STATEMENT OF MATTHEW V. SCOCOZZA,
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DEPARTMENT OF TRANSPORTATION
BEFORE THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
JUNE 30, 1987

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE THE SUBCOMMITTEE TODAY TO DISCUSS FAA AND RELATED FEDERAL PROGRAMS INVOLVING WEATHER DETECTION, COMMUNICATION OF THE RELEVANT DATA, ITS PROCESSING AND INTERPRETATION, AND ULTIMATELY THE DISTRIBUTION OF THE INFORMATION TO AIR TRAFFIC CONTROLLERS AND PILOTS. WITHOUT GETTING BOGGED DOWN IN DETAIL, I WOULD LIKE TO OUTLINE OUR PROGRESS TO DATE. I AM ACCOMPANIED TODAY BY MR. NEAL BLAKE, ASSOCIATE ADMINISTRATOR FOR ENGINEERING, OF THE FEDERAL AVIATION ADMINISTRATION.

I SHOULD NOTE THAT THE AVIATION SYSTEM, INCLUDING AIRCRAFT, AIRPORTS, AND AIR TRAFFIC CONTROL, HAS BECOME SO SOPHISTICATED OVER THE YEARS THAT FLIGHT IN INCLEMENT WEATHER IS A ROUTINE OCCURRENCE. SUCH AIR TRAVEL HAPPENS EVERY DAY WITH NO DEROGATION OF SAFETY.

UNFORTUNATELY, THE AVIATION WEATHER SYSTEM IS NOT WITHOUT ITS PROBLEMS. FOR EXAMPLE, THE WHOLE OPERATION STILL TENDS TO BE MORE LABOR INTENSIVE THAN THE VARIOUS AGENCIES WOULD LIKE. ALSO, WHEN SERVING AS A MIDDLEMAN FOR CONVEYING INFORMATION TO A PILOT, THE CONTROLLER HAS TO GIVE FIRST PRIORITY TO SEPARATING TRAFFIC. IN SHORT, NOTWITHSTANDING THE MANY ACHIEVEMENTS WE CAN ALL BE PROUD

OF, PROJECTS THAT WILL PRODUCE MORE AND BETTER DATA, PASS IT ALONG MORE QUICKLY, AND MINIMIZE THE AIR TRAFFIC CONTROL WORKLOAD MUST CONTINUE.

THESE ARE EXACTLY THE PROBLEMS THAT FAA'S WEATHER PROJECTS ARE DESIGNED TO ADDRESS. FAA, IN COOPERATION WITH OTHER AGENCIES AND THE AVIATION INDUSTRY, HAS MADE SIGNIFICANT PROGRESS IN ADDRESSING THESE ISSUES IN RECENT YEARS. MY WRITTEN STATEMENT DISCUSSES SEVERAL OF THE MOST SUBSTANTIAL ACCOMPLISHMENTS.

HOWEVER, DESCRIBING A FEW OF THE THINGS THAT HAVE ALREADY BEEN DONE TELLS ONLY A SMALL PART OF THE STORY. THE DEPARTMENT OF TRANSPORTATION'S AND FAA'S COMMITMENT TO CARRYING OUT THE NATIONAL AIRSPACE SYSTEM PLAN IS, AMONG OTHER THINGS, A COMMITMENT TO "WEATHERPROOFING" THE AIRWAYS BY THE YEAR 2000.

SPECIFICALLY, WE ARE WORKING TOGETHER WITH NATIONAL WEATHER SERVICE AND THE DEPARTMENT OF DEFENSE ON THE NEXT GENERATION WEATHER RADAR, KNOWN AS NEXRAD. IT IS A NEW TECHNOLOGY DOPPLER RADAR THAT WILL REPLACE THE CURRENT NETWORK OF WEATHER RADAR SYSTEMS, PROVIDING A NATIONAL NETWORK OF WEATHER RADARS. THE PROGRAM IS NOW IN THE PROTOTYPE PHASE, WITH RAYTHEON AND UNISYS COMPETING FOR A PRODUCTION AWARD.

TESTS WILL BE COMPLETED SHORTLY, AND THE CONTRACT AWARD FOR LIMITED PRODUCTION OF TEN SYSTEMS WILL TAKE PLACE NEXT MONTH. IF THEY PROVE SATISFACTORY, A DECISION TO PRODUCE THE FULL 165 UNITS,

IS EXPECTED IN JULY 1988. SYSTEM DELIVERIES WILL BEGIN IN SEPTEMBER 1989 AND END IN MAY 1994.

ALTHOUGH NEXRAD IS BASICALLY AN EN ROUTE WEATHER RADAR, DOT IS COMMITTED TO PROVIDING IMPROVED WEATHER RADAR FOR TERMINALS AS SOON AS POSSIBLE. THIS DECISION REFLECTS THE WIDELY SHARED CONCERN ABOUT WINDSHEAR--A SUDDEN CHANGE IN WIND SPEED OR DIRECTION--WHICH HAS BEEN IMPLICATED IN THE CRASHES OF A PAN AMERICAN 727 IN KENNER, LOUISIANA IN 1982, AND OF DELTA FLIGHT 191 IN AUGUST 1985 AT DALLAS-FORTH WORTH. CONSEQUENTLY, THE FIRST 17 NEXRAD SYSTEMS RECEIVED BY FAA WILL BE RECONFIGURED WITH SOFTWARE APPROPRIATE TO AIRPORT TERMINAL AREAS FOR WINDSHEAR DETECTION AND INSTALLED AS <u>TERMINAL</u> NEXRADS AT THE MOST VULNERABLE AIRPORT LOCATIONS.

THE TERMINAL NEXRAD IS BASICALLY AN INTERIM SYSTEM TO PROVIDE WINDSHEAR DETECTION AT MAJOR AIRPORTS UNTIL THE TERMINAL DOPPLER WEATHER SYSTEM OR TDWR IS READY. LIKE TERMINAL NEXRAD, TDWR WILL WARN CONTROLLERS AND PILOTS OF HAZARDOUS WEATHER CONDITIONS NEAR THE AIRPORT, PARTICULARLY MICROBURSTS WITH ATTENDANT WINDSHEAR CONDITIONS AND GUST FRONTS. SERIOUS CONSIDERATION IS BEING GIVEN TO PLACING TDWRS AT AS MANY AS 100 TERMINALS AROUND THE COUNTRY. IN LATE 1988, FAA PLANS TO AWARD A CONTRACT FOR TDWRS, WITH THE FIRST INSTALLATION SLATED FOR 1992.

LET ME EMPHASIZE AT THIS POINT THAT, TO THE EXTENT THERE HAVE BEEN SOME DELAYS IN NEXRAD, TERMINAL NEXRAD, AND TDWR, THOSE DELAYS

HAVE RESULTED PRIMARILY FROM TECHNICAL OBSTACLES--MOSTLY IN THE SOFTWARE DEVELOPMENT AREA. WHAT PROBLEMS THERE WERE HAVE NOT BEEN CAUSED BY BUDGETARY CONSTRAINTS.

TDWR IS PRESENTLY FACING A BUDGETARY OBSTACLE, HOWEVER. OUR REQUEST FOR $130 MILLION IN FY 1988 HAS BEEN REDUCED IN THE HOUSE APPROPRIATIONS SUBCOMMITTEE MARK-UP TO THE $10 MILLION LEVEL. THIS AMOUNT IS NOT ADEQUATE FOR A CRITICALLY IMPORTANT SAFETY PROJECT THAT SHOULD NOT BE SUBJECT TO UNNECESSARY DELAY. WITHOUT APPROVAL OF OUR ORIGINAL REQUEST FOR TDWR, WE WILL NOT BE ABLE TO AWARD A CONTRACT IN FY 1988, AS IS CURRENTLY PLANNED. SECRETARY DOLE IS EXTREMELY CONCERNED ABOUT THIS PROGRAM CUT.

THE TDWR, WHICH CAN DETECT WINDSHEARS AT FARTHER DISTANCES AND HIGHER ALTITUDES, WILL BE COMPLEMENTARY TO THE LOW LEVEL WINDSHEAR ALERT SYSTEM OR LLWAS, WHICH WAS INITIATED IN 1975. THAT SYSTEM HAS BEEN INSTALLED AT 99 AIRPORTS, WITH COVERAGE PLANNED FOR 11 ADDITIONAL AIRPORTS BY THE END OF 1987. LLWAS SYSTEMS WILL ALSO BE ENHANCED WITH ADDITIONAL SENSORS AND BETTER PROCESSING AND DISPLAY CAPABILITIES. AN OPERATIONAL TEST AND EVALUATION OF THE ENHANCEMENTS IS UNDERWAY THIS SUMMER IN DENVER. COMPLETION OF THE ENHANCED LLWAS PROGRAM IS SCHEDULED FOR THE END OF 1990.

WINDSHEAR--PARTICULARLY THAT STEMMING FROM MICROBURSTS--IS SUCH A SERIOUS THREAT THAT RELYING ON GROUND-BASED SENSORS IS NOT SUFFICIENT. FAA HAS BEEN PURSUING A COMBINATION OF STRATEGIES--

GROUND-BASED SENSORS, PILOT TRAINING, AND AIRBORNE ALERT AND GUIDANCE EQUIPMENT.

ON JUNE 1, THE FAA PROPOSED A REGULATION TO REQUIRE LARGE JET AIRLINERS TO HAVE EQUIPMENT THAT WILL TELL PILOTS WHEN THEY HAVE ENCOUNTERED A WINDSHEAR AND HOW TO ESCAPE IT. IN ADDITION, THE PROPOSAL WOULD REQUIRE AIRLINE FLIGHT CREWS TO RECEIVE GROUND SCHOOL AND SIMULATOR TRAINING IN WIND SHEAR RECOGNITION AND RECOVERY PROCEDURES. FAA HAS PROVIDED A TRAINING PROGRAM--DEVELOPED BY THE BOEING COMPANY AND OTHERS--TO 600 AIRLINES AND RELATED GROUPS.

ALSO WITH REGARD TO AIRBORNE EQUIPMENT, FAA AND NASA ARE DEVELOPING THE SYSTEM REQUIREMENTS FOR "FORWARD-LOOKING" WINDSHEAR SENSORS. WITH THESE SENSORS ON BOARD, THE FLIGHT CREW WOULD BE ABLE TO REJECT A LANDING OR TAKE-OFF BEFORE THE AIRCRAFT ENTERED THE HAZARDOUS AREA. THIS PROGRAM ALSO INCLUDES THE IMPROVEMENT OF EXISTING DETECTION SYSTEMS, IMPROVEMENTS THAT CAN BE MADE IN FLIGHT GUIDANCE FOR PILOTS DURING WINDSHEAR RECOVERY ATTEMPTS, AND THE CONTINUING CHARACTERIZATION OF THE WINDSHEAR HAZARD.

ANOTHER SYSTEM, THE AUTOMATED WEATHER OBSERVING SYSTEM OR AWOS, IS A GROUND-BASED DEVICE WITH MULTIPLE SENSORS FOR RECORDING SURFACE OBSERVATIONS OF WEATHER PARAMETERS. FAA'S CONTRACT FOR 206 SUCH SYSTEMS FOR USE ON NON-TOWERED AIRPORTS HAS BEEN TERMINATED DUE TO CONTRACTOR PERFORMANCE PROBLEMS. WE HAVE DECIDED INSTEAD TO PROCEED WITH PROCUREMENT OF AROUND 160 COMMERCIALLY AVAILABLE AWOS

UNITS. WE HAVE ALSO PREPARED A MEMORANDUM OF UNDERSTANDING WITH NWS FOR A JOINT AWOS PROCUREMENT. FAA WILL PROVIDE ALL CAPITAL AND OPERATIONS FUNDS FOR OVER 500 AWOS UNITS FOR BOTH TOWERED AND NON-TOWERED LOCATIONS, WHILE NWS WILL BE RESPONSIBLE FOR BUYING, INSTALLING, OPERATING, AND MAINTAINING THAT EQUIPMENT. WE ARE OPTIMISTIC THAT THIS ARRANGEMENT WILL PRODUCE QUALITY WEATHER INFORMATION AND FULLY MEET THE NEEDS OF THE AVIATION COMMUNITY.

THE CENTRAL WEATHER PROCESSOR OR CWP IS YET ANOTHER NAS PLAN UNDERTAKING. CWP IS A COMPUTERIZED SYSTEM FOR EN ROUTE CENTERS THAT WILL ACCEPT INFORMATION FROM THE NEXRAD RADARS AND METEOROLOGICAL PRODUCTS FROM NWS, PROCESS WHAT COMES IN, AND DISTRIBUTE IT TO METEOROLOGISTS AND WEATHER COORDINATORS IN CENTER WEATHER SERVICE UNITS. THE PROCESSED RESULTS GENERATED BY THE METEOROLOGIST WILL BE PROVIDED TO THE CONTROLLER AS AN OVERLAY ON THE AIR TRAFFIC CONTROL DISPLAY AND TO THE PILOT VIA THE MODE S DATA LINK.

THE MODE S DATA LINK PROGRAM WILL ENABLE US TO TRANSMIT HAZARDOUS WEATHER INFORMATION DIRECTLY INTO THE COCKPIT AND THUS ELIMINATE THE CONTROLLER FROM THIS TIME-CRITICAL LOOP. COUNTERPART AVIONICS WILL BE NECESSARY FOR THE AIRLINES TO BENEFIT FROM MODE S DATA LINK. THE EFFICIENCIES SEEM PROMISING, AND THE EQUIPMENT ALSO OFFERS AIR TRAFFIC CONTROL OPTIONS THAT DID NOT EXIST BEFORE. THE FIRST MODE S SYSTEM IS SCHEDULED TO BE OPERATIONAL IN 1990.

I WOULD BE REMISS IF MY TESTIMONY FAILED TO MENTION FAA'S AUTOMATED FLIGHT SERVICE STATION PROGRAM. OVER 300 FLIGHT SERVICE STATIONS ARE BEING CONSOLIDATED INTO 61 AUTOMATED FLIGHT SERVICE STATIONS WITH DISPLAY AND PROCESSING ABILITIES THAT GO FAR BEYOND THAT FOUND IN THE OLD FLIGHT SERVICE STATIONS. THIS IS A CRITICALLY IMPORTANT PROGRAM AND ONE ON WHICH WE HAVE CONSULTED AND COOPERATED WITH THE CONGRESS ON A CONTINUING BASIS.

SEVERAL OTHER WEATHER FORECASTING AND COMMUNICATION PROJECTS ARE SUMMARIZED IN MY WRITTEN STATEMENT. OVERALL, WE BELIEVE THE FAA PROGRAM IS COMPREHENSIVE AND EFFECTIVE. IT DEMONSTRATES A COMMITMENT TO IMPROVED AVIATION SAFETY AND CAPACITY WELL INTO THE NEXT CENTURY.

THIS COMPLETES MY PREPARED STATEMENT, MR. CHAIRMAN. I OR THE TECHNICAL EXPERTS FROM FAA WHO ACCOMPANIED ME WOULD BE PLEASED TO RESPOND TO ANY QUESTIONS YOU OR MEMBERS OF THE SUBCOMMITTEE MAY HAVE AT THIS TIME.