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## **Table of Contents**

- I. Purpose of After Action Report**
- II. Overview of Y2K Problem**
- III. Organizational Context of USDOT Response**
  - A. The Office of the Secretary of Transportation
  - B. Outreach Action Team
  - C. Research and Special Programs Administration's Office of Emergency Transportation
  - D. Crisis Management Center
  - E. Crisis Management Center Augmentation Cadre
  - F. Emergency Coordinators
  - G. Regional Emergency Transportation Coordinators
- IV. Institutional Preparations**
  - A. Coordination and Outreach
    - 1. Information Coordination Center
    - 2. Federal Emergency Management Agency
    - 3. Department of Defense
    - 4. Department of State
    - 5. Transport Canada
    - 6. NATO Headquarters
  - B. Exercises
    - 1. CMC Cadre
    - 2. Regional Exercises
    - 3. Administrators Exercises
    - 4. Full-Scale Exercises
  - C. Teambuilding
- V. Technical Preparations**
  - A. Activation Information Management Software
  - B. CMC Concept of Operations
  - C. Special Briefings
- VI. Activation Period Activities**
  - A. Activation Schedule
  - B. Modal briefings
  - C. Operations
    - 1. OET
    - 2. RETCOs and RETREPs
    - 3. CMC Cadre
  - D. Reports
  - E. Interaction with the ICC
- VII. Summary of Impact on Transportation**
- VIII. After Action Efforts**

**IX. Reflections**

**Appendices**

- A. Information Flow Diagrams**
- B. Crisis Management Center Fact Sheet**
- C. Transportation Baseline Data**
- D. AIM Situation Report**
- E. ICRS Report**
- F. Transportation Impact Summary Report**
- G. Y2K Activation Staff**

## **I. Purpose of After Action Report**

This report describes actions taken by the U.S. Department of Transportation's Office of Emergency Transportation (OET) in preparation for and response to the Year 2000 computing problem. The report describes the planning activities conducted by OET to ensure that the Department would be well positioned to monitor the status of the nation's transportation systems during the Year 2000 rollover. This document also serves to highlight the effectiveness of these planning activities and the role of OET as the coordinator for the Department-wide response effort. Additionally, it serves as a reference for future activations of the Department's Crisis Management Center (CMC) by providing a thoughtful review of effective planning procedures, aiding in the institutionalization of these procedures, and providing recommendations for management of future events.

## **II. Overview of Y2K Problem**

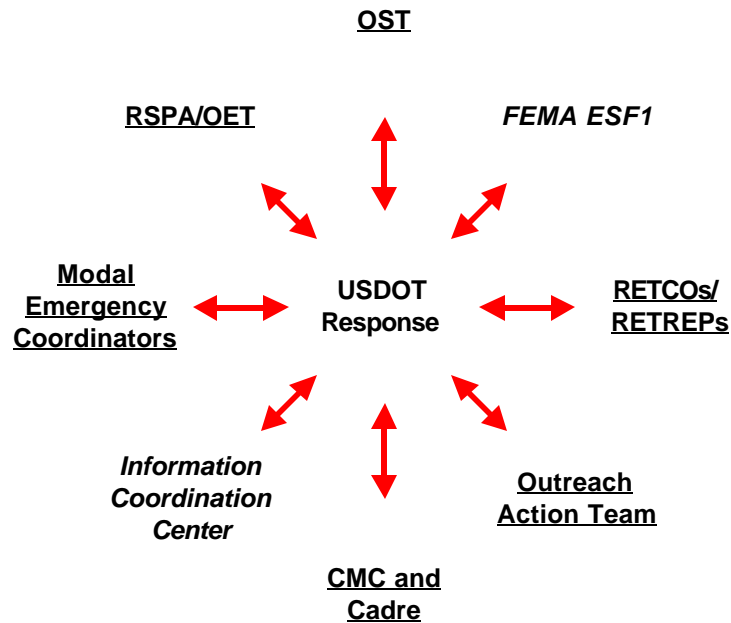
The Year 2000, or Y2K, issue refers to the difficulty some computers may have telling the difference between the Year 2000 and the Year 1900. In the transition to the Year 2000, there was concern that computers would not properly recognize the Year 2000 date and would produce incorrect data or shutdown altogether.

Due to compliance actions and preparedness measures undertaken, the Y2K rollover was not expected to result in serious nationwide consequences, it was likely to result in some local problems for government organizations and businesses that had not initiated remediation efforts. A large number of these smaller occurrences could result in disruptions to the transportation system and/or precipitated requests for Federal assistance. Domestically, the Department and its industry partners made excellent progress on both compliance efforts and contingency planning before the rollover, drastically reducing the potential for failures due to Y2K. There was greater concern, however, that international transportation systems would be more susceptible to Y2K outages. Specifically, the readiness of some international airports, international aviation partners, and international ports and shipping capabilities were questioned.

In response to these concerns, the Department recognized the need to monitor the operational status of the nation's transportation systems during the rollover period. The Department also determined that in order to effectively track possible trends in Y2K outages, the Department would gather data on the operational status of international transportation systems.

### III. Organizational Context of USDOT Response

To monitor, assess, and report effectively on the status of the nation's transportation systems during the Year 2000 rollover period, the Department elected to use its existing crisis management system designed for monitoring both natural and transportation-related disasters. This system relies heavily upon the cooperation and participation of entities within and outside of the Department of Transportation. Figure 1 illustrates the essential actors and their relationship to OET and the Crisis Management Center.



**Figure 1. USDOT's crisis management system requires coordination among multiple internal and external organizations.**

The USDOT response comes under the leadership of the Office of the Secretary of Transportation (OST) with RSPA/OET serving as the primary implementation agent. Each mode (e.g., FAA, FHWA, USCG, etc.) has an Emergency Coordinator (EC), assigned to a headquarters office, who is responsible for coordinating the modal response to emergencies. Additionally, the Department has a network of Regional Emergency Transportation Coordinators (RETCOs) and Regional Emergency Transportation Representatives who work with regional multimodal emergency response teams that provide emergency transportation services during declared crises in their respective regions. These RETCOs and RETREPs work closely with the Federal Emergency Management Administration (FEMA) regional offices and serve as Emergency Support Function 1 (ESF1) in the Federal Emergency Response Plan. The Outreach Action Team

(OAT) is a Department-wide entity formed specifically to ensure that Y2K issues were identified, communicated, and addressed throughout the Department. The Crisis Management Center (CMC) is the physical facility and technology infrastructure through which the Department collects and disseminates information during crisis events. The CMC Cadre is the group of USDOT employees from all modes who staff the CMC during emergency situations. The final circle in Figure 1 is the Information Coordination Center (ICC), a White House organization established specifically for coordinating information about the nation's critical infrastructure (e.g., transportation, communications, financial, energy) during the Y2K period. Each of these entities and their respective roles is described in greater detail below.

#### **A. The Office of the Secretary of Transportation**

Within the Department, the Office of the Secretary of Transportation (OST) played a significant role in the overall coordination and mobilization of the Department-wide Y2K remediation, outreach, and response effort. The involvement of both the Secretary and the Deputy Secretary in promoting awareness of Y2K and its potential impacts on the transportation helped to elevate the millennium rollover issue throughout the Department. This high level of involvement increased the need for the operating administrations to focus on their own Y2K plans and helped to promote the notion that the Y2K response would be a coordinated, "One DOT" effort.

#### **B. Outreach Action Team (OAT)**

As part of the Department-wide effort, OST created the Outreach Action Team (OAT) which was lead by the Acting Chief Information Officer, Kim Taylor, and managed by Caitlin Hughes of OST. The OAT was created to act as a multi-modal task force for Y2K outreach. As the complexities of the Y2K problem were uncovered, the OAT created four subgroups to address specific issues related to compliance, enforcement, and liability; communications; coordination; and response. OAT members chaired the four subgroups; however, their members were not primarily participants of the OAT. The subgroups' members were comprised of individuals throughout the Department with expertise in the subgroup areas. For example, both Bill Medigovich and RADM Bert Kinghorn chaired the Response Subgroup, whose members consisted primarily of the Department's Emergency Coordinators.

#### **C. Research and Special Programs Administration's Office of Emergency Transportation (RSPA OET)**

In preparing for their Y2K response, the Department elected to use its existing crisis management system, which falls under the auspices of the Research and Special Programs Administration's (RSPA) Office of Emergency Transportation (OET). OET was created to monitor and respond to the transportation effects of disasters. OET's mission spans the full spectrum of crises, including natural disasters; technological disasters, such as nuclear power plant accidents; terrorism; and economic disruptions, such as labor strikes and international military deployments. In the event of a disaster, the

Director of the Office of Emergency Transportation serves as the Crisis Manager for the Department, providing policy direction and operational guidance.

For Y2K, it was determined that OET would lead the effort to prepare for monitoring the operational status of the Nation's transportation systems and assist in the response in the event of an emergency. In preparing for Y2K, OET relied heavily on their existing emergency management team and facilities both within the Department and in the field.

**D. Crisis Management Center (CMC)**

In order to provide 24 hour monitoring of the operational status of the transportation systems during the millennium rollover, OET determined that existing

<p><b>CMC Role:</b></p> <ul style="list-style-type: none"> <li>• <i>Monitors the crisis by collecting, analyzing, and evaluating information from all available sources.</i></li> <li>• <i>Disseminates event-related information to appropriate internal and external agencies and offices.</i></li> <li>• <i>Establishes and maintains liaison with other Departments, the Federal Emergency Management Agency (FEMA), and DOT Operating Administrations.</i></li> <li>• <i>Maintains a record of all significant CMC activities to document DOT Headquarters response to the event.</i></li> </ul>
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Crisis Management Center would serve as the central clearinghouse for Y2K information collection and dissemination. The DOT Crisis Management Center (CMC) is located in DOT Headquarters (Room 8336). The purpose of the CMC is as the focal point for the transportation response, providing centralized management of information during an emergency.

Experts from throughout DOT and its partner agencies assemble to analyze information, recommend appropriate courses of action, and provide consolidated reports for the Secretary and the federal response community.

Typically, the CMC is only activated in emergencies that affect transportation such as hurricanes, earthquakes, or accidents involving two or more modes. The CMC can be used by other modes with support from OET during a single mode event. Although the CMC is well equipped to handle those situations, conducting continuous monitoring of all transportation systems for several days over the course of the rollover period presented a new and unique challenge. The Department had other 24-hour operations centers available to them that operate daily; however, those centers were specific to single modes such as the Federal Aviation Administration, or the United States Coast Guard. OET's CMC was the only pre-existing multi-modal operations center within the Department and consequently a natural choice for the Y2K event.

**E. Crisis Management Center Augmentation Cadre (Cadre)**

In addition to the CMC, OET also had an existing team of individuals that make up their crisis response team. This team includes the Crisis Management Center Augmentation Cadre (Cadre). Each of the DOT Operating Administrations provides cadre members for support in the CMC during activations. Individuals are selected from the cadre during a particular emergency to assure modal representation, interagency



coordination, and adequate staffing for the general transportation response and recovery requirements. When the Cadre is activated, they may be called “watchstanders”. The general functions of the Cadre include:

- Serving as the liaison to the sponsoring OA or OST office;
- Preparing reports on transportation impacts and response;
- Identifying implications of transportation issues impacting other modes;
- Assisting in developing coordinated recovery strategies for the transportation system in the disaster/affected area;
- Coordinating disaster information flow within the Department; and
- Coordinating requests for support directly to the Secretary with the appropriate modal authority.

In addition to the traditional watchstanders, several new administrations also contributed personnel to assist in staffing the CMC during the Y2K activation. These new cadre members and their roles are described in the table below.

<b>Position</b>	<b>Responsibilities</b>
<i>Chief Information Officer (CIO)</i>	CIO representatives oversaw all Y2K remediation and response activities and maintained status of DOT’s on-line and mission critical systems.
<i>General Counsel</i>	General Counsel representatives advised the Secretary and operating administrations on legal issues, including the use of extraordinary and emergency response legal authorities.
<i>Office of Intelligence and Security (OIS)</i>	OIS representatives advised the Secretary and Deputy Secretary of any issues domestic or international, which compromised the safety of the transportation system. They also processed early warning or threat information, advised appropriate modal administrators and CMC Cadre members, and acted as liaison with national security organizations.
<i>Office of Public Affairs</i>	Kept media apprised of status of transportation system and responded to media inquiries. Provided staff to support the national Information Coordination Council (ICC) Joint Public Information Center (JPIC).

**F. Emergency Coordinators**

While the Secretary of Transportation has overall management responsibility in transportation crises, each Operating Administration (OA) has a defined role. The OAs respond directly to situations affecting their specific modes of transportation, e.g. FAA for aircraft accidents, USCG for hazardous materials spills in waterways. Each OA has a designated Emergency Coordinator who plans for and can set in motion their organization's response to a disaster. Emergency Coordinators provide valuable information during a disaster, as well as manage their agency's crisis management cadre team in support of the DOT Crisis Management Center.

For the Y2K event, OET used their existing ECs as their primary contacts during the preparations for the CMC activation. The ECs determined which Cadre members from their mode would staff the activation weekend. The ECs prepared their Cadre representatives for CMC duty by providing contact information and assisting in the development of flow diagrams which outlined how information from industry partners and field agents would flow into the CMC. The ECs also participated in many of the planning meetings and exercises conducted by OET to help set policies and determine how the CMC was to operate over the Y2K weekend.

#### **G. Regional Emergency Transportation Coordinators (RETCO)**

Outside of headquarters, OET is supported by the Regional Emergency Transportation Coordinators (RETCO) and their Regional Emergency Transportation Representatives (RETREP). The RETCOs are designated by the Secretary to administer the Department-wide emergency preparedness program in each of the ten designated emergency regions. RETCOs and RETREPs plan the regional response to an event by working closely with the other regional DOT elements, other Federal agencies, the military, State and local governments, and industry. In certain circumstances the RETCO team would also act as lead for the on-scene transportation team. The RETCO/RETREP teams work closely with the CMC Cadre members to provide necessary information about their regional situations. Under most circumstances, the RETCO/RETREP teams are activated when a disaster has been declared in accordance with the Federal Response Plan (FRP). Under such situations the RETCO/RETREP teams operate as part of Emergency Support Function #1 (ESF #1) under the Federal Response Plan (FRP).

As OET's response plans progressed, it became clear that while the RETREPs were a potential link to regional information their primary responsibility was to respond to emergencies. OET determined that relying on the RETREPs as their primary source of information might prevent them from being able to respond quickly and effectively to a potential disaster. Due to the potential for RETREPs to be activated under the FRP during Y2K activation period, they did not serve as the central collection point for Y2K-related information, but rather as a secondary source for regional information.

## IV. Institutional Preparations

Y2K was one of the first issues to truly highlight the various interdependencies across the Department, other government agencies, and private industry. One of the greatest challenges of the Department's Y2K effort was to identify such interdependencies and coordinate planning activities with all of the actors, both governmental and non-governmental.

### A. Coordination and Outreach

OET played a large part in coordinating and providing outreach to several key government agencies including the Information Coordination Center (ICC), the Federal Emergency Management Agency (FEMA), the Department of Defense (DOD), and the Department of State (DOS).

*"Given the interdependencies among agencies, their business partners, and the public infrastructure, it is imperative that contingency plans be developed for all critical core business processes and supporting systems, regardless of whether these systems are owned by the agency" (GAO Testimony)*

#### 1. Information Coordination Center (ICC)

As part of the activities of the President's Council on Year 2000 Conversion a national emergency operations center was created specifically for monitoring the millennium transition known as the Year 2000 Information Coordination Center (ICC). The ICC acted as the Federal Government's central point for gathering, analyzing, and summarizing information on system operations during the Y2K date rollover. The ICC worked with government and industry information and emergency operations centers including the CMC to gather information on system operations during the date rollover.

The role of the ICC was to track the date rollover status of vital Federal Government systems, State and local government systems, and critical public and private sector systems that support key infrastructures such as electric power and telecommunications. The ICC also gathered information about how some international systems handled the transition to the Year 2000. Information received by the ICC was analyzed and regularly updated status reports were provided to agency decision-makers who determined whether any Federal actions were necessary. During the activation period, information on the status of transportation systems was provided to the ICC on behalf of the Department through the CMC. DOT also provided the ICC information about the status of its internal systems and programs.

Prior to the activation of the CMC during the rollover period, there was much coordination between the ICC and OET. Throughout the Department's preparations, representatives from the ICC were encouraged to attend meetings and exercises sponsored by OET. Since the ICC facilities were not operational for the first Y2K activation date (the 99<sup>th</sup> day of the year) DOT hosted the ICC staff at the CMC. OET members also participated in several planning meetings at the ICC as representatives of the Department. As information systems and policies were developed, OET made an effort to share this information with the ICC to increase the ability for a coordinated

national response effort during the Y2K monitoring period. The ICC was fully operational during the Y2K roll over period beginning December 28, and plans to remain active, at a reduced level through March 15.

As part of the coordination efforts, DOT assigned a staff member as a liaison to the ICC to provide transportation expertise. DOT also contributed staff to the management of the ICC, public affairs, and environmental monitoring functions. DOT representatives at the ICC assisted in providing information on the overall status of the transportation system nationwide. DOT representatives also monitored transportation information in the ICC Information Coordination and Response System (ICRS), and received information reports from the CMC.

In order to ensure that information would flow in a timely fashion from the CMC to the ICC, several coordination meetings were held with OET and the DOT representatives to the ICC. These meetings helped to familiarize both the CMC and ICC watchstanders with the information collection systems and reporting procedures being employed at each of the operations centers. Training sessions on the usage and applications of the ICRS system, an Internet based reporting software system, were also held for OET staff.

## 2. *Federal Emergency Management Agency (FEMA)*

Another key federal agency in the Y2K effort was the Federal Emergency Management Agency (FEMA). FEMA is an independent agency of the federal government responsible for emergency response and disaster management at the federal level. During the Y2K rollover period FEMA was the primary liaison for gathering Y2K information from State and local governments and in turn provided that information to the ICC. FEMA built on its existing reporting relationships with the States to obtain information on the status of these systems during the rollover as well as State perspectives on the status of critical industries within their jurisdictions. OET worked closely with FEMA to coordinate transportation reporting from state and local governments and also to ensure that all transportation-related information was passed through the CMC.

OET also worked to coordinate regional monitoring efforts with FEMA through the RETCO/RETREP teams. In most disasters, the purpose of the ROC is to coordinate Federal response efforts until an emergency response team is established in the field. The ROC staff establishes communications with FEMA headquarters and the affected state emergency operations center (EOC), gathers information, and serves as a temporary coordination office for regional Federal activity. For Y2K, the ROCs were activated to serve as operations centers for the regional monitoring efforts and in most regions, the RETREP was on-site to act as the transportation specialist.

OET was also responsible for coordinating the use of the Movement Coordination Center (MCC) at FEMA during the Y2K rollover. The MCC is a function of the DOT and consists of representatives from agencies supporting the Transportation support

Function of the Federal Response Plan. These agencies include DOT (as primary agency), the Department of Defense (DOD - TRANSCOM and US Army Corps of Engineers), the General Services Administration (GSA), the U.S. Forest Service (USFS), and FEMA Logistics. During Y2K, representatives at the MCC in coordination with the CMC collected information on transportation procurement originated at the national and regional levels, maintained visibility over this transportation from point to of departure to point of arrival, and disseminated this information among all the interested parties. If necessary, the MCC was also responsible for arranging transportation for FEMA and other agencies as needed. Similar to the MCC is the Emergency Transportation Center (ETC) located in Atlanta, Georgia. The ETC was created to provide transportation in furtherance of the transportation support function of the Federal Response Plan. During Y2K, some regions used the ETC as their primary mechanism for transportation acquisition, while others used it as a backup alternative.

### *3. Department of Defense*

OET worked with representatives from the Department of Defense and TRANSCOM to coordinate information sharing and collection. DOD was one of the primary sources for information regarding the status of international transportation systems. OET also worked with DOD on the installation and usage of the SIPRNET system, a secure Internet for classified information. During activation, TRANSCOM provided a representative to staff the CMC during activation to assist users with classified information and act as a liaison between DOD and the CMC.

### *4. Department of State*

OET collaborated with representatives from the State Department to determine the methods for collecting information about international transportation systems. Through the State Department Internet site, the CMC was able to access information collected by U.S. Embassies around the world. Representatives from the CMC would scan these reports for any information regarding the status of foreign transportation systems.

### *4. Transport Canada*

OET established operational connectivity with Transport Canada to exchange information electronically. Transport Canada was provided access into DOT's monitoring system and the Department was also able to access Canada's similar system.

### *5. NATO Headquarters*

A technical expert representing OET was assigned to the Euro Atlantic Disaster Response Coordination Center and provided reports on the international status of Y2K directly to the CMC.

## B. Exercises

To prepare for Y2K, OET sponsored several tabletop exercises conducted both at headquarters and in the regions. The main objective of the exercises was to develop strategies that provided the best information possible to enable rational decision making within the Department of Transportation. OET decided to use the tabletop exercise approach to help identify the information sources, flows, and mechanisms needed to provide meaningful responses to national, regional, local, and public information needs about transportation functions. The exercises were also conducted to assess assumptions about the availability and reliability of expected or assumed information sources, flows, and mechanisms. In addition the exercises were to help identify gaps and alternatives for providing information about transportation functions.

From these tabletop exercises OET hoped to achieve the following outcomes:

- Keener awareness of relevant information sources at local, regional, and national level
- Greater understanding of critical information links and their potential weaknesses
- Identification of potential Y2K issues that transcend modes, jurisdictions, agencies, authorities, and traditional public/private relationships
- Greater cohesion among transportation officials and information sources
- Increase public awareness that USDOT is actively addressing Y2K challenges
- A synthesis of lessons learned for decision makers to consult during the Y2K transition

The Y2K tabletop exercise program was one of the most ambitious schedules to date for both OET and the Department. In total, there were 20 exercises conducted by OET between May and December of 1999. Exercises were conducted for the Secretary and Modal Administrators, each of the emergency regions, and the CMC Cadre. In addition, two full-scale exercises were conducted for the CMC in conjunction with the ICC.

Date	Exercise	Location
May 4	CMC Cadre	FAA Headquarters
May 10	Region 5	Chicago, IL
May 12	Region 6	Fort Worth, TX
May 26	DOT Administrators	USCG Headquarters
June 3	CMC Cadre	DOT Headquarters
June 10	Region 8	Denver, CO
June 21	Region 9	Monterey, CA
September 8	DOT Administrators	USCG Headquarters
October 5	Region 10	Seattle, WA
October 7	Alaska Region	Anchorage, AK
October 13	Regions 1 & 2	Boston, MA
October 14	Region 3	Philadelphia, PA
October 21	Region 7	Kansas City, MO

<b>Date</b>	<b>Exercise</b>	<b>Location</b>
November 3 – 4	CMC Cadre	DOT CMC
November 29	DOT Administrators	DOT Media Center
December 8 – 9	CMC Cadre	DOT CMC

1. *CMC Cadre*

The first Y2K tabletop exercise was conducted for a portion of the CMC Cadre. The Cadre exercises were separated into two groups (Cadre 1 and 2) and the exercises were scheduled so that each group would attend two exercises (A and B). Exercise A was designed to focus on the roles and responsibilities of the Cadre during the Y2K activation and promote a general sense of awareness of the Y2K issue and its potential impacts on transportation systems. Exercise B was originally designed to focus on issues of cyber-crime and potential terrorist acts impacting Y2K, however, this idea was changed for a secondary exercise which would test the operational side of the activation and reinforce the anticipated duties of the Cadre during the rollover.

Exercise sessions began with introductions of the Cadre and the exercise facilitators and a brief overview of the project. The exercise goals, format and instructions were also reviewed. To set the backdrop for the exercise, the participants were given a general description of the nominal scenario, which included any events that typically occur around the New Year’s timeframe. After discussing the backdrop and allowing for additional comments, the participants were led through a series of events that described potential transportation system problems or failures, which could occur during the Y2K rollover.

<p><b><i>Nominal Scenario Examples:</i></b></p> <ul style="list-style-type: none"> <li>• <i>New Year's Eve parties</i></li> <li>• <i>High traffic volume</i></li> <li>• <i>Dramatic increase in fuel consumption</i></li> <li>• <i>Higher highway crash rates</i></li> <li>• <i>Shutdown of most basic industries due to holiday</i></li> <li>• <i>Rail/Highway freight traffic volume down</i></li> <li>• <i>Concentrated commuter rail surges in metro areas while most commuter rail declines</i></li> <li>• <i>Intercity passenger travel up</i></li> </ul>
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For each event the group would answer the following questions:

- How did you learn about this event?
- Who provided the information to you?
- How significant is this event from a national perspective (severity, pervasiveness, and likelihood)?
- What are the broader implications of this event for DOT?
- What follow-up actions are required?
- What work-arounds or other actions are needed?

The group worked through the events one at a time. For each, the facilitator read the event description and began the discussion by asking the representative of the mode most affected by the event to provide an initial response to the questions. After the responsible mode(s) discussed their information flows other modes discussed how they would or would not be affected by the event. In most cases, each mode was represented, allowing the exercise facilitators to select a wide range of events.

**Sample Events:**

- *Gantry crane at a major seaport fail to operate properly and vessel load/unload operations are suspended.*
- *Traffic signals in a major metropolitan area exhibit erratic behavior.*
- *Isolated incidents where the valves on petroleum pipeline malfunction and remain in open positions.*

In the early exercises the Cadre participants felt that certain key questions needed to be answered in order to be effective in the CMC during the Y2K monitoring period. These questions included:

- What is the role of the CMC and of the modal representatives in the CMC? What will the CMC be called upon to do? Will it propose solutions or act only as a conduit of information? Will it be responsible for assessing the significance of an event (given that it has a national perspective)?
- What are the modal administration reporting requirements? What are the OET reporting requirements?
- Is there any international coordination for information sharing?
- What is the level and type of information that the CMC should forward to the modal administrators? Who will make the decision at the CMC about what information to pass forward?
- Who is responsible for verifying information for public release (i.e., fact/source checking)?
- What information should the Retreps be required to gather and relay? What is a reliable source of information? Should this be pre-designated?
- What are the reporting requirements for the CMC? How frequent will they report? When will the reports begin?

After completing the events, the participants were asked to provide their observations and insights from the exercise by responding to the following three questions:

- *What have you learned that will help provide the best information possible to enable rational decision making within the department of transportation during the Y2K transition?*
- *What is the single most important recommendation you would make regarding information collection, synthesis, and dissemination during the Y2K transition period?*
- *How has this experience helped you think about Y2K transition management for transportation functions in your mode and across the department? How could it be improved?*



In response to these questions the exercise participants provided many comments about the exercise and recommendations for OET to consider during Y2K planning. One of the strongest recommendations from the Cadre was for OET to create a well-defined concept of operations to outline the expected communications channels both within the modes and for the CMC. The Cadre members also felt that OET needed to provide additional training and guidance for those staffing the CMC during the Y2K monitoring as the Y2K activation was expected to be different from more traditional CMC activations. Given their new sensitivities to the interconnectedness of transportation systems and the potential Y2K impacts, Cadre members also felt it essential to become educated on the various roles and missions of the other operational administrations with responsibilities in the CMC during Y2K. This was especially true in cases where modal responsibilities may overlap (e.g., Coast Guard and MARAD). Overall, the Cadre felt that the exercises provided better insight into the complexities of the Y2K problem and gave them a concrete appreciation of the types of events to which they may have to respond. The participants also agreed that more frequent tabletop exercises, as part of their annual Cadre training program, would be very beneficial.

## 2. *Regional Exercises*

Over the course of the year a total of nine regional exercise were conducted in each of the DOT Emergency Regions.<sup>1</sup> At each exercise the RETREP was responsible for inviting the participants and arranging the meeting space. In the early exercises the attendance was smaller and not necessarily representative of all of the modes. As the schedule progressed and the regions became more sensitive to the Y2K issue the attendance at the remaining exercises increased, including more multi-modal representation.

In most cases the exercises were conducted in the same fashion. There was some variation in the earlier exercises as some of the roles, responsibilities, and polices became more clearly defined as the project progressed. The exercises would begin with introductions and a brief overview of the project. An OET representative would describe the role of the CMC and give a summary of the procedures for the CMC during the Y2K monitoring period. He or she would also describe other Y2K preparatory efforts that were underway within the Department of Transportation.

The exercise leaders would then discuss the specific goals of the day including instructions as to how the exercises would be run. To set the backdrop for the exercise, the participants were given a general description of a nominal scenario, which included transportation-oriented events that typically occur around a New Year's timeframe. The participants were also encouraged to add any additional assumptions to the nominal scenario that were nation-wide or specific to their region. After discussing the backdrop, the participants were led through a series of events. For each of the exercises a core set of multi-modal events was developed. These events were then tailored to address the

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<sup>1</sup> The one exception was Region 4 in Atlanta where the exercise was cancelled due to the fact that the emergency response team had spent the majority of the summer responding to the devastating hurricanes along the east coast and subsequently felt that they were already adequately prepared for any potential Y2K problems

specific transportation systems of the individual regions. For each event they discussed and answered several leading questions

Depending on the size of the participants the events would be worked through in smaller groups to discuss the events. Participants were assigned to groups to distribute modal representatives in each group. Each group was given a different event to work through and the selected events were dictated by the modes represented in that particular group.

**Event Questions:**

- *How did you learn about this event?*
- *At what point does this event merit reporting (e.g., severity, pervasiveness, and likelihood)?*
- *What are the broader implications of this event for DOT?*
- *What follow-up actions are required?*

The event portion of the exercise would generally spark good discussion among the participants. After working through the events the small groups reported back their findings to the large group. At this point all of the participants were invited to comment on the groups' responses. Many of the discussions focused on the existing procedures in place to deal with the events and also what additional plans needed to be made in order to ensure information flows.

To conclude the exercise, the participants were asked to provide their observations and insights from the day by responding to three questions:

- *What have you learned that will help provide the best information possible to enable rational decision making within the department of transportation during the Y2K transition?*
- *What is the single most important recommendation you would make regarding information collection, synthesis, and dissemination during the Y2K transition period?*
- *How has this experience helped you think about Y2K transition management for transportation functions in your mode and across the department? How could it be improved?*

After participating in the exercise, the regional representatives felt that they had a much clearer understanding of what their role was in the Department-wide effort and the expectation for the field offices to provide information to the CMC during the activation period. The participants learned what kind of information to report and the value of positive reporting in the context of Y2K. From the exercises they also understood that the reporting process was not just to pass along information but rather to perform "intelligence gathering". The regional exercises were designed to ensure that every region understood the potential Y2K problems and was prepared to monitor transportation services and respond to emergency situations that might arise during the rollover period. Overall, the exercises provided the regions with a more targeted approach to prepare for Y2K including establishing points of contact and defining their reporting process.

Throughout the regional exercises there were several concerns voiced by the participants. One of the most frequently raised issues was the availability of information to the field offices. The regions wanted to ensure that information was also being passed down the chain to the state offices. They were also concerned about the possibility of handling proprietary or confidential information and requested that OET provide guidance on such procedures. During some of the earlier exercises it was also noted that not all of the modes were present. The regions emphasized the need for participation and buy-in from all modes in order for the exercises and activation to be successful. Other issues raised during the regional exercises included reporting procedures, response priorities, and media relations.

### 3. *Administrators*

The Administrators' exercises served the dual purpose of ensuring that modal leadership understood and was fully engaged in Y2K preparations and that Y2K readiness was a high priority concern for each mode. Deputy Secretary Downey participated in all three exercises; Secretary Slater participated in the second and third exercises. These were the first exercises at the administrator level ever conducted by DOT.

Initially, two Administrators' exercise were planned but, after participating in the first two, the Secretary and modal Administrators' requested an additional exercise devoted primarily to exploring plausible Y2K scenarios and potential problems. The first two exercises focused largely on providing high level information about Y2K issues and concerns and the potential for hostile actions during the rollover period. Additionally, each Administrator reported modal Y2K plans, including hours of operation, staffing, and public information/media relations during the rollover period. Each of first two exercises included two or three Y2K scenarios that served as catalysts for discussion concerning Y2K readiness and communications and coordination among modes.

The third exercise was designed specifically to raise confidence that all modes were adequately prepared to address Y2K issues in a highly coordinated, well-conceived manner. This exercise included an update on information collection and reporting tools to be used during the Y2K rollover period (primarily the Department's Activation Information Management (AIM) System) and guidelines for indicating operational status of the nation's transportation system. The potential Y2K events were designed to cover all modes and, in many cases, a single event affected multiple modes. Examples include:

- Intermittent failures in an airport baggage inspection system
- Malfunctioning railroad drawbridge in the Northeast corridor
- Electrical power failure in a major metropolitan area on New Year's Eve
- Gantry crane failures at a major seaport intermodal terminal
- Erratic traffic signal behavior in a major city
- Natural gas pipeline valves malfunction
- Major international seaports and airports shutdown due to suspected Y2K problem

These events offered opportunity for discussion about the Department’s response to the event and also about how the Department would interact with the media and the public as information about transportation-related problems emerged. The Administrators reviewed a checklist to guide the USDOT response to Y2K activation period events and agreed to full disclosure of accurate, timely, and validated information about Y2K events. Figure x illustrates the sequence of questions used to guide information handling during the Y2K rollover period.

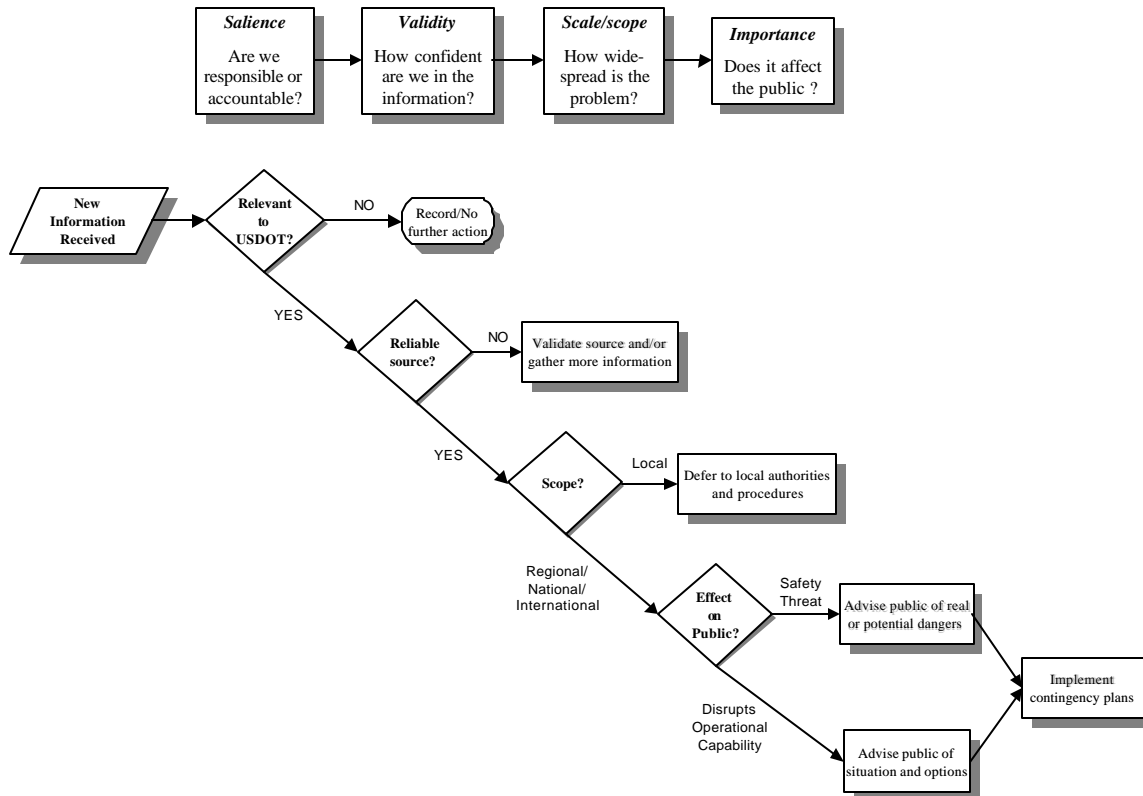


Figure 2. Checklist for USDOT response to Y2K activation period events.

The most significant outcome of the series of Administrators’ exercises was a heightened awareness of the need to communicate among agencies and to cooperate in formulating responses to Y2K events. During the course of the exercises, several of the postulated events prompted Administrators and their staffs to rethink lines of communication, roles and responsibilities, and internal and external relationships. The exercises also prompted each mode to plan its operations during the Y2K rollover period so that the Department could maintain full awareness of the nation’s critical transportation systems and functions during the New Year period.

4. Full-scale exercises (Nov 3-4, Dec 8-9)

The full-scale exercises provided a final test of how the CMC would function during the Y2K activation period. These two exercises were scheduled to coincide with similar exercises at the White House Information Coordination Center (ICC), with the idea of actually collecting information from field sources and communicating that information in the form of situation reports to the ICC.

The first exercise, conducted November 3-4, 1999, was limited somewhat because the AIM software was still under development and could not be used as the primary reporting system. Also, because the ICC's information systems were still under development, coordination and communications between the CMC and ICC were incomplete and largely uncoordinated. The primary result of this exercise was a greater appreciation of the need for well-conceived and coordinated reporting schedules, protocols, and responsibilities between field data sources, the CMC, and the transportation desk at the ICC. The exercise served as a stimulus to identify and resolve reporting inadequacies and coordination problems within modes, across modes, and between USDOT, FEMA, and ICC.

The second full-scale exercise was conducted on December 8-9, 1999, again in conjunction with a similar exercise at the ICC. By this time both AIM and the Information Coordination and Reporting System (ICRS), the ICC's primary reporting system, were in place and operational for training purposes. Prior to the exercise, OET and CMC staff visited the ICC to gain greater familiarity with ICC operations and the role the ICC transportation desk would play during the Y2K activation period. The major discrepancy between the CMC and the ICC was that the ICC had developed a time-phased scenario for use during the exercise and, with that scenario, had created a series of hypothetical events affecting national and international critical infrastructure, including transportation. The CMC, on the other hand, asked field data sources in each mode to report current transportation status, with the only departure being several "staged" events designed to simulate the types of information that might be received during the rollover period. Because of this difference, the hypothetical events reported by the ICC were intermingled with information about real and simulated events reported by field sources, creating some confusion (and occasional contradictions) about sources and status. As a result of this exercise, ICC transportation desk staff and CMC staff met to clarify reporting responsibilities, visibility into databases, and information coordination during the rollover period.

Both full-scale exercises proved to be important because they surfaced issues and problems that, once addressed and resolved, improved performance during the CMC's Y2K activation period. Participants at headquarters and field locations were able to practice with their respective reporting systems and gain greater familiarity and facility with the reporting tools and protocols. Each mode was able to finalize its reporting locations, methods, and routes so that the Department's monitoring and reporting requirements were met during the activation period. The ultimate value of the end-to-end, full-scale exercises was that they raised the confidence of the CMC staff and Departmental leadership that USDOT was adequately prepared to fulfill its responsibilities for monitoring, reporting, and responding during the Y2K rollover period.

### C. Teambuilding

As the activation period came nearer, it was suggested by one of the cadre members that a teambuilding exercise is held for all of the cadre members. The cadre felt that up until then, they had successfully exercised the operational side of the Y2K response. What was missing was the sense of camaraderie that came with the team effort. Many of the cadre members selected for the Y2k effort were not normally participants in CMC activations. Additionally, the nature of the Y2K problem required that new alliances be created that needed strengthening before being tested.

Based on these recommendations OET sponsored a teambuilding event which was referred to as the “ice cream social”. The event was held on December 7<sup>h</sup> at DOT headquarters. Everyone who was expected to be staffing the CMC during the activation period was invited. The event began with ice cream sundaes prepared by the OET Director and Deputy Director. The RSPA Administrator also attended and gave some opening remarks thanking the Cadre members for their continued work in support of the Y2K preparations. The rest of the event was spent reviewing CMC activation hours and policies in small group meetings. The group was split into day shift and night shift staff and the discussions were lead by the CMC Operations Chiefs for each shift.

This event was very successful in fostering teambuilding. Participants appreciated the opportunity to meet their fellow co-workers for the Y2K weekend. This event gave them the chance to share information and associate names with faces that otherwise would have waited until December 31st. This event also gave OET the opportunity to show their appreciation for all of the efforts from the Cadre and also to reinforce some key points in a fun atmosphere.

## V. Technical Preparations

### A. Activation Information Management Software (AIM)

During the Y2K activation, the primary tool used by the CMC for monitoring and reporting the status of the nation's transportation system was the Activation Information Management (AIM) System. The AIM System is a customized version of an Internet based database developed by E-Team that was originally designed to help states and local governments track and monitor disasters. The web-site is hosted by two servers, one in Washington, DC, and one in Oklahoma City, OK.

Through the efforts of OET and E-Team this off-the-shelf product was tailored to meet the needs of the Department's crisis management duties. The database was designed to address not only the Y2K event but also future events for which the CMC may be activated such as hurricanes, earthquakes, or multi-modal accidents. The design of the system centers on two primary functions: the report function, where data is entered, and the view function where entered data can be sorted and analyzed.

The premise of the database was to create report forms for each of the facilities or systems the operating administrations would be monitoring. For example, the USCG identified their forty major ports while FTA listed their top ten grantees as facilities or systems that they would be monitoring over the Y2K period. These report forms also included unique criteria defined by each administration that determined the operational status. These criteria were referred to as the Essential Elements of Information (EIs).

Operational Status for a facility or system was defined according to a color-coded scheme. The Department intended to coordinate their operational definitions with the ICC, however, the ICC did not provide enough direction during the development of the AIM system to create uniform definitions on operability. As such, the OET met with representatives from each of the operating administrations in order to develop the Department's own definitions for red, yellow, and green. The creation of these definitions provided an important lesson to the Department through introducing the notion that different agencies have different responsibilities and different vocabularies to describe them. Developing one set of operational definitions to cut across all the modes was an interesting challenge. The final definitions were:

- Green - normal operations,
- Yellow - a slight disruption to operations, and
- Red - severe disruption to operations.

The following describes the various report forms and their functions:

**Situation Reports** - the highest level of reporting and is used to summarize the overall status of your mode of transportation. Designated individuals in each mode create situation reports. These modal reports are then used to create a consolidated DOT situation report that is prepared by the Deputy Operations

Chief and distributed throughout the Department. The figure below is an example of a situation report in AIM.



**Facility Report** - indicates the operational status of critical facilities and systems that have been identified by each of the Operating Administrations. A Facility Report has been pre-created for each pre-identified facility. To see a Facility Report use the View frame on the left hand side of the screen. To update the status of a facility, use the modify feature.

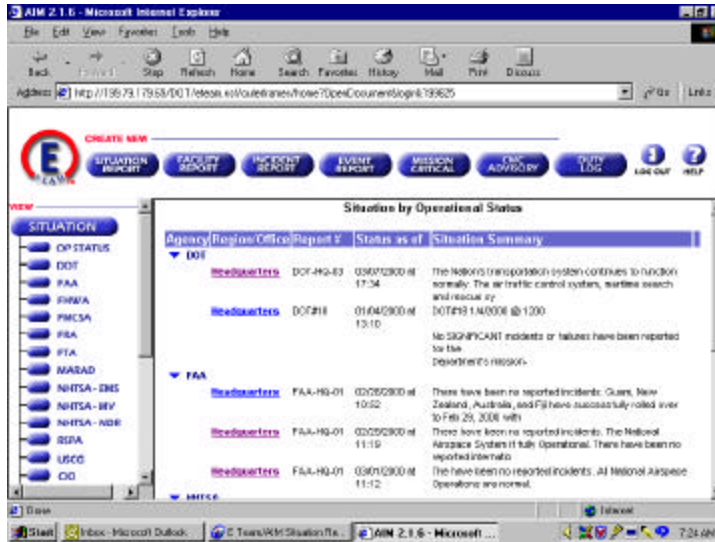
**Incident Report** - the lowest level of reporting and is used to record and track incidents as they occur during the Y2K activation period. Reports will be initiated as incidents occur, monitored and updated as the situation changes, and ultimately archived once incidents are considered closed.

**Event Report** - overarching occurrences that may have individual incidents associated with them. For example, an airplane crash could be an event. The corresponding incidents would be search and rescue operations, re-routing of air traffic, etc. For the Y2K Activation period, the event was “Y2K Activation.”

**Mission Critical Report** - used to track the Department’s 609 mission-critical systems; on-line systems; building infrastructure, both headquarters and field; and security breaches.

All of the information that is entered into these reports can be accessed through the View function of the AIM system. Data can be viewed through a variety of categories including operational status, event type, location, and lead agency. In addition to viewing the information as a database, the report data is also plotted geographically on a map as a function of the software. The illustration below is an example of the View function in AIM.





In order to access the AIM system for the Y2K activation period users were issued ids and passcodes. Each mode determined how they would use the AIM system in their reporting process, however the majority of the administrations selected to input the data into AIM at the CMC. Only a few modes chose to train their field agents in the use of AIM and allowed them to enter data directly from the field.

Multiple training sessions were held throughout the year in order to familiarize users with the AIM system. Sessions were organized by OET and typically held at DOT headquarters. Training classes were taught by E-Team representatives and generally lasted for 2-3 hours. All cadre members scheduled in the CMC during the Y2K activation were strongly encouraged to attend at least one formal AIM training session. Special teleconference training sessions were also arranged for the RETREPs and FHWA field staff in order to provide training to AIM users in the field. AIM training was also a large component of the CMC full-scale exercise and early activations.

**B. CMC Concept of Operations**

The CMC Concept of Operations (Conops) was created in order to provide operational guidelines for the CMC during the Y2K activation. The Conops identified how the multi-modal CMC would operate and report the consequences of any Y2K-related transportation events occurring domestically or internationally, and respond to any emergencies, which may have been a consequence of Y2K incidents or natural disasters occurring simultaneously. The Conops was an important document not only from an operational standpoint but also from an organizational perspective as it defined positions and policies for the CMC that were different from previous activations. These positions and their responsibilities are described in the table below.

Position	Responsibilities
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<b>Position</b>	<b>Responsibilities</b>
<i>Crisis Manager</i>	The Crisis Manager for Y2K was the Director or Deputy Director of the Office of Emergency Transportation, who provided overall direction of the CMC effort, and oversaw coordination with the ICC and FEMA.
<i>Operations Chief</i>	The Operations Chief was responsible for the functional management of the Crisis Management Center. The Operations Chief ensured that modal representatives coordinated, and exchanged information that affected other modes. The Operations Chief conducted periodic verbal briefings for the Secretary, Deputy Secretary and other senior officials as necessary. The Operations Chief also oversaw the production and dissemination of DOT input into the ICC Information Coordination Response System (ICRS) software.
<i>Deputy Operations Chief</i>	The primary responsibility of the Deputy Operations Chief was to assist the Operations Chief in the collection, analysis, review, production and dissemination of periodic Situation Reports and provide DOT input into the ICC ICRS. Secondary responsibility was ensuring the smooth operation of the CMC.
<i>Wildcards</i>	Wildcards were responsible for assisting the Deputy Operations Chief with the preparation and dissemination of situation reports. Wildcards also provided overall support to the CMC during activation.
<i>Technical Support</i>	Technical support for both the CMC hardware (i.e., computer terminals, teleconferencing equipment, local server) and the AIM software was also provided on-site during the activation period by a combination of OET staff and contractors.

In addition to these positions, several operational procedures for the CMC were created for the Y2K activation and included in the Conops. These new procedures related to the following topics:

- Security and classified information;
- Proprietary information; and
- Modal information flows.

Due to the nature of the Y2K problem, there was an increased potential that the CMC may be required to handle classified information. Consequently, OET determined that all CMC watchstanders during the Y2K activation were required to have a secret level security clearance on file with the Department. Anyone who did not obtain a clearance prior to the activation period was required to wear an orange escort badge while in the CMC during the rollover. Additionally, the Staffing Assistant and security guards closely monitored access to the CMC. The Staffing Assistant controls access and egress and ensures proper identification and clearance levels. Individuals not previously rostered arriving at the CMC will be referred to the Operations Chief or Crisis Manager.

Identification was checked upon entry and due to space limitations within the CMC, the modes were limited to two representatives per shift.

Procedures for handling classified information in the form of hard copy materials, fax, and via the telephone in the CMC were also addressed in the Conops. Classified information received was processed through the normal DOT security channels and in accordance with current DOT regulations. The CMC was equipped during the rollover with SIPRNET, a secure Internet system, and a secure phone/fax line for receiving and relaying classified information. Access to the SIPRNET/Secure FAX area was controlled by the Operations Chief and Crisis Manager. During periods which the Crisis Manager or Operations Chief determine there is no need for connectivity to SIPRNET, the CPU was removed from the docking station and secured in the OET safe. All classified documents developed in the secure room became the property of the OET/CMC. Documents developed in the secure room were marked secured in accordance with the U.S. Department of Transportation Security Guide for Employees. A copy of the Security Guide was available in the CMC, and a copy was also available in the secure room.

As part of the Y2K issue there was also concern over the legal ramifications of publicly disclosing information that was considered proprietary or business confidential. Instructions as to how to manage information that may not be suitable for public release were defined in the Conops. In order to address the issue of proprietary information the AIM system was modified to allow for information to be coded as suitable for public release or confidential depending on the request of the information provider. In addition, The Office of the General Counsel created scripted language which watchstanders could read prior to entering reports into the AIM system in order to immunize themselves against claims that the information was improperly disclosed.

**Proprietary Information Script:**

*“The information which you are voluntarily providing will be entered into the Department of Transportation AIM database. The information will be shared widely within the federal government and may ultimately be shared with the public. The DOT reserves the right to use this information freely.”*

Another important and new component of the Conops was the section detailing the information flows for each of the operating administrations. Through the combined efforts of the OAT, OST, the ECs, OET, and each of the operating administrations, detailed diagrams were produced that indicated how information would be passed from the field representatives up to the CMC. These diagrams were an essential part to understanding what type of information each operating administration was capable of collecting and who the primary information sources were. These diagrams also helped to identify and eliminate in most cases any duplicate reporting channels. These diagrams were included as an appendix to the Conops and are also included in Appendix A of this document.

### **C. Special Briefings**

In anticipation of visitors in the CMC during the activation period, OET created a special slide presentation and fact sheet to inform visitors about the CMC and its role within the DOT Y2K response effort. Due to the high media and congressional interest in Y2K monitoring efforts, it was expected that the CMC would have important visitors who may not have any background knowledge of the CMC or of DOT's Y2K response plans. It was also expected that the CMC would be very active and that conducting special briefings on the spot, with out much notice may be disruptive. Consequently, the Department created a slide presentation for such visitors that gave general information about DOT and the CMC while also providing more detailed information about the activation procedures and other Y2K preparations. It was expected that the on-duty Crisis manager would be responsible for conducting any special briefings.

In addition to the slide presentation, a packet of informational materials was created. The packet included a fact sheet with vital information about the CMC during the Y2K activation period. Also provided was a compilation of transportation baseline data designed to provide an overview of "normal" problems experienced by transportation systems and their frequency?

## **VI. Activation Period Activities**

### **A. Activation Schedule**

One of the earliest activities conducted by OET in preparation for Y2K was the activation of the CMC on April 8<sup>h</sup> and 9<sup>h</sup> for monitoring the rollover of the Julian Calendar. The April 9<sup>th</sup> date was of concern because it marked the 99<sup>th</sup> day of 1999. For

this, activation representatives from MARAD, Coast Guard, RSPA, OET, FHWA, FAA, FRA, and FTA staffed the CMC during the activation period. These representatives were responsible for monitoring the status of their transportation modes by surveying their points of contact (industry partners, field staff). In addition to the Cadre, representatives from the ICC monitored the overall national rollover situation from the CMC, as their command center had not yet been completed. The CMC and ICC also monitored the rollover as it occurred internationally and contacted Transport Canada to identify any problems affecting their transportation infrastructure. During the activation there were no problems reported that were attributable to the Julian Calendar rollover.

The CMC also played a role in monitoring the Geographic Positioning Systems (GPS) rollover in August. The CMC provided support to the U.S. Coast Guard, which acted as the lead administration within DOT, for the GPS issue. The GPS systems were a concern as the internal clocks for the satellites that provide data to the GPS receivers were scheduled to rollover on August 8<sup>th</sup>. It was unclear whether the systems would re-set properly without providing an interruption in service.

The CMC was also activated on September 9, 1999 to monitor for any possible Y2K problem due to the “9999” date change. The CMC was activated at 7:00 a.m. and was staffed by representatives from USCG, MARAD, OST, FRA, FHWA, RSPA/OPS, FTA, and FAA. Contact was made with DOT Operations centers, industry partners, the Department of Defense, and Transport Canada. No problems were reported related to transportation infrastructure or the Department’s mission critical systems.

Both of these earlier activations helped to prepare the OET and Cadre for the monitoring period during the Year 2000 transition. The CMC was partially activated on December 28<sup>th</sup> with limited staffing. Full staffing began on December 31<sup>st</sup> and continued with some modifications through January 4<sup>th</sup>. Listed below is the complete CMC activation schedule for the Y2K period.

<b>Date</b>	<b>Hours of Operation (EST)</b>	<b>Staffing Level</b>
Tuesday, December 28	9 a.m. to 9 p.m.	Operations Chief, Deputy Operations Chief
Wednesday, December 29	9 a.m. to 9 p.m.	Operations Chief, Deputy Operations Chief
Thursday, December 30	9 a.m. to 9 p.m.	Operations Chief, Deputy Operations Chief
Friday, December 31	7 a.m. to 9 a.m.	Operations Chief, Deputy Operations Chief
	9 a.m. (24 hour activation starts)	Full CMC staffing
Saturday, January 1	24 hour activation	Modified CMC staffing
Sunday,		

Date	Hours of Operation (EST)	Staffing Level
January 2	24 hour activation (ends at 7 p.m. Jan 3)	Modified CMC staffing
Monday, January 3	7 a.m. – 7 p.m.	Modified CMC staffing
Mon - Tues, January 3 - 4	7 p.m. – 7 a.m.	Operations Chief, Deputy Operations Chief (as warranted)
Tuesday, January 4	7 a.m. – 7 p.m.	Operations Chief, Deputy Operations Chief (as warranted)

The CMC also stood-up for partial activation on February 29, 2000 to monitor the leap year activities. During this activation there were no outages reported that were attributable to Y2K. The CMC provided information on the status of the transportation system to the ICC and also generated three situation reports for the Department.

**B. Modal Briefings**

Prior to the full activation of the CMC, OET scheduled a series of final briefings for each of the operating administrations. The briefings were conducted for all individuals who were scheduled to staff the CMC or be available as alternates during the activation. The final briefings were considered mandatory for all watchstanders and were conducted in two-hour blocks beginning on December 28<sup>th</sup> and ending on December 30<sup>th</sup>. The primary objective of the modal briefings was to provide a final review of key issues prior to the activation period. Those issues included:

- Major elements of the conops;
- Security and classified information handling practices;
- Proprietary information procedures;
- Shift change procedures and practices;
- Logistics information (parking, food, emergency circumstances, etc.);
- ICC activities;
- AIM software update;
- International intelligence gathering procedures;
- Modal representatives duty hours;
- Modal information flows; and
- After action briefings and reports.

**C. Operations**

1. *Office of Emergency Transportation*

During the millennium rollover, OET operated the Secretary's Crisis Management Center as the Department's central clearinghouse for Y2K information. The OET Director or Deputy Director served as the Department's Crisis Manager and oversaw all activities in the CMC. OET staff members also served in CMC positions such as the Operations Chief, Deputy Operations Chief, and Staffing Assistant. The Operations Chief and Deputy Operations chief began their shifts on December 28<sup>th</sup> working 12 hour shifts (9:00 am to 9:00 pm) until December 31<sup>st</sup> when the full staffing of the CMC began.

Responsibilities of the OET Staff during Y2K included:

- Coordination of staffing or representation of a DOT Liaison at the ICC, Joint Information Center (JIC), Federal Emergency Management Agency (FEMA) Federal Operation Center (FOC), and the National Infrastructure Protection Center (NIPC), as needed;
- Preparation and distribution of consolidated Situation Reports; and
- Providing AIM Software support as needed for CMC Cadre.

## 2. *RETCOs and RETREPs*

OET staff also coordinated with the RETCO/RETREPs in each of the emergency regions who were activated for the monitoring period. Some RETREPs were asked by FEMA to staff their Regional Operations Centers (ROCs) while others monitored from their own modal offices. For the Y2K activation period RETCO/RETREPS were responsible for:

- Responding to Federal Response Plan disaster activations as the Emergency Support Function #1 - Transportation leader and team manager; and
- Remaining in a general monitoring mode to report ancillary information that may be obtained from local news media or other reliable sources.

In the event that the acquisition of transportation was necessary, it would have been provided by the Emergency Transportation Center (ETC) in Atlanta in coordination with the CMC, FEMA, and the RETCO/RETREPs. Regions 3, 4, 5, 7, 8 and 10 were to work through the ETC for any transportation acquisitions while Regions 1 & 2, 6, 9, and Alaska were responsible for acquiring their own transportation for their regions, with assistance from the ETC when necessary.

## 3. *CMC Cadre*

Cadre member assignments and schedules were agreed upon by the Operating Administrations. Cadre assigned to work in the CMC were to report at least 20 minutes before their appointed start time to ensure time for shift change briefings, at which time the current status of the rollover was discussed. During their shifts, Cadre members were responsible for the following duties:

- Entering, deconflicting, and reviewing information in the AIM database submitted by the OAs' field representatives. This includes both the status and incident components of the database;

- Coordinating with DOT liaisons at the ICC. Responding to inquiries and issues raised by the ICC;
- When necessary, and following approval channels established by the OA, changing the reporting (green/yellow/red) in the ICC Incident Coordination Reporting System (ICRS);
- Consulting with other CMC Cadre when events involve or could impact more than one OA;
- Preparing situation reports on a periodic basis; and
- Participating in verbal briefings for the Secretary, Crisis Manager, or other parties, at the direction of the Operations Chief.

At the completion of the shift, the watchstander did not leave the CMC until his or her replacement had arrived and been briefed. Selected members of the CMC cadre also completed "shift-change" forms prior to leaving which were used to augment the AIM documentation of current conditions, summarize remedial action on outstanding incidents/events, and capture general comments and remarks.

The cadre continued to serve in the CMC until the Secretary, the Chief of Staff, or the Crisis Manager terminated their involvement in the CMC at the completion of the ongoing event. When released, the cadre members notified their Emergency Coordinator that their services in the CMC had been terminated for the Y2K activation.

#### **D. Reports**

During the activation period several reports were created by the CMC that detailed the operational status of the nation's transportation systems. The major internal report for the Department was the Situation Report (Sitrep) which was generated in the AIM software system and visible on the Internet. Situation reports were generated based on a pre-defined schedule that was outlined in the Conops and then modified as the event progressed. The Department's Sitreps contained summarized data regarding the status of all of the operating administrations. Sitreps were created by the Deputy Operations Chief with inputs from all of the modes in the form of Modal Sitreps which were also created in the AIM system. Modal Sitreps were required to be completed 1 hour prior to the delivery time of the Department's Sitrep to allow the Deputy Operations Chief ample time to assimilate the information. Once completed, the Site rep was distributed in hard copy to the Secretary, Deputy Secretary and Administrators. Copies were also provided to the ICC. Additionally, anyone who had access to the AIM system via the Internet could view the updated information. An example of a Sitrep is included in Appendix D of this document.

Information used to create the Department's Sitreps was also used to create the Department's entries into the ICC's ICRS system. As information developed and situations changed, the Department was required to provide this information to the ICC. At the CMC the Deputy Operations Chief had access to the Internet-based ICRS system and would incorporate new information as it was received in the CMC. Once completed,



the ICRS reports were printed in hard copy and distributed to the Cadre. Sample ICRS reports are available in Appendix E of this document.

In addition to these expected reports, there were several requests for additional reports during the activation period. The ICC frequently sent information requests to the CMC to create talking points for use by John Koskinen, the Secretary, or other senior officials in press briefings. These talking points would be verified by the appropriate Cadre member and edited by the Public Affairs representative prior to being used at the ICC. Other reports that were requested included a discussion of likely events in the transportation sector if Y2K remediation efforts had not been completed and a detailed status report of the operation of the transportation system on the first working day of the Year 2000.

#### **E. Interaction with the ICC**

The DOT Desk Officers at the ICC served as the conduit for information from DOT to other departments and agencies represented at the ICC, and from them back to DOT. The DOT representatives at the ICC studied the information in the AIM system and the ICRS to assure consistency and accuracy. They did not make entries into either system as all transportation-related entries for both systems were made in the CMC. ICC watchstanders entered data summaries into the DSS software at the ICC. They also monitored news reports received at the ICC, and forwarded them, as appropriate, to the Public Affairs desk at the CMC.

DOT watchstanders at the ICC also forwarded information requests from the Joint Information Office (JIC) at the ICC to the Public Affairs representative at the CMC in order to create talking points to be used by John Koskinen and other senior officials in media briefs. Examples of information requests from the ICC during activation included:

- Listing of pre-planned closures or disruptions in service at airports, seaports, transit companies, railroads, or highway systems
- Information on transportation status for bullet points used in briefings
- Clarify/confirm transportation-related information reported through media.
- Estimation on nature and extent of Y2K problems if no preparations

## VII. Summary of Impact on Transportation

By in large, the Nation's transportation systems functioned normally over the Year 2000 transition. The Nation's air traffic control system, maritime search and rescue system, GPS, highways, railroads, marine ports, and transit systems all reported normal operations, with no major Y2K or other problems identified. Additionally, no significant incidents or failures were reported for the Department of Transportation's mission-critical systems, on-line systems, or facilities and infrastructure. There was also no indication of any information systems security breaches. Any minor incidents that were identified were noted quickly and corrected within minutes of discovery. Overall, Y2K caused no significant effect on system operations and no danger to public safety in the transportation sector. Due to their diligent efforts, the Department was able to achieve its primary goal – to maintain public confidence.

While the overall impact of Y2K on transportation systems was negligible, several minor problems affecting transportation systems were reported to the CMC over the Y2K period. None of the reported problems significantly affected operations or impacted transportation safety. Reports received by the CMC included:

- A cargo discharge monitoring computer at a Port of Long Beach, California terminal went off line when activated on January 2<sup>nd</sup> to transfer cargo. The computer support team got the system back on line for normal operations within two hours. Reasons for the outage were not know at the time of the report.
- The FAA Low-level Windshear Alert (LLWAS) systems failed at Tampa, Denver, Atlanta, Orlando, Chicago O'Hare, and St. Louis during the rollover. The systems displayed an error message. Air Transportation system specialists at each site rebooted LLWAS computers to clear the error, and the last system was in normal operation within two hours. Impact on operations was minimal. FAA believed the failures could have been Y2K-related.
- Low-level Wind shear Alert systems at Toledo, Lansing, Charleston, WV and Moline displayed an erroneous date on a receiver that takes in a highly precise time signal. System operations were not affected. The LLWAS installations at these sites are of a different type than those at the airports in the first instance. FAA believed the failures could have been Y2K-related.
- The clocks for the Automated Radar Terminal System (ARTS) IIE at Peoria, IL stopped prior to the rollover, however, the system continued to operate normally. Specialists on-site reset the system to the correct time.
- Kavouras Graphic Weather Display Systems at flight service stations in 16 locations around the country failed approximately ten minutes after the rollover. Data supplied to automated flight service stations did not update properly. Specialists discovered the system sent data bearing the date "2010," resulting in rejection of National Weather Service data and incorrect updates of weather data in the system. Contractors who maintain the system reloaded the software from a

central site, and service was restored in about ten minutes. The system had been certified Y2K-compliant in mid-1998, but FAA believed this to be a probable Y2K-related event.

- An automatic backup to the central computer complex at the Cleveland Air Route Traffic Control Center failed to activate after the date change. Operations were not affected. Specialists believed the cause of the to be the failure of an executive program for backing up data tapes. Manual backup was implemented and service was restored in about 45 minutes.
- The Weather Message Switching Center Replacement in Atlanta, GA, stopped recognizing and processing certain kinds of Notices to Airmen (NOTAMS) due to a software problem involving a failure to recognize years ending in "0" in the NOTAM time and date code. FAA renamed and rerouted the notices through alternate computer paths while it developed a repair for the software problem. Technicians installed a software patch to fix the problem on January 2nd. FAA believes problem could have been Y2K-related
- Power Conditioning System Data terminal equipment at Rochester, NY, Greensboro, NC, Birmingham, AL and Memphis, TN displayed the date "1900" on rollover.
- On January 3<sup>rd</sup>, the AP wire reported the main computer at the air traffic control center in Nashua, NH went down around 7 p.m. FAA confirmed this was not a Y2K related event. The cause of the problem was a disk drive failure, which was immediately restarted. The center switched to an alternative procedure, and operations were not affected. The problem was corrected by 9:40 p.m. Temporary outages such as this are not uncommon in normal day to day air center operations.
- On January 3<sup>rd</sup>, the Coast Guard learned that a Vessel Monitoring System (VMS) used for Coast Guard and National Marine Fisheries Service (NMFS) law enforcement purposes to locate fishing vessels in the Atlantic was inoperative since January 1st. The system was a prototype system and was brought back on-line soon after notification of the problem.

Over the course of the activation period the CMC prepared and disseminated 15 Summary Situation Reports based on information received in 127 reports from the operating administrations at both headquarters and in the field. The Deputy Operations Chief also prepared and disseminated 67 Status Reports created for the ICRS system. In addition to the reports there were multiple visits from the Secretary, deputy secretary, and several Modal Administrators to observe the status of events in the CMC. The FEMA Director, James Lee Witt, and Congressional Staff also conducted additional visits.

During the Y2K rollover the Department demonstrated a high level of coordination with other government organizations. A representative from DOD was

present in the CMC providing connectivity to the DOD Operations Centers. The Department of State provided the CMC access to Weathervane Reports from Embassies and connectivity to the DOS Operations Center. With FEMA, OET participated in daily videoconferences with States and staffed the ESF#1 position at FEMA Operations Center in Washington, D.C. DOT staffed 6 positions at the ICC including 4 transportation sector specialists, a public affairs representative, and a USCG liaison to the EPA. Additionally, OET maintained on-line connectivity to Transport Canada and an on-site representative at the NATO Headquarters Operations Center.

Overall, the Y2K activation resulted in unprecedented support for the CMC from all the operating administrations and the Department's senior leadership. The activation also showed unprecedented cooperation with non-traditional partners such as US TRANSCOM, Transport Canada and other European transportation representatives. During the activation period, all modes collected information from regional and field data sources to confirm normal operations and establish that the nation's transportation system successfully transitioned through the Y2K rollover period and continued to function normally. In addition, the CMC successfully supported the ICC information needs and promoted a "One DOT" presence.

## **VIII. After Action Efforts**

OET sponsored several after action efforts lead by both headquarters and non-DOT individuals, to help evaluate and assimilate the lessons learned from the Y2K experience. OET created its own after action summary report that will be compiled as part of the overall Department-wide after action report on Y2K.

OET also worked closely with several prominent disaster sociologists, Kathleen Tierney, from the Disaster Research Center at the University of Delaware and John Harrald, from George Washington University to create an additional third-party report. This report was designed to evaluate the Department's response to the Y2K event with specific focus on how momentum for disaster preparedness can be maintained a progress institutionalized. The professors and their research associates observed the CMC during activation and also conducted de-brief session after the activation with some key members of the Cadre. This evaluation is expected to be completed and the report made available by Spring 2000.

## **IX. Reflections**

The Y2K rollover event was a "once in a millennium" opportunity for USDOT to prepare for, test, and demonstrate its ability to marshal resources, personnel, systems, and commitment around an event that offered no second chance. Over the course of preparations, attitudes ranged from indifference to interest, and from concern to panic. The Department's thoughtful, rational approach was predicated on the idea that the best

solutions require broad participation, accurate information, careful planning, useable tools, adequate training and testing, and extensive coordination and communication.

From the outset, the Department, under the leadership of the Secretary and Deputy Secretary, gave Y2K highest priority. With the formation of the OAT and its various subgroups, the Department established broad participation in and ownership of the Y2K problems and issues. By assigning lead responsibility to RSPA/OET, the Department recognized Y2K as a potential transportation emergency of national proportions and designated its lead response organization as coordinator of the Department's response. OET, in turn, acquired or developed reporting systems, engaged modal representatives, initiated planning exercises, and promoted interagency coordination efforts designed to surface and resolve monitoring and reporting issues well ahead of this unusual event. Each mode accepted responsibility for establishing new or enhancing existing lines of communication and reporting systems to ensure accurate and timely information about transportation systems or functions under their control or the control of transportation partners in the public and private sector.

The Department's response to Y2K could be summarized in the following way:

- Unprecedented support for the CMC by all modes and DOT senior leadership
- Unprecedented cooperation with US TRANSCOM, Transport Canada and European partners
- All modes collected information from regional and field data sources to confirm normal operations - the nations' transportation system successfully transitioned through the Y2K rollover period and continues to function normally
- No major incidents or failures reported for the Department's mission-critical systems, on-line systems, and HQ or field infrastructure – small number of minor system failures with no significant impact on operations and no impact on public safety – no information systems security breaches reported
- The CMC successfully supported the ICC information needs and promoted a "One DOT" presence

This important experience gives USDOT a stronger foundation for building, protecting, and, in some cases, operating a transportation system that is critical to the nation's health and safety and its economic, physical, and social well-being.

**Appendix A:**  
**Information Flow Diagrams**

**Appendix B:**  
**Crisis Management Center Fact Sheet**

**Appendix C:**  
**Transportation Baseline Data**



**Appendix D:**  
**AIM Situation Report**

**Appendix E:**  
**ICRS Report**

**Appendix F:**  
**Transportation Impact Summary Report**

**Appendix G:**  
**Y2K Activation Staff**