CHANGES BROUGHT ABOUT BY DEREGULATION

Our work has also demonstrated FAA's difficulty in balancing its dual responsibilities for promoting commercial aviation and, at the same time, ensuring aviation safety--roles that may well entail at least some measure of conflict.

FAA did not respond effectively to the changes deregulation brought to the airline industry. The Airline Deregulation Act of 1978 gave domestic airlines, after 40 years of regulation, the freedom to decide where they would fly and what fares they would charge. Our review of airline operations before and after deregulation, through 1984, showed that most passengers benefitted as the industry became more competitive.[3] Fare increases were lower, on average, than what might have been expected under continued regulation; the numbers of flights and available seats increased; airlines have been more responsive to consumer preferences through a wide range of price and service options; and operating efficiency has increased.

While the 1978 act removed government control over fare costs and schedules, FAA remained responsible for assuring that airlines comply with federal safety regulations. FAA did not recognize that a fiercely competitive, deregulated environment highlights aircraft maintenance and other safety-related activities as controllable expenses that directly affect an airline's financial health--a situation requiring greater oversight vigilance. Until recently, FAA took few steps to monitor and address the impact

[3]Deregulation: Increased Competition Is Making Airlines More Efficient and Responsive to Customers (GAO/RCED-86-26, Nov. 6, 1985).

deregulation had on its inspection work load or staffing requirements. Between 1978 and 1983, when the number of airlines and aircraft grew substantially, FAA's inspector work force was cut by one-third, from over 2,000 to 1,332.

Similarly, while air traffic has now reached record levels and is expected to continue to grow, the size of the controller work force remains about 2,000 people below what it was at the time of the 1981 strike. Although improved automation and air traffic control methods can help improve the level of air safety, the first major labor-saving features of FAA's planned automated air traffic control system--the NAS plan--will not be operational until the mid-1990's, at the earliest, thereby delaying by up to 8 years FAA's planned productivity gains.

RISKS RAMAIN FOR MANY NAS PLAN PROGRAMS

In terms of dollars spent, FAA's NAS plan is the largest single civil procurement program since the lunar landing effort in the 1960s; it will cost over $16 billion by the year 2000. FAA believes that the plan represents a practical way to achieve a significantly safer and more efficient system. One of the plan's goals is to reduce the risks of mid-air and surface traffic collisions, landing and weather-related accidents, and collisions on the ground.

We have worked with the House Appropriations Subcommittee on Transportation over the past few years to monitor many aspects of FAA's NAS plan activities. Our reviews to date have addressed a number of NAS plan programs for which FAA has not adequately

identified the technical, operational, and economic risks associated with their implementation. Further, for many of these programs, FAA's acquisition strategy does not include a plan to minimize risks by adequately demonstrating a system's performance in an operational environment before committing it to production.

Because of the problems noted in our reviews of specific NAS plan programs, we also reviewed how well FAA and the Department of Transportation are managing FAA's major systems acquisitions. Our findings are encouraging for the future, but disappointing for NAS programs already committed to production, which have experienced cost increases and schedule delays.

We would expect a major system acquisition program with significant technical, operational, and economic risks to require strict adherence to the phasing and competition principles fundamental to Office of Management and Budget (OMB) Circular A-109.[4] This directive established a process of decisionmaking at four critical points in a system's acquisition, including requiring an agency to demonstrate that a technology will actually work in an operational environment before it commits to production.

A 1984 FAA report on its acquisition process noted little regard for the procurement policy set forth in OMB Circular A-109. Further, a 1984 study of several major systems acquisitions conducted by an FAA consultant found that failure to

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[4]Published in 1976, this government-wide, OMB directive is intended to eliminate problems previously associated with the procurement of major systems. The directive attempts to avoid the premature commitment of a system to full-scale development and production by requiring periodic reviews of project cost, schedule, and performance.

adequately test operational systems in the field prior to full procurement is a major cause of FAA's subsequent performance problems.

In the past year, both the Department of Transportation and FAA have made progress in incorporating the requirements and principles of OMB Circular A-109 into the NAS plan acquisition process. However, six of the 11 major NAS plan systems, are already in the final production phase of the acquisition process and two other systems are currently scheduled to go to production. None of eight have benefitted from the recent improvements in FAA's acquisition process and all have experienced cost increases, schedule delays, or both.

There is, however, hope that other major systems will benefit from these recent improvements. The three remaining major NAS plan systems have still not reached the final production phase. Still other systems are scheduled to become major systems in the near future. And a few systems that are already in the final production phase may have to return to the development and testing phase because of problems encountered in production. Accordingly, we believe that all these systems should be subjected to FAA's revised acquisition process.

THE APPROPRIATE LEVEL OF FEDERAL FUNDING IS STILL UNKNOWN

FAA does not have current, accurate work standards for all its safety functions and therefore cannot give a very good estimate of how much money it needs to provide the "best" level of air traffic control and surveillance over airline compliance with safety regulations. Current funding levels involve guesswork

about how many people are needed, and, as we pointed out earlier, FAA's increases and decreases in staffing have not been consistent with changes in air traffic. In addition, the NAS plan is behind its original schedule and still involves many unknowns and possible changes. There is pressure, however, to spend more because of the current size of the unused balance in the airport and airway trust fund--the funding source for the NAS plan and a percentage of FAA's operations and maintenance costs.

We reported in May[5] that the current unused balance in the trust fund is $3.2 billion. This balance could increase to $12.4 billion by the end of fiscal year 1990 if (1) the trust fund and aviation taxes are reauthorized without change and (2) revenues and expenditures materialize as projected. The requirements of the Balanced Budget and Emergency Deficit Control Act of 1985 may result in further increases in the size of the unused balance. Unless reauthorized by the Congress, however, the trust fund expires at the end of 1987.

The trust fund's unused balance represents a reserve than can be made available by the Congress as appropriate to cover unforseen circumstances and other contingencies. However, the experience of the fund over its 15-year history demonstrates that balances lower than the current level ($3.2 billion) have always been adequate. If the Congress decides the current and projected unused balance levels are too high, it could consider a range of options during the reauthorization deliberations. These options

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[5]Aviation Funding: Options Available for Reducing the Aviation Trust Fund Balance (GAO/RCED-86-124BR, May 21, 1986).

and the competing policy considerations or issues associated with each are discussed in our May report. All of these options would require a change to existing law.

Though the options available are numerous, they generally fall into one of two broad categories: reducing fund revenues or increasing fund expenditures. Increasing fund expenditures for the NAS plan does not, however, appear appropriate at this time. Even though fiscal year appropriations for the plan have lagged behind the amounts authorized in the Airport Improvement Act of 1982 (Title V of Public Law 97-248), FAA's end of fiscal year unobligated balance[6] has steadily increased to about $1.3 billion and none of the NAS plan's major acquisitions have experienced a shortage of funding. FAA simply has not been able to accomplish as much as it originally planned.

Further, we believe that any spending increases should be justified from the standpoint of feasibility, benefits, and costs. Because FAA has neither adequately identified the risks associated with a number of NAS plan programs nor demonstrated their performance in an operational environment, we have recommended that the Congress assure that the systems work before they buy them.

Conversely, although the exact number is not known, there is a clear need for additional air traffic controllers and commercial aviation safety inspectors. The Congress has responded to FAA's need by appropriating the monies to meet FAA's fiscal year 1986

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[6]The unobligated balance is comprised of monies appropriated for a specific purpose, but not yet contracted for by FAA.

controller and inspector staffing requests and has expressed a willingness to support further increases in these work forces if justified. But, FAA does not at present have all the information it needs to establish clearly how many people it should have, and FAA's requests for funding must also be consistent with the Department of Transportation's overall requirements.

The botton line seems to be that no one can say exactly how much money FAA needs to do its job. What can be said is that FAA has received funding for maintaining aviation safety when such proposals have been adequately justified.

This concludes my testimony, Mr. Chairman. I will be happy to answer any questions you or other Subcommittee Members may have at this time.

LISTING OF RECENT GAO REPORTS AND TESTIMONIES RELATING TO AVIATION

Reports
(5/18/83 to Present)

AVIATION SAFETY:

Federal Aviation Administration's Role in Developing Mid-Air Collision Avoidance Back-Up Systems (GAO/RCED-86-105FS, April 22, 1986).

FAA's Surveillance of Two Contract Military Carriers (GAO/RCED-86-128FS, March 13, 1986).

Serious Problems Concerning the Air Traffic Control Work Force (GAO/RCED-86-121, March 6, 1986).

FAA Could Improve Overall Aviation Safety and Reduce Costs Associated With Airport Instrument Landing Systems (GAO/RCED-85-24, April 3, 1985).

Legislation Needed to Clarify Future of Consumer Protection and Federal Preemption After the Civil Aeronautics Board Sunsets (RCED-84-154, June 13, 1984).

Safety Standards on Small Passenger Aircraft--With Nine or Fewer Seats--Are Significantly Less Stringent Than on Larger Aircraft (GAO/RCED-84-2, Jan. 4, 1984).

AIRLINE INSPECTIONS:

Comparison of Airlines With and Without Military Contracts, (GAO/RCED-86-185BR, June 20, 1986).

Compilation and Analysis of the Federal Aviation Administration's Inspection of a Sample of Commercial Air Carriers (GAO/RCED-85-157, Aug. 2, 1985).

Evaluation of the Federal Aviation Administration's Enforcement Program (B-215648, July 25, 1984).

AIR TRAFFIC CONTROL:

FAA's Advanced Automation System Acquisition Is Risky (GAO/IMTEC-86-24, July 7, 1986).

Status of FAA's Host Computer Program and Related Software Enhancements (GAO/IMTEC-86-25BR, July 3, 1986).

Key Aspects of FAA's Plans to Acquire the Multibillion Dollar Advanced Automation System (GAO/IMTEC-85-11, June 17, 1985).

FAA's Host Computer: More Realistic Performance Tests Needed Before Production Begins (GAO/IMTEC-85-10, June 6, 1985).

Interim Observations on FAA's Plans for Major Systems Acquisitions (GAO/IMTEC-84-14, May 4, 1984).

AVIATION ACQUISITION:

Review of the Federal Aviation Administration's Management of Research, Engineering, and Development Funds (B-215676, Sept. 12, 1984).

Information on the Federal Aviation Administration's Regulation of the Aircraft Parts Manufacturing Industry (B-214803, April 16, 1984).

Review of Studies on Early Retirement of Flight Service Station Specialists (B-214320, March 27, 1984).

Federal Aviation Administration's Process of Selecting Locations for Automated Flight Service Stations (GAO/RCED-84-95, March 2, 1984).

AVIATION WEATHER:

FAA Should Buy Direct User Access Terminal Systems, Not Develop Them (GAO/RCED-86-173, June 6, 1986).

FAA System for Disseminating Severe Weather Warnings to Pilots (GAO/RCED-86-152BR, April 22, 1986).

Installation of Automated Weather Observing Systems by FAA at Commercial Airports Is Not Justified (GAO/RCED-85-78, July 29, 1985).

AVIATION FUNDING:

Options Available for Reducing the Aviation Trust Fund Balance (GAO/RCED-85-124BR, May 21, 1986).

Information on Airport and Airway Trust Fund Revenues and Outlays by States and Large Airports (GAO/RCED-85-153, Sept. 30, 1985).

Federal Aviation Administration's System for Prioritizing Airport Grants (GAO/RCED-84-124, April 13, 1984).

DEREGULATION:

Increased Competition Is Making Airlines More Efficient and Responsive to Consumers (GAO/RCED-86-26, Nov. 6, 1985).

Update of Certain Statistical Information Included in Report Entitled "The Changing Airline Industry" (RCED-84-83, May 4, 1984).

The Changing Airline Industry: A Status Report Through 1982 (GAO/RCED-83-179, July 6, 1983).

More Flexible Eligibility Criteria Could Enhance the Small Communities Essential Air Service Subsidy Program (GAO/RCED-83-97, May 18, 1983).

AIRLINE COMPETITION:

Impact of Computerized Reservation Systems (GAO/RCED-86-74, May 9, 1986).

Airline Takeoff and Landing Slots: Department of Transportation's Slot Allocation Rule (GAO/RCED-86-92, Jan. 31, 1986).

Testimonies
(10/01/85 to Present)

Aviation Safety, Subcommittee on Investment, Jobs, and Prices, Congressional Joint Economic Committee, July 21, 1986.

S. 2417 and the Status of FAA's Controller and Inspector Work Forces, Subcommittee on Aviation, Senate Committee on Commerce, Science, and Transportation, July 17, 1986.

Department of Defense Oversight of Airlines With Military Contracts, Subcommittee on Investigations, House Committee on Armed Services, June 26, 1986.

FAA Air Traffic Controller Staffing Issues, Subcommittee on Human Resources, House Committee on Post Office and Civil Service, June 12, 1986.

FAA's Airline Inspection Program, Subcommittee on Aviation, House Committee on Public Works and Transportation, May 14, 1986.

FAA Appropriation Issues, Subcommittee on Transportation, House Committee on Appropriations, April 16, 1986.

Conditions Within the Air Traffic Control Work Force, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, March 17, 1986.

Serious Problems Concerning the Air Traffic Control Work Force, Task Force on Air Transportation Safety, Senate Republican Conference, March 10, 1986.

Conditions Within the Air Traffic Control Work Force at Six FAA Facilities, Subcommittee on Aviation, House Committee on Public Works and Transportation, March 3, 1986.

FAA's Terminal Doppler Radar Efforts, Subcommittee on Aviation, House Committee on Public Works and Transportation, Oct. 2, 1985.

Three Safety Issues Relating to Aviation, Subcommittee on Aviation, Senate Committee on Commerce, Science, and Transportation, Oct 1, 1985.

Senator SARBANES. Thank you very much, Mr. McLure. Do your colleagues have anything they want to add at this time?

Mr. COTTON. No.

Mr. MCGRAIL. No.

Senator SARBANES. Let me ask you this question. As I understand it, part of the NAS program was a reduction in FAA personnel. In other words, the theory was that as equipment was brought on line it would be possible to decrease personnel because updated modern technical versions would be in place. Safety would actually come out on the net-plus line.

My understanding is that they have been cutting the personnel pursuant to that plan but not coordinated with the implementation of the technical plan.

Is that correct? Has that, in fact, been taking place?

Mr. MCLURE. Well we actually don't know exactly why they have been cutting the staff. Some people have said that is why, and Senator Byrd kind of laid that scenario out.

They have been cutting staff for both controllers and inspectors and in some other areas as well, and they are behind in implementing the NAS plan. It is true that the NAS plan—they expect that the NAS plan will require fewer people to operate safely. That was the whole reason for doing it. That, in addition to replacing some really outmoded systems.

So, the connection is there, although, you know, there is nothing there to prove that that is why they were reducing their staff. There are other reasons for reducing staff as well. In fact, at the time of the strike they really were convinced that they had more controllers than they needed at that time. Mr. Cotton, would you like to add to that at all?

Mr. COTTON. Just that the primary savings to come from the NAS plan was cost avoidance by reducing the work forces. And even for inspectors, which aren't affected by the NAS plan, they have made several assumptions as far as productivity gains with modernization of the workplace, for instance, that had not occurred either.

So, you know, although you can't tie direct cause and effect relationship to these assumptions and reductions, they have occurred simultaneously.

Senator SARBANES. I have two problems. First, it is not clear that their assumptions as to how much personnel savings were justified by implementing the NAS plan were warranted. I think they may have overstated or overestimated the amount of personnel that could be done away with by putting this plan into effect.

Obviously there is a pressure on them to take that view, and I think they may have bent in that direction.

In any event, they have not implemented the NAS plan according to schedule. They have not moved in this new equipment according to schedule, but they are reducing personnel, at least to some extent, according to their schedule.

So, even if you accept their premise, which I am careful to say I don't—but even if you accept the premise, they are proceeding not in parallel. And it seems to me if you do that—in other words, if you reduce your personnel ahead of implementing the new system

which is supposed to make the personnel reduction possible, you obviously are skimping on safety for budget purposes, I take it.

Mr. MCLURE. It seems like a reasonable turn of logic.

Senator SARBANES. Let me ask you this question on the inspectors.

There has been a lot of criticism of the FAA that they have focused the inspector force in the wrong direction. Too much has been focused on certifying new airlines which want to enter the business, or making reeligible in fact certain carriers who have been decertified.

In fact, I recall one story where an incredible number of inspector hours were invested in working with an airline whose safety record had been so bad that it was decertified. Then they threw in a team of inspectors with extended hours to help recertify them.

Of course meanwhile drawing those inspectors away from normal run of inspections involved with airlines which are trying to do a much better job in terms of meeting safety standards.

Now, has that in fact occurred?

Mr. MCLURE. Yes. Mr. Cotton can give you the details on that.

Mr. COTTON. In fact the case example that you just gave is part of a report that we issued, that shows a chronology between when a safety-related deficiency was first identified by FAA and the time it took to close, withdraw the certificate. And in that case it took them 6 months. And it took them 6 weeks and 680 inspector staff days to open them back up.

So, they got their certificate back in 6 weeks, where it took them 6 months to close them down.

Mr. MCLURE. FAA does demand work and nondemand work.

Demand work is work that comes in because an airline says I have to have something right now. It also includes work that comes from passengers.

If you have ridden on an airline and you write FAA a letter saying the ashtray was gone out of the seat of my plane and it seemed like a safety hazard, an FAA Inspector has to check out every one of those kinds of reports. And does.

That is called demand work, because it comes in by demand.

The reason the inspectors tend to lean toward those kinds of activities especially with certification ones, is that the airlines are very concerned about them. For example, if you buy a $14 to $20 million aircraft and cannot fly it until FAA certifies it as airworthy, you are real concerned about FAA getting out there right away and inspecting the airplane. So, you put on a lot of pressure.

I wouldn't be surprised if you heard about some of those situations yourself.

So, the inspectors, given that kind of push and pull are going to try to certify the airplane. And the only way they can do that is to take staff away from the normal inspection duties that they refer to as nondemand, but they are regularly scheduled. So that is what happens to them.

When the airlines are growing very rapidly, when they are adding airplanes and moving airplanes from one airline to another quite a bit, then there is a tremendous amount of that work that has to be done. We found that about 80 percent—at least the inspectors in five locations told us that about 80 percent of their time

is spent on the certification work, and only about 20 percent on the inspection work.

Senator SARBANES. How well geared up are all the new entrants into the airlines industry, for the maintenance part of their operation?

Mr. MCLURE. Some are geared very well. Others use contract maintenance. They all are supposed to meet FAA minimum standards. And FAA's minimum standards are supposed to be more than adequate to ensure safety.

There are a variety of situations. However, if you visit an airline, chances are you would be very impressed with the way they go about their maintenance. I just was in an airline myself. A computer tells them when the airplane is moving, when it is in the air. They know exactly how many hours it has been flying between maintenance, when a certain number of hours is up, the computer tells them, look, this kind of maintenance is due now. You have to get that plane in here and do this. Gives them a whole list of things to do.

So by and large, especially the large airlines have very sophisticated maintenance programs. However, many other airlines contract all their maintenance out. That is, they also try to have that same kind of program, but they don't have their own maintenance people so they hire others to do their maintenance for them. And it is likely that they don't have quite the same level of control as the other airlines.

Mr. Cotton, do you want to add to that?

Mr. COTTON. That is one of the issues, along with pilot training and several others that we are going to review. We will have the results of that next spring.

Senator SARBANES. You are looking at the question of type of training?

Mr. COTTON. Yes. We are using the commuter airlines as a cross-cutting issue to take a look at all the concerns that have been raised over the past several years relating to part 121 and 135 airlines.

Senator SARBANES. I'm glad you are focusing on pilot training, because I thought one of the interesting points Senator Byrd made is, that there is a decrease in the amount of experience.

Not much has been written about this problem. As Senator Byrd pointed out, in 1983 only 8 percent of the pilots flying for commuter airlines had fewer than 2,000 flight hours. By 1985, 23 percent of the commuter pilots had fewer than 2,000 flight hours.

He notes that in 1983 pilots flying for major airlines had an average of 2,342 hours of flight experience in jet aircraft. By 1985 the average was down to 818 hours in jet aircraft.

Then he adds the point that over the next 20 years, approximately 70 percent of the pilots employed by major airlines are expected to retire.

Do you see a real crush coming in terms of the experienced pilots available to the major airlines and commuter airlines?

Mr. COTTON. One of the things that we are going to look at is how many hours do you need to be qualified. Obviously the more time you fly, the more experience you gain, the more situations you respond to. And thus, know first hand what to do.

But as of right now, we don't know that it is necessarily bad that you have less than 2,000 hours. That is why we intend to go and find out exactly what standards, what criteria organizations such as ALPA would use as far as when they would consider a pilot to be experienced. But we have not done that. That is included in the review that we are doing.

Senator SARBANES. In any event the number of experienced pilots with real flight experience is clearly on the decrease.

You may not need all that flight experience to be a qualified pilot. But, we are facing a situation in which pilot experience is going to be less than has heretofore been the case.

Is that not correct?

Mr. COTTON. That's correct.

Senator SARBANES. That would suggest, if seems to me, that first of all we better be sure about the level required for certification as qualified, and make sure pilots are meeting it.

And, in any event, it would also seem to me that all the other systems involved—air traffic controller systems, maintenance, airplane standard—are going to lose some experience. That lessens the margin on the safety question, does it not, as a general proposition?

Mr. COTTON. Well, it does, and that is why in tying all this together you do have less experience in the air traffic controller work force than you did. There are fewer full performance level controllers. You have a lot younger, less experienced inspector work force than you did. And you couple those with a less experienced, less trained pilot grouping, then all those could add together and possibly, possibly affect aviation safety.

Senator SARBANES. My sense is, that what has happened in each of the areas related to safety, is that instead of being able to hold the standard or improve it, it in fact is dropping.

It is hard to say exactly what that means in terms of air safety; that part of it is conjecture. Still, Senator Byrd did a good job this morning using his incidents-related tests to show that the margin of safety has decreased.

We are at greater risk on the traffic controllers, for example.

This chart clearly shows that while the FAA is pitching the total number of controllers back up, the total number is still well below the figure before 1981; and second, in my judgment more importantly, the number of full performance level controllers, which is only this portion of that bar, shows a very marked drop from what we had before 1981.

Mr. MCGRAIL. Looking at the full performance level portion of the bar, there is another factor, Senator, concerning experience. And that is before the strike it took a controller between 4 and 5 years to reach the full performance level standard. After the strike, FAA got a waiver of the time and grade requirements, such that today's full performance level controller can reach that level in about 24 months on average.

So, not only are there fewer full performance level controllers, but the experience level of one reaching the status today is only about half of what it was prior to the strike.

Senator SARBANES. That's a very important point. In other words, this FAA figure—this red part here on full performance

level controllers, which they would use to compare with this figure—they are including controllers with about half of the training and experience that would have previously been required in order to have been included over here.

Is that correct?

Mr. McGRAIL. According to the FAA, the new controllers have met the FAA standards for checking out on the position. But again, they do not have the experience that the prestrike controller had to bring to bear on their operations.

Mr. McLURE. I was having a similar discussion with my daughter, Molly, the other night about driving. While young drivers are probably more skilled than experienced drivers and have better reflexes and so forth, they still get into more trouble. And it is because of experience. They don't anticipate as well what is going to happen, they don't understand the traffic patterns as well. And they simply put themselves in situations that cause problems.

None of us know for sure whether that is analogous to the air traffic system. All of us worry that it might be.

Senator SARBANES. Let me ask you this question. I am hard put to find any rationale whatever which would justify a drop in air carrier inspectors as we move into deregulation, and therefore have a marked increase in the number of carriers, a marked increase in the number of flights and departures. I mean, it seems to me the work to be done by inspectors has substantially increased partly because of the growth of the country which would have occurred, in any event. But it has been significantly added to by the impact of deregulation.

Mr. McLURE. That is a really curious thing. None of us have been able to figure that out.

Certainly the people presently in charge of the program recognized right away that there needed to be some changes.

One of the curious things about it is FAA for a number of years didn't keep track of which airlines they inspected, or how frequently, or what they found when they inspected them.

Senator SARBANES. You mean they kept no record of that?

Mr. McLURE. Yes, that's right. They kept no record. So there is nothing to go back and look at about efficiency or what was being inspected and so forth. So, there was nothing to support either way how many inspectors they actually needed.

We found—we took a sample of airlines from 1984 and went to the individual inspector's files to find out how many inspections had been done, and found that there were a number of airlines around the country who had not been inspected at all for certain kinds of inspections during that year, whereas other airlines had been inspected many times.

There simply were no records kept and no basic rules for any inspectors to follow as to how frequently they were supposed to do something. So, quite frankly, we can't tell you how FAA justified that. We can't explain how that situation occurred. Back in the mid-1970's they did keep track of some of those things. So, it is a mystery.

Senator SARBANES. Do you think there is a tendency on the part of FAA, and perhaps others, to relate the urgency of the air safety question to actual accidents and actual fatalities, so that in recent

months even the FAA has been, as it were, more forthcoming. They have admitted some problems. They are redirecting their inspector force, or so they state. They are seeking additional controllers, although in rather small numbers, I think. But, of course, that was because we had a bad year. It may be because we had one bad year here in 1985 on accidents and fatalities.

Do you perceive a tendency to react to the actual occurrence of crisis or catastrophe rather than a more hardheaded, logical analysis of where the trends are going, taking action to preclude the catastrophe from happening, to begin with?

Mr. McLURE. A couple of points on that.

First, of course, FAA has to react when there is a tragedy of some kind, so there is a natural tendency to do that. But, beyond that, in my personal opinion I think Admiral Engen has picked up on some of the things that Senator Byrd is talking about, and FAA shows a much greater tendency now, really, to consider what we call proxies or surrogates to measure how safe the system is.

The big accidents are the worst measure, or the least useful measure, if you are trying to manage the system, because it is the thing you are trying to prevent.

Senator Byrd was quite right that in a system that takes off and handles a million and a half or more operations a year and only has three or four accidents, it is fair to say that an accident really and truly is an accident. What you are trying to do is avoid the circumstances that lead to accidents, and I think those are the things FAA ought to try to measure and try to manage against.

So, for example, if you find instances where airplanes get too close together, or closer together than you think they should be are occurring and you want to decrease that, you can manage that problem. You can say, we had x number of these occurrences last year and we want to reduce that.

So, you can give new guidance to your controllers and your pilots and you can measure your progress and keep the planes further apart. And by doing that, the assumption is you are going to have fewer of the accidents that really are accidents, because you are avoiding the circumstances.

We have taken that position for some time now and I think FAA is coming around on that.

Mr. COTTON. There are measures for the inspector program, for the controllers, that can tell you how well a program is and what progress they have made over a certain period of time.

And once they do that, then the Congress and FAA and even the public will be able to measure how well they are responding. Right now it is reactive instead of a preventive mode that they are in.

Senator SARBANES. We focused a lot on the inspectors and the controllers. We are going to hear from the next panel about systems maintenance.

I wonder what your observations are of what is occurring in that area.

Mr. McLURE. I have one, then I will let Mr. Cotton go ahead and say some more.

The one I have is, right now FAA is kind of working in a constrained funding situation, in that they have a full-time equivalent personnel ceiling they are working against. If they increase con-

trollers and inspectors, which they certainly need to do and agreed to do, they have to reduce somewhere else to stay within that ceiling.

The only other real big work force they have are these maintenance staff that they also need very badly.

So, we are concerned that increasing on the one side may cause some reductions on the other side that might not be a good idea.

Mr. Cotton, go ahead.

Mr. COTTON. Again their assumptions are just based on the idea that the NAS plan was supposed to provide increased reliability allowing them to reduce the number of personnel. They are in the process of replacing much of the equipment with solid-state equipment, which requires less maintenance.

The problem there is those systems have not progressed as rapidly as FAA would have liked. Yet you can see a continuing decrease in that work force as well.

In fact, we are doing a review on that one also right now for Congressman Mineta. And one of the things we have found over the past—I think it has been 10 years—FAA has never received the moneys for the staffing positions that they have asked for in the maintenance work force. And that those staffing positions are driven by a fairly accurate staffing standard process.

Senator SARBANES. Is it your view that the people who work as inspectors or air traffic controllers or systems maintenance people must have a clear sense of the enormous amount to be done, and that they are sort of a beleaguered legion? In other words, their numbers are inadequate to do the job. So, do they feel overwhelmed or under intense pressure as a consequence? Now, does that affect their ability to be productive and to do a good job?

In other words, you can demand a lot from people and sometimes it draws a better performance. But at some point you can put them under so much stress and pressure, because what they have to do is so far greater than their ability to do it, that it in fact begins to impede their ability to function.

Mr. MCLURE. The controllers are the only group we have actually surveyed. We have talked with the other groups, and we had sort of ad hoc impressions. But, Mr. McGrail can tell you what the controllers told us, because we did an actual scientific survey of them.

Mr. MCGRAIL. That was the clear statement from the controllers, such that we felt compelled to recommend what we did. And that was restricting air traffic until FAA pulled its staffing levels up commensurate with the workload.

The controllers at many major facilities that we covered actually felt overburdened and we were concerned when we put their comments together with FAA's own information on overtime hours being worked, and traffic levels they were handling.

So the other area they were concerned about was their ability to maintain a proper margin of safety. Although they were reluctant to say that the system today is unsafe, they were very concerned in many areas about their ability to maintain the level of safety they thought was necessary.

Another critical area we came across is the quality of the training of the new controllers. And time and again that came up both

in the responses, additional comments we received, plus the number of responses to the questionnaire.

Senator SARBANES. According to the press reports on the FAA comment on the GAO study of the controllers, they minimized the survey results. It was even suggested that they were "predictable complainers."

That was some 4 months ago, I guess. Was that the position that you perceived the FAA took? And if so, have they altered it in the interim? Are they now more prepared to concede that a problem exists with their controllers?

Mr. MCGRAIL. There was a position taken by senior staff members in FAA at the time we were doing the study, or getting started into it. But they have changed their position as evidenced by their written response to our report. They do take our problem seriously, although we may not be completely satisfied with the actions they have—they intend to do to correct the problems we found.

Senator SARBANES. To what do you attribute their initial backhand treatment of the survey?

Mr. MCGRAIL. It was a curious thing for us. We put a lot of front-end effort into the development of the survey instrument. For instance, we had a series of meetings with them.

I think perhaps they got used to being able to set aside the comments of a few controllers who had testified before hearings by saying that those statements were only anecdotal evidence, and the system was healthy. And they didn't really take us seriously enough that we were going to do an extensive survey of the system.

Now I think they were quite surprised by a lot of comments that we did receive.

Senator SARBANES. What about anecdotal reports in the other two areas—I know you have not done a scientific survey, but what would they tend to show?

Mr. MCLURE. For the inspectors I have talked to, they strike me as being torn between the demand and nondemand work. They know they have to do inspections, they know that inspections are their No. 1 priority. But, they look at you and say, "What am I supposed to do? That airline needs to use that airplane, and it has $50 million invested. Who am I to keep them from using it?"

So, there is definitely that kind of push and pull for the inspectors.

Mr. COTTON. I would like to add for the inspectors that up until recently they didn't really have any requirements placed on them as to the number of inspections they were supposed to do.

When we were out talking to them, they said, "I know we should do more, but I don't know how much more we should do."

So, if you want to equate that to maybe less stress, okay, they just went ahead and did their demand work and it turned out to be 80 percent of their workload. Now, although we are not satisfied with the criteria FAA has implemented, they do have minimum inspection standards. In other words, you have to do one type of inspection, avionics, maintenance and operations per carrier per year, which we don't think is adequate, because it doesn't reflect the complexity of a carrier's operations.

But even then, since we have been back out talking to the inspectors at many district offices, they say they can't even do that this year. And that is just going to cover the agency for the finding we had last August that they weren't inspecting some airlines at all in a given year.

Senator SARBANES. Are the inspectors and controllers and system maintenance people retiring at the first opportunity? Or is there an FAA program to keep them on the job, and therefore help to address the numbers and experience question?

Mr. MCLURE. We know in some detail what is happening with the controllers, and Mr. McGrail can give you some of that information.

My general impression is: controllers, inspectors and systems maintenance people are ready to retire if they are eligible. You know, they are watching to see what happens with both the tax bills and other retirement legislation.

If none of those things happen—all the answers they have given us are predicated on legislative changes—we are not quite sure what will happen if there are no changes in the retirement laws. But, we do know that the controllers are retiring, and Mr. McGrail can give you some information on that.

Mr. MCGRAIL. FAA agrees the retirement issue is a very volatile one. And again, does not know how to read what the effects of legislation will be. Our concern was with what contingency plans they had in the event there were mass retirements as a consequence of any legislative changes. And they had no particular contingency plans.

There is no special program that I am aware of, to try to entice people to stay beyond their retirement eligibility.

Senator SARBANES. That would, of course, help to address some of the pressures they have in terms of finding trained personnel, at least over the short term, would it not?

Mr. MCGRAIL. Yes, it would. The gain in full performance level controllers at the en-route centers where they are most critically needed is a very slow process. Over the first 6 months of this fiscal year, some centers actually lost FPL's. The number there in March was less than what it was in September. Others gained none.

The average gain among all the centers in this fiscal year is just about two full performance level controllers a month.

Senator SARBANES. Is it fair to say that the FAA does not have a developed plan for raising the safety standards? In other words, they are reacting in some of these areas, and what they are doing in some instances is helpful. In other words, in undertaking to hire some more controllers, they are trying to implement the NAS system, although they are lagging well behind.

But I get a sense that the agency feels that it is being criticized. They don't want to admit fully to a problem which everyone looks at and says, "Well it is there, you might as well face it." I sense that there is not, on the part of the agency as it were, an attitude that says, "Well, there is a problem, we are prepared to face it and here is our fully developed plan for doing so and here is what we are going to be doing in each of the areas."

Is that a correct preception?

Mr. McLURE. I'm not sure. First, I would say your perception of how FAA is reacting to the kinds of work we are doing I think is about correct. They are kind of in a beleaguered state saying, "Look, we are doing the best we can. We are trying to accomplish things and the system is basically safe."

But if you ask me do they have a plan. Well, the NAS plan definitely is a plan, and is a plan directed to making the system safer and allowing it to handle more traffic in the future.

So they would say to you, if I were in FAA, I would say to you, "Look that is a plan. That is a plan, as good a plan as we can come up with."

On the inspection side, Tony Broderick and Admiral Engen have made considerable changes over the past couple of years, and they have a plan laid out of things they need to do. The problem is it is going to take them anywhere from 4 to 8 years to do all the things they need to do.

In the interim is when they are, in effect, kind of hanging on until they get these things in place. So, they feel that they are getting picked on while they are trying to get these things going, and that they do have a plan.

It is hard for me to argue with that.

Senator SARBANES. My view of that is that they then don't really have a plan for the transitional period. It is not enough to have the NAS plan and say that once it is in place all these good things are going to happen, and make no provision for the interim period. You may be talking about 5, 10, 15 years. There will be a lot of people and a lot of safety in the interim period.

Mr. McLURE. And a lot of flights.

Mr. COTTON. I was just going to say they did not develop a contingency plan and anticipate. Really what they missed on the NAS plan is they failed to anticipate the magnitude of the technical risks associated with many of the programs. There are outstanding technical problems that still exist in virtually all of them and that has delayed their implementation.

Yet, to come back and say, "Well, although the NAS plan implementation has been delayed, we are still going to go ahead with staffing reductions," is not quite the way they should have gone about it. They were not quite—I guess the correct word would be, they were overly optimistic for a short period of time. In a number of years we are going to pay the consequences.

Senator SARBANES. You make the point in your statement today, Mr. McLure, that they had not sufficiently tested some aspects of that, and we are proceeding, I think, simply on the assumption that it would work as projected. And that was not necessarily a reasonable assumption.

Mr. McLURE. There again, that is a very tough spot to be in. Terminal doppler weather radar is a good example.

Senator SARBANES. For many of these programs FAA's acquisition strategy does not include a plan to minimize risk by adequately demonstrating the system's performance in an operational environment before committing it to production.

Mr. McLURE. Yes.

The double bind Admiral Engen is in with terminal doppler radar, for example, is that there is a radar system out there that

they have done some developmental work on that they think will work. In the meantime, wind shear, which is what terminal doppler radar detects, is probably the single biggest safety hazard around airports. And people who know that are saying, here you have something that might work. Get it out there as fast as you can.

We, on the other hand, are saying, "You don't know if that thing is going to work or not. If you go and buy 100 of them, they may turn out to be a waste of money. You ought to check it out first."

Well, what do you do if you are the Administrator. You have people pushing on one side and people pulling on the other side. What he is doing is trying to get it out there as fast as he can. And we think in the process they are taking a lot of risks and running into a lot of delays because they are finding problems they thought would be solved are not solved.

Senator SARBANES. Thank you very much. You have presented, as usual, some very helpful testimony.

We particularly—when I say "we" we are really talking about the traveling public—appreciate the work that the GAO has been doing in this area. It is really a very significant contribution.

Thank you.

Mr. MCLURE. Thank you.

Senator SARBANES. If the members of the panel could come forward to the table, we will resume in a moment or two.

[A short recess was taken at this point.]

Senator SARBANES. Gentlemen, we are very pleased to have you with us, and we appreciate your staying through the morning in order to testify.

We have five expert witnesses from the private sector to survey the range of safety conditions in the airline industry: Mr. John Enders, president of Flight Safety Foundation; Mr. Howard Johannssen, president of Professional Airway System Specialists; Mr. John Thornton, national coordinator, National Association of Air Traffic Controllers; Mr. John Baker, president, Aircraft Owners & Pilots Association; Mr. Mark Brewer, airport manager of the Salisbury-Wicomico County Regional Airport.

At this point I do want to read a letter into the record from Senator Biden of Delaware, who writes to me saying:

> I am writing to express my support for a hearing to be held by the Joint Economic Committee on July 21 which will examine the issue of airline safety. I believe that this hearing will provide an excellent opportunity to take a close look at some of the recent safety problems in the airline industry.
>
> As you know, one issue in which I am particularly interested is the proposal by the Federal Aviation Administration—FAA—to consolidate flight service stations. Like you, I am concerned that the FAA may be planning to close service stations without meeting the "good or better" service standard as required by the 1982 Tax Act.
>
> I look forward to reviewing the findings of the committee.

Senator Biden spoke to me last week on the floor of the Senate to express his strong interest in this hearing.

I think, Mr. Enders, we will start with you. In fact, I think we will move in the order in which I read your names. Then, to Mr. Johannssen, Mr. Thornton, Mr. Baker, and Mr. Brewer.

If you will go ahead, we will be happy to hear from you, Mr. Enders.

STATEMENT OF JOHN H. ENDERS, PRESIDENT, FLIGHT SAFETY FOUNDATION

Mr. ENDERS. Thank you, Mr. Chairman, I am John H. Enders, president of the Flight Safety Foundation, an independent, nonprofit organization established in 1945 for the purpose of promoting aviation safety in the interest of prevention of accidents.

Our support comes from membership fees, studies, contract fees, safety audit fees and other means of support from a broad constitution of worldwide membership, 460 organizations in 632 countries.

We carry out our work by monitoring aviation systems performance domestically and worldwide by the study of safety issues and problems, and performance of safety audits of both corporate and airline operators. And then we disseminate safety information through publications, workshops, and seminars throughout the world.

We are pleased to have been invited to share some thoughts about air safety with you today. It is a subject that has attracted growing public concern in recent months, and one which has had the attention of a great many safety specialists in both the public and private sector for many years in the development of aviation.

It is a topic which involves complexities that cannot be adequately dealt with in a few days' meeting, let alone a short presentation. Nevertheless, it is useful to briefly review the current state of aviation safety and to raise some questions regarding the needs for a safe and efficient air transport system.

Let me point out that accident statistics are a measure of past performance. They are somewhat analogous to an annual report—how well have we done? They, in themselves are not predictive. Accident investigations, however, uncover factors that contribute to the accident and provide some trend information.

Incident information is probably the most valuable in terms of figuring out what we should do to head off an accident, but is the hardest data to obtain, and by its nature will always be incomplete and probably anecdotal.

Despite the record tragic loss of life in 1985, and 14 fatal jet accidents among the world air carriers were consistent with the trend of gradually decreasing accident occurrences. This trend is there despite the steadily increasing numbers of passengers flown, some 815 million per year worldwide. The involvment of four large aircraft with heavy passenger loads in the 1985 accidents did not fit the normal pattern of accidents and resulted in the unusually high worldwide air carrier losses of life—in excess of 1,600 compared with the average of 600 to 700 annually in recent years.

Another perspective on air safety in the U.S. is provided by looking at the jet hull loss record and the numbers of hours flown that reflect the exposure to risk.

Since 1959, the year that uninterrupted jet passenger service began, the world's airline fleets have flown over 244 million hours. The U.S. has flown just under half of this total record. And during the same time, the world's jet hull losses in operational accidents amount to 505 jet hull losses. The U.S. experienced about 27 percent of the total losses, or 134. So, we are flying about half of the

time, and compared to the rest of the world, we are taking a quarter of the losses.

On a loss rate basis, it is interesting to note that the U.S. airlines experience one hull loss in about 910,000 jet flight hours, compared with the world rate of one in 483,000 jet hours; almost twice as safe, or half the number of accidents.

If one excludes the United States from the world data, the rest of the world averages one hull loss in every 329,000 flight hours or nearly three times that of U.S. carriers. Only one region of the world has a better hull loss record than the United States and that is Australia and the South Pacific, with one hull loss in 2.4 million hours.

By all comparative measures, the U.S. operational safety record is good. It is good because we have had for many years a number of supporting factors, among them being a very strong, competent national certification and regulatory authority, an excellent network of safety and communication, a reasonably unified environment in which the air transportation system developed in this country, a competent accident investigation function with good feedback to the operations and others, and a strong supporting technical infrastructure in government and in industry.

However, we see some signs of strain in parts of this system.

The factors I mentioned have been responsible for building a substantial margin of safety into the system in terms of know-how, experience, competence, equipment reliability and other elements. The growth of air transport over the past few decades has been gradual and measured, with incremental improvements and experience building that steadily reduced fatality and accident rates while improving system efficiency and performance.

A good balance existed between the Government, the manufacturer and the operator that provided the checks and balances necessary to sustain safe and efficient operations.

The Flight Safety Foundation has played and is playing a substantial role in safety improvement by facilitating the exchange of information and thinking about safety and reliability that is essential to the planning and operation of a well-functioning system.

We have been concerned about what we see are major structural changes taking place in air transportation in this country. There are several factors that influence these changes. There is a generational turnover in government and private sector personnel that has not handed off accumulated knowledge and wisdom to the inheritors as well as we might like them to.

Civil service reform measures and pension changes have had an effect on the staffs of government agencies dealing with aviation.

The oil price increases of a decade ago threw the operational budgets into a tailspin and generated a strong need for rapid technology developments in aircraft power plants that could offset some of the cost increases.

However, Federal budget cutting moves had begun to affect research budgets, staffing and equipment implementation schedules.

The Airline Deregulation Act of 1978 created a new set of problems for the industry and, of course, the PATCO strike of 1981 further added to pressures on a system that was expanding rapidly with fewer people to operate it.

Though economic deregulation was not expected to have any effect on safety, we believe this to have been a somewhat naive assumption, especially since market entry tests were relaxed, and the expected expansion of activity was occurring at the same time that Federal aircraft inspection staffs were being decreased.

The economic competition among carriers drove down ticket prices in consonance with the deregulation architects' hopes. But this action, coming on the heels of high oil prices, resulted in the trimming of secondary and tertiary support staffs in the airlines, such as weather, engineering, and, in some cases, safety staff.

Maintenance and operation functions are generally being preserved though many of the support functions or enhanced margins of safety have declined.

Though the airline aircraft are flying with higher load factors, yields are probably not enough to restore many of these services, which contributed to a margin of safety enjoyed in earlier years.

We recently held our Board of Governor's meeting in Stockholm, Sweden, where we heard the president of Scandinavian Airline Systems, Jan Carlzon give his views on how SAS is coping with the economic pressures in a competitive environment. And I would like to submit this for the record, his remarks, entitled "Flight Safety Comes First in a Competitive Environment."

Senator SARBANES. We would be very pleased to have his remarks. Thank you, sir.

[The document follows:]

Flight Safety Comes First In a Competitive Environment

Remarks by Jan Carlzon
President and Chief Executive Officer
SAS, Scandinavian Airlines
Flight Safety Foundation
Board of Governors' Meeting
Stockholm, Sweden, June 11, 1986

SAS
SCANDINAVIAN AIRLINES

Flight Safety Comes First In a Competitive Environment

FLIGHT SAFETY COMES FIRST IN A COMPETITIVE ENVIRONMENT

To be the safest airline in the world. Can you think of anything that long-term would pay a bigger dividend than being perceived by the entire market as the world's safest airline? The trouble is that you can't say you are. Just as you cannot - or should not - claim to be the most punctual, or friendly, or reliable in the world. These are things you can aspire to be. They are not titles you can lay claim to. As far as SAS is concerned, we certainly want to be the safest airline for, among other things, it also makes eminent sense commercially.

People have different visions. Just recently I read a newly appointed airline president quoted as saying that the future of the airline industry is a double bubble on the 747. I hope I misunderstood him. For if you say a thing like that it shows that you haven't grasped what is happening in this industry.

It could have been a relevant statement back in the 1950s or 60s. In those days every productivity gain was terribly important because the market was in a state of constant expansion. Market growth was a given. Revenues were given. We could live with cartels then, and dividing up the market in such a way that there was no real competition. You know, these are things I used to say in order to get a debate started. Today I really believe that's how it was.

Up until about 1978 the people who ran the airlines were really mostly operators, aviation men. Then a number of financial people moved into the top spots.

That development was occasionally fatal, for what preoccupies a financial guy is the share price, not air transport or quality. The kind of managers needed today are people who have the technical/operational know-how of the old timers, who are capable of understanding figures and acting on them, and, finally, are competition-minded and market-oriented. It is the needs of the market that determine how you run your airline.

The situation changed so completely in the late 1970s that I sometimes call it a breakpoint. Competition became very much a reality. In some places like the USA it was sometimes legislated into existence. Even in Europe, with our bilateral agreements and IATA regulations the competition has become pretty cut-throat.

Strategic Development Areas

Handling this new environment makes very great demands on management. The airlines must cope with three strategic development areas. One is the route and airport structure. A development is on its way towards five or six megacarriers, each with its hub-and-spoke structure. As they used to say, "Whether you're going to heaven or hell, you have to transit in Atlanta." It's getting to be true.

The second strategic development area is booking and information systems. In other words, access to the market. A lot of work is going into this. American Airlines and United are the leading examples. American derives only eight percent of their revenue from their booking system, but that's where 35 percent of their profit comes from. What they have done is not only to make themselves independent of other systems. They have also made others dependent on the AA system. There are those who seriously maintain that we are no longer in the airline industry. We're in the information industry.

Maybe. But the most important area of strategic development is the third one, and that is efficiency. What does efficiency really mean? It's not the same thing as productivity. It's not the same thing as cost cutting. Efficiency means doing the right things at the lowest possible cost. But you'd better not forget the bit about doing the right things. The simplest thing in the world is to lower costs by taking away things that the customer really wants. You end up harming the passenger whom you were supposed to serve.

It's bad enough if this affects his comfort and convenience. If cost-cutting leads you to neglect operational quality, technical quality, then you're in deep trouble. I would go so far as to say that it's an open question whether the same technical standards apply in the United States today as ten years ago, before deregulation.

Non-Negotiable Standards

The truly difficult balancing act is how you maintain air safety, high technical standards and high service standards in a freer competitive environment.

In SAS we came to the conclusion that we had to establish standards that were sacrosanct and could not be tampered with — non-negotiable standards — in three key areas: operations, technical and service.

Having defined standards gives you a yardstick against which one can measure quality. Our service standards must, by our own definition, always be at least as high as those of the competition. And no matter how much we preach economy and efficiency, it must never be at the expense of safety.

I believe it is important that we ourselves define the standards. If you let somebody else do it for you -

determined by legal precedent, for instance, the amount of indemnity you are likely to have to pay in case of negligence -- then you apply a legalistic thinking to the problem, and that limits you. On the other hand if you see operational, technical and service quality as competitive factors, then there are no set limits. The only limits then are the dividends you think this policy will pay over time.

The formal decisions in these matters are made in SAS by our Flight Safety Quality Board. This is a body which may be unique in the industry. The Chief Operating Officer of the airline is chairman, and members include the heads of the technical, operations and traffic services divisions, the different route sectors and the director of Quality Assurance.

It is the function of this committee to establish policy in matters pertaining to safety and quality. It sets up the programs it thinks are needed, and sees to it that they get carried out. Some of these programs are made in their infancy, but we have come sufficiently far along to be convinced that we are on the right track.

First we needed to formulate our standards. We needed an internal information program, both to promote and refine the quality concept. And we needed a system of control to ensure that it works without having a lot of policemen running around the organization.

I mentioned that we have established non-negotiable standards in three areas. These are standards which take precedence over all others. This sounds simple, but arriving at a clear understanding of what belongs in this category is not always easy. You can hide behind flight safety when what you really want is to avoid discussion. Or you can begin to negotiate the non-negotiable in a manner illustrated by the hearings which followed the Challenger disaster. Or the Chernobyl one, too, for that matter.

Negotiable Standards

But what about all other standards? They are negotiable, so by definition they have to be negotiated. How do we go about it? We thought we could find some other airline to serve as a model, somebody we could imitate. But we couldn't. So we had to come up with our own ideas, and again they are based on market orientation, but this time the internal market.

What we did was to look at the entire company as a network of suppliers and customers. Everybody delivers something to somebody else within the airline, a service or product or a memo. And everybody gets something from someone else. We're all of us suppliers and customers at the same time. Now, when a supplier assumes that he knows what the customer wants, it is almost certain that the assumption will be wrong. Exactly as in the external market.

What you have to understand is that internal service delivery is just as important as external service delivery. We want the external service to be efficient and thus profitable. If the internal service is efficient it also contributes to profitability. To become efficient and thus competitive it has to be right, neither more nor less.

What we do is to get people together in groups, and we tell them, "Every one of you is a supplier. And you're also a customer. As a supplier of a product or a service, do you really know what your internal customer needs? Or are you assuming that you know? Go talk to him! Find out precisely what he must have to get on with the job. Then start giving it to him."

"And as a customer, how often have you grumbled about the material you receive from another department or division? Then do something about it! Put down on paper precisely what you require, and let it be known that this is what you expect to get from now on."

Quality

The actual process is of course more complicated. It requires negotiations, testing, adjustment. But the mental process is as I just described it, and it leads to quality. Quality. The right quality. You see, when we speak of Quality with a capital Q we do not mean the highest attainable quality, we mean precisely the kind of functional quality that will get the job done with a minimum of fuss. We don't want to encourage unnecessary perfectionism. But we most certainly don't mean a lower quality, either.

This concept cuts right across divisional boundaries and respects no territorial rights. So in a very real sense the program is a practical expression of our horizonal management thinking. It encourages individual initiative as well as team thinking and team formation. It means being responsible for each other, having demands made on you, but also being praised for a job well done.

The most positive initial response to our program has come from technical and operations. This is not surprising. These are areas where there is little room for debate about standards. Thus it's easy to determine if the quality needs to be upgraded, and improvements can be seen quickly.

But quality brings rewards also when it is not directly related to safety. Take a leaking fresh water supply. Sloppy, yes. An inconvenience to passengers, definitely. But it can also freeze and block a valve that controls cabin pressure, and then there's hell to pay. Or a defective chair that has gone unreported and unrepaired may contribute to passenger injury. So higher standards of service can also mean higher standards of safety. The rewards of running a tight ship are still there.

Cost Benefits

The farther you get away from the front line, the more difficult it becomes to agree on quality standards. It seems less urgent. But we have found that the way to overcome a lukewarm reception among what I call the support troops, the tactical and strategic planners, is to concentrate on dollars and cents, the cost benefits of quality and safety.

Cost cutting is very popular in response to increased competitive pressure. But you have to be careful in how you wield the axe. If a function or activity has been carefully considered and found essential to quality, then you're going to think twice about cutting it out. For chances are that you'll incur much higher costs at some later date when you have to reinstate it.

But it is also possible that in another area you are spending money to achieve a higher quality than necessary. The advertising department may assume everything has to be in full color when all you need is a black and white statement. Personnel may assume you need a personal assistant, when what you require is a typist.

The cost of avoidable error are as staggering as they are incalculable. How much does it cost to put up 200 passengers in a hotel overnight because an aircraft could not be made ready for departure? How much does it cost to lease equipment from another carrier? How much does it cost to ground your fleet? To order an aircraft type not suited for your route structure? Nobody knows. But what we do know is that each time we double our investment in prevention, the cost of error is cut in half.

Self-Control

The system of control that we are installing to make sure our quality program works is truly inexpensive,

for it costs nothing. The individual, or individual group, is responsible for meeting the agreed standards. We call this self-control. I know I am taking a bit of a liberty with the English language, but I'd rather use the term self-control and be misunderstood than use the official term, internal control, and run the risk of somebody thinking that he can continue to control his customer. What self-control means in my book is that you are your own master.

Quality control has of course always existed in SAS, especially in the technical sector. But it used to occur only at the end of the line, just prior to, say, handing over an aircraft to the crew. If anything then was found not to be up to scratch, you had to go back up along the chain to pinpoint and correct the error.

Now, thanks to self-control, checking takes place at every stage along the way, always in accordance with the standards set by the next link, who is the customer. You're your own controller, responsible for getting the right quality from the start. Formerly you had a job description, telling you what your work consisted of. Now you have a standard against which you yourself measure that work.

In the past, there was the comforting thought at the back of your mind that the final quality control would function as a safety net. The safety net today is that you know you can count on your colleagues in other divisions and departments to see to it that you get that extra training, those newest tools or more sophisticated procedures that will enable you to ensure quality right from the start.

Quality cannot be applied like rust remover to the patches where it's obviously needed. Quality has to affect all our attitudes, becoming a way of life. That's a tall order. But it's a pleasant prospect to be neither a vendor nor a buyer of shoddy products and services. When quality thinking really sinks in, greater efficiency and safety will follow.

What I Have Learned

To be quite honest, I have learned the hard way. When we made the transition from a production-oriented to a market-oriented company in 1981, we pushed the commercial aspect so far that we lost our footing a bit on the technical/operational quality side. This is not meant as pointing a finger at anyone else. I'm pointing a finger at myself.

I made the unforgivable mistake of assuming. I assumed that everybody understood that safety and technical quality were a given, something that could never be questioned. So when I talked about service I meant the total product, what the customer pays for and gets, in which the primary ingredient is safety.

But many employees misunderstood. They thought of service as being what you get onboard, what you get across the check-in counter. So then the technical people said, "What about us?" The pilots said, "What about us?" What I did in my thoughtless way was to take a knife to the soul of these people.

Today I understand much better, and I believe the pilots and technical people also understand better. I think we have achieved a good balance between having an aggressive commercial operation on the one hand and technical/operations quality on the other.

This experience has taught me a lesson, however. As soon as you deal with people there is no given. In order to conduct a safety and quality program efficiently and successfully, you must have the motivation. People have to feel they are doing something important. These are attitudes that have to be developed and trained and rehearsed, and then you have to repeat it all over again. You have to be realistic. If you do not work on these attitudes they disappear.

Thank you. If I have managed to convey to you my conviction that the answer to competitive pressure is not cost cutting, but maintaining high standards in service, technical and operational quality, then I have achieved precisely what I wanted.

Mr. ENDERS. I think there are a lot of things that can be done to keep safety and quality control high. While we have no quarrel with economic deregulation per se, we still feel that the architects would have done well to have applied a "fault tree" type of analysis to the legislative package that would likely have identified many of these problems in advance. This is, of course, the tool used by aircraft designers in designing complex systems to make certain they have not overlooked some design traps that might cause a safety problem.

Collectively we seem not to manage large complex systems well, neither personnel nor complex technology. We have a lot to learn there and a long ways to go.

But on the other hand, hearing the testimony this morning, I have to reflect that there are always compensating factors at work when aviation structural changes take place that perhaps don't get fully exposed.

It is essential to ensure that the margin does not slip. And so when, for instance, low pilot experience becomes a factor, there are a lot of activities going on in improving pilot judgment training, new simulation activities that compensate, perhaps, for the low number of flight hours a pilot has that will still put a person in the cockpit that has good skills and judgment.

The appropriate role of the Federal Government in air safety has to be supported adequately. We have heard a lot about that this morning. And certainly the Airport and Airways Trust Fund is sitting there with some funding available to help out.

One area that needs attention develops from the fact that it takes 7 to 10 years for new technologies to find their way into the system. So, upstream funding and support of R&D is essential. We find that, for instance, the NASA aeronautics research and development of civil aviation has dwindled, giving us a very pessimistic outlook for future technical support downstream when the aviation industry will need it. Many of the projects that the FAA and the industry are working with now, such as wind shear and runway slipperiness and fire improvements, were programs that started 10 to 15, or 20 years ago at a research level in NASA and which were handed off as they became developmental.

So, staffing and facilitation and R&D must be supported more vigorously.

I would like to say a word on our feeling about the dual responsibilities of FAA.

In consonance with a strong and independent NTSB, I think the FAA charter established a good check and balance against excesses from either promotional activities or from excessive and nonproductive zeal. I believe that the act is proper in giving this charter, as long as oversight is exerted.

Much of FAA's so-called promotional role is directed toward technical assistance to the industry, which certainly translates into safety improvements.

The two roles have to come together somewhere in the government, and perhaps, as it is now, the FAA is the most appropriate point where they should be resolved. However, FAA should be held to that responsibility with proper oversight.

We reluctantly feel that FAA has not done as well overall as desired. But it is because in many respects they couldn't. They have done well with the resources at their disposal.

In particular, I think Mr. McLure mentioned some changes that are taking place in enforcement actions and certifications and standards activities.

FAA is overconstrained and expected to do much more with too little.

I will close by saying that conflicts between the need for budget control and pressures for growth present an extremely tough decision environment for both government and industry, and it has very, very strong implications for maintaining safety.

Thank you.

Senator SARBANES. Thank you very much.

I think we will hear each witness, and then have questions, unless that creates a problem for someone on the panel. I think we can move more expeditiously that way.

Mr. Johannssen, please proceed.

STATEMENT OF HOWARD E. JOHANNSSEN, PRESIDENT, PROFESSIONAL AIRWAYS SYSTEMS SPECIALISTS

Mr. JOHANNSSEN. Mr. Chairman, it is a pleasure to appear before you today. In our testimony we will show how cutbacks in our profession have a direct economic impact upon the aviation industry of this country. We will also demonstrate how these cutbacks negatively affect aviation safety for all of the users of the national air space system.

We believe it is important for you to understand exactly who we are and the role our members have in the overall aviation picture.

PASS is the sole representative for the FAA's technical work force. We are also the exclusive representative for the FAA's flight inspection pilots, flight procedure specialists and airborne systems specialists. These 6,000-plus employees serve as the backbone of this nation's aviation system.

Picture an equilateral triangle—on one side you have the pilots, air crews and passengers as users of our nation's airways. Another side of the triangle represents the air traffic work force of the FAA. The systems specialists and pilots who are represented by PASS make up the third side of the triangle.

Without the services our members provide and the systems they certify and maintain, the other two sides of the triangle cannot function to today's needed capacity. In all probability, they could not function at all.

You have asked us to address whether the air safety system is as good and reliable as it has been in the past and as it could be.

The answer is no. We have a system today that is taxed to the limit from the technical viewpoint of our profession. Since our inception as a work force, we have prided ourselves on performing the preventive maintenance concept, which has given the false illusion that everything works automatically.

Every system in the FAA has handbooks and directives that call for periodic checks of equipment. When the systems specialists perform these maintenance tests, they are able to determine the cur-

rent operational status of the systems. With their in-depth knowledge and unique expertise, they can also tell when a system needs work to keep it from failing in the future.

Ideally, this work can be coordinated with air traffic so it is done at a time of minimal impact upon the dependent users of the aviation system. The best example would be a radar system that is not operating at 100 percent efficiency. That can be scheduled to be out of service at 2 a.m. when there is minimal traffic. Needed work can then be accomplished during the next few hours with little air traffic risk or delay. The system is then returned to peak performance at 6 a.m. when traffic levels should start to increase.

This approach is the safest for the users and causes the least amount of pressure on the specialists. It is the way we worked until the early 1980's.

A number of factors have changed those historic work methods from the predominately preventive work program to a corrective one as it is today. Due to staffing shortages and budgetary cutbacks, we do not have the personnel or time to perform the mandated preventive maintenance we used to.

Because periodic checks are not done as often, systems now fail before specialists can foresee problems. They do fail during peak periods of traffic when hundreds of aircraft and thousands of lives are dependent upon them.

We have been lucky, to date. It is our belief that this lucky streak will not continue indefinitely.

Morale is poor at best, and the workloads are astronomical. The average systems specialist is now required to perform the work that used to be done by two systems specialists. These employees are tired and see no hope for relief in the future as the agency has practically eliminated the hiring of additional specialists. There has been no major influx of systems specialists for approximately 8 years.

The FAA has shortchanged the NAS requirements of the future. We quote the Associate Administrator for Development and Logistics after he met with the Airway Facilities Managers, and I quote:

> From that meeting, I am more convinced than ever that the heavy emphasis on cost cutting, which has fallen disproportionately upon the Airways Facilities Maintenance function, has the potential for creating disruptions to the system capacity as watch standing is reduced and some facilities are shut down for lack of funds or personnel.

Internally, the FAA now admits it has problems. Unfortunately, we are either told that there are no problems, or while there are problems they will not impact on safety and the economy of the system.

The FAA has allowed this work force to decrease to a critical level. The adjective "critical" is the FAA's own word. A definition of critical in the dictionary is: "pertaining to or of the nature of a crisis; involving grave uncertainty, peril and dangerous."

If the agency internally states that there is a problem that is dangerous and perilous, why is it that the union must be the one that comes before you to reveal the problem?

The change in philosophy from preventive to corrective maintenance, equipment failing for longer periods of time, the inability of specialists to receive proper training in a timely fashion, and for

other reasons, we no longer believe the air safety system is as good and reliable as it was. Unless these problems are properly addressed, we know it is not as good as it could be.

Our major concern on this issue is that unsuspecting lives can be lost.

You have asked us to address in our testimony what we feel is the appropriate role for the Federal Government in air safety.

You requested our views as to whether the Government is fulfilling its role and, if not, the areas in which it is not.

The Government must preserve the aviation system and ensure that it is as safe as humanly possible. Yet, we do not feel the Government has properly placed aviation on its list of priorities, and that aviation has not been appropriately exempted from budget cuts. These cuts for the agency have fallen disproportionately upon our work force. For years, the agency has been robbing Peter, that is AF, to pay Paul, that is AT.

You, the legislative body, must soon face hard decisions concerning the Balanced Budget Act. If you proceed with across-the-board cutbacks for all government agencies, the FAA will be included. This action would further decimate an agency that is already stretched to the breaking point in many areas.

There is legislation currently pending which exempts certain aspects of the FAA from Gramm-Rudman-Hollings. This legislation is insufficient as it currently exempts only the air traffic and inspection areas of the agency.

In many ways, it is not even the FAA which is to blame. As we indicated to the Senate Aviation Subcommittee on July 17, 1986, much of the FAA testimony you hear in your respective bodies has been filtered or censored through DOT or OMB. The FAA has not been able to come before you and speak frankly and with total honesty.

The flying public would be better served if it knew the true state of the system and the jeopardy involved. Instead, the public has a false sense of security that the airways must be safe, since the Government controls them.

As we previously indicated, the Balanced Budget Act has a potential to be disastrous to our aviation system. The decision to place the FAA in both regulatory and promotional capacities for aviation has weakened the system. Many times these views are separate and incompatible.

Regulatory decisions implemented by the FAA allow delegation of the authority to lower levels which are not necessarily in the best interests of aviation. For example, until 1983, systems in the FAA at facilities where we used to have personnel on duty in all disciplines 24 hours a day, we now have open watches. Many smaller facilities have been combined with larger facilities.

This has increased the travel time necessary for specialists to get to the outlying facility. This, in turn, has increased the amount of time a facility remains out of service when equipment fails.

When the equipment fails and there is no one available to restore it, the systems specialist must now be located. There is no guarantee a specialist will be able to be contacted, because the FAA does not pay premium pay authorized by Congress to ensure that specialists will be available.

This is great for the budgetary constraints, but jeopardizes safety to the aviation users.

Congress authorized the alternative work schedule. The union proposed the alternate work schedule in some facilities. We wanted to give more hours of coverage to the flying public. Our requests have been denied.

There are other regulatory decisions that have been made, which adversely affect our work force; reduced per diem, the questionable exemption from the Fair Labor Standards Act, hiring freezes, and pay freezes. All of these changes which are negative in nature for FAA employees, will drive more and more specialists to seek employment elsewhere. Less work will be done. Our air safety system will continue to be weakened.

You also asked us what level of the Federal funding and programming resources is necessary. The FAA originally requested $823 million for its fiscal 1986 airways facilities budget. What it received was $736 million, almost $100 million short of the amount originally requested.

If you allow the Gramm-Rudman cuts to be applied across the board, the amount would be further reduced to $709 million.

For fiscal year 1987, FAA made a request to DOT of $815 million. It was decreased by DOT to $761 million.

To continue cutting this agency's requests for airway facilities will continue to jeopardize the safety of aviation and the implementation of the NAS plan of the 1980's.

We need to reach a level of 9,000 systems specialists to adequately maintain the airways and associated systems of this country. This 9,000 must exclude supervisors and support staff, who are currently included in the FAA figures. This is done to camouflage the real systems specialist staffing shortage that exists.

There are areas in the FAA where we question expenditures and whether they are misdirected. The FAA is currently considering a pilot test program for contract maintenance. The test program would involve 500 positions. By the agency's own estimates, this program will cost an additional $10-$17 million over the cost of keeping these positions in house.

The House Appropriations Committee, Subcommittee on Transportation, has language which we understand prohibits expenditure of funds on this test program. This $10-$17 million would be better directed to the existing work force to do the current job than to a test program which, in all probability, will fail.

One major reason we predict failure of this test program is the in-depth knowledge require of FAA systems specialist versus the private sector technician. There are numerous other reasons the contract maintenance is not in the best interest of aviation safety.

We believe the quality of work and training of technicians will be inferior to that of our own current work force. Companies that need to make profits will be forced into taking shortcuts as some airlines did under deregulation.

Mr. Chairman, we believe that there are serious safety problems that exist today in the aviation system. They have a direct economic impact, as well as safety impact, upon our aviation system. Delays due to equipment outages cost the airlines millions of dollars.

Every time there is an equipment failure that causes controllers to put aircraft in holding patterns, risks to passengers and crew members increases. Additionally, the airlines' operating costs rise due to increased fuel consumption and the labor costs of crew members.

We ask this committee to take the necessary steps to resolve these problems. We need the hiring and training pipelines of the FAA opened now. We need the agency to receive approval and authority to start the massive hiring and training that is desperately needed. We need positive programs such as alternate work schedules. We need contracting out to be prohibited, and the FAA to assume its rightful place of responsibility for maintaining the safety of our airways.

The important role the systems specialists have in the aviation system needs to be recognized by the FAA and you. The national airspace system needs a firm foundation to stand on. The current foundation is not only weakened, but in danger of collapse if needed repairs are not made soon.

Thank you.

Senator SARBANES. Thank you very much, Mr. Johannssen.

[The prepared statement of Mr. Johannssen follows:]

PREPARED STATEMENT OF HOWARD E. JOHANNSSEN

Mr. Chairman and Members of the Committee:

It is a pleasure to appear before you today. We appreciate your ~~invitation~~ to share our expertise with you in areas that are germane to this Committee. In our testimony, we will show how cutbacks in our profession have a direct economic impact upon the aviation industry of this country. We will also demonstrate how these cutbacks negatively affect aviation safety for all of the users of the National Airspace System. Before we do this, we believe it is important you understand exactly who we are and the role our members have in the overall aviation picture.

PASS is the sole representative for the FAA's technical work force and support staff in the Airways Facilities Division. In addition to these systems specialists, we are the exclusive representative for the FAA's flight inspection pilots, flight procedure specialists and airborne systems specialists. These 6000 plus employees serve as the backbone of this nation's aviation system. Picture an equilateral triangle -- on one side you have the pilots, air crews and passengers as users of our nation's airways. Another side of the triangle represents the Air Traffic Control work force of the FAA. It is comprised of the three Air Traffic disciplines: the flight service station, tower, and en route controllers. The systems specialists and pilots who are represented by PASS make up the third side of the triangle. These three integral groups are the human element of our National Airspace System.

Without the services our members provide and the systems they certify and maintain, the other two sides of the triangle cannot function to today's needed capacity. In all probability, they could not function at all. The systems and equipment our specialists are responsible for are literally the eyes and ears of the controllers and pilots. We provide the communications systems which enable pilots and controllers to talk to one another. Without these systems, we would have to revert back to the use of signal flags, light beacons, kerosene lamps and torches, used in the earliest days of aviation in this country. Our radar and data specialists together enable the controllers to see and track the millions of aircraft that annually make their way through this country's skies. Without these systems, traffic separation would have to return to the days of manual control, where aircraft had to report over specific check points to controllers. This method eventually ended in the Grand Canyon tragedy, which forced the FAA to implement a nation-wide radar system for the separation of aircraft.

Our navigational aids specialists provide the systems which are the eyes of the pilot in bad weather. The use of VOR's, TACAN's and radio beacons show the pilot where he is in relationship to certain points on the ground. Instrument Landing Systems (ILS) provided by these specialists enable pilots to approach their destination airports in inclement weather. Our

environmental specialists probably are the backbone of the entire Airways Facilities Division. They are charged with the responsibility of ensuring that power, temperature and humidity at our various facilities are within specific parameters. The complex systems we use today are sensitive to all three of these areas monitored and maintained by our environmental technicians. Any area that exceeds the very tight tolerances mandated by the equipment can cause system failure.

Our flight inspection pilots and airborne systems specialists fly the skies of this country to ensure that the cockpit presentations the pilots receive are accurate and the radar presentations the controllers use depict the exact location of the aircraft. Our flight procedures specialists constantly develop, update and inspect the published air routes pilots fly. We also represent a number of logistics and support staff personnel, without whose work we would not be able to exist in the bureaucracy of the FAA. I believe you can now understand why we consider ourselves to be the foundation of the National Airspace System.

You have asked us to address whether the air safety system is as good and reliable as it has been in the past and as it could be. The answer is no. We have a system today that is taxed to the limit from the technical viewpoint of our profession. Since our inception as a work force, we have prided ourselves on the performing of a preventative maintenance concept, which has given the illusion that everything works automatically. Every system in the FAA has handbooks and directives that call for periodic checks of the equipment. When systems specialists perform these maintenance tests, they are able to determine the current operational status of the systems. With their in-depth knowledge and unique expertise, they can also tell when a system needs work to keep it from failing in the future. Ideally, this work can be coordinated with Air Traffic so it is done at a time of minimal impact upon the dependent users of the aviation system. The best example would be a radar system that is not operating at 100 percent efficiency. It could be scheduled to be out of service at 2:00 when there is minimal traffic. Needed work can then be accomplished during the next few hours with little air traffic risk or delay. The system is then returned to peak performance at 6:00 a.m., when traffic volumes would start to increase. This approach is the safest for the users and causes the least amount of pressure on the specialists. It is the way we worked until the early 1980's.

A number of factors have changed our historic work methods from a predominantly preventative work program to a corrective one as it is today. Due to staffing shortages and budgetary cutbacks, we do not have the personnel or time to perform the mandated preventative maintenance we used to. Because periodic checks are not done as often, systems now fail before specialists can foresee problems. They do fail during peak periods of traffic when hundreds of aircraft and thousands of lives are dependent

upon them. We have been lucky, to date, that no loss of life has been directly attributed to a system failure. It is our belief this lucky streak will not continue indefinitely.

In the late 1970's and through 1980, our profession maintained a work force in excess of 11,000 specialists. Today, by the FAA's own figures, we have barely over 6,000. During this same period, the number of facilities and systems that we must maintain and operate has increased from 19,000 to 22,000. We are doing much more today with far fewer people. The FAA felt this could be accomplished through equipment modernization and a higher degree of reliability on solid state equipment. Unfortunately, when these plans were laid out, the FAA failed to look at the human factor side of the NAS.

Our work force today is one of the oldest in the Federal government. We have an average age in excess of 47 years. The average length of service is in excess of 20 years. By the FAA's own projections 11% of the workforce can walk out the door today. Additionally, 30 % of the existing work force can retire by 1990. Over 50 % will be eligible for retirement by 1992. The FAA's records show these employees are retiring. In addition to these normal retirements, many people are leaving the agency early for jobs in the private sector with higher pay, less pressure, better benefits and better working conditions. This exodus, in conjunction with the retirements, has accelerated the FAA attrition rate for the systems specialists to higher levels than projected by the FAA.

The remaining work force is suffering for this lack of proper planning on the agency's part. Morale is poor at best and workloads are astronomical. The average systems specialist is now required to perform the work that used to be done by two systems specialists. These employees are tired and see no hope for relief in the future as the agency has practically eliminated the hiring of additional specialists. There has been no major influx of systems specialists for approximately eight years.

In trying to preserve the budget mandates of today, the FAA has shortchanged the NAS requirements of the future. We quote from a memorandum dated March 4, 1986 to the FAA Administrator and Deputy Administrator from the Associate Administrator for Development and Logistics after he had met with the AF Division Managers in the various FAA regions: "From that meeting, I am more convinced than ever that the heavy emphasis or cost cutting, which has fallen disproportionately upon the Airway Facilities Maintenance function, has the potential for creating disruptions to system capacity as watch standing is reduced and some facilities are shutdown for lack of funds or personnel." Internally, the FAA now admits it has problems. Unfortunately, they will not admit it to you, the legislative bodies which can provide the solutions. You are either told there are no problems

or, that while there are problems, they will not impact on the safety and economy of the system.

The FAA's figures accurately indicate it takes between 3 to 6 years to train an individual who has previous electronics qualifications to become a full performance level systems specialist. The FAA has allowed this work force to decrease to a critical level. The adjective "critical" is the FAA's own word, shown in briefing sheets of the Associate Administrator for Development and Logistics presented to the FAA Administrator and Regional Directors in March of this year. A definition of "critical" in the dictionary is: "pertaining to or of the nature of a crisis; involving grave uncertainty, peril, etc.; dangerous." If the agency internally states there is a problem that is dangerous and perilous, why is it that the union must be the one who comes before you to reveal the problem? Is this responsible action on the part of the Federal agency that is charged with safety in the skies? We do not believe so. For this reason, and the fact that our office is constantly receiving complaints and reports of systems specialists being unable to perform all assigned work due to the sheer volumes, we appear before you today.

With the change in philosophy from preventative to corrective maintenance, equipment failing for longer periods of time, the inability of specialists to receive proper training in a timely fashion, and for other reasons, we no longer believe the air safety system is as good and reliable as it has been in the past. Unless these problems are properly addressed, we know it is not as good as it could be. Our major concern on this issue is that unsuspecting lives will be lost because of the blind trust of the flying public in the FAA that is no longer warranted.

You have also asked us to address in our testimony what we feel is the appropriate role for the Federal government in air safety. You requested our views as to whether the government is fulfilling its role and, if not, the areas in which it is not. In PASS' viewpoint, the Federal government is the guardian of our aviation system. This system has become one of the nation's primary economic entities. It is overwhelming to consider how aviation impacts on the lives of all of us. Therefore, the government must preserve the aviation system and ensure that it is as safe as humanly possible. Yet, we do not feel the government has properly placed aviation on its list of priorities, and that aviation has been appropriately exempted from budget cuts. We know, and the FAA admits, that these cuts for the agency have fallen disproportionately upon our work force in the past. When the Air Traffic Division needed more money, the major internal source of it in the FAA was the Airways Facilities Division. For years the agency has been "robbing Peter (AF) to pay Paul (AT)." Unfortunately, Airways Facilities has no more resources to give, and its lost resources must today be replenished.

You, the legislative bodies, must soon face hard decisions concerning the Balanced Budget Act as the automatic cutbacks have been ruled illegal by the Supreme Court. If you proceed with across-the-board cutbacks for all government agencies, the FAA will be included. This action would further decimate an agency that is already stretched to the breaking point in many areas. There is legislation currently pending which exempts certain aspects of the FAA from Gramm-Rudman-Hollings. This legislation is insufficient as it currently exempts only the Air Traffic and inspection areas of the agency. The exemption of only these two areas would cause the FAA's overall cuts to again fall disproportionately upon our work force. Instead of 10 percent, we may literally have to assume 13 percent or more. If this happens, we will not be able to do our jobs.

We realize the difficult position you are in. You must realize it is not PASS or the employees we represent who placed you in this position. In many ways, it is not even the FAA which is to blame. As we indicated to the Senate Aviation Subcommittee on July 17, 1986, much of the FAA testimony you hear in your respective bodies has been filtered or censored through DOT and OMB. Because the FAA has not been able to come before you and speak frankly and with total honesty, you have received a distorted picture of the National Airspace System. If the Federal government is to fulfill its role as guardian of the airways, the agency must have the ability to be honest with you concerning its problems. The flying public would be better served if it knew the true state of the system and the jeopardy involved. In that manner, people could make an honest decision on whether to fly or not. Instead, the public has a false sense of security that the airways must be safe since the government controls them.

In your invitation you asked us what major budgetary or regulatory decisions in recent years have or will weaken our air safety system. As we previously indicated, the Balanced Budget Act has the potential to be disastrous to our aviation system. The decision to place the FAA in both regulatory and promotional capacities for aviation has weakened the system. Many times these views are separate and incompatible. The regulatory decisions implemented by the FAA that allow delegation of authority to lower levels are not necessarily in the best interests of aviation. For example, until 1983 systems in the FAA had mandated response levels for outages. When a certain type of system failed, it was either restored immediately or the restoration could be put off because the impact was not as great on the aviation community. In 1983 this regulation was changed to allow local managers to make the determinations on the immediacy of restorations of failed equipment. This was helpful to the local managers, who no longer had the sufficient number of specialists to properly staff the facilities. It was helpful for the budgetary offices because the needed overtime would not take place, and there would be one less indicator of insufficient staffing. The individuals this new regulation did not benefit were the

controllers and pilots who needed to use these systems, that remained out of service, to insure the safety of the crews and passengers.

These changes in priorities to restore systems are taking place in facilities of every size, from JFK and O'Hare Airports to the smallest facilities. At facilities where we used to have personnel on duty in all disciplines 24 hours a day, we now have open watches (periods when there is no specialist available in a certain area). Many smaller facilities have been combined with larger facilities. In most cases, this has increased the travel time necessary for the specialist to get to the outlying facility. This, in turn, has increased the amount of time the facility remains out of service when equipment fails. When equipment fails and there is no one available to restore it, a systems specialist must be located, normally at home, and asked to report to the facility. There is no guarantee a specialist will be able to be contacted because the FAA does not pay the premium pay authorized by Congress to insure that the specialist will be available. Again, this is great for budgetary constraints, but jeopardizes safety for aviation users.

Congress authorized the Alternate Work Schedule. The union proposed to the FAA the use of the Alternate Work Schedule in some facilities. We wanted to give more hours of coverage to the flying public. All of our requests have been denied. In the legislation only the Department of Transportation can authorize use of the Alternate Work Schedule, and D.O.T. is unwilling to do so. There are other regulatory decisions that have been made which adversely affect our work force. They include reduced per diem while attending long-term training at the Academy, the questionable exemption from the Fair Labor Standards Act, government-wide hiring freezes, agency-imposed hiring freezes due to budgetary constraints, pay freezes, etc. All of these changes, which are negative in nature for F.A.A. employees, will drive more and more specialists to seek employment elsewhere. This again will accelerate our attrition rate, leaving us with fewer people to do the job. Less work will be done. Our air safety system will continue to be weakened.

You also asked us what level of Federal funding and program resources is necessary. Since we are not accountants or actuaries, we cannot estimate the dollar figure. What we can tell you is that the FAA originally requested $823,523,000 for its FY-86 Airways Facilities budget. What it received by the time the request had gone through the various processes was $736,424,000 -- almost $100 million short of the amount originally requested to the Department of Transportation. If you allow the Gramm-Rudman cuts to be applied across the board, that amount would be further reduced to $709,759,000. For FY-87, FAA made a request to D.O.T. of $815,719,000. By the time this request reached Congress, it was decreased by D.O.T. to $761,058,000. We do know that to continue cutting this agency's requests for Airways Facilities will

continue to jeopardize the safety of aviation and the implementation of the NAS Plan of the Eighties.

Rather than give you monetary figures, we feel we are better qualified to tell you staffing numbers that are required. We need to reach a level of 9,000 systems specialists to adequately maintain the airways and associated systems of this country. This 9,000 must be a real number, not a paper number. It must exclude supervisors and support staff, who are currently included in the FAA's figures. We believe this is done to camouflage the real specialist staffing shortage that exists.

There are areas in the FAA where we question expenditures and whether they are misdirected. In many cases, new systems are delivered to facilities long before they can be installed. Some are left exposed to the elements, where they can become damaged, for lengthy periods of time. Some of these delays are coordination problems due to construction requirements for the new systems not being completed. Other times the agency is at fault, i.e., staffing is not available to install the new equipment. We blame the staffing problem solely upon the bureaucracy of the FAA. Had the Congress been given the true and accurate picture, we do not believe you would have allowed the staffing in our profession to be reduced to such a critical level. We are hopeful that now that you are aware of the critical staffing levels, you will take immediate action to correct this problem once and for all.

We realize that we cannot go out and hire all the additional systems specialists needed today. The agency is not equipped to train this number. We therefore recommend to the members of this Committee that in each of your legislative bodies you seek authorizations and mandates for the FAA to hire at least 1,500 specialists over the next two years. This number will basically replace the losses we will incur due to attrition during this period. At the end of that two-year period, your respective bodies can again examine our status and figure out the numbers needed over the next 2-4 years to obtain the plateau of 9,000 working systems specialists.

The FAA is currently considering a pilot test program for contract maintenance in three of its regions. The test would involve 500 positions in the FAA's Eastern, Great Lakes and Southern Regions. By the agency's own estimates, this program will cost an additional $10-17 million over the cost of keeping these positions in-house. The House Appropriations Committee, Subcommittee on Transportation, has language which we understand prohibits expenditure of funds on this test program. We concur with this Subcommittee's recommendation that this program should be eliminated. We cannot justify to our members (or the flying public) why they are told there is no money available for overtime, moves necessary to obtain a balanced work force, or the hiring of needed replacements when the agency is considering a

program like this. DOT and the FAA must realize that this $10-17 million would be better directed to the existing work force to do the current work than to a test program which, in all probability, will fail.

One major reason we predict failure for this test program is the in-depth knowledge required of the FAA systems specialist versus the private sector technician. We know these systems inside and out and are able to work on any part of them made by various manufacturers. We must be able to restore systems promptly and efficiently, working under the pressure of knowing that human lives hang in the balance. Knowing all of this, our work force has responded admirably since its inception. We were shocked and appalled to learn that the FAA had recently issued an order that would allow non-FAA personnel to work on and certify equipment as safe for use by controllers and pilots. We feel this act on the FAA's part was one of desperation due to the critical staffing problems.

There are numerous other reasons contract maintenance is not in the best interest of aviation safety. We believe the quality of work and training of the technicians will be inferior to that of our current work force. Companies that need to make profits will be forced into taking shortcuts as some airlines did under deregulation. The displaced members of our work force will not sit idly by for 2-3 years until the program fails and beg for their jobs back. They have readily marketable skills that are in high demand in the private sector. Retirees from our work force are doubtful as a source of employees for the potential contractors. Their usefulness has been extorted by the FAA to such a degree that many do not even wish to see an airport once they retire.

Mr. Chairman, we believe that there are serious safety problems that exist today in the aviation system. We further believe they have a direct economic impact, as well as a safety impact, upon our aviation system. Delays taken by aircraft due to equipment outages cost the airlines millions of dollars. Such delays have happened in the past few months in areas covered by Boston Center, New York Center, Leesburg Center, Chicago Center and at airports like Baltimore-Washington International and Dallas/Ft. Worth. Every time there is an equipment failure that causes controllers to put aircraft in holding patterns, the risk to passengers and crew members increases. In addition, the airlines' operational costs rise due to increased fuel consumption and hours of crew members. When delays are incurred on the ground, we have additional airline costs as well as passenger problems.

We ask this Committee to take the necessary steps to resolve these problems. We realize the Congress does not like to tell an agency how to run its shop. However, an agency must be totally forthright and honest to the Congress about the condition of its shop. If it is not, we feel Congress must step in and intervene,

especially where loss of life is at stake. We need the hiring and training pipelines of the FAA opened now before it is too late. We need the agency to receive approval and authority to start the massive hiring and training that is desperately needed. We need positive programs, such as the Alternate Work Schedule, to be implemented in the FAA. We need contracting out to be prohibited, and the FAA to assume its rightful place of responsibility for maintaining the safety of our airways. We have asked other Subcommittees to consider a bonus for our employees as an incentive to keep them in the agency. In the past, such bonuses have been used by the military and the government in other critical professions. We ask your committee to endorse this request.

The important role systems specialists have in the aviation system needs to be recognized by the FAA and you. The National Airspace System needs a firm foundation to stand on. The current foundation is not only weakened, but in danger of collapse if needed repairs are not made soon.

Senator SARBANES. Now we will turn to John Thornton, the national coordinator, National Association of Air Traffic Controllers.

Mr. Thornton, please proceed.

STATEMENT OF JOHN F. THORNTON, NATIONAL COORDINATOR, NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION

Mr. THORNTON. Good afternoon, Mr. Chairman.

The National Air Traffic Controllers Association appreciates the opportunity to appear before you today.

The nation's air traffic controller system has been straining at the seams since airline deregulation. Unfortunately, as the number of flights mushroomed, there was no corresponding growth in full performance level controllers, the mainstay of the system.

The post-strike controller work force was at first spared the brunt of deregulation. In August 1981, the FAA wisely curbed the number of flights while it attempted to rebuild the system. However, the restraints were short lived. When they were lifted in December 1983, the gaps and weaknesses in the rebuilding concepts surfaced and multiplied with a speed the FAA could not cope with.

It was at this crucial juncture that the FAA had two choices. It could have reevaluated its plan in light of these difficulties and reduced once again the number of flights. This would have been the prudent and judicious course of action.

Unfortunately, the FAA denied that any thing was wrong.

Rather than address the inadequate number of FPL's, the FAA changed the terminology. It created the so-called operational controller, who could be a controller with any one of a number of levels of training.

In an operating room, this would have been the equivalent of lumping interns and surgeons together and calling them all health specialists.

As Representative Gary Ackerman of New York recently commented, the FAA was apparently following the philosophy of changing definitions if you can't reach your goals.

Where does this leave us?

NATCA believes there are a number of remedies beginning with the three recommendations made by the GAO in its recent report.

First, the FAA should impose restrictions upon air traffic until the number of FPL controllers and overtime requirements meet the FAA's goals.

Second, the FAA should reduce the total amount of time controllers are spending behind the radar screens. The FAA should also take into account the amount of time the controllers are working without a break.

Third, the FAA should work with the controllers and their supervisors to change sector configurations where sectors are handling too much traffic, are too complex, or are too large geographically.

In addition to the GAO recommendations we urge:

One, a prohibition on the de facto dismantling of the air traffic control system through contracting out.

Two, an exemption of controllers and essential air safety personnel from Gramm-Rudman automatic budget cuts.

Three, institution of a system of flow control to prevent massive fluctuations in the air traffic control system.

And, a restoration of confidentiality and immunity for controllers, pilots and other safety personnel who suggest corrections or who call attention to dangerous conditions.

NATCA also recently testified in favor of S. 2417, to create the Aviation Safety Commission. One of the benefits of this bill is that the system for the first time will be observed as a whole.

We hope that this will be the catalyst for getting the FAA back on the right track. Frankly, we do not understand how an agency can be ruled by two masters; safety and promotion.

After deregulation, the FAA demonstrated that promotion was its guiding beacon. If S. 2417 is passed, NATCA would ask that the Commission recommend setting up a separate agency within the DOT to monitor and enforce safety regulations.

In conclusion, there are a number of options available regarding the Nation's air traffic control system. However, all of them rest upon the simple but true logic that the level of air traffic cannot be safely increased without a corresponding increase in FPL controllers. With aviation safety, you cannot have your cake and eat it, too.

If the Nation wants to see a continued growth in commercial aviation, then it must pay to build and upgrade its controller work force. There is no way around it.

NATCA believes that this should be the starting point for any future discussions on the air traffic control system.

Thank you, Mr. Chairman.

Senator SARBANES. Thank you very much for your testimony.

[The prepared statement of Mr. Thornton follows:]

PREPARED STATEMENT OF JOHN F. THORNTON

Good morning. My name is John F. Thornton and I am National Coordinator of the National Air Traffic Controllers Association (NATCA). NATCA is a professional organization of Controllers whose primary goal is to represent the nation's Air Traffic Controllers before the Federal Aviation Administration (FAA), Congress and the aviation community.

NATCA's supporters wish to convey their deep concern to the subcommittee over the nation's Air Traffic Control System. We believe that the ratio of air traffic to Full Performance Level (FPL) Controllers has begun to exceed the acceptable, prudent level. Our ranks are stretched thin and our people are overworked. Due to this and other conditions, our most experienced controllers are retiring at the earliest opportunity. Their replacements, many of whom are still in training, are being thrust nevertheless into the breach. The Air Traffic Controller is a highly skilled and responsible individual who is dedicated to the safety of our airways. But no amount of dedication can make up for the serious deficiencies that are appearing in the system. The Air Traffic Controller cannot be expected to make such an overtaxed machine run smoothly.

The Air Traffic Control System has been playing "catch up" since August 1981. The system was already showing signs of strain in the pre-strike days. Deregulation of the nation's airlines spawned new carriers and bargain rates which attracted more passengers. Air transportation quickly became the Everyman's method of travel. It was evident that the number of qualified FPL Controllers would have to keep pace with increased air traffic. This was simple logic and arithmetic.

The post-strike Controller work force was at first spared the brunt of deregulation. In August 1981, the FAA wisely curbed the number of flights while it attempted to rebuild the system. However, the restraints were short-lived. The FAA assumed that it could restore the system quickly and run it effectively without flight restrictions. The agency was also convinced that the system could be operated with 2,000 fewer Controllers than the pre-strike work force.

When flight limitations were lifted in December 1983, the gaps and weaknesses in the concept surfaced and multiplied with such speed that the FAA could not cope. The subcommittee has undoubtedly heard of most of these problems and in the interest of time, I will mention but a few: a high washout rate at the FAA Academy; miscalculation of the time needed to become an FPL; enormous strain placed on the Controllers who stayed on the job; neophyte Controllers being rushed into positions of responsibility that exceeded their capabilities; forced overtime; low morale and a host of others. Although the verdict was not in, it was obvious that the FAA rebuilding plan was flawed and beginning to crumble.

It was at this crucial juncture that the FAA had two choices. One, it could have reevaluated its master plan in light of the difficulties that were emerging. During this period, the number of flights could have once again been reduced. The FAA had nothing to be ashamed of. After all, it had been confronted with a Herculean task. No responsible individual would criticize an agency charged with ensuring the air safety of the nation for taking a slow, but judicious, course of action.

Unfortunately for the American flying public, the FAA flatly denied that anything was wrong. Rather than address the inadequate number of FPL's at many major facilities, the FAA simply changed terminology. The so-called Operational Controller was created. He or she could be any of a number of Controllers with different levels of training. In an operating room, this would be the equivalent of lumping interns and surgeons together and calling them all health specialists. As Rep. Gary L. Ackerman of New York recently commented, the FAA was apparently following the philosophy of changing definitions if you can't reach your goals. NATCA could not agree more. The FAA was covering up its failures in semantics.

But where does this leave us? NATCA believes that there are a number of remedies beginning with the three recommendations made by the General Accounting Office in its report issued last March on the Air Traffic Control Work Force. First, the FAA should impose restrictions upon air traffic until the number of FPL Controllers and overtime

requirements meet the FAA's goals. Second, the FAA should reduce the total amount of time Controllers are spending behind the radar screen during a shift. The FAA should also take into account the amount of time the Controllers are working without a break. Third, the FAA should work with Controllers and their supervisors to change sector configurations where sectors are handling too much traffic, are too complex or are too large geographically.

In addition to the GAO recommendations, NATCA urges: (1) a prohibition on the de facto dismantling of the Air Traffic Control System through contracting out; (2) exemption of Controllers and essential air safety personnel from Gramm/Rudman automatic budget cuts; (3) institution of a system of flow control to prevent massive fluctuations in the air traffic control system; (4) restoration of confidentiality and immunity for Controllers, pilots and other safety personnel who suggest corrections or who call attention to dangerous conditions; and (5) an end to the abuse of the practice of hiring part-time Controllers.

NATCA has also recently testified on two legislative proposals: H.R. 4003, the Controller rehire bill and S. 2417, the Aviation Safety Commission legislation, both of which are aimed at improving the quality of the Air Traffic Control System.

Our organization has not yet formed a position on H.R. 4003. We are waiting for the results of the GAO survey on ATC's regarding their feelings towards rehire. However, so far, our supporters have told us

that the language in H.R. 4003 is too vague. Rehire is also a very emotional issue. Controllers on the job are concerned about their future under the legislation.

NATCA recently told the Senate Commerce Subcommittee on Aviation that the Aviation Safety Commission could be the catalyst for getting legislation written and passed that will put the FAA back on the right track. Our support for the legislation is predicated in part by the FAA's reluctance to accept constructive criticism, such as the GAO report, which forces us to seek far more formal and demanding remedies.

NATCA has carefully reviewed H.R. 2417 and agrees with the six principal areas that the Commission would study. Frankly, we do not understand how an agency can be ruled by two masters; safety and promotion. Eventually one takes a back seat and it is usually *safety*. After deregulation, the FAA demonstrated that promotion was its guiding beacon. The agency accommodated the increase in air traffic but did not augment its Controller, Inspector and technical ranks. If S. 2417 is passed, NATCA would ask the Commission to recommend setting up a separate agency within the Department of Transportation to monitor and enforce safety regulations. Moreover, this agency would have to have some teeth, otherwise the FAA will continue with its business-as-usual attitude. Such an arrangement works with other agencies. The Maritime Administration, which is charged with promoting the U.S. merchant marine, does not police the operating standards of U.S-flag fleet; the Coast Guard does. There is no reason why a similar arrangement cannot be made for commercial aviation. It is long overdue and would be most welcome.

NATCA is naturally concerned about the final recommendations of the Commission and what form they would take. Since the current FAA authorization expires at the end of FY 1987, they hold an even greater significance. Therefore, if S. 2417 is passed, NATCA proposes that the Commission make two sets of recommendations. One would be for the short term and would include examining proposals for increased funding for Controllers, inspectors, technicians and the like. The second would be to investigate the more difficult and demanding issues such as creating a new airline safety agency within the Department of Transportation. NATCA is worried that we could lose the additional funding for new Controllers that we need right now if we try to lump all of these ideas into one proposal. Our supporters had some suggestions about the makeup of the Commission which we would be happy to provide to the subcommittee if so desired.

In conclusion, there are a number of options open to the federal government regarding the nation's air traffic control system. However, all of them rest upon a simple but true law: the level of air traffic cannot be safely increased without a corresponding increase in FPL Controllers. With airline safety, you cannot have your cake and eat it too. If the federal government wants to see a continued growth in commercial aviation, then it must pay to build up and upgrade its Controller workforce. There is no way around it. Therefore the the Administration and the Congress must decide on the level of commercial aviation it can afford to control saefly. If the ceiling is hit, a trigger mechanism would halt additional flights until new funds

could be authorized to hire and train new Controllers. NATCA believes that this should be the starting point for any future discussions on the Air Traffic Control System. As we mentioned earlier, there are many other things we can do in the interim in terms of reorganization and management of the FAA, but we must never lose sight of this guiding principle.

Mr. Chairman, the National Air Traffic Controllers Association is most grateful that the this subcommittee is showing such concern for the integrity of the nation's air traffic control system. Through your leadership and that of other concerned members of Congress, we should be able to to find the solution to keep our skies safe.

Thank you.

Senator SARBANES. Mr. Baker, president of the Aircraft Owners & Pilots Association.

STATEMENT OF JOHN L. BAKER, PRESIDENT, AIRCRAFT OWNERS & PILOTS ASSOCIATION

Mr. BAKER. Thank you, Mr. Chairman. I am John Baker, president of the Aircraft Owners & Pilots Association which represents 250,000 pilots and 140,000 aircraft owners. We have national headquarters in Frederick, MD.

We welcome the opportunity to testify. We represent the biggest single group of users of both the air traffic system and the Nation's air space. General aviation flies six times as many hours as the airlines.

Last year we moved about 180 million passengers intercity out of 14,000 airports. While we are not the arteries of the Nation's transportation system, we are certainly the veins and the capillaries that give it network capability.

We have a vested interest, obviously, in the air traffic system since we are the first ones at the scene of an accident.

The system is safe. It is terribly inefficient, but safe. And, unfortunately, if we allow the circumstances with which we are confronted to continue, the inefficiency is going to ultimately impact safety as well as cause the Nation to pay a terrible price in the economics of aviation.

One of the points that seems to have been missed through this dialogue; general aviation had the best safety record in its history last year. A dramatic improvement, a 10-percent improvement on a very stable base. In a year in which general aviation operations were up, we flew about 38 million hours last year.

The air carrier, if you pull out the international accidents over which the FAA had no control, had about an average year. It was not a catastrophic year, contrary to what the headlines would indicate.

And interestingly enough, in the accidents that did happen there was, to date at least, no proved air traffic controller involvement. So, the air traffic system is indeed working well. It is handling more traffic than it did prestrike.

It is not without problems. But one of the major problems with which we are confronted is the air space system plan was grossly oversold at the time the Congress bought it. It was sold on the basis of being an off the shelf system where all you needed was money to go out to buy the pieces and put the pieces together and we would have, voila, a magic new system.

The FAA has demonstrated over the intervening years, they lack the competence to create this kind of a system, this kind of a research program. They are falling behind in every area. Funding has not been the problem.

While we as users are somewhat sensitive to that, since the trust fund comes from the user—the airline passenger and the general aviation user. It is our money that is impounded in the trust fund, currently about $8.5 billion of which over almost now $4 billion is unobligated.

Throwing more money at the problem is not going to solve it, however. Until we can find a system manager that can put this system together, we are not going to move along at any great rate.

The point that the chairman made regarding the lack of management competence in terms of keeping equipment and personnel in sync is a glaring problem. The flight service station network, which is vital to general aviation, for instance, is being allowed to atrophy to the point where we are now going to see almost all of the stations in the country part timed on an emergency basis.

When we talked to the FAA about it, they said, well, we just got a little out of whack. We let the people decline at too great a rate, even though they are 7 years behind on the equipment side of that particular modernization.

We see that being replicated in every other area in the system.

We also see a lack of impetus on improving airports in the country and that is the key to resolving our delay and congestion problems. Almost all of the air traffic problems are ultimately caused by backing traffic into the system as a result of runway acceptance rate. If we don't spend that money, we are not going to solve the problem no matter how exotic the air traffic system becomes.

I think that it is unfortunate that Senator Byrd overstated somewhat the problems that exist. He seems to believe he has discovered something new. The dialogue has been going on both in the public and in the aviation community very aggressively over the last 2 to 3 years. I think we do see a reaction on the part of the FAA as a result of this dialogue. They have decided they are going to circle the wagons up and fight the world off at this point because they are being pounded on from all sides.

I think the FAA quoted in Mrs. Kassebaum's hearing last week that they have had something over 600 hearings before Congress and GAO studies done since 1978. A staggering number. And if, indeed, they did nothing but respond to the findings of those studies plus the public tirades which have been leveled against them, they would do nothing else. And indeed that is what is happening.

They have become terribly defensive, and that does not move forward any of the programs in which any of us have an interest, as far as I am concerned.

The second problem is that they are being muzzled by both the Department of Transportation and the Office of Management and Budget.

A classic circumstance has to do with the operations inspectors of the FAA. In one of my many past lives, I was the Assistant Administrator at the FAA. In 1973, I participated in a battle with the Office of Management and Budget to save ops inspectors. At the time the focus was heavily on air traffic disciplines and indeed that has continued to this day.

As a result, we have allowed the inspector force to atrophy away to the point where now it is simply inadequate.

The reason the frequency of carrier inspection has gone down so badly is at one time there were inspectors stationed with every airline. As the staffing decreased, they went to FSDO's where they centralized these people and now nobody knows who is on first base, because they have too few inspectors for the number of carri-

ers and general aviation that needs to be surveilled, and there is simply no way to stretch those resources across that broad front.

Another area that we have a major problem in general aviation, of course, has to do with product liability and the runaway settlements we are having right now in the court system, at least perceived runaway.

We have, essentially, no general aviation industry left in this country. We are going to see it go offshore much as we have seen many other manufacturing disciplines. The Cessnas, Pipers, and Beeches have gone out of the general aviation business, simply because they are paying now about $75,000 an aircraft for product liability insurance on aircraft that traditionally sold in the $15,000 to $25,000 price range.

So, no one is buying the airplanes, they are no longer building the airplanes. And I think the handwriting is on the wall. We are going to lose the industry. It has been one of the major balance of payment positives over the years. And the Nation has been the beneficiary of their positive balance of payment results.

So, we see major problems in the air traffic system, but it is safe. It is just terribly inefficient at this point.

And, anecdotal stories about horrible things people have heard of the aviation industry don't move us forward. I have been flying 43 years. I started out with the jets when they first were built in the 1940's. And we have seen every horror story known to man at some time, because people are involved.

But, this system is safe. The equipment we are flying is good. The pilots are competent and we need the assistance of the Congress to ensure that we continue to move down the road toward better service to the country and better service to the user.

Thank you.

. Senator SARBANES. Thank you, sir.

[The prepared statement of Mr. Baker follows:]

PREPARED STATEMENT OF JOHN L. BAKER

Mr. Chairman, I am John L. Baker, president of Aircraft Owners and Pilots Association (AOPA). AOPA appreciates the opportunity to appear before this committee today and to respond to your concerns regarding the safety of the air transportation system and to provide AOPA's perspective of the consequences of reduced federal commitment to aviation-related health and safety programs.

The Aircraft Owners and Pilots Association is the largest aviation organization in the world. It has an audited membership--constituency--of 265,000 pilots who fly general aviation aircraft for business and personal reasons and own over 140,000 of the nation's aircraft. We are consumers seeking only safety, economy and utility.

AVIATION SAFETY TODAY

The major issue to be addressed today is whether the existing air transportation system is as safe now as it has been, and whether air transportation will continue to be the safest form of transportation available. The Air Traffic Control (ATC) system is safe and, further, with modifications to specific programs, the future system will continue to enjoy the same excellent reputation it has in the past.

Nearly a half-billion people fly each year, over half on the airlines and the rest on general aviation flights. Every day more than 21 million miles are flown, carrying 1.3 million passengers on nearly 200,000 flights. It is a tribute to the pilots, controllers and other participants in the national air transportation system, particularly in this, the 50th year of ATC, that aviation maintains the best safety record of all transportation modes. (We in aviation are quick to point out that the automobile ride to the airport is always statistically more dangerous than the flight itself.)

The NTSB reports that last year was general aviation's safest year ever. General aviation's contribution has been a consistently downward accident trend with the lowest rate ever in 1985 and indications of further improvement in 1986.

We are not satisfied! All of us in aviation continue our aggressive efforts to further reduce the possibility of aviation accidents.

The National Airspace System Plan (NASP) is FAA's scheme for the future. It contains programs which must be completed to ensure continued viability and safety of the air transportation system. We are just as firmly convinced that many of the NASP programs were conceived without consideration of users' needs, and in many cases the programs have been overtaken by rapidly advancing technology. "Attachment A" provides AOPA's comments on critical NASP programs regarding the importance of specific NASP programs to overall system safety, appropriate funding levels, and other concerns.

THE GOVERNMENTAL ROLE

We fear that FAA/DoT reaction to the events of the past year may result in unfortunate changes to procedures which have served well for many years. Time after time, following an incident or accident, "tried and true" procedures are changed, or legislation is proposed solely as an effort to demonstrate to the public that the Administration is "responsive to the problem." AOPA believes that such marginal safety improvements come at great expense in dollars, in efficiency, and in economy of the overall system; they are not justified by the very small return to air transportation users in terms of improved safety.

The FAA is currently under much pressure to accommodate the needs of increasing numbers of users while being constrained by fiscal, safety and managerial problems. Some say that the FAA cannot be responsive to system needs because of inherent bureaucratic inertia and political pressures.

The FAA must be given greater autonomy to manage its own planning, operations and finances. A first step in this direction is removing FAA from the oversight of the Department of Transportation and making it again an independent agency. The second step is to expend the Aviation Trust Fund for its intended purpose, funding capital improvements for America's aviation system users.

Department of Transportation's Role

There is no doubt about aviation industry concern regarding the efficacy of an FAA buried under the weight of Department of Transportation (DoT) leadership which consistently seeks to micro-manage aviation activities it is ill-equipped to understand and which are clearly the responsibility of the FAA. The Air Transport Association (ATA) "Federal Corporation" proposal, though not widely supported, reflects both this concern and aviation industry frustration with bureaucratic inertia and political agendas originating primarily within the DoT!

Often criticized for its apparent inability to bring important safety and system efficiency programs to fruition, it is more often interference from within the Executive Branch than economic or political pressure from commercial segments of aviation which renders FAA impotent. Instead of coordinating intermodal functions, the Office of the Secretary of Transportation (OST) is setting policy, managing regulatory and technical functions and delving into day-to-day administrative functions to an ever-increasing degree. The FAA has become a subset of the OST staff instead of exercising the broad powers given it by Congress in the Federal Aviation Act of 1958.

It is time to remove the FAA from under the DoT umbrella to allow it to better serve the unique needs of aviation. The public interest will be better served if the FAA is made an independent agency. Safety, technical, regulatory and similar issues can be better resolved without the additional layer of bureaucracy. An independent FAA, provided with adequate funding, would more closely meet the needs of the users and may preclude the need for ATA's "federal corporation."

Product Liability

Aviation product liability is one of the most serious problems facing the general aviation community, both consumer and manufacturer. Exorbitant settlements in liability cases have essentially forced general aviation manufacturers to cease production of light aircraft, escalated prices of all aircraft, and severely reduced the numbers of new pilots. Government intervention may be the only solution.

To help address this issue and to stimulate dialogue, AOPA recently sponsored an industry-wide symposium on the subject. The symposium attendees concluded that, in general, the approach taken by Congressman Dan Glickman's legislation, H. R. 4142, provides the most workable avenue to address the aviation product liability crisis. AOPA generally supports this bill.

We believe that a legislative solution to the product liability problem is imperative, but we feel that there could be some improvements in H. R. 4142 to balance the consumers' and manufacturers' interests. We have expressed these concerns to Congressman Glickman and to the industry.

The few technical changes we have recommended would greatly balance the proposal contained in H. R. 4142 with regard to injured parties and ensure fair compensation for individuals injured by defective aviation products. We hasten to state, however, that AOPA believes the General Aviation Tort Reform proposal is the best legislative effort to date, and we support this approach.

BUDGETARY FACTORS

AOPA presented its comments regarding funding and program resources at appropriations hearings in both houses of Congress this spring. We have summarized important funding concerns in "Attachment A."

We place our focus on the Aviation Trust Fund and Airport Improvement as two major economic programs which greatly influence the safety and capacity of the national airspace system.

Aviation Trust Fund

Retention of massive surpluses in the Aviation Trust Fund greatly degrades FAA's ability to do its job. Trust Fund monies should be spent at authorized levels, and provision for exceeding these levels for necessary programs must be established. We do not advocate throwing Trust Fund assets at ill-defined problems, but there must be some mechanism for shifting appropriations to meet the needs of users of the national airspace system.

The Aviation Trust Fund is based on the equity of user benefits stemming from user-paid premiums. Billions of user dollars are not being utilized. The uncommitted balance in the Aviation Trust Fund, now more than $4.5 billion, is growing faster than ever. This surplus represents user tax revenues held hostage in the war toward a balanced budget.

Even worse, the large Trust Fund surplus is an irresistible target for deficit reduction. The Administration has proposed to fund 75 percent of FAA operating costs ($736 million beyond what is authorized by law) from the Trust Fund. We believe this to be a contradiction of the purpose for which Congress established the Trust Fund.

AOPA agrees that a legislative solution must be reached in order to free the Aviation Trust Fund from the constraints of the Federal Unified Budget where user taxes are used to shelter other spending from the General Fund.

For these reasons AOPA supports H. R. 1491 and S. 1979 to take the Aviation Trust Fund "off-budget" but to continue it as part of the annual federal appropriations process. We encourage efforts to ensure that the Trust Fund is actually used for the purpose for which it was intended—enhancement of the utility and safety of this country's airport and airway system.

Airport Improvement Program (AIP)

The Airport Improvement Program (AIP) should never be funded below its authorized levels in annual appropriations. Any amount less will only serve to deprive the air traveling public of full use and safety of the nation's airport system. It would also result in airports' being unable to fund needed safety-related improvements.

In the 16 years federal financial assistance has been available under the Airport and Airway Development Act of 1970 (as amended) and the Airport and Airway Improvement Act of 1982, the government has spent more than $7 billion from the user-paid Trust Fund on airports. However, most of this money has gone to the major air carrier-dominated airports in large metropolitan areas. While many of these airports are large hubs and need additional capacity enhancements, a large amount of their funds have nevertheless gone for nonairside projects.

Less than one-third of all AIP money is allocated to general aviation and reliever airports. These are the airports that can significantly affect metropolitan area airport capacity and safety problems, and they should receive a greater share of AIP funding.

In many cases, lack of funding has led to the loss of public-use facilities. For instance, from 1974 to 1985, the U.S. lost 17.5% of our public-use landing areas. Further, more than 40% of the privately owned, public-use facilities went out of business. In effect, billions of dollars have been spent on airports during the past 16 years, yet aviation is worse off than it was before. Congestion and delays will not be resolved by slot rules or an expensive air traffic control system, but by additional landing surfaces.

AOPA has proposed language ("Attachment B") for inclusion in legislation to replace the Airport and Airway Improvement Act of 1982 which expires in 1987. Adoption of this or similar wording would accomplish the following:

- o extend AIP eligibility to all airports included in the National Plan of Integrated Airport Systems (NPIAS) and add all airports included in a State Airport System Plan (SASP) to the NPIAS

- o adjust the apportionment formula to funnel more funds to nonprimary-commercial service airports, reliever airports, and general aviation airports

- o permit eligibility of airside pavement maintenance projects at general aviation airports

- o increase staffing at FAA Airports Division and Airports District Offices, thereby halting the decrease in airport inspections.

CONCLUSION

The air traffic control system is safe. Though AOPA often takes FAA programs and responsiveness to task, we are firmly convinced that the FAA maintains a "safety first" attitude. They deserve much credit for operation of an airspace system which sets the world safety standard. Obviously, additional ATC controllers are needed, and continued funding is necessary for programs of the National Airspace System Plan which will pay the biggest safety dividends. AOPA will continue to speak in support of completing such programs as FSS automation, DUAT, AWOS, Mode S ground equipment, but will loudly oppose MLS, Mode S avionics, FSS consolidation and other low return programs.

ATTACHMENT A

National Airspace System Plan (NASP)

We believe that the NASP contains programs which must be completed to ensure continued viability and safety of the air transportation system. We are just as firmly convinced that many of the NASP programs were conceived without consideration of users' needs, and in many cases the programs have been overtaken by rapidly advancing technology.

Advanced Automation System (AAS)

Rushing the production of such a complex acquisition as this $3.2 billion software, hardware, and workstation upgrade deserves a measured approach. We agree with the General Accounting Office (GAO) assessment of the AAS program expressed in the June 17, 1985 interim report (IMTEC-85-11).

The FAA's 1987 Fiscal Year budget proposal requests $61.8 million to amend the $246.8 million design competition contracts awarded in 1984 to refine "system level specifications and a more exact set of performance requirements." Even the FAA's optimistic forecast of availability suggests that AAS will not really be fully operational until the turn of the century. We have to believe that satellite solutions to communication, navigation and surveillance problems of today's ATC system will be possible by that time. AAS should not proceed until such technological advances are exploited.

As the GAO report noted, plans to award the acquisition contract before completing hardware and software development and testing, and without validating functions, will lead to significant increases in cost and, perhaps more damaging, extensive delays which will make the AAS obsolete before it is operational.

We are not comfortable that the cost/benefit study with which the FAA justifies the AAS will prove to be valid. The impact of Gramm-Rudman-Hollings, the FAA's phased implementation of AAS, benefits taken "up-front," and various weaknesses in the cost/benefit analysis lead to the conclusion that all benefits will not materialize.

AOPA recommends that the AAS implementation be delayed in favor of further development of the host computer. FAA should proceed with the initial sector suite, but should review AAS to ensure that it will be able to take advantage of satellite technology to meet user airspace system needs.

A disproportionate amount of the R&D budget is committed to the AAS program. Funds should be reallocated from this concept which is constrained to ground-based communications, navigation and surveillance systems, in favor of investigation of high-technology, efficient, satellite solutions. The host computer will provide adequate system capacity until satellites can be fully evaluated.

User needs or requirements for satellite communications navigation and surveillance service have been very skillfully set forth in the interim report of the Radio Technical Commission for Aeronautics Special Committee 155, and international requirements are in early stages of development in ICAO FANS.

Microwave Landing System (MLS)

First introduced in the early 1970's, the MLS program is now caught between FAA commitment to continue implementation, user doubts concerning system advantages and the realities of budget constraint. In large part, Instrument Landing System (ILS) technology has rendered many previously touted benefits of MLS moot.

Communities have been denied precision approach capability far longer than necessary due to an arbitrary decision to suspend ILS installations in favor of MLS. Before any increase in the number of precision approaches occurs, the FAA will have to replace 750 high-technology, solid-state ILS ground systems with an MLS which is essentially a clone in terms of initial capability. There is doubt that the first 178 MLS can be retrofitted later to meet the recently released specifications for the second "buy." I'm told the specification substantially increases the cost of procurement.

Current FAA cost estimates for MLS are far from reality. The 1987 budget request asks for funds to procure MLS avionics at $78,000 per aircraft, and MLS ground stations at more than $760,000.

I believe that new generation solid-state ILS can be purchased for less than half the cost of first buy MLS--including installation and initial flight checks. We are told ILS can be purchased for less than 300,000 dollars. RMM is possible with ILS which has demonstrated remarkable reliability. Too few of the representatives of the aviation community are asking for MLS. Price as a benefit for MLS has disappeared.

AOPA recommends that the FAA install MLS at airports to meet international agreement, where ILS will not site, and where ILS already exists, to realize what capacity enhancements are available. We also recommend continuing a moderate ILS implementation, installing approximately 300 ILS at airports which can qualify for precision approaches. Clearly, a new ILS initiative will demand a new, creative policy with regard to ILS procurement. We believe alternatives to federal ownership of navaid equipment, such as lease or lease/purchase, exist.

It is important to recognize that FAA has not yet completed development which will permit use of MLS for category II or III approaches. It is this capability which was used to justify the MLS program. Yet the first buy may never be able to provide Category II or Category III. The FAA has yet to invent procedures leading to the system capacity increases alleged to accompany the MLS implementation.

Along with these drawbacks, airborne avionics costs will only fall to a level attractive to the broader segment of users if air carriers, who can afford the initial artificially high prices, "prime the pump." Installation at air carrier airports already served by ILS may stimulate avionics production while permitting the air carriers to meet requirements of international agreement.

Continuing the ILS implementation will immediately expand precision approach capability so desperately needed by most users and communities. We are currently considering the value of an ILS lease, lease/purchase program to meet interim precision approach needs.

Mode S

Mode S may eventually provide a limited data link capability for communication from the ground to aircraft in flight. It will not provide service to aircraft operating at altitudes below 6000 feet or on the ground at most locations. Mode S will not provide meaningful communications service until after the mid-1990's, yet U.S. airlines will own and operate a satellite communications system as early as late 1987. Most significantly, Mode S will never be compatible with these satellite systems which are the promise of the next decade.

It is inconceivable that the FAA, still has not been able to describe the sort of messages its Mode S data link will carry. It is apparent that the data link will not be able to carry significant amounts of information necessary to make the system cost efficient.

AOPA enthusiastically supports FAA's implementation of the monopulse Mode S ground radar equipment. Nearly all of the benefit to be derived from Mode S (radar accuracy, reduced clutter and reduced controller workload) results from that technology, not from airborne Mode S transponders. In any case, the current ATCRBS transponder is compatible with all elements of the Mode S implementation and should be protected.

Traffic Alert and Collision Avoidance System (TCAS)

The FAA has spent more than $41.5 million in an effort to create a viable TCAS device. We understand that a TCAS II device has recently passed initial flight tests on board Piedmont aircraft. Still, the FAA is a long way from production model TCAS.

Most TCAS advocates agree that horizontal and vertical resolution advisories are necessary to any successful application, but there is no agreement regarding the impact of TCAS-prompted maneuvers on the so-called ATC/pilot contract or the potential for conflicts generated by these maneuvers.

What will the $45 million invested in TCAS have bought us by the end of 1987?

Along with these drawbacks, airborne avionics costs will only fall to a level attractive to the broader segment of users if air carriers, who can afford the initial artificially high prices, "prime the pump." Installation at air carrier airports already served by ILS may stimulate avionics production while permitting the air carriers to meet requirements of international agreement.

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What will the $45 million invested in TCAS have bought us by the end of 1987?

Automatic Weather Observing Systems (AWOS)

The FAA proposes to spend about $20 million for AWOS in 1987. AWOS is another "miracle" of the FAA R&D effort which has not met expectations.

The GAO reported that "FAA tests and demonstrations have shown that AWOS cannot meet the FAA's operational requirements." "Therefore," the GAO concluded, "the FAA intends to augment the AWOS with weather observers at commercial airports."

Although enthusiastically supporting development of an adequate AWOS device to meet general aviation needs at numerous airports where observers are not economically justified, AOPA is not impressed by the FAA's success with AWOS.

SYSTEM ENGINEERING AND INTEGRATION (SEI) CONTRACTS

The FAA has requested $82.5 million to pay the Martin Marietta Corporation to oversee the implementation of the National Airspace System plan. This is the fourth installment on a total contract worth $685.6 million through 1992. After several years of operation, the aviation community has not seen sufficient results from this oversight and integration effort to justify such expenditures.

The National Airspace System Plan has already been developed, designed and formally submitted to Congress at least four times. In each of the years of the Martin Marietta contract, the company will receive more for overseeing the FAA's administration of the development of the National Airspace System plan than the FAA will spend on the actual NAS development administration.

FAA RESEARCH AND DEVELOPMENT

Experience with FAA efforts at R&D since the inception of the NASP lead to the conclusion that FAA R&D may be a contradiction of terms. Example after example can be put forward to demonstrate that the FAA R&D program moves so slowly as to be glacial, while technology in the private sector leapfrogs into the next century.

The FAA's snail's pace delivery of usable products hampers the national airspace system. Often products delivered are of little benefit because they have been rendered obsolete by advancing technology; the development process has produced devices not directly applicable to the need expressed by users; or developments outside the FAA R&D process render the FAA's efforts of little value.

There seems to be little central direction to the entire effort. Programs do not have proper continuity, nor are critical needs emphasized.

ATTACHMENT B

In previous hearings, AOPA has proposed language to be included in any replacement of the expiring Airport and Airway Improvement Act of 1982. These recommendations would go a long way toward extending eligibility for federal funds to public-use airports currently excluded from even being considered. The new legislation would also establish eligibility for pavement maintenance on general aviation airports.

The section in the new law to replace Section 513 of the existing AAIA of 1982 should be worded so as to allow eligibility of airside pavement maintenance. It is in the users' best interest to have the law changed to allow aid for a properly administered maintenance program for general aviation airports. FAA should require that proper pavement maintenance be conducted and that failure to do so could jeopardize future federal grants.

Sections 507 and 508 of the current Act should be rewritten to reflect the following AIP apportionment formula:

Existing Apportionment		Suggested Apportionment	
Primary Airports:	50%	Primary Airports:	25%
Non-Primary, Comm'l Service Airports:	5.5%	Non-Primary, Comm'l Service Airports:	15%
Noise Compatibility:	8%		
Reliever Airports:	10%	Reliever Airports:	20%
General Aviation Airports:	12%	General Aviation Airports:	20%
NPIAS:	1%		
Discretionary:	13.5%	Discretionary:	20%
TOTAL:	100%	TOTAL:	100%

The existing formula provides for primary airport status to be extended to a substantial number of relatively less active airports. Current legislation allows for this by establishing in the airport categories definition a cutoff of 0.01% of the total of national enplanements. Fifty percent of the gross AIP funding is set aside as location-specific entitlement for primary airports. At quite a number of the smaller and less active primary airports, many of the previously expressed priority needs have already been satisfied, although many general aviation-related needs remain. Entitlement funds are thus often used for relatively low priority items. The net effect is diversion of funds from high priority development needed at other locations, especially reliever and general aviation airports.

The proposed formula would reduce the total number of airports with location-specific entitlement funds. Maximum cumulative entitlement would be reduced from 50% to 25% of total AIP funding. Airports which fall out of the primary airport category would be provided for from funds in the commercial service airport category. A more liberal definition of reliever should yield more designated reliever airports.

Sections 503, 505, and other appropriate sections of the AAIA including the "Definitions" section, should be changed to provide: (1) that all airports included in a State Airport System Plan (SASP) be added to the National Plan of Integrated Airport Systems (NPIAS); and (2) that all NPIAS airports become eligible under AIP.

Current eligibility extends to: (1) publicly owned airports included in FAA's (NPIAS); (2) privately owned airports included in the NPIAS that (a) are designated reliever airports or (b) enplane 2,500 scheduled passengers annually.

Current law limits federal aid to approximately 3,000 existing airports, including all publicly owned airports in the NPIAS and those relatively few privately owned airports which qualify. However, federal aid has been used for extensive planning efforts to produce the various State Airport System Plans. The sum of all airports, including publicly owned and privately owned airports, included in SASPs is approximately 4,800. This represents an additional 1,600 airports beyond those that are included in the federal NPIAS.

Senator SARBANES. Mark Brewer, the airport manager of Salisbury-Wicomico Regional Airport.

STATEMENT OF MARK P. BREWER, AIRPORT MANAGER, SALISBURY-WICOMICO COUNTY REGIONAL AIRPORT

Mr. BREWER. Mr. Chairman, thank you.

I am pleased your committee has seen fit to explore the area of air safety and the role of the Federal Government today.

An area I would like to address today concerns safety versus economic impact of the Federal Aviation Administration's plans to consolidate 316 flight service stations into 61 automated flight service stations, or super stations as they are known.

The decision to consolidate flight service system was based primarily on modernization, efficiency, manpower productivity, and economics.

The consolidation program will have an adverse effect on our airport.

On June 4, 1986, I testified before the U.S. House of Representatives Subcommittee on Aviation to discuss this issue in detail. To avoid redundancy, I have enclosed a copy of my testimony for your information and review. This is attached to my statement today.

Senator SARBANES. That testimony will be included in full in the record.

Mr. BREWER. If I may, however, I would like to elaborate on some of my comments concerning the consolidation program to better address the specific economic and safety purposes of this hearing.

No. 1, the flight service station network is an essential part of a safe and effective air transportation system. The FAA is in the initial stages of their consolidation/modernization program to improve the "quality and timeliness" of the services provided.

However, with the software and hardware problems the new super stations have encountered, the reliability of the system has deteriorated. The FAA itself has designed into the system a mechanism for any pilot waiting on hold for a telephone weather briefing for more than 30 minutes to be dropped off line by the computer. To design a system which will anticipate a 30-minute lag in answering calls, and then program a computer to hang up on that pilot, cannot in all good consciousness be considered modernization, productive, or efficient.

Mr. Chairman, at the very least, the FAA should be required to work out the kinks in their existing model 1 system before being allowed to proceed with further consolidations.

No. 2, the flight service system I believe belongs within the realm of the Federal Government. To date, the FAA has served our nation well with trained flight service specialists from coast to coast providing weather, pilot briefings, airport advisories, et cetera.

This system, because of the interstate nature of air travel, does not belong in the hands of each State aviation organization, nor private enterprise. This system needs to be a single consolidated network of trained aviation specialists who can coordinate and

communicate with one another with no profit or competitive motives attached.

Unfortunately, the FAA's apparent mismanagement of personnel has led to part timing of over 76 flight service stations and the closing of 6 across this country due to lack of manpower.

The reliability of the system is in jeopardy when weather observations formerly taken on the hour are now several hours old or not taken at all because of the flight service station has closed down.

The city of Butte, MT, for example, was forced to fill this gap at their own expense attempting to supply their pilots with a usable system. The city actually paid the FAA $2,300 to cover expenses in order to prevent their flight service station from going part time.

It is unfortunate when the FAA will knowingly reduce services in Butte, MT, or any other area in order to save such relatively minute sums of money when air safety is at stake.

No. 3, the major regulatory and budgetary decision in the Airport and Airway Improvement Act of 1982, which allowed for the flight service station consolidation program to take place, created an initially well-intentioned program which has now been proven to be flawed, and is driven by the commitments and promises made several years ago.

I feel the consolidation program is too drastic of an attempt to cut costs in personnel and equipment and still maintain an efficient and effective system.

I feel the FAA should slow the process down, reevaluate staffing requirements, admit that 61 super stations are not enough, and adopt Administrator Engen's concept of an additional 52 adjunct or satellite flight service stations to complement the 61 super stations.

The FAA's consolidation program today is driven by their budget. This is wrong. Safety needs to be the predominant factor. An ineffective air transportation system designed to save only dollars will not well serve the American public.

No. 4, the Congress' mandate to the FAA was to consolidate flight service stations nationwide only if pilots were served as good or better than the existing. These words, "as good or better" are the key to the whole program.

The FAA has appointed itself to define what "as good or better" means and has determined that it will be the judge to ensure that it has met its own criteria. I feel this is also wrong.

We have a political body under time and budgetary pressures, who have managed to create for themselves a program which is behind schedule and short staffed, deciding if they have met the intent of Congress.

I believe that Congress needs to define for the FAA a set of specific guidelines, or a test, if you please, from which to assure themselves that the FAA has met their requirements.

I further believe Congress needs to again scrutinize the FAA's budget to ensure that the tail is not wagging the dog, and that air safety remains of the utmost importance and budgetary restrictions have some built-in flexibility to ensure a safe and efficient flight service station system.

In conclusion, Mr. Chairman, I believe the intent of Congress in the Airport and Airway Improvement Act of 1982—and certainly

in today's era of Gramm-Rudman—is to cut costs, but not to jeopardize safety.

In my opinion, this goal is achievable, but perhaps not to the scope and the idealistic extent to which the FAA is attempting to take the flight service consolidation program.

We need to admit this and remember that the FAA's major goal should be to maintain a safe and effective air transportation system.

The flight service station system, Mr. Chairman, must be maintained operational. With the part timing or closing of approximately 25 percent of the flight service stations in service today due to lack of manpower, something must be done to reverse this trend.

The FAA has recently stated that it fully intends to reduce the flight service station staffing by 740 more specialists in the next fiscal year. No one can predict how many more stations will be part timed due to this action.

We cannot stand by on the side lines and watch this important aviation safety network deteriorate any further.

Once again, Mr. Chairman, the flight service station network must remain operational. We must appropriate the funds and provide the guidance to the FAA to maintain this essential air safety system.

I thank you for your time and hope my comments have been useful.

Thank you.

[The statement attached to Mr. Brewer's oral statement follows:]

STATEMENT OF MARK PAUL BREWER, AIRPORT MANAGER

SALISBURY-WICOMICO COUNTY REGIONAL AIRPORT

Regarding the planned consolidation of the Salisbury Flight Service Station into the Leesburg, Va. AFSS

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEE ON AVIATION

HONORABLE NORMAN Y. MINETA, CHAIRMAN

UNITED STATES HOUSE OF REPRESENTATIVES

WEDNESDAY, JUNE 4, 1986

INTRODUCTION

Mr. Chairman, I am Mark Brewer, Airport Manager of the Salisbury-Wicomico County Regional Airport. On behalf of the Wicomico County Airport Commission I appreciate this opportunity to appear before this committee today.

I am here to outline the detremental impact on the efficiency and effectiveness of the existing Flight Service System should the Salisbury Flight Service Station be consolidated into the Leesburg, Va. AFSS.

Before I get into specifics, however, let me make clear that each airport across this country is part of a National network of airways connecting city with city and community with community. Although it would be incorrect to call this system a "house of cards" it is important to recognize that to a certain extent, what happens to an individual airport has an impact on all the others.

The closing of the Salisbury Flight Service Station may most directly impact those aircraft owners and operators based at the Salisbury Airport but pilots from around the country will lose this service also.

Lets explore the services which will either be reduced or lost at Salisbury if consolidation occurs. (Keeping in mind of course, the FAA is mandated under Section 528(C) of the Airport and Airway Improvement Act of 1982 to consolidate only if the services provided to airmen are "as good or better" than existing. I doubt there will be much question, that in the case of Salisbury, the services to be provided under a consolidated AFSS will not be equal and certainly not better than existing.

REDUCTIONS IN SERVICE AT SALISBURY

(1) "HANDS ON" AVAILABILITY OF WEATHER MAPS, FORECASTS, CHARTS, ETC.

This existing service is utilized today by experienced as well as student pilots. Pilots can presently receive their briefings while studying the satelite maps, the charts outlining existing and forecast weather front movements, the computer print out of winds aloft, etc., etc. These services will disappear at Salisbury when/if the consolidation occurs. Access to this source of weather information in Salisbury will be completely eliminated.

To the users of the Salisbury FSS the elimination of these forecasting aids would not be considered as an "equal or better" service than existing.

2. PERSON-TO-PERSON WEATHER BRIEFINGS

The Salisbury FSS offers what I feel to be the key to understanding the weather forecasts - a person across the table available to discuss directly with you the forecast. The Salisbury FSS is staffed with experts who can interpret the data available in the "big picture" and present it to the pilot in terms of his/her specific route of flight. These experts understand the local weather tendencies. They recognize that we are surrounded by water on three sides and that just because we are close to Baltimore and Washington does not mean that we will experience the same weather systems. I have often checked the weather with the Salisbury FSS personnel only to find that their forecast will vary, sometimes significantly, with the FAA's computer weather forecast for our area. Invariably they are right.

It concerns me a great deal, that should the Salisbury FSS be forced to close its doors, the experts presently available to "fine tune" a forecast will no longer be here.

I am certain you are aware the main objective of the FSS is to provide accurate up-to-date weather and forecasts to pilots. What better way than to have someone intimately knowledgeable with an areas weather patterns to be the one giving the briefing. It is, I believe, "looking for trouble" to have weather briefers in Leesburg, Va. responsible for such a large territory of this mid-atlantic region with little or no specific knowledge of each areas weather intricacies. It is not my intent to criticize the FAA's weather forecasting abilities, it is I'm sure the finest network in the world, however, the specific need to fine tune each forecast is necessary.

We are not yet convinced that to replace a person-to-person weather briefing by an area weather expert with either a computer simulated voice or someone sitting in front of a console over 120 miles away is "equal or better" service to the users of this airport.

3. 24-HOUR WEATHER OBSERVATIONS BY FAA TRAINED OBSERVERS

In Salisbury official weather observations are taken on an hourly basis, or more often as needed, by the person who will give you your briefing. He knows what he is reporting because he is the one who measured ceiling, he observed the type of cloud cover, he saw the morning fog, he knows the field conditions because he is there.

The FAA's goal is to replace this individual with an AWOS (Automated Weather Observation System). An AWOS is a mechanical system designed to measure current weather conditions and broadcast them to pilots over an assigned frequency by a computer simulated voice. The FAA has developed three levels of AWOS. AWOS-1, 2 & 3. Because Salisbury has a Part 121 air carrier serving our community all pilots will benefit because the FAA says we need the best system - the AWOS - 3. That's the good news. The bad news is that, according to the latest information we have available, it doesn't work! The FAA tells us they are very close to solving the problems with AWOS - 3 and will begin production immediately thereafter.

Lets remember now, the FAA planned originally to close the Salisbury FSS this month - June, 1986 and production of the AWOS - 3 system will only begin as soon as the bugs are worked out.

This means the FAA had to come up with an alternate plan to provide weather observations at Salisbury. Their idea was to replace their existing personnel, who are familiar with the local area weather,with contract weather observers from wherever the low qualified bidder happened to come from. That's correct, their plan is to replace people with people on an interim basis. This interim basis could be years should the AWOS production schedule slide further behind. We have a great deal of difficulty in understanding why the FAA, interested in public safety and the best interest of the pilot would even consider such a position when the mechanism to provide the best weather service available is already in place. Again, I highlight the mandate to provide "equal or better" service.

4. LOCAL AIR TRAFFIC ADVISORIES

The FAA's 1984 National Airspace System Plan identifies the issuance of "Airport Advisories" as one of the services provided by some Flight Service Stations. An airport advisory is a radio transmission to a pilot in the immediate vicinity of the airport outlining current weather and/or other aircraft in the area.

In Salisbury, these airport advisories are issued in great numbers. In fact in 1985, according to the FAA's own stastics, over 44,000 airport advisories were issued at Salisbury. Salisbury ranks number four (4) in the nation behind only Crestview, Florida; Galveston, Texas and Prescott, Arizona.

Certainly one would expect the FAA to continue to offer this service in some fashion at Salisbury when they leave - not so. The FAA is satisfied to allow only a non-governmental radio station to serve in this capacity. This system,called a UNICOM,was developed in the early days of aviation to give pilots approaching the same airport a common frequency to announce their intentions and position. There is no obligation by the operator of the UNICOM station, usually a local fixed based operator, to answer the radio or to give airport advisories. In fact, UNICOMS today have been religated to a second class status. They are usually used by pilots to request fuel or order a taxicab. Numerous articles have been written on the overcrowded state of the UNICOM network nationwide.

We are again in a quandry as to how removing on site FAA trained personnel currently giving over 44,000 airport advisories per year, and transferring these advisories over to a non-governmental, perhaps self-serving fixed based operator, using an already overburdened UNICOM system, will provide "equal or better" service than already exists.

8. ACTIVATION OF APPROPRIATE RUNWAY LIGHTS AND LANDING AIDS

Presently, under a Letter of Agreement the FSS personnel operate all runway lights and landing aids at the Salisbury Airport. The FSS specialists make a determination of the active runway and illuminate only those runway lights and taxiway lights necessary for landing and departing aircraft.

If the FSS facility closes in Salisbury the FAA has agreed to assist in the purchase, using our very limited AIP funding dollars, a Pilot Controlled Lighting System (PCLS). This system allows a pilot to turn on runway lights by clicking his microphone over an assigned frequency either 3, 5 or 7 times. As soon as a pilot "clicks" his mike 3 times every runway light and every taxiway light as well as some landing aids come on at low intensity. Click the mike (five) 5 times and all runway lights increase to med intensity and additional landing aids come on. Click the mike seven (7) times and all lights go to high intensity and all remaining landing aids come on and stay on for 15 minutes.

The FAA's Airman's Information Manual describes this system and states "Suggested use is to always key the mike seven times, this assures that all controlled lights are on the maximum intensity."

One can imagine what this new system will do to our annual electric bill when the usage demand charges are added up, not to mention the increase maintenance costs associated with manpower and materials to replace the over 400 runway and taxiway light bulbs on the facility which today very rarely burn at high intensity. The net result to the community will be higher operating and maintenance costs. The net result to the pilot will be to hope the 15 minute timer doesn't run out while he's on final approach in bad weather or that the pilot behind him doesn't click the mike fewer times than he did which will reset the system and provide fewer landing aids or most basicly hope he doesn't have radio failure if he is flying into Salisbury after dark and therefore not be able to turn on any runway lights.

Without elaborating any further on this issue I believe it is clear, the FAA's plan to provide a pilot controlled lighting system can not provide "equal or better" service than having an FAA trained specialist controlling only the lights the pilot needs upon request.

6. "DF" STEERS

Lost aircraft can presently be assisted by the Salisbury FSS personnel by use of direction finding (DF) equipment. This equipment identifies an aircrafts location relative to the airport. It is a great advantage to having this system operated by local FSS personnel who are familiar not only with local hazards to air navigation (such as radio towers) but with local landmarks for a confused or distressed pilot to relate to in attempting to find his bearings.

I have personally witnessed the safe arrival of an aircraft with a VFR pilot in IFR weather into the Salisbury airport because local FSS personnel were able to look out their windows and see the aircraft passing overhead in and out of low clouds. I am convinced that if this visual contact had not been made an accident would have occurred.

Although the "DF STEER" capability will be transferred to Leesburg it is obvious to me that without the ability for visual contact with the lost aircraft the "as good or better" criteria can not be met.

EXISTING PROBLEMS AT LEESBURG AFSS

Mr. Chairman, the intent of this testimony is not to criticize the FAA's consolidation program, in general, but to endorse a proposal I believe has been made by FAA Administrator Engen on more than one occasion to designate 82 "satellite" FSSs to remain open after the consolidation into the 61 AFSS's is completed. It is our belief the words "equal or better" are a lot easier to say than to comply with at certain FSS facilities and, of course, we believe Salisbury to be one of these facilities.

Identifying the 52 specific "adjunct" locations to remain open in addition to the 61 Super Stations will be easier if the FAA will admit that an effective and efficient Flight Service System can not be accomplished with only 61 AFSS's.

In spite of this alternate proposal, however, I believe it is important for the FAA to admit the existing consolidated system has problems with equipment and manpower and to expand the system for the sake of a timetable before the bugs have been worked out, should not be, and is not, acceptable.

It is my understanding the FAA is presently 11 personnel short in the Leesburg AFSS facility alone. A cursory review of the facts would show a staff of 8 personnel in Salisbury at this time. It would appear to be the ideal move to close Salisbury and relocate all personnel to Leesburg, except, the fact remains that five of the Salisbury specialists will opt for retirement rather than relocate to Leesburg. The net effect would be placing the workload of eight people on 3 individuals, not solving the manpower shortage and providing much less service to the users of this facility.

The Leesburg facility is presently the source of much annoyance for pilots attempting to file flight plans or receive weather briefings. Apparently the phone system is inadequate. Local pilots have called me to complain about the service. One complained of being placed on hold for over 40 minutes before a briefer came available to talk to him. I referred this complaint to the FAA's Eastern Region who in effect called the pilot a lier because the system is designed to automatically hang up any caller on hold for more than 30 minutes. Can you imagine the frustration of a pilot who has waited for this period of time not only to never talk to a briefer but to be cut off by a computer. This can not realistically be considered progress.

The 1984 National Airport Systems Plan boasts "the software design of the Model 1 system has exceeded FAA's expectations". If this statement is true, then apparently the FAA had very low expectations of Model 1 in 1984. Any software which is designed to anticipate a 30 minute delay in services and then be programmed to hang up on you should not be characterized as "exceeding expectations."

Again, I find myself being perhaps unduly critical of an elaborate and intricate system. Certainly it would be difficult for me to do better, however, the unacceptable experience factor our community has had to deal with using this new system for pilot briefings has been a poor testimony to the "State of the Art" modernization program it has been touted to be.

CONCLUSION

In conclusion let me state, Mr. Chairman, the Salisbury-Wicomico County Regional Airport is home to over 100 based General Aviation Aircraft, a Chapter of the Experimental Aircraft Association, an Agricultural Spraying Operation, a Federal Express Air Freight facility, the Maryland State Police Medevac Helicopter, a Civil Air Patrol Squadron and Rescue Aircraft, two FBO's and Henson Airlines maintenance facility and corporate offices. We serve as a pilot training facility for our airline and flight school. A great deal of military training also occurs at our facility.

The closure of the Flight Service Station will force this growing and busy airport to take a step back to a UNICOM system for airport advisories. We will lose person-to-person weather briefings and hands-on availability of weather maps, charts and forecasts. The activation of runway lights will revert to a pilot activated runway light system. The existing 24-hour weather observations conducted by Flight Service Station personnel will be contracted out because the FAA's AWOS-3 (Automatic Weather Observation Station) system does not work!

Section 528(C) of the Airport and Airway Improvement Act of 1982 permitted the FAA to close Flight Service Stations nationwide, as part of a modernization program, ONLY if service provided to airmen is "as good or better" than existing.

It is obvious to us at the Salisbury-Wicomico County Regional Airport that the FAA's plans to close the Salisbury Flight Service Station will not provide "as good or better" service to the pilots using this and most other airports on the Delmarva Peninsula.

Our list of supporters who agree with this conclusion include Senator's Paul S. Sarbanes, Charles McC Mathias, Jr., Joseph R. Biden, Jr., William V. Roth Jr. and Congressman Roy Dyson in addition to local political representatives and Eastern Shore airports and pilots.

WE SOLICITE YOUR STRONG AND ACTIVE SUPPORT TO PREVENT THIS "MODERNIZATION PLAN" FROM TAKING THIS PROGRESSIVE AIRPORT A STEP BACKWARDS.

Thank you, Mr. Chairman, for the opportunity to present these comments.

Salisbury-Wicomico County Regional Airport

Box 1948 • Airport Rd. • Salisbury, MD 21801 • (301) 548-4827

Mark Paul Brewer
Airport Manager

SALISBURY FLIGHT SERVICE STATION

RANKING IN FY 1985

(BASED ON 310 OPERATING FSS'S)

(4) AIRPORT ADVISORIES	(44,021)
(27) TOTAL VFR CONTACTS	(38,866)
(27) IFR/DVFR AIRCRAFT CONTACTS	(15,693)
(44) TOTAL VFR FLIGHT PLANS	(10,151)
(97) TOTAL FLIGHT SERVICES	(179,129)
(118) TOTAL IFR FLIGHT PLANS	(16,317)
(118) TOTAL PILOT BRIEFS	(35,817)

Senator SARBANES. Thank you very much, Mr. Brewer.

I once again thank all the panel for some very helpful testimony.

Mr. Johannssen, could you address briefly the question of the early retirement of the Professional Airways Systems Specialists whom you represent.

I earlier had an exchange with the GAO about that problem. I wonder if you are in a position to address in somewhat greater detail the question of the systems specialists.

Mr. JOHANNSSEN. Yes, I am, Mr. Chairman.

The FAA has run a set of demographics on the airways facilities work force. So we have specific numbers. In our prepared statement we address your question.

Basically, to give you a quick picture, 1978 we had 19,000 facilities and 11,000 systems specialists. In 1986 we have 22,000 facilities and 6,000 systems specialists. By 1990, based on predicted regular retirement of our work force, we will have 25,000 facilities and 3,800 system specialists.

Now, FAA until very recently had a hiring freeze. They haven't put anyone in the pipeline, and they are now only authorized to hire some 150 systems specialists for critical positions nationwide.

Our work force is one of the oldest in the Federal Government. We are approximately 48 years old; 38 percent of us, of the 6,000, will retire by 1990.

The indications I get from everyone I speak to in the system—and I travel a great deal—is they cannot wait to go.

Unlike the controllers' strike where the controllers left the Federal work force and realigning their occupations, our people are highly trained both in the military—generally before they come to work for the Government—and then for FAA, by FAA academy and contractor schools. So, we have the highest state of training in the technology of electronics. Any one of our people retiring, if they so choose to go get another job can do that in industry today very easily, making a better living perhaps than they are making now with more benefits and such.

So, quite frankly, there is an incentive to go. We work around the clock. As you get older, the idea of working 7 days in a row and around the clock is no longer appealing. So that also is another incentive for people to go.

But, we are the oldest work force. To replace a man or woman who does retire, requires 3 to 6 years of intensified training before they can get into the job place and do the job; 50 percent of that training, approximately, is training on the job, with people who have been doing it for a great many years to gain their skills and knowledge to be able to take over.

One of the aspects we are losing as these retirements or people are going out the door now, is we are losing the years of skill and training that should be passed on to the new employees as they come into the system—we are losing that as well.

Senator SARBANES. The last point you make is the point Mr. Enders made, which I think is a very important point, that the wisdom and experience of one generation is not being handed on to the next.

It is not just true in your area, it seems to be generally true. Is there some explanation for this trend?

Mr. JOHANNSSEN. It has been addressed once already, and I don't want to steal everybody's time here, but this NAS plan, as was so appropriately stated by quite a few people here today, the FAA brought on this wonderful plan which, in fact, was something we supported as well, as to the upgrading of equipment.

But, in reducing the numbers of personnel and not keeping that in parallel as equipment has arrived, has created the problem of not being able to pass on that information. I think FAA greatly overestimated what new automated equipment will do. And that new automated equipment, for example, in the previous work force 10 years, 12 years ago when we had the then new air route traffic control centers, and we went to the 9020, the big computerized system—in fact, the computers are still in the centers today that are being replaced by the host computers, one of the reasons for that major purchase was to reduce the number of controllers. We had, I think, 9,000 at that time. FAA found, after we went to this wonderful automated system that was going to reduce staffing, we almost doubled our staffing.

So, I don't think the people in FAA who are making those determinations of what the future portends to be, have been making very good decisions.

Senator SARBANES. Let me just quote Mr. Enders, and then perhaps ask him to comment on it. I thought it was a very interesting observation:

> We have become concerned about what we see are major structural changes taking place in air transportation in this country. There is a generational turnover in government and in the private sector that has not handed off accumulated knowledge and wisdom to the inheritors as well as might be desired.

If you would like to elaborate on that, I would be very much interested. I think it is a very important point. It has been a kind of a subtheme to a lot of the testimony here this morning. The length of time is critical. You have said 3 to 6 years for your people.

The controllers have said it used to be that a 5-year period was regarded as a minimum. Now it has been put at 23 or 24 months. And a lot of people apparently think that is inadequate.

We have the same problem with the inspectors.

We have the decrease in pilot experience of pilots already referred to.

Mr. Enders, would you like to develop that a bit?

Mr. ENDERS. Mr. Chairman, I think that we have sort of lost sight of the, perhaps, *principle* of apprenticeship that served so well in the buildup of this country, where a junior person would train under someone with some experience and become a journeyman or higher level to take over when the master left.

And that applies no matter whether it is at the labor level or at the highest corporate office level. There still needs to be some sort of an apprenticeship for people to absorb the knowledge and lessons learned over the years.

One of the reasons for this situation—I suspect there are many—is that during the 1970's, there was a slow cutback in staffing, by not filling positions vacated. It was an attrition process. When a person retired, no one would be hired to fill that spot. And so there was no one on hand to really pick up on what the other person had learned.

Meetings with my colleagues in industry during that same period of time, through many industry committees, revealed the same sort of thing happening there. As attention was focused on the economics of running the business, perhaps the true value of this apprenticeship was undervalued.

As I noted in comments to the ALPA Safety Forum last week, that the communications process, which is part of this passing on of knowledge, is so vital to survival of the system that we have created. We have the best aviation system in the world in this country and it is in danger of strangling because of a lack of adequate communication in many forms.

The first things that get chopped in a budget cut seem to be communications functions; whether it is travel or secretarial help that would help to speed messages around and so on.

This undervaluing of the apprenticeship process seems to be endemic throughout the whole structure of our society right now. I don't have any answers right now about what to do except to mark this as a possible area for study and examination.

Senator SARBANES. Does anyone else want to address that topic?

Mr. BAKER. I think, Mr. Chairman, from the pilots' perspective, we have made some progress in this arena. Particularly the simulator has enabled us to force feed by putting people repetitively in hazardous, or potentially hazardous circumstances without jeopardizing themselves in an airplane.

In the air carrier industry we, of course, have the circumstance of an aging pilot population in a growing industry. And as a result you do have far less experienced people sitting in the left seat, the pilot's seat of the aircraft.

We are going to see that filter down through the rest of the industry we believe. But it is the commuter who is suffering now as a result of hiring by both regional carrier and trunk carrier. And we are also going to see the flight instructor who has traditionally done the yeoman work on the training side, jumping for the better paying jobs with the carriers.

So, you are going to see the impact, I believe, in the commuter airline, the regional airline, business, corporate fleets, and in the flight instructors' arena. Because the jobs with the carriers pay better.

This last year there were 7,000 new pilots hired by the air carriers in this country.

Senator SARBANES. How important are the flight service stations to the poeple you represent?

Mr. BAKER. They are very, very important. That is our principal access to the air traffic system. It is where we go to get the weather briefings. Half of our fatal accidents in general aviation are weather related.

If, indeed, you finally despair of being able to get through to someone at the FSS, which is the case when the weather is bad here—and I would ask the Chairman the first rainy, cloudy day to try to call Leesburg, which is a modernized, in theory, flight service station—I think you will find you hold for an hour on the phone, if indeed you have the patience.

We find it terribly serious.

The second thing they have done is applied a standard to the FSS system which assumes that the weather is the same every place in the country. As a result they are just cutting facilities based on the number of pilot contacts. Even though, for instance, on the Eastern Shore we have altogether different weather here than we do in Cumberland or in Washington. West of the mountains the weather is altogether different from that east of the mountains. No judgment has been applied to it. It has been one of those classic, "Let's standardize the procedures and let's not apply any judgment, let's not be able to be second guessed."

As a result, there has been a terribly adverse effect on safety both from the general aviation perspective as well as the air carrier side, because they also rely on the data generated by the flight service stations.

Senator SARBANES. In that sense, don't you feel hearings are important in order to force the FAA to focus on some of these problems?

Mr. BAKER. We have had hearings upon hearings. The problem is compounded by the Office of Management and Budget and the Department of Transportation mandating a course not consistent with that directed by the Congress.

We, at AOPA have fought the flight service station battle for many years. We have succeeded every year in getting language into the appropriations bill which says there will be no cuts until equal or better service is provided.

Unfortunately, as Mr. Brewer mentioned, the FAA is the one that is judging the criteria as to what is equal or better service.

We find it ludicrous, for instance, that we are going to have 55 emergency part timings of flight service stations a year in advance. Somehow or another that doesn't seem to be an emergency under the classic definition. It seems to me that is bad management.

We have exactly the same situation with the maintenance personnel on the equipment side of the FAA.

How we could get ourselves in this position with the knowledge that it was coming and the dialog that has been going on for the last 3 or 4 years, is inconceivable.

The same thing has happened in the inspector corps. It is lousy management tempered by loss of initiative, loss of control by the FAA.

We have taken a very strong position. We believe the FAA should be reestablished as an independent agency, much like NASA, where it would be immediately responsible to the Congress, to the users and to the public. Right now they are filtered, if you will, both through the Department and to a greater extent, through OMB. They should not be! They don't even argue their own case through OMB, the Department of Transportation does it. And DOT is staffed by well-meaning amateurs by and large.

Senator SARBANES. Is it your impression in many of these instances that the FAA wishes to follow a positive path, but the OMB makes it difficult or impossible?

Mr. BAKER. No question about that, sir.

All of us that wander the halls down there—and I think all of us do. Despair seems to be one of the principal emotions that you encounter, and a sense of frustration and helplessness. They are

being pilloried in the public press about not doing an adequate safety job, when their principal, and in most instances only motivation, is safety, since that is the best promotion of aviation from every one of our perspectives. If you don't have safety you aren't going to have a viable aviation system.

They feel that they are being inhibited as a result of constraints applied that are extraneous to the issues with which they are trained to deal.

Senator SARBANES. I would ask the members of the panel generally to react to the renewed GAO proposal to restrict air traffic, curbing the number of flights until some of these problems are actually dealt with and they are satisfied that the safety standard has risen to a higher level.

What is your reaction to that?

Mr. BAKER. Obviously, representing users, we are not wildly enthusiastic about it. The system is working essentially that way now. The FAA meters traffic into the system.

If we had adequate airport facilities, much of the congestion and delays would go away. It is the traffic backed up from airports, not because the system itself can't handle the demand. So, we believe they are metering right now to maintain a safe level.

Now, that doesn't mean we don't have the anomaly where too much traffic does end up in an area.

Occasionally when the weather is bad in Chicago, if you happen to fly over Cleveland, it will make a Christian of you. There are airplanes going in every direction out there while they are holding them and attempting to feed them into the terminal area.

But by and large they are trying to take the delays on the ground with gate holds, and we believe the system is suffering economically, but not safetywise.

Senator SARBANES. Mr. Thornton, do you want to address that?

Mr. THORNTON. Yes. We basically support the GAO recommendations. I understand the benefits to the user to keep the system functioning and growing as it is. The problem, however, is the work force is getting burned out at a much earlier age than it did prior to 1981. Our controllers at Washington Center here in Leesburg, the majority of them worked 6-day weeks, 46 out of 52 weeks last year.

We see it as, something has to happen. Hopefully, somebody will use some foresight and curb the system a little bit, so that the use of overtime can go down and the number of FPL controllers can grow to accommodate the increase in traffic.

It is not a healthy situation when the morale of the workers who are working, who actually save the system, read that their employer is casting them as habitual complainers. They haven't been in long enough to be habitual anything.

But on top of the excess work they are doing, to find out the employer doesn't appreciate it, we are creating a very bad morale environment for the controller.

The impact on the work force has to be taken into effect. They need some breathing space. Cleveland Center this summer, because of the agency cutting back on the amount of overtime, amount of scheduled overtime being used, it had to go out and cancel annual leave for this summer. That is just really not a healthy situation.

Mr. JOHANNSSEN. We would agree with the GAO report. In fact, I think there are some areas that are more affected by that then others. But, it is getting to the point now when we talk about the flight service station, the terminals, air traffic is asking, in some cases, the controllers whether they are working in flight service stations or in terminals, to sometimes go down and fix equipment when it fails. And if our people aren't present when they have historically been present, see if they can't do something about the failed equipment themselves to get it back in service.

So, we are not just asking them to do their jobs, now we are indicating in some regions of the FAA that they have to do more than just control traffic. Now they have to become specialists in those kinds of situations to start adjusting or turning equipment on and off or resetting it.

Now they have done that on a very limited scale. But just the concept in itself is profoundly unsafe.

And it seems that rather than looking for ways to raise safety to a more defined level and developing a plan for that, they are continuing to work under the forceful action of OMB and DOT to keep costs down.

If you looked at the numbers that I heard earlier today, 900,000 hours in overtime, versus time and a half, versus those same dollars invested in hiring full-time employees, I have to ask myself how much would the overtime have been reduced if they would have had the people to do the job in the first place.

I just don't think decisions are being made appropriately as they should be made.

I said earlier we represent the FAA pilots in that flight inspection program where FAA inspects itself in the air or all the systems we use. One of the contentions and frustrations of the people, the pilots working in that program is a move by FAA to go out and purchase a new flight inspection fleet of some $132 million, the last numbers I saw. Or, replace or just refabricate the aircraft they have today, which are basically the Saber Liner fleet that I am speaking of for flight inspection, at a cost of about a half million dollars an aircraft.

So, we are talking about an expenditure of some $30 million to recondition what they have for a flight time of 20,000 hours, which is what the pilots want and fly, and have flown in a good program, versus picking up new aircraft the pilots don't even want to fly and challenge whether they will be able to do the job and spending an additional $100 million.

Well, it has an effect, one, on the budgetary problems we have; and two, on the very people who are instructed and responsible for doing the job. Not understanding the wisdom, plus being angered by the decisionmakers.

And I think that is where all of this comes back to, the decisionmakers.

Senator SARBANES. Mr. Brewer, I thought you made a very telling point when you said:

> The FAA itself has designed into the system a mechanism for any pilot waiting on hold for a telephone weather briefing for more than 30 minutes to be dropped off the line by the computer. To design a system which will anticipate a 30-minute lag

in answering calls, and then program a computer to hang up on that pilot, cannot in all good consciousness be considered modernization. . . .

I couldn't agree with you more.

How much progress do you think we are making in getting the FAA to take a more pragmatic look at the flight service station question, instead of moving in an arbitrary fashion?

Mr. BREWER. Well, I think the more emphasis that we can put on the 52 satellite stations in addition to the 61 super stations, the more emphasis that we can show that 61 stations are not enough, that because of the discrepancies or the variances of weather around the Nation—Salisbury, for example, is halfway between the Chesapeake Bay and the Atlantic Ocean. We cannot just arbitrarily take the Baltimore and Washington weather and add on an hour and a half and say that is what is going to happen in Salisbury.

The FAA in the 1984 systems plan said that the model 1 systems, which is that phone network, software had exceeded expectations. And to me that says that they either had very low expectations back in 1984, or just really didn't think the thing through.

I hope that by all the rhetoric that we have been hearing today and from the past hearings that I have been involved with, that the emphasis on the flight service stations system—which admittedly is a small section of the entire FAA budget—will help achieve a better system.

Senator SARBANES. Well, it may be a small part of their budget, but I think it is an important part in developing, as it were, a comprehensive air network.

And I take it, Mr. Baker, from your testimony earlier, that your people in particular—although you are dealing with commercial flights as well—would be very concerned about that.

Mr. BAKER. That's right.

We are terribly exercised about it. We believe that someone should take a look at the prime contractor on these systems. They have had the program now for 6 years or so. They are 7 years behind in some parts. The user-friendly portion which was to ultimately represent the big cost savings has been put on hold. They can't make it play.

It has not been a shortage of funding. They have been throwing money at that side of it, but allowing the staffing to atrophy as a result of anticipating the equipment to come on board when we knew well in advance the equipment wasn't going to be forth coming.

So, it is a classic situation that you see with your traffic controller, with the maintenance people, and the flight inspectors.

Senator SARBANES. I take it, Mr. Brewer, that you see the effort to get the localities to pick up the cost as leading to a breakdown of anything like a national network?

Mr. BREWER. I agree. Yes. Absolutely.

One of the questions that the subcommittee from the House investigated from State aviation organizations and so on, was as to whether or not they felt it was important enough that a State might pick up this kind of service. Get it out of the Federal Government realm and put it on to the States.

And across the board there was a negative response to that kind of concept. That is—aviation weather is one of the most important things in flying safety today. And to have it either in the private sector where they are competing with one another as to the number of briefings thay they give for incentive purposes or whatever, or for State aviation organizations where they might be trying to do more advisories than the State of Utah, or whatever, is wrong. It belongs in a national network where the pilot can be confident that the weather type and quality that he is getting in Maryland is the same that he will be getting across the country.

Senator SARBANES. Well, of course, if you move it out of the Federal system the tie-in to the whole FAA network would be diminished. Then you would have a big coordination problem and cooperation problem, which you probably have to some extent even now, when it is all in one agency, let alone if you fragmented the jurisdiction.

Wouldn't you be confronted with that problem as well?

Mr. BREWER. Exactly. I agree.

Senator SARBANES. Gentlemen, you have been very helpful. We appreciate it.

It was a very good panel and you have made a number of very important observations. We thank you all very much for your contributions.

The subcommittee stands adjourned.

[Whereupon, at 1:20 p.m., the subcommittee adjourned, subject to the call of the Chair.]

APPENDIX

STATEMENT OF

THE AIR TRANSPORT ASSOCIATION OF AMERICA

BEFORE THE JOINT ECONOMIC COMMITTEE

JULY 21, 1986

EFFECTS OF GRAMM-RUDMAN-HOLLINGS ON AVIATION SAFETY

(163)

EFFECTS OF GRAMM-RUDMAN-HOLLINGS ON AVIATION SAFETY

The Air Transport Association of America (ATA) is the trade and service organization of the major U.S. airlines. Our 31 member airlines provide more than 90 percent of U.S. passenger and cargo air transportation. ATA is pleased to address, on behalf of our members, the adverse effects of the Balanced Budget and Emergency Deficit Control Act of 1985 on the budget of the Federal Aviation Administration and to suggest a way to correct these problems for the foreseeable future.

ATA has testified many times in the last several years on the fundamental undermining of the legislative goals of the Airport and Airway Improvement Act of 1982. That law provided that the Aviation Trust Fund was to be used to enhance the safety and capacity of our nation's airport and airway system. The money in that fund is paid exclusively by users of the aviation system. In a word, they are not getting what they have paid for.

For several years, appropriations have neither been sought nor made at the authorized levels. Those funds are necessary to make important and long planned aviation safety and capacity

improvements. The effect of Gramm-Rudman-Hollings on the Aviation Trust Fund already held hostage to the general fund deficit problem will simply exacerbate an already unconscionable situation.

Our Members strongly believe that aviation safety is everyone's highest priority. Neither the FAA nor individual airlines will operate in an unsafe system. Insuring aviation safety in the face of damaging across-the-board cuts mandated in Gramm-Rudman-Hollings will compel several results:

-- The FAA would be forced to shrink system capacity to ensure aviation safety, resulting in intolerable inconvenience, delays and related travel disruptions to more than 400 million air travelers;
-- Implementation of mandatory Gramm-Rudman-Hollings cuts would compromise air traffic control system modernization and airport capacity improvements;
-- The shipping of cargo, small packages and mail by air would be seriously impeded; and
-- The future vitality and growth of air transportation would be impaired.

The overwhelming deficit pressures have driven and created FAA budget targets which bear no relationship to Aviation Trust Fund resources. The guiding principle should be: what is required for a safe and efficient aviation system for the present and the future? Self-sustaining programs assuring

aviation safety and growth are simply not appropriate for automatic sequestrations.

Long before Gramm-Rudman-Hollings, we had an enormous Trust Fund surplus, substantial system development and operating needs, deficiencies in FAA appropriations compared to authorized levels, and aviation user fee revenues held hostage to general fund deficit problems. The uncommitted Trust Fund surplus, now estimated at over $3.3 billion, is growing faster than ever before in its history, and is expected to reach $4.3 billion by this October. Important aviation safety and capacity improvements have already been unacceptably delayed.

The prospect of damaging cuts on top of the FAA's 1987 budget request, which is already too low because it is predicated on total budget targets established in Gramm-Rudman-Hollings, is truly alarming. The Gramm-Rudman-Hollings cuts made in the FAA's 1986 budget eliminated $211 million, over half of which came out of already underfunded Trust Fund programs.

The FAA and DOT have promised that air traffic controllers as well as other essential safety-related personnel would be protected from furloughs which would otherwise result from Gramm-Rudman-Hollings cuts. But consider the cost. On May 8, 1986, the Administrator of FAA testified before the Senate Appropriations Subcommittee on Transportation on the FAA's Fiscal Year 1987 Budget Estimates. The FAA anticipated an over $80 million deficiency in its FY 1986 operations budget, overwhelmingly in the area of personnel expenditures. To achieve the

necessary reduction in operations without additional funding, which it would not request, the FAA indicated that a 40 day furlough of 13,000 people would be required and suggested reprogramming money from airport improvement, research and development, and other critical programs where an immediate impact on aviation safety would not result. Congress, finding this scenario as unacceptable as the industry, instead passed a supplemental appropriation of $85 million for FAA's Fiscal Year 1986 budget. However, we understand that the FAA's cross-option transfer program, wherein experienced controllers are reassigned to ATC facilities where they are most needed, as well as necessary travel and analytical work on system capacity enhancements cannot continue under the Fiscal Year 1986 budget constraints.

The impact of Fiscal Year 1987 budget cuts under either the Administration's budget request or Gramm-Rudman-Hollings would, of course, be far more serious.

Since 1982, Facilities and Equipment, the Airport Improvement Program, and Research, Engineering and Development programs have been underfunded by about $1.5 billion from approved authorizations. The Administration's budget request would result in program cuts of another $700 million, bringing the total shortfall to $2.2 billion over the 5-year legislation. While the future of Gramm-Rudman-Hollings is uncertain, if a 15% reduction were required under Gramm-Rudman-Hollings for Fiscal Year 1987, FAA would suffer budget cuts of over $700 million, over half of which would occur in Trust Fund programs. In the same fiscal year, user

taxes will generate more than $4 billion credited to the Trust Fund, more than enough to fund Trust Fund programs to full authorization levels.

Under either the Administration's budget request or Gramm-Rudman-Hollings, it is clear that the National Airspace System Plan for modernization of the air traffic system would be seriously degraded. Last year, FAA was able to protect major NAS Plan projects by delaying other supporting projects which have less impact on system safety and capacity. This short term expedient is no longer a viable option.

During the Fiscal Year 1986 appropriations hearings in the Congress, FAA indicated that although its F&E request for that year would permit the critical NAS Plan programs to be carried out on schedule, the cumulative shortfall from full authorization levels must be resolved soon, or slippages in major program schedules were bound to occur. The deferral into the future of major NAS Plan components is inevitable if we continue this way of doing business.

The airlines clearly recognize that the national airspace system must be modernized for it to meet the operational and capacity challenges of the future. We supported the NAS Plan when it was announced by FAA, and we supported the establishment of tax and spending levels adequate to implement it on a timely basis. We continue to support NAS modernization. However, we grow increasingly concerned about potential slippages in the implementation of major components such as the advanced automation system, without which safety and

productivity gains will be delayed. The financial and technical viability of the NAS Plan, under the present method of funding and management, is in serious jeopardy.

Aviation Research, Engineering and Development is also critical to the future success of airspace modernization. Shortfalls in R,E&D funding will detrimentally affect NAS Plan implementation schedules and other FAA programs for increasing airspace and airport capacity. Like F&E funds, R,E,&D funds have fallen considerably below authorization levels in recent years, despite the significant needs and Trust Fund resources.

When the aviation user taxes were renewed in 1982, the enormous development requirements of the airport system were also universally recognized. The need for airport capacity enhancement and expansion continues to be indispensable to the future of the aviation system. The FAA's National Plan of Integrated Airport Systems (NPIAS) forecasts airport development needs of $12 billion through the year 1993, over $6 billion of which will be needed to enhance the capacity of the system. All segments of the aviation industry have joined with FAA, state governments and airport operators in coordinated efforts to enhance and expand airport capacity, and create new facilities where needed. The Airport Improvement Program is an integral part of those efforts, currently providing one out of every three dollars of airport capital financing. Any funding deficiency would virtually destroy FAA's ability to make meaningful discretionary grants to airports where safety and capacity projects require more than can be funded solely by

entitlement allocations.

ATA and its Members have asked themselves how an intolerable cycle of decline in funding the system's infrastructure can be stopped. Budget crises requiring immediate attention for day-to-day operations as well as for year-to-year future development must be resolved. The money exists to do so and has been collected solely to do so.

The authorizing legislation for the Trust Fund and its user-funded programs expires at the end of Fiscal Year 1987. The reauthorization process will provide an opportunity to explore new ways of funding and operating the national airspace system, and to ensure that aviation programs in the future are freed from the inequities that have existed during the past 15 years and which threaten to devastate the future. ATA is proposing establishment of a federal corporation, financially reliant solely on user charges, as a more efficient and financially sound way to operate, maintain and develop the air traffic control system and the airport improvement program. By removing the airport and airway programs from the annual federal budget battles and the contraints of certain personnel, procurement and financial policies under which the FAA must currently operate, the NAS plan, airport improvements and the growth of the air traffic control system can finally be assured.

We must remove the Trust Fund and these self-sustaining aviation programs from ongoing budget constraints and the adverse effects of Gramm-Rudman-Hollings. Such action is well founded in terms of both the equity of the user-fee based Trust

Fund concept and the major financial commitments needed to fund the NAS Plan and other airport and airway safety and capacity improvements. By retaining the federal presence, yet removing traditional government restrictions which are inappropriate for this kind of business-like operation, a federal corporation or authority could achieve what the FAA/DOT will never be able to achieve under the specter of general fund deficits--the management and operation of an airport and airway system based on system, rather than deficit, needs.

We urge the Joint Economic Committee to recommend in its next Report to Congress that FAA's air traffic control and airport activities be transferred to a new federal authority, designed to be self-sustaining and removed from the budgetary, personnel, and procurement restraints that hinder air transportation safety and capacity enhancement. Gramm-Rudman-Hollings and other laws designed essentially to balance the Government's overall budget should not apply to activities such as these, which so vitally affect aviation safety and which have--for years--had ample resources to operate in the black because of the contributions of users dedicated solely to enhancing the safety and capacity of our nation's airport and airway system.

The nation's airlines deeply appreciate this opportunity to present views on vital questions which will confront the Congress as it considers the future application of Gramm-Rudman-Hollings to those government programs which ensure a safe and efficient national air transportation system for the future.

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FOR RELEASE ON DELIVERY
EXPECTED AT 11:00 A.M.
MONDAY JULY 21, 1986

STATEMENT OF
JOHN B. GALIPAULT, PRESIDENT
AVIATION SAFETY INSTITUTE

BEFORE THE JOINT ECONOMIC COMMITTEE

Thank you, Mr. Chairman, for allowing me this opportunity to offer the views of the Aviation Safety Institute (ASI) on these national air safety issues.

I am going to focus my statements on the effects of deregulation. General aviation is currently depressed and commercial aviation has expanded beyond anyone's expectations. More people are flying to more destinations at less expense than ever before in the history of United States aviation. I doubt that our aviation pioneers would ever have dreamt that our skies could be so crowded.

In 1927, the visionary Charles A. Lindbergh wrote about his early adventures in aviation in a book entitled "WE". In it he discussed the prospects of a viable future for commercial aviation. I wish to quote two paragraphs from that section of the book:

> "Commercial aviation, in the United States, has been retarded in the past by lack of government subsidy, but the very lack of

> that subsidy will be one of its greatest assets in the future. A subsidized airline is organized with the subsidy as a very large consideration. The organization exists on the subsidy and its growth is regulated by the subsidy. Years will be required before the point of independence is reached and the receipts become larger than the expenditures.
>
> "On the other hand, an airline organized without regard to an external income is in a position to expand along with the demands for service. If the traffic becomes great enough to require more or bigger planes, a larger profit ensues, instead of an increased subsidy being required or the fare being raised to hold down the demand..."

It required a bold and uncertain step by Congress to test the foresight of Mr. Lindbergh and authorize the Deregulation Act of 1978. The burning question now seems to be: "Was deregulation a mistake? Is it a socio/economic experiment that could burn down the laboratory?" One side argues that there are distinct correlations between airline deregulation and increased hazardous incidents and accidents. Others contend that there is no valid evidence of such relationships.

Regardless of who would win the deregulation argument, deregulation remains a fact of life. Interesting vistas have been seen by hundreds of thousands of new passengers, more airlines have emerged, and new city pair routes at low cost have resulted. On the other hand, old routes were dropped and virtual elimination of major air carrier service has plauged some population areas. More airlines, more jobs, more people traveling by air, and more utilization of our expensive National Airspace System (NAS) are compelling arguments in favor of deregulation. While there are pro and con economic arguments about deregulation, there are equally interesting polarizations of opinion with respect to safety and deregulation.

After nearly two decades of working in the aviation safety arena, I must conclude that there can be a generalization as to the factors that influence safety - in either positive or negative ways. These are groupings of factors that can and have prevented or contributed to accidents and near-accidents.

- The PEOPLE who are directly involved in flight operations: pilots, mechanics, air traffic controllers, flight attendants, ramp/service personnel, meteorologists and others.
- The POLITICS which influence the regulations, rules and policies that guide aviation.
- The ENVIRNOMENT which includes weather, air traffic control, airport configurations, and similar features in our "outside" world.
- The MONEY that any fleet operator has available which permits him to operate within the law, and a fifth factor I prefer to call

- o The ATTITUDE of MANAGEMENT with respect to its legal and moral responsibility for the safety of flight.

It should be apparent that one or more of these factors may interact to either compound or confound safety. All of them come into play at some point during any serious discussion of safety. Deregulation has impacted on all of these factors and there are methods of evaluating the corresponding effects on safety.

For instance, suppose you and I were locked in a time capsule 11 years ago without knowledge of aviation events and suddenly released and given the 1975-1985 accident statistics. We had no knowledge of deregulation, the early 1988's recession and other economic and political factors. We are now asked to draw conclusions about the root causes of the changes in the statistics. So, I suppose we would seek a sufficient variety of statistics in order to understand the events and trends.

Let me now provide you with a meager set of data with respect to airline operations from 1975 to 1985, as shown in Table I.

Year	Depart-ures	RPM (x1000)	Flight Hours	Inc.	R1	R2
1975	4456146	1947660	4826355	348	.0023	.9233
1976	4598152	2051614	5047504	438	.0022	.9110
1977	4798591	2161952	5296101	449	.0022	.9061
1978	4874565	2249102	5449292	586	.0022	.8945
1979	5232381	2471401	6090313	616	.0021	.8591
1980	5222879	2523375	6247795	708	.0021	.8360
1981	5099380	2442294	6080401	517	.0021	.8387
1983	4920125	2552942	6174957	601	.0019	.7968
1984	5304710	2854299	6897513	699	.0019	.7691
1985	5610552	3023605	7364493	1054	.0019	.7618

RPM = Revenue Passenger Miles (in billions)
Inc. = Number of incidents (near misses,etc)
R1 = Ratio of departures to RPM
R2 = Ratio of departures to flight hours

Table I
Listing of Annual Airline Departures, Revenue Passenger Miles (RPM)
Flight Hours, Number of Incidents, Ratio of Departures RPM,
Ratio of Departures to Flight Hours
(Source: FAA)

A correlation statistical analysis shows that there is a strong positive relationship between the number of aircraft departures and incidents. There is a strong negative correlation between the number of incidents and the ratio of departures to flight hours.

This says that the increase in air traffic corresponds to a proportional increase in incidents. At the same time, as the number of flight hours per annual departures decreased, the number of incidents also proportionately

increased. The inference is that more short flights were made and that the chance for near misses and runway incursions increased. Does this mean that deregulation is the culprit? I do not feel that any conclusion can be made that ties deregulation directly to the incidents, unless one recognize that deregulation has permitted dramatic increases in air traffic nationwide. The significant increase in departures over the eleven years of data would not likely have occurred with regulation of routes and carriers.

Suppose after the eleven year hibernation we were to read the DALLAS TIMES HERALD series on aviation safety or the plethora of reasonably accurate investigative articles coming from the media in the past twelve months. We would speculate that deregulation has caused several critical things to happen. First, fierce cut-throat competition between the old-line carriers and the revolutionary low-cost airlines required deep cost-cuttings. Aircraft weight reduction programs (including the removal of life rafts and greatly reduced fuel loads), dramatic wage concessions, union busting, hub and spoke route structures, increased open maintenance items on aircraft, reduced training and qualification standards for crews, and other conditions have cut deeply into the margins of safety established during regulation.

One more thing, as you and I examine the statistics, we see a general trend of decreasing numbers of accidents during the eleven years. The exception was 1985, but we could easily argue that the increase in accidents was not really significant although the number of fatalities was, and that can be explained away by other rationale. The point is that the number of incidents has increased - the things that happen but do not quite produce major damage or injury and/or death. The rise in incidents has been notable and a warning for us to heed. So, if we agree that our eleven year absence was, in part, caused by deregulation, how is the FAA let this happen? How could the great deregulation experiment flawed?

I contend that it is a lack of "control". Congress expected the Federal Aviation Administration (FAA) to assume a tough posture with respect to the introduction of new airlines, surveillance of the old carriers and all of the attendant operational performance standards that must be followed in order to assure the highest levels of safety. By its own admission, the FAA Office of Flight Standards in August 1977, gave warning to Administrator Langhorne Bond that there would be significant impediments or barriers to achieving even a semblance of control over the quality of service and safety that airlines would produce for years to come. I have attached a copy of an FAA memorandum and the intra-subcommittee correspondence authored by former Congressman John L. Burton. He expressed concern about the content of the 1977 memorandum and the contradicting testimony of Administrator Bond and Associate Administrator Skully.

I had submitted testimony for the record at those 1977 hearings on deregulation and warned that deregulation would incur considerable confusion and dangers for the traveling public. The process of deregulation demanded a strong and forceful FAA, a leadership that would produce regulatory guidance and strong remedies for lax performance. However, it is our view and the opinions of others in the safety business that rather than providing effective leadership, the FAA permitted a laissez-faire attitude and a free-wheeling "damn the torpedoes" performance by the air carriers. The FAA is not totally at fault: who would know that near rapid growth in airline startups would be matched by an almost precipitous downturn in the number and quality of flight standards

inspectors, incredible workloads on field personnel and a sanctions logjam that signalled to some airline operators that one is innocent if one can hide the illegal corporate economic manipulations.

The truth is that the FAA has failed to meet its responsibilities in the civil aviation community. It has even been sterile in its promises to the Department of Defense as evidenced by the tragic Arrow Air crash last December at Gander, Newfoundland. Granted, the FAA has once again reacted to the pressure and demands by Congress and the American Public and now appears to be headed back on course to toughness and strength. We must keep it on course.

I am not certain that the FAA can do any better under its present Department of Transportation blanket. I am dubious of its ability to guide its own destiny under the political pressures that assail it from every direction. It has no evasive action left to avoid excessive compromises that individually may win certain benefits for a few but weaken U.S. aviation overall. Our National Airspace System and our aviation industry are vital national assets we must protect like our wetlands, shorelines, natural resources and our people. We cannot willy-nilly sell off our assets for short-term or temporary benefits. We must look forward and thoughtfully invest time and effort to devise the most effective mechanism for oversight and control of our aviation assets.

If the lack of FAA regulatory control has been one shortcoming, then the lack of economic control has been the other serious flaw of deregulation. I've consulted some of the brightest and most knowledgable minds available in Washington and not one person has been able to describe an incentive for aircraft fleet operators to install in their aircraft proven safety devices not required by law. Windshear detection and avoidance devices, improved engine fire detection and suppression equipment, advanced navigation black boxes, and cockpit head-up displays (HUDs) are all valuable safety tools, but with significant price tags.

In a deregulated economy weakened by fare wars there are no economic incentives to purchase accident preventive technology. An HUD can prevent landings short of runways and assist in flying up and out of a microburst or other windshear. We are not convinced that HUDs should be required by Federal Aviation Regulations. We are confident that HUDs can prevent some accidents and that more airlines would install them if there were an attractive economic gain. That economic incentive can only come from Congress. I hope you will consider this as the Joint Economic Committee faces these difficult aviation issues.

We should also take a careful look at the air traffic control (ATC) system. It is overburdened and understaffed. There are too many airplanes flying for the ATC system to safely handle. Mr. Lyle K. Streeter, a control supervisor at Los Angeles En Route Center, recently sent a letter to the Editor of AVIATION WEEK AND SPACE TECHNOLOGY. Let me quote a small part of that letter because he succinctly and eloquently says it all:

> "...(Captain Dick) Siano's solution of rehiring 5,000 controllers will be of some help. It will help me get an occasional extra day off, it will make it easier for me to get my vacation when I want it and it will ease my load on days when controllers are sick. It will not create more runways, it will not create more sky, it will

not reduce the separation standards for aircraft and it will not reduce the tremendous and growing demand for ATC services. The solution lies in the creation of an ATC system that has the flexibility to meet user demand, and if you are willing to bear the tax burden of such a system your legislator is the one you should be writing."

(AWST, June 23, 1986, Page 188)

The safety issues in ATC are too extensive to even touch on in this short hearing. There is sufficient good evidence furnished by GAO and others to warrant a more comprehensive examination of ATC safety. Similarly, deficiencies in the FAA inspection programs, a critical shortage of aviation eletctronics technicians, and the questionable policy of contracting out for computer programmers and controller training are all serious matters deserving attention.

Let me be very specific about the FAA's current policies for awarding million dollar contracts. FAA contracts for Air Traffic Training personnel and Data Systems Specialists were awarded without competitive bidding to companies owned or represented by former FAA associate administrator for air traffic Raymond Van Vuren and former deputy director Raymon Alvarez.

In a time when Government officials should be concerned about spending, the FAA is offering early retirement to its Data Systems Specialists. The FAA is paying $25,000-$35,000 retirement benefits plus $55,000-$75,000 salary per person per year as these same people are immediately rehired by the contractors to perform the very same job. This abuse is widespread. On June 2, 1986, Tom Protiva retired as FAA air traffic division manager. On June 3, 1986, Tom Protiva was hired by a Washington-based firm, NYMA, as program manager for an FAA contract.

These FAA policies are locking us into a future of escalating costs. Within only a few years there will be no one other than the contractors able to provide these essential services. We have seen this same situation before in military contract abuse. Letting this practice go unaddressed, and it is obvious why current FAA officials decline to comment on the issue, will only serve to deteriorate the FAA's reputation for safety and make the rest of us look bad for not using the necessary legal recourse to prevent it.

One final note. I am deeply concerned about the proposed use of Aviation Trust Funds for FAA operation budgets. If the OMB insists on utilizing these funds that are designated for safety enhancements, then the people and organizations providing these tax dollars should see the benefits. In other words, any funds taken from the Trust should reflect a reduction in ticket, fuel and other assessments on aviation and aviation passengers. We have so many serious and potentially rewarding projects that could enhance safety that to misuse these billions of vital dollars is unacceptable.

Our country just went through a serious soul-searching, embarrassing expose by the President's Commission on the CHALLENGER shuttle accident. From that experience we should learn that the FAA is no more sacrosanct than NASA. The

Federal Aviation Act of 1958 was a vital savior step for aviation. The Act is sound, even if deregulation has stretched the limits of its capabilities. It is time for an incisive examination of the FAA.

Your colleagues in both the Senate and the House are taking important steps to preserve the integrity of the FAA and to protect the safety of the millions of Americans who travel by air. Senate Bill S. 2417 now being considered by the Senate Subcommittee on Aviation will help us find the proper measure of wisdom and proportion to guide the aviation industry into a safer and healthy future. House Bill H. R. 4483 will put sharp teeth into the barrier against fleet operators who would dare to deliberately withhold or falsify information requested by the FAA. I hope that you will support these initiatives. Thank you.

—ATTACHMENT—

NINETY-FIFTH CONGRESS

Congress of the United States

House of Representatives

GOVERNMENT ACTIVITIES AND TRANSPORTATION SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS

RAYBURN HOUSE OFFICE BUILDING, ROOM B-350-A-B

WASHINGTON, D.C. 20515

MEMORANDUM

November 18, 1977

FROM: John L. Burton, Chairman

TO: All Subcommittee Members

SUBJECT: UPCOMING FAA HEARINGS - CONFLICT FROM PREVIOUS DEREGULATION HEARING

In my November 17 memorandum, I mentioned a conflict between testimony received during the September airline deregulation hearing from the FAA Administrator and the Director of FAA's Flight Standards Service (FSS), and certain internal FSS memorandum which were supplied, upon request, for our record.

Those of you who attended those hearings will remember the assurances we received from Mr. Bond and Mr. Skully concerning the impact of airline deregulation on aviation safety and FAA manpower requirements. Their argument was that there would be no adverse impact on aviation safety, and there would be no need for additional Flight Standards Service inspector manpower.

Yet the memoranda of various FSS divisions paint, as you will observe, a very different picture of the effects of airline deregulation. In particular, I draw your attention to the memorandum of Mr. Paul Clark, Chief of the Evaluations Staff.

I am enclosing a copy of the hearing transcript containing the testimony (particularly pages 20 to 22), and a copy of the internal memoranda.

As you are aware, this conflict was the subject of a Committee news release, and we have officially notified the FAA that we want to try to resolve this conflict on November 29.

Once again, I stress the importance of your attendance at the upcoming FAA hearings.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ROUTE SLIP

DATE: 8/2/77

TO: (NAME) — (ROUTING SYMBOL)

All AFS Division/Staff Chiefs

SUBJECT: Regulatory Reform

- ☐ PER YOUR REQUEST
- ☐ FOR YOUR INFORMATION
- ☐ PER OUR CONVERSATION
- ☐ NOTE AND RETURN
- ☐ DISCUSS WITH ME
- ☐ FOR YOUR APPROVAL
- ☐ FOR YOUR SIGNATURE
- ☐ COMMENT
- ☐ TAKE APPROPRIATE ACTION
- ☐ PLEASE ANSWER
- ☐ PREPARE REPLY FOR SIGNATURE
- ☐ OF _____

REMARKS:

The Director has requested that you provide input on the subject of "Regulatory Reform-Potential Issues" as they relate to Flight Standards. Please submit your comments to AFS-4 by COB, Monday, August 8.

Arthur Varnado

ARTHUR VARNADO

FROM:	TELEPHONE NO	ROUTING SYMBOL
Special Assistant to the Director, Flt. Stds. Service	x68187	AFS-4

FAA Form 1320-19 (4-67) FORMERLY FAA FORM 3641 ☆1978-O-P.O.-1783-M/675-766 68

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591

DATE: AUG 9 5 1977

REPLY TO: AFS-60

SUBJECT: Regulatory Reform - Potential Issues; your route slip dtd 8/2/77

FROM: Chief, Evaluation Staff, AFS-60

TO: AFS-4

Regulatory reform or deregulation of aviation industry could cause an increase of Flight Standards safety workload efforts under the present FS policy of delegation and the continued decline of FS inspector manpower. Any increase in accidents/incidents and violation of FAR's would require an increase in FAA surveillance, and inspection thereby necessitating an increase in Flight Standards inspectors.

The following areas could become potential issues of concern:

1. Maintenance Training

In order to be competitive with other carriers in ticket prices, the carriers could be expected to cut economic costs wherever possible and through past experience, the first corner to be cut is maintenance training.

2. Maintenance and Maintenance Personnel

Maintenance personnel could be the next area to be cut to remain competitive in the air transportation market. Maintenance of the aircraft and maintenance personnel are usually a large outlay of monies for any carrier and effected early in any economic pinch.

3. Minimum Equipment List

Maintenance discrepancies carried-over for correction, although authorized by the Minimum Equipment List, could be abused. Logbook carry-over or deferred list would have discrepancies noted and corrective action taken only, after the aircraft was no longer legal to fly, flight crews refused to fly the aircraft, or items corrected at the next major inspection, time permitting.

4. Delegation

Over the years, Flight Standards found it necessary to delegate more functions to industry because of the steady decline of FS inspectors. This has worked very well because the carriers were prosperous and the individual wearing two hats, employee and a representative of the Administrator, had a certain degree of security; but, with this security being threatened, the individual may revert to self-survival and side with the carrier on crucial decisions.

2

5. Operator Certification

An increase in certification of operators could be expected with new operators trying to get into the transportation market. The increase of competition would have a direct bearing on the economics in maintaining safe air transportation.

PAUL L. CLARK

NINETY-FIFTH CONGRESS

NOV 1 [illegible] Congress of the United States

House of Representatives

GOVERNMENT ACTIVITIES AND TRANSPORTATION SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENT OPERATIONS

RAYBURN HOUSE OFFICE BUILDING, ROOM B-316-A-B

WASHINGTON, D.C. 20515

Wes

MEMORANDUM

FROM: John L. Burton, Chairman JB - Please Try To be here

TO: All Subcommittee Members

SUBJECT: Upcoming FAA Hearings

DATE: November 17, 1977

You have all recently been notified of hearings scheduled for November 28 and 29 in Room 2247, RHOB; the hearings will begin both days at 10:00a.m. They will involve aviation safety - the midair collision potential caused by FAA's use of the "see and avoid" concept to separate large commercial airliners and small general aviation aircraft in airport areas - and FAA procurement management.

I just want to reemphasize the importance of these hearings. The FAA spent $13.8 million for ASR-8 radar systems in a contract with General Dynamics and eventually received only a few antenna pieces. Decisions in this procurement are strange and even suspicious. GAO will also summarize another procurement where FAA spent over $4 million for a radar system prototype which it never received. Of course, we will also want to ask some questions about the air traffic controller radar simulator procurement.

FAA procurement management was described as recently as August 1976 - in an FAA-commissioned Air Force study - as having major systemic faults. The taxpayer's money has been wasted, and we want to begin a major review to insure that this type of waste will not be continued.

As far as safety is concerned, there are a lot of problems, but we will concentrate on the "see and avoid" problem. Dr. Charles Billings, who heads NASA's Aviation Safety Reporting System (ASRS), will testify about his group's latest findings, which includes many reported near midair collisions between commercial airliners and

(more)

smaller general aviation aircraft. We want to determine whether FAA has done all it can to eliminate this problem.

Finally, during our September 8 and 9 hearings on the safety implications of regulatory reform, we received testimony from the Administrator and the Flight Standards Service Director that there would be no safety problems caused by regulatory reform, and that there would be no additional need for manpower. Yet, FAA staff documents which we requested for the record contradict that in dramatic terms. (The testimony and documents are contained in the hearing record which is being sent to you separately). We want to resolve this conflict.

A recent NBC news special highlighted problems in the FAA, and I think the public is concerned that Congress explore the agency in greater depth. We have chosen a couple of good, solid issues, and we want to go into them in considerable detail.

Bruce Butterworth in the subcommittee staff office (X53252) will be holding a briefing for your staff members on Tuesday at 2:00 p.m. in the subcommittee office, B350-A RHOB.

If you have any questions, please call me.

JLB:BB:cm

JOHN B. GALIPAULT

Mr. Galipault is president of the Aviation Safety Institute (ASI). He founded the non-profit foundation in 1973 to conduct aggressive accident prevention work.

Galipault is a graduate of the College of Education, Cortland, New York. He did graduate work at Cornell University and Ohio State University. He was on the faculty of the Ohio State University from 1960 to 1966 in the Department of Aviation of the College of Engineering.

In 1966, Galipault formed a consulting firm and did work for Cornell Aeronautical Laboratory, the military and several aviation and industrial corporations. He has more than 8,300 flight hours and was a rated jet navigator. He has extensive flight test experience, particularly in the very low altitude flight regime.

Galipault holds memberships in the Aviation/Space Writers Association, Society of Experimental Test Pilots, Aircraft Owners and Pilots Association, and the International Society of Air Safety Investigators.

Galipault has written more than 100 technical papers, monographs, and articles on aviation. He is an occasional writer for PROFESSIONAL PILOT Magazine and a member of the Board of Trustees of the Lacrosse Foundation. He is editor of a biweekly newsletter called MONITOR published by ASI.

He is a resident of Worthington, Ohio and married to Pamela Hecker and has seven children.

XXXX

STATEMENT

OF

THE AIR LINE PILOTS ASSOCIATION

BEFORE THE

JOINT ECONOMIC COMMITTEE

OF THE

CONGRESS OF THE UNITED STATES

WASHINGTON, D. C.

JULY 21, 1986

Mr. Chairman and members of the Committee, the Air Line Pilots Association, on behalf of more than 39,000 ALPA members who fly for 46 airlines, appreciates the opportunity to present the views of the Association on aviation safety. Our statement will include comments on the special legislation introduced by Senator Byrd to establish an Aviation Safety Commission, the status of the air traffic control system, the FAA's aircraft inspection program, and crew member training and qualification.

Aviation Safety Commission

The Air Line Pilots Association strongly supports S. 2417, introduced by Senator Byrd, which proposes the establishment of an Aviation Safety Commission. We believe the establishment of such a commission to study the

organisation and functions of the FAA would be most appropriate, considering the dramatic changes that have occurred in the U.S. aviation and air transportation industry during the past decade. I refer to things such as the Deregulation Act of 1978, the rebuilding and restructuring of the air traffic control system necessitated by the controllers strike of 1981, the development of a national airspace system plan, the ongoing efforts to further automate the ATC system, the unprecedented growth in the number of air carriers, the hub-and-spoke system of airline operations, and improved aircraft avionics and performance.

It is the opinion of the Air Line Pilots Association that for a number of reasons the FAA has not been provided with the resources necessary to carry out its basic safety mandate. This has led to the establishment of priorities, based on inadequate funding levels, which have not in all cases been in the best public interest from a safety perspective.

There is a growing frustration in the industry over a perceived inability of the FAA to respond to user requirements in a deregulated environment in a timely and responsive manner. Much controversy is evident over the Aviation Trust Fund, the dual responsibility of the FAA to "promote" and "regulate" aviation, etc. This has prompted industry proposals for dramatic changes, such as the formulation of a federal corporation to assume the responsibilities and functions of the FAA.

With reference to S. 2417, we would like to suggest an addition to the composition of the commission. As stated under Section 2(b)(1), the bill would require that the commission be composed of presidential appointees who "possess extensive experience and expertise at the highest executive levels of corporate

management." We believe that if such a commission is to perform the functions outlined in the bill, then the commission staff personnel should possess extensive expertise in aviation matters, including aviation safety with pilotage experience. This can be accomplished under Section 4(b)(1)(A) and (B) of the proposed legislation.

The Air Traffic Control System

During the past three years, ALPA has testified on several occasions before various congressional committees on the adequacy and safety of the air traffic control system during the rebuilding process since the PATCO strike of 1981. Our message has been consistent. The air traffic control system is safe, but we are concerned over what appears to be a general reduction in the inherent margin of safety of the National Airspace System. This concern has been developed as the result of reports received from our members who operate daily in this system. In effect, we continuously monitor the ATC system.

In addition to the special monitoring that we conducted during the PATCO strike, we have also reviewed the professional studies on the air traffic control system conducted by the Government Accounting Office, the National Transportation Safety Board, the Jones Committee, and the Flight Safety Foundation during the past few years. All data collected and reports reviewed clearly indicate and conclude that there are significant problems within the system, that the margin of safety has diminished, and that there is an extraordinary shortage of experienced controllers today, almost five years after the PATCO strike.

We agree with these conclusions. Based on the observations and experiences of

our members, we have been convinced for some time that the system is not as "healthy" as the FAA would like us to believe. Many ATC facilities, particularly the ARTC centers, have not recovered from the effects of the strike in terms of controller staffing requirements. And all ATC facilities are coping with an enormous growth of traffic with a controller work force that has an overall lower experience level.

For example, it is our understanding that the controller staffing level prior to the strike included over 13,000 full performance level (FPL) controllers. (A full performance level controller is one who is fully qualified to operate all positions in a defined area.) As of June 1986, the number of FPL controllers was only slightly over 9,000. While the FAA claims their hiring figures indicate the addition of a much greater number of controllers, the real indication of the success of the rebuilding process is the number of full performance level controllers. Furthermore, being classified as an FPL controller does not necessarily mean that the controller is experienced. It takes years of exposure to combinations of dense traffic conditions, bad weather, and the need to cope with equipment failures to provide an individual with the ability to make good decisions under very trying conditions. The point is that today we have fewer FPL controllers to handle more aircraft, and those FPL controllers on an average are less experienced than those we had prior to the PATCO strike.

It is obvious that the previous FAA management team miscalculated the time required to replace the fired controllers. Part of the rebuilding program was based on further automating the ATC system to reduce controller workload and consolidating some facilities with the premise that fewer controllers would then be needed. However, significant facility consolidation and

upgrading of automation will not occur for several more years, well into the 1990s. Further, we understand that it can take two to four years to train new recruits to the point where they can qualify to perform control duties without direct supervision. The training process to date has been a formidable task and will continue to be so for years to come, costing millions of dollars. We believe that the controller work force can be reinforced in a shorter period of time and at less cost by rehiring some of the fired controllers, particularly those who had already reached the full performance level before the strike. They would be able to requalify after only a short period of refresher training at the facility to which they would be assigned. The cost savings could be significant since there would be no need for them to attend the FAA Academy nor undergo extensive on-the-job training.

Recently another situation has come to our attention that may affect the rebuilding process. This is the FAA's decision to award contracts to the private sector to provide the training and automation programming functions at 22 air route traffic control centers. We are extremely concerned about the immediate and future impact this may have on the ATC system. Such training and programming is currently being done at the facilities by highly experienced FAA personnel intimately familiar with local requirements. It is this cadre of controllers and ex-controllers who have been meeting the unprecedented demand for the training of new employees hired since the PATCO strike. Now their experience and knowledge may be lost as a result of the contracting out of these functions. We have had several indications that this has already caused a morale problem at some facilities. It was apparently a spontaneous decision on the part of the FAA, with little or no prior consultation with the employees involved. This is typical of the FAA's approach to management-labor relations, for which they have been so vehemently criticized in the past.

Our concerns go beyond the immediate impact on the 500 or so employees involved. On-site training of developmental controllers is a very specialized endeavor. The instructors must be thoroughly knowledgeable in procedures and practices unique to the local area. The adaptation of computer programs at the individual facility places similar requirements on the data systems staff. You cannot take a controller from the New York center, for example, and send him or her to some other center to instruct or reprogram the facility's computer, without first providing some training in local procedures unique to the area.

The training of center controllers has lagged in the system rebuilding process, not because of the efforts of current instructors, but because of the large number of personnel to be trained. We fear that the contracting out of the center training and automation functions may cause further delay in the rebuilding process. All in all, we feel this was an ill-conceived decision which probably could not pass the test of any cost-saving study.

Deregulation has fostered an unprecedented demand for air traffic services. The increasing pressure on both pilots and controllers to expedite traffic movement causes us to believe that the ATC system is being stretched beyond its limit, resulting in the creation of very marginal situations. We are not saying that individual pilots or controllers are at fault. We are saying that increased pressures are caused by additional aircraft and by the scheduling problems brought about by the hub-and-spoke system.

We realize that the suggestion of rehiring some of the fired air traffic controllers raises a sensitive issue within the Administration. The FAA is particularly adamant about its decision not to rehire them, citing the view

that rehiring any of the "strikers" would be disruptive to the current work force. We do not agree with such a rationale. The FAA has, in fact, been compelled to reinstate many striking controllers and has rehired some 700 from that group. To our knowledge, this has not resulted in any obvious disruptions or serious morale problems.

In recent months there has been a growing sentiment for the selective rehiring of controllers or at least for affording them the opportunity to apply for vacant positions as a viable means to bolster the staffing level of qualified controllers in the shortest period of time. For example, Congressman Guy Molinari, in a letter to the President cosigned by 78 of his colleagues, urged a selective rehiring. More recently he has sponsored a bill, H.R. 4003, to legislate such action. The Air Line Pilots Association strongly supports approval of this legislation. Congressman Robert Michel, in a letter to the President, urged that the Secretary of Transportation be instructed "to look into the feasibility and desirability of rehiring on a very selective, case-by-case basis." In a letter to Administrator Engen, Congressman Oberstar, Chairman of the Subcommittee on Investigations and Oversight, requested the submission of legislation from the Administration to establish a "screening panel" as a means for accepting applications from former controllers.

FAA's Aircraft Inspection Program

The airline safety inspection program is not a new subject. In fact, we testified before the Senate Subcommittee on Aviation last fall on the same subject. Some of my comments will be the same, but they are germane to the issue and deserve repeating.

First of all, I want to clear up some confusion surrounding FAA inspectors and FAA inspections. Many people envision FAA inspectors wearing coveralls and climbing all over aircraft with flashlights and mirrors. Although that is done to some extent by the FAA, the majority of inspections are handled by inspecting the paperwork, files, training, maintenance procedures, etc., and this is the way it should be. It is much more efficient for a trained inspector to ensure that a whole fleet of aircraft is being properly maintained by checking the records on those aircraft than by spending his time climbing around one aircraft at a time. Experience has shown, except in a few cases where unscrupulous operators falsified their records, that an FAA inspector can more quickly locate a potential problem by checking the operator's records than by chancing upon a problem during a hands-on inspection.

The first and most important question is: Does the FAA have an adequate number of inspectors? Unfortunately, the answer, which will come as no surprise to anyone, is no. The FAA does not have an adequate number of inspectors to inspect and certify the air carrier and commuter airlines. As a result, the safety level of the industry is not as high as it could be.

When new carriers enter our national air transportation system, the FAA Inspection Division is called upon to certificate those new entrants while at the same time continuing to monitor and inspect those operators already assigned to inspectors. Compound this problem by the fact that the number of FAA inspectors between 1979 and 1985 has remained fairly constant while new airlines have proliferated, and you have all the necessary ingredients for a significant safety problem. Obviously, some areas must suffer.

To gain some perspective into the problem, please review the following figures

taken from FAA-supplied data or from conversations with FAA personnel:

In 1979, there were approximately 645 FAA inspectors assigned to 178 air carrier, commuter, and air taxi operators.

By the end of 1982, the number of inspectors had been reduced from 645 to 576, an 11% decrease, while the number of operators had increased from 178 to 381, a 114% increase.

By the end of 1985, the number of operators increased to 526, a 195% increase over 1979.

The inspection problem is more clearly delineated when you realize that in 1979 there were approximately 3.6 FAA inspectors for each operator; and as a result of the dramatic increase in the number of operators, this ratio has been reduced from 3.6 to 1.3 inspectors for each operator by 1985. See Charts 1 and 2.

In addition to the above, consider that for each new entrant, two FAA inspectors must devote their full time, for a period of approximately 45 days, to certifying the new entrant's maintenance, training, flight operations, manuals, etc. These are inspectors that are also assigned to inspect other air carrier or commuter operators on a routine basis. However, during the period when they must devote all their time to certifying the new entrant, they obviously cannot perform their normal duties. During the period 1980 to 1985,

CHART #1

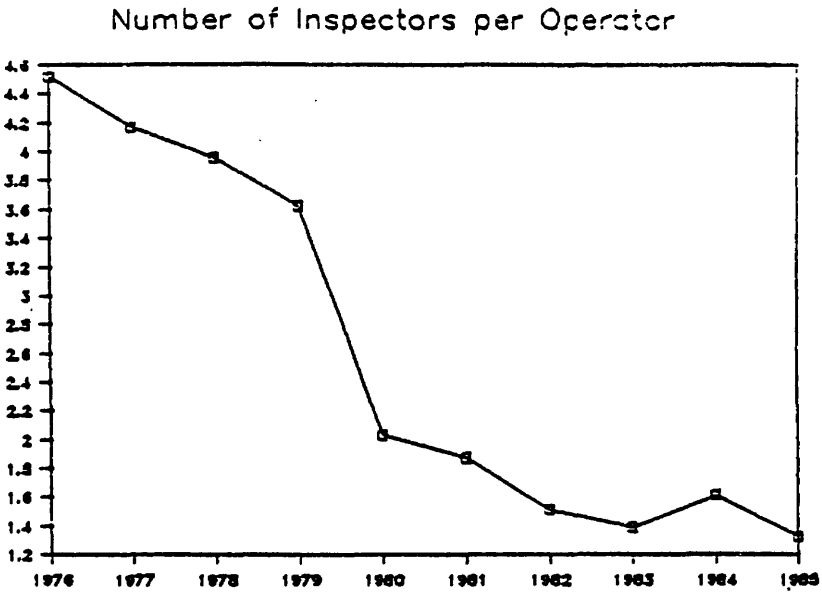

CHART #2

HISTORICAL
PERSPECTIVE
OF AIR CARRIERS OPERATING, HOURS PER YEAR AND NUMBER OF CARRIERS

Year	Air Carrier Number	Air Carrier Hours	Inspectors	Hours per Carrier	Inspectors per Carrier
1976	138	530947	624	3846.72	4.52
1977	145	552194	604	3808.23	4.17
1978	153	580958	605	3797.11	3.95
1979	178	615545	645	3458.12	3.62
1980	315	673019	640	2136.57	2.03
1981	360	648892	674	1802.48	1.87
1982	381	667606	576	1752.25	1.51
1983	409	688569	569	1683.54	1.39
1984	417	738137	674	1770.11	1.62
1985	526	901142	698	1523.08	1.33

the FAA had to certify 76 new air carriers and 233 new commuter airlines, so they spent approximately 27,000 man-days just certifying new entrants. It then becomes obvious why so many routine items are going unnoticed by the FAA inspectors: they are simply too busy certifying new entrants and then taking on additional workloads once the new entrants are certified and operating.

But sheer numbers and statistics do not tell the whole story. Just increasing the number of inspectors will not immediately solve the problem. An inspector can only be highly efficient if he/she has the needed expertise and experience, and it takes many years to train an inspector. So even if we could hire several hundred new inspectors, it would be a long time until they could relieve the workload of the present ones. In fact, a new hire often makes the "old timer's" job more difficult because he must train the new person as well as do his own job.

Another aspect to be considered in training is the background of the newly hired inspector. With the expansion of the airline industry, the government is competing against the industry for the most qualified people. The old law of supply and demand is making it difficult to hire even semi-qualified people.

In an attempt to improve the situation without increasing manpower, the FAA has shifted some general aviation inspectors back and forth between commuter operators and air carrier operators, far beyond their level of experience. This became necessary as more commuter operators expanded and began to use large aircraft. The significance of this problem first became apparent to us in early 1983 when our members reported that general aviation inspectors were performing the duties of air carrier inspectors. We brought this to the

attention of the FAA on several occasions, receiving the standard response, "We are trying to utilize our inspectors in the most efficient manner." Although we admire such a lofty aim, the means of achieving it are not very satisfactory from the viewpoint of safety.

In order to improve safety there is also a need to increase the number of FAA inspections. In general, we would say that more frequent inspections, and hence more total inspections, would improve safety. However, quality is just as important as quantity. Considering the previous discussion on manning levels, we may have to be satisfied with fewer than the optimal number of inspections. But in the future, when manning is higher, the frequency of inspections should be increased.

To its credit, the FAA is making an earnest effort to keep the system safe, but it can't do that with its current resources. The key to the program is an adequate number of well-trained inspectors following a well-organized plan using accepted safety standards. That is a big job and can't be done overnight. The first step, of course, is to start hiring people. In 1985, the FAA employed 698 inspectors. We recognize that Secretary Dole has approved the addition of 500 FAA inspectors, and we applaud this action. However, in order to provide the same capability that existed in 1979 (645 inspectors for 178 operators), it would seem that a total of 1906 inspectors is needed, which is an increase of approximately 1208 inspectors. Keep in mind that the number of operators has increased 195%.

We believe it is obvious from the evidence offered that a great many more qualified inspectors are necessary to ensure a safe air transportation system.

But just as important are the training they receive and the adherence to a plan.

Crew Member Training and Qualification

ALPA is deeply concerned about the quality of pilot training and the qualifications of newly hired pilots. We feel that pilot training should be more standardized and waivers fewer. We also would like to see pilot qualifications increased. The safety of the flying public requires this.

Pilot training techniques for major air carriers have generally changed from intensive classroom study and aircraft training and checking to the use of audiovisual training aids, training devices, and advanced simulators. By using an Advanced Simulation Training Program, it is possible for a pilot to receive all his training and checking in an advanced simulator.

For Federal Aviation Regulation (FAR) Part 121 air carriers, training programs are well defined as far as curriculum and programmed training time. However, the individual airline's principal operations inspector (POI) has a great deal of latitude in allowing changes to a training program. These changes are often requested by airlines to provide more efficient training techniques and more comprehensive training subjects. The POI's, who are not necessarily training experts, must make their decisions based on information developed and presented by an individual airline for its own benefit. An airline's basic training program does not have to be approved at a central FAA facility. Only changes to the basic training program that deviate from specific FAR requirements must receive a formal exemption approval from FAA headquarters. We believe a wiser course would be to have <u>all</u> changes to an approved training

program receive approval from a central FAA training facility for standardization purposes.

The training programs at Part 135 air taxi and commuter airlines are somewhat different. Part 135 regulations are not as specific in regard to training curriculum and hourly training requirements. The availability of training aids, training devices, and simulators is much more limited than for Part 121 airlines. More training is done in the airplane, which has the advantage of realism, but which can be dangerous when some maneuvers, such as simulated engine failures at critical times, are performed in the aircraft.

In regard to training programs overall, we have several major concerns. Are the programs themselves, as approved by the POI's and conducted by the airlines, providing adequate training to pilots? Is the FAA process of allowing POI's a high degree of autonomy the best way to approve training programs? The FAA uses a National Simulator Evaluation Team to evaluate and approve simulatorsused in an Advanced Simulation Training Program. Would it be possible to develop a similar centralized approval authority for approving and conducting training programs? We do not feel that all current training programs are entirely adequate to meet today's training needs. Training program approval appears to be somewhat arbitrary overall, with a great deal of authority delegated to POI's. Also, many training programs are being conducted under a myriad of exemptions that, in effect, allow wide variations in the training programs of both Part 121 and Part 135 air carriers. We believe that FAA headquarters should take a more active role in approving and monitoring airline training programs.

ALPA is also seriously concerned about basic crew member qualifications for

pilots being hired both at existing and new air carriers. The industry is going through an unprecedented period of growth and expansion with increasing employment opportunities for younger, minimally qualified pilots. We feel that the experience and qualifications requirements of new-hire pilots are declining. At the same time, the crowded operating environment is placing greater demands on pilots to operate safely and efficiently.

In 1981, the Presidential Task Force on Crew Complement recognized the requirement for increased crew member qualifications and recommended that all pilots flying as second in command be required to have air transport pilot (ATP) certificates and type ratings on the aircraft they fly. The FAA rejected this recommendation as an unnecessarily restrictive requirement. ALPA disagrees, and we are developing a petition asking the FAA to initiate rulemaking action to upgrade the minimum qualifications needed to pilot air carrier aircraft under Part 121.

We feel a pilot in command should have an ATP certificate and an aircraft type rating with 2500 hours minimum flying experience and 1000 hours experience on air transport aircraft. The second in command should have an ATP certificate and a type rating on the aircraft flown.

Conclusion

In summary, the Air Line Pilots Association supports Senator Byrd's proposal (S. 2417) to establish an Aviation Safety Commission. We are confident that the air traffic control system is safe, but express concern about the potential erosion of safety unless effective measures are taken immediately to provide a more experienced work force and to provide the FAA with the necessary resources

to carry out its inspection program responsibilities. We are also concerned that crew members must be appropriately and adequately trained and qualified to handle the increased operational demands being placed upon them in our rapidly expanding and growing aviation environment.

We have taken this opportunity to attach a list of additional programs, projects, and activities that we feel need funding, congressional direction, or legislation in order to maximize aviation safety for the traveling public.

Attachment

AVIATION SAFETY PROGRAMS REQUIRING CONGRESSIONAL SUPPORT

It is the opinion of the Air Line Pilots Association that for a number of reasons the FAA has not been provided with the resources necessary to carry out its basic safety mandate. This has led to the establishment of priorities, based on inadequate funding levels, which have not in all cases been in the best public interest from a safety perspective. To remedy this situation, Congress must: (1) appropriate funds in an amount which will provide necessary resources, (2) provide directives to the FAA where necessary so that proper priorities will be established in view of the difficult funding problems which exist today, and (3) create legislation where funds and directives are not sufficient.

The following is a list of programs, projects, or activities which need funding, direction, legislation, or some combination thereof in order to best represent the public interest.

PERSONNEL

1. Air Traffic Controller Staffing

There should be no reduction of current staffing and no deferment of hiring more controllers. Training activity must continue at present levels. The August 1985 report of the Subcommittee on Investigations and Oversight of the Committee on Public Works and Transportation indicated that "the number of controllers in 1984 was approximately 3000 short of the pre-strike level of 16,250." Systemwide, the committee found that "the number of experienced controllers had declined by about one-half." The excessive controller workload, which is a function of staffing, can be shown by near-midair collisions and runway incursions. In December 1985, the FAA reported a 65 percent increase in NMAC reports since 1983. The number of runway incursions also continued to increase during this period. It should be obvious that any reductions in controller staffing would have an adverse effect on safety, especially as the FAA is far from completing a "rebuilding of the system" since the controller strike of 1981.

Congress should direct the FAA to rehire as many of the fired controllers as possible to expedite the rebuilding process by reducing the training time and raising the experience level as quickly as possible. At the same time, Congress must ensure that adequate funding be provided for the training of these new controllers and for the continued training of the existing controllers.

2. Safety Inspectors

Safety inspectors, which include flight, maintenance, security, airport, and airway personnel, ensure compliance with the minimum safety standards developed by the FAA. Although there has been a slight increase in the number of FAA inspectors in the past year, the present number of inspectors continues to lag 30 percent behind that of 1979, while the number of carriers operating today is 122 percent over the 1979 numbers. The total

number of inspection requirements has tripled during this same time period. The shortage of FAA inspectors has resulted in a degradation of safety on the airlines as evidenced by more and more maintenance discrepancies that are being deferred for increasingly longer periods of time. In other words, passenger-carrying aircraft are flying longer periods of time with more inoperative equipment than in the past. Safety questions concerning the air traffic control system become academic if the aircraft operating in the system are not maintained to the high safety standards which provided the enviable safety record our industry has enjoyed in past years. We certainly cannot afford a cut in an area where it has been demonstrated that a decrease in the inspection force will result in a greater number of fatal accidents. We request congressional support and continued funding to allow the FAA to increase the general aviation and air carrier inspectors by 138, as outlined in the 1987 DOT budget.

RESEARCH AND DEVELOPMENT

1. National Airspace System Plan

This is an ongoing program, a key element of which is aimed at replacing existing ATC computer systems which are not adequate for handling the projected growth in aviation traffic beyond the late 1980's. The new computers are the bases for several safety improvements which cannot be accommodated by existing computers because of capacity limitations. For example, the new computer software will provide for a "conflict resolution" function. This will not only alert the controller to potential aircraft conflicts but will also suggest actions for effective resolutions of the situation. The new computers will also detect and track all aircraft equipped with an altitude reporting transponder and automatically alert the controller when such aircraft are in conflict with IFR aircraft. This feature will significantly reduce the potential for near-midair collisions. Existing air route traffic control centers are being expanded to accommodate the new equipment. Curtailment of this program as a result of budget cuts would extend the program over a longer period and result in cost overruns. To ensure that the future growth of aviation can be safely and efficiently accommodated in the National Airpsace System, congressional support for the current level of funding for the National Airspace System Plan is critical.

2. Traffic Alert and Collision Avoidance System (TCAS)

The development and implementation of an effective airborne collision avoidance system is long overdue and needed now more than ever. This system is not dependent upon the ground-based air traffic control system. The TCAS system currently under development is only marginally effective and will not provide the aviation public the degree of safety that today's technology permits. This system is known as TCAS II and provides only vertical escape maneuvers. Another system

under development is TCAS III, which offers more accurate information than TCAS II, provides both horizontal and vertical escape maneuvers, and reduces the number of unnecessary alarms. Clearly the improved TCAS III system is more appropriate for airline installation, primarily because of the increased accuracy and the addition of a horizontal escape maneuver, which would be more effective in preventing a collision at both high and low altitudes. We feel that Congress should direct the FAA to implement, as quickly as possible, a collision avoidance system with horizontal as well as vertical escape maneuvers.

3. Next Generation Radar (NEXRAD) and the Terminal Doppler Weather Radar System

The justification for these systems is well documented, needs little, if any, embellishment, and is certainly able to withstand any challenge. The current long-range weather detection system is archaic from both an operational and a maintenance standpoint, and for years the current equipment has not met the requirements of users for adequate weather information. The basic operational requirements for NEXRAD are still valid and, considering that the majority of fatal aviation accidents are related to severe weather, this program should receive priority over non-safety-related issues. Another critically needed program is the development of terminal area doppler radar. A critical need exists for a means of detecting microburst activity and other such phenomena that have a detrimental effect on aircraft during their most crucial phases of flight, takeoffs and landings, and have been directly responsible for major aviation disasters. Congress should ensure that funding is available for the development and procurement of a terminal doppler weather radar.

4. Human Performance Research

In order to help ensure safety in our nation's aviation system, it is important to understand areas where human shortcomings may lead to problems, incidents, or accidents. The FAA is attempting to address these issues through selection, hiring, and operational practices for its employees. Pilots are the other half of the important safety equation. The FAA published a Cockpit Human Factors Plan in January 1985 that is designed to investigate human interface with an automated air traffic control system and highly automated new aircraft. The FAA has begun to address several operational safety issues identified by this plan, and more will be studied at a later date. Rather than curtail these important human interaction safety studies, we feel the FAA should proceed with its plan with increased vigor and commitment. One of these issues being studied is an investigaiton of the operational implications of failures in automated aircraft systems and the impact of reversion to manual control. These safety studies will yield important immediate operational safety gains and continue to pay safety dividends in the future.

The funding level established by the FAA is $4.3 million for 1986 and $3.4 million for 1987. Congress should ensure that these levels of funding are maintained to adequately support research into these human factors issues.

5. Runway Friction Measurement

At the present time a pilot landing or taking off on a runway contaminated with snow, ice, or slush must rely primarily on other pilot reports as to the condition of that runway and the ability to stop on that runway. These pilot braking action reports are very subjective because the reporting aircraft could be a different model - lighter/heavier, faster/slower, etc. There have been many instances in which aircraft went off runways because the flight crew had inadequate information on the stopping condition of the runway. Therefore, there is a need to determine if the presently available friction measurement vehicles are sufficiently accurate, under winter contaminated conditions, to be used to give runway friction measurement information to a flight crew. These vehicles have proven themselves to be very useful to the FAA and airport operators in ensuring that the runways are maintained to a satisfactory dry/wet level of friction. We must now expand this knowledge to determine the reliability of the vehicles under winter conditions. Such a research and development program is approximately fifty percent completed. Since this program involves both ground vehicles and large transport aircraft (B-727 and B-737), Congress should recommend that $500,000 be earmarked each year for the next four years in order to complete this project.

6. FAA Security Program

Although airports already have elaborate systems for searching passengers and luggage to minimize the chances of a hijacking, hijacking incidents still occur and terrorism is continuing to spread worldwide. Recent terrorist activities have emphasized that our security systems are still vulnerable. To counter this threat, we must continue the FAA security program and make improvements. As the terrorists increase their knowledge, techniques, and sophistication, we need to update and improve our security efforts. Therefore, in order to meet the probable threat, there is a need to increase the number of security inspectors and to underwrite the research, development, and purchase of more sophisticated equipment to detect weapons, explosives, and flammable liquids. It is estimated that at least $10 million is necessary for this addition.

FACILITIES AND EQUIPMENT

1. Tower Closures

It has been a long-standing goal of ALPA to have an air traffic control tower at every airport served by scheduled passenger service. This goal is based on well-documented

evidence that a control tower enhances operational safety. Following the PATCO job action on August 3, 1981, the FAA reduced the operating hours of over 300 control towers across the country and temporarily closed 80 towers. This action was necessitated by the lack of qualified controllers needed to man these facilities. The negative impact on aviation safety is obvious. The FAA assured the aviation community that it would do its best to return the majority of these facilities to their normal hours of operation as soon as staffing levels would permit. Due to a continued shortage of personnel after the PATCO strike, the FAA initiated a program of contracting the operation of low activity towers to the civil community. The FAA plans to include 55 airport control towers in its contract tower program by the end of fiscal year 1986. The agency's planning for fiscal year 1986 also calls for some closed towers to be decommissioned and for other towers to be returned to FAA operation. In Phases II and III of the program in fiscal years 1987-88, between 10 and 15 more operating towers are scheduled to be contracted and five nonfederal towers would be added each year. This contract tower program will provide additional air traffic control towers and has received the support of the White House as well as Congress and the aviation community. It is consistent with Administration objectives to relinquish appropriate government functions to the private sector. The closing of the low activity towers would become even more prevalent with any budget cuts for 1986, and should cuts materialize in 1987 and beyond, more operational towers might be closed. These cuts would come at a time when air traffic activity is above that of the pre-strike period and, in our opinion, would have a serious negative impact on aviation safety. Congress must ensure adequate funding for maintaining air traffic control towers at airports served by air carriers.

2. Instrument Flight Procedures Development and Maintenance

Quality and up-to-date instrument flight procedures are absolutely necessary to provide the maximum degree of safety in our airspace system. This becomes especially critical in the approach, missed approach, and departure segments of instrument flight procedures. We are aware that the procedures sections in the Flight Inspection Field Offices are understaffed and are experiencing difficulty in keeping up with the ever-increasing workload. At present, a large percentage of the specialists who are assigned to develop and maintain instrument flight procedures are trainees. We further understand that formal FAA Academy training in procedures development has already been deleted because of existing budget constraints. This means that the experienced procedures specialists must devote valuable production time to training. This situation has undesirable and, in our view, unsafe side effects. ALPA pilots have been reporting a proliferation of lengthy Notices to Airmen (NOTAM's) which are difficult to sort out in the cockpit environment and which contain an abundance of very critical procedure changes. At a high density airport, such as Chicago's O'Hare, it is not unusual to have very long, wordy

changes to several procedures for several runways. Many NOTAM's are intended to be temporary, but they remain in the system for months and even years. We believe that the procedure specialists are forced to resort to issuing an excessive number of NOTAM's and permitting them to remain in effect for an intolerable length of time because of being understaffed, heavy with trainees, and having inadequate resources to process new or revised procedures in a timely manner. Therefore, a budget cut for this program could have a disastrous effect on the safety of instrument flight operations. We could be faced with the cancellation of existing procedures and/or a freeze on the development of new procedures.

Instead of a reduction in outlay, Congress should direct the FAA to increase staffing and training in the flight procedures program to a level that will ensure the utmost safety in the use of published instrument flight procedures. An emphasis should be placed on catching up with the present workload and on the planning of resources to handle future demands, such as the development of instrument flight procedures for the 1250 MLS systems that the FAA will install in the next few years.

3. Flight Inspection of Navigation Aids

Since as early as 1975 the FAA Flight Inspection Program has been cutting expenses in a very dynamic manner. It has consolidated flight inspection offices, reduced its aircraft fleet, and established an automated flight check system that permits flight checks in instrument weather conditions. However, the flight inspection program has reached a point where further cutbacks could result in a deterioration of the navigation system as we know it today. We believe that a budget cut for this program would have totally unacceptable results. Just as the procedures program might have to halt new procedures development for the lack of an adequate number of experienced specialists, the flight inspection offices might have to shut down navigation facilities and have procedures canceled due to the lack of resources to permit flight checks. Duplicative procedures now published (such as for noise abatement) may have to be canceled for lack of available flight hours. Periodic flight checks of ILS, MLS, VOR, and NDB navigational aids may have to be conducted less frequently. This development would be unacceptable. Also, the thoroughness of the flight check and some of the parameters tested might have to be reduced. This is unacceptable from a safety point of view. Congress should direct the FAA to ensure that the flight inspection of navigation aids be maintained at a level of staffing and training that will guarantee no derogation of our airspace system and that will accommodate future systems as modern technology overtakes today's state of the art.

4. Transition to the Microwave Landing System (MLS)

ALPA supports the MLS program because precision approach procedures are inherently safer than nonprecision approaches. Our position has long been that there should be a precision

approach to every runway used by air carrier aircraft. The flexibility of the MLS, especially regarding siting and installation costs, makes it possible to have a precision approach to runways where an ILS is not feasible. Also, the FAA is revising its Airway Planning Standard Number One to include MLS qualifying criteria that will permit MLS selection for runways that could not have qualified using the present ILS criteria. Because of its direct relation to safety, the MLS program should not be subjected to a budget cut that would delay the availability and installation of precision approach guidance at additional runway ends that can only be provided by MLS. The success of the MLS implementation plan depends greatly on the will of the users to purchase MLS receivers. Implementation will be seriously handicapped if the FAA proceeds with its plan to collocate the MLS with ILS systems.

Congress should direct the FAA to ensure that, in the near term, MLS systems be installed only on runways that will increase airport capacity or on runways that do not now have a precision approach system.

5. Airport Surface Detection Equipment (ASDE)

Present traffic control radar was not designed for and is incapable of locating aircraft on an airport with any degree of accuracy. Thus, in poor visibility conditions, a controller and quite often a pilot cannot determine if the aircraft is clear of a runway or taxiway. You will recall the Tenerife accident where two 747 aircraft came together at the Canary Island airport because there was confusion concerning aircraft location. A contract has already been awarded for new radar equipment (ASDE III) that will increase safety by improving the controller's ability to monitor aircraft on the ground. During the past ten years, there have been several collisions between aircraft and other vehicles on the airport surface in low visibility conditions. Also of concern to ALPA are the numerous runway incursions that have occurred and are increasing at an alarming rate. All of these accidents and incidents might have been avoided if effective and reliable surface radar had been available and in use. The research and development efforts for an improved radar system have taken 10 to 15 years. The new equipment will enhance airport safety by giving controllers a clear all-weather radar picture of traffic movements on runways and taxiways, ramps, and other operational areas. The FAA contract calls for the delivery of 17 systems and includes an option for 13 more. Any delay in these installation plans could have a serious negative impact on safety due to the increasing number of runway incursions.

Congress should direct the FAA to continue procurement for ASDE III and ensure that the current contract level of $55 million be maintained. We also recommend that Congress insert a statement of encouragement that the FAA continue the present schedule for installation of the thirty ASDE III systems without delay.

SPECIAL PROGRAMS

Aviation Safety Reporting Systems (ASRS)

The FAA has an interagency agreement with NASA providing for the funding and operation of a real-time aviation incident reporting program, the Aviation Safety Reporting System (ASRS). This safety program provides important safety analysis information unavailable through any other source. As an important example of safety study capabilities, ASRS personnel are currently conducting an ongoing analysis of the data base to determine operational problems with aircraft automated systems. Due to the necessity to respond to requests such as this, the ASRS program has become successful, but it does not have adequate resources to input vital safety information into the data base. The program needs increased support to continue its high level of safety utility. Congress must provide additional funding levels to support the ongoing operation of the ASRS program.

TRUST FUND

Airport Improvement Program (AIP) Funding

Safe airports are an essential part of the air transportation system. AIP funds are intended to provide the necessary improvements at the nation's airports to ensure that the airports are safe. AIP funds are obtained through a "trust". Funds for the trust come from ticket taxes, fuel taxes, and taxes on aircraft tires. The AIP fund currently totals over $3 billion dollars and is growing at a rapid rate.

AIP funds are designed to be used for airport safety. Items such as airport fire trucks, snow removal equipment, runway grooving, airport lighting systems, runway safety areas, and more are all fundable from the AIP fund. Recently, however, funds have been awarded for projects which do not really meet the intent of the original AIP. For example, artwork for the interior of an airport terminal has been paid for by AIP funds.

Since the users have already paid for the necessary safety improvements through the ticket tax, Congress should appropriate sufficient funds to meet the safety needs of the airports and airport operators.

CONGRESSIONAL DIRECTIVE

1. Aircraft Certification Standards for New Technology Aircraft

Present regulations dealing with the certification of air carrier aircraft do not address the systems and concepts being proposed for the next generation of aircraft. These new aircraft will employ systems such as fully electronic flight and engine controls and associated new cockpit instrumentation, where the aircraft to a greater or lesser extent is being controlled by computers. So far such systems have appeared only on certain military aircraft where mission requirements dictated their use.

In many cases these automatic systems are still in the military research and development area. However, several manufacturers are proposing that these exotic systems be standard on air carrier aircraft scheduled to be flown and certificated within the next two to three years.

If the FAA and the regulations addressing such systems are to keep pace with these advancements, it is imperative that funding be approved to allow FAA personnel to investigate these systems and concepts.

2. Cabin Safety

The topic of air carrier cabin safety encompasses a very large range of items and includes carry-on baggage, interior crashworthiness, interior fire resistance, and more. All of these items influence passengers' safety and their ability to survive an inflight fire or accident. Improvements in cabin safety, however, have been slow in coming and require additional attention from Congress to ensure the necessary improvements.

Carry-on baggage has become a real problem due to passengers bringing on large amounts of heavy and oversized bags. This baggage can block the aisles in an emergency and hit passengers on the head during turbulence or an accident. Requirements need to be developed to control this problem and prevent this unsafe condition from continuing. Congress needs to pressure the FAA for rule change. Hearings would be an appropriate method.

Cabin crashworthiness is an area where the FAA has been very reluctant to initiate rule changes. Most air safety experts agree that passengers can survive impacts (G-loads) greater than those for which current cabin furnishings are stressed. Passenger deaths have been caused by seat and cabin furnishings failure during accidents which would otherwise have been survivable. The technology exists to provide more crashworthy passenger seats and aircraft interiors without a weight or cost penalty. Many prototype seat systems have been developed and tested (some at FAA CAMI) with very positive results. We believe that it would be appropriate for Congress to request a briefing by the FAA on this topic. The FAA should be encouraged to become more aggressive in its efforts to improve this situation through rulemaking.

Cabin fire safety has been markedly improved during the past few years. There are, however, a few areas in which progress has not been made as quickly as it should. The FAA has issued NPRM's on cargo area fire safety and passenger cabin material flammability. Both of these NPRM's have been endorsed by air safety organizations and resisted by the airlines.

Congress should encourage the FAA to proceed with final rulemaking on these issues since its research and actual accident experience dictate improvements should be made.

3. Water Survival

Air carrier water contact accidents are rare. Because of this, many airlines have reduced their water survival gear (life vests, rafts, and associated emergency equipment) to the absolute minimum required. Most airlines flying coastal routes have received waivers from the FAA and operate up to 160 miles offshore without life rafts. The chances of survival for passengers on one of these aircraft if it ditches are minimal.

The majority of air carrier airports have significant bodies of water in the approach/departure paths or around the airport boundary. Most aircraft have no flotation equipment (other than seat cushions) available although they operate over these large bodies of water. Pilots and flight attendants who fly on long, overwater segments are minimally trained; they are not required to know how to swim and do not even get into the water during training.

The FAA is reluctant to make any improvements because of resistance from the airlines. Congressional involvement could be most beneficial in this area. A request from Congress to the FAA for a briefing on the status of its efforts in water survival would be most enlightening.

It would be helpful if Congress would request periodic updates from the FAA. No action will be taken to improve the situation until pressure is applied or a major water contact accident occurs.

4. Emergency Evacuation Certification

The ability to evacuate an air carrier aircraft quickly is paramount to passenger survival if an accident or fire occurs. Recently there have been survivable accidents - with no impact injuries - that resulted in numerous deaths simply because the passengers could not evacuate the cabin quickly enough. Recent interpretation of the applicable Federal Aviation Regulations dealing with emergency evacuation by the FAA and the airplane manufacturers raises serious doubts about their recognition of the importance of exit system design and certification.

This issue has been the subject of prior congressional hearings and current review activity by the FAA. It is very important that Congress maintain an interest in this topic and apply pressure to the FAA to follow through with its promises to review the situation and require more realistic emergency evacuation certification drills.

5. National Noise Policy

The lack of an effective national noise policy has disrupted the air transportation industry for several years. Proliferation of local noise regulations is creating chaos at locations as diverse as Burbank, California; West Palm Beach, Florida; Boston, Massachusetts; and Islip, New York. Congress should direct the FAA to resolve this policy vacuum by establishing federal preemption of noise responsibilities.

LEGISLATION

Protection for Pilots, Flight Attendants, Mechanics, and Airport Employees Who Report FAR Violations

No job protection currently exists for an employee of an FAA-certificated operation, i.e., airline, maintenance/overhaul base, airport, when that employee correctly informs the FAA that his employer is conducting business in violation of the Federal Aviation Regulations (FAR's). Another problem arises because some regulations are so worded that they make both the employee and employer responsible for complying with the regulation. In these cases, an employee who insists on complying with the regulation when his employer would prefer not to comply is putting his job in jeopardy.

Therefore, there is a need for legislative action to establish a law similar to the "whistle blower" law for federal employees that would protect airline and airport employees when they report violations of the FAR's by their employers.

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