TALKING POINTS
FAA ADMINISTRATOR JAMES B. BUSEY
AIR TRAFFIC DIVISION MANAGERS
CONFERENCE
ATLANTA, GEORGIA
FEBRUARY 2, 1990

INTRODUCTORY MATERIAL:

* I AM PLEASED TO HAVE THE OPPORTUNITY TO SPEND SOME TIME WITH YOU TODAY. IT'S A PARTICULAR PLEASURE TO GET TOGETHER WITH THIS GROUP BECAUSE IT REPRESENTS MORE THAN 50 PERCENT OF THE FAA.

* I HAVE MET QUITE A FEW OF YOU PERSONALLY IN MY VISITS TO REGIONS AND FACILITIES.

* SOME OF YOU MAY HAVE HEARD ME SAY THIS BEFORE, BUT I WANT TO TELL YOU AGAIN HOW IMPRESSED I AM WITH THE QUALITY AND COMMITMENT OF THE FAA WORKFORCE.

* THE NTSB JUST RECENTLY RELEASED ITS ACCIDENT FIGURES FOR 1989, SHOWING THAT THE FATAL ACCIDENT RATES ROSE AND THE NUMBER OF FATAL ACCIDENTS FOR THE AIR CARRIERS WAS THE HIGHEST SINCE 1968.

* THAT MIGHT BE AS AN ACCURATE SNAPSHOT FOR ONE YEAR, BUT IT'S IMPORTANT TO LOOK AT SAFETY FROM A BROADER PERSPECTIVE. AND THE FACT IS THAT THE LAST DECADE HAS BEEN EXTRAORDINARILY SAFE FOR ALL COMMERCIAL AVIATION.

* I AM NOT SUGGESTING COMPLACENCY OR SELF-SATISFACTION IN THE FACE OF THESE STATISTICS, BUT I THINK IT'S IMPORTANT FOR ALL OF US TO REMIND OURSELVES OF THIS FROM TIME TO TIME TO KEEP THINGS IN PERSPECTIVE.

* YOU HAVE ALL HAD A PART TO PLAY IN THIS POSITIVE TREND AND IN MAKING AMERICAN AVIATION THE BEST IN THE WORLD. YOU AND THE CONTROLLERS OUT THERE ON THE FIRING LINE DESERVE A LION'S SHARE OF THE CREDIT.

* NOW I WOULD LIKE TO TAKE A FEW MINUTES TO DISCUSS A FEW ITEMS THAT I THOUGHT YOU WOULD BE INTERESTED IN BEFORE I OPEN THE FLOOR TO QUESTIONS.

FAA REFORM:

* THE FIRST IS THE FAA REFORM PACKAGE. EARLIER THIS WEEK, THE SENATE COMMERCE SUBCOMMITTEE ON AVIATION HELD HEARINGS ON S.1600, WHICH IS LEGISLATION TO

* AS YOU KNOW, BEFORE SECRETARY SKINNER AND I TOOK OFFICE, AN INDEPENDENT FAA WAS A HOT TOPIC AND THERE WAS GROWING SUPPORT FOR IT ON CAPITOL HILL AND IN THE INDUSTRY.

* I BELIEVE THE STEPS WE ARE TAKING INTERNALLY AND THROUGH PROPOSED LEGISLATION WILL ELIMINATE MANY OF THE REASONS THAT S.1600 WAS CONSIDERED BY SOME TO BE NECESSARY IN THE FIRST PLACE.

* THE SECRETARY AND I HAVE DEVELOPED AN EXCELLENT PERSONAL AND WORKING RELATIONSHIP. I HAVE HAVE BEEN WORKING WITH HIM TO RESTORE TO THE FAA SOME OF THE AUTHORITY AND RESPONSIBILITIES THAT WERE TAKEN OVER BY OST OVER THE YEARS.

* AS A RESULT OF THESE DISCUSSIONS, THE ADMINISTRATOR HAS THE AUTHORITY TO SERVE AS THE SOURCE SELECTION OFFICIAL ON CONTRACTS ABOVE $150 MILLION, AND TO MAKE SES SELECTIONS AS WELL AS ORGANIZATIONAL CHANGES WITHIN FAA WITHOUT OST APPROVAL.

* THERE ARE A NUMBER OF OTHER ITEMS IN THE SO-CALLED REFORM PACKAGE THAT YOU WILL BE HEARING ABOUT SOON. THEY DEAL WITH SUCH ITEMS AS STREAMLINING PROCUREMENT PROCEDURES AND THE RULEMAKING PROCESS. OTHERS DEAL WITH PERSONNEL AND FUNDING.

* SOME OF THE REFORMS REQUIRE LEGISLATION. IN THE SO CALLED "REAUTHORIZATION" LEGISLATIVE PROPOSAL, FOR EXAMPLE, WE ARE SEEKING AUTHORITY FOR THE ADMINISTRATOR TO ESTABLISH A CLASSIFICATION AND PAY SYSTEM FOR FAA EMPLOYEES.

* AMONG OTHER THINGS, THIS WOULD PROVIDE FOR DISTINCTIONS BETWEEN LEVELS OF RESPONSIBILITY AND KNOWLEDGE, LENGTH OF SERVICE, INCENTIVE OR MERIT PAY, AND GEOGRAPHICAL PAY DIFFERENCES.

* WE ALSO ARE PROPOSING CHANGES THAT WOULD ALLOW FAA TO USE A MORE BUSINESS-LIKE APPROACH TO LEASES, CONTRACTS, AND OTHER ASPECTS OF BRINGING AIRWAY SYSTEM IMPROVEMENTS ON LINE.

* WITH THESE KINDS OF REFORMS, FAA WOULD BE STRONGER REMAINING AS PART OF THE DOT BECAUSE IT GIVES US A PLACE AT THE TABLE OVER AT THE WHITE HOUSE.

REAUTHORIZATION LEGISLATION:

* WHILE WE ARE ON THE SUBJECT OF THE REAUTHORIZATION LEGISLATION, LET ME GIVE YOU SOME OTHER HIGHLIGHTS OF THE PROPOSED BILL:

* THE AIRPORT GRANT PROGRAM AUTHORITY RUNS FOR TWO MORE YEARS. BUT, THE AUTHORIZATION FOR FAA RESEARCH, ENGINEERING AND DEVELOPMENT (R,E&D) AND FACILITIES AND EQUIPMENT (F&E) EXPIRE OCTOBER 1, 1990. ALSO, USER TAXES WHICH SUPPORT THE AVIATION TRUST FUND EXPIRE AT THAT SAME TIME.

* SO, WE HAVE PROPOSED REAUTHORIZATION LEGISLATION, CALLED "THE AIRPORT AND AIRWAY EXPANSION ACT OF 1990," WHICH SETS A COURSE OF ACTION FOR THE NEXT FIVE YEARS.

* THE ENTIRE PROPOSAL IS BASED ON A FUNDAMENTAL NEED FOR A MORE FLEXIBLE, DYNAMIC APPROACH TO IDENTIFYING AND PLANNING FOR CAPITAL INVESTMENT NEEDS IN AN ERA OF RAPID GROWTH AND CHANGE.

* WE HAVE ALREADY BEGUN WORK ON A NEW CAPITAL INVESTMENT PLAN WHICH WILL INCLUDE THE ORIGINAL ELEMENTS OF THE NAS PLAN. WE NEED LEGISLATIVE AUTHORITY AND FUNDING MECHANISMS TO IMPLEMENT THAT PLAN.

* PERPETUATION OF THE SAME FUNDING APPROACH TO AIRPORT AND AIRWAY CAPACITY WILL NOT DO THE JOB. SO, WE ARE PROPOSING AN INCREASE IN THE AVIATION USER FEES ACROSS THE BOARD, WITH THE PASSENGER TICKET TAX GOING FROM 8 TO 10 PERCENT AND THE WAYBILL FEE INCREASING FROM 5 TO 6 PERCENT.

* IN ADDITION, WE ARE PROPOSING THE ESTABLISHMENT OF A MECHANISM BY WHICH PASSENGER FACILITY CHARGES, OR HEAD TAXES, MAY BE IMPOSED BY AIRPORT OPERATORS.

* WE ALSO ARE PROPOSING THAT 85 PERCENT OF FAA'S TOTAL COSTS BE PAID FOR FROM THE NEW USER FEES.

TOTAL QUALITY MANAGEMENT:

* NOW, LET ME SPEND A MINUTE OR TWO GIVING YOU MY PERSPECTIVE ON TEAM BUILDING AND TOTAL QUALITY MANAGEMENT. THIS GROUP IS VITAL TO IMPLEMENTING THESE CONCEPTS WHICH I REGARD AS ESSENTIAL TO GETTING THE FAA JOB DONE EFFECTIVELY.

* TEAM BUILDING IS NOT JUST IMPORTANT FOR THE TOP MANAGEMENT TEAM--SUCH AS THE EXECUTIVE DIRECTORS AND ASSOCIATES--IT IS IMPORTANT THAT WE INSTILL THIS CONCEPT THROUGHOUT THE AGENCY, FROM TOP TO BOTTOM. AND THAT IS WHERE YOU COME IN.

* TEAM BUILDING AND TOTAL QUALITY MANAGEMENT (TQM) GO HAND IN HAND. DON'T GET HUNG UP ON THE TERM TQM AND DON'T THINK OF IT AS A PROGRAM, ANOTHER NEW MANAGEMENT CONCEPT THAT WE ARE GOING TO TRY OUT ON YOU.

* WHAT WE ARE TALKING ABOUT MORE THAN ANYTHING IS AN ATTITUDE THAT CONTINUOUSLY AIMS AT IMPROVING THE SERVICE AND PRODUCTS WE PROVIDE. WE ALL HAVE TO BUY INTO THAT COMMITMENT. THAT, IN A NUTSHELL, IS WHAT TQM IS ALL ABOUT.

* THE CONCEPT OF "IF IT AIN'T BROKE, DON'T FIX IT" HAS TO GO, AS DOES, "NOT TOO BAD FOR GOVERNMENT WORK." QUALITY MANAGEMENT HAS TO DO WITH STRIVING AS A TEAM TO FIND A BETTER WAY TO DO THE JOB.

* QUALITY WORK DOES NOT COME FROM EDICTS ON HIGH. BOSSES ARE NO LONGER THERE JUST TO GIVE ORDERS. THEY ARE THERE TO EMPOWER PEOPLE, TO ACT AS COACH RATHER THAN DRIVER. AND THEY ARE THERE TO PROVIDE SUPPORT AND TO HELP CLEAR AWAY THE OBSTACLES TO GETTING THE JOB DONE.

* TO UNDERSTAND THIS CONCEPT AND TO GET IT WORKING RIGHT TAKES TRAINING, AND WE ARE GOING TO PROVIDE THAT TRAINING AT ALL LEVELS OF THIS AGENCY. AS PROFESSIONALS, YOU WILL LIKE THIS APPROACH. IT WILL NOT BE THREATENING. IN FACT, IT WILL MAKE YOUR JOBS A WHOLE LOT MORE

GOALS AND PRIORITIES:

* MOST OF YOU HAVE ALREADY HEARD ME DISCUSS WHAT MY GOALS AND PRIORITIES ARE FOR THE FAA:

  - SAFETY (PRIMARILY SECURITY AND DRUGS).

  - FINDING THE RIGHT PEOPLE AND TRAINING THEM PROPERLY.

  - IMPROVING THE PROCUREMENT PROCESS.

  - GETTING THE FUNDING WE NEED TO DO THE JOB PROPERLY.

  - DEVELOPING AN AVIATION POLICY AS PART OF SKINNER'S NATIONAL TRANSPORTATION POLICY EFFORT.

- <u>OUTREACH</u>.

* SINCE YOU HEARD ME DISCUSS THEM BEFORE, I WON'T GO THROUGH THEM ALL. TODAY, LET ME SPEND ME A FEW MINUTES ON TWO OF THEM--BUDGET AND OUTREACH.

* AS YOU KNOW, THE PRESIDENT ANNOUNCED HIS FY 1991 BUDGET PROPOSAL ON TUESDAY. THE PROPOSED 1991 BUDGET FOR FAA SHOWS A INCREASE IN FAA FUNDING ACROSS THE BOARD.

* WE ARE PROPOSING A FUNDING LEVEL OF $8.3 BILLION FOR THE AGENCY. THIS IS $1.1 BILLION--OR 16 PERCENT ABOVE THE FY 1990 ENACTED LEVEL.

* AMONG THE HIGHLIGHTS OF THE PROPOSED LEGISLATION:

  - 85 PERCENT OF FAA'S REQUEST WOULD BE FINANCED FROM THE TRUST FUND

  - $4.088 BILLION FOR OPERATIONS, WHICH REPRESENTS A 7 PERCENT INCREASE OVER FY 1990. THIS INCLUDES THE ADDITION OF 495 CONTROLLERS ABOVE THE ESTIMATED FY 1990 LEVEL FOR AN FY 1991 EMPLOYMENT TOTAL OF 17,495.

  - $2.5 BILLION FOR F&E, WHICH AMOUNTS TO AN INCREASE OF $779 MILLION (45 PERCENT) OVER FY 1990.

- $190 MILLION FOR R,E&D--A 12 PERCENT INCREASE.

- $1.5 BILLION FOR AIRPORT GRANTS (FIVE PERCENT INCREASE) TO ADDRESS CAPACITY NEEDS.

- ALLOWANCE OF PASSENGER FACILITY CHARGES

- INCREASE IN USER FEES. PASSENGER TICKET TAX FROM 8 TO 10 PERCENT, FOR EXAMPLE.

* FINALLY, I WANT TO SPEND A FEW MINUTES TALKING ABOUT OUTREACH. ONE OF THE THINGS I AM DETERMINED TO DO IS TO MAKE SURE FAA GETS BETTER AT LISTENING TO THE PEOPLE WHO RUN OUR AIR SYSTEM AND THOSE WHO DEPEND ON IT--PILOTS, MECHANICS, PASSENGERS, INDUSTRY GROUPS, AND THE LIKE.

* BY THE SAME TOKEN, I WANT TO MAKE SURE WE LISTEN TO ONE ANOTHER WITHIN FAA. I DO NOT SUBSCRIBE TO THE BELIEF THAT ALL WISDOM RESIDES IN WASHINGTON OR JUST ON THE 10TH FLOOR OF THE FAA BUILDING. I AM A STRONG BELIEVER IN PARTICIPATORY MANAGEMENT AND IN THE IMPORTANCE OF LISTENING.

* I ALSO WANT YOU FOLKS TO TAKE THAT ONE STEP FURTHER AND MAKE SURE YOU LISTEN TO ONE ANOTHER AND THE PEOPLE WHO WORK FOR YOU UP AND DOWN THE LINE.

* DON'T GET ME WRONG--I UNDERSTAND THE SIGNIFICANT PROGRESS THAT HAS BEEN MADE IN THIS REGARD OVER THE LAST SEVERAL YEARS. AND MANY OF YOU HAVE BEEN INSTRUMENTAL IN THIS PROGRESS.

* AS EXAMPLES, I WOULD CITE THE PROTOTYPE SUCCESS THROUGH PARTNERSHIP PROCESS (STP) AT THE NEW YORK AND CHICAGO CENTERS. THIS IS VERY ENCOURAGING AND A STEP IN THE RIGHT DIRECTION.

* I MIGHT ALSO MENTION THE COOPERATIVE WORKING RELATIONSHIP THAT HAS BEEN ESTABLISHED BETWEEN FAA MANAGEMENT AND NATCA. THIS KIND OF PARTNERSHIP INVOLVING ALL AIR TRAFFIC MANAGERS AND SUPERVISORS WITH THEIR NATCA COUNTERPARTS WILL HELP PREVENT US FROM GETTING SIDETRACKED ON LABOR/MANAGEMENT SQUABBLES AND KEEP US FOCUSED ON THE TASK AT HAND.

* THEN, OF COURSE, THERE ARE THE FACILITY ADVISORY BOARDS AND ADVISORY COMMITTEES WHICH HAVE BEEN IN PLACE FOR YEARS. ALL OF THESE ARE GIVING EMPLOYEES A LARGER SAY IN PROCEDURAL, TECHNICAL AND OPERATIONAL MATTERS. THIS KIND OF GIVE-AND-TAKE HAS AND WILL CONTINUE TO PROVIDE ENORMOUS BENEFITS IN TERMS OF EMPLOYEE MORALE AND OPERATIONAL EFFECTIVENESS.

* I ALSO WANT TO RECOGNIZE THE PARTICIPATION BY A TEAM OF 100 CONTROLLERS IN THE DEVELOPMENT OF THE ADVANCED AUTOMATION SYSTEM. OVER THE PAST FEW YEARS, THIS TEAM HAS SPENT 10,000 HOURS WORKING WITH ENGINEERS EVALUATING THE DESIGN AND DEVELOPMENT OF THE AAS.

* AS I TOLD A GROUP OF ENGINEERS AT PATUXENT RIVER RECENTLY, CONTROLLERS WILL CONTINUE TO PLAY A MAJOR ROLE WHEN WE START HANDS-ON TESTING AND FINE TUNING THE HUMAN/COMPUTER INTERFACE OF THE AAS. WE WANT TO MAKE SURE THE PEOPLE WHO WILL OPERATE OUR NEW AAS CAN INTERACT WITH IT SAFELY AND

* SO, WHILE I RECOGNIZE THE PROGRESS THAT FAA HAS MADE IN REACHING OUT TO OUR OWN PEOPLE AND OUR CUSTOMERS OUTSIDE THE FAA, WE STILL NEED TO WORK HARDER ON THIS ASPECT OF OUR JOBS.

* A COUPLE OF WEEKS AGO, I MET WITH A GROUP OF OFFICIALS FROM A MAJOR CITY ABOUT A CONTROVERSIAL AIRPORT IMPROVEMENT PROJECT. DURING THE COURSE OF THE MEETING, A MAYOR MENTIONED THAT HE HAD TRIED SEVERAL TIMES TO GET HOLD OF THE AIRPORT TOWER MANAGER BUT HE COULD NEVER GET THE PERSON TO RETURN HIS CALL.

* AGAIN, I RECOGNIZE THE TREMENDOUS OPERATIONAL RESPONSIBILITIES OUR FACILITY MANAGERS HAVE TO SHOULDER. BUT, AT THE SAME TIME, THEY MUST RECOGNIZE THAT DEALING WITH THE CITY OFFICIALS, POLITICIANS, AND THE PUBLIC IS ALSO PART OF THEIR JOB. AND THEY HAVE TO CARVE OUT TIME FOR THAT.

CONCLUSION:

* BEFORE I OPEN THE FLOOR TO QUESTIONS, LET ME EXPRESS MY APPRECIATION TO ALL OF YOU FOR THE TREMENDOUS WORK YOU ARE DOING OUT THERE. AS YOU DEAL WITH THE DAY-TO-DAY ADMINISTRATIVE AND PERSONNEL PROBLEMS AND THE OPERATIONAL HEADACHES, KEEP IN MIND THAT YOU ARE MAKING A SIGNIFICANT DIFFERENCE IN A VITAL ASPECT OF AMERICAN LIFE.

* NOW, IF THERE ARE ANY QUESTIONS.

REMARKS BY ADMIRAL JAMES B. BUSEY
ADMINISTRATOR
FEDERAL AVIATION ADMINISTRATION
ORDER OF DAEDALIANS
WASHINGTON, D. C.
FEBRUARY 6, 1990

IT'S GREAT TO BE WITH YOU THIS EVENING. I'VE BEEN A MEMBER OF THE DAEDALIANS FOR MANY YEARS, AND I'M SURE I SPEAK FOR EVERYONE HERE WHEN I SAY IT'S ALWAYS A PLEASURE TO GET TOGETHER WITH FELLOW MILITARY AVIATORS. WE'VE HAD SOME FUN THIS EVENING, AND I'M GOING TO TALK TO YOU ABOUT THE FAA.

I BELIEVE WE'RE ENTERING ONE OF THE MOST CHALLENGING PERIODS IN AVIATION HISTORY. FIFTY YEARS FROM NOW, PEOPLE ARE GOING TO LOOK BACK AND SAY THAT THE 1990'S WERE THE DECADE WHEN WE TRANSFORMED AMERICA'S AVIATION SYSTEM.

WE'RE UNDERTAKING A NEAR TOTAL UPGRADE AND MODERNIZATION OF OUR AIR TRAFFIC CONTROL SYSTEM. WE'RE DOING THAT BECAUSE WE MUST INCREASE THE SYSTEM'S CAPACITY TO MEET RISING DEMAND.

WHENEVER I TALK ABOUT THE FAA AND THE AMERICAN AIR SYSTEM, I HAVE TO USE A LOT OF SUPERLATIVES -- WORDS LIKE THE "BIGGEST" AND THE "BEST" -- NOT BECAUSE I WANT TO BOAST, BUT BECAUSE I WANT TO DEAL IN FACTS:

* AMERICA HAS THE <u>BEST</u> AIR TRAFFIC CONTROL SYSTEM IN THE WORLD. WE SET THE STANDARDS FOR ALL THE WORLD.

* AND WE ALSO HAVE THE LARGEST AIR COMMERCE SYSTEM -- WITH MORE PLANES AND MORE FLIGHTS, FLYING MORE PASSENGERS AND FREIGHT THAN ANY OTHER COUNTRY.

LET ME THROW SOME NUMBERS AT YOU. WE'VE GOT:

* 17,OOO AIRPORTS,

* 216,OOO AIRCRAFT,

* AND 7OO,OOO PILOTS.

IN 1988, OUR AIRCRAFT:

* SPENT MORE THAN 49 MILLION HOURS IN THE AIR,

* FLEW NEARLY NINE BILLION MILES,

* AND TRANSPORTED 575 MILLION PASSENGERS.

OUR 447 FAA CONTROL TOWERS WILL HANDLE MORE THAN 61 MILLION TAKEOFFS AND LANDINGS THIS YEAR. OUR 22 ENROUTE CONTROL CENTERS WILL HANDLE CLOSE TO 37 MILLION FLIGHTS.

NOW IT TAKES A LOT OF TALENTED PEOPLE TO CONTROL THAT VOLUME OF TRAFFIC. MORE THAN HALF OF OUR 48,OOO EMPLOYEES WORK DIRECTLY IN AIR TRAFFIC CONTROL JOBS.

IN ADDITION TO OUR TOWERS AND CONTROL CENTERS, WE OPERATE 244 FLIGHT SERVICE STATIONS, NEARLY A THOUSAND INSTRUMENT LANDING SYSTEMS, 2OO AIRPORT SURVEILLANCE RADAR SYSTEMS, 1,3OO VISUAL APPROACH SLOPE INDICATORS, AND THOUSANDS OF COMPUTERS, RADIOS, RADARS, AND NAVIGATION DEVICES.

THIS YEAR THE FAA BUDGET TOTALS 7.1 BILLION DOLLARS, WITH MORE THAN HALF COMING FROM FEES PAID BY THE AIRLINES AND OTHER USERS OF THE SYSTEM. INCLUDED IN THAT TOTAL IS ABOUT 1.4 BILLION DOLLARS FOR AIRPORT IMPROVEMENTS.

SO THE FAA IS A BIG ORGANIZATION, WITH AN IMPORTANT MISSION, AN ENORMOUS WORKLOAD -- AND A HISTORY OF ACCOMPLISHMENT. AS I SAID, AMERICA'S AIR TRAFFIC CONTROL SYSTEM SETS THE STANDARDS FOR THE WORLD. AND THAT SYSTEM WAS BUILT BY THE FAA.

BUT TODAY THE FAA FACES THE MOST DIFFICULT CHALLENGE IN ITS HISTORY -- THE CHALLENGE OF BUILDING THE AIR CONTROL SYSTEM OF THE NEXT CENTURY.

AS I SEE IT, A CRITICALLY IMPORTANT PART OF MY JOB IS TO WORK WITHIN THE ADMINISTRATION AND WITH THE CONGRESS TO GET THE FUNDING TO KEEP OUR AIR COMMERCE SYSTEM THE BEST IN THE WORLD.

WE HAVE A GROWING SYSTEM WITH GROWING NEEDS. THERE'S JUST NO QUESTION THAT WE'RE GOING TO NEED SUBSTANTIAL INCREASES IN CAPITAL INVESTMENT.

NOW WE ALL KNOW THERE'S A BUDGET CRUNCH AND TOUGH COMPETITION FOR FEDERAL DOLLARS. BUT I'M OPTIMISTIC BECAUSE THE ADMINISTRATION IS PAYING ATTENTION TO OUR NEEDS.

WE HAVE A PRESIDENT AND A SECRETARY OF TRANSPORTATION WHO UNDERSTAND THE IMPORTANCE OF AVIATION TO AMERICA. AND THEY HAVE MADE MODERNIZATION OF THE NATIONAL AIRSPACE SYSTEM ONE OF THEIR TOP PRIORITIES.

WE HAVE MUCH WORK TO DO. TRAFFIC VOLUME IS GROWING RAPIDLY. EVERY YEAR, THE NUMBER OF AIRLINE PASSENGERS GOES UP. WE'LL HAVE ABOUT A HALF-BILLION THIS YEAR. BY THE TURN OF THE CENTURY, WE'LL HAVE CLOSE TO 800 MILLION, AND STILL GOING UP.

THAT MEANS MORE PASSENGERS, MORE PLANES, MORE FLIGHTS -- AND A TREMENDOUS POTENTIAL FOR MORE CONGESTION AND DELAY.

HOW CAN WE FORESTALL THAT?

WELL, MAINLY BY GETTING ADVANCED TECHNOLOGY AND SYSTEMS THAT WILL INCREASE THE SYSTEM'S EFFICIENCY AND CAPACITY.

AS I SAID EARLIER, WE'RE LITERALLY GOING TO TRANSFORM OUR AIR TRAFFIC CONTROL SYSTEM. IN THIS DECADE, WE'RE GOING TO BUILD, PIECE BY PIECE, THE AIR SYSTEM FOR THE 21ST CENTURY.

IN MY VIEW, AMERICAN AVIATION IS AT AN HISTORIC TURNING POINT. WE'RE ABOUT TO BREAK AWAY FROM THE WAY WE'VE DONE THINGS FOR NEARLY 50 YEARS. WE'RE ON THE VERGE OF MAKING A QUANTUM LEAP FORWARD -- A LEAP THAT IN A FEW SHORT YEARS WILL GIVE US AN AVIATION SYSTEM THAT WILL MAKE TODAY'S LOOK AS OLD-FASHIONED AS THE PONY EXPRESS.

WE'RE GOING TO GET TECHNOLOGY THAT WILL GIVE US CAPABILITIES THAT NO ONE DREAMED POSSIBLE A COUPLE OF DECADES AGO. IT WILL GIVE US AN AIR TRANSPORT SYSTEM:

* WITH GREATER RELIABILITY, IN WHICH OPERATIONAL AND WEATHER DELAYS WILL BE MOSTLY MEMORIES OF THE PAST;

* A SYSTEM WITH GREATER EFFICIENCY -- ONE THAT PRODUCES MORE TRANSPORTATION FOR EVERY POUND OF FUEL BURNED AND EVERY DOLLAR INVESTED;

* AND A SYSTEM WITH GREATER SAFETY, PROVIDING A LOWER LEVEL OF RISK FOR EVERYONE WHO FLIES.

LET ME HIT JUST A FEW OF THE HIGHLIGHTS.

FIRST OF ALL, IN OUR 20 ENROUTE CONTROL CENTERS WE'VE INSTALLED A GIANT NEW COMPUTER SYSTEM THAT HAS TEN TIMES THE SPEED AND FOUR TIMES THE CAPACITY OF THE OLD SYSTEM.

WE'VE GOT NEW RADARS THAT PROVIDE FAR MORE ACCURATE WEATHER, NAVIGATION, AND SURVEILLANCE INFORMATION.

WE'VE GOT A NEW NATIONAL FLOW CONTROL COMPUTER SYSTEM THAT'S INTERFACED WITH LOCAL TRAFFIC MANAGEMENT UNITS AND IS HELPING TO SMOOTH THE FLOW OF TRAFFIC NATIONWIDE.

OVER THE NEXT COUPLE OF YEARS, WE'LL BE GETTING AIRBORNE COLLISION AVOIDANCE SYSTEMS, WINDSHEAR DETECTION DEVICES, AND ADVANCED DIGITAL COCKPIT DISPLAYS AND FLIGHT MANAGEMENT SYSTEMS.

WITH THE NEW MODE S RADAR TECHNOLOGY, WE'LL SET UP AUTOMATED DIGITAL DATA LINKS BETWEEN PLANES AND TRAFFIC CONTROL CENTERS. WE'LL GIVE PILOTS THEIR FLIGHT CLEARANCES, WEATHER, AND OTHER INFORMATION, ALMOST INSTANTANEOUSLY, WITHOUT TIME-CONSUMING -- AND ERROR-PRONE -- RADIO CONVERSATIONS WITH CONTROLLERS.

BY THE LATE 1990S, WE'LL BE USING MICROWAVE LANDING SYSTEMS TO SPEED THE FLOW OF TRAFFIC IN AND OUT OF OUR MAJOR JETPORTS.

AND WE'RE NOW TESTING THE POSSIBILITY OF USING MILLIMETERWAVE IMAGING TECHNOLOGY TO GIVE THE PILOT A "PICTURE" OF THE RUNWAY IN BAD WEATHER. OBVIOUSLY, IF WE COULD FLY IN BAD WEATHER THE WAY WE DO IN GOOD WEATHER, WE'D HAVE NO SIGNIFICANT DELAY OR CONGESTION PROBLEMS. BAD WEATHER CAUSES 70 PERCENT OF OUR DELAYS.

IN A FEW YEARS WE'RE GOING TO NEED EVEN MORE COMPUTING POWER, WHICH WE'LL GET FROM AN EVEN FASTER AND MORE POWERFUL COMPUTER SYSTEM. THIS WILL BE THE LARGEST REAL-TIME, COMPUTER-CONTROLLED SYSTEM EVER DEVELOPED.

IT WILL BRING ALL OF OUR PRIMARY TRAFFIC CONTROL FACILITIES INTO AN INTEGRATED, AUTOMATED SYSTEM THAT WILL BE EASY TO EXPAND AS NEW TECHNOLOGY BECOMES AVAILABLE.

EVENTUALLY WE'LL USE THESE POWERFUL COMPUTERS TO AUTOMATE NEARLY ALL OF OUR AIR TRAFFIC CONTROL OPERATIONS. THEY'LL DETECT AND RESOLVE FLIGHT CONTROL PROBLEMS IN ADVANCE, MAKE DECISIONS, AND OFFER CLEARANCES DIRECTLY TO AIRCRAFT WITHOUT HUMAN INTERVENTION -- BUT, OF COURSE, ALWAYS UNDER HUMAN <u>DIRECTION</u>.

ALONG ABOUT THE SAME TIME, WE'LL START USING SATELLITE-BASED TECHNOLOGY TO TELL CONTROLLERS PRECISELY WHERE PLANES ARE, ANYWHERE IN THE WORLD.

I COULD TALK FOR THE REST OF THE EVENING ABOUT HOW WE'RE MODERNIZING THE SYSTEM. BUT I'VE SAID ENOUGH TO GIVE YOU AN IDEA OF HOW WE'RE GOING TO USE TECHNOLOGY TO MANAGE THE AIRSPACE MORE EFFICIENTLY AND INCREASE THE SYSTEM'S CAPACITY.

HOWEVER, GETTING THE BEST IN TECHNOLOGY WILL MEAN LITTLE IF WE DON'T HAVE THE PEOPLE WHO CAN USE IT.

ONE OF MY MAJOR GOALS IS TO GET THE KIND OF PEOPLE WE NEED TO RUN THIS INCREASINGLY COMPLEX SYSTEM. RIGHT NOW, FOR EXAMPLE, WE'RE MODERNIZING OUR CONTROLLER TRAINING PROGRAM, TOP TO BOTTOM.

WE NEED TALENTED PEOPLE IN THE AIR, TOO. AND, HERE AGAIN, WE'VE GOT A PROBLEM THAT REQUIRES ATTENTION. FOR THE FIRST TIME IN THE HISTORY OF AVIATION, WE'RE ON THE VERGE OF A PILOT SHORTAGE.

UNTIL NOW, THE AIRLINES COULD RELY ON A STEADY SUPPLY OF EX-MILITARY PILOTS. BUT THE NUMBER OF MILITARY PILOTS LEAVING THE SERVICES IS LEVELING OFF AND WILL PROBABLY DECLINE SOMEWHAT IN THE MID-199O'S.

THIS IS HAPPENING JUST WHEN THE DEMAND FOR PILOTS IS SKYROCKETING BECAUSE OF THE GROWTH OF THE AIRLINE INDUSTRY AND BECAUSE A LARGE NUMBER OF AIRLINE PILOTS WILL RETIRE IN THE YEARS JUST AHEAD.

LAST YEAR WAS THE FIRST IN WHICH U.S. SCHEDULED AIR CARRIERS HIRED MORE PILOTS FROM THE GENERAL AVIATION SECTOR THAN FROM THE MILITARY. AND THIS TREND WILL CONTINUE.

A RECENT STUDY SPONSORED BY THE MILITARY AIRLIFT COMMITTEE OF THE NATIONAL DEFENSE TRANSPORTATION ASSOCIATION SHOWS THAT U.S. AIRLINES ARE GOING TO NEED AN ESTIMATED 53,OOO NEW PILOTS IN THIS DECADE.

BUT THE ESTIMATED SUPPLY WILL BE ONLY ABOUT 41,OOO -- LEAVING A SHORTAGE OF ABOUT 12,OOO PILOTS IN THIS DECADE.

THE SHORTAGE OF PILOTS IS ALREADY FORCING THE AIRLINES TO HIRE MORE OLDER PILOTS. MAJOR AIRLINES ARE HIRING NEW PILOTS IN THEIR 40'S, AND SOME HAVE HIRED PILOTS IN THEIR 5O'S.

RIGHT NOW WE'RE SETTING UP A PRESIDENTIAL COMMISSION TO STUDY THE PILOT SHORTAGE AND COME UP WITH SOME ANSWERS. MEMBERS OF THE COMMISSION WILL COME FROM THE DEPARTMENTS OF DEFENSE AND TRANSPORTATION, THE AIRLINE INDUSTRY AND FROM COMMERCIAL AND GENERAL AVIATION.

THEY WILL STUDY BOTH SIDES OF THE PROBLEM -- THE MILITARY AND THE CIVILIAN -- AND REPORT TO THE PRESIDENT AND CONGRESS BY MARCH OF NEXT YEAR.

IN MY VIEW, THE COMMISSION MAY CONCLUDE THAT WE'VE GOT TO RELY MORE ON GENERAL AVIATION TRAINING AND ESPECIALLY ON THE NEW "AB INITIO" PROGRAMS THAT ARE SPRINGING UP AROUND THE COUNTRY.

IN CASE YOU HAVEN'T HEARD THAT TERM, "AB INITIO", IT'S LATIN FOR "FROM THE BEGINNING."

THE IDEA IS TO TAKE A PERSON WITH ZERO HOURS AND TRAIN HIM OR HER IN A DISCIPLINED WAY, AND TURN OUT A "STANDARD PRODUCT" WITH 200 TO 250 HOURS, READY TO MOVE INTO THE RIGHT SEAT OF A COMMUTER OR REGIONAL AIRLINE.

THESE AB INITIO PROGRAMS HAVE A LOT TO OFFER. THEY CAN DO WHAT MILITARY FLIGHT TRAINING DOES -- PUT THE YOUNG AVIATOR THROUGH A <u>STANDARDIZED</u> PROGRAM THAT PREPARES HIM OR HER TO FLY HIGH PERFORMANCE AIRCRAFT IN A DEMANDING ENVIRONMENT.

ALL TOO OFTEN TODAY, THE YOUNG PILOT COMING UP FROM THE GRASS ROOTS GETS TRAINED IN AN UNCOORDINATED AND HAPHAZARD MANNER. WE CAN'T REALLY BE SURE OF THE QUALITY OF TRAINING SHOWN IN THE LOGBOOK.

WITH MILITARY TRAINING, WE KNOW EXACTLY WHAT KIND OF PILOT WE'VE GOT COMING OUT OF THE PIPELINE. WE CAN DO THE SAME THING IN CIVILIAN TRAINING WITH THESE AB INITIO PROGRAMS -- WHICH, IN MY VIEW, MAKES THEM VERY ATTRACTIVE.

WELL, I'VE TALKED LONGER THAN I PLANNED -- SOMETHING I USUALLY DO WHEN I GET ON MY FAVORITE SUBJECT, AVIATION.

TONIGHT I'VE TRIED TO GIVE YOU AN IDEA OF THE CHALLENGES THE FAA FACES -- AND OF THE WAY IN WHICH WE'RE MEETING THEM.

I'VE BEEN WITH THE FAA LONG ENOUGH TO KNOW IT HAS THE RESOURCES AND PEOPLE TO FULFILL ITS RESPONSIBILITIES TO AMERICA. WITH THE COOPERATION OF EVERYONE IN AVIATION, I'M CONFIDENT WE CAN KEEP AMERICA'S AIR SYSTEM THE BEST IN THE WORLD.

IT'S BEEN A PLEASURE BEING WITH YOU THIS EVENING. THANK YOU.

REMARKS FOR ADMIRAL JAMES B. BUSEY
ADMINISTRATOR
FEDERAL AVIATION ADMINISTRATION
BEFORE THE
ARMED FORCES COMMUNICATIONS AND
ELECTRONICS ASSOCIATION
WASHINGTON, D.C.
FEBRUARY 8, 1990

GOOD AFTERNOON. IT'S A PLEASURE TO BE WITH YOU TODAY TO TALK ABOUT THE CHALLENGES FACING THE FEDERAL AVIATION ADMINISTRATION.

WE HAVE LOTS OF CHALLENGES, BUT THE MOST IMPORTANT WILL BE THE MODERNIZATION OF OUR AIR COMMAND AND CONTROL SYSTEM.

BACK IN 1981, THE FAA LAUNCHED THE NATIONAL AIRSPACE SYSTEM PLAN, THE NASPLAN, WHICH IS A MULTI-BILLION DOLLAR PROGRAM TO UPGRADE OUR AIR TRAFFIC CONTROL SYSTEM -- A PROGRAM THAT IS ABSOLUTELY ESSENTIAL IF WE ARE TO ACCOMMODATE INCREASING TRAFFIC VOLUMES IN THE YEARS AHEAD.

TODAY, MORE THAN 90 PERCENT OF THE ORIGINAL NASPLAN IS UNDER CONTRACT AND THOUSANDS OF PIECES OF EQUIPMENT ARE ON LINE, WITH MORE COMING EVERY DAY.

HOWEVER, COMPLETION OF THE NASPLAN WILL NOT MEAN THE END OF OUR CAPITAL INVESTMENT PROGRAM. FAR FROM IT. I SEE NO END TO OUR NEED FOR NEW TECHNOLOGY AND SYSTEMS IN FUTURE YEARS.

IN FACT, WE ARE PLANNING A SERIES OF FURTHER IMPROVEMENTS THAT WILL BE ACCOMPLISHED ALONG WITH THE NASPLAN AND WILL CONTINUE AFTER IT IS COMPLETED.

TAKEN TOGETHER, THE NASPLAN AND THESE ADDITIONAL PROGRAMS ARE ONE OF THE LARGEST CIVILIAN PROJECTS SINCE THE APOLLO ASTRONAUTS LANDED ON THE MOON -- WITH ONE DIFFERENCE. THERE'S NO SINGLE DESTINATION, NO SINGLE STOPPING POINT.

OUR INVESTMENTS IN INNOVATIVE NEW TECHNOLOGY WILL CONTINUE, AS NEW REQUIREMENTS SHOW UP. AND WE CAN'T PREDICT ALL OF THOSE FUTURE REQUIREMENTS.

WE'VE GOT THE BEST AIR CONTROL SYSTEM IN THE WORLD. AND I'M DETERMINED THAT IT WILL STAY THE BEST.

WE'RE GOING TO BUILD AND BUY A LOT OF NEW SYSTEMS THAT WILL BENEFIT EVERYONE WHO FLIES, AS WELL AS THE COMPANIES THAT SUPPLY THOSE SYSTEMS.

TO GIVE YOU AN IDEA OF THE SIZE OF THE INVESTMENTS WE'RE MAKING, LET ME MENTION TWO NUMBERS FROM THE PRESIDENT'S BUDGET PROPOSAL FOR FISCAL 1991.

THE PRESIDENT REQUESTED $2.5 BILLION DOLLARS FOR FAA FACILITIES AND EQUIPMENT -- A 45 PERCENT INCREASE OVER THE CURRENT FISCAL YEAR. MOST OF THIS MONEY WILL BE INVESTED IN NASPLAN PROJECTS. WE INTEND TO INVEST MORE THAN $13 BILLION DOLLARS OVER THE NEXT FIVE YEARS.

THE PRESIDENT ALSO REQUESTED $190 MILLION FOR THE FAA'S RESEARCH, ENGINEERING AND DEVELOPMENT -- A 12 PERCENT INCREASE OVER FISCAL 1990, AND AGAIN REFLECTING THE NEED TO DEVELOP THE MOST ADVANCED TECHNOLOGY WE CAN GET TO IMPROVE OUR COMMAND AND CONTROL SYSTEM.

TODAY, I WANT TO TELL YOU ABOUT SOME OF THE THINGS WE'RE DOING, SOME OF OUR NEW R&D PROGRAMS, AND SOME OF THE MAJOR SYSTEMS THAT WILL BE COMING ON LINE IN THE 1990'S.

I WON'T HAVE TIME TO COVER EVERYTHING WE'RE DOING. THE PROGRAM IS JUST TOO BIG FOR THAT. BUT I CAN GIVE YOU AN IDEA OF THE HIGHLIGHTS.

TECHNOLOGY IS ADVANCING SO RAPIDLY THAT IT'S IMPERATIVE TO CHANGE THE THRUST OF OUR R&D PROGRAMS. WE'VE GOT TO BE READY FOR DEVELOPMENTS NO ONE PREDICTED JUST A FEW YEARS AGO, THINGS LIKE:

* NEW AIRCRAFT AND ENGINE TECHNOLOGY THAT WILL LET PLANES FLY HIGHER AND FASTER, AND PERFORM IN DIFFERENT WAYS THAN TODAY'S AIRCRAFT;

* HIGHER LEVELS OF AUTOMATION, INCLUDING ARTIFICIAL INTELLIGENCE, THAT WILL TAKE OVER MUCH OF THE WORK OF CONTROLLERS AND PILOTS;

* AND SATELLITE-BASED NAVIGATION, SURVEILLANCE, AND COMMUNICATION SYSTEMS -- AND THE POSSIBLE EVOLUTION OF AIR TRAFFIC CONTROL AWAY FROM A GROUND-BASED SYSTEM TO ONE CENTERED PRIMARILY WITHIN THE AIRCRAFT ITSELF.

IN MY VIEW, AVIATION IS AT AN HISTORIC TURNING POINT. WE'RE ABOUT TO BREAK AWAY FROM THE WAY WE'VE DONE THINGS FOR NEARLY 50 YEARS. WE'RE ON THE VERGE OF MAKING A QUANTUM LEAP FORWARD, A LEAP THAT IN A FEW SHORT YEARS WILL GIVE US AN AVIATION SYSTEM THAT WILL MAKE TODAY'S SYSTEM LOOK AS OUTMODED AS THE PONY EXPRESS.

FIFTY YEARS FROM NOW, PEOPLE ARE GOING TO LOOK BACK AND SAY THAT THE 1990S WERE THE DECADE IN WHICH WE TRANSFORMED AMERICA'S AVIATION SYSTEM.

THE TECHNOLOGY THAT WILL BE PART OF OUR DAILY LIVES IN THE NOT-TOO-DISTANT FUTURE WILL GIVE US CAPABILITIES THAT NO ONE DREAMED POSSIBLE A SHORT WHILE AGO.

IT WILL SOLVE MOST OF THE PROBLEMS THAT HAVE PLAGUED US FOR YEARS. MOST IMPORTANTLY, IT WILL GIVE US AN AIR TRANSPORT SYSTEM WITH THE CAPACITY TO HANDLE TREMENDOUSLY INCREASED TRAFFIC DEMANDS:

* A SYSTEM WITH GREATER RELIABILITY, IN WHICH OPERATIONAL AND WEATHER DELAYS WILL BE MOSTLY MEMORIES OF THE PAST;

* A SYSTEM WITH GREATER EFFICIENCY, ONE THAT PRODUCES MORE TRANSPORTATION FOR EVERY POUND OF FUEL BURNED AND EVERY DOLLAR INVESTED;

* AND A SYSTEM WITH GREATER SAFETY, PROVIDING A LOWER LEVEL OF RISK FOR EVERYONE WHO FLIES.

THERE'S JUST NO QUESTION THAT THAT IS THE KIND OF AIR TRANSPORT SYSTEM WE'RE GOING TO CREATE BY THE TURN OF THE CENTURY.

TO CAPSULIZE IT, WE'RE AIMING FOR THE NEAR-TOTAL AUTOMATION OF AIR TRAFFIC MANAGEMENT.

THAT WON'T SHOW UP OVERNIGHT, OF COURSE. BUT, WITHOUT DOUBT, WE'RE EVENTUALLY GOING TO HAVE A HIGHLY COMPUTERIZED AND HIGHLY AUTOMATED SYSTEM -- A SYSTEM THAT WILL BE SATELLITE BASED AND THAT WILL USE REVOLUTIONARY NEW SENSOR TECHNOLOGY.

COMPUTERS, OF COURSE, ARE ALREADY GIVING US TREMENDOUS PAYOFFS IN GREATER EFFICIENCY, CAPACITY, AND SAFETY.

YOU CAN SEE THIS IN OUR NATIONAL CENTRAL FLOW CONTROL COMPUTER SYSTEM THAT WE PUT IN OPERATION A YEAR AGO. IT'S ALREADY HAVING A TREMENDOUS IMPACT ON OUR NATIONAL AND REGIONAL TRAFFIC MANAGEMENT.

THIS SYSTEM CAN DETERMINE THE POSITION OF ANY AIRCRAFT, NATIONWIDE. AND IT CAN PREDICT WHERE CONGESTION MIGHT OCCUR, UP TO FOUR HOURS IN ADVANCE -- WHICH GIVES US TIME TO TAKE CORRECTIVE STEPS TO FORESTALL CONGESTION AND DELAYS. AND WE ARE DOING THAT ON A DAILY BASIS RIGHT NOW.

THIS FLOW CONTROL SYSTEM IS BEING INTERFACED WITH LOCAL TRAFFIC MANAGEMENT UNITS IN OUR 22 ENROUTE AIR TRAFFIC CONTROL CENTERS ACROSS THE NATION.

AS I'M SURE ALL OF YOU UNDERSTAND, IF WE'RE TO HAVE A HIGHLY AUTOMATED SYSTEM, THEN WE'VE ALSO GOT TO HAVE RELIABLE, EFFICIENT COMMUNICATIONS.

WE'RE GOING TO GET THAT FROM OUR NEW VOICE SWITCHING AND CONTROL SYSTEM THAT WILL PERFORM THE ADVANCED INTERCOM, INTERPHONE, AND AIR-GROUND VOICE CONNECTIVITY AND CONTROL FUNCTIONS WE NEED FOR NATIONWIDE AIR CONTROL OPERATIONS.

WE'RE GOING TO START FUNDING THIS HALF-BILLION DOLLAR INVESTMENT THIS YEAR, AS SOON AS THE COMPETITION IS FINISHED.

NOW, OF COURSE, IT GOES WITHOUT SAYING THAT AUTOMATION REQUIRES COMPUTERS. WELL, WE'RE GOING TO GET A LOT OF THEM. IN FACT, WE'RE GOING TO GET THE LARGEST, REAL-TIME COMPUTER SYSTEM EVER DEVELOPED, A $3.5 BILLION DOLLAR ADVANCED AUTOMATION SYSTEM.

IT WILL PUT ALL OF OUR PRIMARY TRAFFIC FACILITIES INTO AN INTEGRATED, HIGHLY AUTOMATED SYSTEM, AND GIVE US THE SPEED, CAPACITY, AND FLEXIBILITY TO HANDLE OUR INCREASING TRAFFIC LOADS WELL INTO THE NEXT CENTURY.

AND IT WILL BE THE BASIS FOR A WHOLE SERIES OF MAJOR ADVANCES -- IN COMMUNICATIONS, IN WEATHER, SURVEILLANCE, NAVIGATION, AND TRAFFIC MANAGEMENT.

IN ONE IMPORTANT RESPECT, THIS SYSTEM IS UNLIKE ANYTHING THE FAA HAS EVER DONE. IT'S DESIGNED FOR EASY EXPANSION AS NEW TECHNOLOGY BECOMES AVAILABLE. WE WON'T HAVE TO CHANGE COMPUTERS TO HANDLE 21ST CENTURY DEMANDS.

THIS KIND OF TECHNOLOGICAL FLEXIBILITY IS A FIRST FOR THE FAA. ALWAYS BEFORE, WHENEVER WE WANTED TO MAKE A TECHNOLOGICAL ADVANCE, WE HAD TO SCRAP THE SYSTEM IN USE. BUT NO LONGER. WE'LL HAVE A BUILT-IN ABILITY TO KEEP UP WITH EVOLVING TECHNOLOGY AND CHANGING NEEDS.

AND, IN FACT, WE'RE ALREADY PLANNING MAJOR NEW AUTOMATION PROGRAMS THAT WOULD HAVE BEEN IMPOSSIBLE WITHOUT THE ADVANCED AUTOMATION SYSTEM.

ONE OF THESE WILL BE THE AUTOMATED ENROUTE AIR TRAFFIC CONTROL SYSTEM -- AERA, FOR SHORT.

IN ITS FIRST PHASE, AERA 1 WILL GIVE CONTROLLERS THE CAPABILITY OF EVALUATING ROUTES REQUESTED BY PILOTS FOR POTENTIAL CONFLICTS WITH OTHER AIRCRAFT, PROHIBITED AIRSPACE, AND FLOW CONTROL RESTRICTIONS.

IN ITS SECOND PHASE, AERA II WILL NOT ONLY DETECT PROBLEMS, BUT WILL COME UP WITH POSSIBLE SOLUTIONS, WHICH CONTROLLERS WILL BE ABLE TO SELECT.

IN THE THIRD PHASE, ALONG ABOUT THE TURN OF THE CENTURY, AERA III WILL USE ARTIFICIAL INTELLIGENCE TO MAKE DECISIONS, BASED ON THE WAY CONTROLLERS MAKE DECISIONS TODAY.

WHAT WE ENVISION IS THE NEARLY COMPLETE COMPUTERIZATION OF AIR TRAFFIC CONTROL. COMPUTERS WILL DETECT AND RESOLVE FLIGHT CONTROL PROBLEMS IN ADVANCE, MAKING DECISIONS, AND OFFERING CLEARANCES DIRECTLY TO AIRCRAFT WITHOUT HUMAN INTERVENTION.

CONTROLLERS WILL THEN BECOME SYSTEM MONITORS AND AIRSPACE MANAGERS, DOING THE THINGS THAT PEOPLE DO BEST AND LETTING COMPUTERS DO THE THINGS THAT THEY DO BEST.

THE FUTURE DEVELOPMENT OF THE AERA SYSTEMS WILL, AS I SAID, INVOLVE ARTIFICIAL INTELLIGENCE. AND, IN FACT, WE'RE NOW DEVELOPING THREE PROGRAMS THAT WILL USE ARTIFICIAL INTELLIGENCE.

ONE IS A SIMULATION SYSTEM FOR CONTROLLER TRAINING. THE SECOND IS FOR AN AUTOMATED PROBLEM-RESOLUTION CAPABILITY THAT WILL BE THE CENTRAL FEATURE OF THE AERA II SOFTWARE. AND THE THIRD IS AN AUTOMATED SYSTEM FOR THE DETECTION OF LOW-LEVEL WIND SHEAR IN CONJUNCTION WITH DOPPLER WEATHER RADARS.

WE'VE JUST AWARDED A CONTRACT FOR 45 NEW DOPPLER RADAR SYSTEMS AT MAJOR AIRPORTS. THIS SYSTEM, WHICH PROVED ITS WORTH IN A TEST JUST COMPLETED AT DENVER, CAN GIVE US AUTOMATIC ADVANCE WARNING OF DANGEROUS WINDSHEAR THAT CAN DOWN A JETLINER.

DOPPLER RADAR WILL ALSO BE USED TO SUPPORT THE AUTOMATED OPERATIONS UNDER AERA II AND III, AND WE'RE GOING TO BE INSTALLING NEW LONG-RANGE DOPPLER WEATHER RADAR SYSTEMS OVER THE NEXT COUPLE OF YEARS.

NOW THE AERA SYSTEM WILL AUTOMATE THE ENROUTE ENVIRONMENT. BUT WE WANT AUTOMATION THROUGHOUT THE SYSTEM, COVERING AN AIRCRAFT'S MOVEMENTS FROM THE TIME THE PILOT STARTS THE ENGINES TO THE TIME HE SHUTS THEM DOWN.

SO WE'RE WORKING ON TWO ADDITIONAL AUTOMATION PROGRAMS.

ONE, THE TERMINAL AIR TRAFFIC CONTROL AUTOMATION PROGRAM, WILL GIVE US MORE PRECISE CONTROL OVER THE SEQUENCE AND TIMING OF TRAFFIC IN AND OUT OF TERMINAL AREAS. IT WILL PROVIDE CONTROLLERS WITH IMMEDIATE TACTICAL ADVICE IN RESPONSE TO CHANGES IN THE MIX OF AIRCRAFT, WEATHER, AND OTHER CONDITIONS.

THE OTHER, THE AIRPORT SURFACE TRAFFIC AUTOMATION PROGRAM, WILL AUTOMATE THE MOVEMENT OF AIRCRAFT ON THE GROUND. IT WILL HELP PREVENT RUNWAY INCURSIONS AND PROVIDE MORE EFFICIENT SEQUENCING OF AIRCRAFT DEPARTURES.

OF COURSE, IF WE'RE GOING TO AUTOMATE THE SEPARATION OF AIRCRAFT, WE'RE GOT TO HAVE SOME REDUNDANCY AND BACKUP IN COMMUNICATIONS AND SURVEILLANCE.

ONE INDEPENDENT BACKUP IS THE COLLISION AVOIDANCE SYSTEM, TCAS 2, THAT IS NOW BEING INSTALLED IN THE AIR CARRIER FLEET. THIS AIRBORNE SENSOR GIVES THE PILOT MANEUVER INFORMATION IN ONE DIMENSION: FLY LEFT, FLY RIGHT, OR STAY LEVEL.

BUT WE WANT TO DO BETTER THAN THAT. SO WE'RE NOW IN THE FINAL TESTING STAGE FOR THE NEXT GENERATION, TCAS 3, WHICH WILL GIVE MANEUVER INFORMATION IN TWO DIMENSIONS: FLY LEFT, FLY RIGHT, FLY UP, FLY DOWN, STAY LEVEL.

SOMEDAY THESE NEW AIRBORNE SYSTEMS MAY ALLOW US TO HAND OVER MORE CONTROL TO THE AIRCRAFT'S ON-BOARD SYSTEMS AND THE PILOTS, WHO WILL THEN BE ABLE TO FLY WITH LESS CONTROL FROM THE GROUND.

THIS ADVANCE WILL DEPEND UPON THE DEVELOPMENT OF BETTER NAVIGATION, COMMUNICATIONS, AND SURVEILLANCE -- WHICH WE WILL PROBABLY GET FROM SATELLITE TECHNOLOGY.

AS YOU KNOW, THE 24-SATELLITE GLOBAL POSITIONING SYSTEM WILL BE IN PLACE BY 1993. THAT SYSTEM COULD FREE AIRCRAFT FROM THE LIMITATIONS INHERENT IN GROUND-BASED NAVAIDS AND, IN ADDITION, GIVE US FAR MORE ACCURATE NAVIGATIONAL FIXES OVER THE OCEANS AND OTHER REMOTE AREAS THAT ARE NOT NOW COVERED BY RADAR.

IN FACT, ONE OF THE FIRST USES OF SATELLITES WILL BE IN SUPPORT OF WHAT WE CALL THE AUTOMATIC DEPENDENT SURVEILLANCE SYSTEM -- ADS, FOR SHORT -- THAT OFFERS GREAT POSSIBILITIES FOR INCREASING THE CAPACITY, EFFICIENCY, AND SAFETY OF OUR OVER-OCEAN FLIGHT TRACKS.

JETLINERS HAVE A LOT OF NAVIGATIONAL AND POSITION INFORMATION IN THEIR COCKPITS THAT NEVER GETS TO OUR CONTROLLERS.

BUT AN ADS SYSTEM WILL LET ONBOARD COMPUTERS TALK DIRECTLY TO OUR TRAFFIC CONTROL COMPUTERS AND GIVE US ACCURATE AND TIMELY, DIGITIZED POSITION REPORTS OVER OCEANS AND OTHER REMOTE AREAS WHEN THE AIRPLANE IS OUT OF RADAR COVERAGE.

WE'LL BE STARTING A PRE-OPERATIONAL TRIAL THIS SUMMER ACROSS THE PACIFIC USING PROTOTYPE EQUIPMENT IN A NORTHWEST AIRLINES 747-400 EQUIPPED WITH SATELLITE COMMUNICATIONS CAPABILITY.

WE'RE ALSO LOOKING INTO THE POSSIBILITY OF INTEGRATING LORAN C AND GPS SIGNALS. ONE RECENT STUDY SHOWS THAT LORAN/GPS INTEGRATION MIGHT WORK WELL AS A STAND-ALONE NAVIGATION SYSTEM.

EVENTUALLY WE MAY BE ABLE TO USE SATELLITE TECHNOLOGY FOR A HIGHLY RELIABLE, WORLDWIDE NAVIGATION SYSTEM THAT CAN BE INTEGRATED WITH MLS FOR AN ALL-WEATHER PRECISION APPROACH AND LANDING SYSTEM.

LORAN, OF COURSE, IS ANOTHER TECHNOLOGY THAT CAN PROVIDE ADDITIONAL COVERAGE AT LOW ALTITUDES AND IN OFFSHORE AND REMOTE AREAS. AND WE'RE GOING TO COMPLETE THAT SYSTEM IN THE CONTINENTAL UNITED STATES SOON. WE'VE GOT FOUR MORE TRANSMITTERS TO PUT IN PLACE OUT IN THE MIDWEST, AND THEY'LL BE INSTALLED WHEN THE BUILDINGS ARE READY.

BETTER NAVIGATION. BETTER COMMUNICATIONS. WE NEED IT ALL. AND WE'RE GOING TO GET IT ALL.

OVER THE NEXT COUPLE OF YEARS, WE'LL BE UPGRADING OUR SYSTEMS WITH MODE S TECHNOLOGY THAT WILL GIVE US MORE ACCURATE POSITIONAL INFORMATION AND THAT WILL ALSO BE USED FOR AUTOMATIC, DIGITIZED COMMUNICATIONS.

AUTOMATED COMMUNICATIONS, OUR TERM FOR DATA LINK, WILL BE ESSENTIAL IN THE HIGHLY AUTOMATED SYSTEM OF THE FUTURE.

WE'LL USE DATA LINKS GIVE PILOTS THEIR FLIGHT CLEARANCES, WEATHER, AND OTHER INFORMATION, ALMOST INSTANTANEOUSLY, WITHOUT THE NEED FOR TIME-CONSUMING AND ERROR-PRONE VOICE COMMUNICATIONS.

THE NEW AIRCRAFT NOW COMING OFF THE LINE -- THE 757'S, 767'S, 747-400'S, AND SO ON -- ALL HAVE DATA LINK CAPABILITY.

AND WE'VE GOT TO HAVE IT, TOO, IF WE'RE TO GET THE MOST OUT OF OUR NEW TECHNOLOGY. SO ONE OF OUR MAJOR R&D PROGRAMS IS AIMED AT DEVELOPING THE MODE S DATA-LINK SYSTEM.

IN FACT, NEW AIRLINERS TODAY ARE EQUIPPED WITH HIGHLY ADVANCED DIGITAL FLIGHT MANAGEMENT SYSTEMS THAT PROVIDE FULLY INTEGRATED FLIGHT PLANNING, PRECISION NAVIGATION, GUIDANCE, CONTROL, AND DISPLAY SYSTEMS.

THE AVAILABILITY OF ALL THIS INFORMATION FROM THE ON-BOARD FLIGHT MANAGEMENT COMPUTER WILL BE ESSENTIAL IN OUR AUTOMATION PROGRAMS, SUCH AS THE AERA ENROUTE SYSTEM AND THE TERMINAL AREA AUTOMATION PROGRAM.

AND THAT'S ONE REASON WE'RE PUSHING SO HARD TO DEVELOP THESE NEW SYSTEMS -- ADS, MODE S WITH DATA LINK, TCAS II AND III, SATELLITE COMMUNICATIONS, AND ALL THE REST. WE MUST GO FORWARD WITH THIS TECHNOLOGY BECAUSE WE MUST BE ABLE TO TAKE FULL ADVANTAGE OF THE CAPABILITIES NOW BEING BUILT INTO OUR AIRLINERS.

IN ADDITION, WE'RE GOING TO MOVE FORWARD WITH MLS, THE MICROWAVE LANDING SYSTEM, SIMPLY BECAUSE IT MAKES SO MUCH SENSE.

JUST BY PUTTING MLS IN THE NEW YORK REGION AND CHANGING THE RECEIVERS ON OUR AIRCRAFT, WE CAN CREATE ADDITIONAL CAPACITY EQUAL TO AN AIRPORT THE SIZE OF WASHINGTON NATIONAL -- WITHOUT POURING ONE CUBIC YARD OF CONCRETE FOR A NEW RUNWAY. AND MLS WILL DO THE SAME THING FOR OTHER REGIONS.

MLS IS ADVANCING IN OTHER NATIONS. AND I BELIEVE WE MUST HONOR OUR COMMITMENT TO HAVE IT INSTALLED AND WORKING ON OUR INTERNATIONAL RUNWAYS BY 1998.

SO WE'RE GOING AHEAD WITH OUR MLS DEMONSTRATION PROJECTS AT JFK, IN NEW YORK, AND MIDWAY, IN CHICAGO. I AM CONFIDENT THAT MLS WILL LIVE UP TO ITS PROMISE.

WE'RE ALSO LOOKING FOR OTHER NEW WAYS TO GET JETLINERS IN AND OUT OF MAJOR AIRPORTS DURING BAD WEATHER.

THE ONE THAT OFFERS A FAIRLY QUICK PAYOFF IS THE DEMONSTRATION PROJECT WE'VE GOT GOING AT RALEIGH/DURHAM AND MEMPHIS THAT IS TESTING TWO DIFFERENT METHODS FOR FASTER RADAR SCANS.

OUR CURRENT RADAR GIVES A POSITION INDICATION EVERY 4.8 SECONDS. IF WE CAN SPEED THAT UP TO, SAY, EVERY HALF SECOND, WE'D HAVE THE ACCURACY AND PRECISION WE NEED TO BRING MORE AIRCRAFT IN ON RUNWAYS THAT ARE TOO CLOSE FOR INDEPENDENT ARRIVALS DURING BAD WEATHER WITH OUR CURRENT RADAR TECHNOLOGY.

THESE TESTS ARE USING CURRENT TECHNOLOGY THAT, IF SUCCESSFUL, CAN BE IMPLEMENTED RAPIDLY.

BAD WEATHER CAUSES 7O PERCENT OF OUR DELAYS. SO IT STANDS TO REASON THAT IF WE COULD FLY IN BAD WEATHER THE WAY WE DO IN GOOD WEATHER, WE'D JUST ABOUT ELIMINATE OUR DELAY OR CONGESTION PROBLEMS.

AND WE ARE WORKING ON A WAY TO DO JUST THAT. WE'RE NOW TESTING NEW TECHNOLOGY THAT HAS THE POTENTIAL TO PROVIDE AN ON-BOARD INDEPENDENT LANDING GUIDANCE SYSTEM THAT WOULD ALLOW AN AIRLINER TO LAND IN CONDITIONS WHERE TODAY IT WOULD HAVE TO HOLD OR DIVERT TO ANOTHER AIRPORT.

THIS SYSTEM WILL USE FORWARD-LOOKING INFRARED SCANNERS AND GROUND-SCANNING MILLIMETERWAVE RADARS TO GIVE THE PILOT A HEADS-UP "PICTURE" OF THE RUNWAY EVEN IN ZERO-ZERO WEATHER. WE'RE CALLING IT "SYNTHETIC VISION".

IT MAY GIVE AIR CARRIERS AN ALL-WEATHER CAPABILITY AND THE RESULTING SCHEDULE RELIABILITY THAT THEY HAVE SOUGHT FOR MANY YEARS.

I COULD GO ON FOR THE REST OF THE DAY TALKING ABOUT WHAT WE'RE DOING TO BUILD THE COMMAND AND CONTROL SYSTEM WE'VE GOT TO HAVE TO MEET OUR FUTURE NEEDS.

BUT I'VE SAID ENOUGH TO SHOW YOU THAT WE'RE SERIOUS ABOUT BUILDING A SYSTEM THAT WILL SERVE AMERICA WELL INTO THE NEXT CENTURY.

WE'RE EXCITED ABOUT THE IMPROVED PERFORMANCE WE'RE GOING TO GET WHEN WE START USING:

* PRECISION RADARS WITH MODE S DATA LINK,

* MLS WITH CURVED AND SEGMENTED APPROACHES IN INSTRUMENT WEATHER CONDITIONS,

* AIRBORNE COLLISION AVOIDANCE SYSTEMS,

* WINDSHEAR DETECTION SYSTEMS,

* ADVANCED DIGITAL COCKPIT DISPLAYS AND FLIGHT MANAGEMENT SYSTEMS,

* AND THE ADVANCED AUTOMATION SYSTEM THAT WILL AUTOMATE MOST OF OUR AIRSPACE MANAGEMENT PROCEDURES.

WHEN YOU THINK ABOUT IT, YOU'LL REALIZE THAT WE'VE GOT SO MUCH COMING ALONG IN NEW AVIONICS THAT WE WE'RE RUNNING INTO A REAL ESTATE PROBLEM IN THE COCKPIT. THERE'S ONLY JUST SO MUCH OF IT, AND THE QUESTION IS WHERE ARE WE GOING TO PUT ALL THIS NEW TECHNOLOGY -- ADS, GPS, MLS, MODE S, LORAN C, AND ALL THE REST? HOW DO WE INTEGRATE IT? HOW DO WE DISPLAY IT?

BUT WE'LL SOLVE THAT PROBLEM JUST THE WAY WE'VE SOLVED ALL THE OTHERS -- BY DEDICATION, HARD WORK, IMAGINATION, AND CREATIVITY.

THOSE ARE THE QUALITIES THAT HAVE MADE AMERICA GREAT. AND THEY ARE THE QUALITIES THAT ARE GOING TO KEEP AMERICA THE WORLD LEADER IN AVIATION TOO.

THANK YOU.

TALKING POINTS
FOR USE BY
FAA ADMINISTRATOR JAMES B. BUSEY
AT
DEDICATION OF THERMAL NEUTRON ANALYSIS (TNA)
MIAMI, FLORIDA
FEBRUARY 9, 1990

* I am pleased to be here this morning, and I appreciate you coming out here to the Pan Am facilities for the unveiling of this device here in Miami.

* The Thermal Neutron Analysis (TNA) system represents a major technological breakthrough in the detection of explosives in checked baggage and cargo. It can detect all know civil and military explosives.

* This is the second of six FAA-funded units that are being installed a key major airports, here and abroad, for extensive operational testings in a real world environment.

* The first TNA was installed at TWA's facilities at JFK, in early September 1989. The other units are scheduled for installation at London's Gatwick Airport, Washington Dulles, and at Frankfurt. A site for the sixth machine has not yet been selected.

* Last September, FAA published a final rule that will require airlines to install TNA systems, initially at 40 airports. We expect the 50 units to be deployed by the end of this year and 150 by the end of 1991.

* Our experience at JFK involving 40,000 pieces of luggage has been very encouraging. The detection rate has been excellent and the process has not involved significant delays for passengers or flights.

* We believe TNA will prove to be an effective weapon in the fight against international terrorism. Competing technologies show promise, but most of them are years away from practical application. At the moment, TNA is the only explosives detection system that meets FAA acceptance test criteria.

* It's important to keep in mind that neither TNA nor any single system that comes along is <u>the</u> answer to international terrorism. TNA is designed to function within the context of a total civil aviation security system.

* We cannot wait until the perfect system comes along. The terrorist threat is now and we would be remiss if we did not take advantage of TNA and other promising measures to help deal with it.

* Meantime, FAA is moving across a broad front to provide increased protection against terrorism. The FY 1991 budget includes a R,E&D request for $190 million--a 12 percent increase of FY 1990. Some of that increase is targeted to expansion of explosives detection work. Budget request also includes 164 additional security positions.

* FAA is cooperating with the members of ICAO in the global fight against international terrorism. We can get the job done only through the firm resolve and concerted action of all civilized countries.

* Secretary Skinner and I are determined to use every means at our disposal to stay abreast of the changing terrorist threat and to do all in our power to stop terrorists in their tracks.

REMARKS BY ADMIRAL JAMES B. BUSEY
ADMINISTRATOR
FEDERAL AVIATION ADMINISTRATION
ALPA MASTER EXECUTIVE COUNCIL
DELTA AIRLINES
SAN DIEGO, CALIFORNIA
FEBRUARY 22, 1990

THANK YOU.

THIS CERTAINLY IS A GREAT WAY TO SPEND AN EVENING. GOOD FOOD. GOOD COMPANY. AND THE CHANCE TO TALK ABOUT FLYING WITH A GROUP OF TOP PILOTS FROM ONE OF THE WORLD'S LEADING AIRLINES.

I'M NOT GOING TO TALK FOR LONG TONIGHT. AND I'M NOT GOING TO GIVE YOU A LECTURE ABOUT SAFETY, EITHER. YOU DON'T NEED IT. I KNOW THAT SAFETY IS YOUR NUMBER ONE CONCERN WHENEVER YOU'RE IN THE COCKPIT. AND I KNOW THAT EVERY ONE OF YOU WILL DO WHATEVER YOU CAN TO PREVENT ACCIDENTS.

AMERICA HAS A TREMENDOUS AVIATION SAFETY RECORD. THAT RECORD WAS CREATED BY A LOT OF DEDICATED, SKILLED PEOPLE -- PEOPLE LIKE ALL OF YOU AND YOUR COLLEAGUES IN OTHER AIRLINES. AND YOU CAN BE PROUD THAT AMERICAN AVIATION LEADS THE WORLD IN SAFETY.

HOWEVER, GOOD AS THE RECORD IS, I'M SURE YOU'LL AGREE THAT WE'VE STILL GOT WORK TO DO. WE MUST MAKE FLYING EVEN SAFER.

WE'RE IN THE MIDST OF A TECHNOLOGICAL REVOLUTION IN AVIATION. GLASS COCKPITS, DATA-LINK COMMUNICATIONS, AUTOMATED AIR TRAFFIC CONTROL, SATELLITE NAVIGATION, FLY-BY-WIRE -- I COULD GO ON AND ON. TODAY IT'S ALMOST IMPOSSIBLE TO KEEP UP WITH THE SPEED OF TECHNOLOGICAL ADVANCE.

THE WAY WE FLY, THE WAY WE COMMUNICATE, THE WAY WE NAVIGATE, THE WAY WE CONTROL TRAFFIC -- ALL OF THIS IS CHANGING BEFORE OUR VERY EYES. AND IT WON'T BE LONG BEFORE WE'LL LOOK BACK AND SAY THAT THIS WAS ALMOST THE PONY EXPRESS AGE OF AVIATION.

I'M GLAD WE'RE GETTING THIS NEW TECHNOLOGY. IT'S GOING TO GIVE US THE CAPACITY TO SERVE MILLIONS OF ADDITIONAL PASSENGERS IN THE YEARS AHEAD.

BUT IT WILL NOT GIVE US AN AUTOMATIC INCREASE IN FLYING SAFETY. WE'RE BEYOND THE DAY WHEN TECHNOLOGICAL IMPROVEMENTS ALWAYS MEAN GREATER SAFETY. IN FACT, TECHNOLOGICAL ADVANCE TODAY MAY ACTUALLY PRESENT NEW DANGERS THAT WE'RE GOING TO HAVE TO LEARN HOW TO HANDLE.

IF WE'RE NOT CAREFUL, FOR EXAMPLE, WE COULD END UP WITH HIGHLY AUTOMATED SYSTEMS THAT DEGRADE HUMAN PERFORMANCE. SO WE'VE GOT TO PAY SPECIAL ATTENTION TO HOW WE FIT PEOPLE INTO THE TOTAL PICTURE.

THAT MEANS WE'VE GOT TO GET ANSWERS TO A WHOLE BUNCH OF THE SO-CALLED "HUMAN FACTOR" QUESTIONS, AND I'LL HAVE MORE TO SAY ABOUT THEM IN A MOMENT.

THE FACT IS THAT MOST OF THE FUTURE INCREASES IN FLYING SAFETY WILL COME NOT FROM TECHNOLOGY BUT FROM IMPROVING HUMAN PERFORMANCE -- IN THE COCKPIT, IN THE CONTROL CENTER, AND IN THE MAINTENANCE HANGAR.

AND WHILE THE NEW TECHNOLOGY MAY PRESENT NEW RISKS, IT'S ALSO GOING TO HELP US IMPROVE THAT ALL-IMPORTANT HUMAN PERFORMANCE FACTOR.

FOR EXAMPLE, WE'VE BEEN USING FLIGHT DATA RECORDERS FOR MANY YEARS IN OUR ACCIDENT INVESTIGATIONS. THIS INFORMATION REPRESENTS A TREMENDOUS UNUSED ASSET -- AN ASSET THAT CAN HELP IMPROVE AIRLINE TRAINING AND SAFETY PROGRAMS AND PROVIDE A WAY FOR PILOTS TO STUDY THEIR OWN PERFORMANCE WITH A VIEW TOWARD SELF-IMPROVEMENT.

WE'VE LEARNED A LOT FROM OUR ACCIDENTS. WE'VE USED THE BITTER EXPERIENCES OF A RELATIVELY FEW PEOPLE TO MAKE FLYING SAFER FOR ALL.

BUT WE CAN'T WAIT FOR MORE ACCIDENTS IN ORDER TO MAKE FLYING SAFER. OUR SENSE OF RESPONSIBILITY DEMANDS THAT WE DO MORE THAN THAT.

AS ONE OBSERVER RECENTLY WROTE: "THE FUNDAMENTAL QUESTION IS NOT HOW MANY PLANES WILL CRASH THIS YEAR, BUT HOW MANY STEPS WILL THE AIRLINES AND REGULATORS TAKE TOWARD SAFER SKIES."

I THINK ONE OF THOSE STEPS MUST BE TO USE FLIGHT DATA RECORDER INFORMATION TO IMPROVE AIRCREW PERFORMANCE.

THE TIME HAS COME TO START USING THIS DATA NOT ONLY FOR ACCIDENT INVESTIGATION BUT TO HELP PILOTS AND CREWS FLY BETTER -- TO MANAGE FUEL USAGE BETTER, TO CONTROL SPEEDS BETTER, TO MAKE MORE PRECISE APPROACHES, AND ALL THE REST.

DATA RECORDERS ON OUR NEW AIRCRAFT MONITOR 30 TO 40 PARAMETERS CONTINUOUSLY. AND THESE NEW AIRCRAFT HAVE THE BUILT-IN CAPABILITY OF USING DATA-LINK COMMUNICATIONS TO TRANSMIT INFORMATION ON ENGINE, AIRCRAFT, AND AIRCREW PERFORMANCE TO AIRLINE MAINTENANCE AND OPERATIONS PERSONNEL ALMOST INSTANTANEOUSLY.

THAT INFORMATION CAN ALSO BE AVAILABLE TO THE AIRCREW -- IN FLIGHT OR AFTERWARDS. IN SOME OF THE NEW GENERATION AIRCRAFT, YOU MAY SOMEDAY BE ABLE TO MONITOR EACH PHASE OF YOUR FLIGHTS, TO LOOK BACK AND SEE WHAT YOU ACTUALLY DID, OFTEN WHILE YOU'RE STILL IN THE AIR -- AS JAPAN AIRLINE PILOTS ARE DOING RIGHT NOW IN THEIR NEW BOEING 767S.

THEY HAVE AIRBORNE PRINTERS THAT GIVE THE CREW A DETAILED DESCRIPTION OF EACH PHASE OF FLIGHT -- TAKEOFF, CRUISE, APPROACH, AND LANDING. AND THEY USE THIS TO REVIEW THEIR PERFORMANCE AND IDENTIFY WAYS TO IMPROVE IT.

JAL ALSO USES THIS INFORMATION TO FINE-TUNE ITS TRAINING PROGRAM. FOR EXAMPLE, THEY FOUND THAT THEIR PILOTS WERE DUCKING UNDER THE GLIDE SLOPES AT ONE TIME. AND THEY NOTICED A LOT OF THEM WERE OVERSHOOTING THE GLIDE SLOPE WHEN THEY INTERCEPTED IT. SO THEY CHANGED THEIR TRAINING PROGRAM AND PUT MORE EMPHASIS ON FLYING THE GLIDE SLOPE WITH GREATER PRECISION.

THEY ALSO NOTICED THAT PILOTS WERE CARRYING EXCESS SPEEDS IN THEIR DESCENTS. AND, AGAIN, WITHOUT THREATENING ANY INDIVIDUAL CREW OR PILOT, THEY WERE ABLE TO INSTILL A GREATER UNDERSTANDING OF THE NEED TO REDUCE POWER A BIT, SLOW THE PLANE DOWN, AND THEREBY SAVE FUEL.

NOW I KNOW THAT MANY PILOTS ARE CONCERNED ABOUT HOW THIS DATA MIGHT BE USED. SOME SEE IT AS A THREAT. THEY FEEL THAT AIRLINES MIGHT USE IT IN A THREATENING AND EVEN PUNITIVE MANNER.

BUT I AM POSITIVE WE CAN WORK OUT A WAY TO ENSURE THAT THIS INFORMATION WILL BE USED ONLY AS A TOOL TO IMPROVE SAFETY AND EFFICIENCY.

MY INTEREST IS IN THE SAFETY OF THE SYSTEM. IF WE CAN MAKE SAFETY IMPROVEMENTS BY USING THIS DATA, THEN WE SHOULD USE IT.

BUT IT NEED NOT BE A THREAT TO ANY PILOT.

WE WILL PROTECT THE ANONYMITY OF PILOTS, AND IF WE HAVE TO HAVE RULES AND REGULATIONS TO DO THAT, THEN, SO BE IT. WE WILL HAVE THE RULES AND REGULATIONS.

WE'LL DO WHATEVER IS NECESSARY TO COOPERATE WITH THE INDUSTRY AND THE UNIONS TO PRESERVE THE CONFIDENTIALITY OF THE PROGRAM AND THE ANONYMITY OF PILOTS.

IT IS POSSIBLE TO CONDUCT A FLIGHT REVIEW PROGRAM IN A WAY THAT DOES NOT THREATEN A PILOT'S REPUTATION OR CAREER. A NUMBER OF AIRLINES -- INCLUDING SWISSAIR, BRITISH AIRWAYS, KLM, LUFTHANSA, AND JAPAN AIR LINES -- HAVE HAD FLIGHT DATA MONITORING PROGRAMS FOR YEARS.

AND THEIR EXPERIENCE SHOWS THAT IT CAN IMPROVE SAFETY. AFTER MORE THAN 15 YEARS, FOR EXAMPLE, SWISSAIR CONSIDERS IT ONE OF THE BEST ACCIDENT PREVENTION TOOLS AVAILABLE. THEY USE IT TO DRAW ATTENTION TO FACTS, NOT TO GO AFTER ANY INDIVIDUAL.

I THINK WE CAN DO THE SAME IN THIS COUNTRY, IF WE APPROACH THE PROBLEM OBJECTIVELY AND IN A SPIRIT OF COOPERATION.

WE CAN ASSURE THAT FLIGHT PROFILE DATA WILL BE USED IN A NON-THREATENING WAY, ONLY FOR A PILOT'S SELF-IMPROVEMENT, FOR THE IMPROVEMENT OF AIRLINE OPERATIONS AND TRAINING, AND FOR INCREASING THE SAFETY OF THE NATIONAL AIRSPACE SYSTEM.

SO THE NEW TECHNOLOGY IS GIVING US GREATER CAPABILITIES TO IMPROVE HUMAN PERFORMANCE. BUT, AS I SAID EARLIER, IT'S ALSO POSING SOME SERIOUS PROBLEMS.

GLASS COCKPITS ARE GREAT. BUT MAYBE IT'S TIME TO ASK JUST HOW FAR CAN WE AUTOMATE FLIGHT WITHOUT GETTING A REVERSE EFFECT ON SAFETY?

DO WE WANT TO EXTEND AUTOMATION TO THE FARTHEST POSSIBLE LIMITS?

THAT'S A LEGITIMATE QUESTION, BECAUSE THERE ARE SOME RISKS -- AND WE HAVEN'T IDENTIFIED OR STUDIED ALL OF THEM YET.

MY PRIME CONCERN IS NOT SO MUCH THE CURRENT LEVELS OF AUTOMATION IN SUCH PLANES AS THE 747-4OO, MD-11, AND A-32O. I'M CONCERNED WITH WHAT WE'RE GOING TO DO IN THE FUTURE.

HOW WELL ARE WE HUMAN BEINGS GOING TO PERFORM WHEN WE START ADDING ADDITIONAL TECHNOLOGY TO GLASS COCKPITS?

ARE WE GOING TO BE ABLE TO ABSORB AND MANAGE ALL OF THE INFORMATION THAT WILL BE FLOWING OUR WAY WHEN WE PUT IN TCAS 2 AND 3, OR WHEN WE BEGIN USING THE DATA-LINK CAPABILITY THAT'LL GIVE US OUR CLEARANCES, ATIS INFORMATION, WEATHER, AND A LOT MORE?

WE'VE GOT TO BE THINKING ABOUT HOW YOU PILOTS ARE GOING TO MANAGE ALL OF THAT. WE'VE GOT TO BE THINKING ABOUT THAT FROM A COCKPIT PERSPECTIVE AS WELL AS FROM THE AIR CONTROL SYSTEM PERSPECTIVE.

NOW YOU'LL HEAR SOME PEOPLE SHRUG THIS OFF BY SAYING THAT PILOTS MUST BECOME SYSTEM MONITORS. WELL, MAYBE SO. BUT THAT MEANS YOU'VE GOT TO KNOW HOW TO MONITOR AND WHAT TO MONITOR. AND THAT MIGHT NOT BE SO EASY AS IT SEEMS.

I KNOW OUR FAA PILOTS ARE FINDING THAT THEY HAVE TO CHANGE THEIR WHOLE THINKING PROCESS WHEN THEY GET CHECKED OUT IN THE G-4. EVERYTHING HAPPENS QUICKER IN A HIGH PERFORMANCE AIRPLANE. AND IT'S MORE COMPLEX. SO IT INTRODUCES NEW PROBLEMS.

OF COURSE, AUTOMATION GETS RID OF A LOT OF WORKLOAD AND FREES THE PILOT TO CONCENTRATE ON THE MOST IMPORTANT FACTORS IN EACH PHASE OF FLIGHT. BUT IT IS NOT A PANACEA.

WE'VE ALREADY HAD ACCIDENTS IN "NEW TECHNOLOGY" AIRCRAFT THAT WERE HIGHLY AUTOMATED -- ACCIDENTS WHICH TAUGHT US THAT AUTOMATION WILL NOT ELIMINATE HUMAN ERROR. IT MAY ELIMINATE SOME OF THE OLD KINDS OF HUMAN ERROR, BUT IT MAY ALSO CREATE A WHOLE NEW CLASS OF ERROR THAT WE'RE GOING TO HAVE TO CORRECT.

SO WE'VE GOT A BATCH NEW QUESTIONS THAT WE'VE GOT TO CONSIDER AS WE MOVE TOWARD EVEN GREATER AUTOMATION THAT WILL LEAVE THE HUMAN BEING WITH LESS AND LESS TO DO. QUESTIONS LIKE:

* HOW CAN WE BALANCE THE SAFETY BENEFITS OF FULLY AUTOMATED LANDINGS AGAINST THE POSSIBLE LOSS OF SKILL FROM NOT FLYING LANDINGS BY HAND?

* WILL COLLISION AVOIDANCE SYSTEMS CREATE PILOT COMPLACENCY ABOUT LOOKING FOR TRAFFIC?

* HOW MUCH CAN WE DO WITH SIMULATORS, AND WHEN MUST WE USE THE AIRPLANE ITSELF?

* ARE WE IN DANGER OF GIVING PILOTS TOO LITTLE TO DO IN SOME PHASES OF FLIGHT AND TOO MUCH TO DO IN OTHERS?

* HOW MUCH HEADS-DOWN TIME CAN WE HAVE WITHOUT AFFECTING SAFETY?

* WHAT HAPPENS WHEN THERE IS AN INADEQUATE UNDERSTANDING OF WHAT THE SYSTEM IS DOING, WHICH COULD MAKE RECOVERY FROM AUTOMATION FAILURES MUCH MORE DIFFICULT?

* HOW CAN WE OVERCOME THE HESITANCY WE MIGHT HAVE TO TAKE OVER FROM AN AUTOMATED SYSTEM WHEN THERE IS A POSSIBLE FAILURE?

TODAY, HIGHLY ADVANCED TECHNOLOGY IS BEING INTRODUCED ALONGSIDE PREDOMINANTLY MANUAL SYSTEMS, AND PILOTS AND CONTROLLERS ARE OFTEN MOVING BACK AND FORTH BETWEEN AUTOMATED AND MANUAL ENVIRONMENTS. THIS MEANS WE NOW HAVE AN UNPARALLELED OPPORTUNITY FOR CONTROLLED COMPARISONS OF TWO VERY DIFFERENT TYPES OF OPERATING ENVIRONMENTS.

AND I'M GLAD TO SAY THAT INTEREST IN HUMAN FACTORS ISSUES IS INCREASING. THE ATA-SPONSORED HUMAN FACTORS TASK FORCE JUST RELEASED ITS RECOMMENDATIONS. AND LAST YEAR, CONGRESS PASSED THE AVIATION SAFETY RESEARCH ACT, WHICH PROVIDES INCREASED FUNDING FOR HUMAN FACTORS RESEARCH.

THE FAA IS NOW IN THE OPENING STAGES OF A MAJOR COMPREHENSIVE NATIONAL HUMAN FACTORS RESEARCH AND DEVELOPMENT EFFORT. WORKING IN PARTNERSHIP WITH NASA, THE DEFENSE DEPARTMENT, THE AVIATION INDUSTRY, AND ACADEMIC INSTITUTIONS, WE'LL BE LOOKING AT HUMAN FACTORS IN ALL TYPES OF AIRCRAFT AND IN AIR TRAFFIC CONTROL OPERATIONS -- IN BOTH THE OPERATIONAL AND THE MAINTENANCE SPHERES.

AND SPEAKING OF HUMAN FACTORS, I WANT TO SAY THAT I'M A FIRM BELIEVER AND A FULL SUPPORTER OF COCKPIT RESOURCE MANAGEMENT TRAINING.

IN MY VIEW, CRM DOES NOT TAKE AWAY ANY OF THE CAPTAIN'S AUTHORITY AND RESPONSIBILITY -- YET IT DOES OFFER A VERY GREAT POTENTIAL FOR INCREASED SAFETY.

IF YOU NEED AN EXAMPLE OF WHAT IT CAN DO, JUST CONSIDER UNITED 232 AND HOW A HUNDRED LIVES WERE SAVED AT SIOUX CITY LAST SUMMER. THAT WAS CRM AT ITS BEST -- WHEN WE REALLY NEEDED IT.

WE KNOW THAT MANY ACCIDENTS HAPPEN TO AIRPLANES THAT ARE FLYABLE -- IN MANY CASES, THERE'S NOTHING WRONG WITH THE PLANE.

WHAT WAS WRONG WAS THE WAY THE HUMAN BEINGS OPERATED THE PLANES -- OFTEN BECAUSE CREW MEMBERS FAILED TO COMMUNICATE PROPERLY AND FAILED TO USE THE RESOURCES AVAILABLE -- AND NOT BECAUSE THEY LACKED TECHNICAL SKILL.

SURE, WE'VE GOT TO HAVE THAT INDIVIDUAL SKILL, AND WE'RE GOING TO KEEP ON MAKING SURE OUR PILOTS DO HAVE IT. BUT TODAY, AS I'M SURE YOU ALL AGREE, JETLINER PILOTS ARE TEAM MEMBERS.

INDIVIDUAL SKILL IS STILL NEEDED. BUT SO IS TEAMWORK. AND TEAMWORK DEPENDS ON THE ABILITY AND WILLINGNESS TO COMMUNICATE AND COORDINATE.

IN ESSENCE, THE SAFETY OF OUR SYSTEM DEPENDS ON THE ACTIONS OF THOUSANDS OF PEOPLE, EACH DOING HIS OR HER JOB WITH SKILL AND DEDICATION -- DOING IT THAT WAY OUT OF CHOICE, NOT BECAUSE THEY ARE FORCED BY AN INSPECTOR LOOKING OVER THEIR SHOULDER ALL THE TIME.

AND THAT'S WHY TONIGHT, IN SPEAKING ABOUT SAFETY, I HAVE CONCENTRATED ON SOME OF THE THINGS WE CAN DO TO IMPROVE HUMAN PERFORMANCE. AS I SAID, THAT'S WHERE THE REAL SAFETY PAYOFF LIES.

IT'S BEEN A PLEASURE BEING WITH YOU TONIGHT. THANK YOU VERY MUCH.

0317P

DRAFT REMARKS
FOR
FAA ADMINSTRATOR JAMES B. BUSEY
BLACK HISTORY MONTH PROGRAM
FEBRUARY 27, 1990

I am pleased to be here this morning to participate in this annual observance of Black History Month.

I think it's important for all of us, from time to time, to look back at the contributions our forebearers have made to this country. They serve as a model and an inspiration, especially for the young. And their examples and achievements provide us a standard and a goal to strive for.

This link with the past also is important for our understanding of ourselves as individuals and as Americans. It provides us a better sense of who we are and where we are headed.

In a sense, it is sad that we have to stage a special observance to honor the achievements of Black Americans. But, it is all part of what I mentioned a few weeks ago at the EEO awards ceremony.

Just as we have our work cut out for us in terms of providing equal opportunity for minorities and women at FAA, we still have a way to go to set the record straight about the contributions of Blacks to American history.

I look forward to the day when we no longer need a separate Black History Month--when the history books and the culture fairly recognizes the achievements of all Americans: Blacks, Hispanics, Asiatics and Whites.

Meantime, though, we are indebted to Dr. Carter Godwin Woodson, the "Father of Black History" for this commemoration. It started out in 1926 as a week's observance and later, in 1976, it was expanded to a month.

It is fitting that this observance falls in February because this month includes not only the birthdays of George Washington and Abraham Lincoln, but also another great American, Frederick Douglas.

If I took a poll of this audience today and asked you about these three distinguished Americans, I think most of you would do pretty well with two of them. But, I suspect we would get some blank stares if we asked about Mr. Douglas.

You can relax, I am not going to pull a pop quiz on you. But, I did want to use this example to illustrate the point that most of us probably don't know much about the achievments of Blacks in American history.

That's too bad because all Americans--Black or White--ought to be familiar with Frederick Douglas, a diplomat and journalist, who fought tirelessly to abolish slavery and was a great supporter of women's suffrage.

They ought to know the name Harriet Tubman, the heroic slave, who helped lead slaves to freedom and who served as a Union Army scout and spy during the Civil War.

They should be aware of the courageous efforts made by Blacks serving as part of the 92nd and 93rd Divisions in World War I and the 99th Fighter Squadron of Blacks in World War II.

They should recognize the name of Benjamin O. Davis, Jr., the first Black graduate of West Point to become a general in the Air Force, and who later served as an Assistant Secretary of Transportation at DOT.

They should know of the courage of another Black General, Chappie James, who flew 78 combat missions in Vietnam and was widely decorated for his heroic accomplishments.

There are others--too many to name here. So, I won't try.

But, I would urge you to attend some of the events that are on the agenda for Black History month to learn more about Black History.

Take home the material that is being distributed by the Black History Month committee. Let your children read it so they too can start developing a better understanding of American History.

I would urge you all, though, to regard this occasion more than just an historical observance. I would urge you to do whatever you can do eventually to eliminate the need for Black History Month. This and other special observances only underscore a fundamental problem that still exists in American society.

We all need to work towards the day when Frederick Douglas and Harriet Tubman, and Ben Davis and Chappie James, are recognized not as Black Americans but as Americans who just happened to be Black.

I think the fact that figures like former Secretary of Transportation, Bill Coleman, and General Colin Powell, formerly National Security Advisor to the President and now Chairman of the Joint Chiefs of Staff, are recognized for their achievements and not for their color, indicates that we are moving in the right direction.

As I mentioned at the EEO Awards Ceremony, we also have a lot to do here at FAA to put our own house in order. We need to open up this agency so that it provides an equal opportunity for all Americans--Blacks, Hispanics, men and women of all ethic and religious background.

I look forward to the day when young women and Blacks and Hispanics look to the FAA, and to aviation, as a career field opportunity wide open to them. Today, by and large, they don't.

Minority and women representation at FAA is running way below the civilian labor force levels. We are working to change that--through our recruitment program and through our aviation education program efforts with the schools.

But we still have a long way to go, and I ask for you support in this effort. I think the fact that you are here today indicates you share this commitment.

Thank you.

Remarks by Admiral James B. Busey
Administrator
Federal Aviation Administration
Professional Aviation Maintenance Association
Houston, Texas
February 28, 1990

For a long time, aircraft maintenance was pretty much taken for granted by air travelers in this country. I suspect most of them scarcely thought about it at all. Their greatest concern always was whether their luggage was going to arrive at the same airport and at the same time they did.

Pilots have had more or less the same outlook, especially those like me who began flying in the military. As a naval aviator, I learned very early that I had to trust my ground crew as completely as, oh say, I trust my wife. And that's 100 percent.

Given the kinds of operational missions the military flies -- including actual combat -- you don't have time to do a careful preflight, or even kick the tires sometimes, before takeoff. You climb in the cockpit and launch. Any military pilot who continually second guesses his or her ground crew would be well advised to talk to a personnel officer about another job.

In a way, being taken for granted could be characterized as a silent testimonial to the dedication, skill and knowledge of the professional aviation maintenance technician. As I said, that's one way of looking at it.

But let's get real. There also is a down side from the viewpoints of prestige, recognition and compensation, among others. It brings to mind Rodney Dangerfield's complaint about not getting enough respect. Throughout the history of aviation, it seems, the glory always has gone to the guys and gals in the leather helmets and white silk scarfs.

For example, I wonder how many people outside this room could identify Charles Taylor correctly. Maybe one in 100,000--I don't really know. (I do know if you asked that question in Washington, most people would tell you that Charles Taylor was the Redskin's all-time leading pass receiver until this past season when Art Monk broke his record.)

Yet, without the Charles Taylor engine, the Wright Brothers might have a different place in the history books today, although let's not forget that Wilbur and Orville were pretty darn good mechanics themselves -- mechanics before they were pilots, in fact. So I want to congratulate PAMA for honoring Charles Taylor with its highest award.

You know, talking about recognition, we have something of an analogous situation at FAA. Air traffic control is considered the glamour job by the public and the media. As a result, our Airway Facilities technicians -- the people who, like the members of this audience, work behind the scenes -- rarely get the credit they deserve for keeping the National Airspace System running 24 hours a day, seven days a week, 52 weeks a year.

But I can assure you that FAA management understands and appreciates their contributions just as we recognize the vital contributions made by maintenance technicians to the health, viability and safety of America's air transportation system. Aviation, after all, is a team effort. All of the various elements have to pull together to make it work the way it should work and, indeed, has to work.

While I'm on this subject, let me digress a moment and reply to those who charge that the FAA is undermanned and therefore is "staggering" under the task of monitoring airline safety.

Let me assure you, we are not staggering. We have been building up our inspector ranks over the past few years. We had 1331 in 1983. By the end of fiscal 1991, we plan to have 2800. That's a 110 percent increase in eight years.

I suspect this group knows that, but I don't like to see charges like that to go uncontested.

I think it's unfortunate that it took a near tragedy -- that is, the Aloha Airlines accident in April 1988 -- to focus public attention on the important role that maintenance plays in aviation safety. Predictably, there was something of an overreaction because of the high drama of that event with the fear that every aircraft that had reached its design life was about to fall from the sky. Consumer-oriented publications were advising passengers how to check the age of an airplane before flight by hunting down and uncovering the manufacturer's data plates.

But the Aloha accident was even a shock to government and industry airworthiness experts who had been concerned about the aging aircraft fleet for a number of years and had developed the Supplemental Structural Inspection Program to meet this problem. The accident challenged some long-held presumptions about fracture mechanics. An impossible scenario had indeed happened and it forced the aviation establishment to rethink and reshape basic maintenance philosophy. In short, the old concept of "inspect and repair" just wasn't good enough anymore for older aircraft.

One of the first actions FAA took after the accident was to convene an International Conference on Aging Aircraft in early June 1988 that drew more than 400 experts from around the globe. That meeting was remarkable from a number of viewpoints, not the least of which was the greatly increased recognition given to the pivotal role of human factors in the maintenance process, particularly as it relates to inspections.

Indeed, human factors was given equal billing on the agenda with airframes, engines and nondestructive inspections and made the subject of a separate panel session. Participants in that session were asked to consider whether the human factors realities of repetitive visual and nondestructive inspections were being properly accounted for in the design of these programs.

As you might expect, the answers ranged over a wide area. But there was general agreement that maintenance technicians can not be expected to perform like robots -- anymore than anyone else -- when confronted with routine and repetitive tasks. The participants also identified a need to provide maintenance personnel with improved procedures, more comprehensible instructional materials and increased training to help them do their jobs even better and more efficiently.

It's important to understand that the aging aircraft conference was not a one-shot effort where important issues are discussed and then quickly forgotten when everyone went home. The conference spawned a host of on-going government-industry programs designed to ensure the continued airworthiness of older aircraft for as long as they remain in service. A good example is the work done by the government-industry task force that already has produced structural modification programs for older Boeing and McDonnell Douglas jets.

For the most part, the aging aircraft program to date has been aimed at large commercial jets. However, there is no ignoring the fact that the general aviation fleet is getting older as well.

How old? Well, the General Aviation Manufacturers Association says that the average jet in the business fleet now is 13 years old and the average single-engine airplane is more than 23 years old. I've got some more GAMA numbers for you, too:

* 25 percent of the single-engine piston fleet is more than 33 years old.
* 25 percent of the multi-engine piston fleet is over 26 years old.

* 25 percent of the turboprop fleet is more than 16 years old; and

* 25 percent of the jet fleet is over 19 years old.

There are a couple of ways of looking at these numbers. Although an aging fleet of general aviation aircraft creates problems for operators and maintenance personnel, the situation is not directly comparable to that existing for older commercial jets. The reasons, of course, are the differences in design and utilization that exist between general aviation and commercial aircraft.

Still another way of looking at these aging aircraft numbers is in terms of the pent-up demand for new aircraft they represent. It helps explain why aircraft manufacturers are cautiously optimistic about the future. GAMA has reported that new aircraft deliveries in 1989 were up 25 percent over 1988. The association is particularly bullish about certain market segments such as training aircraft and new technology light twins.

So aviation maintenance technicians are faced with something of a double-barreled challenge as we move on into the 1990s. On the one hand, you need to continue to maintain older aircraft in an airworthy condition and, second, you need to get ready for the new technology that's coming into increasing use in aviation.

In fact, you can throw in a third challenge here. That has to do with people -- or "Where are the new maintenance technicians coming from?

If it makes you feel any better -- and it won't -- it's not a problem unique to your specialty or even to the aviation industry. It's a societal problem. You hardly can pick up a newspaper or magazine anymore without reading an article about the growing shortage of trained technical personnel and the potential impact on American industry and its competitive position in the global marketplace.

This issue as it related to aviation maintenance technicians was discussed in a recent issue of Business & Commercial Aviation by the leaders of the various aviation trade and user groups. The consensus was that the profession has to change with the times.

Let me quote Larry Burian of the National Air Transportation Association. He said, "I see a need for a new breed of maintenance personnel. It's going to be unheard of one of these days to have an overwhelming need for the typical A&P mechanic as we know him today. The guy is going to have to be well versed in electronics as well." Larry went on to say that he doesn't see the demise of the traditional authorized inspector and A&P mechanic but he expects a transition to one type of technician who would handle all aspects of aviation maintenance.

Comments like these point up a need for updating and modernizing the FAA rules governing the certification and training of aviation maintenance technicians. I'm speaking specifically about Part 147, which covers Aviation Maintenance Technician Schools, and Part 65, which is the basic certification regulation.

The present Part 147 has not been significantly changed since 1970 and for the most part reflects the needs of the aviation industry as they existed at that time. In case you don't remember what the industry was like in the late '60s and early '70s -- this is a pretty young-looking crowd, at least, from my point of view -- electronics still were not solid state, composites were virtually unknown, turbofans had not yet been introduced and phrases such as "hot section" inspections were just beginning to be heard. The commuters were flying DC-3s, Convair 440s, Martin 240s and Beech D-18s. In general aviation, about a quarter of the fleet still were tail draggers and aircraft electronics in many cases consisted of old "coffee grinder" tuning for NAV-COMM receivers.

I hardly need tell you how things have changed since these "good old days." When aviation professionals get together now they talk about fly by wire, glass cockpits, digital electronics, fiber optics, computer systems with self-diagnosis capabilities, unducted fan jet technologies, and new metals and composites. It's truly exciting. Yet, bear in mind, in another 20 years, these will be the good old days. That's how fast technology is evolving.

The agency has recognized for some time the need to update Part 147. In 1985, it began a series of symposiums designed to bring government and industry together to identify the needs of the Aviation Maintenance Technician Schools in the

The agency expects to issue a notice of proposed rule making this summer that will address these concerns. Among other things, it will propose to increase primary training in nondestructive inspection procedures, corrosion control and solid state electronics. Additionally, all training schools would have to teach composites and turbine engines to a new level of proficiency. Some of the old, largely obsolete courses -- such as working with wood, rope and fabric -- would be eliminated or greatly reduced.

The whole idea here is to streamline the curriculum to make it more relevant and meaningful with regard to current and future aviation technologies. We think we can accomplish this objective and substantially upgrade the level of training without -- I repeat without -- increasing the minimum training requirements of 1900 hours for the basic A&P certificate.

As I already have indicated, we are acutely aware that aviation is in competition with other industries for young talent. We do not want to make it more difficult and more expensive for them to earn an A&P rating. In fact, we believe the revamped curriculum actually will serve to attract more young people by upgrading the professional standing of the aviation maintenance technician.

Closely allied to this effort is our planned evaluation of FAR Part 65, which, incidentally, has not been revised since the late '60s. As the first step, we plan to run a complete regulatory evaluation. During this phase we will be asking such questions as the following:

* Can certification standards be improved and at the same time increase the supply and quality of technicians?

* Do we need to add certain subspecialities to the rating system with perhaps different certification criteria? For example, would this increase the supply of nondestructive inspection personnel?

* Are present currency requirements adequate? Are otherwise qualified people being frozen out and lost to the industry?

As part of this effort, we will be conducting a broad-based Job Task Analysis of the mechanic and repairman occupations. This is a tool we have used most recently with the pilot profession to help define needed changes in the Part 61 certification requirements.

But this will be the first time, JTA's have been applied to maintenance technicians and we will need your help to ensure that the end product meets all of our needs. After all, you are the real experts on the day-to-day duties and responsibilities of maintenance technicians. No one is in a better position to tell us what knowledge and skills are required to do your jobs.

In addition to these regulatory efforts, we also have launched a high-priority educational program aimed at further upgrading the professional level of aviation maintenance. It's part of the new "Back to Basics II" program that I announced just two days ago at the National Air & Space Museum in Washington, DC.

Many of you probably are familiar with Back to Basics I, which ran for three years beginning in 1986. Aimed primarily at general aviation pilots, it's objective was to reduce accident rates by focusing attention on the fundamentals of safe flight. That three-year period, by the way, was characterized by a significant improvement in the general aviation safety record. I would like to think that Back to Basics I had something -- actually, a lot -- to do with that.

Back to Basics II is advertised as a "new and improved version" of the original product. (That indicates to me that the program people are sitting through the TV commercials rather than going to the refrigerator for a beer.) Certainly, the most significant difference between Back to Basics I and II, as I've already indicated, is the inclusion of parallel programs for operational and maintenance personnel.

Over the five-year life span of Back to Basics II, we plan to cover 10 topics each for pilots and maintenance technicians, spending six months on each. For maintenance technicians, the first subject is 'Inspection Authorization Test." IA Test materials already have been sent out to FAA District Offices and cover regulatory problem areas that have occurred over the last year. The materials will be used in seminars and other educational meetings and programs.

In July, we will switch to a new subject area, "Airworthiness Management, Part I." This will cover FAR Parts 21, 39, 43, 65 and 91. We will continue with the "Airworthiness Management" theme in 1991, covering Part 145 repair stations in the first six months and Part 135 commuter and air taxi operations in the July-December period.

In 1992, we will begin the "Master Mechanic" series and over the next three years will cover such subjects as composite structures, NDI techniques, corrosion control, airworthiness for older aircraft, inspection/trouble shooting techniques and

Our goals for the maintenance portion of Back to Basics II are:

* To reduce the number of maintenance related accidents;

* Improve the base-line understanding of maintenance related Federal Aviation Regulations;

* Improve communications between maintenance personnel and the FAA;

* Create incentives for further education and training;

* Improve public understanding of the maintenance technician's vital safety role in order to encourage more young people to enter this career field.

In closing, let me say how very pleased I am by the continued growth and development of PAMA. I'm told PAMA is already the largest professional organization dealing with maintenance-related issues and its membership is expanding at a healthy rate of 15 percent a year.

I'm pleased because PAMA's objective for your profession is identical to that of FAA. As stated by Dave Wadsworth in a recent issue of PAMA NEWS, that objective is "promoting safety, knowledge and dignity in the aircraft maintenance profession." This commonality of interest no doubt explains why our two organizations have worked so well together in the past and why I have every expectation that this cooperative and productive relationship will continue in the future.

These really are very exciting times to be involved in aviation and it's going to get even better. What we need to do now is convey that message to the public and especially to the young people who are the future of this great industry.

Thank you!