Talking Points
David R. Hinson
Administrator, Federal Aviation Administration
Naval Aviators Luncheon
May 1, 1995

Introduction

- Thank you. I am delighted to be here among so many distinguished aviators, and I appreciate the opportunity to talk to you today.

- I think we've all probably heard the old aviation saying that there are old pilots and there are bold pilots, but there are no old bold pilots.

- Well, looking over this audience makes me wonder about the truth of that statement. It looks to me like we've got a whole room full of old bold pilots.

- In fact, I imagine some of the oldtimers here have been flying so long you can remember some of the first federal rules regulating flying.

- Rules such as: pilots must not wear spurs when operating an aircraft; pilots must never leave the ground with the motor leaking; and pilots must carry hankies to wipe off their goggles.

- Now, I know you're not here this afternoon to listen to a serious and lengthy speech -- and I'm not here to make one.

- This is a time to renew friendships, make new friends, and to tell lies about old flying exploits.

- So, I'm going to follow President Roosevelt's advice on speechmaking. He said one should "be sincere, be brief; and be seated."

- Actually, I'm glad to have this chance to tell you a little about what we're doing at the FAA. The FAA's work touches everyone in aviation, one way or another, as well as the millions of people who depend on air transportation.

- In the almost 2 years that I have been privileged to lead the FAA, I have had to deal with some old recurring issues and some new ones as well. Today I'd like to talk briefly about three of them: system safety; new navigation technology; and FAA reorganization.

Safety

- The United States takes pride in the fact that our airspace is not only the most heavily traveled in the world but one of the safest as well. These achievements are linked.

- For a strong aviation sector depends on solid public confidence in the safety and integrity of the system.

- Its hard to imagine, but last year 516 million passengers flew in our skies.

- Air travel has become so commonplace and accidents so rare that people take for granted that the system is essentially 100 percent risk-free -- people expect the system to be faultless.

- In fact, our goal is zero defects because America expect nothing less.

- I don't underestimate this challenge, and both government and industry are working hard to achieve this end.

- It is clear, we simply must accelerate the intellectual efforts associated with flying airplanes safely -- technology, training, and a smart use of resources.

- It's time we changed our way of thinking -- we need a change of mindset that would lead to a permanent record of zero accidents.

- Because safety is a shared responsibility, FAA and industry have renewed their commitment to work together to improve safety and maintain public confidence in the safety of the system.

- Several months ago, the FAA and DOT held a safety conference with industry representatives to reaffirm that shared commitment to safety.

- Our goal was a permanent change of thinking that would lead to a permanent record of zero accidents. We wanted to help the aviation community and the flying public begin to understand, and finally to believe, that accidents are not inevitable, that 100 percent safety is possible

- To do that we -- the FAA and industry -- are reprioritizing programs, shifting resources, and focusing management attention on actions required to meet the zero accident challenge.

- We have formulated a Safety Action Plan -- a very aggressive plan. Of the 173 initiatives set forth in the plan, 104 are scheduled for completion by September 30.

- Under a new agreement, airlines will allow the FAA to analyze data they collect as part of their new Flight Operations Quality Assurance (FOQA) programs. The agency, in turn, agrees not to use the data in enforcement actions against the airlines.

- Now, for the first time, the aviation community will have access to a wealth of technical data it needs to analyze trends and to anticipate many potentially dangerous problems before they happen.

- This action plan also includes several key training initiatives. One of the most important is our proposal to accelerate the Advanced Qualification Program (AQP), which will provide greater use of simulation and better training for flight crews.

- Another important initiative is the proposal to expand the FAA strategic plan to include a Maintenance Resource Management (MRM) program. This will provide maintenance workers the same kind of sophisticated training that flight crews receive.

- I believe simulation is the single most important advance in the state of aviation safety, because, historically, human factors are the single largest problem in aviation safety. But we're beginning to understand that it's not as simple as labeling something "pilot error."

- Simulation allows us to put pilots, mechanics, flight attendants -- essentially every person that comes into contact with the airplane -- into real time problems and train them to work together to handle those problems.

- The better our simulation, the better our training. And well-trained people make fewer errors.

- I find these initiatives very exciting. However, it is important to remember that they represent only a small part of the ongoing work we're doing to ensure and increase air safety.

- We are also taking other prudent steps to insure system safety.

- For example, as many of you know, early this year, I put the standardization of large and commuter regulations on a fast track. Under this accelerated pace, on March 24, the FAA announced proposed changes to the regulations to create one level of safety.

- Also, I recently selected Chris Hart to head the new System Safety Office whose primary mission is to help the FAA develop new concepts in preventative safety analysis.

The NAS System

- In addition, to meet the challenge of zero accidents, FAA must move forward carefully -- we must take a scientific approach to change.

- Moving to the next level of safety requires a combination of technology and application of all appropriate sciences.

- As an integral part of our continuing efforts to improve safety and to effectively and efficiently meet new demands on the system, the FAA is even more committed today, than it was in the past, to modernizing the national airspace system.

- We're developing powerful new tools and data bases to put in the hands of highly skilled professionals dedicated to safeguarding the public's trust in the integrity of our aviation system.

- Today, air traffic control technology is being transformed by parallel developments in three separate fields: satellites, computers, and digital communications.

- Any one, by itself, would be a major advance. Combined they create virtually unlimited possibilities.

- This new era of ATC technology offers the prospect of an integrated global system -- a seamless system.

- The most promising technology may be the Global Positioning Satellite Network.

- Although the benefits of GPS to all modes of transportation are enormous, its contribution to aviation promises to be revolutionary.

- This new technology offers the prospect of accuracy and global availability unmatched by existing navigational systems.

- In fact, that technology is so promising that last June I announced elimination of the category 2 and 3 microwave landing system (MLS) program.

- The FAA instead will concentrate on the aggressive development of the global positioning system.

- Last year, the FAA certified various types of GPS receivers for use in all phases of flight, including nonprecision approaches.

- And, we approved the first GPS nonprecision approach procedure for use by helicopters.

- After working with manufacturers and aviation organizations, FAA now permits the use of GPS for Category I approaches.

- In fact, we reached a major milestone last summer, when Aircraft Owners and Pilots Association President Phil Boyer and I landed at the Frederick, Md., airport using the first FAA-approved public "stand alone" global positioning system instrument approach for aircraft. We have since published GPS approaches for other airports.

- The FAA continues to work with NASA to use GPS to satisfy Category II and III precision approaches.

- In addition, the FAA has issued a Request for Proposals for a Wide Area Augmentation System, a network of ground stations and communications systems that will enhance the integrity and availability of GPS signals.

- FAA also recently established a policy for the operational implementation of GPS as a primary means of navigation in oceanic and remote areas. This will be instrumental in providing more precise routings in such areas, allowing controllers to safely reduce the separation between aircraft over the ocean.

- And, on March 27, in a message to ICAO representatives, President Clinton agreed to share satellite signals for worldwide airliner navigation.

- As GPS is incorporated into our air traffic system, more and more carriers will be able to benefit from increased safety, more precise routing, fuel savings, and increased airport capacity in foul weather.

- I believe its rapid deployment is essential if we are to have an air traffic management system that is safe and which can handle the growth we all predict for the future.

FAA Reorganization

- But, technology alone cannot provide the solution for all questions. We at the FAA recognize that our organization must also reform to keep pace.

- Throughout government we need to be open to new ideas, because the old ways just aren't working too well anymore.

- Governments know how to expand, but they aren't too sure how to shrink. And under President Clinton, the federal government has been shrinking ... for the first time any

of us here in this room can remember.

- Every part of the government has to learn ways of doing the job with fewer people and less money.

- And the FAA is not exempt.

- In the past two years, the FAA's budget has been reduced more than 8 percent.

- Actually, it's more than that -- once you count the mandatory cost increases which we've had to find the money to pay for.

- These are serious cuts. They're deep cuts. Yet, while our resources are shrinking, there's an ever-growing demand for our services.

- In just 10 years, 300 million more pilots will be flying every year.

- We have to find a way to provide better service, at less cost, without in any way impairing safety.

- In an era of diminishing resources and increasing demands, it is necessary that the FAA strengthens the way it manages its products and services -- we must operate like a smart business.

- This is especially critical as we make the momentous and costly transition to a space-based air traffic control system with its dependence on satellites, digital communications, and highly sophisticated automation.

- As part of our continuing effort to make the agency a more efficient, effective, and businesslike organization, last November I announced a new organizational structure for the FAA.

- FAA is now formed along the six operating arms of the agency, representing product and service lines, streamlining how we do business and clarifying the lines of accountability.

- As you know, DOT is also in the midst of restructuring. That reorganization will affect all DOT modes -- including the FAA.

- DOT has submitted legislation to consolidate 10 agencies into three, divided roughly as air, land and sea. If passed, it will cut the bureaucracy in half and save hundreds of millions of dollars.

- Under this plan, the FAA will continue to be responsible for aviation safety and security, regulation and certification, and a whole range of activities involving airports -- airport planning and programming, airport safety and standards, and airport capacity planning.

- The FAA will also take over a few other aviation-related functions which are now located elsewhere in the Department. Commercial space transportation operations, for example.

- But, internal FAA or DOT reorganization cannot solve the systemic problems of burdensome personnel, procurement, and budget regulations.

- As you know, several members of Congress support legislation that address reforms for the FAA.

- And, one of the most far-reaching recommendations in the President's National Aviation Initiative, and recently reaffirmed by Secretary Peña in his announced plans to streamline the Department of Transportation, was the proposal to re-invent the FAA's air traffic control services as a government corporation.

- The President's aim is to create a new form of federal corporation which will be unhampered by cumbersome rules governing procurement, financing and personnel.

- This new organization would allow us to upgrade equipment much faster, to make more business-like investment decisions, and to hire people with the technical skills we need at any given moment -- an organization with the flexibility and the resources to adopt new technology and to keep pace with the changing dynamics of the industry.

- Creating a air traffic services corporation, however, is not a change we at the FAA or DOT can undertake on our own.

- The decision to create an air traffic control corporation ultimately lies with Congress and the President. And, we are very encouraged by the interest being expressed by the Congress on FAA reforms.

Conclusion

- I really appreciate the opportunity to talk to you today, and I fear I've already gone on too long. Since I'm sure you have questions, let's open up the floor.

Talking Points
David R. Hinson
Administrator, Federal Aviation Administration
Media Briefing on B737 Flight Control Critical
Design Review
May 2, 1995

MESSAGE POINTS

* SCIENCE OF AVIATION -- STUDY OF B737
WAS AN EXHAUSTIVE, STEP-BY-STEP
REVIEW

* ZERO ACCIDENTS -- TWENTY SEVEN
RECOMMENDATIONS MOVE US TOWARD
OUR GOAL

* PRAISE THE TEAM -- NO SILVER BULLET,
BUT RECOMMENDATIONS INCREASE
SAFETY MARGIN

TALKING POINTS

INTRODUCTION

- Good morning. Thank you for coming. As you are likely aware, today we are here to share with you the B737 Flight Control Critical Design Review . This study has provided us with 27 recommendations to further enhance the safety margin of the B737. We want to share those recommendations with you, too.

- Tom McSweeny, our Director of Aircraft Certification Service, will explain in detail those recommendations and tell you more about the study and the FAA investigative team that conducted the review.

- First, however, I would like to frame our discussion by explaining to you the philosophy and methodology that drove our review. I would like to share you with our perspective on the bigger picture -- how this study and its recommendations provide us with more sign posts on the road to zero accidents.

1. THE SCIENCE OF AVIATION

- As an engineering pilot I always wanted to know the cause of an accident ....That desire to understand "why" has never left me. There is something inside all of us that wants to

- When I arrived at the FAA I continued to have lingering concerns about the Colorado accident. I reviewed with Tony Broderick the actions and reviews the FAA had undertaken to work with the NTSB to solve that accident.

- Scarcely a day went by when I didn't find myself in Tony's office reviewing the information, discussing further actions we might take. For those of us in the industry this is extremely unsettling. This doesn't happen to us ...

- The reality, however, is that our strides in safety and technology have evolved to the point where there are no longer easy problems to solve with answers that are hard to miss. The science of aviation and aviation safety have risen to another level .... (GIVE GOLF ANALOGY THAT HAS WORKED SO WELL IN THE PAST.) In much the same sense, we are now at that point in aviation science.

- Thus, faced with a new more sophisticated problem, we felt a new approach was warranted. We decided we needed new eyes to look at the flight control system of the 737 -- to make sure nothing was overlooked -- no stone unturned.

- What evolved from our approach of assembling a new investigative team -- comprised of aviation experts both within and outside of the FAA -- is a detailed engineering review, one of the most exhaustive and extensive studies of an air craft in this agency's history.

- This detailed engineering review provides us with facts, pieces of important information upon which the FAA can base its actions. The incremental changes that are recommended in this review are the building blocks to make future strides to raise the bar even higher on aviation safety.

- As reporters, you know that the real work of your profession is not the glamorous front-page story or the exclusive interview, but the solid basic reporting and investigating that often goes unsung. This study can be viewed in much the same light. We must have clear facts and good science to back

any actions the FAA would undertake. This study
provides us with just that.

2. ZERO ACCIDENTS

- The recommendations contained in this study
  allow us to make small, incremental improvements
  in the margin of safety for the B737. No -- to
  answer the questions everyone here wants to know
  -- we did not find the silver bullet.

- No design flaw was found that can explain what
  caused the tragic accidents in Colorado and in
  Pittsburgh. You are not going to see the kind of
  dramatic changes that were unveiled during our
  release of the evaluation of the ATR.

- But these incremental changes are just as important
  as finding the silver bullet. They will allow us to
  further enhance the margin of safety.

- They provide us with new pieces of information
  which may -- in the long run -- prove to be the
  very links we need to understand the "why" of
  these two accidents and the "how" of increasing
  the safety margins for this and other aircraft.

3. PRAISE THE TEAM

- I would like to publicly thank the team that worked on this study. Although they did not find the silver bullet -- we did not expect to find the silver bullet -- they have made recommendations that we feel will improve the margin of safety and move the science of aviation forward. We all owe them a debt of gratitude.

- Now, Tom will walk you through the study and our recommendations.

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GLOBAL ISSUES AND CHALLENGES AFFECTING THE FUTURE OF AVIATION

David R. Hinson
Administrator, Federal Aviation Administration
AIAA Air & Space '95
Crystal City, Arlington, VA
May 2, 1995

INTRODUCTION

(SLIDE 1: TITLE)

GLOBAL ISSUES AND CHALLENGES AFFECTING THE FUTURE OF AVIATION

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o   Over the past few months, the industry has breathed a collective sigh of relief as the airlines, as a whole, began the slow return to profitability.

   For the first time in a long time, most of the signs are positive.

o   There are challenges confronting us which can threaten the future vitality of the industry if we fail to deal with them now...in this period of relative strength.

o   This afternoon, I'd like to talk about six of these.

OVERVIEW OF SIX MAIN POINTS

(SLIDE 2)

## CHALLENGES TO GLOBAL AIR TRANSPORTATION

- CONTINUE TO IMPROVE THE SAFETY OF AIR TRAVEL
- SECURITY
- EXPAND AIRPORT INFRASTRUCTURE
- AFFORDABLE SUPPLY OF FUEL
- ABILITY OF AIR CARRIER INDUSTRY TO ACCESS CAPITAL
- ADEQUATE INTERNATIONAL REGULATORY FRAMEWORK

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o   The six challenges I'll discuss are especially important because they are global in scale.

1. We must maintain a high level of public confidence in the safety of air travel.

2. We must enforce a worldwide aviation security program to combat criminal terrorists attacks at airports and on-board aircraft.

3. We must expand airport infrastructure to support the growth in traffic we see ahead.

4. We must maintain an affordable supply of fuel.

5. We must ensure that airlines are profitable enough to attract the capital they will need for future expansion.

6. We must design a regulatory framework adequate to the changing character of the industry.

CHALLENGE 1: WE MUST MAINTAIN A HIGH LEVEL OF PUBLIC CONFIDENCE IN THE SAFETY OF AIR TRAVEL.

[SLIDE 3]

ACCIDENTS PER 100,000 DEPARTURES
PART 121 & COMMUTERS 1975 - 1994
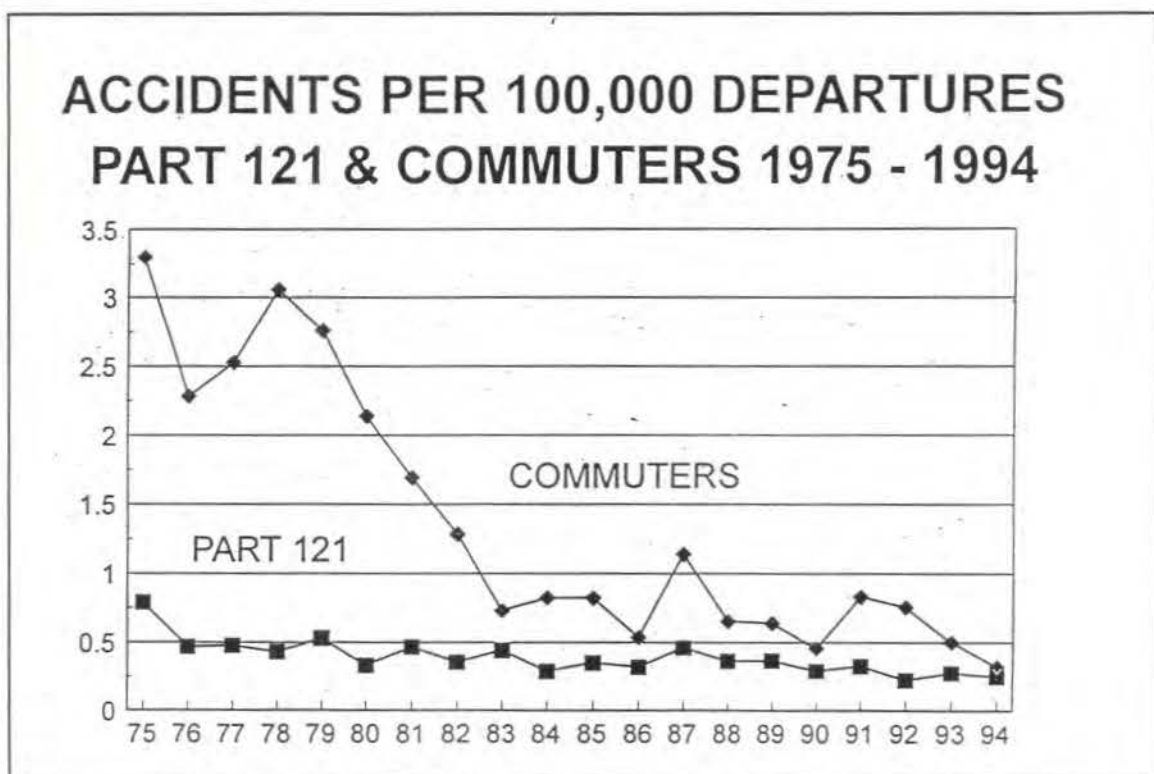
o   The U.S. aviation system is the safest and most efficient in the world. (428 fatalities in past five years vs. 4,512 on non-U.S. carriers; U.S. has 50 percent of world's traffic but only 8 percent of the fatalities.)

o The safety record for commuters has been steadily improving.

   Despite last year's tragic events, 1994 was safest year ever for commuters -- virtually the same rate as the majors.

o One Level of Safety initiative will reinforce these improvements.

o The majors have had a virtually unvarying low accident rate for past two decades.

   Plateaued at low level, but long-term implications are disturbing.

(SLIDE 4: HULL LOSS PROJECTION]
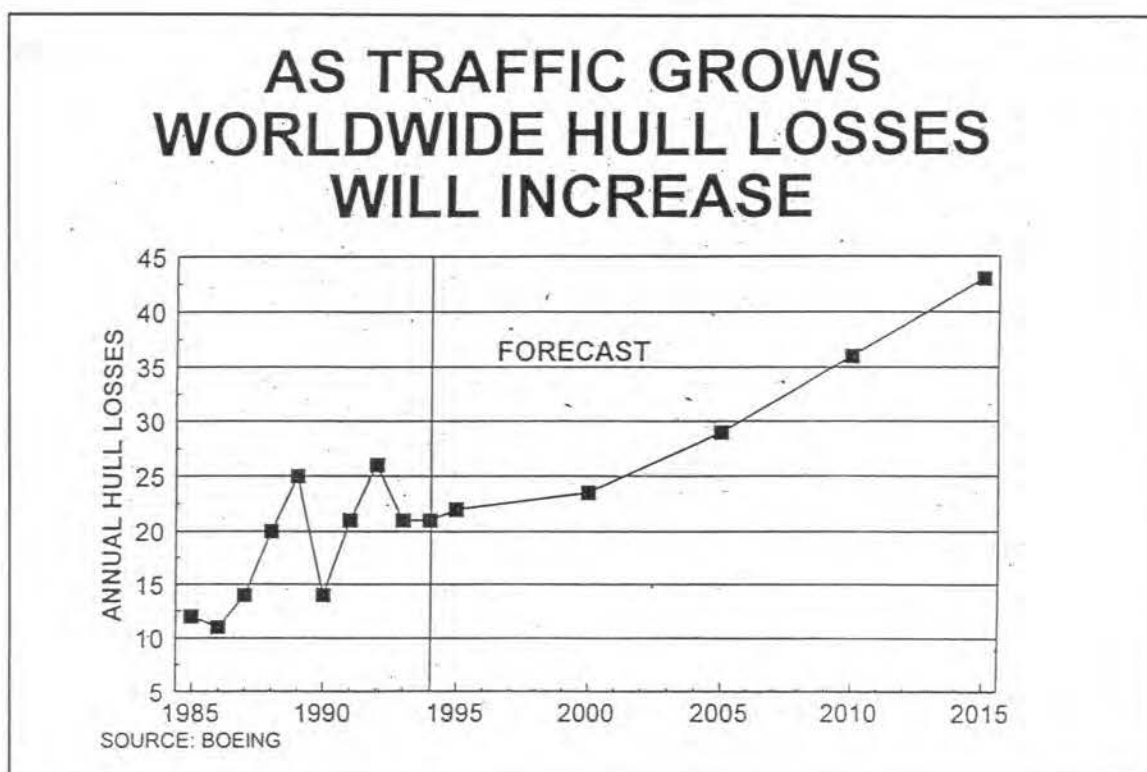
o   Boeing projection: Given the forecast growth in air
     travel, at the present level of safety, by the year
     2013, we can expect to lose one aircraft every eight
     days, worldwide.

o   European Transport Safety Council warns that,
     unless the current rate can be reduced, fatalities
     from plane accidents could increase twenty-fold.

o   <u>Zero Accident Goal</u>: We must break ourselves of the mindset that tolerates an occasional crash because "accidents will always happen."

Aviation Safety Conference: 173 initiatives spelling out what government and private sector must do to prevent what will otherwise be an inevitable rise in the number of air disasters.

(SLIDE 5: TOPIC CHECK-OFF: SAFETY)

CHALLENGES TO GLOBAL AIR TRANSPORTATION

✓ SAFETY
■ SECURITY

(<u>Transition</u>): In the public's mind, safety and security are inseparable.

> CHALLENGE 2: WE MUST ENFORCE A WORLDWIDE
> AVIATION SECURITY PROGRAM TO COMBAT CRIMINAL
> TERRORISTS' ATTACKS AT AIRPORTS AND ON BOARD
> AIRCRAFT.

(SLIDE 6: SECURITY)

SECURITY

- COSTS

- DETECTION

- THREAT ASSESSMENT

- CODE SHARING & BILATERAL
  AGREEMENTS

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o **Costs.** Detection systems cost $100 thousand to $7 million a unit. In the US, airlines shoulder most of the cost, while in Europe, the governments do.

o **Detection.** U.S. leads the world in the technology of explosives detection. One EDS system is now certified and undergoing tests. Passenger profiling and screening techniques are becoming more sophisticated.

o   **Threat Assessment.**

o   **Code Sharing & Bilateral Agreements.**

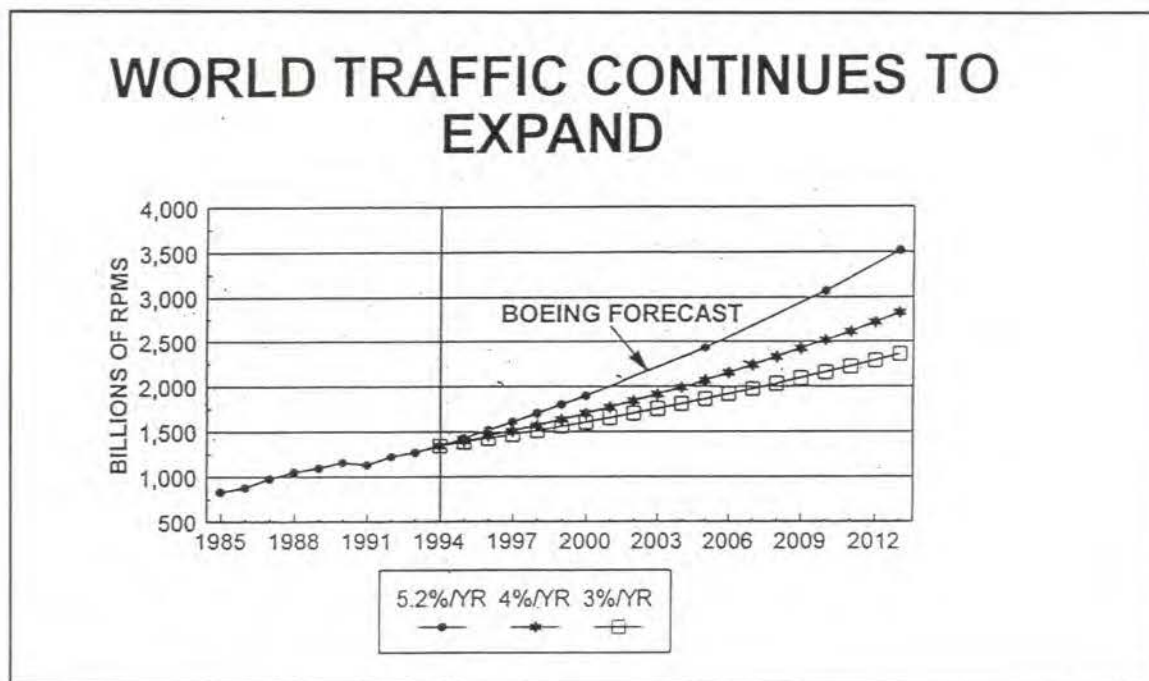(SLIDE 7: TOPIC CHECK-OFF; SAFETY, SECURITY)

CHALLENGES TO GLOBAL AIR TRANSPORTATION

✓ SAFETY
✓ SECURITY
■ EXPAND AIRPORT
   INFRASTRUCTURE

(Transition): The Public still has confidence in aviation safety and security, as seen in the growth statistics.

CHALLENGE THREE: WE MUST EXPAND AIRPORT INFRASTRUCTURE TO SUPPORT THE GROWTH IN TRAFFIC WE SEE AHEAD.

(SLIDE 8: WORLD TRAFFIC CONTINUES TO EXPAND)

WORLD TRAFFIC CONTINUES TO EXPAND

BOEING FORECAST

BILLIONS OF RPMS

4,000
3,500
3,000
2,500
2,000
1,500
1,000
500

1985 1988 1991 1994 1997 2000 2003 2006 2009 2012

5.2%/YR   4%/YR   3%/YR

o   The FAA forecasts growth for U.S. commercial air carriers

4+ percent per year over the next 12 years;

800 million enplanements within the decade;

1 billion enplanements in less than two decades.

o   Aviation is becoming the world's primary mode of mass transportation.

Last year, one in five of the global population traveled by air.

Over the next twenty years, air travel around the world will triple.

o   Projected growth means that more planes will be using our airports: 30 percent more over the next 15 to 20 years.

Over the next 20 years, we will add nine or ten airports to our already long list of U.S. airports with serious delay problems.

More delays will add to operating costs of carriers and undermine their strategies to increase productivity.

o   My longstanding concern: inadequate airport capacity will curtail the growth prospects of the industry.

(SLIDE 9: TOPIC CHECK-OFF)

CHALLENGES TO GLOBAL AIR TRANSPORTATION

✓ SAFETY
✓ SECURITY
✓ EXPAND AIRPORT INFRASTRUCTURE
▣ AFFORDABLE SUPPLY OF FUEL

<u>(Transition)</u>: Another shortage which might threaten the industry is a scarcity of fuel.

CHALLENGE FOUR: WE MUST MAINTAIN AN AFFORDABLE SUPPLY OF FUEL.

(SLIDE 10: AIR CARRIER AVERAGE JET FUEL PRICES)

US AIR CARRIER AVERAGE JET FUEL PRICES
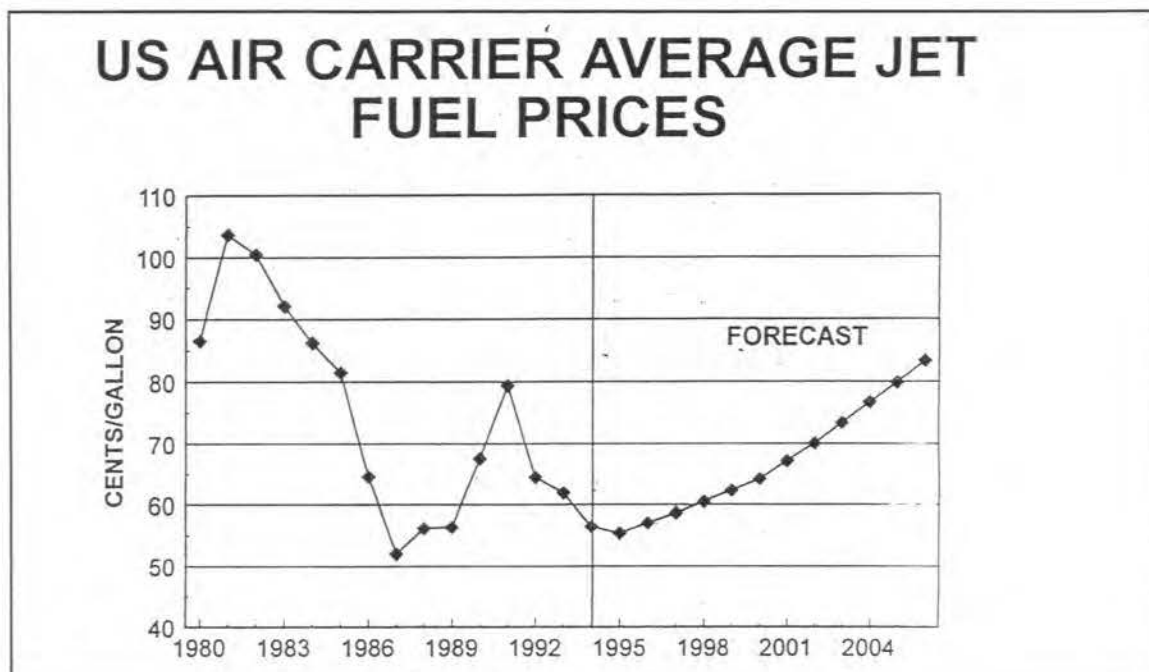
o   Recent trend for crude prices to rise faster than product prices can be expected to result in higher fuel costs.

SLIDE 11: FACTORS AFFECTING THE AVAILABILITY OF FUEL)

FACTORS AFFECTING THE AVAILABILITY OF FUEL

■ GEOGRAPHY

OVER 80% OF WORLD OIL RESERVES
FOUND IN MIDDLE EAST, AFRICA,
RUSSIA, AND CHINA

■ GEO-POLITICAL RISKS
MIDDLE EAST, RUSSIA, AFRICA

■ DEMOGRAPHY
EXPLODING WORLD POPULATION COMPETING
WITH AVIATION FOR LIMITED RESOURCES

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o   Geography: Many of the world's major oil
reserves are in politically unstable regions.

o   Demographics: growing competition for fuel.
Every ten years, population increases by a billion
people; the equivalent of one New York City a
month or a new Los Angeles every 12 days.

(SLIDE 12: TOPIC CHECK-OFF: SAFETY, SECURITY, AIRPORT, FUEL)

CHALLENGES TO GLOBAL AIR TRANSPORTATION

- ✓ SAFETY
- ✓ SECURITY
- ✓ EXPAND AIRPORT INFRASTRUCTURE
- ✓ AFFORDABLE SUPPLY OF FUEL
- ■ ABILITY OF AIR CARRIER INDUSTRY TO ACCESS CAPITAL

Transition: Low fuel prices have been critical to the recovery of profitability.
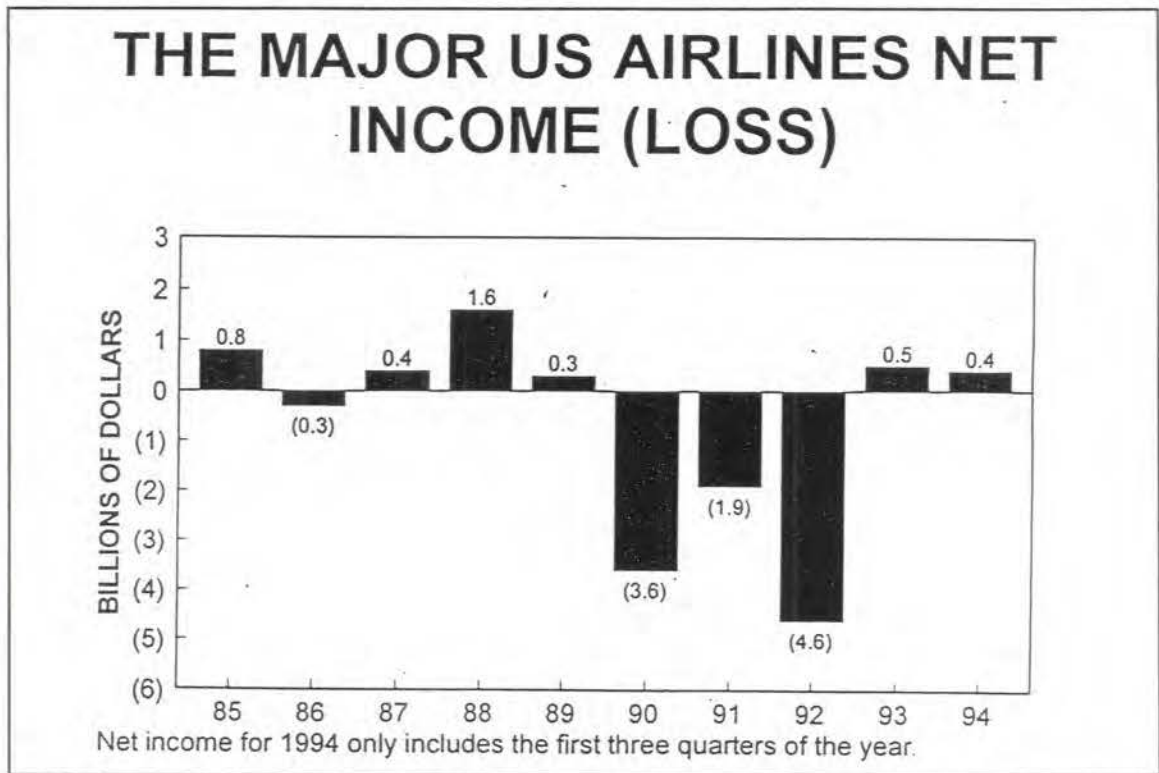
CHALLENGE FIVE: WE MUST ENSURE THAT AIRLINES ARE PROFITABLE ENOUGH TO ATTRACT THE CAPITAL THEY WILL NEED FOR FUTURE EXPANSION.

(SLIDE 13: VALUE OF AIRCRAFT DELIVERIES THROUGH 2003)

WORLD ESTIMATED VALUE OF AIRCRAFT DELIVERIES INCREASES THROUGH 2003

SOURCE: ESG AVIATION SERVICES, BOEING
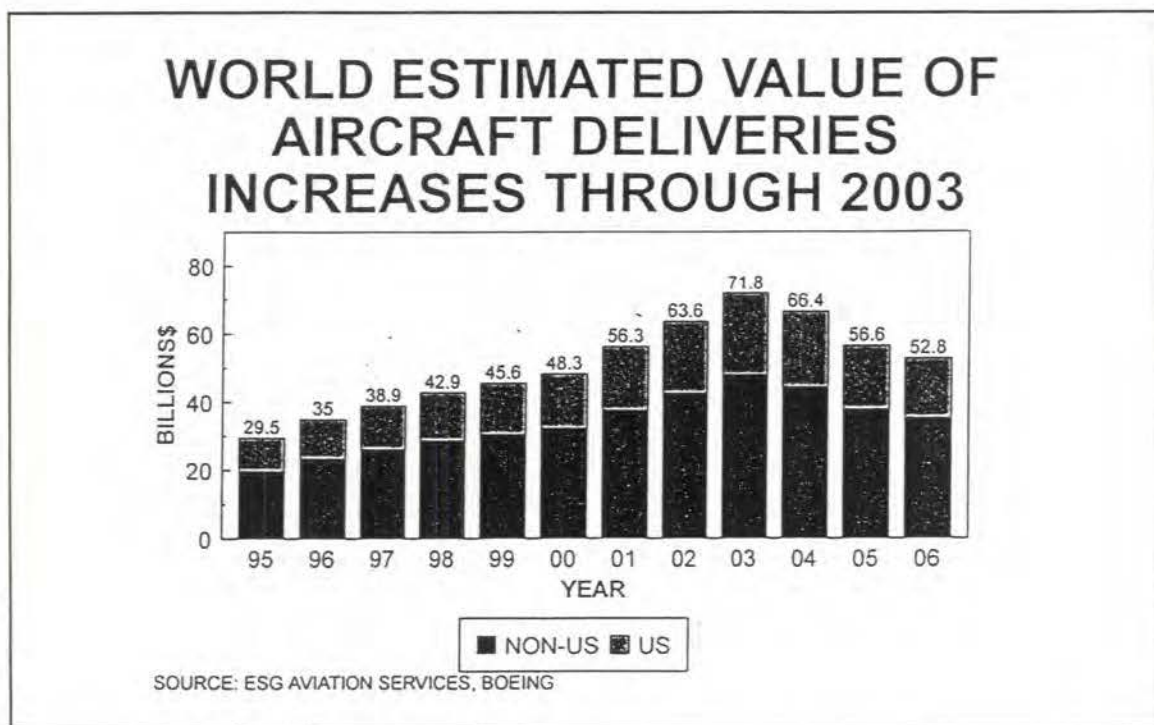
o   Promising sales forecasts assume that the carriers can afford to buy the planes.

[SLIDE 14: MAJOR AIRLINES' NET INCOME]

THE MAJOR US AIRLINES NET INCOME (LOSS)

Net income for 1994 only includes the first three quarters of the year.

o   The majors have had two good years in a row, and 1995 should be even better.

Not likely to generate a profit margin of one percent (compared with 4-5 percent for businesses in the S&P 500).

o   One reason is debt.

[SLIDE 15: MAJOR AIRLINES' LONG-TERM DEBT HAS DOUBLED SINCE 1985]

o   Good news: nearly 80 percent gain in stockholder equity between 1985 and 1994 -- after plummeting by more than a third during the dark days of the early 90s.

o   Bad news: near doubling of long-term debt during the same period.

Airline business as a whole does not inspire much confidence in the investment community.

[SLIDE 16: MAJOR AIRLINES' S&P RATINGS]

AIRLINES S&P RATINGS

AIRLINE	1988		1995		TREND
AMERICA WEST	B		B		no change
AMERICAN	A	(I)	BB+		down
CONTINENTAL	B		B-		down
DELTA	A-	(I)	BB		down
NORTHWEST	A-	(I)	BB-		down
SOUTHWEST	A-	(I)	A-	(I)	no change
TWA	B-		D		down
UNITED	BB		BB		no change
USAIR	BBB+(I)		CCC+		down

Note: I Indicates Investment Grade

o Bond quality among nine carriers has deteriorated dramatically.

As a group. carriers are far weaker than they were seven years ago.

In 1988, five were investment grade. In 1995, only one.

o   Recession exposed structural weakness. Recovery
    discloses that troubles are systemic and deeply
    rooted.

o   Warren Buffett: "Frankly, no airline is going to be
    a wonderful business." Not many disagree.

o   Unfavorable consensus weakens the industry even
    further. Carriers must invest in new aircraft and
    other infrastructure improvements to accommodate
    growth. Yet they may face serious capital shortage
    if lenders and investors avoid the industry.

o   Airline Commission recognized problem and
    presented a number of recommendations. Some
    were actions on the domestic front.

(SLIDE 17: TOPIC CHECK-OFF: SAFETY, SECURITY, AIRPORT, FUEL, CAPITAL)

CHALLENGES TO GLOBAL AIR TRANSPORTATION

- ✓ SAFETY
- ✓ SECURITY
- ✓ EXPAND AIRPORT INFRASTRUCTURE
- ✓ AFFORDABLE SUPPLY OF FUEL
- ✓ ABILITY OF AIR CARRIER INDUSTRY TO ACCESS CAPITAL
- ■ ADEQUATE REGULATORY FRAMEWORK

(Transition): Most far-reaching recommendations dealt with globalization and the need to break down barriers to air commerce and the flow of capital across national boundaries.

CHALLENGE SIX: WE MUST DESIGN A REGULATORY FRAMEWORK ADEQUATE TO THE CHANGING CHARACTER OF THE INDUSTRY.

(SLIDE 18: ADEQUATE REGULATORY FRAMEWORK)

ADEQUATE INTERNATIONAL REGULATORY FRAMEWORK

■ REDUCE TRADE BARRIERS

■ OPEN SKIES

■ CROSS-BORDER INVESTMENTS

■ HARMONIZING CERTIFICATION STANDARDS

o   World Bank forecast for next decade:

Low inflation, strong increases in world trade, falling commodity prices and an average growth rate of 3.3 percent worldwide.

o   Growth in developing countries will be twice that
    of industrialized ones -- responding to liberalization
    and increasing integration of developing countries
    into world trade system.

o   National governments and their flag carriers are
    often resisting liberalization and deregulation.

o   One example of distorting effects of regulation:
    slow growth of air travel between U.S. and Canada
    during period of rapid trade expansion.

o   Expected benefits of new "open skies" agreement.

    Successful "open skies" agreements with other
    countries will allow U.S. airlines to compete on a
    more even footing for international traffic.

    International carriers are likely to become
    increasingly multi-national in character.

    Already a clear trend, with code-sharing and
    strategic alliances a commonplace.

o   Legislation recently introduced in Congress will liberalize restrictions on foreign ownership of U.S. carriers -- one of Airline Commission's recommendations.

Removing barriers to foreign investors will expand availability of capital.

o   Airlines will follow path already followed by aircraft manufacturers which have developed risk-sharing partnerships and supplier relationships with companies around the world.

One result of global dispersion of production: push to harmonize certification standards and procedures.

CONCLUSION:

Just as the economic realities of aviation are eroding the purely national character of carriers and aircraft manufacturers -- so too is the regulatory functions of government becoming a shared international obligation.

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* PRAISE THE TEAM -- NO SILVER BULLET,
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TALKING POINTS

INTRODUCTION

- Good morning. Thank you for coming. As you are likely aware, today we are here to share with you the B737 Flight Control Critical Design Review . This study has provided us with 27 recommendations to further enhance the safety margin of the B737. We want to share those recommendations with you, too.

- Tom McSweeny, our Director of Aircraft Certification Service, will explain in detail those recommendations and tell you more about the study and the FAA investigative team that conducted the review.

- First, however, I would like to frame our discussion by explaining to you the philosophy and methodology that drove our review. I would like to share you with our perspective on the bigger picture -- how this study and its recommendations provide us with more sign posts on the road to zero accidents.

1. THE SCIENCE OF AVIATION

- As an engineering pilot I always wanted to know the cause of an accident ....That desire to understand "why" has never left me. There is something inside all of us that wants to

- When I arrived at the FAA I continued to have lingering concerns about the Colorado accident. I reviewed with Tony Broderick the actions and reviews the FAA had undertaken to work with the NTSB to solve that accident.

- Scarcely a day went by when I didn't find myself in Tony's office reviewing the information, discussing further actions we might take. For those of us in the industry this is extremely unsettling. This doesn't happen to us ...

- The reality, however, is that our strides in safety and technology have evolved to the point where there are no longer easy problems to solve with answers that are hard to miss. The science of aviation and aviation safety have risen to another level .... (GIVE GOLF ANALOGY THAT HAS WORKED SO WELL IN THE PAST.) In much the same sense, we are now at that point in aviation science.

- Thus, faced with a new more sophisticated problem, we felt a new approach was warranted. We decided we needed new eyes to look at the flight control system of the 737 -- to make sure nothing was overlooked -- no stone unturned.

- What evolved from our approach of assembling a new investigative team -- comprised of aviation experts both within and outside of the FAA -- is a detailed engineering review, one of the most exhaustive and extensive studies of an air craft in this agency's history.

- This detailed engineering review provides us with facts, pieces of important information upon which the FAA can base its actions. The incremental changes that are recommended in this review are the building blocks to make future strides to raise the bar even higher on aviation safety.

- As reporters, you know that the real work of your profession is not the glamorous front-page story or the exclusive interview, but the solid basic reporting and investigating that often goes unsung. This study can be viewed in much the same light. We must have clear facts and good science to back

any actions the FAA would undertake. This study
provides us with just that.

2. ZERO ACCIDENTS

- The recommendations contained in this study
  allow us to make small, incremental improvements
  in the margin of safety for the B737. No -- to
  answer the questions everyone here wants to know
  -- we did not find the silver bullet.

- No design flaw was found that can explain what
  caused the tragic accidents in Colorado and in
  Pittsburgh. You are not going to see the kind of
  dramatic changes that were unveiled during our
  release of the evaluation of the ATR.

- But these incremental changes are just as important
  as finding the silver bullet. They will allow us to
  further enhance the margin of safety.

- They provide us with new pieces of information
  which may -- in the long run -- prove to be the
  very links we need to understand the "why" of
  these two accidents and the "how" of increasing
  the safety margins for this and other aircraft.

3. PRAISE THE TEAM

- I would like to publicly thank the team that worked on this study. Although they did not find the silver bullet -- we did not expect to find the silver bullet -- they have made recommendations that we feel will improve the margin of safety and move the science of aviation forward. We all owe them a debt of gratitude.

- Now, Tom will walk you through the study and our recommendations.

##

REMARKS PREPARED FOR DELIVERY
FAA ADMINISTRATOR DAVID R. HINSON
IEEE INTERNATIONAL RADAR CONFERENCE
MAY 8, 1995
ALEXANDRIA, VA

Thank you, Tom,[1] and good afternoon ladies and gentlemen:

I'm honored to be the guest speaker at this premier event and delighted to have this opportunity to address such a diverse international audience.

This year we're observing the sixtieth anniversary of the invention of radar. We look back on 1935 as a year when several critical experiments refined the concept and pointed to its enormous potential as an emerging technology.

What makes this particular anniversary noteworthy is that it occurs at a time when we are seeing a new potential for radar -- one which was completely unforeseen when radar was first invented.

Sixty years ago next month, British scientists led by Robert Alexander Watson-Watt put together the first cathode-ray device on which planes could be detected. And by September, they could measure the height of an aircraft flying 15 miles away.[2]

By the next year, radar could spot aircraft 75 miles away. And by 1937, a chain of twenty radar stations was being built along the east coast of England.

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[1] Tom Fagan, IEEE Conference '95 Operations Chairman, is Vice-President for Business Development and Government Affairs, ITT Corporation.

[2] Bunch, Bryan and Hellemans, Alexander. The Timetables of Technology. Simon & Schuster, 1993. Pages 351, 355.

But radar's emergence as a vital new technology did not occur without some missteps and delays.

Many of us have heard the story that a few years earlier, engineers working for the British Post Office were the first to notice that shortwave radio reception was disturbed whenever an aircraft flew within four miles of their receiver.

Yet no one at the time realized the significance of this signal interference. Several years passed before anyone made the mental connection that would eventually transform this casual observation into the idea of radar.

Progress in technology is a process of making the right connections. And, inevitably, missing a few along the way.

Inventing new technologies is always a high risk venture -- failures are always a possibility and setbacks a certainty. Only as a technology matures can incremental improvements be made with increasing levels of confidence.

After sixty years, it would be reasonable to consider radar as a mature technology. Some might even say its a technology that is past its prime.

With all the enthusiasm for GPS, the radar industry may be feeling some qualms about its future. You can sympathize with the makers of keypunch machines back in the days when direct data entry was being introduced.

Today I'd like to offer an argument that contradicts this pessimistic view of radar's future.

Far from being written off as an outmoded technology, I would suggest that the radar industry will find new opportunities to apply its long experience and vast expertise.

Even as we move toward ever greater reliance on GPS for long-range navigation, we will find new applications for advanced radar technology in the terminal environment.

Its development will be spurred by two factors.

First is the need for safer, more efficient handling of air traffic at airports which are increasingly congested.

Second is a more flexible acquisition procedure which the air traffic services corporation proposed by the Clinton Administration will be free to pursue.

Underlying both of these factors is the relentless growth of aviation, and the urgent need to prepare for it.

Last year, more than 555 million passengers boarded flights on U.S. carriers. The aviation forecasts we released in March predict that, shortly after the turn of the century, this number could reach 800 million a year...and may grow to more than a billion in less than two decades.

This magnitude of growth inevitably means more planes using our airports -- perhaps as many as 30 percent more over the next 15 to 20 years.

It has been my longstanding concern that inadequate airport capacity, here and throughout the world, threatens to curtail the prospects of our industry for continued growth and profitability.

We project that, given the capacity we have available today, over the next 20 years, we will add nine or ten new airports to our already lengthy list of U.S. airports with serious delay problems.

For example, at O'Hare, the world's busiest airport, delays have exceeded 100,000 hours evert year for the past 5 years.

The expected growth could produce even longer delays at even more airports -- adding to the operating costs of our carriers, and frustrating their strategies to increase productivity.

And whatever relief may eventually come from carriers shifting to larger aircraft ... that relief is still a long way off. In spite of the fact that the new Frankfurt terminal was built to handle the super-jumbos, both Boeing and Airbus are now expressing doubts that a sufficient market now exists for 600-seat aircraft.[3]

Airbus Industrie's managing director Jean Pierson -- in explaining the basis for his skepticism -- cited the trend, especially in the U.S., for carriers to offer a greater number of flights using smaller aircraft.[4]

The net impact of all this is, of course, a growing problem with airport congestion. And a growing potential for airport accidents -- especially runway incursions during bad weather and nighttime operations.

The FAA is taking action to deal with this prospect ... actions which have already resulted in nearly a 25 percent drop in the number of incidents for every 100 thousand airport operations.

This impressive reduction isn't just a chance fluctuation in our statistics. It's the outcome of a concerted effort, begun in 1991, when the FAA organized 45 different projects to eliminate this hazard.

Thirty of those 45 projects have now been completed, giving us the essential background of knowledge and experience to make an even more effective attack on the problem of runway incursions.

Last month, we released a comprehensive action plan, based on our cumulative expertise and incorporating the specific recommendations of the Aviation Safety Conference.

That conference was an attempt to cross a mental threshold, to establish a new paradigm. We wanted to help the aviation community and the flying public begin to understand, and finally to believe, that accidents are not inevitable, that 100 percent safety is possible.

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[3] Financial Times, April 7, 1995, "Doubts at Boeing on Superjumbo".

[4] Interview in Financial Times, April 3, 1995

That conference, which we held in January, set priorities for the entire industry. It spelled out -- in 173 specific initiatives -- exactly what government and the private sector must do now to achieve a zero-level of accidents.

The FAA's five point action plan for preventing runway incursions is one of the early results of that historic conference.

Two of the five points address our plans to accelerate the introduction of new digital technology for the detection and management of surface traffic at airports.

Our new generation airport surface detection equipment -- the ASDE-3 -- is critical to this program.

The design of ASDE-3 shows how far radar has come over the past sixty years. It can penetrate rain, snow, fog, and darkness to give controllers in the tower a visual display of all airplanes and vehicle traffic on runways.

The ASDE-3 is a showcase technology. It's also a critical, corner-stone technology because it must be in place before we can set up the second part of our runway incursion prevention plan -- what we call the Airport Movement Area Safety System, or AMASS.

Once ASDE and AMASS are linked, we'll have -- for the first time -- an automated warning system which will issue audio and visual alerts anytime there is the possibility of ground collisions.

The first ASDE-3 was commissioned just 17 months ago in Seattle. Since then, we've put them in operation at twelve other airports. We are commissioning three more this month and four more in June. By the end of the year, we plan to have them fully operating at 21 major airports and will have 40 going by the end of 1999.

Like the early development of radar, the fielding of these new systems has not proceeded without some setbacks and delays. Even so, AMASS has gone from drawing board to on-site testing in less than five years. And in another year, we will begin operational testing at San Francisco.

Given the fact that no one had ever built anything quite like it, this is a rate of progress I'd like to think would have impressed even Watson-Watt and the other pioneers of radar.

They, after all, didn't have to think about how to integrate their new invention into an air traffic control system massive in scale and complexity.

They didn't have to win the confidence of a prudently cautious professional workforce with a long tradition of refusing to compromise standards when it comes to passenger safety and system integrity.

And they didn't have to contend with federal procurement policy or negotiate the many bureaucratic barriers to quick action.

The government's acquisition rules and procedures today rival the IRS tax code in complexity. These regulations aren't too great an impediment when we're buying mature technology which doesn't change much from year to year.

But when we're trying to purchase new technology in fast-developing fields, these procurement policies are severely detrimental to common-sense management and sound business practice.

The FAA has limited flexibility to change the way we deal with suppliers. Fundamental improvements will become much easier once we get Congressional approval for our proposal to set up a separate air traffic services corporation.

Other nations have successfully set up independent organizations to handle air traffic, and there are clear advantages -- especially at a time when money is scarce and demand continues to rise. The Clinton Administration's proposal for a government-run, Air Traffic Services Corporation is a break with the old business-as-usual approach which no longer serves our best interests as a nation.

Legislation to establish the corporation was introduced in the House just before the Easter recess. As it works its way through the Congress, we will continue to make whatever improvements we can to keep our programs moving forward.

One important step we're already taking is to buy "commercial off-the-shelf" technology whenever possible. Increasingly, this is the way we'll be buying the next generation of radar technology.

We see off-the-shelf procurement as allowing the FAA to upgrade more quickly and more economically. We can begin to benefit from new engineering advances as soon as they reach the market and acquire new systems at commercially competitive prices.

We're also betting that this move will enhance entrepreneurial vigor by stimulating innovation and new product development. There will be expanded opportunities for those small companies which nurture new technology. They'll find that selling to the FAA has become far simpler and less formidable. And more immediately rewarding.

It is important that this industry be at the forefront of new product development, because future radar technologies may someday contribute to the solution of a problem that we are just now beginning to confront.

Radar may well be essential to the success of one of our boldest ideas for redesigning the basic architecture of air traffic control. That is the idea of free flight. It is our goal that sometime -- not too far ahead -- pilots will be allowed to file a flight plan for any route they choose, and will be allowed more flexibility in deciding when to take off and land.

Free flight, through dynamic traffic management initiatives, is now available at Flight Level (FL) 350.

For free flight below FL290, however, new technology is necessary. But it is technology which is already well along in development cycle -- systems such as Wide Area Augmentation, universal TCAS, digital data link and automated en route air traffic control (AERA).

We're just about ready to award the contract on Wide Area Augmentation, and prototypes of AERA are being evaluated at Cincinnati and Salt Lake City.

The great obstacle still ahead in realizing our goal of unrestricted free flight is the management of traffic in the terminal area. Especially at our most congested airports -- those top 100 airports which are now working under close control.

The missing connection is "How do we make the transition from free flight into the optimized close control of a densely crowded terminal airspace"?

It's a problem. And we don't yet know the solution. But it may well be some new application of advanced radar technology.

It's a also challenge for us. And an opportunity for you -- those of you who are part of this industry.

So as we celebrate this sixtieth anniversary of radar, it is not yet time to think of retiring this venerable old technology. Quite the contrary, it's about to start an exciting new career.

At a time when we're in danger of running out of airport capacity, we're also in danger of running out of options. It's more and more difficult to expand existing airports. And building new ones is virtually out of the question.

Nor can we expect to see larger aircraft take to the air any time soon. At the moment, they don't appear to be economically feasible.

We will have to look to technology to help us leverage maximum capacity from our current system of airports. We will have to rely on technology to keep our airports operating in weather that now closes them down.

And, we will have to depend on technology to assure that -- as we push more and more traffic through our airports -- system safety remains one of the world's best.

The public has every right to demand an aviation system with the highest possible standards of safety. The goal of our zero accident initiative to guarantee that level of safety.

Radar -- as we know it today, and as it will evolve in the future -- is certain to be a decisive element in any successful technological solution.

Thank you.

DAVID R. HINSON
ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION
NATIONAL AIR TRANSPORTATION ASSOCIATION
NATA '95 CONVENTION AND TRADE SHOW
NEW ORLEANS, LA ,
MAY 10, 1995

INTRODUCTION/ACKNOWLEDGMENTS

- It is a great pleasure to be here in person -- not on videotape as I was last year.

  I want to thank Jim, Andy, and all of you for inviting me back.

TODAY'S TOPICS

- Today, I'd like to offer my views on four major areas of concern to NATA members.

  First, I want to talk about our shared commitment to safety.

  Second, I want to report on what we are doing to make our rulemaking process more meaningful and less burdensome.

  Third, I want to highlight the progress we've made in fostering the recovery of the aviation industry and to support continued long-term growth.

  Fourth, and last, I want to tell you why I believe we need a government-run Air Traffic Services Corporation.

- Most of us look at issues from a variety of angles. Depending on our experiences, our current positions and our goals for the future, our perspectives may be very different.

  The perspective I offer is based on the 20 months that I have been the FAA Administrator and nearly 40 years in the business of aviation -- some in businesses like those you operate.

- Whatever line of the aviation business we're in, it always involves the issue of safety. Safety is not only *good* for business -- in aviation it is *essential*.

OUR GOAL OF "ZERO ACCIDENTS"

- Accidents now happen so rarely that people take safety for granted. It is our job to strengthen that assurance.

- The accident rate for commuters, which has been a matter of public concern and media attention, was just about the same last year as the rate for the major carriers.

   Despite last year's tragic accidents, 1994 was the safest year on record for commuter airlines. Part 121 carriers had their second lowest accident rate on record.

   General Aviation had the fewest number of accidents since World War II.

- But while the majors have had a virtually unvarying low accident rate for the past two decades, the rate for commuters has been much more variable.

   Our "One Level of Safety" initiative addresses this concern -- and gives us some of the tools we need to safely manage the phenomenal growth that is predicted for commuter airlines during the next two decades.

- The Aviation Safety Conference in January was an attempt to cross a mental threshold.

   We need to help the aviation community and the public begin to understand, and finally to believe, that aviation accidents are not inevitable.

- In the past, federal regulation has been an essential part of creating public confidence in air safety. Effective regulation is still necessary to help us reach our goal of 100 percent safety -- "zero accidents."

- But to reach that goal, we need to do more than change some of the things we do. We need to change the way we think.

REGULATORY INITIATIVES

- Regulation, in cooperation with the aviation community at large, is still the foundation of aviation safety.

   Our regulatory system continues to serve as a world model, helping introduce American concepts and technology into other air transportation systems worldwide.

   We will continue to take responsible steps to build on that framework.

- Regulation does not necessarily mean more intrusive, more expensive government.

Convincing data on costs and benefits will help us avoid preemptive or precipitous rulemaking. The conference we held last June is a step in this direction.

Greater use of ARAC -- the Administrative Rulemaking Advisory Committee -- is speeding up the rulemaking process and helping us make more informed decisions.

ARAC member organizations are drawn from every sector of American aviation and from advocacy groups that represent many diverse interests and viewpoints.

Since ARAC was formed in 1991, we have assigned the committee some 130 tasks -- 90 of which are on-going.

- ARAC was involved in formulating the new rules we published last year to harmonize U.S. and European standards for small airplanes.

  This is an example of government regulation which doesn't add to the cost of the industry. In fact, these are changes which make the rules less burdensome.

  But there is still plenty to do.

"HATE A REG"

- Shortly after I arrived at the FAA, I initiated a major review aimed at amending -- or ending -- any existing regulations that create economic burdens or barriers to progress, but do little to improve safety and security.

  Dubbed the "Hate a Reg" project, I asked the public to identify the three regulations they considered unwarranted, inappropriate or unduly burdensome, and to recommend alternatives.

  We received 426 recommendations from 180 sources.

- The rules the GA community disliked most were those dealing with medical certification requirements, biennial flight review, aircraft annual inspections, and aircraft simulation.

  We received more than 5,000 written comments to the NPRM to revise airman medical standards and certification procedures.

  Jim (Coyne) and other leaders of the General Aviation Coalition have told us, loud and clear, that they believe some of our proposed changes in certificate requirements would discourage some people from continuing to fly. And would deter others from taking it up.

We will look at the comments carefully before we take the next steps.

We try to make sure that all legitimate points of view get a chance to be heard. But on some issues, there's very little room for discussion.

One of those issues is unapproved parts.

UNAPPROVED PARTS

- We cannot permit the manufacturer and use of unapproved parts on civil aviation products. And we will pursue and prosecute persons knowingly involved in this type of illegal activity.

- We recently published a notice in the Federal Register, explaining our position and enforcement intentions.

    Companies that are in compliance with the FARs have no problem.

- Any company not now in compliance has until May 30th to submit a preliminary application. The FAA assures those who take this step that the information they provide will not be used against them in an enforcement action.

    We are gearing up to handle a heavy volume of new applications, because I believe the vast majority of manufacturers and suppliers are responsible businesses.

- There can be no leeway allowed for the use of unapproved, bogus, or counterfeit parts. Incidents -- like the one involving the Lycoming bolts -- remind us how important it is for the entire aviation community to cooperate in combating fraudulent manufacturing and marketing practices.

    The reputation of our entire industry is at stake. And that reputation is the foundation upon which we are starting to rebuild general aviation.

- It is because of that reputation for quality and reliability that a persuasive case could be made for product liability reform.

FUTURE OUTLOOK:
RECOVERY AND CONTINUED GROWTH

- This landmark legislation is expected to stimulate new product lines, more sales, and create thousands of new jobs.

- Cessna is building a new plant and expects to turn out 2,000 single-engine aircraft a year.

- Piper is also gearing up in response to the new liability limitations.

- Other factors also suggest a turn-around in general aviation.

  - The continuing strength of the economy

  - The vitality in the used airplane market signals that GA is far from dormant

  - NATA's "Learn to Fly" and similar programs are attracting new people into aviation.

The FAA has a wealth of basic safety information in videotapes, brochures, and other training materials that we can contribute to support these programs. We're available to lend our technical support and expertise as well.

  - The entire aviation community is united in the recovery of GA.

Within weeks after I came to the FAA, I signed off on the agency's first-ever policy to revitalize general aviation, then we produced a plan to achieve that goal.

We are working, side by side, with the GA community on new incentives to improve safety and service, lower the cost of flying, develop new products through R&D, and guarantee access to airports at home and around the world.

- Let me give you a few quick examples:

- **Contract Tower Program**: Contracting out low activity towers is a prime example of how the federal government can provide quality services for less cost.

  We have expanded this program, through Fiscal Year 1997 to include 99 Level 1 towers.

  It costs the FAA about $450 thousand per year to operate a Level 1 tower. We can contract them out for about $250 thousand. Once all the conversions are complete, we expect the savings will reach $20 million a year, and service will be comparable or better.

- **AvGas**: A search is underway to find a clean, low-cost alternative to leaded aircraft fuel suitable for general aviation aircraft. Our research center in Atlantic City is working with the engine manufacturers and the oil industry

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to develop a high octane unleaded gasoline. EAA and
AOPA are participating in this effort.

- **Safe, Affordable Aircraft**: We have formed a partnership with NASA to give general
  aviation manufacturing a boost from advanced technology. This partnership has three
  objectives:

  > 1) to produce affordable aircraft and avionics for worldwide sale;

  > 2) to improve the crashworthiness of general aviation aircraft; and

  > 3) to get America's small high-tech firms interested in
  > developing new products for general aviation.

The FAA is providing technical expertise in such areas as
cockpit system technologies, propulsion systems, icing
protection systems, and data link design.

- **Weather Information**: The availability of reliable weather information is critical to
  safety and to your ability to provide services.

Our budget request this year includes $24.5 million to
purchase an additional 106 Automated Surface Observing
Systems (ASOS). This last installment will mark the
successful conclusion of our ASOS program, which was
begun in 1982. When the program ends next year, we will
have installed ASOS at 537 locations, at an investment of
$255 million.

- **Free Flight**: Our goal is to allow pilots, whenever practical, to choose their own
  route and file a flight plan that follows the most efficient and economical trajectories.
  That's what we call "free flight."

  > Thanks to dynamic traffic management initiatives, this option is already available
  > down to Flight Level 35.0.

  > If all goes according to plan, we will drop the altitude
  > limitations to 29.0 in September.

- Free flight below 29.0 depends on four new technologies that are already well along in
  the development cycle:

  > 1) GPS: (Contract for the Wide Area Augmentation contract will be awarded this
  > month);

2) Airborne collision avoidance systems;

3) Digital data link; and

4) Higher levels of automation.

- Universal "free flight" is still in the conceptual stage.

  This summer, we hope to have a draft of the system architecture to discuss with industry.

  Next, we need to work out the hardware and software specifications with the users of the system, and begin the process of buying and installing them.

  Then, we must work out the human factors that go along with a paradigm shift of this magnitude.

- The pace at which the goal of universal free flight can be achieved is directly related to my fourth and final subject -- why I support establishing the U.S. Air Traffic Services Corporation.

THE ATS CORPORATION PROPOSAL

- The FAA is faced with the task of modernizing aging aviation system infrastructure at a time of growing customer demands and shrinking budgets.

  - We have to work under rigid personnel rules that make it hard to hire and deploy people when and where we need them.

  - We are slowed down by a procurement system which handicaps us in the race to keep up with the latest technology.

  - We have a budget process that doesn't allow for long-term planning or timely acquisition. (The ASOS program took 15 years to complete.)

  - And we must compete for our funds at a time when entitlements and interest on the federal debt are consuming more and more of the federal budget.

- The competition for diminishing resources is already being felt: We estimate that we need about $3 billion annually to fund our Capital Investment Plan. We expect to receive about $2 billion. Given the constraints every government agency faces under the Budget Enforcement Act, it is hard to see how we will be able to meet the continuing capital needs of the ATC system in the future.

- The Clinton Administration's solution is a not-for-profit, government-owned U.S. Air Traffic Services Corporation.

  - The corporation will be fully funded from fees charged to users of the ATC system, and it will be able to borrow to finance major capital programs.

  - **General aviation will continue to pay existing taxes on avgas and jet fuel.**

- Of the many alternatives that have been presented, only the ATS Corporation specifically addresses all the problems.

CONCLUSION

- There is certain to be lively debate as the various bills move through the Congress.

- There is broad agreement concerning the problems that are confronting the current ATC system.

- We all agree that the time has come to change -- to get on with the job of assuring the future growth of American aviation.

- I believe that the U.S. Air Traffic Services Corporation is the best way to achieve that goal.

###

Opening Remarks Prepared for
David R. Hinson, Administrator
Federal Aviation Administration
Trilateral Meeting
Mexico City, Mexico
May 11, 1995

- I am delighted and honored to be here for the second meeting of senior aviation officials from North America.

- I cannot express enough thanks to the Mexican government for graciously offering to host this year's meeting.

- The partnerships and friendships formed a year ago can only be enhanced here in Mexico City.

- As we did last year, we are here to further the safety, security, harmony, and efficiency of aviation within the North American region.

- By opening the lines of communication and creating a partnership of nations we can, and will, create an even safer and more efficient North American aviation system.

- This is important, because as air travel increases throughout North America, national borders will begin to shrink.

- And, as those borders shrink, Mexico, Canada, and the United States must coordinate and cooperate to maintain a high level of safety.

- We must think boldly and globally to ensure that safety.

- More importantly, we need to make sure we do business in the same way -- we have to eliminate policies that are ownership or nationality driven and work towards a common system.

- Because without cooperation and harmony we will have chaos.

- And chaos could lead to accidents, something we all desperately want to avoid, and something the United States, Canada, and Mexico are committed to prevent.

- That is why last year we met in an effort to begin developing common air traffic procedures and standards throughout the northern hemisphere.

- Last year we took the first step towards international harmonization of aviation.

- I am happy to announce that as a result of our first trilateral meeting, we are beginning to move toward that common navigation system.

- Over the past year, we have made major strides in achieving the goals established at last year's meeting.

- For example, at our first meeting, Canada, Mexico, and the United States committed to the incremental development of a plan which would identify current, short-term, near-term, and long-term goals leading to air traffic harmonization through the implementation of a new Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM) plan.

- Our hopes are to use such a plan as the cornerstone for future planning, with the ultimate goal being the creation of a North American Air Navigation Plan for submission to ICAO.

- In pursuit of that goal, in June we will hold the first in a series of annual planning meetings to both evaluate current efforts/projects and to discuss planning activities within each country.

- Those meetings will also address the terms of reference for establishing the North American CNS/ATM Implementation and Transition Plan -- which will serve as the cornerstone of our common system.

- It is vital for our long term success that we implement technologies and establish procedures that will result in an ability for facility-to-facility communications between our individual countries.

- Today, I also want to acknowledge and commend my Mexican and Canadian counterparts for their help in completing the NAFTA Specialty Air Services Phase I process.

- We have now taken the first steps toward eliminating cross-border restrictions on specialty air services among our countries.

- In the past year, over 300 significant differences were raised, and over 90 percent of them were resolved.

- Its amazing what a little cooperation can accomplish, especially when all parties believe in the same goals and are willing to commit themselves to the quick accomplishment of those goals.

- Also, before I close I want to congratulate both Canada and Mexico for the work they have done restructuring their own aviation authorities.

- Canada will soon commercialize its air navigation system.

- The United States is closely watching that development, because, as most of you are aware, the U. S. Department of Transportation would like to corporatize the U.S. air traffic control functions.

- Under the leadership of Director General Barges, the Mexican DGAC has undergone significant change.

- Ingeniero Barges has committed to a very aggressive schedule for the restructuring of the DGAC to create a more efficient and effective aviation authority.

- In fact, he is creating a structure which is closely aligned with the FAA, and I am honored that the FAA was able to provide him some help and advice as he undertakes reorganization.

- He has already established a separate organization for security and for aviation safety. And, he has successfully introduced new statutes and regulations to support those changes.

- We, individually and collectively, have made major accomplishments over the past year.

- I look forward to our continued cooperation and continued success as we move toward our mutual goals.

- I believe I've probably already gone over my allotted time, and I do not want to be the one to delay these important work sessions any longer.

- So, let me thank you for the opportunity to speak before you today. And, I wish us all success in this year's meeting.

Closing Remarks Prepared for
David R. Hinson, Administrator
Federal Aviation Administration
Trilateral Meeting
Mexico City, Mexico
May 12, 1995

- As we end our second North American trilateral aviation conference, I would like to close with a few thoughts on what we have achieved here this week and what we can look forward to in the future.

- As it was last year, this year's meeting has proven quite successful for a variety of reasons.

- First, it has given us the opportunity to keep lines of communication open between our nations as we work toward a common goal of aviation harmonization.

- Partnerships forged last year have grown even stronger this year, affording us the opportunity for even greater cooperation in the coming months -- especially as our working groups get down to business.

- We all realize that air travel throughout the northern hemisphere is increasing dramatically.

- That fact makes it even more essential that we work together as nations to create a safe and secure common aviation system.

- No one country can create and maintain a high system of safety and security throughout all of our individual airspaces.

- We must cooperate and we must maintain a strong partnership to make a safe system even safer.

- I believe that by working together we can achieve a goal of zero accidents -- a transnational goal we all want to see become a reality.

- We can do that by working toward common goals and ideas, as well as using common technology, standards, and procedures.

- This week we have made great strides in moving towards our goals of furthering the safety, security, harmony, and efficiency of aviation within the North American region.

- This is especially true as evidenced by the additional steps we have taken toward developing common air traffic procedures and standards throughout the northern hemisphere.

- I have faith that our individual aviation systems will, one day in the near future, become truly global in nature as we transcend national boundaries.

- As we close this year's meeting, I want to commend all participants for their efforts and look forward to our continued cooperation in the future.

- Thank you all, especially our wonderful hosts. I hope we have the opportunity to meet again as a group next year.

Remarks Prepared for
David R. Hinson, Administrator
Federal Aviation Administration
Regional Airline Association Annual Meeting
San Antonio, Texas
May 16, 1995

Thank you for that warm welcome, and I thank you for the opportunity to be here with you today. It's always a pleasure to speak to an organization such as yours.

This is an exciting and challenging time for the Regional Airline Association.

We've been hearing a lot of talk lately -- mostly from Wall Street analysts -- that the airline business is mature. Which is a polite way to say it's moribund.

But as Jack Welch of General Electric says -- "Mature isn't just an adjective anymore. It's an excuse for not finding growth."

Today you don't have to look far to find where the airline business is growing. Just look at the low-cost carriers, commuters, and regional airlines.

The regional airline business is one of the fastest growing segments of the aviation industry.

Although there are still giants left in the aviation business, there is increasing opportunity for anyone willing to start small and move fast.

Look, for example, at operations out of Baltimore Washington International Airport and some of the carriers flying out of there. In fact, someone has recently called Baltimore the Price Club of airports.

Long overshadowed by its two rivals -- Washington National and Dulles -- Baltimore is now the fastest growing airport in the United States. Traffic is up forty percent over what it was a year ago.

What made all the difference was the arrival of competing low-fare, no frills carriers -- several of them regional or commuter airlines.

In a decade which has discovered the economic benefits of cheap air travel, that's where the business is.

While most of our major carriers are still struggling financially, many of the smaller, regional airlines are thriving.

One start-up carrier turned a profit only four months after it started flying and is filling about 90 percent of its seats. It has since added five new routes and nine new planes.

These new carriers are succeeding because they offer air travel at the cost of a Greyhound bus ticket. Now, even the Greyhound line in Canada is planning to get into the low-fare airline business.

To me, this radical transformation of the industry does not look like sluggish maturity.

Not when air travel increased last year more than 8 percent and 555 million passengers boarded flights on U.S. carriers.

Not when so many new carriers are taking to the skies. In 1993, 13 airlines entered the U.S. market. And last year, FAA approved about 18 start-ups, and other applications are pending.

The dozens of small carriers which have come into existence the past several years remind me of that time -- a century ago -- when there were some 300 auto makers offering their cars on the market.

That, we know, was at the dawn of the automobile industry in this country. And, the proliferation of new airlines makes me wonder if we are not now at the dawn of a new era for our own industry.

I have been in the aviation business almost all of my life. During this time, I have watched the commuter industry mature. It has grown from a relatively small, unsophisticated business to an integral part of the air transportation industry in this country.

Further, airline deregulation and the changing economics of the industry have re-written the rules of the game.

There are currently 134 regional airlines in the United States. These U.S. regional and commuter airlines have become an indispensable component of the national air transportation system.

They are the fastest growing sector of the aviation community.

In the past 20 years, commuter aircraft flight hours have climbed from 900,000 to more than 2.3 million annually. Commuter departures are up from 1.4 million in 1975 to over 3.1 million today.

Passenger enplanements have increased fivefold since the deregulation of airlines in 1978 and have increased nearly 35 percent in the last three years, rising to 57 million in 1994.

Daily departures for regional airlines exceed 12,800. Each day an average of 150,000 people travel on regional airlines.

Business travelers account for more than 60 percent of those passengers.

More than 2 million passengers a year use the regional airlines for their international travel to Canada, Mexico, the Bahamas, and the Caribbean.

And, FAA forecasts show that commuter travel is likely to triple by 2006.

The fundamental character of the regional airline industry has changed dramatically in the past decades. These changes range from the relative size and sophistication of airline operations, the players involved, and aircraft fleets, to the industry's relationship with the large commercial air carriers in the national transportation system.

While the role of the industry, in the past and today, is to provide feeder service to the large hubs served by the larger commercial air carriers, the exact scope and relationships of its role has changed dramatically.

During the last 20 years, for example, we have seen a major trend toward integration of commuter operations with the major and national carriers along with a consolidation of smaller carriers to form larger commuter airlines.

In addition, 47 regional airlines have code-sharing agreements with major airlines.

Also, the commuter airline fleet in 1978 was comprised of smaller, general aviation-type aircraft. The fleet of today is made up of newer, larger aircraft. And, the fleet is much bigger.

In the categories of commuter aircraft - 10 to 30 seats - the growth has been staggering. The number of commuter aircraft in the 10 to 19 seat category has tripled to 800 airplanes. In the 20 to 30 seat category we have seen an eight-fold increase to 300.

It is the continually evolving nature of the industry that led us to rethink safety requirements for commuter and regional airlines. It is why we feel that a single level of safety is now necessary.

Rules governing commuter airline operations were last overhauled in 1978. Since that time FAA has issued 50 amendments to the rule.

That is why on March 24, the FAA announced a rule which establishes one level of safety for all scheduled passenger-carrying flights.

For the first time, commuter airlines will have to meet the same rigorous safety standards as the major air carriers.

This rule standardizes requirements for aircraft equipment, airline certification and operations, and personnel for all air carriers operating aircraft with more than 10 seats.

From first aid kits to flight attendant manuals, passengers will be assured of the same standard of safety whether the aircraft they are boarding has 10 seats, 100 seats, or 300 seats.

As we all know, a number of regional carriers have already adopted some Part 121 operational requirements for: flight and duty times; pilot training; carry-on baggage; and ground icing programs.

I commend those carriers for their efforts. But there is still more to be accomplished.

Although the safety record of commuter airlines has improved steadily since 1978, it still falls short of the major carriers' outstanding record.

(As you well know, however, 1994 was the safest year in commuter history in terms of accidents.)

Safety is improving.

I know that the commuter airlines are working hard to improve safety, and this one level of safety rule takes a common sense approach to supporting those efforts.

We accomplished the rulemaking in less than 100 days, through the Herculean efforts of a team of 50 FAA staff dedicated only to this project.

Our team did an outstanding job of completing the rule proposal in the shortest time ever for development of a new aviation regulation.

Given the current call for a blanket moratorium for federal regulation, this rule is an excellent example of government aggressively acting in the public interest.

Teams of FAA experts examined every aspect of the commuter airline industry -- aircraft certification and performance, operations, cabin safety, and maintenance.

Our work toward achieving one level of safety didn't begin, and it won't end with this rule.

The FAA already has rules in progress on flight and duty time, training, crew pairing, and the use of simulators for training. We are considering rulemaking on digital flight data recorders, age 60 limit for airline pilots, and Alaskan operations.

I think we all can agree that the American public has the right to expect the same level of safety, whether they are boarding a four-engine jet or a twin-engine turboprop. This new rule will guarantee that level of safety is achieved and maintained.

Setting a uniform safety standard will ensure maximum passenger safety as the commuter industry continues to grow. And, in turn, it will bolster public confidence in the system.

Overall, our purpose is to achieve the highest level of safety without imposing unnecessary regulations or costs.

This rule, however, will not be inexpensive. It is expected to cost commuter airlines $275 million during the next decade.

However, the stricter safety requirements are expected to prevent nearly 100 accidents during the next ten years at an average estimated cost saving of $5.9 million per accident.

The cost to passengers on a one-way ticket will be $1.91 on 10 to 19 seat aircraft and only 68 cents per ticket on 20 to 30 seat airplane.

I want to pause here for a moment to reassure you that the FAA is aware of, and seriously listens to industry's comments on our proposed rules.

In fact, we try to make sure that all legitimate points of view get a chance to be heard.

That is why, before enacting final rules, the FAA carefully reviews industry comments on NPRMs -- we look at all comments carefully before we take the next steps.

While we have taken a comprehensive approach to the one level of safety rulemaking there is more work to be done.

For example, this rule also necessitates a new standard of safety for the airports which are served by the commuter airlines.

This is not a new issue -- I'm sure that many of you are aware the NTSB recently made a similar recommendation regarding Part 139 requirements.

NTSB recommended that all airports receiving air carrier service should be certificated, not just those receiving air carrier service with aircraft of more than 30 passenger seats (i.e., the current Part 139 requirement).

There would be a cost to those airports to meet that requirement. The rule would have to be rewritten to address these smaller airports. The exact requirements that would be applicable have not been determined but costs associated with it would probably involve capital outlays and operating expenses. This effort would also be subject to a cost benefit analysis.

We plan to forward legislation to Congress which gives FAA the authority to raise safety standards and require certification for smaller airports which are served by commuter airlines.

As painful as all of this might seem, it represents prudent, necessary, and logical steps to making a safe system even safer.

To expedite the rulemaking process, pending Congressional action, an initiative has begun under FAA's Aviation Rulemaking Advisory Committee.

A government/industry working group is now forming to recommend changes to the rules which govern commuter airports.

We, industry and FAA, have forged an excellent working partnership that will every day and every new year emphasize safety over all else.

We all need to understand that the FAA, industry, and groups like the Regional Airline Association are all dedicated to meeting the challenge of zero accidents.

These are not just words, but rather a genuine commitment to improving safety.

With your help, I am sure we can reach that goal.

So, I leave you as I entered, confident about our role, optimistic about the future of the regional airline industry, and certain that aviation will grow both nationally and internationally as a safe carrier of more and more people.

The days ahead, no doubt, will be days of opportunity that we don't often see. The environment is ripe for change, and one thing that we can be sure of is that change is coming, and that the FAA and the airline industry is ready to meet the challenges ahead.

I thank you very much for this opportunity to speak, and I look forward to returning next year, if you'll have me, to examine further how far we've come in accomplishing our goals.

OVERVIEW

- I joined the FAA-DOT team because I believed I could make a difference in the future of U. S. civil aviation. I also was convinced that Secretary Peña, and the President and Vice President had aviation's future as one of their highest priorities.

- When I became Administrator in August 1993 , FAA faced significant challenges to get ready for the 21st century.

- Capacity. The national airspace system that could be carrying one billion passengers within 18 years. Increased globalization of aviation and changing political trends gave us new responsibilities.

- State of the Industry. Airlines had lost $10 billion from 1990 through 1992. Several major carriers were in bankruptcy. Orders for U. S. commercial aircraft continued to decline.

- Smaller budget and workforce. FAA had to maintain safety and technical competence while being asked to do more with less, and do it better.

- <u>Credibility</u>. The aviation community had lost confidence in our ability to modernize because of unacceptable cost increases and delays in the Advanced Automation System. Modernization is the key to meeting increased capacity demands.

- <u>Inefficiencies</u>. FAA R&D activities were scattered across the Agency and not integrated with acquisitions. The regulatory process was excessively cumbersome for both FAA and its customers.

- We have sharpened and redefined FAA's mission during the last 20 months. Our goal is to give the Agency a strong vision of where we have to go and how we're going to get there.

REFORMING FAA

- In 1993, FAA had had interim management for some time. We also had too <u>many</u> layers of management. We could not focus effectively on our highest-priority goals. We were not as responsive as we could be to the needs of the aviation community.

- It's important to remember <u>that the people at FAA are highly trained, dedicated professionals</u>. They have been hampered by a less-than-perfect organizational system.

- We have begun to reform FAA from within. The bottom line is an organization that is leaner and more in sync with our customers in aviation.

- <u>AAS</u>. We put a new management team in control and identified the causes of the delays and overruns. We canceled parts of the system that were clearly weren't going to work as intended.
    - --We made sure that Loral satisfied our concerns before awarding the $898 million Display Replacement System contract last month.

    - --The modernization program is back on track and costs are under control. Total estimated savings to taxpayers: $1.6 billion

- <u>Streamlining</u>. FAA has cut employment levels by 4,700 since December 1992 through buyouts and a hiring freeze with <u>no adverse impact on safety</u>.

- <u>New faces, new ideas</u>. Since September 1993, 55 of 148 Senior Executive Service personnel (37 percent) are new to their jobs. On my Management Team, 19 of 28 members (68 percent) are new.

- <u>FAA Reorganization</u>. Last November, we restructured FAA along our six key lines of business. Clear and separate accountability for operational and regulatory functions helps ensure proper focus for each area.

- <u>Acquisitions reform</u>. We created a separate Office of Research and Acquisitions. It pulls together scattered research activities and integrates them with development and acquisition. The result: better research, products are getting to the market more quickly.

- <u>Reinventing regulations</u>. Since January 1994, FAA has worked with the aviation community to review and reform the regulatory process. We developed and issued the proposal for the commuter rule in just 100 days.

--Management committed to the deadline, eliminated conflicting work priorities and made issue teams accountable.

--Five issue teams were set up. Mid-level management briefings were continuous. Upper-level management was briefed ever two weeks.

--Senior managers made themselves readily available for final decisions.

- Boeing 777 certification process a good example of meeting the regulatory challenge with flexibility while maintaining authority.

The Future
- We have a "whole new way of doing business" and we're delivering on our promises. The agency is more accountable. We are exercising the regulatory function in a responsible manner while satisfying aviation community's needs.

- Reforms are helping us move advanced technology out of the laboratory and into practical application. It will be available in a timely manner to ensure system safety for the rest of this decade and in the early 21st century.

- We are still hampered by cumbersome government procurement and personnel regulations. One

solution may be corporatization of air traffic control services.

- Advantages of ATC corporatization:
  --A simplified procurement process. Today, 95 percent of procurement involves ATC services.

  --Personnel flexibility to attract highly qualified people and make sure they go where they're needed.

  --Business-like financing options, including borrowing from outside investors.

- Getting the plan through Congress is a real challenge, but I believe we'll succeed. Our goal would be to have the organization up and running 12-18 months after approval.

SAFETY

- <u>Safety is our Number One priority</u>. That was true when I took over, it's true now and will continue to be true. It's the fundamental thread that runs through everything we do.

- U. S. air travel is the safest in the world. According to Air Claims, the United States has suffered 428 fatalities in scheduled revenue service in the last 5 years. The rest of the world has had 4,510 fatalities during the same period. That's 8 percent of the fatalities with over half of the world's ticket sales.

- Since 1993, we have taken several important steps to make the system even safer.

- <u>Safety Office</u>. In February, we created a top-level Safety office that reports directly to me. It's sole responsibility is safety--period.

- <u>Aviation Safety Conference</u>. On January 9-10, we met with more than 1,000 members of the aviation community.

- Conference was a turning point in aviation history. Our goal was to start developing plans for a revolutionary aviation safety paradigm: zero accidents.

- Eliminating accidents requires hanging the way we think: Accidents are <u>not</u> inevitable. Also requires a plan to change the way we do things.

- Conference resulted in a Safety Action Plan issued on February 9. The Plan is a road map detailing 173 government and industry safety initiatives that address 45 concrete safety issues.

- Conference also produced a new FAA policy of "shared responsibility." Policy recognizes that zero accidents requires full commitment from everyone who flies, regulates, maintains aircraft.

- For the first time, aviation community will have access to technical data it needs to analyze trends and anticipate potentially dangerous problems.

- In the past, concerns that data voluntarily released by the airlines could be used for regulatory enforcement often created barriers to full cooperation between industry and government.

- Airlines will allow the FAA to analyze data they collect as part of their new Flight Operations Quality Assurance programs. FAA agrees not to use the data in enforcement actions against the airlines.

- Another step toward the zero accidents goal: the "one level of safety" concept . Under this proposal,

commuter flights must meet same rigorous safety standards as major air carriers.

--Whether an airplane has 10 seats or 300 seats, our goal is to assure travelers that all commercial flights deliver the same high level of safety.

- We estimate it will cost commuter airlines about $275 million over 10 years to implement these standards. But we believe it will prevent nearly 100 accidents over the same period, at a savings of an average $5.9 million per accident.

    --Expected per-ticket cost increase: $1.91 for 10-19 seat aircraft, $.68 for 20-30 seat aircraft.

TECHNOLOGY FOR THE 21ST CENTURY

- Meeting our goals of zero accidents and increased capacity requires that we rapidly develop advanced technology and put it in cockpits and control centers as quickly as possible.

- FAA is the nation's premier research organization for aviation technology. It's been one of the Agency's major missions since its creation.

- Over the next 5 years, we're investing $XXXXXX in research on new technology. XX percent of FAA budget.

- GPS. Satellite navigation is revolutionizing air navigation. Gives both pilots and controllers unprecedented accuracy on a plane's position. Getting GPS data into widespread civilian use is one of our highest priorities.

- We've taken several steps to advance use of GPS in the last 18 months or so:

    --Certified the first GPS receiver. Now there are at least 10 U. S. companies in the market. It is the fastest-growing segment of the avionics industry.

    --Authorized GPS for supplemental navigation, including non-precision approaches.

--Approved GPS for oceanic and remote operations. A typical suitable GPS unit costs $40,000. Typical inertial navigation unit costs $100,000, plus $16,000 annual maintenance. Economic benefits of GPS for these operations is clear.

--FAA saved $8 million by cutting back on ILS system buy from Wilcox (64 instead of 225 systems).

--Developed Wide-Area Augmentation System to enhance GPS signals and permit Category I approaches. Contract for $XXX million awarded to XXXXXXX two days ago.

- Realization of GPS potential is spreading:
    --President's March 27 letter to ICAO meeting
    --ICAO blessing of GPS as navigational aid

- As GPS is incorporated into ATC, more air carriers will benefit from increased safety, more precise routing, fuel savings and increased bad-weather airport capacity.

- Maintaining pace on other advanced technologies as well.
    --Runway Incursion Action plan. Commissioned ASDE-3 at 11 airports, 10 more planned for 1995.

AMASS to be deployed in San Francisco, May 1996.

--TDWR. Installed at 16 sites, commissioned at three (Houston Intercontinental, Memphis, St. Louis). Construction underway at 12 more sites. Plans to install TDWR at 47 airports nationwide.

- "Free Flight" is our next major airspace initiative. Aircraft operators would be able to vary speed and flight path for maximum safety and efficiency. Air traffic control infrastructure would be greatly reduced.

- Free Flight will require operational capability of many advanced technologies: satellite navigation, data link, TCAS.
  --RTCA advising FAA on Free Flight. Draft operating concept due in August, final report in October.

AIRSPACE CAPACITY

- Capacity is a critical issue that we must address. In 1993, 23 airports exceeded 20,000 hours of annual flight delays. Estimated cost to airlines at each airport: $32 million. By 2003, number could reach 32 without improvements.

- We developed a comprehensive Aviation Capacity Enhancement plan issued in February. Lays down foundation for system improvements to increase capacity and reduce delays.

- We formed an Airspace Audit team in September 1994 to examine current ATC restrictions. Data could help us eliminate unnecessary restrictions, validate those that work. Action plan currently being developed.

INTERNATIONAL ISSUES

- <u>China</u>
  --FAA has had technical exchanges on airworthiness issues with CAAC for 8 years.
  --Expanding cooperation in flight standards, security, airport safety and air traffic control.

- <u>North America</u>
  --First North American Trilateral held May 1994.
  --Delegates met February 1, 1995 to reaffirm implementation plan.
  --Mexico hosts second NAAT meeting May 11-12, 1995.

- <u>Russia</u>
  --FAA working to get shorter air routes through Russia's far east.
  --Working to modernize ATC system, conclude bilateral airworthiness agreements.
  --Implementation of GNSS

AIR CARRIER SAFETY

A new Paradigm for the 21st Century

Talking Points Prepared for
David R. Hinson
Administrator, Federal Aviation Administration
General Harold R. Harris "Sight Lecture"
Wings Club
New York City
May 17, 1995

INTRODUCTION

SLIDE 1: TITLE

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AIR CARRIER SAFETY

A New Paradigm for the 21st Century

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o   The seven commercial airplane accidents that claimed
    264 lives in 1994 focused public attention on flight safety
    and aroused apprehension among air travellers.

    In the aftermath of those tragic events, difficult questions
    were leveled at every segment of the industry.
    Concerned passengers wanted to know "Is air travel
    safe?" "Is there something more that government and
    industry should be doing?"

    The answer to both questions is "yes".

o   In this discussion, I will try to place aviation safety in the
     United States within an historical context of evolving
     technology. I will retrace the period from the end of
     World War II to the present to see how and why we
     were able to make such steady gains in the safety of air
     travel.

     Then, I will look to the future -- making the case that the
     projected growth of the industry will compel us to
     achieve an even higher level of safety than we have
     today.

     To reach this new level, we will need a new paradigm --
     a new way of defining safety and setting standards.

     I will outline the course of action which the FAA plans
     to follow in fulfilling its responsibilities in the coming
     decades.

SLIDE 2:   SCHEDULED AIRLINE ACCIDENT RATES, 1946-1994

Accident Rates, Scheduled Airlines
Rate per 100,000 Flight Hours
1946 - 1994
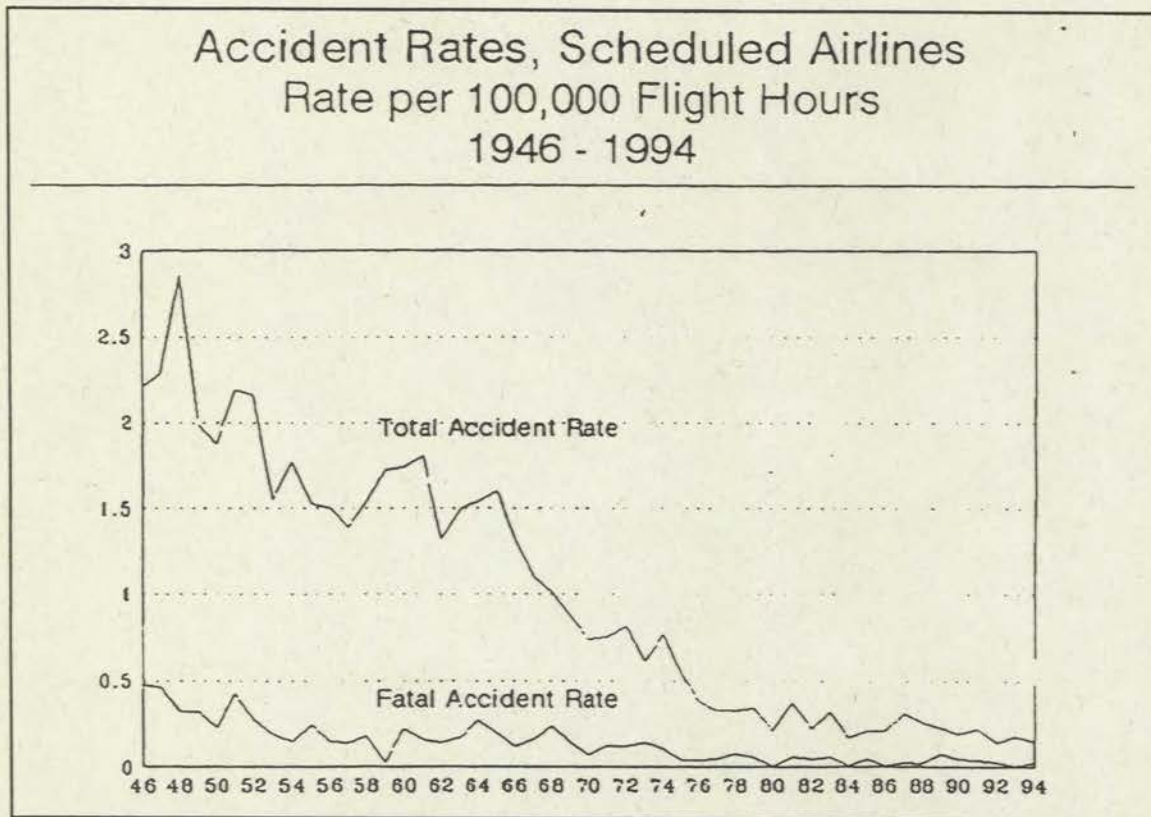
o   Over the last five decades. the rate of accidents for U.S. scheduled carriers has declined steadily.

We haven't totally stopped having accidents, but the rate of fatal accidents, the intervals between them, and the number of survivors have all gotten consistently better.

DRH: Wings Club, May 17, 1995

o   This year alone, over half a billion passengers will fly half a trillion miles in our skies.

     Yet in the entire history of U.S. aviation, there have been 12,600 commercial passenger fatalities. This is approximately the number of people who lose their lives every four months on U.S. highways.

o   The U.S. airspace is also the busiest and the most complex in the world.

     Measured by total passenger traffic, our airports account for 11 of the world's top 15 ranked airports.

     In terms of aircraft operations, 27 of the world's 30 busiest airports are in this country.

o   Compared to the elsewhere in the world, the U.S. has 50 percent of the world's traffic but only 8 percent of the fatalities (428 in past five years, compared to 4,512 on non-U.S. carriers.)

SLIDE 3:   ACCIDENTS PER 100,000 DEPARTURES,
            PART 121 AND COMMUTERS

Accidents Per 100,000 Departures
Part 121 and Commuter Airlines
1975 - 1994
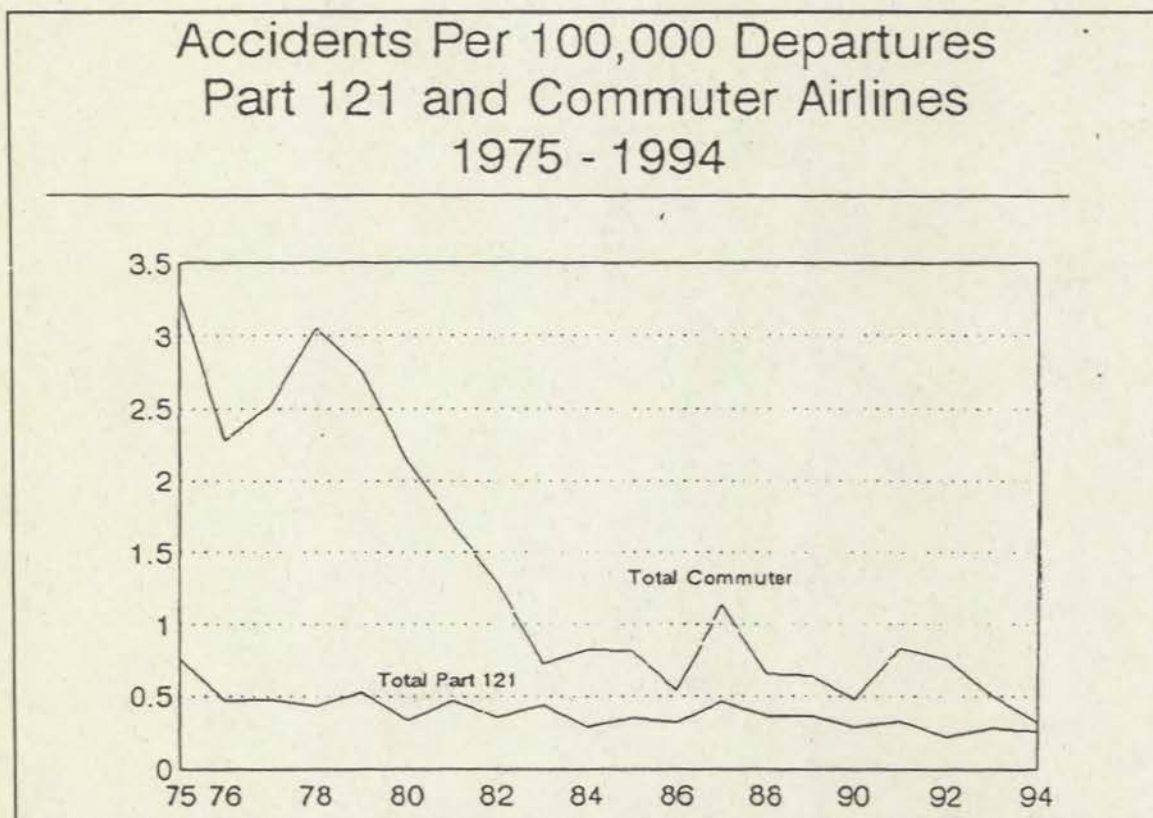
o   Over the past decade, Part 121 carriers have averaged
    24.5 accidents a year.

o   Fully one-half or more of these were reports of injuries
    caused by turbulence in-flight, ramp or gate mishaps,
    injuries while boarding or during emergency evacuation,
    or burns from hot coffee spills.

o   The rare catastrophic accidents that make the headlines happen, on average, zero to 3 times a year.

o   Before last year's fatal accidents, the major Part 121 carriers had flown 27 months and carried over a billion passengers without a fatality.

o   The four-year period just prior to those accidents was the safest in the last 50 years.

o   The accident rate for commuters has also fallen sharply since 1978, despite dramatic growth and change in the fundamental character of this segment of the industry. (i.e., size and sophistication of operations, marketing strategies and alliances, short haul vs. "feeder" services.)

Last year, commuters carried 53 million passengers, twice as many from just seven years ago.

o   Contrary to general perception, today's commuter fleet is
     mostly composed of turboprops with the same design
     sophistication that we find on larger jets.

     Only about 12 percent of the estimated 3 million annual
     takeoffs are in small single-engine piston aircraft, mostly
     serving remote communities in Alaska. The harsh flying
     conditions there regularly account for one-third to a half
     of all commuter accidents.

o   The accident rate for turboprops operating in the lower
     48 states, which carry 95 percent or of all commuter
     passengers, was almost identical last year to that of Part
   121 operators.

     Looking at the rate of accidents, 1994 was the safest year
     ever for commuter airlines.

o   The one level of safety rule which we recently proposed
     will reinforce this trend.

o   The net result is that today we find ourselves with an extremely low accident rate of 0.2 per 100 thousand flight hours -- one where the collective efforts of government and industry have really paid dividends.

o   Because of this record, the public has grown to expect -- and to demand -- zero accidents from the U.S. air transportation system.

Transition: Over the years, the rate of accidents kept falling while the rate of growth kept accelerating. The fact that the more people traveled on planes, the safer air travel become -- this inverse relationship added momentum to the industry's expansion.

SLIDE 4:   ACTUAL U.S. AIRLINE FATALITIES
             VERSUS 1960 PROJECTION

Actual U. S. Airline Fatalities Versus
Fatalities if 1960 Rates Were Extended
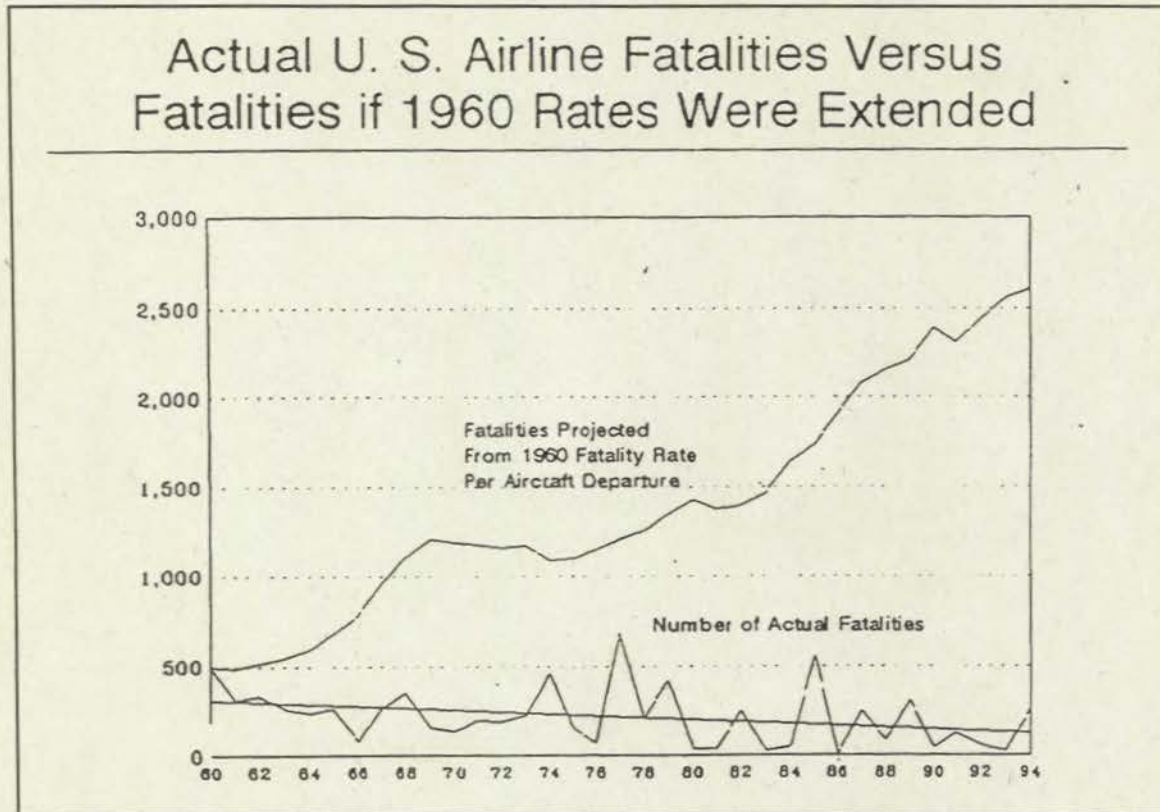
o   Imagine what would have happened if the rate of
     accidents in 1960 had remained more or less constant.
     Project the 1960 rate to the present, and we would be
     having a fatal air crash every ten days.

o   That is not what happened, of course. And the reason is
     an interesting story of technological progress and
     collaboration between government and industry.

SLIDE 5:   THE EVOLUTION OF AIR SAFETY:
             FIFTY YEARS OF PROGRESS

THE EVOLUTION OF AIR SAFETY
FIFTY YEARS OF PROGRESS

- ENGINES AND AIRFRAMES

- ONBOARD AUTOMATION

- SIMULATORS

- AIR TRAFFIC CONTROL

---

o   The foundation for the present high level of safety can be
     traced to fifty years of progress in four major disciplines.

1)   The tremendous advances that the manufacturers
      have made in airframe and engine reliability

2)   automation and advances in the cockpit;

3)   wider application of simulators for training for
      training pilots and crew.

4)   the evolution of the science and technology of air
   traffic control;

AIRFRAMES AND ENGINES

SLIDE 6:   DOUGLAS CLOUDSTER

PHOTO

DOUGLAS CLOUDSTER, CIRCA 1920

o   Steady improvements in the reliability of airframes and engines have played a major role in aviation safety.

o   Airframes have evolved from wood and glue to jet age advanced materials (nickel alloys and titanium for greater strength under heat; composites, fibre glass resins and reinforced plastics to resist impact and stress.)

SLIDE 7:   MILES PER FLIGHT HOUR - SCHEDULED AIRLINES, 1932 - 1994

Miles Per Flight Hour - Scheduled Airlines
1932 - 1994
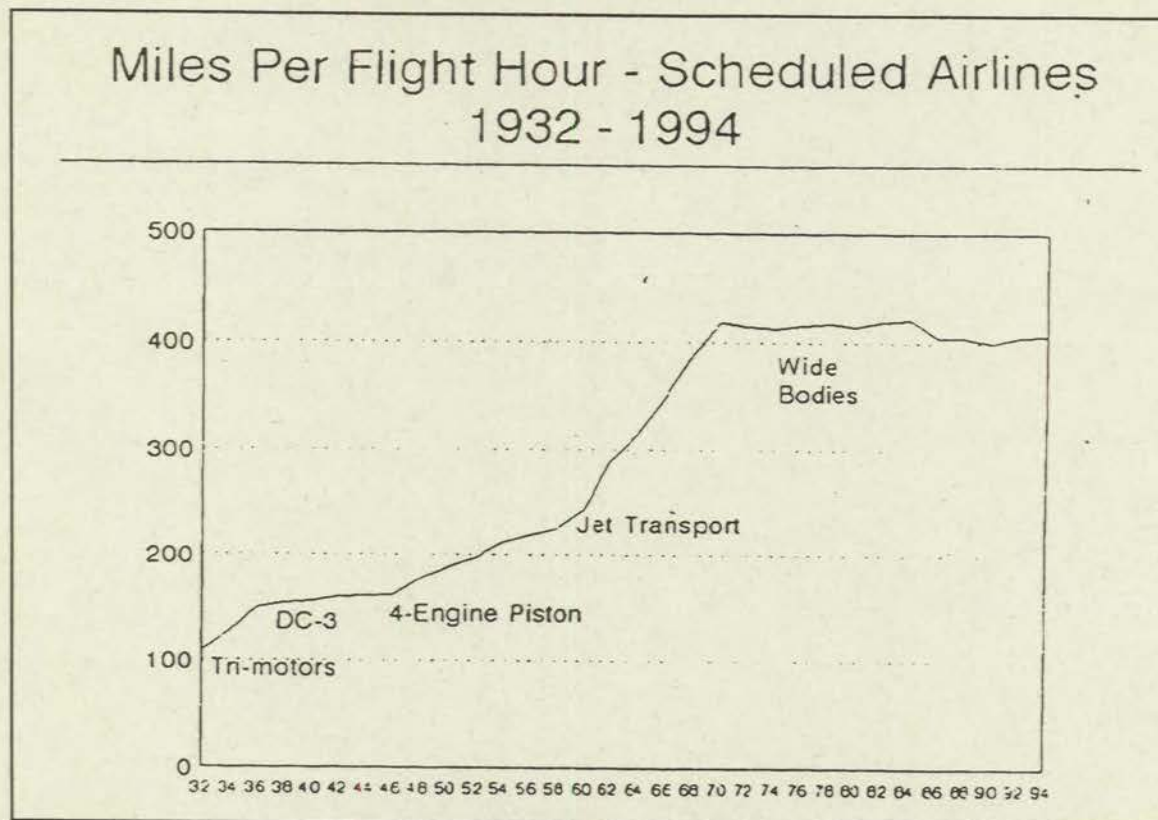
o   This illustration shows just how quickly jets dominated civil aviation.

o   The early piston driven aircraft had a speed of about 150 knots and a maximum range of 500 miles. By comparison, today's jumbos fly between 400 and 500 knots, at altitudes as high as 45,000 feet, with a range of up to 8,000 miles.

Transition: The jet engine brought a revolutionary level of reliability to the airline industry.

SLIDE 8:   SCHEDULED AIRLINE ACCIDENT RATES
            VERSUS INFLIGHT SHUTDOWNS

Scheduled Airline Accident Rates
Versus Inflight Shutdowns
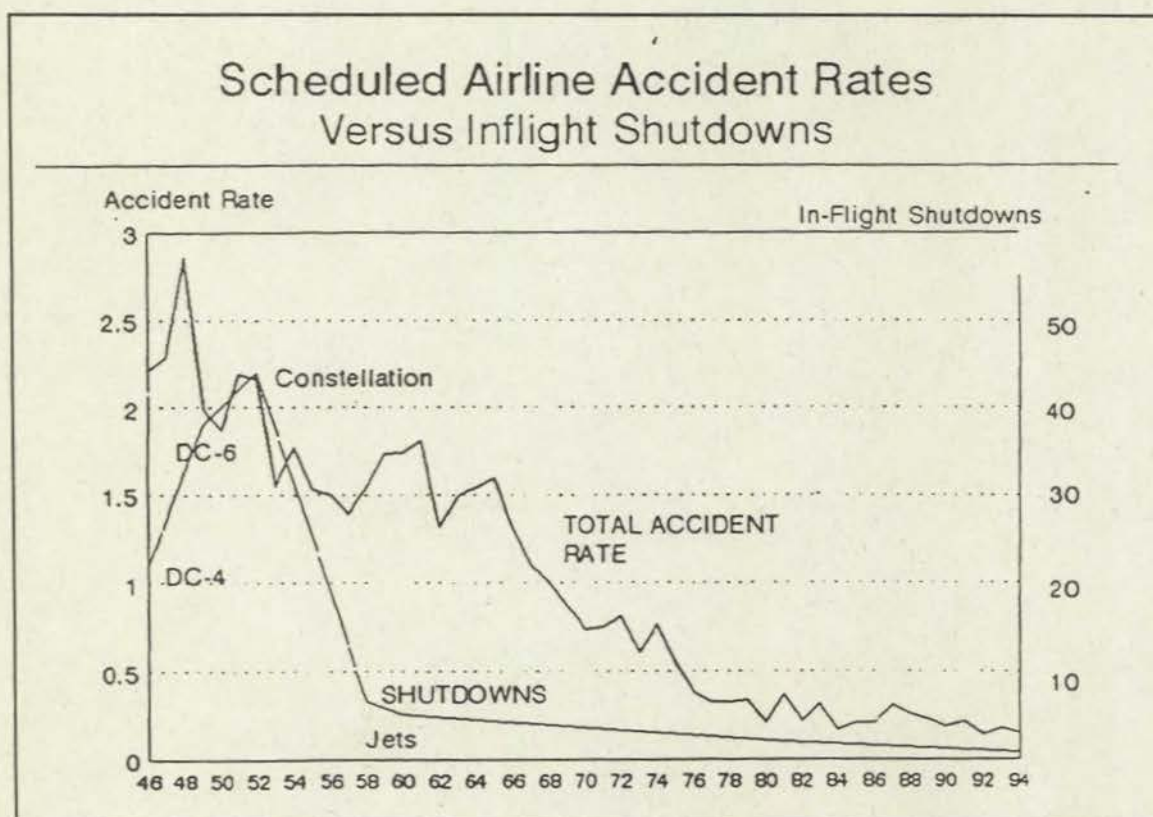
o   From 1946 to 1958, the U.S. averaged 3 passenger
    aircraft hull losses and 42 fatalities a year in accidents
    caused primarily by engine failure.

Post-War piston engines could run only 1,500 to 2,000 hours time between overhauls (TBO).

The earliest turbofans had TBO of 6,200 hours, and quickly jumped to 20,000.

The average time between overhaul for the present generation of jet engines is as high as 50,000 hours.

o   The second generation of jets, introduced in the mid-sixties dramatically decreased the rate of in-flight shut downs.

Engine technology has reached the point where a jet engine failure, in flight, is something that many young pilots will never experience in their entire flying careers.

SLIDE 9.   TOPIC CHECK OFF, ENGINES AND
                AIRFRAMES

| THE EVOLUTION OF AIR SAFETY |
| FIFTY YEARS OF PROGRESS |

✔ ENGINES AND AIRFRAMES

● ONBOARD AUTOMATION

● SIMULATORS

● AIR TRAFFIC CONTROL

Transition: Improved engine reliability, lighter weight,
higher strength materials and the advanced engineering of
contemporary aircraft have helped make flying more
efficient and much safer. Airplanes have improved so
dramatically that the basic integrity of the machine is not
usually a factor in accidents.

There has been equally dramatic change in the cockpit.

ONBOARD AUTOMATION

SLIDE 10.   DC-3 COCKPIT

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┌───┐
│   │
│   │
│   PHOTO   │
│   │
│   DC-3 COCKPIT   │
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o    Prior to the jet age, the most sophisticated piston-
      powered aircraft had only one or two analog computers
      that controlled pressurization or heaters.

o    In the 1970s the use of digital electronics technology
      allowed more aircraft functions to be automated with
      higher levels of reliability.

o    The pace of automation surged in the 1980s, when the
      micro-computer and cathode ray tube displays were
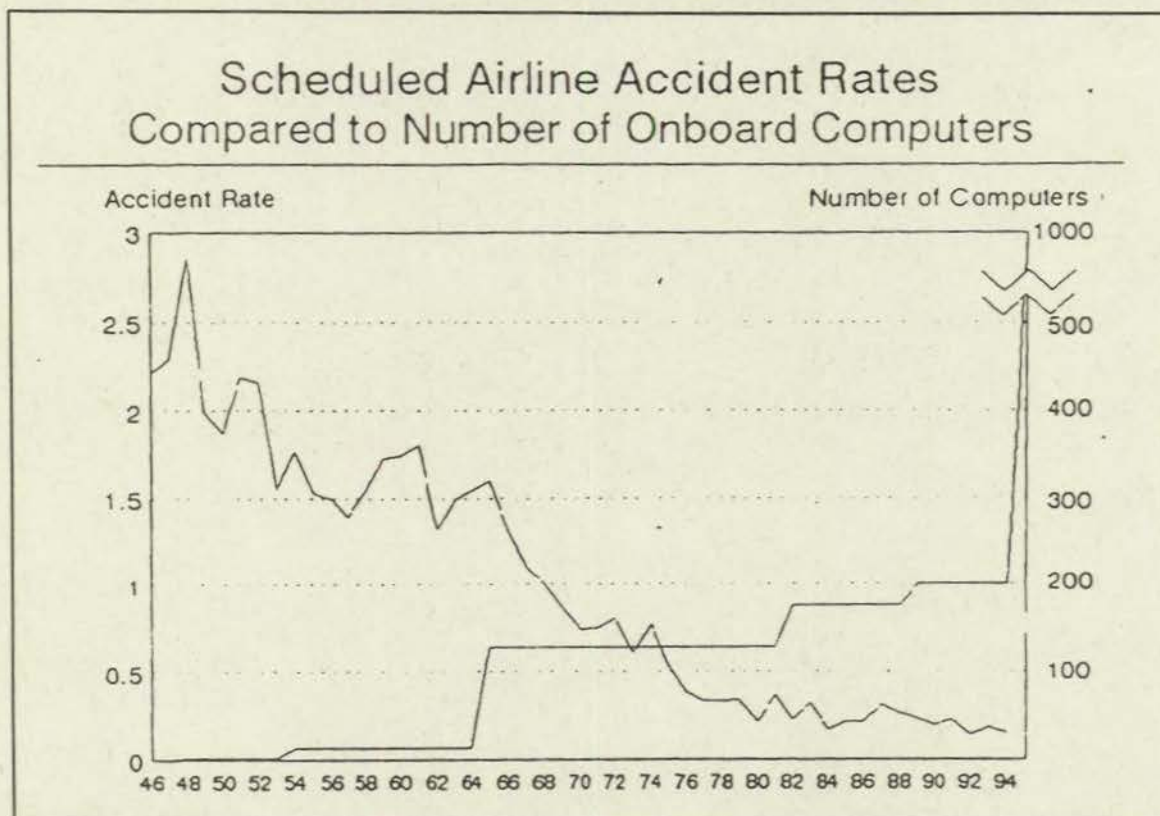      introduced into the cockpit.

o    The new Boeing 777, pictured here, has 1,000 digital computers.

SLIDE 11.    Boeing 777 Cockpit
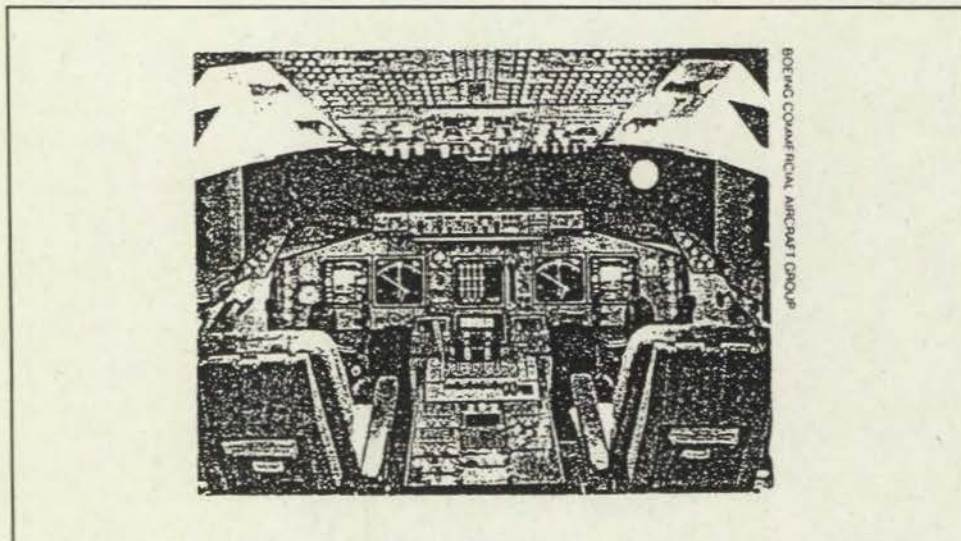


o    These automatic computations have made an enormous contribution to flight safety.

SLIDE 12.    ACCIDENT RATES, SCHEDULED AIRLINES
             VERSUS NUMBER OF ONBOARD COMPUTERS



Scheduled Airline Accident Rates
Compared to Number of Onboard Computers

o    Most commercial aircraft today are equipped with
     onboard computers that provide a host of functions; i.e.,
     assist the pilot in flying the plane, provide status on the
     flight, the aircraft, and the environment, separate it from
     terrain and other aircraft, control aircraft speed and
     altitude.

SLIDE 13.    (TOPIC CHECK OFF, AIRFRAMES AND
ENGINES, ONBOARD AUTOMATION)

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THE EVOLUTION OF AIR SAFETY
FIFTY YEARS OF PROGRESS

✔ ENGINES AND AIRFRAMES

✔ ONBOARD AUTOMATION

• SIMULATORS

• AIR TRAFFIC CONTROL

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Transition:  The computer revolution which made onboard
automation possible also transformed the way we train pilots
and other members of the flight crew.

TRAINING AND SIMULATION

SLIDE 14.    APPROVED DOMESTIC SIMULATORS
                    AND PART 121 ACCIDENT RATES ·



Approved Domestic Simulators
And Part 121 Accident Rates
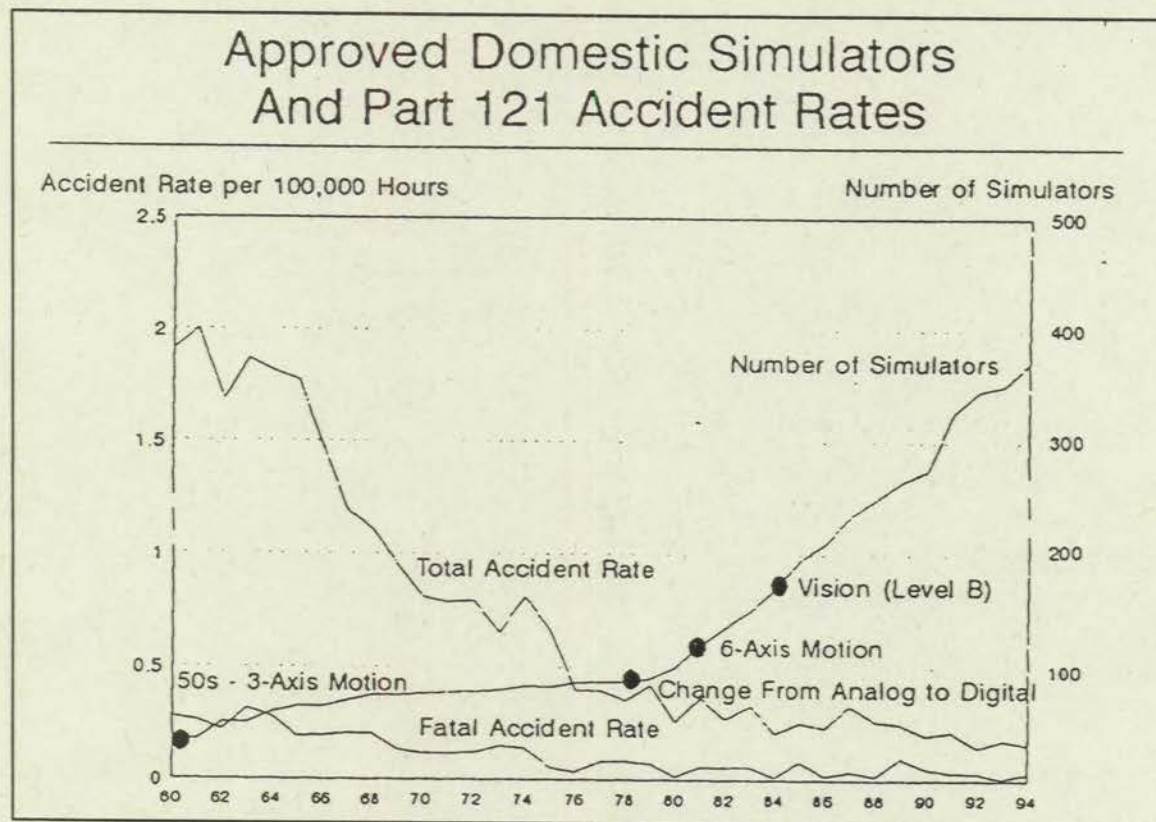
o    Computer-based flight simulation has been the single
      most important advance in the field of training.
      Simulation is no longer just a supplement to regular
      training procedures. It has replaced them.

o   The first simulators -- developed during World War Two
    to rapidly train large numbers of pilots -- were primitive
    devices which gave students practice in limited and
    highly artificial conditions.

o   Training still meant preparing for actual flight checks --
    which were necessarily restricted to routine maneuvers.
    There was no way to test the pilot's ability to handle a
    plane in dangerous and uncommon situations involving,
    for example, wind shear, severe wake turbulence, and
    malfunctions happening close to the terrain.

    Pilots encountering such events for the first time were at
    the controls of real aircraft carrying real passengers.

o   The turning-point in flight simulation dates from the late
    1970s -- when there was a rash of flight training
    accidents and the oil crisis led to escalating fuel prices.

o   The airlines sought a training alternative which was less
    expensive and less dangerous.

o   The FAA set the performance requirements that had to
    be met in order for a pilot to receive full training credit
    for time in a simulator.

Because no simulator then on the market met these standards, manufacturers around the world immediately began new product development.

o   The regulatory process was a catalyst that transformed the field of flight simulation. And added a great deal of new knowledge.

Milestones:

--   1978: Analog to Digital
--   1981: 6-Axis Motion
--   1984: Vision

o   To produce the necessary breakthroughs in technology, the manufacturers had to carry out extensive new research into actual aircraft behavior in all flight conditions.

o   Today, simulator technology has become so advanced that the simulator has replaced the airplane as the vehicle for flight training.  And a simulator can cost as much as a plane -- $10 million apiece.  Every common aircraft in the commercial passenger fleet is simulated, including commuter aircraft under 30 seats.

o   This graph shows that the number of approved domestic simulators has just about doubled over the past ten years.

More than 300 simulators authorized for use in the U.S. today, or operated abroad by U.S. companies.  More than a fourth of these are for the 727 and 737.

o   Originally only pilots received simulation training.  But now many airlines require it for the entire crew.  We've learned that safety is improved if a crew works together as a team, and that teamwork is the product of training.  Simulation makes that training effective and affordable.

This summer, as an aspect of our "One Level of Safety" initiative, the FAA will issue a rule mandating crew training for all airlines. Most carriers are not waiting for the rule.  They are making this change on their own.

o   Advanced simulation has another implication for safety.
    It can be used to create a highly realistic laboratory for
    running many accident scenarios which we could never
    study before.

Transition: Simulators have come a long way since their
invention in World War Two.  Radar is another product of
the war, and was the root technology from which has grown
today's air traffic control system.

SLIDE 15.   (TOPIC CHECK OFF: AIRFRAMES,
            ONBOARD COMPUTERS, SIMULATORS)

THE EVOLUTION OF AIR SAFETY
FIFTY YEARS OF PROGRESS

✔ ENGINES AND AIRFRAMES

✔ ONBOARD AUTOMATION

✔ SIMULATORS

● AIR TRAFFIC CONTROL

# AIR TRAFFIC CONTROL

## SLIDE 16.     MODERN ATC FACILITY

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PHOTO

ATC MODERNIZATION (TOWER)

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o    From the 1940s to the present, one of the most difficult
     jobs of the FAA -- and its predecessor, the CAA -- has
     been management of modernization of the air traffic
     control system.

o    The challenge is to phase in new technologies without
     disrupting what has become one of the most sophisticated
     and complex aviation systems in the world.

SLIDE 17:     ACCIDENT RATES, SCHEDULED
              AIRLINES AND ADVANCES IN ATC



Accident Rates, Scheduled Airlines And Advances In ATC
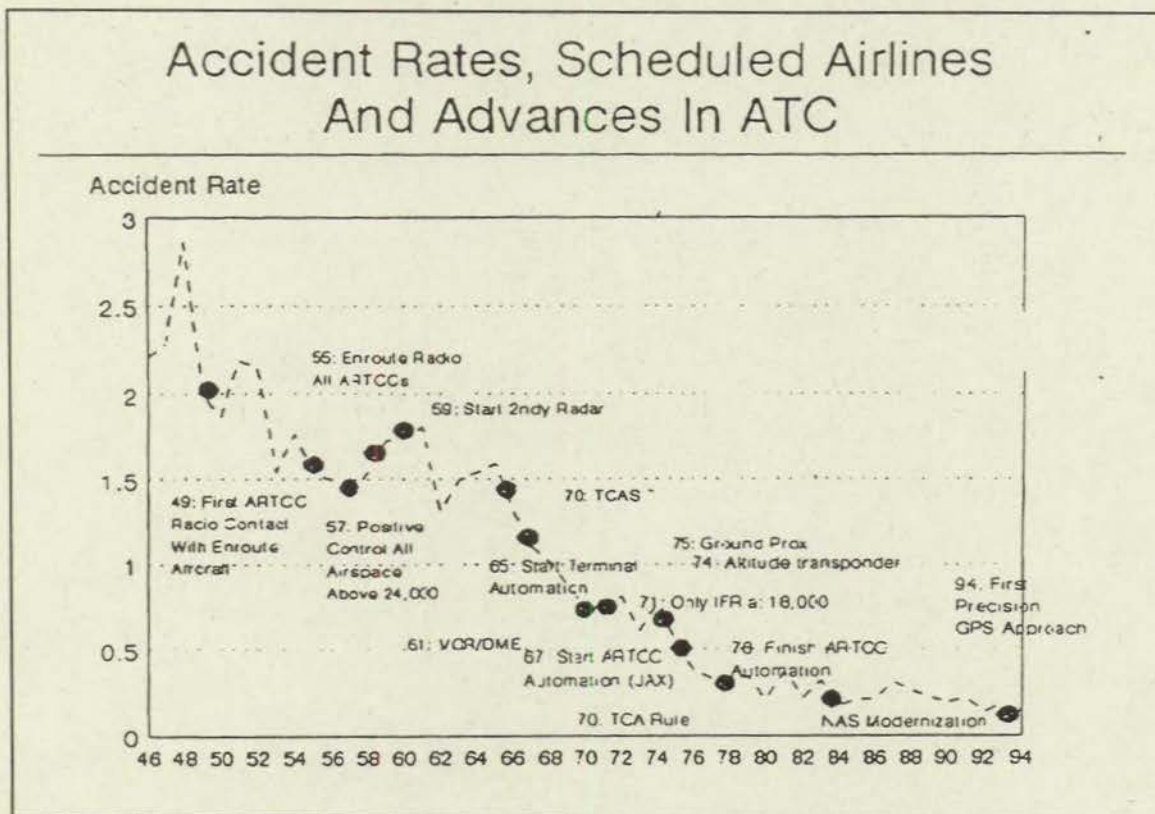
o    And it is a system.  As you can see on this graph, there
     is a very strong downward trend in the data, with each
     peak lower than the one earlier.  And each trough deeper
     than the one preceding -- until we reach a plateau in the
     mid-eighties.

This pattern is indicative of growing stabilization in the system, where the sharp swings upward are becoming increasingly modulated.

o    The introduction of radar in 1946 was a major event in the history of air traffic control, but it was also quite straight-forward.

o    Modernization became a little more complicated in the decade of the 1960s, when we started the first forms of ATC automation and more positive control to reduce the risk of mid-air collisions.

o    The mid-1970s saw the advent of ground proximity warning systems on all major carriers. To this day, no single technology has done more to improve safety.

     Controlled Flight Into Terrain -- once the dominant safety concern in this country and still the leading cause of accidents worldwide -- now rarely, if ever, happens on major US carriers.

     The installation of the GPWS on commuters, which became mandatory this past year, brings us closer to fulfilling our commitment to "one level of safety."

o   Throughout the 1980s, our efforts intensified to resolve
    some of the most compelling safety issues still
    confronting us.

    Just looking at midair collision, we see that they virtually
    disappeared from 1981 onwards.

SLIDE 18:    MIDAIR COLLISIONS IN U.S.*



Midair Collisions in U.S.
Part 121 Aircraft*
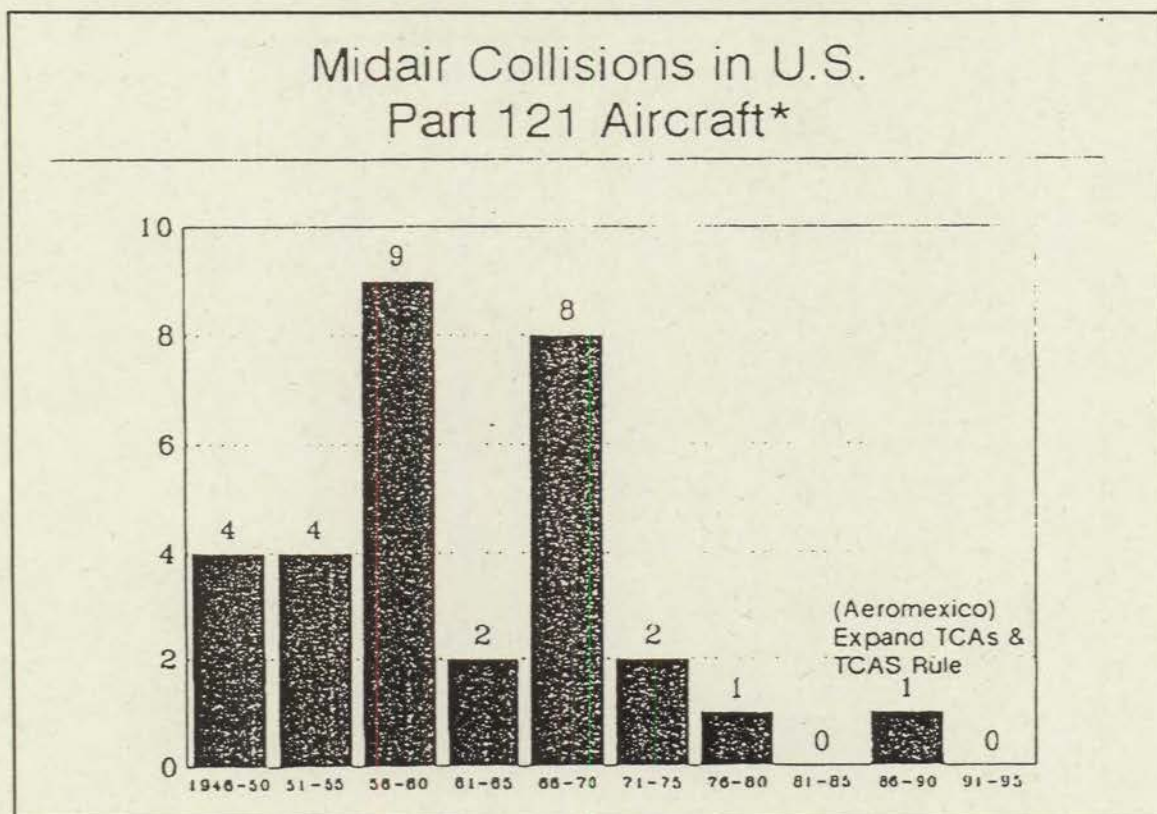
(* Part 121 aircraft, over 30 seats)

o   We created the terminal control area, required Mode-C transponders, and developed TCAS to further reduce the threat of mid-air collisions.

o   Similarly, as we reached a better understanding of windshear, the FAA and the industry were able to develop an integrated approach to this problem, including both better pilot training and new technologies for detection.

o   The leveling off of the accident rate in the 1980s occurred while we were getting ready to introduce other technologies which promise to improve safety. But their impact on safety won't be reflected in safety statistics perhaps for another decade.

o   GPS will make it possible to determine aircraft position with unprecedented accuracy.

o   Data Link -- by providing high speed, error free communications between computers at ATC ground facilities and in cockpits -- reduces the likelihood of confusing messages.

o   Automation allows these technologies to be further integrated.

SLIDE 19:     (TOPIC CHECK OFF, AIRFRAMES AND
                      ENGINES, ONBOARD AUTOMATION,
                      SIMULATORS, ATC)

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THE EVOLUTION OF AIR SAFETY
FIFTY YEARS OF PROGRESS

✓ ENGINES AND AIRFRAMES

✓ ONBOARD AUTOMATION

✓ SIMULATORS

✓ AIR TRAFFIC CONTROL

---

Transition:  The system which industry and government have
carefully put together over the years is made up of all the
elements we've been talking about:  improved aircraft design
and manufacture, the introduction of automation into the
cockpit, better training of airline personnel ... and advances in
air traffic control.

There have been remarkable improvements, as well, in cabin
safety, aviation security, and the science of accident
investigation.

SLIDE 20: A NEW SAFETY PARADIGM FOR THE
21ST CENTURY

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A NEW SAFETY PARADIGM
FOR THE 21ST CENTURY

---

o   In recalling the events which led to improved air safety
    over the years, we retrace much of the history of
    commercial aviation.  The two histories are intertwined.
    Most technological change in aviation occurred for
    reasons of safety or had important implications for
    safety.

o   The demand for high levels of safety will continue to
    guide the future course of the industry.

o    As a group, large US carriers average about one hull loss accident a year.

Yet, even at this low rate, given the growth in air travel which we're forecasting, an extrapolation of the current accident rates means that instead of one major hull loss a year in the United States, we'll have <u>four</u>.

o    To avoid such a calamity, we must succeed in reducing the accident rate to a fraction of what is now.  And since it is already so low, we're faced with the challenge of virtually eliminating major accidents altogether.

o    To achieve a zero level of accidents, we must change the definition of safety.  A safe flight is not just one which doesn't crash.  It is one which stays well within the known parameters of safe aviation practice.

SLIDE 21:    A NEW/OLD IDEA

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**A NEW/OLD IDEA**

**Operational Feedback**

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o    One of the most important tasks facing the industry is to
     establish those parameters through the systematic
     collection and analysis of normal flight operations data.

o    I've said that the pattern in our aviation safety statistics
     was the sort produced by a well integrated system.  But
     to further reduce the accident rate, we need a system
     where the elements are even more closely linked.

o    That linkage is provided by information.

     Not just information to help us figure out what went
     wrong -- that is the old kind of retrospective, after-the-
     fact information that we have always collected.  But a
     new kind of information -- collected in a new way -- and
     used for a new purpose.

---

# SLIDE 22:  SAFETY CONTINUUM



o    System integration requires feedback.  And in the case of
     aviation safety, we need feedback about day-to-day
     operations.

     We need to "wire" into the system a permanent feedback
     loop: one in which the regulatory and certification
     process is influenced by actual experience both (1) in
     designing and using products and (2) in defining and
     following procedures.

## SLIDE 23:    WORLD AVIATION ACTIVITY



World Aviation Activity

Operational Data Obtained by FAA
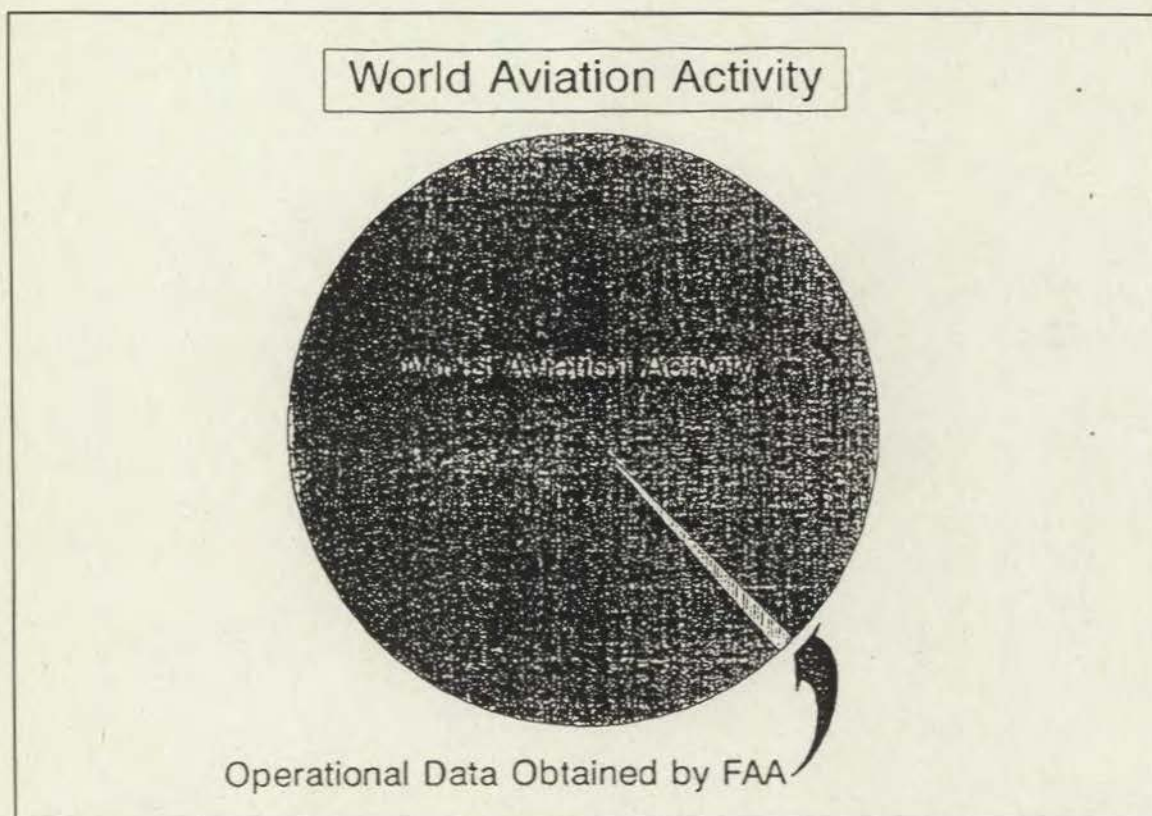
o    The FAA today is systematically collecting just a sliver
     of the information that is available. We gather very little
     routine operational data from sources within our borders.
     We gather even less from international sources.

     With increasing globalization of the aviation industry, we
     must work harder to collect information from around the
     world and share it with our counterparts in other
     countries.

SLIDE 24:    CONCEPT

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### CONCEPT

**To Achieve a Zero-Accident Environment it Will
be Necessary to Create an Analytical System
That is Sensitive Enough to Provide
Pre-Emptive Warnings of Impending Problems.**

**WE NEED AN EARLY WARNING SYSTEM!**

---

o    But we must do far more than merely collect information
     on a global scale.  We must analyze it in new ways.

     To achieve a zero-accident environment, it will be
     necessary to create an analytical system that is sensitive
     enough to provide pre-emptive warnings of impending
     problems.

     We need to move from a reactive to an anticipatory
     approach in data gathering and analysis.  We need an
     early warning system.

     This is a major shift in emphasis.

SLIDE 25:    WORLD WIDE SAFETY DATA
             REQUIREMENTS

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### WORLD WIDE SAFETY DATA
### REQUIREMENTS

o    **Flight Data**
o    **Cabin Safety Data**
o    **Maintenance Data**
o    **Air Traffic Control Data**
o    **Flight Crew Reporting**

---

o    But we need to collect far more than just flight data to be
     really comprehensive.

     We need to compile information about incidents related
     to cabin safety.  We need maintenance records, air traffic
     control data, and the reports of flight crews.

o   Historically, our knowledge of aviation safety has come
from accident investigations. Examples:  stronger
airframes designed to withstand fatigue from
pressurization cycles, TCAS, Mode C in TCAs, GPWS,
cabin safety improvements, time-and-duty limits, crew
coordination, windshear detection -- all these measures
were based on findings of accident investigations.

The new 125 channel flight data recorders, designed to
survive the most severe crash impact and fire, will
greatly assist investigators in determining the causes of
accidents.

Data from accident investigations tell us about the
extreme events that happened on a particular flight.

o   Almost nothing is known about what happens during the
hundreds of thousands of flights which are incident-free.
Data descriptive of routine operations would enable us to
establish statistically valid norms for safe performance,
and to quantify the levels of risk associated with ordinary
flights.  We could more precisely pinpoint those
circumstances which are potentially hazardous.

## SLIDE 26:    OPERATIONAL FEEDBACK MIGRATION
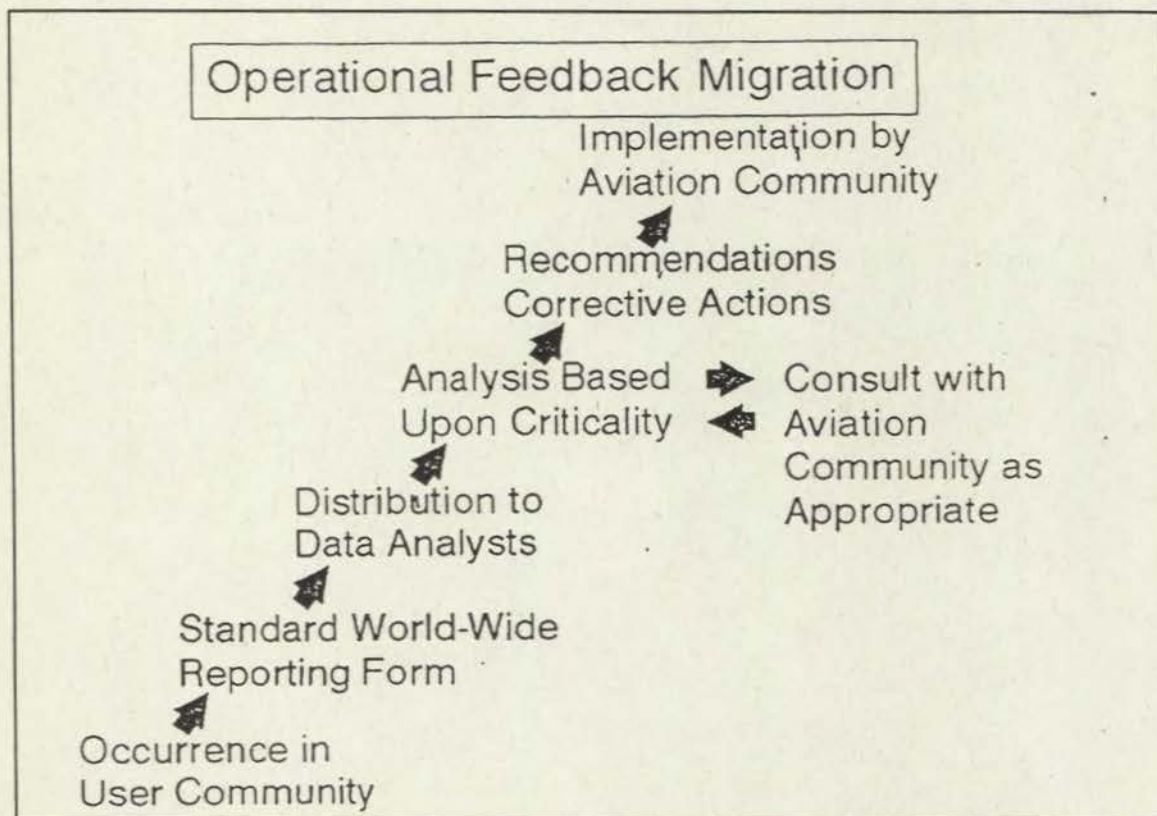


o    In order for the system to work effectively, all this
     information needs to be reported on standardized forms
     in common use throughout the world, then forwarded
     regularly to centralized centers for analysis.  Findings
     should be shared with the aviation community and
     become the empirical basis for corrective and preventive
     action.

SLIDE 27:   PRIMARY ISSUES AFFECTING
            OPERATIONAL FEEDBACK

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**PRIMARY ISSUES AFFECTING
OPERATIONAL FEEDBACK**

   o    **Adverse FAA Action
Against Company or Individual**

   o    **FOIA and Discoverability**

---

These two issues are of critical importance if the Operational
Feedback process is to work successfully.

There are serious concerns which must be resolved, and I
do not under estimate the challenge.

But the FAA is moving ahead now.  We have the
capability and we have the responsibility.

SLIDE 28:     NEW TOOLS (SOME EXAMPLES)

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# NEW TOOLS
# (SOME EXAMPLES)

- Flight Data Recorders
    - Expanded Data Parameters
    - Use of FDR in Crew Performance Analysis

- Video (Potential Uses)
    - Approach and Landing
    - Cockpit Area Cameras
        - Data Compression

---

o   Under a new agreement stemming from the Aviation Safety Conference in January, airlines will allow the FAA to analyze data they collect as part of their new Flight Operations Quality Assurance programs.

o   Adding data from our air traffic management facility will help us put together a comprehensive, real-time picture of normal flight operations.

o   The results can have enormous payoff. Take, for
example, flight abnormalities associated with past
accidents. We can check the data recorders of flights
experiencing similar abnormalities but which were
otherwise uneventful.

We can determine what actions the cockpit crew took to
prevent an accident from occurring. The findings may
provide guidelines and training for pilots caught in
similar situations.

SLIDE 29:    FAA STRATEGY

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**FAA STRATEGY**

1.   **A New Safety Office**
     -   **Data Base Management**

2.   **Study Legal Environment**
     -   **Freedom of Information Act (FOIA)**
     -   **Federal Air Regulations (FAR)**

3.   **Set Up an International Data Exchange**
     -   **Standardized Reporting**
     -   **Provide Secure Access**

4.   **Further Develop Science of Operational Feedback
     and Analysis**

---

o   <u>New Safety Office.</u>

--   Established last December to provide an independent view and to challenge existing assumptions.

--   Selected Chris Hart

--   Data Analysis Center established last year is the first of its kind designed to coordinate the collection and analysis of standardized information relevant to safety.

--   This concentration of resources indicates the direction in which we are moving.

o   <u>Study Legal Environment.</u>  Our agreement with the air carriers is that data collected through the FOQA program will never be used by the FAA in enforcement actions, nor will confidentiality ever be violated.

--   A model for such a program is the Aviation Safety Reporting System (ASRS), where pilots can submit anonymous reports within ten days of the event without fear of punitive action.

ASRS has limited usefulness because the sources are always unknown to us.

o          We need to be able to work with specific carriers and manufacturers whenever our analysis identifies problems which need to be remedied.

--      We will probably need to seek a statutory fix which will give the FAA latitude to work constructively with the industry, rather than initiate enforcement action for every violation of a FAR.

And we need to exempt this information from the requirements of the Freedom of Information Act. We must be able to guarantee strict confidentiality.

o     Set up International Data Exchange. Data collection and analysis on this scale requires a lot of coordination. I believe that, eventually, this coordination must be done at an international level.

o     Further Develop Science of Operational Feedback and Analysis. This new approach represents a fundamental change in the FAA's primary mode of intervention: from regulation and surveillance to risk management and collaborative problem solving.

This is the direction in which I am leading the FAA.

SLIDE 26:    FAA LOGO
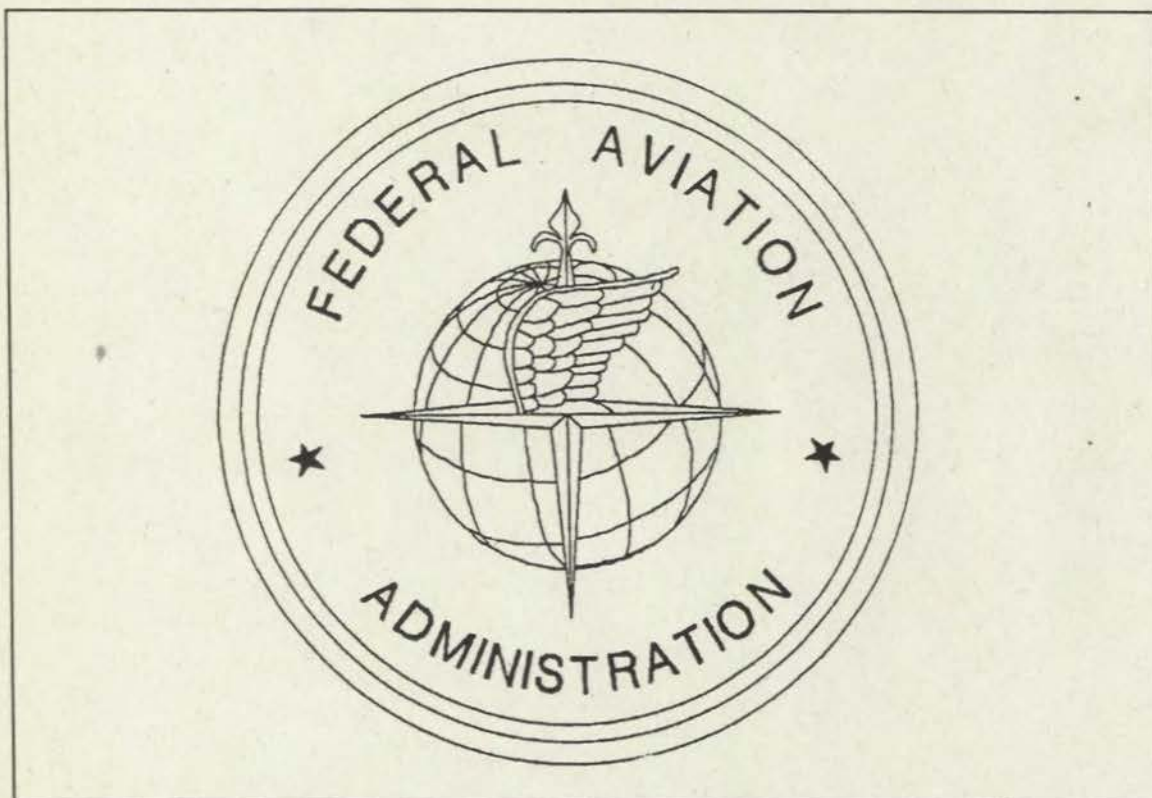


CONCLUSION:

o    This shift is not a deviation from our primary purpose.
     It is required if the industry, as a whole, is to meet its
     tougher standard of performance ... the higher
     benchmark we've set for ourselves:  to pare the number
     of aviation accidents all the way down to zero.

o     Cooperation between government and industry has produced the significant gains in aviation safety which I've mentioned today.

      Now we must expand this collaboration to the systematic sharing of vital information.

o     This is a strategy to bring the field of aviation safety fully into the Information Age.

      This isn't just another big acquisition program to buy more technology. It's a plan for acquiring new knowledge and a deeper understanding.

o     The Information Age means using information with an eye on the future. It demands increasingly powerful analysis and the effective management of our information resources.

      Aviation safety in the age of information will depend on our foresight -- on our intelligence in envisioning the hazards and opportunities in an environment where the only real certainty is uncertainty itself.

Talking Points
Anthony J. Broderick
Associate Administrator for Regulation and
Certification
May 17, 1995

- Good afternoon. Thank you for joining us. Today
  we would like to share with you the results of one
  of the most comprehensive and thorough internal
  investigations in the history of this agency. After
  16 months, a thorough review of literally
  thousands of flight records and documents by
  FAA investigators across the nation; our in-house
  probe has led to the investigation of 29 pilots,
  some of them FAA employees, who appear to
  have falsified flight records as a means of
  expanding the types of aircraft they were licensed
  to fly.

- The exhaustive investigations are still ongoing,
  but already have resulted in the revocation of four
  pilots' certificates and several dramatic changes in
  the way this agency's handles the aircraft type
  ratings process.

- I would like to explain to you what prompted these investigations; to tell you in detail what actions we have taken against those under investigation and to share with you our thoughts and feelings about what we have learned through these comprehensive investigations.

- But there are some simple truths that must be shared -- and fully understood -- before we can proceed. You should know that there is not a shred of evidence -- based on our investigations to date -- that any of the airmen who received questionable aircraft type ratings actually used those ratings to fly in air carrier operations.

- We have not found any illegal certificates issued for aircraft used by the commercial airlines. So, in a word, as distasteful as these airmen's alleged actions may have been, safety was not compromised. And already we have taken immediate action to protect against further falsification.

- Our investigations began in January 1994, after an FAA manager discovered irregularities in the activities of an FAA Aviation Safety Inspector. The manager then notified the FAA Security division, which began immediately looking into those irregularities. The subsequent investigation defined the group of pilots currently under investigation.

- The investigations are not confined to a particular section of the country, but include five of our nine regions. The regions conducting investigations are Great Lakes, Northwest Mountain, Southern, Southwest, and Western Pacific. A joint FAA Flight Standards and FAA Civil Aviation Security task force has been established to coordinate the investigations.

- As a result of the investigations conducted thus far, the FAA has removed certification authority of four of six Aviation Safety Inspectors and suspended the authority of eight of 12 Designated Pilot Examiners who are among the 29 pilots under investigation. Aviation Safety Inspectors' duties include the certification of airmen. Designated Pilot Examiners are non-FAA employees designated by the agency to conduct airmen certifications. These airmen's certification authority was removed or suspended to make sure that no additional certificates are issued by these airmen while the investigation is continuing.

- Of the remaining 11 airmen under investigation, although they hold pilot certificates issued by the FAA, none have had certification responsibilities.

- Overall, we have taken the harshest actions we could take within our authority. All of the pilots involved have had their certificates suspended or revoked. They have lost the right to fly -- and for many of them that is their livelihood. Of the six FAA employees involved, two retired, one was fired, one resigned in lieu of removal based on a settlement agreement. Two cases are still under investigation and therefore I cannot comment.

- What I can tell you, however, is there is absolutely no evidence to suggest any of these pilots ever flew an aircraft with an illegal certificate. Nonetheless, these airmen have undermined the perception of integrity in the FAA work force. Their actions are a slap in the face to the more than 48,000 dedicated FAA employees who strive daily to ensure that the skies are safe. I am angry, frustrated, disappointed and appalled.

- The FAA has learned that a good system can be compromised when trusted and knowledgeable employees cheat. The FAA aggressively investigated and defined the scope of this problem, is taking appropriate punitive action, and has initiated protective measures to preclude this from occurring again. To date, this investigation has not uncovered any adverse flight safety problems. The safety of the skies was not compromised.

- To ensure this type of activity never occurs again, the Flight Standards Service has instituted a review of the records of all of our Aviation Safety Inspectors to make absolutely certain no other activities of this type are occurring. That review is nearly complete, and we are confident that the problem is not substantially bigger than I have described.

- Also, the FAA has put an automated data base in place that will monitor the actions of Aviation Safety Inspectors and Designated Pilot Examiners to prevent the type occurrences that prompted the investigations. Any unusual activities or atypical number of certifications will set off the data base's automatic "trigger" that will immediately bring the suspected action to the attention of an investigator.

- In addition, the FAA's new National Examiner Board (NEB) has developed a new application and background screening procedures for examiners. As part of the new process, NEB is creating a national examiner candidate pool and examiners will be designated from this pool. NEB also is actively seeking input from designees, inspectors and the aviation community to assess other program changes.

- In a word, the skies are safe and we are determined to aggressively and proactively keep them that way.

STATEMENT OF THE HONORABLE DAVID R. HINSON, FEDERAL AVIATION ADMINISTRATOR, BEFORE THE SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS, SUBCOMMITTEE ON OVERSIGHT OF GOVERNMENT MANAGEMENT AND THE DISTRICT OF COLUMBIA, CONCERNING THE SAFETY OVERSIGHT OF SUSPECTED UNAPPROVED PARTS. MAY 24, 1995.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear before you today on the subject of what we refer to in the aviation industry as Suspected Unapproved Parts or SUPs. With me today are Mr. Tony Broderick, Associate Administrator for Regulation and Certification, and Mr. Bill White, Deputy Director of Flight Standards.

At the outset, let me address the bottom line for us all, and that concerns safety. Simply stated, do SUPs pose a significant safety problem for our air transportation system? No. Are they a safety concern to the FAA? Of course. Could they potentially become a safety problem if we don't continue to address their root causes? Yes, and that is exactly why we have a number of important initiatives underway to do just that, on which I will elaborate in a moment.

Let me briefly put the safety issue into better perspective, giving you some foundation for why we reach the safety conclusions that we do. Perhaps most telling is that there are literally hundreds of millions of parts on our Nation's airlines--a B-747 alone has over 6,000,000 parts--and we estimate that about 26,000,000 parts (some like fuel pumps containing many individual parts) are changed each year. Since 1989, we have received only about 1,100 reports of SUPs. FAA's investigation of those reports has led (as of mid-May) to 114 FAA enforcement actions and 69 initiatives, of which 8 were airworthiness directives. More telling, however, is that the National Transportation Safety Board, or the NTSB, which investigates airline and general aviation accidents in the U.S.,

has **never** found that an unapproved part has contributed to a U.S. airline accident. An FAA review of the NTSB's computerized accident data from 1983 to 1992 disclosed 11 cases where a "bogus" part was noted as a contributing factor in a general aviation accident, but on further analysis of those records we found, and the NTSB has agreed, that, in each instance, incorrect maintenance rather than a counterfeit or fraudulently documented part was the problem. We have asked the Board to correct this data to eliminate confusion.

NTSB Chairman Vogt also addressed the topic of unapproved parts in testimony before the House Committee on Appropriations, on March 16, 1993, and in record material for that hearing, indicated:

> The Safety Board has not identified the use of an unapproved part or a counterfeit (bogus) part as a cause in any air carrier accident. The Safety Board has, however, cited the use of unapproved parts as a causal factor in general aviation accidents. Typically, this involves the use of automobile parts or hardware available from a local hardware store substituted for the more expensive approved aircraft part. The cause of these accidents is attributed to improper maintenance.

> We are aware of the Department of Transportation Inspector General's efforts to identify the manufacturers of parts that are purported to be approved, but for which no manufacturer's approval has been issued. While such parts have not been the cause of an accident, the potential safety hazard warrants concern.

Significantly, from a risk assessment perspective, the issue of bogus or unapproved parts is not included in the NTSB's Top Ten Most Wanted List, nor does it find a place on the list of important accident causal factors developed by Boeing in a comprehensive report.

Safety analyses have consistently shown that human error is associated with the vast majority of aircraft accidents. That is not to say that we should ignore this issue. Since becoming Administrator, I have reorganized the agency, created a new safety office, and set a new goal of "0" accidents, which is enabling us to be proactive, not reactive.

The Office of the Inspector General (OIG) conducted an audit of parts at 14 domestic and foreign repair stations, and reported their findings on March 7, 1994. The report found that, of a total of 495 types of newly purchased parts, 43% (95% in the case of parts from distributors) had insufficient documentation and were considered by the OIG to be suspected unapproved parts. The report contained specific examples for only 64 part types. FAA then initiated an investigation of the 64 cases cited, finding, however, that there was adequate information to follow up on the OIG findings in only 51 cases. FAA's technical findings were dramatically different from the auditors' findings. Of these 51 cases of suspected unapproved parts, FAA safety inspectors found:

* 31 cases involved parts that **did** have sufficient documentation to trace them to an approved source.

* 11 cases involved examples of mechanics or repair stations exercising their professional prerogative, under FAA regulations, to substitute similar, equivalent parts in the course of a repair. In fact, 8 of the 11 cases involved standard parts.

* 1 case involved a mistaken assumption by the OIG that a part had been installed, when, instead, it had merely been ordered at the same time as other parts.

* 4 cases did involve suppliers to a Production Approval Holder shipping parts to customers without direct-ship authority. The parts, however, met the same safety standards as the parts they supplied to the PAH.

* 2 cases resulted from improper maintenance—using an approved part but for the wrong application.

\* 1 case involved no production approval.

\* 1 case involved a counterfeit part. Significantly, though, the FAA and the original manufacturer had learned of this type of counterfeit part and had previously advised the industry and the OIG about it. The repair station had been alerted to the potential problem with this type of part and should not have used it. It should be noted that the use of the part would not have produced a safety hazard, nor was any evidence found that it had been installed on a U.S.-registered aircraft.

Thus, of the 51 cases in which FAA had adequate information upon which to assess the OIG findings, only 8 cases (16%) involved problems of any nature and only 1 case (2%) was directly related to unapproved parts (that being a previously-known counterfeit parts case). Put another way, FAA verified the integrity of 98% of these parts.

I cite the preceding information only as a means of adding perspective to this issue, not to demonstrate that unapproved parts ought not be of concern to us. Clearly, they should be and they are. That's why we have a variety of initiatives underway to better address the problem. But before discussing those efforts, I would like to explain what we mean when we talk about approved or unapproved parts and describe the systems we have in place.

First, it's important to recognize the key distinction between two types of unapproved parts: counterfeit parts or parts with fraudulent documentation—often called bogus parts—that are introduced into the parts inventory by criminal acts, bypassing FAA regulatory standards; and parts that are manufactured either without FAA production authority or without proper quality assurance. Discussions of unapproved parts often merge the two types of unapproved parts, which can create confusion, since the nature of the problems and, indeed, the remedies are quite different. Criminal investigation and prosecution is the

appropriate remedy for those who make or sell counterfeit aviation parts, and we applaud the DOT IG and the Department of Justice for their efforts to seek criminal sanctions against parts counterfeiters. Our experience, however, has been that, by far, most unapproved parts cases are associated with lack of compliance with FAA production and maintenance regulations and procedures rather than counterfeit or fraudulently documented parts.

There are several means through which a part is approved to be installed on an FAA type-certificated aircraft, aircraft engine, or propeller. Although the FAA Administrator may approve other types of systems, parts are typically approved through one of 3 means: 1) a Parts Manufacturing Approval (PMA) issued by FAA under 14 CFR 21.303; 2) a Technical Standard Order (TSO) authorization issued by FAA for products such as avionics; or 3) a production approval issued in conjunction with type-certification procedures for a product.

Under FAA regulations, any replacement or modification parts that are produced for sale for installation on a type-certificated product must be produced under one of the specified means of approval, unless: 1) they are parts produced by an owner or operator for maintaining or altering that person's own product; or 2) they are standard parts (such as bolts or nuts) that conform to established industry standards or U.S. specifications. Naturally, given the complex nature of many aviation products, many manufacturers rely on components or parts manufactured by other sources, some of which may not hold an FAA production approval. In this case, the production approval holder (PAH), who uses those parts from such a supplier, must have a system of quality control in place to oversee the quality of the parts produced by that supplier.

A parts supplier to a particular PAH may use either of 2 approved means to provide replacement parts for products that are in service. The supplier may receive the PAH's approval to ship parts directly to the end user or to a parts distributor, under a method called the "direct-ship" method. In this case, the part is produced under the PAH's approved quality assurance system, and the PAH is responsible for the part's conformance to the type design and with production quality assurance standards. Under the second means, the supplier may obtain its own PMA or TSO approval from the FAA.

In order to receive a Parts Manufacturing Approval or a Technical Standard Order from the FAA, a supplier must demonstrate that a part's design complies with applicable FAA regulations and must establish an FAA-approved production quality assurance system to assure the quality of the parts produced. We have experienced a problem with some suppliers over the years in this area, with some suppliers shipping parts directly to end users without having received a PMA or TSO from the FAA. Although the parts are identical to the parts they supply to the Production Approval Holder, and thus do not represent a safety threat, they nevertheless are considered unapproved parts. As I will explain shortly, we are acting to tighten up controls over this area to bring such suppliers into conformity with our approval process.

I mentioned earlier that the use of standard parts is permitted under our regulations. All standard parts have part numbers with recognized prefixes. A parts installer may replace a standard part with another identical standard part or may substitute an equivalent standard part. Generally, standard parts are not used for critical applications on transport category aircraft for which a part's failure would have significant safety consequences. Nevertheless, to assist in guarding against standard parts that do not conform to recognized specifications, we participate in the Government/Industry Data Exchange Program, along with other government agencies and industry representatives.

Consistent with the FAA's safety regulatory structure generally, our regulations provide that maintenance personnel, owners, and operators bear responsibility for using approved or otherwise appropriate parts in their maintenance work. This includes certificated repair stations as well as airline maintenance personnel. Repair stations performing maintenance work on air carrier aircraft must also meet the requirements of their customer's FAA-approved maintenance programs.

There are a variety of sources to which maintenance personnel can refer to determine whether a replacement part is appropriate. The manufacturer of each product or appliance prepares a maintenance manual defining the appropriate maintenance and wear limits for some parts of the equipment. There is also a manufacturer's illustrated parts catalogue (IPC), which lists most parts that make up the product and uses recognized standard part numbers to identify whether a part is a standard part. If a part is not a standard part, the IPC typically lists where the part may be purchased. Information may also be available from manufacturers or type-certificate holders or in manufacturers' service bulletins and service letters. Once a part number is properly identified, the installer may use either an acceptable part from stock or order the part from an appropriate source. When a part is received, the installer verifies that it is the correct part. It is important to note that maintenance personnel are trained to spot unusual conditions of parts, and, in fact, many of the unapproved parts reported to the FAA have been detected by installers.

Thus, the FAA's basic regulatory structure for parts provides safeguards to help assure airworthiness of parts at both the manufacturing and the installation/operation phases of the parts process. Distributors, on the other hand, are not regulated by the FAA. They are neither responsible for the production of parts nor for their selection or use in maintenance activities. In fact, as intermediaries, parts brokers may not even have possession of parts. Under FAA's rules, it is the end users--repair stations and certificated

maintenance personnel--who bear responsibility for assuring the airworthiness of parts before they are installed. They may determine parts' conformity to applicable specifications and their airworthiness through documentation, through inspection and maintenance, or through a combination of both methods.

As I noted earlier, FAA's activities in this area show that most problems related to unapproved parts result from the lack of a PMA or TSO or from errors in maintenance or documentation. We have found parts in use and in inventories that suppliers have distributed directly to customers without their production under a Parts Manufacture Approval or without direct-ship authority from the Production Approval Holder. Maintenance personnel also make mistakes. They may, for example, use the incorrect data for a repair or may misread a part number and install the incorrect part which, even if an approved part, becomes an unapproved part for that repair. Since these areas constitute the vast majority of adverse findings related to unapproved parts, we have concentrated our efforts on them. When we do encounter evidence of counterfeit or fraudulently documented parts, we promptly address the safety concerns associated with those parts and refer the case to the OIG for criminal investigation, providing such technical expertise as may assist in their investigative efforts.

I would like to take a few moments now to discuss some of the steps we have taken and will be taking to address the unapproved parts issue. Many of these initiatives also respond to OIG recommendations. In the past several years, we have issued several Advisory Circulars, providing guidance to the aviation community on suspected unapproved parts. Last July, we issued 3 such circulars concerning "Supplier Surveillance Procedures," "Detecting and Reporting Suspected Unapproved Parts," and "Disposition of Unsalvageable Aircraft Parts and Materials." Last year we also issued a revision to our

old Airworthiness Approval Tag, as a first attempt at creating a combination universal parts control tag and maintenance release acceptable anywhere in the world.

We chartered a Parts Approval Action Team in September 1992, and followed that up in August 1993, with the establishment of a formalized FAA Suspected Unapproved Parts Program. Since 1989, we have had a headquarters office and an office at Dulles Airport overseeing FAA's involvement with SUPs.

We have actively involved our Aviation Rulemaking Advisory Committee, comprised of industry and public representatives, with this issue. Based on their work and recommendations, including minority opinions that resulted from these efforts, we are developing a new advisory circular on "Determining Disposition of Undocumented Parts." This will address the appropriate means of returning to service or otherwise disposing of inadequately documented parts sitting in inventories. In addition to other guidance types of material that we have issued and on which we are working, we have conducted approximately 150 public seminars on the SUPs problem, both domestically and internationally.

In a major commitment to deal with the issue of military surplus parts, we have jointly chartered an effort with the Defense Department, pursuant to which we are establishing a process for identifying dual use (military-civil) flight safety critical aircraft parts. Through that effort, FAA and DOD experts are working to define a process to ensure that critical parts lacking documentation, proper configuration, or serviceability are identified and mutilated prior to their disposal. Their value will only be as salvage, not as possible unapproved replacement parts for our commercial fleet.

With regard to parts suppliers who do not hold a PMA, we issued a Federal Register notice in March to offer strong encouragement to suppliers to seek an FAA PMA for their products. Suppliers were given until May 30, to apply for an appropriate PMA or to subject themselves to FAA penalties. Not surprisingly, we have received numerous PMA applications in response to that notice. We are also working with an industry team, chaired by the Aerospace Industries Association, to develop a comprehensive PMA data base to be available to industry.

There is also underway a significant effort concerning parts distributors and brokers. The OIG had recommended to us that we take action to directly regulate these distributors, of which there are some 2,000-5,000, depending on how you define them. We have declined to accept that recommendation, believing that the need to formally regulate distributors has not been shown. Thus, the imposition of new Federal regulations that could be costly and burdensome without producing corresponding safety benefits would simply be unwarranted. Licensing of parts distributors could also logically lead to pressure for the added regulation of airlines to require them to document for each part whether it was purchased from an original equipment manufacturer, a PMA, or a licensed distributor. Further, at a time of government downsizing, the licensing of distributors by the FAA would needlessly add to the heavy workload of our safety workforce and create unnecessary cost for the government as well. Instead, we believe that a far better approach is for an accreditation program for parts distributors to be established.

We are working cooperatively with an industry-run, voluntary accreditation program, under development by the Aerospace Industry Regulation of Distributors Task Force. We plan to work aggressively with industry to implement and use this program for distributors. An advisory circular is under development by the FAA that will specifiy quality standards and auditing criteria. As part of this effort, we are considering what

incentives we can offer to certificate holders who obtain parts only from distributors that have been accredited. In a corresponding effort, we are developing an FAA rulemaking proposal that would make it a regulatory violation for a distributor or other person to misrepresent that a product is an FAA-approved product. Even though a distributor's activities would not directly be licensed by the FAA, their false assertions would be subject to FAA's regulatory authority.

In closing, Mr. Chairman, let me assure you and the Members of the Subcommittee that the FAA does not take lightly the issue of unapproved parts. On the contrary, it is our expectation that all parts used on aircraft be approved for that purpose. Although we have taken a variety of actions to address this issue, we recognize that there is much ahead of us. Aviation safety is a serious responsibility, and one that rightfully must be shared by industry and government. I am confident that, in concert with industry, we are heading in the right direction, and that we will continue to show progress.

That completes my prepared statement. I would be pleased to respond to questions you may have at this time.

Remarks Prepared for
David R. Hinson, Administrator
Federal Aviation Administration
Historically Black Colleges and Universities Symposium
Tuskegee Institute, Alabama
May 31, 1995

Good Morning. I am delighted to be here with you today to discuss FAA's Historically Black Colleges and Universities (HBCU) program.

Before I begin, however, I want to thank Dr. Payton and Tuskegee University for hosting this symposium.

The University has a rich aviation history.

During this 50th Anniversary of World War II, it is more than appropriate to remember Tuskegee as the place were some of the first Black military aviators were trained, and out of which came the famed 99th Fighter Squadron.

By the time the base in Tuskegee closed in 1945, a total of 992 Black graduates had been successfully trained as airmen.

Tuskegee also has a rich history of successfully educating its students and preparing them to play effective professional and leadership roles in society.

Committed to academic excellence, the University consistently produces talented and well-rounded graduates prepared to make positive contributions to the future well-being of our country.

Tuskegee's success reinforces the faith which African-American organizations have traditionally placed in education -- despite the disdain which so many of our young people -- both White and Black -- now seem to have for intellectual accomplishment and academic achievement.

Nevertheless, the commitment to education persists.

We at the FAA know this from our association with the historically Black colleges and universities with whom we have maintained close and productive ties over the years.

Since 1982, the FAA has been associated with the historically Black colleges and universities, developing new curricula and collaborating in research.

In fact, the FAA has worked with the HBCUs and other institutions of higher learning in developing airway science curriculum programs, providing aviation research grants and contracts, promoting aviation education, and investing in cooperative education programs.

To date, we've been very happy to be able to help many of these institutions develop academic and research programs in aviation areas.

We've come to value our aviation relationships because they are reciprocal ones.

These are relationships from which all parties benefit, from which all parties learn and develop.

And because they are so beneficial, I will continue to promote the utlization of HBCUs in all programs and activities for which the FAA is responsible.

The work of all historically Black colleges and universities has been made easier by the Clinton Administration.

In November 1993, the President issued Executive Order 12876, strengthening the Administration's ties to the HBCUs.

In that order, the President directed all Federal agencies to strengthen the capacity of historically Black colleges and universities to provide quality education and to increase opportunities to participate in and benefit from Federal programs.

To ensure the success of this directive, the White House has created a Presidential Advisory Committee, as well as an office within the Department of Education, to oversee Federal activities as they relate to the HBCUs.

The FAA has taken the President's mandate seriously.

Now, on the threshold of a new century, we realize that we must strengthen this proven partnership with the HBCUs by enhancing the quality of programs already underway and by establishing new ties with institutions which share our commitment to the future of aviation.

We are proud of the progress we have made, but there is more work to be done.

FAA is relying on students from institutions like the HBCUs to lead both the agency and the aviation industry into the future.

As you are aware, the FAA is in the process of rebuilding, or reinventing itself.

We are acquiring new, sophisticated technology which anticipates the needs of the future.

We are also preparing to enter the space age.

Satellites are beginning to play a critical role in navigation and air traffic control around the world.

We now fly advanced aircraft with sophisticated avionics, such as GPS.

The ability to adapt quickly to changing technology is a mark of a well-trained and dedicated professional.

To fulfill its mission in the coming decades, the FAA must also assume a global perspective.

Complex technical systems and standards must be designed for worldwide compatibility.

Important decisions must be made in coordination with other nations.

To meet the challenges of the future, the FAA of tomorrow will require a new generation of employees -- a diverse group of employees.

We need well-educated men and women from diverse racial and social backgrounds who have the intellectual fortitude to adapt to the constant advances in the aviation sciences.

Our future employees must also have the cultural breadth to work effectively with their international counterparts.

It is important that if we are to respond quickly and efficiently to the changing market, if we are to respond adequately to our customer's demands, we must be sensitive, we must be intelligent, and we must be creative.

We can do this effectively and efficiently only if our work force mirrors our client base.

More importantly, as aviation becomes more complex, more competitive, and more international, we must ensure that we have access to, and that we can draw upon, the broadest possible and most diverse employee base.

Quality, however, and not quantity is the watchword in our diversity goals.

That is why we are diligently working with institutions such as the HBCUs, who consistently produce highly qualified and energetic graduates.

The FAA and the aviation industry has succeeded in adapting to the new and even the unexpected in the past.

I know that our successes in the future will set the standards for other businesses to strive for.

But, to succeed, we have to train our future leaders now.

We have to set the standards today, for our technicians of tomorrow.

To find this new generation of managers and technical specialists, the FAA will rely as never before on our nation's historically Black colleges and universities.

It is under programs such as those we have created with the HBCUs, that we are training our leaders of tomorrow.

I think we are all here today because we share at least three things:

a love of aviation,

a concern for its future,

and a determination that it be as strong, if not stronger, ten years, twenty years, a hundred years from now as it is today.

If we are to succeed, we have to work together -- FAA, academia, and private industry.

We are particularly looking to our aviation industry partners to maintain a vital partnership with the HBCUs and to help guide their programs into the future.

We look to industry to provide:

matching funds to support endowments, and

the expertise to facilitate the development of more effective ways to manage finances, improve information management, and improve course offerings.

To create that strong, future aviation system, we have to begin work today.

We know that this will not be an easy task, but it is a necessary one -- a challenge we must meet to succeed in the future.

I am here to tell you that the FAA is striving to do its best to meet that challenge.

This past March we instituted a new HBCU intern program.

Created within the spirit and intent of the White House Executive Order and FAA's diversity goals, the program enables HBCU students to supplement their academic course work with study-related work experience in FAA facilities.

The program is open to students in both two- and four-year programs.

Students are placed in a variety of aviation career fields and are given the opportunity for participation in a maximum number of learning experiences such as meetings, classes, and tours.

In the two months that this program has been available, we have already placed 35 interns nationwide.

There is great interest in the program and we look forward to placing more and more students.

And, I am excited to note, that this coming Fall we plan to extend our HBCU Intern Program to include graduate students.

The FAA is also actively working to expand the number of HBCU institutions participating in our Airway Science Curriculum program.

Approximately 2,500 students are currently enrolled in the program at over 50 institutions.

More than 34 percent of the current Airway Science Program students consists of HBCU students.

Thirteen HBCUs have received FAA recognition for their programs of study.

We hope to get more schools involved in this particular program.

The FAA is currently discussing such opportunities with institutions such as Tuskegee University.

I understand Dr. Payton and his staff are working toward this objective.

We hope that someday soon, Tuskegee will operate one of the premier Airway Science Programs.

That will only be fitting, since that institution was one of the first to prepare young, educated, and enthusiastic Black pilots for service in our nation's airways.

We all know that our greatest strength for the future of the aviation industry and of the country is the succeeding generations of young Americans.

The main power of America is people empowered by education, people who learn a skill, polish a talent, see a tomorrow that is better, more fulfilling than yesterday -- or even today.

The historically Black colleges and universities are an excellent source for the high quality professionals the FAA must be able to recruit in this period of unprecedented innovation in technology.

The more students we can get involved in our cooperative efforts, means the better the pool of future workers will be.

To maintain our position as the world's aviation leader, the United States must continue and expand its work with programs such as that with the HBCUs to ensure the quality, diversity, and excellence of our future aviation professionals.

I am proud of FAA's long relationship with the historically Black colleges and universities, and I look forward to building an even stronger partnership in the future.

Thank you.