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Travis P. Dungan
RSPA Administrator

"RSPA is dedicated to fully supporting the Secretary in carrying out his National security responsibilities."

RSPA/TSC to Assist the NDTA in the Formation of a Transportation Technology Committee

Secretary Skinner has approved a request by the National Defense Transportation Association (NDTA) to have RSPA/TSC, under Administrator Travis P. Dungan's guidance, assist the NDTA Board of Directors in establishing and supporting a new standing committee of the NDTA to promote transportation technology. The NDTA is a non-profit, educational organization that provides a link between the military/government and the transportation industry. In requesting RSPA/TSC's support, the NDTA noted that the Department's Transportation Systems Center is uniquely qualified to serve in an educational role because of its \$140 million of research support and interactions with both the civil and defense transportation communities.

Recently the NDTA selected Edward C. "Pete" Aldridge, Jr. to be the Chairman of the Transportation

Technology Committee. Mr. Aldridge is the President of the newly formed McDonnell Douglas Electronic Systems Company, an unincorporated business unit of McDonnell Douglas Corporation. From June 1986 to December 1988, Mr. Aldridge served as Secretary of the Air Force. RSPA/TSC looks forward to working with Mr. Aldridge in his role as chairman of the Transportation Technology Committee.

Around the World Flight Demonstrates Satellite Tracking of Aircraft

A team of government and industry engineers has, for the first time, monitored and tracked the location of an aircraft traveling around the world while maintaining continuous digital communication with the plane.

The flight demonstrated satellite communication and position reporting technologies expected to be in widespread use in the 1990's. Under the sponsorship of the U.S. Air Force and the Federal Aviation Administration, and with industry collaboration, RSPA's Transportation Systems Center planned and coordinated the simultaneous tracking of and communication with the Air Force transport aircraft on its journey around the world. The C-135C plane, comparable to a commercial jetliner, departed Andrews AFB, Washington, D.C., on November 23rd, and completed its global flight on December 3, 1989. Intermediate stops were made in Hawaii, Indonesia, India, and other locations.

Aviation planners have long recognized the airspace safety and capacity benefits possible through satellite-assisted aircraft tracking and communications where radar coverage and voice communications are limited or unavailable. Satellite-based technology is expected to fill these needs as well as

provide significant aircraft operating and maintenance savings. Previous experiments have demonstrated the feasibility of tracking the location of planes and communicating with them through satellites. The recent Air Force flight has shown that the necessary institutional arrangements can be made for accomplishing these functions on a global scale with the use of newly developed technology.

The test aboard the C-135C aircraft was accomplished through the cooperative efforts of several equipment suppliers, government agencies, and commercial firms.

The test made use of two private sector satellite capabilities, GEOSTAR for the United States and INMARSAT for international areas. Position and velocity data at fifteen second intervals derived from the aircraft's inertial navigation unit, along with digital air/ground messages, were relayed through whichever satellite was in view at a particular time. The effect was to complete a "seamless" global automatic position reporting capability. An omnidirectional antenna of basic design, provided by Ball Aerospace, was used aboard the aircraft.

The TSC INTRANSIT facility served as the command and control center for satellite flight tracking and Geographic Information Display, using a software system developed by Unisys Corporation. This system is based on prototype concepts developed by Highlighted Data, and provides mapping capability to the airport level. Detailed airport maps were digitized by Envirodata Corporation.

The National Defense Executive Reserve

One of RSPA's most important and visible defense-related programs is the National Defense Executive Reserve (NDER) Program. This program

includes a cadre of over 400 executives from the transportation industry and is managed by RSPA's Office of Emergency Transportation (OET). The NDERs, who represent a cross section of the transportation industry including transportation carriers, shippers, engineers, academics and labor representatives, volunteer for Federal service in times of emergency and are assigned to the Department's standby Emergency Organization (EO).

Today's NDER has its historical roots in the "dollar-a-year" and "without compensation" executives who played a key role in World Wars I and II. The current program dates to 1952, when President Eisenhower issued an Executive Order calling for the development of a roster of key executives to assist in the Korean Conflict. A 1955 amendment to the Defense Production Act formally established the NDER. On November 2, 1962, the Secretary of Commerce created the original OET unit, which was transferred to DOT in 1967. Currently, there are 11 NDER units throughout the Federal Government, with over 2,500 members. The DOT/OET unit has an authorized strength of 450 and is organized into a Headquarters staff and ten regional elements. Reservists are designated by the Secretary and, when activated by the President in a time of crisis, would become Federal employees.

Each year, OET conducts a 2-day training exercise for the DOT EO in each of the ten regions. Our reservists attend this important training on their own time and at their own expense, a tribute to their dedication. The National Defense Executive Reserve represents the finest spirit of American patriotism and has been a cornerstone of the Nation's defense for nearly 30 years.

RSPA and the Global Positioning System

RSPA is playing a key role in coordinating the implementation of the Global Positioning System (GPS) for civil users. RSPA became involved with GPS when, in 1978, Congress and several elements of the Executive Branch questioned the cost justification for GPS as a military-only system. Congress felt that the introduction of GPS into the civil community could reduce the need for many other Federally provided radionavigation systems.

GPS is a space-based positioning, navigation, and time distribution system developed by the Department of

Defense (DOD) for worldwide military use. DOD plans to declare the system operational sometime in 1993 when they expect to have a constellation of twenty-one satellites functioning in their assigned orbits. Widespread national and international civil use of GPS is expected for air, land and sea navigation, mapping, geodetic surveying, and numerous other applications including automatic vehicle location and fleet management services.

To determine the optimum radionavigation system mix, Congress directed DOT and DOD to jointly develop a government-wide radionavigation plan. The premiere edition of the Federal Radionavigation Plan (FRP) was published in 1980 and became the first consolidated document to examine the entire radionavigation picture including both DOD and the civil community. GPS is the driving force behind the FRP.

The biannual production of the FRP is the responsibility of the Radionavigation Program in RSPA's Office of Research and Technology. A DOT/DOD joint Radionavigation Working Group, alternately chaired by RSPA and DOD, meets frequently to develop FRP policy regarding GPS and its impact on other radionavigation systems. RSPA hosts a biannual User Conference to receive input from the civil user community for development of the FRP.

Safety Training (DOD)

During FY-89, RSPA's Transportation Safety Institute (TSI) provided a wide variety of safety courses to Department of Defense personnel. The primary thrust of this effort is to reinforce the transportation safety mission of the Department of Transportation where that mission interfaces with DOD activities. Much of the material is tailored to maximize the individual mission of each of the services.

TSI has developed two new programs which show significant promise for the future. The Aircraft Accident Investigation and Rotorcraft Safety and Accident Investigation Courses are open to DOD personnel on a tuition basis. TSI is currently negotiating with Naval Aviation Depot, Pensacola, Florida, to customize the Rotorcraft course and offer it to 400 senior Navy investigators and engineers. The second new outreach effort is under the sponsorship of the General Services Administration and includes a tailored version of the DOT Hazardous Materials Requirements Course. TSI's near-term goals include the

development of courses which are easily customized for wide application in the areas of employee drug testing and drug interdiction.

OHMT/DOD Coordinate Hazardous Materials and Emergency Response Activities

The Department of Transportation (DOT) and the Department of Defense (DOD) have been meeting on a regular basis since 1986 to coordinate regulatory and emergency response activities involving the safe transportation of explosives, ammunition, rocket motors, and other hazardous materials needed for national security. RSPA's Office of Hazardous Materials Transportation (OHMT) leads the DOT participants. The DOD team, led by the Office of the Assistant Secretary of Defense for Production and Logistics, includes representatives from the Military Traffic Management Command, the Naval Sea Systems Command, the Air Force Office for Logistics and Engineering, and the Explosives Safety Board.

The coordination meetings have proven especially helpful in the processing of DOD requests for exemptions and approvals involving regulations for the packaging and shipping of munitions and explosives. Problems in meeting schedules and complying with operational and shipping requirements are worked out before they become serious. Some of the items addressed include the use of commercial airports by the Civil Reserve Air Fleet (CRAF) for carriage of ammunition and other hazardous materials essential for military operations, and the approval of procedures covering the use of tank cars for transporting highly toxic rocket fuels.

The exchange of accident data and research information has been most helpful to both DOT and DOD in planning and implementing hazardous materials transportation programs. For example, both agencies have shared information concerning accidents involving explosives and ammunition. Additionally, DOD has briefed DOT on satellite tracking systems for possible use in tracking the movement of high risk hazardous materials. Research efforts in areas of mutual interest to both DOD and DOT, such as highway routing of hazardous materials and the study and inventory of safe havens used in the transportation of explosives and ammunition, have been closely coordinated.