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HEARING

BEFORE THE

SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

ON

PREPAREDNESS NOT ONLY WITH RESPECT TO AVIATION, BUT ALSO MARITIME

SEPTEMBER 30, 1999

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SPECIAL COMMITTEE ON THE
YEAR 2000 TECHNOLOGY PROBLEM

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WILL Y2K SNARL GLOBAL TRANSPORTATION?

THURSDAY, SEPTEMBER 30, 1999

U.S. SENATE,
SPECIAL COMMITTEE ON THE YEAR 2000
TECHNOLOGY PROBLEM,
Washington, DC.

The Committee met, pursuant to notice, at 9:43 a.m., in room 192, Dirksen Senate Office Building, Hon. Robert F. Bennett (chairman of the committee), presiding.

Present: Senators Bennett and Dodd.

OPENING STATEMENT OF HON. ROBERT F. BENNETT, A U.S. SENATOR FROM UTAH, CHAIRMAN, SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM

Chairman BENNETT. The committee will come to order.

I apologize to the witnesses and to those observing the committee for our tardy start. We had an emergency conference called by the Republican leader, the Majority Leader, and I have been attending that. And I am told that we have a series of roll call votes this morning.

One of the frustrations of working in the Senate is that sometimes the Senate does not pay attention to your schedule and insists on doing its own business, in addition to the committee business. So we will try to work around that. I apologize to the witnesses. We have a number of witnesses who have come here from great distance, from out of the country, and we're very grateful to them for being here and want to apologize for any inconveniences that be caused by the insistence on Senate votes.

In the interest of time, I will forego my formal opening statement and have it printed in the record. I will make this kind of introduction.

Of all the discussions relating to Y2K and Y2K interruptions, potential interruptions, none has been more persistent or come up more often than the question of travel. As Senator Dodd and I said quite facetiously, but with a tinge of seriousness, fairly early on in this process, the three places you don't want to be on New Year's Eve are in an elevator, an airplane, or a hospital.

I am now very comfortable about elevators. I am now very comfortable about hospitals that are connected with large suburban chains—I'm a little nervous about inner city hospitals or rural hospitals—and I now tell people I will be happy to fly on an airline if it is a responsible airline and they are willing to put the plane in the sky, that they understand their risks as much as I do.

While proportionately this is not true, in the aggregate they have more to lose than I do. So if they're willing to take that risk, I would be willing to fly with them.

Now, there are some international airlines that have announced they will not have an airplane in the sky over that weekend, unless they change their plans between now and then. I think that's an indication of the seriousness with which they take this.

There are some countries that have said they're going to solve the problem by insisting that all of their airline executives be flying that day, and I would just as soon not fly on those planes, either. But in a properly certificated international carrier, that has checked out not only the air traffic control system that it will interact with, but also the terminals from which it will take off and land, as well as its own equipment, who is willing to take the risks, I am now willing to fly. I have no plans, I assure you. I'm going to be in Salt Lake City.

Nonetheless, I think we ought to make it clear that we have made tremendous strides in aviation, and Senator Dodd and I are now telling people that aviation, in most of the world, will be safe.

So we're going to discuss preparedness not only with respect to aviation, but also maritime. We welcome our witnesses here today.

[The prepared statement of Chairman Bennett can be found in the appendix.]

Chairman BENNETT. Senator Dodd, I understand we've got some votes starting around 10 o'clock.

Vice Chairman DODD. Right.

Chairman BENNETT. I think maybe we ought to do the "tag team" thing, where one of us votes early and then the other votes late, whatever, to try to keep this going, if you can be here most of the morning.

Vice Chairman DODD. I would be happy to do that as well and accommodate the chairman.

We've got a hearing on Russia in the Foreign Relations Committee, and I wanted to participate to some degree. But we'll try and work around that added dimension. That's just a couple of floors upstairs, so it shouldn't be too difficult.

Chairman BENNETT. OK, good. You're up.

STATEMENT OF HON. CHRISTOPHER J. DODD, A U.S. SENATOR FROM CONNECTICUT, VICE CHAIRMAN, SPECIAL COMMITTEE ON THE YEAR 2000 TECHNOLOGY PROBLEM

Vice Chairman DODD. Thank you, Mr. Chairman. This is a very important and worthwhile hearing. I heard your comments as I came in the door and I certainly subscribe to those sentiments and opinions.

The first question that probably Senator Bennett and I get asked by groups in our respective States around the country, if they can think of one issue that comes to mind, it is air travel. Both of us, and I think others who have been involved and paid attention to this issue, have indicated our conclusion that, based on everything we've seen, the safety of air travel around the millennium dates in this country certainly is nothing for anyone to be concerned about. The airlines themselves are very much aware and conscious of this issue and are monitoring it very, very carefully. Even international

travel, you will not have to be deeply concerned about picking a carrier that's willing to go someplace that hasn't made a determination that this is going to be perfectly safe.

So, on that issue alone, I agree entirely with the Chairman's comments. We will continue to monitor and watch it and make sure that those statements are borne out by even better information as we get closer to the millennium dates.

The airline and travel industries have gone to great lengths in my view to ensure that travel on the air, sea and land is going to be safe. There continues to be some genuine Y2K-related problems in foreign countries that I suggested.

Recently, the State Department prepared a detailed travel advisory characterizing the level of safety for 194 countries. Each country has dealt with the approach of the new millennium in a different way and will carry in Y2K readiness come January 1. The State Department's public advisories indicate that certain countries will be much safer than others. The United States, Canada, England and Australia are expected to fare very well during and after the date change occurs.

Other countries, such as India, China and Russia may be more susceptible to Y2K problems. Again, we've talked about these countries in the context of other issues, so it shouldn't come as any great surprise, when there are shortcomings in energy or telecommunications, it shouldn't be a great surprise to discover that there may be some shortcomings in transportation. In fact, a number of Asian-based airlines are drawing up plans for alternative routes to Europe in order to avoid flying over India, for instance, during that period of time. It seems that India's own Air Traffic Controllers' guild is worried about the Y2K readiness status in its own country.

When the State Department issues an advisory for an entire area of the world, factors such as the continuing availability of medical services, telecommunications, and utilities are equally important to travel as actual transportation systems. Therefore, just because planes will not fall out of the sky and ships are not going to sink doesn't mean necessarily that all is going to go well. We must look at the picture as a whole before making a decision about where to go during this date transition.

Recently, warnings have circulated within Japan and Great Britain about the risks involved with traveling during Y2K. In fact, the British Airline Pilots Association, a union with some 7,000 members, stated this past July that they will not fly to areas they regard as unsafe. This means that pilots must be trained and briefed on flying alternative routes, given that some skies are potentially not as friendly as others.

Indeed, the Department of Transportation's Inspector General tells us that 34 of 185 nations have not yet responded to the International Civil Aviation Organization's request for information. We will want to explore that with you here today. Approximately one million passengers flew between these 34 countries and the United States last year.

An interagency committee, made up of the Department of Transportation, Defense and State, reviewing the ICAO information about the 89 countries that account for 97 percent of U.S. inter-

national passengers, has determined that there is insufficient information available for assessing the Y2K readiness of 28 of the countries.

And even in this country, while again we feel pretty strong about where we are, almost 2,000 of the 3,300 air carriers surveyed by the FAA did not respond to the FAA's survey. All were smaller carriers, I might point out. But nonetheless, with less than 100 days to go, in my view, any carrier, I don't care how small or big, that didn't respond to these things, there ought to be immediate, direct contact with them as to why that hasn't occurred. And if it goes on much longer, I would get warnings that they're not going to fly. I want to hear what you're prepared to tell those small airlines today if you don't get answers back from them.

Despite this last statistic, the United States is more prepared than any other country in the world, as the Chairman has indicated. Problems in this country are more likely to create inconveniences rather than safety issues. A major concern of the Federal Highway Administration is how ready State and local governments' traffic management systems, traffic signal systems, and other intelligent transportation systems are that make road travel convenient and delay-free.

Mr. Chairman, I was in Stamford, CN a week ago visiting the corporate headquarters of Champion, International, which I know you're familiar with. During the lunch on the 13th floor, all the lights went out. We thought it was just in the building and it turned out that a construction company in Stamford had gone through the major cable that provided all the electrical power for downtown, with all the traffic lights and everything shut down.

I was leaving that meeting to have a press conference with the mayor of Stamford, and the fire department, the police department, about Stamford's Y2K readiness in city hall, what they had done in conjunction with the local newspaper. Actually, we had a great crowd, obviously, because everyone was out of the buildings.

It made the point that while this was not an anticipated event—we didn't orchestrate it—you got a good idea of what it could be like when traffic signals and police officers had to rush into intersections and move traffic around. So it's more than just air travel, as the Chairman has suggested, and we want to talk about those issues as well. It's the train systems, mass transit systems, all matters of concern to us, and hopefully we'll get into some of that with you today.

Again, I want to congratulate the Chairman for hosting this important hearing, and to examine some of these issues that are critically important to consumers in this country and abroad.

[The prepared statement of Vice Chairman Dodd can be found in the appendix.]

Chairman BENNETT. Thank you.

I would want to make one additional comment that was in my prepared statement, but I think it's important for those who are following this by television.

Here is a picture that looks very prosaic and unimpressive of a ship. That is the Susan Maersk, a container ship. It is the largest to call in an American port, 1,138 feet long, and it transports the equivalent of 6,600 20-foot trainers. It doesn't look like the great

majestic Man of War of the Yankee Clipper days, but as bulky and awkward as it looks, it is an enormously efficient means of transporting goods across water.

I am stunned to realize and report to you that it has a crew of 15. That demonstrates how dependent we are on computers in today's world. The ship, we're assured, is Y2K compliant, but it's just an illustration of how serious this can be in international commerce if it's not under control.

Vice Chairman DODD. I'll tell you, I sail a lot, as you know, in New England waters. I'll tell you something. If you're out sailing and it's a little hazy and misty—and I've had this occur—and all of a sudden as the haze lifts and the mist and the fog pull up, and on your horizon is one of these container ships, you are convinced you're directly off course and you're sailing into a city, they are so imposing to see on the water.

Chairman BENNETT. Very good.

With that, at 92 days, 14 hours, 1 minute and fifty seconds, Connecticut time, prior to Y2K, we welcome our witnesses.

Our first panel will be from the Department of Transportation, the Honorable Mortimer Downey, who is the Deputy Secretary and a frequent witness to this committee, a great friend of this committee. We welcome you, sir, and congratulate you on your diligence here.

He is accompanied by the Honorable Kenneth Mead, who is the Inspector General of the Department of Transportation, and likewise, General Mead, the work that's been done in DOT has been truly heroic to get us to the point where we're all feeling as good as we are.

With that, we welcome you as witnesses. Secretary Downey, we will hear from you first.

STATEMENT OF MORTIMER DOWNEY, DEPUTY SECRETARY, U.S. DEPARTMENT OF TRANSPORTATION

Mr. DOWNEY. Thank you, Mr. Chairman, Vice Chairman Dodd, for this chance to report on the Department of Transportation's progress and accomplishments.

The President has made addressing the year 2000 problem a top priority for the administration, and I am proud to say that as a result of concerted effort, all 609 mission-critical systems of DOT are fully 100 percent Y2K ready and have been verified as such.

Over the next 92 days, we will continue to test, we'll continue to monitor these systems, to keep them compliant. But considering where we stood with this complex task a year ago, or 2 years ago, I think our readiness is a tribute to extraordinary efforts within the Department. In addition to the departmental efforts, we have worked with the transportation industry to assure a safe transition.

Let me briefly summarize the status of some of the transportation sectors. Federal Highway has conducted extensive outreach to State and local officials, through conferences, through regional meetings, through their day-to-day work. We continue to have confidence about the efforts of larger organizations to manage traffic control and related systems. We're still working with some smaller

communities. We have enlisted State and local participation to be part of the monitoring and reporting system during the transition.

The major automobile manufacturers have reported to our National Highway Traffic Safety Administration that they expect to Y2K related problems in their vehicles.

The Federal Transit Administration has required a Y2K status report from all of its grant recipients, and as of September 21, all but four of the 593 transit agencies in the United States said they are compliant, or have contingency plans. The four remaining are in Puerto Rico and we're working with them. FTA is also requiring operational testing of these measures, including the contingency plans.

The Federal Railroad Administration has hired a consulting firm for further review and analysis of the Y2K status of the major management systems of the nation's four major freight railroads. Having seen computer problems with their mergers, we wanted to be sure that their systems will work and that we don't get into a backup and congestion problem. We'll have that precautionary evaluation result ready early next month. The safety issues on the railroads we believe are settled, with grade crossings and switches not showing any problems.

Administrator Garvey and Admiral Naccara will provide you with information on aviation and maritime readiness, and it is generally good, although there is more work to be done in both areas. I will stay to hear what they have to say.

Let me now address your questions about our plans to provide information to the public about Y2K status in international airline travel. Our interagency evaluation process has reviewed information on the Y2K readiness of foreign civil aviation entities. Individual country information is now available as of this morning, at a DOT website. It's www.fly2K.dot.gov, and it includes all that we know about air traffic control, carriers serving U.S. routes, and airports handling international flights. Today there are 90 countries' information represented on the website, and we'll have some more in a few weeks.

At this point, the FAA does not anticipate making specific recommendations as to whether or not individuals should travel, but we have that information available so that they can make their judgments.

Safety is the top priority, always, for all of us. The FAA has found that Y2K problems in civil aviation, to the extent they may develop, appear more likely to cause disruptions of service than a serious safety risk. I believe you will hear the same, and you both mentioned the testimony from the International Air Transport Association. Their on-the-ground surveys have found the same. Safety appears to be in good condition. If not, those airlines will not operate, but one of the issues that might develop would be congestion.

Should a serious safety consideration arise, or appear to be arising, involving international aviation, you can be assured the U.S. Government will take appropriate steps.

At this point we can say, with some confidence, that eight of the top 20 locations that have direct service from the U.S., including the top three—Canada, the United Kingdom and Japan—are very likely to be ready. The rest of the top destinations have strong pro-

grams underway, but we do not have enough information to gauge their rate of progress.

We are still working to get more information about other places that either did not respond to the international survey, or had gaps in their information, and we will make that available. But in those cases, travelers should exercise prudence in making travel plans. We have been in close contact with State on these issues, and the Department of Defense has been part of the international evaluation.

Jumping forward to our information dissemination on the millennium weekends, the DOT headquarters crisis management center will be linked directly to the interagency coordination center. We will have liaisons at DOD and State.

As to your question on actions the Congress or others should take to address Y2K issues, I encourage your continued efforts in promoting informed awareness of the Y2K issue as you have done to date.

In conclusion, we are strongly committed to ensuring that all DOT systems will operate properly. We recognize and will discharge our responsibility to the public and the need to continue our efforts to reach out to industry and to the many public and private entities that operate the transportation system.

This concludes my testimony. We have a longer written statement that we provided for the record, and I would be happy to answer any questions.

[The prepared statement of Mr. Downey can be found in the appendix.]

Senator DODD [presiding.] Thank you, Mr. Secretary.

Mr. MEAD.

STATEMENT OF KENNETH M. MEAD, INSPECTOR GENERAL, U.S. DEPARTMENT OF TRANSPORTATION

Mr. MEAD. Thank you, Senator Dodd.

I can relate to your experience sailing. I'm from Connecticut as well, and I can tell you that sailing outside the Thames River, in the New London area, you come upon submarines there. It's an equally frightening experience.

I'm going to summarize my testimony and cover three subjects: departmental readiness, domestic transportation industry readiness, and international aviation and maritime readiness.

First, departmental readiness. Just over a year ago, many of us had serious concerns about the Department, especially FAA, and its Y2K progress. Our office has worked closely with senior departmental officials, Secretary Slater, Deputy Secretary Downey, FAA Administrator Garvey, and Commandant Loy on the Y2K program.

We could not have asked for more support, Senator Dodd. It was an extremely constructive working relationship. I think this committee's oversight, as well as that of the House, and hard work by departmental employees has resulted in a situation where we can report an extremely positive situation.

Two cautionary notes about readiness in the Department. In safeguarding systems that have already been made compliant, by making changes or upgrades to them, we don't want to make them noncompliant.

Second, business and contingency plans need to be finalized with proper training and testing and coordination with labor unions. At FAA, the controllers' union is participating. To date, the maintenance technicians have not participated, although they have been invited to do so.

Moving to domestic-industry readiness, the Department relies heavily on self-reported data as a key measure of industry readiness. The responses to departmental surveys have been mixed, ranging from 36 percent in marine, and 41 percent for air carriers—although all large air carriers have responded—to over 90 percent for transit.

Based on survey results, our sense is that large domestic providers in all transportation modes are making good progress and they ought to be ready in time. We are disappointed, though, at the lack of information concerning the readiness of smaller providers.

An important point here is that getting information from nonresponding organizations and filling the voids is going to remain a major challenge for the remainder of the year. However, it can be done, as Mr. Koskinen mentioned yesterday.

Let me overview the situation by mode. In aviation, all larger carriers responded to FAA's survey, and 1,900 smaller carriers did not respond. This is just unacceptable. At this late hour, the FAA is pursuing these nonresponding carriers, including a planned action to publish their names after November 15.

Frankly, Senator, I agree with you. If they want to fly in this country, they can at least respond to a questionnaire about whether they're Y2K compliant.

Vice Chairman DODD. This was a questionnaire from the FAA.

Mr. MEAD. Yes, sir.

Vice Chairman DODD. It wasn't from some congressional office or a newspaper making inquiry. These are carriers that have already been approved by the FAA to fly, and you're the regulatory body that gives them that permission to carry passengers, isn't that correct?

Mr. MEAD. Yes, sir. And I think that's an important point for another reason, too. You're going to hear today about international readiness and how we want more information from these foreign countries. Certainly we have to have our own house clean if we're going to be asking foreign countries to come forward with statements about their readiness.

Vice Chairman DODD. Let me just tell you, we're maybe only in session another 3 weeks, but I will use the forum here to say that if within the week you haven't heard back from these people, I will offer a piece of legislation on a continuing resolution that prohibits any airline that has not provided information to the FAA about its readiness, that will not allow them to fly after December 31 in this country. I hope they hear that. But I'm going to draft a bill today, have it ready, and if they don't respond to the FAA within a week, then I'm going to introduce the bill. Anyone who has not responded by the middle of November—As far as I'm concerned, I'm worried about that point, whether or not the information would be accurate. So let that be a service and notice here today, that they're not going to be flying airplanes in this country come December 31 if

they can't respond to the Federal regulatory body responsible for passenger safety.

Mr. MEAD. Yes, sir.

In maritime, the Coast Guard has received information from 43 percent of vessels visiting U.S. ports. I would like to commend the Coast Guard here because that response rate was not sufficient, and the Coast Guard has demonstrated that there will be consequences for failure to respond. In fact, in early September, the Coast Guard stopped 175 ship movements due to lack of Y2K-readiness.

In the surface areas, all transit operators, except four which are in Puerto Rico, responded. They were required to respond and did so.

For freight railroad companies, the seven largest companies reported they will be ready by today. We still need information from a large number of regional and local railroad companies.

I would like to move to international. As of today, information about some foreign countries' readiness is still sketchy or too incomplete for to allow assessment, although the picture has been improving, and clearly so in the last several weeks.

Just as an illustration, we testified a couple of weeks ago—and at that point 54 of 185 member countries had not even responded. When we wrote our testimony, it was down to 34, and today it's down to 30——

Mr. DOWNEY. Twenty-nine.

Mr. MEAD. Twenty-nine. So I think these hearings and the efforts of the Department are beginning to bear fruit in that area.

Vice Chairman DODD. We'll offer a similar admonition to international carriers who want to fly to the United States.

Mr. MEAD. Yes, sir.

FAA plans to impose flight restrictions only if there's a known, verifiable problem. But significant uncertainties continue to exist, where we simply don't know enough to make a judgment.

I'm not persuaded that approach is going to be sufficient, because you just won't be able to say, "well, we know there's a problem" if you have incomplete information. So I think it's becoming exponentially important that we get a complete package of information. This is not just a case of not having information from countries where people won't go at that time of year. Some of the countries where the information is incomplete are, in fact, places where people will go.

With regard to international maritime readiness, there's a lack of publicly available international information. I would recommend you get a classified briefing. The Admiral who will testify on this later will offer you one, and I think you'll find that quite useful Thank you, sir.

[The prepared statement of Mr. Mead can be found in the appendix.]

Chairman BENNETT [presiding.] Thank you.

I apologize for having missed your formal testimony, but having read your testimony, we do have some questions that we will like to ask of you.

I want to start by congratulating the Department once again on the tremendous work that has been done. If you go back and look

at statements made by this committee, by me, Senator Dodd, a year or year-and-a-half ago, we expressed great, great concern. The fact that we're all feeling as good as we are right now is a tribute to the work that's been done.

Of course, the ultimate responsibility is the Secretaries, and we acknowledge that and pay tribute to the Secretary, because as I've said repeatedly in this format, this is a CEO problem, not a CIO problem. If the man at the top doesn't take it seriously, it doesn't get done.

Secretary Downey, we recognize that you have been the one within the Department to whom the Secretary has delegated this responsibility. We extend this congratulation to you.

It's clear from your testimony that you're now a little more concerned with rail than you are with air. Aviation is the one that everybody thinks about because we personally fly now, but from the standpoint of the economy, if the rail system were to shut down, the impact on goods throughout the country would be enormous.

Can we talk a little bit more specifically about rail and where you think the rail situation may be, either one of you?

Mr. DOWNEY. We will know better in a week or two when our review is completed of the four major freight railroads. I hope we will be able to say things will be fine. We are comfortable now with the safety issue. Switches, grade crossings and the like will operate.

What we had concern about was the experience we all went through with the various mergers, particularly most recently the Conrail transaction, where Norfolk Southern and CSX took over Conrail. We saw again how much the interdependence of the major railroads is driven by their computer systems. There was a small problem in the Norfolk Southern on the day of the takeover. They didn't quite program the computer right and it cascaded throughout the system because freight cars could not be sent to the right destination. Trains could not be made up. This has immediate economic consequences and, when not corrected, could develop into safety consequences.

The railroads, the major freight railroads, assure us that they have been working on these systems and that they will be compliant. But as a precautionary measure, we asked to go in—and they invited us in—to review the progress that's been made. We will have a specific report on that very shortly.

Chairman BENNETT. Thank you.

Mr. MEAD. The only thing I would add is that Amtrak, which is Y2K ready, is reliant on the rail companies outside the northeast corridor, where Amtrak doesn't own the track. The rail companies own the track and the basic infrastructure.

Also, in transit rail, additional work is needed. We had hoped all of them would be compliant now. All of them are reporting they will be compliant in the coming months, but there is still attention needed in transit rail.

Chairman BENNETT. That anticipated my next question, which has to do with transit.

Your recent report said that of the top 30 transit grantees, which account for 75 percent of the ridership, only four were Y2K compli-

ant, with the rest saying they would be. Is that still the latest information you have?

Mr. MEAD. Yes, sir, that's our latest information.

Chairman BENNETT. Of course, the one that immediately comes to mind—and we get this question all the time—what about Metro? Are our staffs going to be able to get to work in January of 2000? Are your staffs going to be able to get to work?

Mr. DOWNEY. Metro is one of those that is not yet compliant but will be there by the end of the year.

One of the things we have reminded the transit operators of is that they will be one of the first public services to be put to a full-scale test over the millennium weekend, in downtown Washington, in downtown Boston, in New York, where thousands, if not hundreds of thousands, of people will be coming to community celebrations—and they're all going to want to get home. And they're going to need to get home on the subways.

So if they hadn't thought that through to this point, we had a meeting at the White House with the major transit operators, and they're now facing up to it. That is a real challenge. They have their contingency plans in place, and they're also working through their compliance and they should be there.

Many of the rail systems will pause service for five or 10 minutes before and after midnight. That's preplanned. People should understand that and plan their trips accordingly. But it's part of their contingency effort.

Chairman BENNETT. What's the purpose of service interruption?

Mr. DOWNEY. In the off chance that something might go wrong in their dispatch system—We saw it the other morning on the Metro, the first time in the 20 years of its history, the computer didn't startup and the trains on the Red Line didn't startup. So rather than take any risks, they just feel 5 minutes out of their schedule, with each train stopping at a station, would be a useful precaution.

Chairman BENNETT. We're going to hear later from the Coast Guard, but do you have any general comment about maritime shipping and the problems—this is not strictly a DOT problem, but it is connected with transportation. I would hope you would have some connection with the folks who do handle it.

The computers at Customs need to handle the paperwork, as container ships like this show up. You don't press hard and make three carbons as you do the paperwork on 6,600 trailers packed on that ship. It's got to be done by computer. That's all part of the international transportation system.

Do you have a sense as to where we are in that?

Mr. DOWNEY. Customs and Immigration have been part of our transportation Y2K task force. They've been working on their systems, which are, incidentally, old and somewhat fragile. But they believe they will be ready.

The maritime side continues to be a bit problematic, in that there are so many different ships, so many different owners, so many different configurations. I think the Coast Guard has done a terrific job of organizing internationally to set a code of good practice in place. All the major port and maritime countries have adopt-

ed that. The IMO usually takes 5 years to do anything, but got this done in less than a year.

As General Mead said, in the 9–9–99 test that we went through, the Coast Guard actually stopped a number of ships and said, "Let's see your Code of Good Practice compliance certificate." When they didn't have it, they were not permitted entry until they could get it. So we know how ships and terminals should be operating, and we are prepared to take action.

The Coast Guard has also scheduled and carried out drills in our major ports, on how to deal with any problems that develop. We also have invited port and maritime officials from around the world to join us on those drills, and then to go back and do them in their countries. But there will be a high state of alert in our ports over the millennium period so the Coast Guard is ready to deal with any eventualities.

Mr. MEAD. The American Association of Port Authorities did a survey of 83 ports, and the response rate was not what you would like to see. There were about 33 responses. So it's quite critical that we get these different transportation entities to respond as to their readiness.

I again would like to endorse the Coast Guard action, in which they actually restricted ship movements to show the consequences of not responding.

Chairman BENNETT. One final question going to the area of vulnerability that has become part of my education with respect to Y2K.

Do you anticipate, or have you seen any signs at all of any malicious attempts, either on the part of hackers who want the thrill, or those who wish this country ill, who want to inflict some kind of damage, to try to break into the air traffic control system, produce a malicious result, perhaps under the guise of a Y2K problems? So that it would be more difficult to trace the source of that attack and cause you to think, "Gee, this is a Y2K failure" when, in fact, it's a terrorist group or someone else that wants to disrupt us?

Have you done anything with respect to that, or seen any signs of that?

Mr. DOWNEY. We're sensitive to that as a potential. We have seen no signs, but FAA and our other entities will be monitoring their systems over that period for any potential intrusions.

We have done some exercises within the Department to be prepared, and that's the kind of a scenario we have thrown on the table, to be sure that people are sensitive to it and ready to respond quickly, and ready to do, in every case, what would restore safety to the system first, and then restore economic performance.

Mr. MEAD. We are aware of one incident, not involving air traffic control. It involved involving a pipeline, which is under the Department's jurisdiction. An individual was allegedly going to blow up a pipeline. It would masquerade as a Y2K problem. The reason he was going to do this was to purchase stock options.

Mr. DOWNEY. Oil futures.

Mr. MEAD. Yes, to get oil futures, and then the pipeline would go up on January 1 and it would look like a Y2K problem. So this is something we all need to be mindful of in all modes.

Chairman BENNETT. The criminal or terrorist mind can be very inventive sometimes, and we need to be equally inventive in protecting ourselves against it.

Senator Dodd, if you have no further questions—or did you not get to ask any?

Vice Chairman DODD. I didn't get any. We were going to recess, but the statements were finished.

Chairman BENNETT. OK, go ahead.

Vice Chairman DODD. I understand you raised a couple of points that I was going to raise, and I will talk with staff about the responses to them. Let me bring up a couple more, if I can.

I think it was you, Mr. Mead, who mentioned that flight restrictions would only be imposed where there was a known, verifiable safety problem. What I'm curious about is when the survey was done by an interagency committee, as I mentioned, assessing foreign nations Y2K readiness, 28 of the 29 countries most frequently visited by the United States have not provided sufficient information to adequately assess their Y2K readiness, 31 percent of those countries.

The question is, is it safe to assume that all the other almost 70 percent did provide sufficient information, and how does the interagency committee plan on evaluating countries with insufficient information, particularly in the statement that it has to be known, verifiable safety problems?

Am I phrasing that properly enough for you to——

Mr. MEAD. Yes, and Mr. Downey will probably want to amplify on my response.

The Department has five categories of readiness that the different countries, based on the assessment of their responses, are plugged into. The first two categories are good categories. The third category is the country says they're not going to be ready. I don't think there are any in that category now. There were last week.

Another category is, "well, progress is being made, but we don't have a sufficient package of information to indicate the complete status of Y2K readiness." A fifth category is there is simply insufficient information available at this time to do any assessment.

There were, as you said, 28 countries—and this is as of September 13—that were in that bottom category, and there were 45 that were in the next-to-the-bottom category, and in the last several weeks that 28 figure has dropped to 18, which is a very good sign.

But still, the awkward situation, it places the——

Vice Chairman DODD. The ten, where did they move to? Did they move to the top category or just one step up?

Mr. DOWNEY. Some moved right to the top category. Others moved up——

Vice Chairman DODD. Right to the top?

Mr. DOWNEY. Yeah.

Mr. MEAD. And I think this places FAA in an awkward situation. Having known, verifiable information of a problem is one thing. But you can't say you have known, verifiable information about a problem if you don't have any information. That's the point of concern that we were raising in our testimony, sir.

Mr. DOWNEY. If I could just add to that, I think you'll hear from the international air carriers on this. If we know that a particular

country—and there are 17 now in this category—is one where we have insufficient information, the airline will still make a judgment as to whether or not they should fly to that country. My understanding is they would appropriately protect themselves, enough fuel to get to another destination, certainty as to when they make the approach to the country, how they would make the landing. This is not unlike what they do on any given day, in terms of landing at foreign destinations. So it is not as if they fly off into a black hole. They fly to a known destination and they may not have all the services available that might normally be available, and they need to be prepared in that circumstance to make a safe and graceful recovery.

Vice Chairman DODD. There are a number of recommendations we may hear from the Federation of Air Line Pilots Association, representing 120,000 pilots in the country. I see here they made about five or six recommendations, and you mentioned one or two of them here.

Do you agree with all of those?

Mr. DOWNEY. I have not seen the five specifically, but in general, the idea of more training and——

Vice Chairman DODD. Increasing flight crew contingency training, do you agree with that?

Mr. DOWNEY. We think that would be a good idea.

Vice Chairman DODD. Refresher training for aircraft collision avoidance systems?

Mr. DOWNEY. That sounds to me like something that's always a good thing to do.

Vice Chairman DODD. I was hoping you would say that.

Aircraft should have an extra 30-minute fuel supply, which you just mentioned.

Mr. DOWNEY. Yes.

Vice Chairman DODD. Noncritical military flights should be curtailed.

Mr. DOWNEY. I would leave that to DOD to react to.

Vice Chairman DODD. An extra pilot should be in the cockpit during this rollover period, how do you feel about that?

Mr. DOWNEY. I think I would defer to FAA on that.

Vice Chairman DODD. I raised earlier—and you weren't in the room, Mr. Chairman—but I was sort of stunned once again. We've been through this with a number of other industries, and the pharmaceutical industry was one back a couple of months ago.

I was rather surprised to learn how many of our airlines have not responded to the surveys requested by the FAA. As suggested, I'm going to draft some legislation and I'm going to give them a little bit of time to respond to these surveys—very quickly, not much. Then I will be prepared to submit legislation which would prohibit any airline that had not submitted information to the FAA about its Y2K status from flying after December 31st.

What I want to get at here is, if you don't get this information quickly—I mean, I can see someone now just saying "Let's fill out the survey and tell them what they need to hear". I want to make sure there's enough time to make an independent assessment as to whether or not the information you're getting is good.

How much time would you need? You get these surveys back, and then I presume someone is going to verify what information you're receiving; is that correct? Do you verify?

Mr. MEAD. They don't directly verify, but the questionnaire that the FAA has prepared, I think it is pretty good. It will take them some time. I would defer to them as to how long it will take. But it's a pretty good questionnaire. You can tell a lot from the answers, and the questions are not so general that you could drive a truck through them.

Vice Chairman DODD. Who is required to sign the survey? Is the CEO of the company required to sign?

Mr. MEAD. I don't know, sir. I would defer to FAA.

Vice Chairman DODD. I would like to know, because for the ones who have not responded, I would like to see the CEO's signature on that. I don't want to see some third or fourth level accountant doing it. I want the boss's name on that.

Mr. DOWNEY. Senator, in our surveys of the public transit agencies, which as I noted we have received 99.9 percent response, that is what we require, the chairman of the agency to give us his or her assurance.

Vice Chairman DODD. You know, I have made the suggest that, if you don't hear back from these people, I'm prepared to try to put something in that would prohibit these guys from flying.

Now, do you disagree with that?

Mr. DOWNEY. No.

Mr. MEAD. I can't speak for FAA or the Department, but speaking for myself, this recommendation was made months ago. FAA chose to proceed with a voluntary survey, rather than an attestation. That was their call. And now, at the 11th hour, they find themselves in a situation in which all the large carriers have responded, but 1,900 or so that haven't.

Vice Chairman DODD. What's the number again that have not responded?

Mr. MEAD. About 1,900, sir.

Vice Chairman DODD. Out of how many?

Mr. MEAD. About three thousand. And these are small carriers, not to give a misleading impression.

Vice Chairman DODD. I understand.

Mr. Downey, do you want to——

Mr. MEAD. No one is required to sign them.

Vice Chairman DODD. What's that?

Mr. MEAD. No one is required to sign the questionnaire, I'm advised.

Vice Chairman DODD. I would want somebody who gets held accountable. I would suggest that, given the timeframe here, I would almost recommend that these be signed, maybe a—I would like the boss to sign those.

Chairman BENNETT. Ask Jane Garvey. She's next.

Vice Chairman DODD. Jane is coming up. All right, we'll ask Jane. So you know the question is coming. [Laughter.]

Ms. GARVEY. I'm worried about the answer, though.

Vice Chairman DODD. Good.

Mr. Downey, I'll ask Ms. Garvey. But I appreciate your answer on this. Again, I obviously have to draft something and have you take a look at it. We'll run the draft piece of legislation by you.

But I would feel irresponsible, knowing what I know, that 1,900 carriers have failed to respond to the agency responsible for regulating them, about whether or not they're Y2K ready. Candidly, frankly, knowing that and not taking some action here would cause this Congress to be held accountable for lacking responsibility on this issue. I don't like doing it, but I don't know how else to get their attention.

What I want to know is, when they send this stuff back, that there's some way to verify to determine they're OK. It makes me nervous. An airline that would not fill out a survey is telling you something. I don't like what I'm hearing on this. An awful lot of Americans fly on these small airlines every day, and——

Mr. MEAD. That approach worked very effectively in transit. The reason we are able to report to you today on the status of all the transit properties in this country is because the Federal Transit Administration said, if you want to continue getting money, you will respond.

Vice Chairman DODD. Yeah. And it worked, didn't it?

Mr. MEAD. They did respond.

Vice Chairman DODD. Just the last thing I would like to do. Mr. Downey, you mentioned DOT's interface with the Y2K Information Center. I wonder if you could briefly describe how the status information will flow among the Department of Transportation, the ICC, and the transportation industry.

For instance, where should a concerned consumer go for Y2K status information? Do they go to DOT, ICC, or some other place to get information as this thing gets closer to the date?

Mr. DOWNEY. As we get closer, we will certainly make information available through our media outlets, including the Web. The ICC will duplicate that. The ICC is not generating any independent information on transportation. We're basically providing it to them. But that gives them a broader picture of electric power, communication, transportation and all of the issues.

But it is a seamless system of information. We have developed computer programs to store it and display it, and as we get closer to that time period, we will make the public aware of how to get it, where to get it, and what it will look like, so that they can make their judgments.

Vice Chairman DODD. Thank you both, very much.

Thank you, Mr. Chairman.

Chairman BENNETT. Thank you.

Mr. DOWNEY. Thank you, Mr. Chairman.

Chairman BENNETT. We appreciate your testimony and all of your work.

Our second panel is the Honorable Jane Garvey, who has been sitting there taking notes, the Administrator of the FAA; Mr. Peter Cooke, who is the Year 2000 Coordinator for British Airways; Mr. David Z. Plavin, who is President of Airports Council for International-North America; Mr. Thomas Windmuller, who is the Y2K Project Director for IATA, the International Air Transport Associa-

tion; and Mr. Edward Smart, Representative to ICAO, for the International Federation of Air Line Pilots Organizations.

We appreciate your being here. You have heard all of the questions and comments up till now, and we look forward to hearing your testimony.

Mr. Windmuller, we'll begin with you. Well, let us begin with Administrator Garvey. She is the "rose amidst the thorns". [Laughter.]

Then we'll start at the end and go down.

Administrator Garvey.

STATEMENT OF HON. JANE F. GARVEY, ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION

Ms. GARVEY. Thank you very much for both the introduction and for allowing us to be here, Mr. Chairman. I appreciate it very much. I am really delighted to be with so many of my colleagues, all of whom we've worked very closely with particularly over the last year.

The Deputy Secretary has reported on the entire Department, but I will just make a brief comment or two about the FAA, if I could.

Let me say, as you have acknowledged—and I appreciate it very much—the last time I appeared before this Committee I promised that the FAA would complete its Y2K readiness by June 30th, and I am delighted to say, as the Deputy Secretary indicated, that we have delivered on that commitment.

Each of our components in which a Y2K fix was required has undergone multiple testing and validation. On April 10th of this past year we conducted an end-to-end testing. During this test, our air traffic control systems were set forward to December 31 and rolled over to January 1, 2000. The testing demonstrated that our operational fixes transitioned flawlessly.

As the Deputy Secretary indicated, the challenge for us now is to maintain the integrity of our Y2K status by making sure that any changes that we make to our systems in the normal course of business are Y2K compliant. We certainly want to stay the course here.

Moreover, we have established a moratorium on changes to the National Airspace System during the critical periods of this transition. That moratorium will be effective from mid-November through very early January, as well as during February—because, you know, we have the leap year issue, so we have a couple of periods where there will be a moratorium on any changes.

In addition, as the Inspector General has mentioned, we have developed a comprehensive business continuity and contingency plan. The plan really builds on our existing contingency plans to specifically address potential disruptions caused by Y2K. The contingency plan has been developed with the participation of our labor workforce. That's been critical from my perspective. Certainly having that at the table with us has been very important and very, very helpful.

That's the status of where we are at the FAA, but we certainly recognize that our efforts do not end at the FAA's doors. What I

would like to do is just briefly outline what we at the FAA have been doing with the industry over the past 18 months or so.

I know that you're going to hear a great deal from David Plavin about our domestic airports. I would only say that we've been monitoring and working very closely with the airports. We are very focused on 20 computer systems on airports that may be used to comply with our regulatory safety requirements, so there are 20 airports system that we really are focused on. Seven of those have a direct impact on safety, things having to do with lighting, things having to do with fire trucks, things of that sort.

We have notified all of our airport operators, our certificated airport operators, that by October 15 they are expected to have those systems Y2K compliant. But I will say we have been very pleased with the kind of relationship and the kind of work we've been able to do with them.

We visited 150 of the top airports, and they account for about 97 percent of all the enplanements. We're very pleased with the progress made in those airports in particular. I'm sure Mr. Plavin will have more to say on that.

With respect to the U.S. aircraft fleet and airlines, the FAA, as the IG and Deputy Secretary have mentioned, has conducted extensive surveys with our certificate holders. Again, I listened very carefully to the comments and the questions that you all raised. We have gotten responses to date, but we are, as you have indicated, concerned about the ones we have not yet heard from.

Just incidentally, our managers and many of our field inspectors are in Washington today. Each one of them is very, very focused on this issue. They are responsible for a certain number of our certificate holders, and they're going to be looking at three issues today: what do we know, what information do we have, what areas are we concerned with, what specific certificate holders have we not heard from or are we concerned about the information, and what are we going to do about it? We are going back to them individually, and quite honestly, Senator, I think the idea of legislation could be very helpful to us.

We have worked with the IG on the November 15 deadline. We are going to tell them categorically that they must get back to us, that we must have that information early in November, so that we can analyze it and know quite clearly on November 15 what the——

Vice Chairman DODD. Just to jump in quickly, what I hear you saying, then—and obviously, you will want to see what we draft, and I would run it by your staff and so forth. But the idea of prohibiting an airline from flying that has not responded to a survey from the FAA is something you would agree with?

Ms. GARVEY. I certainly think that could be very helpful. I will tell you that I continue to remain optimistic, that we will get the information back. But I think there is nothing——

Vice Chairman DODD. But in a timely fashion, I would presume, as well.

Ms. GARVEY. Absolutely.

Vice Chairman DODD. Getting information on December 30——

Ms. GARVEY [continuing]. Will not be helpful. That's right.

The FAA has been working, as you will hear, with the International Civil Aviation Organization in raising the whole issue internationally. I will shift to that, if I could.

We have been very supportive of the efforts of the International Air Transport Association [IATA]. We are promoting the IATA Airports Council International airline-airport business contingency plan, and again, that's very similar to the contingency plans that we have undertaken domestically.

We are also doing, as the Deputy Secretary mentioned, extensive international testing. By December, we will have conducted testing with 23 countries to ensure adequate communication exchanges for those countries with which we have direct interfaces. We already have schedules in place to test both the voice and the data systems in order to validate the connections between our air traffic control systems.

We work very closely with the Departments of Transportation, with Defense and with State, on the interagency working group to review the information, and the Deputy Secretary has spoken about that in some detail. I want to make it clear, as we move forward, should we gain any knowledge at any point that causes us to be concerned about the safe operations of the civil air fleet, we are prepared to act appropriately. If it means issuing Notice to Airmen, we will take that action.

Again, I think that from what we've heard and the work we've done internationally with our colleagues there, I think we are encouraged to date. But I think all of us have said we'll be very vigilant and be prepared to take whatever appropriate actions are necessary.

Let me just summarize, because I know we have a very full panel today and we would like to hear from all of them.

The question you asked in the letter about what Congress can do, I think I speak for all of us at the FAA. We think that we owe Congress a debt of gratitude for keeping this issue very much on the forefront, keeping it very much in the public domain. We appreciate that enormously.

I also want to publicly again thank the Secretary and the Deputy Secretary. I don't think I have met with the Deputy Secretary once in the past year where he hasn't asked about our Y2K efforts. So they are very, very focused on that. And the IG's as well. I think we've had an extraordinarily cooperative relationship with him in working these issues through.

Finally, it is always wonderful to be able to say publicly how much I appreciate the efforts of the men and women of the FAA. To meet that deadline of June 30 was an extraordinary effort. People really worked around the clock to get that done. I am very proud of the agency and proud of the men and women who saw that through.

So we're very pleased with our progress to date, but as we said earlier, we've not overconfident. We will stay vigilant, stay very watchful. We know that we really can't rest until we're well into the year 2000.

With that, I will conclude my testimony. Thank you very much.

Chairman BENNETT. Thank you.

[The prepared statement of Ms. Garvey can be found in the appendix.]

Chairman BENNETT. Mr. Windmuller.

STATEMENT OF THOMAS WINDMULLER, DIRECTOR, IATA YEAR 2000 PROJECT, INTERNATIONAL AIR TRANSPORT ASSOCIATION

Mr. WINDMULLER. Good morning, Mr. Chairman and Mr. Vice Chairman.

I would like to start this morning by thanking this Committee for providing IATA with an opportunity to explain what we, on behalf of the international air transport industry, have been doing to prepare for the year 2000. The international airline community and the civil aviation industry at large have a good story to tell about their work in this field.

Having submitted a written statement to the Committee in advance of today's hearing, I will confine my verbal remarks to a few highlights, first, with respect to airlines and the Year 2000 problem. In 1996 IATA established the Year 2000 Group, a forum in which our 265 member airlines could meet regularly to discuss the Year 2000 preparations in a non-competitive environment. Participants exchange information about problems encountered, solutions identified and best practices established. IATA has also collected information on the readiness of aircraft systems from the major airframe manufacturers, Western and Russian, and made this information available to member airlines, as well as to other airlines participating in our Year 2000 work. IATA has also been in contact with the major computer reservation systems. Since early 1999 they have been accepting reservations for dates after the rollover. At last count our member airlines are expected to spend at $2.3 billion in preparing for the millennium change.

It is with airports and air traffic service providers that IATA has concentrated the bulk of its work. IATA has been tracking their progress in preparing for the millennium transition for the past 15 months. To increase Y2K awareness amongst airports and air traffic service providers around the world, we have distributed over 2,500 industry Y2K tool kits in eight different languages, a copy of which I have brought with me here today. We have also conducted a series of 26 training seminars that attracted over 2,000 participants, and I am very pleased to report that we do not believe there is any major international airport or provider of air traffic services in the world that is not aware of the Year 2000 problem and its potential impact on the air transport industry. We have carried out visits to the overwhelming majority of the world's air traffic service providers and to the top 71 airports outside of North America. Individual airlines, working on behalf of the entire airline industry, have conducted independent visits to several hundred more airports. As of last week we had obtained data covering more than 175 ATS sites around the world, and from over 1,200 airports.

Based upon this data, we are generally satisfied with the progress we are seeing amongst all sectors of the air transport industry. Some 326 airports, for example, report that they have completed their Y2K preparations on 100 percent of all systems. Several hundred more report they are nearing completion on 100 per-

cent of all systems. However, IATA will continue, through the end of the year, to track the progress of those entities that have not yet completed their work.

IATA has also played a proactive in helping states, ATS providers and airports to adapt their existing business continuity and contingency plans to a Y2K environment. Contingency planning is something the air transport industry undertakes every day. The aviation industry is committed to providing safe, dependable service to our passengers and shippers. Therefore, airlines, airports and ATS providers always have contingency plans available to cover almost every conceivable scenario. We implement these plans regularly due to weather problems, labor strife and other disruptive events, and we are very accustomed to working with these plans, often with no discernible impact on the service we provide.

During the rollover ICAO and IATA personnel will jointly be manning a network of regional coordination units in every region of the world. These centers will track developments across the globe as each time zone flips over from December 31st to January 1st.

In summary, Mr. Chairman, IATA is confident that the international civil aviation industry has solutions to this challenge in hand. The confidence is based on the good progress we are seeing amongst our industry partners on the existence of robust contingency plans, and on the real-time tracking of developments that will take place during the rollover period. Our confidence notwithstanding, we are not complacent. We will continue and even accelerate our work on all fronts over the remaining 92 days of 1999 and during the first quarter of 2000.

IATA is also confident that sufficient air space capacity will be available to enable those airlines that choose to do so to operate their normal year-end schedules, even with the implementation of contingency plans that have been agreed by states under the auspices of ICAO.

Notwithstanding all the efforts by airlines, airports and ATS providers, it would be unwise to predict a flawless transition into the next millennium. There may be some flight delays, some cancellations or other disruptions. In the days that follow the rollover, we will be tracking the lifting of these contingency measures, as the number of passengers wishing to travel increases and airlines begin to ramp up their schedules. We hope and expect that these inconveniences will not be significantly greater than they are on any other winter weekend. And it's important to emphasize that these are inconveniences. We are very confident that there will be no compromise on safety.

To paraphrase one of my industry colleagues, Mr. Chairman, if any of your constituents has real concerns about the Year 2000 problem, tell them to book a flight. The one place I know they will be safe from the bug is on an airplane.

Before closing, Mr. Chairman, I would like to take this opportunity to recognize the outstanding Y2K work performed by the Federal Aviation Administration, by our colleagues at the Air Transport Association, and by the major US carriers. The very high level of Y2K readiness throughout the airport industry in this country is to a great extent the result of the strong programs that

these parties have implemented. Equally significant, however, is the strong leadership that Administrator Garvey and her team, the Air Transport Association and the major US airlines have exercised in the international arena. All of them have extended strong support to the IATA industry initiative, and the work of all these entities deserves to be recognized by this Committee.

IATA would also like to commend this Committee, Mr. Chairman, for its leadership in obtaining congressional passage earlier this year of the so-called Safe Harbor Legislation. This legislation serves as a model for other national legislatures, a model that has been followed by an unfortunately small number of countries. We would respectfully request that Members of the Congress use their contacts with legislators from other countries, through the North Atlantic Assembly, for example, to encourage their national legislatures to enact similar laws.

Mr. Chairman, we are grateful for the opportunity to appear here today to discuss one of the largest challenges ever faced by civil aviation. We appreciate the continued interest of this Committee in the problems faced by those who fly planes around the world and in the welfare of those who are flown.

I would be pleased to respond to any questions that you or the Vice Chairman might wish to pose.

[The prepared statement of Mr. Windmuller can be found in the appendix.]

Chairman BENNETT. Thank you very much.

Mr. Plavin.

STATEMENT OF DAVID Z. PLAVIN, PRESIDENT, AIRPORTS COUNCIL INTERNATIONAL-NORTH AMERICA

Mr. PLAVIN. Thank you, Mr. Chairman, Vice Chairman Dodd.

ACI-North America, the Airports Council International, is a trade association representing about 400 airports, 150 airport operators, and we handle about 97 percent of the domestic and virtually all of the international passenger and cargo activity in the United States and Canada.

Because of the nature of this industry and because of the nature of the business, we have worked very closely with the air carriers and with FAA in trying to be sure that our member airports will be ready for the rollover. We have participated with FAA and with the carriers in creating seminars and other forums for airports to exchange information, both with themselves and with the carriers and with the FAA. We have been operating this in that mode for about 2 years now.

Because the 18,000 airports in the United States are locally owned and operated, it has been somewhat difficult to form a single view of the readiness of the industry. Unlike the major airlines or the regional airlines, with their relatively smaller number of operators, this diverse ownership makes it rather difficult. However, having said that, many attempts were undertaken by FAA, by the Inspector General, by the General Accounting Office, and we found that in general the airports are not only ready, but that they are well ahead of their original schedules. By and large, we found that at the commercial airports, at least 80 percent of the systems that have been identified as critical, have been found to be Y2K compli-

ant, and the rest are expected to be compliant by the end of the month of November.

However, having said that, I think there are a couple of important points to keep in mind. One of them is the contingency plan approach, which Tom Windmuller referred to. It is common practice among our member airports to conduct extensive testing to assure that every affected system will be made fully compliant. It is also common practice to develop contingency plans to assure continuation of the functions in the unlikely event of a failure. Airports do contingency planning all the time. They have emergency drills. They participate for disruptions, dislocations of all kind throughout the course of their business. And so it is natural to expect that this contingency planning process will be in place and will be tested in a number of occasions between now and the rollover date. So we are confident that a high quality of contingency planning has been done and will continue to be done between now and the Y2K rollover.

The other part that is important to note is that there are not very many airport systems that are critical to the functioning of the system. The aviation system has been subjected, I would argue, to unwarranted speculation regarding potential for Y2K failures having an impact on safety, and fortunately, that speculation is not warranted; unfortunately, that speculation continues.

ACI has worked with the Air Transport Association of the US and with the Air Transport Association of Canada, and particularly with FAA to prepare and distribute to certificated airports a list of approximately 150 systems commonly owned by airports that might be susceptible to Y2K failure. Many of the important systems that people think about are not operated by airports, but the ones that are have been viewed by FAA and by the airports and the airlines that use the systems. In FAA's judgment there were 48 systems that were initially identified as either critical to airfield operations or useful in fulfilling some regulatory requirement. We believe that very few of these actually have the potential for either significantly affecting operation or safety. Many of the systems merely serve to increase efficiency by automating functions formerly performed manually. Others provide information, or data bases, or record keeping in nature and do not control operational functions. 3 of these 48 systems have been the subject of frequent speculation and are worthy of additional discussion here.

The first of those is the airfield lighting control systems. These are tools for controlling the thousands of lights used on a typical airport runway and the taxiway system. Newer systems are computer controlled. Some of them have been found to have the possibility of failing in the Y2K environment. These systems generally have been replaced or repaired by our members, and subsequent testing indicates that they are free from risk. However, the important point here is that airports can still flip the switch and turn them on if they fail.

The second one of these I think which is important to talk about are airfield access control systems from a security point of view. These are used to regulate the secure portion of the airfield, over many doors that are required to be controlled for the purpose of protecting the security of the operation. As is the case with the air-

field lighting systems, they have been repaired or replaced, tested for Y2K readiness, and are felt to be fully reliable. However, if failure were to occur despite this testing, they are designed to fail in a closed mode, and FAA has been providing guidance to airports on how to manually control access to airport secure areas. Assuming that any failure could not be quickly repaired, the consequence would be an increased requirement for staffing and a reduction in the number of access points to the aeronautical area, all of which have been planned for, and the contingency plans to accommodate those are in place.

The third system is the airport rescue and fire fighting vehicles. The airports have been working with the manufacturers to identify some of the equipment which may have the possibility of being affected by Y2K. To this point the manufacturers have provided fixes to the equipment, and the testing of those goes on. We are comfortable that the overwhelming bulk of the equipment will not fail, and that to the extent that it does, the support equipment, that is in place at all airports that are required to have it, will be able to function reliably.

I am comfortable, therefore, that, as Mr. Windmuller said, the airport system will be able to fulfill its part of the services required for the continuation of a safe, secure and effective airport and aviation operation.

We appreciate the kind of direction that we have been getting from the FAA, which has actually been putting in place the opportunity to verify the effectiveness of Y2K compliance measures, and we expect that by the time Year 2000 rolls around, if there is a failure in the system, it will be because we have got snow.

[The prepared statement of Mr. Plavin can be found in the appendix.]

Chairman BENNETT. And we cannot blame snow on Y2K.

Mr. PLAVIN. Right.

Chairman BENNETT. Mr. Cooke, welcome, sir.

STATEMENT OF PETER COOKE, YEAR 2000 COORDINATOR, BRITISH AIRWAYS

Mr. COOKE. Thank you, Mr. Chairman, and good morning, Mr. Chairman and Vice Chairman.

I would like to thank the Senate Special Committee for inviting me, and for this opportunity to add to public knowledge and confidence on this very important challenge for the international aviation industry. The position taken by British Airways on Year 2000 is detailed in our written submission, but I would like to highlight the following aspects.

First, some words on the British Airways internal Year 2000 program. British Airways takes the Year 2000 issue very seriously, and has been working on the investigation, identification and remediation of its own systems, equipment, and supplier chains for about 4 years. This has been a significant task with some 3,000 systems, 800 applications, 30,000 PCs, and 40,000 suppliers in our data base. Throughout the program the emphasis has been on not simply remediating IT functions, but insuring that all critical business processes will continue to operate. Hence we have had line management involvement and accountability at all levels. Some 70

million pounds, $112 million, has been committed over the length of the project, and up to 200 people have been involved in the effort. The main board takes a keen interest in the project and receive regular updates.

We have worked closely with our major partners, British Airports Authority at Heathrow, Gatwick, and other UK airports, aircraft manufacturers, the national air traffic services, travel agents and CRS's, banks and many other suppliers. Where appropriate, joint testing has been undertaken. We have also cooperated closely with Action 2000, which is the UK Government agency responsible for reassuring the British public as to the Year 2000 readiness of key components of the UK economy and infrastructure. It covers utilities, financial services, fuel and food distribution, transport and public services. In July we publicly received their highest rating following an assessment of our program.

We have currently completed the installation and testing of contingency plans for our mission-critical and important business systems and processes. We are by no means complacent, and we will continue our work up to and through the millennium period, but we are confident that British Airways is now ready to meet this unique challenge.

Second, some words about the external environment. Critical components of our supplier chain are, of course, the air space we fly through and over and the airports we operate to throughout the world. This forms a particular challenge to a global airline like British Airways which is interested in some 150 of the 185 member states ICAO, and which operates to 160 airports in 6 continents with technologies ranging from the simple to the extremely sophisticated. Our investigations have included cooperation with ICAO, participation in the IATA industry project, closely liaison with the CAA and Eurocontrol, collaboration with our reliance partners in oneworld, and overlain by our own investigations, knowledge, experience and assessments.

I would particularly highlight our participation in the IATA industry project, in which we have been very active since its initiation and of which we are a very strong supporter. We have had observers present at many of the site visits, both to air traffic service providers and to airports. However, we do not rely solely on the IATA data. We have conducted our own assessments, and we have engaged a small team of air traffic systems experts who have provided us with in-depth knowledge and expertise for our assessment process. We have worked with air operator committees at airports and have made our own evaluations of the readiness of airport customer related systems, including their contingency plans to insure that regular business continues over the millennium. Finally, we have devised former routines to analyze data and soft information from all sources in order to make our assessments.

And last, some words on our conclusions. We are confident that the methodology and assessment processes we have put in place are appropriate and adequate to address the Year 2000 challenge. We are very pleased with the progress being made and reported in all parts of the world. It should be recognized that not all providers in all countries have yet reported conclusions to their programs, and these providers will continue to be monitored and reviewed,

both through the IATA project and by ourselves. I am happy to say that it is a small and diminishing number that fall into this category, and looking forward, we do not believe that there will be an adverse effect on our planned operations. I should say that we are receiving unprecedented cooperation from industry partners in all parts of the world in this unique exercise.

On September the 20 we announced our planned schedule of operations for the millennium. While bookings are some 29 percent up on last year for the last few days in 1999 and the first week of 2000, the millennium eve itself is quiet, as is usual on New Year Eves. We shall therefore be operating a reduced program over the millennium night with no short-haul flights after 6 p.m. until the next morning. There will be a long-haul operation, however, with 20 aircraft flying during the rollover period. Although we have determined the residual risk is low, since safety is of paramount concern, we will continue to monitor and review progress up to the rollover period, including using our operations control center at London to take any necessary operational decisions on the night itself, as is our normal practice. We cannot say, of course, that no delays or disruptions will occur. They are a normal occurrence in airline life. We believe, however, that we have adequate experience-based plans to cope with all eventualities and to mitigate their consequences.

In conclusion, therefore, British Airways approaches the millennium with confidence. Thank you.

[The prepared statement of Mr. Cooke can be found in the appendix.]

Chairman BENNETT. Thank you very much for being here and sharing that with us. We appreciate it.

Mr. SMART.

STATEMENT OF EDWARD SMART, ICAO REPRESENTATIVE, INTERNATIONAL FEDERATION OF AIR LINE PILOTS ORGANIZATIONS

Mr. SMART. Thank you, Mr. Chairman, Vice Chairman Dodd. I am the air line pilot representative to the International Civil Aviation Organization.

Chairman BENNETT. Can you talk a little more into the microphone?

Mr. SMART. Of course, Mr. Chairman.

Chairman BENNETT. Thank you.

Mr. SMART. Our organization, the International Federation of Air Line Pilots Associations is made up of just under 100 national member pilot associations, and we have 120,000 pilot members, as you said before. Our basic aim is the development of a safe and orderly system of air transportation.

IFALPA is aware of the efforts expended by states and international organizations to increase public awareness of the Y2K problem, as well as their assistance in eliminating or minimizing its impact. We have full confidence in assurances given to us by the major aircraft manufacturers that there is nothing within the aircraft themselves which will jeopardize flight safety. We are also confident that the measures already taken or yet still pending will insure continued flight safety for operations in North America, the

Eastern and South Pacific, and the North Atlantic oceanic regions, and in Western Europe.

We are somewhat less confident about what might occur in Eastern Europe, and within the air space eastward to Vladivostok. We noted the recent announcement by the head of Russian Air Traffic Control of his serious concerns that Russian flight safety system has been weakening since the early 1990's and may soon become critically deficient. Similar concerns apply to the former Soviet republics to the north of Iran and Pakistan.

Also of concern is the fact that the air traffic control contingency plans developed for Western Europe include the idea that some states may close their air space in the event of communications failure. This procedure already exists, but has rarely been used and never on a large scale. If this occurs for any extended period of time and involves many aircraft, we believe that flight safety problems could emerge. There are some 420 morning daily flights inbound to Europe from overseas.

We were also told that some air space and aerodromes along the main routes to Europe from Asia could be closed, and we understand there is a possibility that routes over Afghanistan and Turkey and that airports in Cyprus, Syria and Turkey might also be closed if communications fail.

Today over large areas of sub-Saharan Africa, the air traffic control system is not and has never been fully functional. Pilots must rely on a do-it-yourself form of air traffic control, called In-flight Broadcast Procedure, IFBP. They broadcast their presence and altitude in the blind. Other aircraft then hopefully hear these calls and minimize the chances of collision by changing their altitude. This normally works fairly well in low traffic density areas, but there are difficulties. Not all aircraft are aware of or use the procedure, and not all pilots use the English language.

ICAO's Y2K regional contingency plans contain a version of the In-flight Broadcast Procedure as a primary means for preventing midair collisions if and when air traffic control does fail. Pilots will then be expected to revert to essentially a do-it-yourself air traffic control system.

Vice Chairman Dodd. Mr. Smart, I thought all pilots had to know English, that it was the international language?

Mr. SMART. No, sir, that is incorrect. It is the international norm, but it is not a standard. Within South America, for instance, about all you hear is the Spanish language, except from North American pilots flying through the area and European pilots, of course. It is very common in West Africa they use French while they are airborne as well, and it does present difficulties for us.

It could be said that at least we still have a last ditch electronic means for avoiding midair collisions by using the Onboard Airborne Collision Avoidance Systems, when neither ATC nor the In-flight Broadcast Procedure worked. But in order to detect a potential collision, ACAS requires that the threat aircraft be equipped with an altitude-reporting transponder. Unfortunately, there is no regional requirement for its installation until the year 2003. Even then ACAS will not be required for cargo aircraft. It is also not required for small commercial or non-commercial aircraft, nor is it required for the military.

Russian radar transponders used in their domestic aircraft also cannot be seen by our ACAS. There have been near misses, and in 1996, a Saudia 747 equipped with ACAS and a Kazakh Ilyushin 76 cargo plane without a compliant transponder, had a midair collision over India and we lost 350 people.

Recommendations, which we recently made to ICAO during the second Global Y2K Contingency Planning Meeting, included the measures indicated on the chart. These measures were all accepted except for the additional flight crew manning recommendation which we had made.

In conclusion, Mr. Chairman, we agree with the view that both ICAO and IATA have taken all reasonable measures that are within their means in dealing with Y2K types of events. We are most appreciative of this opportunity to have presented the views of the international air line pilot to this eminent national legislative body. Thank you very much for your kind attention.

[The prepared statement of Mr. Smart can be found in the appendix.]

Chairman BENNETT. Thank you very much, Mr. Smart, for your testimony. In reacting, Mr. Plavin, to some of the comments you made about over-reaction, I've had the experience, and I'm sure Senator Dodd has as well, when I have been out trying to reassure people that things are all right with respect to Y2K, of having my own speeches quoted back to me. Some people who have a psychological vested interest in seeing Armageddon, tell me I am now lying to them deliberately when I say things have gotten better, and, look, my early alarms were the correct information and nothing has changed. It is very difficult to break through that kind of mentality.

I think the panel, as a whole, has gone a long way to go in that direction as we have heard from a number of different sources, each one affirming the other that the overall system has made extraordinary progress here. The early warnings were not improper. The possibility of failure was there, and it was serious, but the work that has been done has been Herculean, and we should all recognize that and rejoice in that instead of being disappointed that we are not going to see the huge disaster that a lot of people, frankly, are still hoping for.

Now, the first thing I would do would be to ask any member of the panel if you have any comment on any other member of the panel's presentation, either correction or amplification. Now, if you are just going to say, "Gee, they are all right", you can do that very quickly, and we will be happy to have that, but is there anything any one of you has said that strikes a button in the other, so we can get a conversation going among you experts as to where we are?

Vice Chairman DODD. Or anything that Mr. Downey or Mr. Mead may have said in the panel before you.

Chairman BENNETT. Yes, yes.

Mr. PLAVIN. Mr. Chairman?

Chairman BENNETT. Yes?

Mr. PLAVIN. If I may, I want to take exception to you having exempted the administrator from the description of the rest of us as "thorns." Chairman BENNETT. I see. I can live with that.

Mr. PLAVIN. From the airports' point of view, I just want to say that one of the things that has made it possible for the airports to do what they have done is very significant oversight by the FAA in making sure that the systems are compliant as they seem to be. And the second part of that is to make it clear that the air carriers have taken a very, very big role in—because they have a network which is able to spread across most of the airports in the world, they have been the logical place, and they have stepped up to the table to take that responsibility of sharing information and assessing information. I have trouble saying that because airports and air carriers are not supposed to be doing things in the same direction, but in this case at least, we are.

Chairman BENNETT. Yes, sir?

Mr. WINDMULLER. Thank you, Mr. Chairman. If I can just build on Mr. Plavin's point, I think there is something that you have touched on, Mr. Chairman, that was implicit in a lot of what we were saying but bears further scrutiny because I think there is a lesson to be learned here.

I think you were right about the early warnings being justified. I think you were equally right about the progress that has been made, and the result of that progress being that it is a very different world out there from what it was a year ago or even just a few months ago, but I think one of the reasons for that is the way in which this industry has approached this issue. The cooperation that we have all seen amongst regulators, airlines, air traffic control providers, airports, pilots, air traffic controllers, in my personal view, has been either unprecedented or unsurpassed, and matched only by our common approach toward safety. That I think is not only to be commended, but also to be remembered and built upon when we have other issues like this, non-competitive issues, to face in the future. Thank you.

Chairman BENNETT. Thank you.

Yes, sir, Mr. Smart?

Mr. SMART. Thank you, Mr. Chairman. Just to comment on a previous statement that was made with regard to the paucity of information available. We feel that this is an important aspect and perhaps we have learned a lesson from all this. The final authority for insuring the safety of flight rests properly with the pilot in command, and we have to have the information that is required in order to make that final decision, and it is sometimes terribly difficult to dig it out. We hear generalities for the most part with regard to the important airports, the important aviation states, the important aerodromes, the information there are no difficulties involved. I am afraid that if I was flying on an unimportant airline in an unimportant aviation state, I would still feel relatively important and that it was necessary for me to get the proper information. So I do think we have perhaps learned a lesson here. We have not yet, I do not believe, solved the problem, but at least I have identified the problem.

For the pilot, the information that we need is available in flight publications. We have the Airman's Information Publication, AIPs and AICs, but they are not available in the cockpit to us. We rely on major chart producers to produce, of course, in making that

available. Time is becoming very, very short. We are now under 90 days. Thank you.

Chairman BENNETT. I have been interested in Senator Dodd's indication of drafting legislation and your reaction to that, Administrator Garvey. I think that will have a salutary effect, and we have never had to issue a subpoena in this Committee to get any witnesses, but I have threatened to issue a subpoena on occasion, and it is amazing how quickly the use of that word changes some people's attitude toward cooperation with the Committee. And I think the dreaded word "legislation" can have the same impact here. But do you not have some authority in the FAA to shut down an airline if you come to the conclusion that they are in fact stonewalling you on information? Can you not, administratively, without legislation, take some action in this area?

Ms. GARVEY. Well, certainly. Let me answer that in two ways. First of all, our major focus, as everyone at the table has said, and as the Deputy Secretary said this morning, is safety. So at any point, if we believe that an action being taken, or we have enough concern raised, we can certainly take very strong action, so we absolutely have that. I think that is an important distinction to make. We have heard a lot of discussion early on, well, if a company or an airline is not Y2K compliant, should we take an action? We have said we should take an action if safety is affected, because, for example, someone could have very appropriate contingency plans, or it maybe, as Mr. Plavin said, it may be a system that is not Y2K compliant, but quite frankly does not affect the safety. So we want to stay within what is regulatorily responsible, I believe, and I think we absolutely can take the action.

The second point I wanted to make is that our inspectors, which—and I mentioned that many of them, in fact, nearly all of them are in town today to really talk about the Y2K, the managers and so forth. They are out there working with these certificate holders weekly, sometimes daily. So we have a very good sense—and I think a lot of the discussion we are going to hear today is, "Well, you know, maybe the information may not be sufficient, but we have got a good sense of what is happening with that particular certificate holder." So, we are really building on a structure which I think has served us very well in aviation safety, and I want to make that point, because we have some very good folks out there who are working these issues daily.

But to answer your question, we absolutely can take some strong action. The Inspector General has made the point that sometimes even just the exposure on the website, knowing you are going up because you have not provided the information, is very compelling, and we are going to do that. But certainly any encouragement, and we certainly appreciate the offer to work with you on the legislation so that we are making sure it is within the bounds of what we think is appropriate from a regulatory point of view, but you are right. I remember a great quote from a Senator from this body, who once said that, "When I feel the heat, I see the light." And that may be a little bit of what the Senator is talking about. That certainly does have an effect.

Chairman BENNETT. Yes. Mr. Cooke.

Mr. COOKE. Yes. Can I just add to what the FAA Administrator said. I agree entirely that the issue that should concern legislators is one whether any airline is likely to be indulging in unsafe practices. If an airline just has not got its act together and has not produced a very good Y2K program, it is most likely not to be able to operate itself. So I think the main issue is whether it is unsafe, not whether or not it has got a good business program going.

Chairman BENNETT. Senator Dodd?

Vice Chairman DODD. Mr. Chairman, thank you.

Let me just pick up on the last part, Ms. Garvey. We are working on drafting this, and I would like to get the names, by the way, of the 1,900 airlines, because I want to put them in the congressional record today. And I find it does—I mean I understand you have the authority. My concern would be, obviously, from a customer point of view, that you get down here toward the end and people have made plans to travel and so forth, and all of a sudden they find at the last minute airlines are not going to be able to fly. I would like an earlier termination for the benefit of the flying public here as well.

I take this very, very seriously. I appreciate the fact that they may be operating well and fine and it may not be a problem, but I am not going to take that chance. My view here, if someone is not doing the basic thing of responding to the Federal Aviation Administration's request for a survey on whether or not they are going to be compliant when dealing with a problem that has raised tremendous concern with the American public, I think we would be tremendously recalcitrant. So my concern would be, in the absence of legislation, and of course you have the authority I think in a lot of areas, but I presume that decision may also be subject to some legal action, where it could be contested, I suppose, and you could end up with courts and decisions in courts, whereas a piece of legislation might have a more beneficial impact.

I hope it does not come to this. I hope the 1,900 are getting the message today, and that before the week is out or the early part of next week, you are going to find full compliance here. But I just want to make it very clear that from my standpoint alone, I am not going to sit here wondering for the next 92 days or 94 days, whatever we have got left here, whether or not constituents of mine get on an airline someplace, and I knew that they had not complied with a survey on Y2K, and the question comes back, "Senator, what were you thinking of?" So I am hopeful this can be resolved.

Ms. GARVEY. Senator, one point I will just add, that a staff person, as I was coming to the table, said, "You know, sometimes even when the airlines want to"—and this gets to your point about the legality—"sometimes even the corporate structure says, "Well, there are legal issues and we perhaps should not give information out."" And so the staff person said, "You know, the legislation is helpful in that sense." And I think sometimes this is the case for even very big corporations.

Vice Chairman DODD. No, that is a good point. I actually found that happened in the past. You know, "If I share any information, then I am subjecting"—I have co-authored the Y2K legislation on tort issues here to try and minimize the possibility of just an overwhelming amount of litigation in this area. So I have tried to do

my best over there to minimize this specifically so it would reduce the kind of argument that some people are making about how do you not share information. I mean, that to me is just so unacceptable, particularly with something where the American public, during a holiday season, where people have to sit there. I have made the statements over and over again, "I think they are perfectly safe and you ought to be flying if you want to fly." But I did not know about 1,900 airlines that had not complied with the survey.

Ms. GARVEY. Just to be correct, it is a number of very small ones.

Vice Chairman DODD. Yes. I appreciate that.

Let me jump, if I can, to—there is the survey, the Airports Council International, Mr. Plavin, states that the most authoritative data on US airports rests with survey information that the FAA gathered in the spring and summer of this year. Now, in spite of the fact—I do not think that was originally collected with the idea of confidentiality in mind, at least I know of nothing that indicates that. You can correct me if that is the case. I wonder if you might clarify it for the Committee, is there not some point when that information should be released to the traveling public? We have made similar requests of other surveys that have been done across the board so that we get an idea here. This information will become public at some point, and I would be, again feel negligent, if that information becomes available after January 1, and for some reason there were problems in some place and that information had not been made available to the public. Now, is there some reason why it cannot be made available?

Mr. PLAVIN. Mr. Chairman, I think there are two separate sets of information streams that are at issue here. One of them is a body of work that the ACI has been doing with the airlines that actually looks at certain kinds of systems within airports that airports and airlines use jointly. It is that package that was gathered with the assurance of confidentiality.

Vice Chairman DODD. Why?

Mr. PLAVIN. Because of—the point you made a moment ago, because are saying, "I do not want that information to be used in legal action against me. I want to share it in a way so that in the interest of everybody knowing what everybody else is doing, but I do not want to give that to somebody else as a basis for saying, "We are going to sue you."" Now, having said that thought, the more important issue is the work that FAA has been doing. That is clearly not gathered under the assumption of confidentiality. The airports have responded in the spirit, I think, in which you identified earlier, that FAA is the regulatory body, they are the ones who have to make the determination whether the airport is operating safely and properly in accordance with its certificate, and it is FAA's responsibility, and the airports know they have an obligation to respond and to respond timely and accurately. So I do not think that there is any assumption that failure to respond is not going to be public.

Vice Chairman DODD. You know, we worked very hard to pass the Y2K Litigation Reform Bill, and I found very hard. It took a week of activity, and the President, to his credit, signed it, despite a lot of opposition in doing so. I do not buy the argument that because someone is afraid of maybe some legal action here, that that

information, the consuming public would like to know. And if you have information that some airport is not safe, somehow that information ought to be made to the public. I do not buy the argument any longer. I think you had a good case before, but today, the idea that that information should be kept in-house and not shared with the consuming public, I do not think is right. I do not know what deals were struck to get that information, but is there some problem in——

Ms. GARVEY. Senator, actually, we are going to be putting that information up on the website. Mr. Plavin is right, we did the site surveys of the 150. We have additional information that is coming by October 15th, and that information, as we analyze it, will be up on the website for the reasons that you stated.

Vice Chairman DODD. Thank you. Let me jump if I can. I do not want to take too much time, but I raised the issue of the Pilots Association had that list, and again, Mr. Downey properly threw the ball to you, Ms. Garvey, in terms of responding to a couple of those question. How do you feel about the—I gather the extra pilot in the aircraft is the one that you are least attracted to, is it not?

Ms. GARVEY. That may be, and I would like a little bit more time to take a look at that. That was not one I was familiar with. Some of the others though, additional training, as the Deputy Secretary said, in fact we are doing that with our controller work force. Extra fuel and so forth, those are definitely, yes.

Vice Chairman DODD. Well, great. That is very helpful.

A couple of more here if I could. You had a directive. The FAA has given a certified—I understand that the FAA has given certified airports until October 15 to be compliant or to have alternate means of compliance. And I am just wondering how you expect that situation to evolve, initiating action? Again, the suggestion was made earlier about funding and so forth to make the point clear. What do you do on October 16, I guess is what I am asking, if you do not have compliance?

Ms. GARVEY. Well, if we do not have compliance, we have some teams ready. We would be going out and doing individual visits. We have regional offices where there are airports people. So we are prepared to take action if we have to, if we were convinced that those 7 or so systems where safety is really affected have not been satisfied. We would be prepared to take action, but we certainly have time between October 15, or after October 15 for the site visits to work with the airports. And our hope is, as you indicated earlier, that everything will be in compliance.

Vice Chairman DODD. I would be very interested, and I feel the Committee would be, to get a briefing as to—shortly thereafter as to what the status is with regard to that information.

I mentioned earlier, it has been mentioned here that 28 of the 89 countries providing data to the ICAO did not provide sufficient information to allow adequate Y2K readiness. Again, the obvious question here, and the lack of information raises obvious concerns in these areas, although I gather things may be improving almost as we speak, but nonetheless, our concern here is the absence of information. To what extent does that raise warning signs to you as the Administrator?

Ms. GARVEY. Well, Senator, I think any time that you do not have adequate information, it does give you pause, and I think the next few weeks or the next several weeks are going to be critical and very important as we are gathering the information. As we have said before, and as the Deputy Secretary has also testified, we will take appropriate action if either because insufficient information leads us to believe that there are problems, focused again on the safety problems as opposed to whether or not there may be some flight disruptions. But if we have cause for concern, we can issue the notice to travelers, the Notice to Airmen, which is something that the FAA is able to do, obviously, very much in consultation with the State Department and of course with the Secretary's Office. But we would not take that lightly, but we have that ability.

And the Inter-Agency Committee is working very hard and analyzing the material, looking at it, and as you suggested, it is changing daily. We are getting new information every day.

Vice Chairman DODD. That's great.

Mr. Cooke, I must say I was deeply impressed with what British Airways has been doing, and I really appreciate your presence here today. This is very, very helpful. I wonder if you might just comment on what Mr. Smart and his organization have recommended in the area during the rollover period as some of the safety precautions. Are these the ones up over here? Yes. Do you have any reaction to those?

Mr. COOKE. Yes, sir, I have seen them. My first reaction is that I am absolutely confident that within the normal training procedures of an airline, as they are required to do, they will take account of—they will make sure that air crews are absolutely adequately trained to operate all the equipment that they have on board the aircraft. Nevertheless, I do note the points that Mr. Smart has raised, and I will check with my organization to make sure that all of these are incorporated in our plans. But I am absolutely confident they are, because I think they are part of the duty of an air operator to insure that we comply with those.

Vice Chairman DODD. You have done something that the Chairman and I and others have recommended across the board, not just in dealing with travel, but in every area, and that is the independent assessments. I guess we do it sort of naturally here in this country, that institutions that want an assessment made will do in-house, but it is not uncommon for us to ask others to take a look over our shoulder to determine whether or not what we have concluded is in fact appropriate and proper, and I was impressed with the fact that British Airways had an independent done, as I understand it anyway, of its Y2K program, which I applaud you for. Can you tell us if this practice is being widely used by other airlines; are you aware of that?

Vice Chairman DODD. Well, it certainly applies—if you are referring to the UK Government audit in the UK, that applies to all UK operators; they are all being audited.

Vice Chairman DODD. What about outside of the UK?

Mr. COOKE. I honestly do not know what the position is in other countries. I think it is probably patchy. I think some countries, their governments have instituted audits; others have not, so I really do not know the specifics.

Vice Chairman DODD. How about airports and air traffic services around the world, independent audits?

Mr. COOKE. There again, I do not know whether independent audits are being carried out. I think Tom might be able to give you better data on that from an audit point of view.

Vice Chairman DODD. How widespread is that?

Mr. WINDMULLER. Mr. Vice Chairman, first of all, on the subject of air carriers on the international scene, we are not systematically tracking them one-by-one in this area. But the kind of independent audit that Mr. Cooke has referred to is not at all uncommon amongst the IATA member airlines.

With respect to the airports and air traffic service providers, while we are not undertaking formal audits of these entities through the IATA program, we are independently visiting these entities, independently gathering data, and we feel pretty confident about the thoroughness of it, and the accuracy of it, because we do not simply take an air traffic service provider's word for it, for example; we cross-check the data we get from an air traffic service provider with that that we receive from the manufacturer of the equipment that he uses, from what his national safety regulatory authority is saying in the AICs being delivered to ICAO and so forth. So we are cross-checking the information that we get from a number of different sources, looking for inconsistencies and then following up with the air traffic provider organization if and when we see one.

Vice Chairman DODD. Mr. Cooke, coming back to you a second if I can. You partner with a number of airlines around the world.

Mr. COOKE. Yes.

Vice Chairman DODD. And I wonder if the assessments that you have done, the independent assessments and so forth that you have done with British Airways, does that also apply to your partners?

Mr. COOKE. Yes. We have, as part of our program of working together, we have conducted an assessment of each of our partner airlines. Each one has assessed each of the other partners, and we have all agreed to methodology and satisfied ourselves with the degree of readiness of all our partners.

Vice Chairman DODD. That is very good, appreciate that.

Just again coming back to Mr. Windmuller, again I appreciate your last comment there. You made it clear that the IATA and ICAO have gathered an enormous amount of information about the readiness of the air transport industry, and I appreciate that, and I do appreciate the confidentiality questions. I mean, I am not unmindful of those concerns, but you have to weigh those concerns versus others, and I am trying to balance them here. Is not there some way that we can offer more concrete and specific assessments of troubled areas in the industry at this time, with a few days to go; is not that possible, without violating—I mean there has got to be some way of doing this.

Mr. WINDMULLER. I fully take on board the concerns you express, and we recognize that there is also a very legitimate interest by national safety regulatory authorities in knowing what their partners are doing. For example, for two states which adjoin one another, to carry out a regional contingency plan. They have to have a pretty high degree of confidence in each other. And it was for that rea-

son that IATA and ICAO agreed that all of the information that we collect now concerning air traffic service providers is now being conducted as joint ICAO/IATA information. We make all the information that we collect on these visits available directly to ICAO, whether they are with us or not. ICAO then takes that into account in terms of the information that it passes on to each individual state to its national safety regulatory authorities.

On the airport side as well, we have an obvious interest in insuring safety above all. And I think our only hesitancy about the confidentiality of information from airports is mainly in the area of business confidentiality. In addition to these safety systems, we have been collecting quite sensitive business confidential information from airports, which outside the US is an increasingly competitive business. If in Europe—you take the example of Europe, Heathrow, Charles de Gaulle, Frankfurt, Amsterdam, are all fierce competitors now for traffic, especially transit traffic. And the information they have quite openly been providing us is information about individual components and systems they have that they would not want their competitors to be privy to, and it was for that—it has nothing to do with Y2K; it really is to do with their competitiveness as a business. And it was for that reason that we were willing to undertake these often written pledges of confidentiality with them, that we would only use this for Y2K purposes, that we would only share it with our member airlines, and that we would not be using this type of information, for example, on airports and user charges negotiations that we carry out with them.

Vice Chairman DODD. As someone who may fly to Europe around that time, I sure as hell would like to know. If I had a choice of airports to fly into, and you had information that indicated that one of those airports was a cause of concern for you, that you had information, Y2K information that raised concerns in your mind about it, and that was being held and not shared, and something happens, I do not need to tell you what the reaction is going to be.

Mr. WINDMULLER. That is absolutely right, Senator, and the best assurance I can give you is that if any airline has concerns about safety at an airport, you will not be flying into that airport because that airline will not be landing there.

Vice Chairman DODD. But if I choose the wrong airline who decides not to make that decision.

Mr. WINDMULLER. I cannot imagine that any one of our member airlines would ever compromise on safety.

Vice Chairman DODD. No, no, I know. But I would like to know as a consumer. Can I not have—should I not know that too? I mean I appreciate the airline knowing it, but should I not know that you have concerns about certain airports?

Mr. WINDMULLER. Yes, by all means. We are not trying to withhold information about concerns we might or might not have at airports. And as I have said, we feel very good about the progress we are seeing in every region of the world. That is not any kind of information that we would withhold.

Vice Chairman DODD. Are there areas of the world you do have concerns about?

Mr. WINDMULLER. No, there are not. Right now we feel very confident about the progress we are seeing in every region of the world.

Vice Chairman DODD. OK, all right. Mr. Chairman, let them move along. There are a lot more questions, but I will submit them to you in writing. But I thank you very much. And I thank you, Ms. Garvey, for being very forthcoming.

Let me make this—I would like the list of the 1,900 companies. I would like to get that today. Today is what, Thursday?

Chairman BENNETT. Yes.

Vice Chairman DODD. I will tell you what. I will be back on Monday, back in session on Monday, and I will use it today and over the next three or 4 days—in fact, I will wait until Tuesday morning, but I will not put that list in the congressional record until Tuesday morning, to give those 1,900 companies—I am sure they will find out today; there are plenty of people sitting in the audience who know who they are—today is Thursday. You have got till Tuesday morning, and if you have been in touch with the FAA and complied, then that list does not go in the record. But I am still going to draft the bill, and I do not want to cause undue embarrassment to a company that may have submitted the survey, you have not received it yet, so apply a little lag time here for them to comply without necessarily embarrassing someone who is complying with your request, but Tuesday morning that list—and I would like to have an updated list by Tuesday morning.

Chairman BENNETT. I had to step out, was interviewed. And the first question I was asked was, "Is any one of those 1,900 in Utah?" I will have to wait until Tuesday morning to find out.

Ms. GARVEY. None of them are in Utah or Connecticut.

Chairman BENNETT. OK. We thank you all very much.

Our final panel will change subjects totally. While our panel is sitting down, Paul Hunter, boy, you have done a great job. It is a very well prepared hearing. Good work.

If we could have a little more order in the room.

As I said, this last panel is going to change the subject, totally, except that I do remember, when I worked at the Department of Transportation, flying on Coast Guard I. Now we called it Coast Guard I for a while, until they found out we were doing that from the White House, and they told us, "No, it's Coast Guard I only when the President is flying on it, not when the rest of you are flying on it." But it was a Gulfstream III, I think at the time, II or III, back in the 1960's, a very luxurious airplane, and made me want to be Secretary of Transportation at some point in my life. I do not think I want to do that anymore.

Do you still have Coast Guard I, or——

Admiral NACCARA. Yes, sir, we do. It's a Gulfstream III, currently. It was probably a Gulfstream I, I think back then, sir.

Chairman BENNETT. Yes. OK.

Well, so you do have an air force of some sort concerned about air traffic.

Chairman BENNETT. But we are here today to talk about the Y2K preparedness in the maritime world, and we welcome Admiral George Naccara, who is the Chief Information Officer for the Coast

Guard, and Mr. Richard Du Moulin who is Chairman and CEO of Marine Transport.

Admiral Naccara, we appreciate your leadership on Y2K. We understand you have some family members with you here today and we want to welcome them as well as you, and tell them they should be proud of their daddy, or whatever, cousin, brother, and so on, husband, for the work that you have done. We will start with you, Admiral.

STATEMENT OF REAR ADMIRAL GEORGE N. NACCARA, CHIEF INFORMATION OFFICER, UNITED STATES COAST GUARD

Admiral NACCARA. Thank you very much, Mr. Chairman.

Good morning, sir. Good morning, Mr. Vice Chairman.

I have responsibility for the Coast Guard's Year 2000 Project, and as you said, I am the Chief Information Officer for the Coast Guard.

I certainly welcome this opportunity to give the Committee an update on the Coast Guard's Y2K preparedness, and the readiness of the global Marine Transportation System, which have steadily improved since I last testified before you in April.

As Mr. Downey mentioned earlier, I am happy to report 100 percent completion of all of the Coast Guard's 74 mission-critical systems, and despite this, we will not relax our efforts. We will continue our end-to-end testing as well as work on non-mission-critical systems. We have contingency plans in place for all of our mission-critical systems and we have business continuity contingency plans in place for 100 percent of our operational units, and we will continue to update these as we exercise them.

We used the recent end-of-week rollover of the Global Positioning System and the rollover of computers to 9–9–99 to test and modify our Incident Command Center organization and our communications procedures.

At the end of the year, the Coast Guard intends to be ready to perform its missions in a Y2K environment, whatever that environment proves to be.

In addition to our own readiness, we have pursued a 2-year ambitious strategy of outreach to the Marine Transportation System, both domestically and internationally. This outreach has included an Assessment of the readiness of the Global Marine Transportation System. Government and private sector assessments of the readiness of this Global Transportation System have been completed, including one, recently, from the CIA, with a section on maritime shipping and ports.

Additionally, the Coast Guard has been partnering with the United States Transportation Command [TRANSCOM], in collecting information on the readiness of some key world ports. Summed up, the studies show a high level of Y2K preparedness in the shipping industry, and a steadily improving picture in the world's ports.

I will not review these classified assessments in detail, here, because they are available to the Committee. While we are guardedly optimistic about the emerging picture for world ports, I will continue to sound a cautionary note that this Marine Transportation

System is a very complex, fragmented, and intermodally connected system.

Of course, particularly because of the wide dependence on technology, as you mentioned before concerning the M/V SUSAN MAERSK, we have so many embedded chips in this industry, a level of uncertainty will remain until the new century arrives.

Next is our outreach to the Marine Transportation System. As I have said, the Coast Guard has pursued a 2-year program of outreach to the industry. This has included many Y2K conferences; special industry days around the country; distribution of nearly 500,000 brochures to ships' masters, port facility operators, marina operators, and recreational boaters; as well as a busy schedule of speaking engagements, both domestically and internationally.

We also maintain numerous Web sites and an 800 info line for mariners. Characteristically, we took many additional steps to inform the public during the GPS end-of-week rollover in August.

Next, our Y2K enforcement policy. Our goal in enforcement, in addition to safety on the waterways, has been to minimize disruptions to commerce. This explains the active role that we took in developing the Year 2000 Code of Good Practice, which was issued by the International Maritime Organization as its Circular Number 2121.

This circular fosters an open exchange of information among many elements of the Marine Transportation System and the stakeholders. In fact, a growing number of nations, including, among many others, Canada, the U.K., Japan, Germany, the Netherlands, Russia, Australia, Singapore, and many others, have adapted the enforcement policy in Circular 2121.

The Coast Guard published the U.S. enforcement policy in a Federal Register notice back in June, and we based our approach on this information exchange from the IMO Circular.

We also issued policy guidance to each of our Captains of the Port, including a risk assessment matrix and a risk management process.

In essence, our Captains of the Port take the information provided by the companies and determine the level of risk associated with each vessel movement, or each terminal cargo operation.

When our Captains of the Port used this matrix during the first designated Y2K critical period of September 7 through September 9, incomplete information from many ships and facilities really was the principal cause for our issuing the 175 Captain of the Port Orders to Ships, and about 85 Orders to Facilities. Many of these Orders, which reflected some level of restriction on vessel movement or cargo operations, were quickly rescinded as these outstanding issues were resolved. It was extremely beneficial. I must emphasize that.

While the Coast Guard took no pleasure in requiring even brief delays of this type, which I know are very costly to industry, I felt it demonstrated the seriousness of our intent to ensure safety, and will really enhance preparation for the industry at the end of the year.

It did prove that U.S. ports can remain open, with commerce proceeding safely. It also sent a clear message to other nations that

a viable process is available, and it also reinforced our international leadership in Y2K readiness.

Last, the port exercise program. As mentioned earlier, we have led port-level exercises in a large number of U.S. ports. However, since our view is cast on a global industry, we have urged other world ports to carry out similar Y2K exercises.

Some, such as Hong Kong and Singapore, already have done so. To further this approach, we invited representatives from several nations, including all the G8 member nations, and our primary oil supplying countries of Saudi Arabia, Mexico, and Venezuela, as well as China and Korea, to attend our port exercises in New Orleans, in San Francisco, and in New York.

Just last week in Berlin, I urged maritime representatives of the G8 nations to hold their own exercises. I distributed a playbook which we have compiled from our exercises, with guidelines on how to develop an exercise, as well as best practices and lessons learned.

Subsequently, I met with the Secretary General of IMO in London, just the very next day, and I am happy to report that he has distributed these materials as another IMO Circular, 2158, which urges all IMO member nations to hold similar port exercises.

By the way, IMO published both of those documents the very next day after I delivered them. I think it really was a very clear example of the seriousness with which they address the Y2K issue.

The Coast Guard will not relax its efforts during the 92 days remaining until December 31. We will continue to reevaluate systems and refine contingency plans. Port exercises will continue and we will assist all Marine Transportation System stakeholders who request our help with their own exercises.

We will continue our DOT interagency and interdepartmental cooperation to maximize responsiveness. All the tools that we have developed, including our playbook, our data base of industry readiness information, and our risk assessment matrix, will be made available to any public entity who desires to use them.

On December 31, the Coast Guard will be in a heightened state of readiness, nationwide, to respond to any threat of maritime emergency or disruption to the marine environment.

I also want to thank Mr. Downey and the Department for their constant support and belief in the Coast Guard. I want to thank the Department of Transportation Inspector General and his staff as a constant source of constructive comments. I should thank Administrator Garvey as being the lightning rod, perhaps, in the Department, for what they have done.

I want to thank, mostly, the men and women of the Coast Guard who took the challenge of Y2K on, as we do just any other emergency. Thank you for the opportunity, sir.

[The prepared statement of Rear Admiral Naccara can be found in the appendix.]

Vice Chairman DODD. Mr. Chairman would you mind if I just, for 1 second——

Chairman BENNETT. No; go ahead.

Vice Chairman DODD. I am going to scoot. But I just want to—I am not objective about the Coast Guard at all. I represent, you know, the State of Connecticut, the home of the Coast Guard Acad-

emy, and over the years it was my congressional district, and, now, of course, in the state——

Chairman BENNETT. We do not have a lot of Coast Guard—— [Laughter.]

Vice Chairman DODD. Well, we are prepared to help out. I been out. You have got Lake Utah, you have got the Great Salt Lake. I think you could make a case. Of all the Western states, we could make a case with Utah. But they just do a fabulous, fabulous job, and I was on the Board of Visitors there for a number of years, but urged my colleagues to come up and to meet these young cadets, and now we have incorporated at the Academy, in fact, consolidation here. We have the NCO's who are going through training there as well, which I think was a great move to have, and just done a wonderful job.

I particularly, Admiral, want to commend you for what you did with regard to these vessels and facilities that were not complying. I mean, that's exactly the thing to do, and I am just curious. Staff tells me—and you want to maybe update this. I do not know if this is as of today, or whether it was back earlier. That you still have only 36 percent of the 5,000 marine facilities, and 43 percent of the 33,000 vessels that come to U.S. ports, have complied with your survey as of this date in September.

Is that an accurate number?

Admiral NACCARA. It is accurate as of last week, Senator, but there have been improvements. I am concerned about that number, but I feel we have the necessary mechanism in place to take appropriate action.

Vice Chairman DODD. I am prepared to add what I want to do with these airlines, particularly; but if you have got some ideas and you question whether or not the Department of Transportation or the Coast Guard has the authority, for instance, to deny a vessel access to our ports, or to close down a facility because of your concerns, I would like to know that. If you have any doubts about that, and you think you may need some legislative authority to do so—I do not know how the Chairman feels, but I think we would be prepared—we are going to leave here soon and we will be out of here when these events occur.

But if you are lacking any authority to take any action that could jeopardize our facilities, or our marine environment, or a variety of other issues, then we would like to know it. I would like to know it in the next few days.

Admiral NACCARA. Yes, sir. Absolutely. Thank you very much for that offer, sir. We have absolutely no doubt that we have that authority. We did just that. We denied entry to a number of vessels. We denied departure to a number of vessels on 9–9–99.

Vice Chairman DODD. Yes.

Admiral NACCARA. We also shut down many facilities. I think the value in running through the 9–9–99 date was that people got a very clear message the Coast Guard is serious about this, and as we mentioned before, noncompliance can result in very substantial, costly penalties.

Vice Chairman DODD. Well, I commend you, again, for it.

Admiral NACCARA. Yes, sir.

Vice Chairman DODD. A job well done.

Admiral NACCARA. Thank you very much.

Vice Chairman DODD. I apologize to you, Mr. Du Moulin, but I have read your testimony and will submit some questions to you. Thank you, Mr. Chairman.

Chairman BENNETT. Thank you.

Mr. Du Moulin, we appreciate you being here. I understand you wear several hats, so you might want to explain in whose behalf you are testifying.

STATEMENT OF RICHARD T. DU MOULIN, CHAIRMAN AND CEO, MARINE TRANSPORT CORPORATION

Mr. DU MOULIN. First of all, I am Chairman and CEO of Marine Transport Corporation which is a New Jersey-based owner-operator of 35 ships, mostly U.S. flag. None of them call on Utah, though they do pass by Connecticut. I recently completed a 3-year term as Chairman of INTERTANKO, which is the International Association of Independent Tanker Owners. It is made up of about 600 members, over 2,000 tankers, and about 70 percent of the oil imports to the United States, crude oil products, come in on our ships.

I am also, now that I am retired from that, I am still Chairman of the North American panel, so we stay involved with Coast Guard, and other parts of the U.S. Government.

I am serving on the President's Council on Y2K, headed by John Koskinen, also, and in working with the President's Council and with the Coast Guard, I think it is a very good use of Federal leadership and they are doing a very good job.

As far as Y2K and how it relates to shipping, first of all, the shipping I am talking about are ocean-going vessels trading to and from the United States and along the coast of the United States. These could be container ships, passenger vessels, tankers, dry cargo.

My specialty is tankers but I will try to be general when I make my comments.

You cannot think of ships only when you look at Y2K and shipping. You have to look at the Marine Transportation System [MTS], as Department of Transportation has coined it.

It is a chain of people, equipment, facilities, services, that's a logistics chain, and looking at the elements of the chain, reviewing them briefly to see areas of potential disruption, first, obviously, is on board the ship, mainly navigational and operating systems, navigating systems such as radar, GPS, Loran, communications systems, radio, satellite, both voice and telex, propulsion and maneuvering systems.

The goal for a ship obviously is to get from point A to point B without colliding with anything, without going aground. So this is really the area one would think of in terms of safety.

The other element of the system would be the port system. Four years ago, INTERTANKO did a port and terminal safety study looking at ports in the United States, more related to safety and preventing pollution, and that became one of the initial building blocks of the MTS initiative by the Secretary of Transportation.

In that, we pointed out that safe navigation, including Y2K-related safe navigation, depends on the role of the pilots, the navigational aids in the channels, vessel traffic control systems, third

party traffic in the waterways, terminals, and then the intermodal hookups to rail and road. For the Y2K, it is the same, that these are the areas that have to coordinate for the system to work.

There are also support systems that deal with cargo booking, documentation, tracking, financial services, movement of funds. These are not necessarily marine. They are really for the entire U.S. infrastructure but the shipping business does depend on them.

In terms of the status, I would say the bad news is it is very difficult to quantify where the shipping industry stands. We have the interdependence of the elements, of the chain I described. We have a lot of fragmentation, meaning there's many, many participants in each of the elements of the chain.

The tanker industry, in our membership, we have over 600 members in INTERTANKO, but in dry cargo, there is even more fragmentation. Container shipping is not quite as fragmented, but still many companies, and so on and so forth.

So you have many, many companies domiciled in many parts of the world, all operating to and from, around the United States. So it is hard to determine, statistically, where things stand.

The good news is we have had the leadership of the U.S. Coast Guard, of the International Maritime Organization, trade associations like INTERTANKO, the Chamber of Shipping here in the United States. So the shipping industry is very aware of the Y2K problem and it has been for a few years.

Charterers who charter ships, such as the oil companies chartering ships, have also been aware of it. So there has been a lot of attention paid to Y2K.

The companies doing business in the United States tend to be the bigger, more sophisticated, more serious operators in the world, and they are the ones who I believe are dealing the best with Y2K.

So from the U.S. point of view, we tend to be dealing with the best companies. Shipboard, I think we are in good shape. Shipping companies and crews of ships are trained to deal with routine crises. That is the nature of being out on the ocean.

So whether it is an oil pollution situation or a collision, or a breakdown of a piece of equipment, shipping companies are always responding to needs of the ship and Y2K would be the same thing.

So I think that shipping companies are prepared to deal with the situation, if it develops.

Over the past few years the shipping industry has adopted International Safety Management [ISM], which is a documented form of total safety management, and this has also set up the shipping industry to be better prepared with Y2K or any other event.

Finally, ultimately, the crew of the ship rely on their seamanship to handle a vessel. Systems such as gyro compasses, magnetic compasses, charts, parallel rules, binoculars, anchors, are not Y2K dependent. So the basic means of navigating a ship, based on traditional seamanship, is still what one can fall back on, if needed.

In terms of United States' dependence on resources and manufactured goods, fortunately, there is a diversification of sources for most of what comes into the United States.

Finally, the U.S. ports, AAPA, the American Association of Port Authorities, has also done a lot to make its members aware of the situation.

Looking at each of the basic sectors of shipping individually, just to look at a particular vulnerability, again my expertise is tankers but I will take a shot at the others also.

With cruise and ferry, the issue here is the safety of the passengers. The Coast Guard is very aware of this and they are focusing on this industry. Probably the biggest challenge for the cruise industry is their very high technology, modern, large cruise ships which would be susceptible to a Y2K type glitch.

Fortunately, these large, very-well-capitalized companies do business regularly in the United States, many of them headquartered here, and it would be my estimation that they are doing a pretty good job on it. But, again, I do not have any statistics.

As far as crews and ferry, just one other interesting note is those who are out on these vessels on New Year's Eve, when the lights go out at midnight to sing "Auld Lang Syne," if they come back on, they know they passed through the Y2K OK.

In terms of container ships, almost a 100 percent of our manufactured goods come in and out of the United States via container ships, and this is intermodal. It is very logistics-oriented, very dependent on the chain of communication, financial services, and ports.

Fortunately, there you have some very large, very sophisticated companies who make up the bulk of the container ship industry, and they are definitely aware of Y2K, and I am pretty confident they are in good shape.

In terms of tankers, my special area, our industry's been very aware of the problem, we've been working on it, and INTERTANKO's efforts are focused on awareness. It's up to each individual owner to look at their specific ship, and systems, to make sure they comply. Generalizations really don't work. You have to get very specific into each piece of equipment, and each vessel.

The GPS which most ships nowadays use to navigate has already gone through its Y2K, and, again, that's just one method of navigation. It's not the only one. I am optimistic the ship side will be OK. One interesting possibility, though unlikely for a problem, is not so much with the ship, but it is with the logistics chain that brings oil into the United States, and that is, we are dependent largely on Third World countries for our oil, and it is very hard to determine where they stand in their ports, in their internal pipeline systems for Y2K.

If you remember, 1974, the lines, the gasoline crisis, or the perception of a gasoline crisis. The year 2000, it is theoretically possible the same thing would happen. We have high oil prices today. We have low crude oil inventories, and consumers cannot plan ahead. You cannot stockpile your gasoline other than by filling your tank, and, again, much of our oil comes from third parties, Third World countries.

If there was a serious export stoppage from Venezuela, or Mexico, or Nigeria, or the Middle East, in theory, you could have a public perception of an oil problem, even though our sources are very diversified.

We have the Strategic Petroleum Reserve and we have oil companies who are very well organized to deal with crises themselves.

But one area that would be an interesting possibility or problem would be a perception of a gasoline shortage, and it probably would not be a bad idea for the oil industry to start building up its inventories as we approach the end of the year. Thank you.

[The prepared statement of Mr. Du Moulin can be found in the appendix.]

Chairman BENNETT. I want to pick up on your last comment because one of the issues that we are having a very hard time getting our arms around, here, on the committee, is this whole question of stockpiling, and how much is going on, and will it produce an economic impact in the first quarter of 2000.

Theoretically, Y2K could cause a classic inventory recession, where everybody builds up his inventory in anticipation of it, in the last quarter of 1999, and then says to his suppliers, "Well, I have to work off this excess inventory, so I will not be buying anything in first and second quarter 2000." That is the core of the "gloom and bust" cycle that we have learned to live with and hate during the Industrial Revolution.

Now, do you see—INTERTANKO members handle shipments—do you see any stockpiling going on by virtue of demand being higher than normal in this quarter? Any indication of that going on, that would come through your members?

Mr. DU MOULIN. That is a good question, Senator. First of all, INTERTANKO members serve the customers. Their ships carry the oil owned by, whether it's exporting countries, oil companies, traders. So our ships go wherever they're ordered to go, based on the contract we have with the charterer.

But what we have seen in terms of the oil markets in recent months is that the Asia economy has picked up, they seem to be through the worst of their crisis, so demand there has picked up for crude oil and refined products.

The United States economy is still very strong and consuming quite a bit. There is really no significant recession anywhere, perhaps other than Russia, and so there is a high demand for oil.

OPEC has gotten its act together, so the prices are now up over $25 for the first time in over 3 years. So that what we have seen is a draw-down of oil inventory, probably due to the buyers of oil trying to wait till prices drop off a little bit. That is just my guesstimate.

With winter coming, and Y2K lurking at the end of the year, it is my opinion that it is not a great time to have lower inventories. It is a better time to have normal or solid inventories.

In terms of the oil industry, high or low inventories of itself I do not think can trigger the kind of recession you are talking about, because it is not the consumer that holds inventory. It is really an industrial inventory.

I think that it is not a convenient time, if there were a problem in the Third World, to have low inventories. So one would hope inventories would buildup both for the winter and for Y2K. Building of inventories would not of itself be any economic hardship on the consuming public.

Chairman BENNETT. Well, go out of the oil industry for a minute into container ships. Here are some quotes from an "Information Week" survey.

"Cargo shipments that would have normally been scheduled for the first quarter of 2000 are being booked for the second half of this year." A shipping company official said, "Eighty percent of our customers want to import now rather than take a chance early next year." Are you seeing any indication of that by virtue of traffic?

Mr. DU MOULIN. I am not an expert at the statistics and container ship industry, so I cannot comment on that. I do know the industry has lots of capacity to move cargo. But what you are interested in is really the effect on the consumer and the manufacturers. The shipping industry itself I am sure could handle the load, but I cannot speak to the other part of the issue. I do not know whether the Coast Guard may have any data on that.

Admiral NACCARA. Mr. Chairman, I do not have hard data on it, but I know from many of my conversations with senior executives in the shipping industry, that they have repeatedly said they would not be operating on the critical dates. They do not want me to repeat their names or their companies for competitive reasons, but I suspect that they are planning to work around that issue. Given that as part of their contingency plan, they do not intend to be in restricted waters, they do not intend to be moving within harbors on the critical dates. So that may result in the stockpiling or the planning around that. That is as much as I have on that.

Chairman BENNETT. That would be a matter of a day or two, and I realize this is a question that is almost impossible for you to answer. I am not expecting any kind of hard numbers.

There is a sense of smell out there, that tells me that more stockpiling is going on than anybody wants to admit. All of the evidence for that is anecdotal. I have not been able to get my hands around any kind of firm information that says we are seeing worldwide a major inventory buildup. We had the gentleman from British Airways. I have reports from business associates who tell me that there is a fairly significant amount of stockpiling going on in the United Kingdom. Very quietly, companies are building their inventories, so that they will not be vulnerable.

I have no way of, as I say, quantifying it, but I am just looking to see if there is any more anecdotal information that goes in that direction, or goes in the opposite direction, and I would think traffic in international maritime facilities would be part of the anecdotal evidence that would suggest that maybe some of that stockpiling is going on.

But neither one of you can give me a sense of smell, either way?

Admiral NACCARA. Not at the moment, Mr. Chairman, but what we can do is to check on port entry data and we can compare that to previous years' benchmarks, perhaps. I can also check with pilots' associations to get a sense for the number and the capacity of cargo being moved and compare it to previous years.

Chairman BENNETT. Yes, I think it probably would be more of a capacity issue than number issue, that they just fill the ship up a little more.

Admiral NACCARA. Yes, sir. I will look into that and report back to the Committee.

[The information referred to can be found in the appendix.]

Mr. DU MOULIN. I am just advised by one of my companions, there is some selective placement of cargos in the fourth quarter rather than the first quarter in the container ship industry. This is not my own knowledge but my companions have some better ideas on this. But it does not sound like massive amounts we talked about.

Chairman BENNETT. Around the world, there are some choke points to marine navigation—Suez Canal, Panama Canal, Straits of Hormuz, and so on. I am sure there are others that I am not familiar with.

Do you have any comment on these various choke points, and what you are looking for there?

Mr. DU MOULIN. I have a comment. I would like the Admiral to follow me because he may know more on certain of these. I have been down to Panama, and what impressed me there was the seriousness they are taking the hand-over. What also I found fascinating was that much of the control equipment dates back to the first 10 years of the 20th Century, and so maybe that's a good defense against Y2K.

Chairman BENNETT. The ghost of Teddy Roosevelt is still there.

Mr. DU MOULIN. So I would hope the canal is all right. In terms of Suez Canal, for crude oil shipments, there is a choice of going around Africa or going through the canal. It is really an economic choice of an extra week of steaming versus the cost of the transit of the canal.

So it would certainly be somewhat disruptive if the Suez Canal ever closed, but it would not be a catastrophe if it closed. There is a lot of tanker capacity out there now.

In terms of other navigational bodies, like Straits of Singapore or others, it is not a matter of physical closure as much as the advice you can get from some vessel traffic control facilities that are located in some of these areas.

I would think that the ships operating with their own due diligence would be able to still navigate.

Admiral NACCARA. Sir, on an interdepartmental basis, the Coast Guard attempted to identify the critical ports in the world for military purposes and as our key trading partners, and all of the key choke points as you just mentioned.

We have taken this list to TRANSCOM, and together with a contractor, they have developed an assessment of most of these critical ports and the choke points.

That is part of their classified assessment. I can say, generally, that we have seen through three briefings, during the last 8 months, that there has been a great improvement in awareness of Y2K and preparedness, and generally actions have been taken in all of our critical ports and choke points.

I can have arrangements made for that briefing to be made to you, sir, and your staff.

Chairman BENNETT. We would appreciate receiving that information.

[The information referred to can be found in the appendix.]

Finally, the same kind of general question that I have asked before of the aviation people. One of the concerns in the Department of Defense is that someone who wishes us ill will try to slip some

sort of computer problem into the system, disguising it as a Y2K system, when in fact it is a computer attack.

Now the Department of Defense is the center of most of the computer attacks against this country that are going on. Some of them have turned out to be 16-year-old boys who are simply out to prove that they can do it, and do not realize the enormous damage that they cause.

But some of them are coming from much more sophisticated and powerful sources. It would seem to me that if there were a source that wished this country ill and wanted to create disruption in the Western world, generally, for whatever reason—religious ideology or fundamentalist zeal, or whatever reason—that disrupting shipping would be a very, very good thing for them to do to achieve their goal.

How secure do you think some of the critical systems are? Mr. Du Moulin, you probably have not focused on this as much as the military people, but I would like you to think about it, if you have not, and get your various associates to do the same.

How secure, Admiral, do you think you are against some kind of an attack that would be made over the Y2K period, to try to create this disruption and make it look as if it were something other than an attack?

Admiral NACCARA. A difficult question to answer, Mr. Chairman. I can say, through experience, that we have rather sophisticated intrusion detection equipment installed on Coast Guard software systems. In fact, we are probably susceptible to about 40 attempted intrusions per month, most of which have been unsuccessful, I must say, during the last 6 months.

We will have a heightened state of awareness and have more people on watch and prepared, looking for those types of problems, as we pass the millennium.

I would like to think that we are fairly secure in the Coast Guard. That does not ensure that level of security on those systems that are beyond our control. The other key systems that are operated by other Government agencies I would believe have similar intrusion detection equipment in place.

Chairman BENNETT. Are you in touch with DOD and the work that they are doing?

Admiral NACCARA. Yes, sir; absolutely.

Chairman BENNETT. I would assume that would be the case, that the uniformed services——

Admiral NACCARA. Yes, sir. Interoperability and compatibility are very critical to all of our services.

Chairman BENNETT. Thank you very much for your patience. We appreciate you sitting through a long morning, but we learned a great deal on the committee through the morning, and your testimony, the two of you, was very, very helpful. Thank you, again.

The Committee stands adjourned.

[Whereupon, at 12:20 p.m., the Committee was adjourned.]

APPENDIX

ALPHABETICAL LISTING AND MATERIAL SUBMITTED

PREPARED STATEMENT OF CHAIRMAN ROBERT F. BENNETT

The movement of people and goods safely, rapidly, efficiently, and economically is both a major accomplishment and an essential requirement of modern times. People can now take short trips to far off destinations for personal or business reasons that in the earlier part of this century would have required the commitment of many days or even weeks. Businesses have now developed more efficient means of production that rely on just-in-time inventories and lean manufacturing where trains, trucks, and tankers serve as moving warehouses of supplies and finished goods. And the transportation infrastructure makes possible the rapid deployment of US armed forces—power projection forces—in times of conflict to any part of the world as needed, precluding the need for greater "forward deployment" of American troops on foreign shores.

However, transportation vehicles and systems increasingly rely on automation and information technology as many other industries do. Everyone is aware of the computers that manage air traffic, and we are increasingly reminded of the computers in our automobiles, but few of us have experience with other modes of transportation that are also heavily dependent on information technology and embedded systems.

A good example of this is the "Susan Maersk," a container ship operated by the Maersk Line (shown in a poster on my right). This ship, the largest to call on an American port, is 1,138 feet long and transports the equivalent of 6,600 twenty-foot trailers. Amazingly, through technology, it manages to accomplish its tasks with a crew of only 15. It does so with a computer system that connects and monitors some 8,000 sensors in the engine room, cargo-containers, and elsewhere that enables safe navigation and operations.

This computer dependence has made transportation systems potentially vulnerable to the Y2K bug unless the technology is fixed. So far, this sector has been faring well, having passed several suspect dates in the past year with minor problems at best. The problems that have shown up so far could be classified as nuisances, such as lost luggage, broken taxi meters, erroneous traffic citations, premature cancellation of registrations, and failure of GPS receivers in a small number of automobiles last August. However, we know the potential is there for much greater problems. We've seen what can happen to air traffic when the radar systems and computers fail, and we've experienced in this city the commuting headaches that occur when the computers that control the D.C. Metro fail.

Today, we will examine how the Y2K problem may interfere with the global network of transportation systems and what steps Governments, industry, and trade associations are taking to minimize Y2K's impact. We will focus mainly on international issues, having looked at the domestic issues in detail last year. It is very important that air, sea, and land transportation systems be ready in other nations for Americans to travel safely as well as for the uneventful import and export of raw materials and finished products that our economy depends upon. Nonetheless, there are a few loose ends in the domestic area, such as the readiness of domestic airports and marine terminals, which we expect our witnesses will address today.

Information that has only recently surfaced concerns us that there may be a lack of serious attention to Y2K by many entities within the transportation sector. For instance, the Coast Guard received only a 43% response to its request for Y2K status information from the 33,000 vessels that visited U.S. ports over the last two years and only a 36% response from the 5,000 marine facilities surveyed. Also, only 33 of the 83 U.S. members of the American Association of Port Authorities responded to its August 1999 survey. Finally, 22 of 168 U.S. airlines providing international service did not respond to the International Civil Aviation Organization's

request to member states to publish information on the Y2K readiness of their aeronautical services, while another 27 of the 168 failed to report Y2K completion dates. I could cite further examples, but I think the trend is clear.

Finally, with New Year's Eve just three months away, it is important to understand how Government and industry plan to manage the transition to the new century at the end of the year in a way that keeps the public appropriately informed while minimizing the potential for panic. The Department of Transportation is fulfilling several key roles to this end. For example, it is leading the team evaluating foreign aviation systems, working with the Department of State on travel guidance for U.S. travelers, and assisting the Information Coordination Center under the President's Council on Y2K Conversion to assess the transportation sector's response to Y2K at the end of this year. We look forward to hearing how the Department will accomplish these difficult and critical tasks.

PREPARED STATEMENT OF PETER COOKE

I am Peter Cooke, appearing on behalf of British Airways Plc. I would like to thank the Committee for offering British Airways the opportunity to explain the steps we are taking to deal with the unique challenge posed by the Year 2000 issue.

BRITISH AIRWAYS READINESS FOR THE YEAR 2000

The British Airways Year 2000 programme began in 1995. The programme encompasses computer systems, applications and equipment for which the airline is responsible, as well as embedded chip technology, business partners and supplier chains. The two basic programme principles are:

- the application of rigid project management disciplines and
- line management accountability for business continuity.

The project is regarded as a business issue rather than purely an IT problem, hence the appointment of myself, a generalist line manager rather than an IT specialist, as Project Director. Our Director of Customer Service and Operations sponsors the project at executive management level and I have open access to the Chief Executive. The Main Board is keenly interested in the project and receives regular reports both verbally and in writing.

We have had up to 200 staff assigned to the programme both in the Central Project Office and across Departments and our estimated spend over the length of the project amounts to 70 million sterling (approximately $112 million). Specialist consultanices have been engaged, principally in the fields of business continuity and embedded chip technology, All findings have been subjected to independent quality audit.

Current Status

Over 99% of British Airways systems and infrastructures have finished their compliance projects and are back in production. This programme has involved more than 3,000 systems and environments, over 800 applications and some 30,000 PCs. The small number of systems remaining are either not business critical or have tested business continuity plans.

Successful large-scale tests of our business processes, with system clocks set in 2000 mode, have been carried out. These include such routine airline operations as check-in, reservations, ticket sales, cargo, crew scheduling, airport arrivals and departures and flight tracking across the network. Systematic and close liaison has been established with major business partners such as British Airports Authorities (BAA Plc) with joint testing of common systems at our base airports of Heathrow and Gatwick—e.g. baggage delivery systems.

Our Engineering Department, in conjunction with Boeing, Airbus and avionics suppliers, has undertaken a thorough audit of aircraft systems inclusive of British Airways originated modifications. Flight tests have been conducted on each aircraft type. As expected, normal system and aircraft operation has been demonstrated.

With regard to supplier chains, our database originally comprised some 40,000 entries worldwide. All have been categorized according to business importance, investigated and certified compliant or alternative arrangements put in place.

We have monitored and will continue to monitor the Year 2000 programmes of our franchise and codeshare partners.

As safety regulator the Safety Regulation Group of the United Kingdom Civil Aviation Authority (CAA) is required to be satisfied that UK airlines are addressing the Year 2000 issue, that adequate resources are provided and that airlines provide safety assurances of readiness in respect of services and products covered by the UK CAA approval held by the Operator. No safety concerns have been raised.

British Airways has collaborated closely with Action 2000, the United Kingdom Government Agency established to ascertain Year 2000 readiness of key components

of the United Kingdom economy and infrastructure. In July, following audit of our programme by independent assessors appointed on Action 2000's behalf, we were accorded their highest rating—BLUE—which means that we met the following criteria for business processes of importance to UK infrastructure.

- the organization's critical systems programme is complete.
- the organization has addressed its exposure to suppliers and has an adequate and on-going supplier assurance programme in the judgement of the assessor.
- the organization has reasonable risk based continuity plans in place or on course to be in place and fit for purposes by 1 January 2000 in the judgment of the assessor.

A freeze on all systems implementation has been in place since the beginning of September 1999. This will continue until end of January 2000.

In conclusion, therefore, British Airways is satisfied that it is ready for the new Millennium as far as all systems and processes that it controls are concerned.

READINESS OF AIR TRAFFIC SERVICES AND AIRPORTS

Air Traffic Services

Ensuring Year 2000 readiness of overseas air traffic service providers has been a significant exercise for an airline with global operations like British Airways. there are over 180 ICAO States of which some 150 are of relevance to British Airways. Our process has included co-operation with the International Civil Aviation Organization (ICAO), participation in the International Air Transport Association (IATA) industry project, collaboration with our alliances partners (**one**world) and our own assessments, knowledge and experience.

Firstly, an assessment has been made of State responses to the ICAO request for assurances of programmes to audit date sensitive systems, action taken by States and declarations of readiness.

Secondly British Airways has been a very active supporter and participant in the IATA industry Year 2000 programme, unanimously adopted at the Annual General Meeting in May 1998. In fact, I have the honor of being the Chairman of the Steering Group of airlines who have given direction to the IATA programme as it has developed, and continues to develop. Our Flight Operations department was involved in developing the ATS programme methodology and we have had observers at many site visits, either our own Flight Ops personnel or specialist ATS consultants under contract to us. We have also taken into account report from the IATA Regional Technical Offices. In some cases very positive discussions have been held directly with suppliers to ATS authorities.

In some areas we have conducted our own assessments and have also taken reports from our **one**world partners.

A formalized company assessment process has been developed to determine degree of readiness, that contingency plans are in place or being formalized within the region and the potential impact on safety. The scope of assessment comprised:—

a) Air Traffic Service Providers.
b) Operational systems related to Air Traffic services at airports.
c) Destinations and Alternates.
d) Focus on Millennium transition period 31st December to 4th January.
e) Safety and Operational viability.

To determine the potential impact to aircraft in flight a database was created with assessment criteria for each ICAO State. A computer routine was developed to determine the location of British Airways flights (en-route and the ground) at midnight local time and GMT.

The monitoring of readiness will remain on-going up to 31st December and the assessment code given to each State will be reviewed and revised as further information is received. Our normal Operations Control Centre at London, which controls our operations on a 24 hour basis, 365 days a year, will be responsible for monitoring and taking any necessary decisions on flights during the Millennium rollover period. It will begin to receive information from early on 31st December through direct communication links which are being established with ICAO, IATA, Eurocontrol and **one**world partners. These links are currently being defined, installed and tested.

Airports

With regard to the operational readiness of airports worldwide, British Airways has also been a very active supporter and participant in the IATA industry Year 2000 investigation. British Airways representatives have observed many of the site visits, and we have been lead airline, responsible for ensuring data collection, at a number of airports both in the UK and overseas.

Our assessments have been based on IATA data, and on information gained through the Regional Task Forces which have been instituted by IATA to assemble

regular meetings of regional airlines and to pool all available knowledge on Year 2000 readiness. We have also taken account of reports from our own overseas managers at each airport and collaborated with our oneworld partners. We have concentrated in our assessments on contingency plans at each airport we operate to and we have participated, wherever possible, in the testing of such plans. We have developed a route-by-route database to co-ordinate all assessments.

Conclusions

We continue to track progress worldwide and will do so up to the Millennium itself.

Our assessment is that we are very satisfied with progress being made in all parts of the world and we do not currently anticipate that our planned Millennium period operating schedules will be impacted by Year 2000 readiness issues at ATS providers or airports.

CONTINGENCY PLANS

The British Airways Year 2000 programme calls for Business Continuity Plans to be in place, confirmed and tested by the end of September 1999 for mission critical and important processes. We are also taking into account the regional contingency plans being put in place by ICAO and, as mentioned, the BCPs of individual airports. Our conclusion that there are currently no impediments to operating our planned schedules takes into account our assessment of the contingency plans of key suppliers and business partners.

RELATIONS WITH ICAO, IATA AND OTHER ORGANIZATIONS

British Airways believes that the Year 2000 programme undertaken by IATA with participation, support and funding from all member airlines (and including some non IATA carriers) is a striking example of the airline community taking the lead, collaboratively and proactively, in an important initiative in the public interest. Some $28 million has been provided by airlines for this programme and we believe that no other international industry has demonstrated a more responsible approach to the Year 2000 challenge.

The programme has received unprecedented co-operation from our industry partners and a vast amount of relevant and useful data has been assembled.

The industry programme has worked closely with ICAO, Airports Council International (ACI), Air Transport Association of America (ATA) and other representative international organizations from related industries and service providers. British Airways is pleased with the co-operation offered by all concerned.

SUMMARY

British Airways is confident that its methodology and assessment process is appropriate to address the safety related issues posed by Year 2000. We have determined that the residual risk to operations is low and that adequate contingency plans are in place. On September 20th we announced our schedule of operations for the Millennium. There will be a reduced schedule over the Millennium eve, reflecting expected demand. New Year's eve is traditionally a time of reduced passenger loads. However, there will be a worldwide operation including some flights during the rollover period.

We shall, of course, keep all aspects of our assessment of Year 2000 readiness under continuous review up to and during the rollover period and, since safety is of paramount importance, we will not hesitate to review our planned operations in the light of latest information and will take appropriate action if necessary. This is normal practice for an airline with global operations 24 hours a day. It is never possible to say that no delays or operational disruption will occur but we have well established procedures to mitigate both the likelihood and the consequences of any disruption to our passengers.

PREPARED STATEMENT OF VICE CHAIRMAN CHRISTOPHER J. DODD

Thank you, Mr. Chairman. Y2K has the capacity to severely disable the transportation industry. Luckily, however, the airline and travel industries have gone to great lengths to ensure that travel on the air, sea, and land will be safe and uninterrupted on New Year's Day. To a very great extent, I believe this will be the case. However, there continues to be genuine Y2K-related problems in foreign countries that are significantly less prepared.

Recently, the State Department prepared a detailed travel advisory characterizing the level of safety for 194 countries. Each country has dealt with the approach of the new millennium in a different way, and will vary in Y2K readiness come January 1. The State Department's public advisories indicate that certain countries will be much safer than others. The U.S., Canada, England and Australia are each expected to fare well during and after the date-change. Other countries such as India,

China and Russia may be more susceptible to Y2K problems, therefore it would be appropriate to caution people against traveling to those areas. In fact, a number of Asian-based airlines are drawing up plans for alternative routes to Europe in order to avoid flying over India. It seems India's own Air Traffic Controllers' Guild is worried about the Y2K readiness status of its aviation and airport industry.

When the State Department issues an advisory for a certain area of the world, factors such as the continuing availability of medical services, telecommunications, and utilities are equally important to travel as actual transportation systems. Therefore, just because planes will not fall out of the sky and ships will not sink, it does not necessarily mean that all will go well. We must look at the picture as a whole before making a decision about where to go during the date transition. Recently, warnings have circulated within Japan and Great Britain about the risks involved with traveling during Y2K. In fact, the British Airline Pilots Association (BALPA), a union which has 7,000 members, stated this past July that they will not fly to areas they regard as unsafe. This means that pilots must be trained and briefed on flying alternative routes given that some skies are potentially not as friendly as others.

Indeed the Department of Transportation's Inspector General tells us that:

- 34 of 185 nations have not yet responded to the International Civil Aviation Organization's request for status information on aeronautical services (airlines, airports, and air traffic control). Approximately one million passengers flew between these 34 countries and the U.S. last year.
- An interagency committee (DOT, DOD, and DOS) reviewing ICAO information about the 89 countries that account for 97% of U.S. international passengers, has determined that there is insufficient information available for assessing the Y2K readiness of 28 (or almost 1/3) of the countries.
- And, even in this country, almost 2,000 of 3,300 U.S. air carriers surveyed by FAA did not respond to the FAA survey. All were smaller carriers.

Despite this last statistic, the United States is more prepared than any other country in the world. Problems in this country are more likely to create inconveniences rather than safety issues. A major concern of the Federal Highway Administration (FHWA) is how ready state and local governments traffic management systems, traffic signal systems, and other Intelligent Transportation Systems are that make road travel convenient and delay-free. These systems are operated solely by state and local governments, and do not depend on the Federal government for supervision or maintenance. This is not to say that travel should be avoided over the holiday season, only that you should factor Y2K into travel plans much as you would factor in other potential problems such as bad weather or holiday traffic.

Here in the District, and in other large cities across the nation, people will use trains as part of their means of holiday transportation. The railway system is a highly interconnected system and citizens should be aware of potentialities that may exist there. During Hurricane Floyd the central operations center of CSX railway was understaffed, causing a total shutdown of commuter trains as far as eight hundred miles away. Though Y2K related problems are not necessarily expected to occur in this area, no one can really be sure until we get there, and even then, no one can be sure how far-reaching problems may be. The possibility always exists for unanticipated problems to erupt in one place, causing disruptions in another, which is the very nature of the Y2K problem. A more thorough assessment will be provided by the Department of Transportation, which will give us a better understanding of how contingency plans would be followed in the case that disruptions actually occur. In any case, people should remember that Y2K could cause normally heavy travel days to be wrought with disruptions and delays.

A hundred million Americans travel to work everyday in planes, trains and automobiles. Millions of students depend on buses and trains to get to school. During and after the New Year there will be potentially millions of people traveling to various destinations nationwide and worldwide. There is no question of the importance of this issue. We look forward to hearing from our witnesses today. Thank you, Mr. Chairman.

PREPARED STATEMENT OF MORTIMER L. DOWNEY

Chairman Bennett, Vice-Chairman Dodd, and Members of the Committee: thank you for this opportunity to report on the Department of Transportation's (DOT, or the Department) accomplishments in resolving the Year 2000 (Y2K) challenge. I appear before you today fully confident that all of DOT's vital computer systems will effectively make the transition on January 1, 2000.

Over the past two years, the Department has put forth a concerted effort to ensure that its mission-critical systems will function as expected before and after the century change. The safety and well-being of the traveling public, and the crucial role that the transportation industry plays in our Nation's commerce, have been uppermost in our minds as we've gone about the business of remediating the Department's vital systems.

Today, I am pleased to report to you that the Department has completed remediation efforts on 100% of its 609 mission-critical systems. These systems function in every Operating Administration (OA) in DOT: the Federal Aviation Administration (FAA), the U.S. Coast Guard (USCG), the Federal Highway Administration (FHWA), the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), the Maritime Administration (MARAD), the National Highway Traffic Safety Administration (NHTSA), the Research and Special Programs Administration (RSPA), the St. Lawrence Seaway Development Corporation (SLSDC), the Surface Transportation Board (STB), the Transportation Administrative Service Center (TASC), the Bureau of Transportation Statistics (BTS), the Office of the Inspector General (OIG), and the Office of the Secretary (OST).

Considering where we stood with this complex task a year or so ago, this achievement is a testament to the extraordinary efforts of a truly dedicated team of professionals determined to ensure that our transportation system remains ready and safe.

We are still working hard to complete work on our non mission-critical systems. In our August quarterly status report we reported that remediation has been completed for 100% of these systems operated by the Federal Aviation Administration, the Federal Highway Administration, the Federal Railroad Administration, the Federal Transit Administration, the National Highway Traffic Safety Administration, the St. Lawrence Seaway Development Corporation, and the Surface Transportation Board. The remaining OAs continue to make progress with their non mission-critical systems, and most project completion of this work by October.

We recognize that despite our best efforts, some services provided by business partners and the public infrastructure may be disrupted during the millennium rollover due to Y2K system failures. We must be prepared to deal with system failures that could disrupt vital services, whether or not they are within our control. Therefore, the Department's OAs have developed Business Continuity and Contingency Plans (BCCP) so that our core business functions will continue uninterrupted. Our OAs are in the process of testing their contingency plans and making necessary adjustments to these plans. Current versions of each plan have been provided to you.

In addition, the Department has conducted two tabletop exercises with the Secretary, OA Administrators, and myself, and we plan to conduct an additional such exercise in November. During these exercises, various failure scenarios are introduced to the participants and they are required to elaborate on how their contingency and staffing plans might deal with these failures. These exercises are proving very useful for identifying problems and circumstances that might arise, and the strategies to deal with them.

While we feel confident about the Department's own remediation and contingency planning activities, we recognize the need to continue vigorous outreach activities with our domestic and international industry partners. Under the auspices of the President's Council on Year 2000 Conversion, I chair the Transportation Sector Working Group. This group includes the Department of Defense, the Department of Agriculture, the Department of the Interior, the Department of State, the National Aeronautics and Space Administration, the Customs Service, and the U.S. Postal Service. The group is charged with promoting action on the Y2K problem and gathering information on Y2K readiness of entities in the transportation sector. This sector includes air carriers, airports, shipping companies, port operators, freight railroads, automobile manufacturers, trucking companies, and mass transit authorities. Through this group, there has been a full exchange of information on many levels across the globe, and from this exchange we have been able to determine several common themes regarding the transportation sector's readiness:

- there is a high degree of awareness of the problem and its potential consequences;
- there are aggressive efforts being made to address the problem, although better progress is reported by large organizations than by small and medium-sized organizations;
- possible disruptions are expected to be generally local in nature; and,
- there is a greater potential for international failures that could adversely affect our own domestic and cross-border operations (many of the world's smaller and emerging nations are struggling to meet the challenge).

More specific information regarding the transportation sector has been included in the Quarterly Summaries of Assessment Information issued by the President's Council on Year 2000 Conversion. The most recent Summary was issued in August, and the final Summary will be issued in November. The following represents transportation sector status information as of the August report:

Highway—Automotive/Trucking

A spring 1999 National Highway Traffic Safety Administration (NHTSA) survey of major automobile manufacturers did not identify any potential Y2K impacts for the safe operation of motor vehicles. Auto manufacturing companies representing approximately 90 percent of cars and light trucks sold in the United States all stated that the Y2K problem would not affect the safety or performance of their motor vehicles.

Many manufacturers voluntarily submitted Y2K Readiness Disclosures in addition to their survey responses. These disclosures, available to the public on the NHTSA web site, indicate that most manufacturers are addressing all aspects of the automotive industry with their Y2K efforts, including coordination with business partners such as vendors, suppliers and dealers.

The American Trucking Associations, Inc. (ATA) surveyed its 3,600 member companies in February 1999. The 190 respondents represented a cross-section of the industry, from small regional companies to large national and international companies. A summary of responses showed that 95 percent of respondents had Y2K plans in place. Of 170 respondents, system assessments, on average, were 89 percent complete with over half reporting 100 percent completion. Renovation was reported as 74 percent complete; validation 61 percent complete; and implementation 61 percent complete. Eighty-one percent reported having designed contingency plans, 56 percent said they had tested those plans. ATA distributed another survey to its members in September and results are expected in October.

Within the trucking industry, large and small businesses are expected to be the most prepared for the date change (small businesses in the industry are not heavily automated), while mid-sized companies are thought to be vulnerable due to a lack of funding and experts to make Y2K repairs to business systems. There are no known Y2K problems for truck engines. Members of the major trucking associations were alerted to the Global Positioning System (GPS) end-of-week rollover issue that could have affected some GPS receivers after August 21, 1999. No GPS incidents were reported to us by trucking associations. We recognized that the GPS, which is operated by the Defense Department, is relied on by virtually every mode of transportation and by recreational users such as hikers, and campers. Therefore, the DoD and DOT worked together and with many other organizations, to ensure that GPS users were aware of this date-related GPS event and avoided any situations where loss of the GPS could cause a hazardous condition. I am pleased to report we were successful—GPS anomalies were few and minor and we know of no incidents arising from this event.

Rail

In general, because of the design of safety-critical railroad signaling, dispatching, and telecommunications systems and the operating rules that accompany them, the railroad industry does not anticipate that there will be any Y2K problems associated with these systems. The systems are all event-driven. Similarly, no Y2K problems are expected with grade crossing signals because they are event-driven, rather than time- or date-driven. Electronic event recording systems keep track of grade crossing signal operation, but the signals themselves are designed to operate even if the event recorders malfunctioned due to a Y2K problem.

Amtrak and the commuter railroads examined their mission-critical operating systems (dispatching, signals, grade crossings, etc.) and their mission-critical business systems (ticketing, reservations, scheduling) and reported that they successfully corrected those few systems where a Y2K problem existed. They anticipate that trains will run as planned on Jan. 1, 2000 and the following days, and that customers will continue to be able to obtain information, tickets, and reservations. However, Amtrak and most of the commuter railroads carry out operations on tracks by the major freight railroads and are therefore dependent on the Y2K readiness of these railroads.

Serious Y2K problems are not anticipated in the short-line railroads since they are primarily small businesses that rely on older, less technology dependent, equipment. For example, most short line railroads do not have signal systems and operate older locomotives that do not have on-board computers. However, they also rely on the larger railroads with which they connect to provide them with traffic data and other automated support.

Because of the dependence of the smaller railroads on the larger ones, as well as the serious safety issues that have arisen as a result of computer problems occur-

ring in connection with railroad mergers in recent years, the Federal Railroad Administration (FRA) is taking a more proactive role with regard to potential Y2K-related computer issues with the major railroads. FRA hired a consulting firm with a background in Y2K conversions to visit the nation's four major railroads (Burlington Northern Santa Fe, CSX, Norfolk Southern, and Union Pacific), which together account for almost 90 percent of freight revenues. The consulting firm was tasked with the following: to review the steps the railroads have taken to make their operating data systems, yard management systems, dispatching systems, and electronic data interchange systems Y2K compliant; to analyze what steps remain to be taken at each company before full compliance is achieved; to review logs and records regarding the railroads' Y2K compliance activities in terms of independent validation and verification, remediation, testing, and implementation; to observe end-to-end tests; and to review each railroad's contingency plans and evaluate their likely effectiveness. The results of this effort will be available at FRA's upcoming Y2K Readiness Workshop on October 8, 1999.

Transit

In July 1999, the President's Council on Year 2000 Conversion convened a meeting to gather information on the Y2K efforts of transit providers and suppliers. DOT, the Federal Transit Administration (FTA), and a cross-section of transit industry representatives identified the following issues affecting the industry:

- transit will be one of the very first public services to be utilized in the New Year, serving everyone from revelers to shift workers conducting Y2K coverage;
- some authorities in metropolitan areas have extensive contingency plans to address unprecedented ridership increases expected for the New Year's celebrations;
- Y2K does not appear to pose any insurmountable technological hurdles for the transit industry and, as a general business practice, most transit providers have existing contingency plans (non-Y2K specific) addressing various scenarios; and,
- some transit providers are planning to pause either rail or rail/bus operations briefly around midnight until it is clear they may safely resume normal operations.

The participants at the July meeting agreed that Y2K readiness remains a major focus of top-level management attention in the transit industry, requiring the continued personal direction of transit agency board chairs and chief executive officers as well as Federal, state and local officials through January 1, 2000 and beyond.

For its part, FTA has accelerated its industry outreach, management oversight and survey of the Y2K compliance of the nation's transit systems. FTA transit agencies unable to meet a June 30, 1999, Y2K compliance deadline established for Y2K grantees were required to submit a contingency letter outlining their plans for continuation of system operations while repairing or replacing non-compliant elements. Of 550 grant recipients required to report, all but four have responded that they are either Y2K compliant or have required contingency plans. Of those responding, 403 (73%) reported Y2K compliance, and the remaining 143 reported that they will be complaint by 12/31/99. The remaining four grantees (all in Puerto Rico) either did not respond to the survey or responded incorrectly. FTA is following up with these recipients.

Air and Maritime

Administrator Garvey and Admiral Naccara will provide you with detailed information regarding their agencies' readiness and the readiness of the FAA's and Coast Guard's domestic and international industry partners. Both organizations have been working Y2K issues aggressively and extensively with the aviation and maritime communities.

However, I would like to take this opportunity to address your specific questions regarding our strategy for advising the public of Y2K related problems in the airline industry, particularly in the international arena. In cooperation with the President's Council on Year 2000 Conversion, the Office of the Secretary of Transportation, the Federal Aviation Administration, and the Department of Defense have reviewed available information gathered through the International Civil Aviation Organization (ICAO) and other sources on the Y2K readiness of foreign civil aviation entities. Information on whether an individual country is Y2K ready is available on the DOT website at the following address: *www.dot.gov/fly2k*.

The whole Y2K phenomenon is characterized by uncertainty as to its effects and we cannot fully predict what will happen during the millennium transition. Y2K non-compliance in a system or entity does not necessarily translate into a safety problem or regulatory violation. To date, FAA's analysis of available data has not identified any aircraft safety problem associated with Y2K that would justify prohibition of aircraft from U.S. airspace.

Furthermore, civil aviation is inherently capable of addressing contingencies every day. Before any flight is conducted by U.S. carriers/crews they must carefully assess all information pertaining to the flight including weather, Notice to Airmen advisories, performance data, suitability of destination airfield, and other factors affecting safe operations. In the event adverse conditions are expected, contingency plans are required which might include additional fuel, use of alternate airports, restrictions on operations to daylight only, or any other number of possibilities. It is expected that the millennium transition will be no different, and contingency plans will be in place at each facility and for each flight to address Y2K impacts. International contingency planning efforts and our encouragement of business continuity planning at international airports should mitigate potential disruptions in service. The current expectation is that conditions related to Y2K transition will give rise to isolated service disruptions that could subject passengers to inconvenient delays or diversions.

However, if the FAA has credible, verified information that aviation operations in a foreign country would not be safe due to Y2K problems, the Administrator would take appropriate action. FAA can proscribe flights to an area and provide notices about conditions, if the responsible aviation authority for that area for some reason doesn't. However, flight proscriptions or other proscriptions on air carriers traveling to foreign destinations will not be made solely on the basis of Y2K compliance statements which cannot be verified through first hand inspection and whose effects cannot be clearly identified or measured. The FAA would also provide information concerning unsafe conditions to the Department of State, which is responsible for issuing Travel Advisories.

You also asked me to address our plans to coordinate with the Information Coordination Center (ICC), the Department of State, and the Department of Defense regarding assessments of the international travel situation. Both the FAA and the U.S. Coast Guard will closely monitoring international activities through a variety of information networks. The FAA has normal operational links with the Department of State and Defense whereby information affecting civil aviation is reported and acted on as appropriate. We will be increasing our vigilance for the millennium rollover. This increased activity will include direct contact with the ICAO Y2K Global Command in Montreal, which, in turn, will be contact with the seven ICAO Y2K Regional Information Centers around the world. We are also reviewing our links to DOD and DOS to ensure exchange of Y2K information related to foreign air traffic service, airports and air operators.

The U.S. Coast Guard has established a large and diverse set of international partners. These partners range across the entire industry and include international terminal operators, shipping companies, indemnity clubs, appropriate government agencies and bodies such as the International Maritime Organization. Meetings were held this past week with the G-8 nations and international trade organizations to establish the turn of the century communications plans, as well as to share preparation information for the event. In addition, the Coast Guard has personnel stationed in Rotterdam, Guam, Japan, and the Panama Canal who will report on scene information. Similarly, liaisons will be at the DOD and State Department command centers during the event to observe conditions and report relevant information.

The FAA's Communication and Information Center (CIC) and the Coast Guard's Incident Management Team (IMT) will be linked to the DOT Headquarters Crisis Management Center (CMC), which, in turn, will be the direct line of communication with the ICC. Key personnel will be on duty at all locations to augment normal staffing to ensure flow of information and appropriate response to any problem caused by Y2K.

Overall, we have been working closely with the ICC and the Federal Emergency Management Agency (FEMA) to establish a coordinated information management capability for the days immediately preceding and following key date changes. We have a full-time detailee assigned to the ICC office as of September 1, 1999, through the end of February 2000. It is anticipated that we will have an additional five individuals assigned for the rollover period. In addition, we are also working with the Public Affairs component of the ICC, the Joint Public Information Center (JPIC), which will be operational during the rollover period. We have already participated in two exercises conducted jointly with the ICC and we anticipate that we will participate in additional readiness exercises conducted by the ICC beginning in mid-October. In addition, ICC representatives attended the two DOT tabletop exercises conducted with our OA Administrators.

We also serve on two policy bodies organized by the ICC—the Interagency Domestic Working Group and the Interagency International Working Group. In the international arena, DOT will be collecting supplemental information through our FAA offices and Coast Guard liaisons located in a number of world capitals. In addition,

we have operational ties to Transport Canada through our Crisis Management Center and its Canadian equivalent and we participated in Canada's major national exercise held September 27-28. We will continue to fully support the activities of the ICC.

In response to the question regarding actions the Congress or others should take to address international Y2K issues, I encourage your continued diligence in emphasizing the importance of the issue and the general state of readiness. With respect to Y2K in general, I would like to acknowledge this Committee for its pragmatic approach to the problem and its realistic portrayal of the status of Y2K efforts. Considerable misinformation regarding Y2K status has been generated on a variety of fronts, but this Committee has consistently sought to provide an accurate and objective picture of the facts.

In conclusion, I would like to reiterate that we are committed to ensuring that all DOT systems will operate properly before, during, and after the millennium change. Further, we recognize our responsibility to the traveling public and the need to continue our efforts to reach out to the transportation industry and all those responsible for our transportation infrastructure.

This concludes my testimony. I would be happy to answer any questions you may have.

PREPARED STATEMENT OF JANE F. GARVEY

Chairman Bennett, Senator Dodd, and Members of the Committee:

Thank you for the opportunity to appear before you this morning to discuss the status of the Federal Aviation Administration's (FAA) Year 2000 (Y2K) compliance efforts. I had the honor of appearing before you last year to apprise the Members of our efforts, and it gives me great pleasure to inform you today that the FAA has completely implemented all Y2K fixes in our systems as of June 30, 1999, the date that we promised we would.

We have worked tirelessly to ensure that the transition of air traffic services to the new year would be as smooth as possible. All FAA computer systems, mission-critical and non-mission-critical, are now Y2K compliant. An independent contractor has reviewed the documentation on the repairs we have performed on all of these systems and verified our work based on engineering judgment. The Office of the Inspector General (OIG) of the Department of Transportation (DOT) has also validated our compliance. I am confident that the FAA will make the transition to the year 2000 smoothly and without compromising aviation safety in the National Airspace System (NAS).

Our confidence in this was reinforced by one of our most important checks on our Y2K efforts. On April 10 of this year, we conducted an "end-to-end' test of our systems at the FAA's operational facilities in Denver, Colorado. This event used an FAA flight check aircraft to fly from Colorado Springs to Grand Junction to Denver International Airport. During this flight, the FAA's air traffic control systems were set forward to December 31, 1999, and rolled over to January 1, 2000. We recorded all of the tracking data, examined the data, and discovered that there were no problems attributable to the Y2K transition. This was a particularly important step in our testing, since it provided us with the assurance that our individual system fixes were able to work together in an operational environment.

Although our systems are Y2K compliant, we all know that the FAA must continue to conduct business from now through the new year, and that as our business needs change, so will our systems. Hence, we have added a Post-Implementation phase to our Y2K repair approach. During this phase, we will ensure that as changes are applied to our systems, the system will remain Y2K compliant. Additionally, we are strengthening our efforts in testing and quality assurance to ensure that NAS will continue to function through the year 2000.

We are committed to making sure the NAS will remain safe and efficient through the Y2K change. We are keeping a vigilant eye on our systems, testing and retesting them to assure ourselves, you the Congress, and the traveling public, that our Y2K repairs really do work. We continue to perform interface and system integration tests. Again, our focus is the maintenance of the integrity of our Y2K-compliant status. All enhancements, changes to the system, and deployment of new systems that the FAA would normally undertake are closely monitored to ensure continued Y2K compliance. We will maintain this focus until March 30, 2000, one month after the date of the last potential Y2K problem, the leap year date of February 29, 2000.

As an added precaution, the FAA has hired two independent contractors, one to conduct additional analyses of high-profile systems, such as the Common Automated Radar Tracking System (Common ARTS) and the Display System Replacement

(DSR), to ensure that there are no obscure problems that we may have missed. The other independent contractor is currently auditing our change management process to ensure that retesting and recertification for Y2K is conducted where necessary. Moreover, we have developed a moratorium on changes to the NAS around the critical year-end period. This is yet another precaution to maintain the stability and the Y2K integrity of the NAS during potentially risky time frames.

In our ongoing Y2K efforts, our contingency planning continues to develop. The FAA published a Business Continuity and Contingency Plan (BCCP) Version 1.0 on April 15, 1999, and published Version 2.0 on July 15, 1999. Despite our confidence in the Y2K fixes implemented at the FAA, the BCCP details what actions the FAA would take should problems associated with Y2K arise. The FAA has always had strong contingency plans in place to deal with eventualities, such as inclement weather and power outages, and the BCCP builds on those contingency plans to address potential Y2K-specific problems. We will publish Version 3.0 of the BCCP by October 15, 1999. As the BCCP develops, we have made sure that our labor partners are fully informed and invited to contribute to that development.

The FAA has been reviewing and testing the BCCP, making sure that the various operational functions of the FAA work individually and coherently. We have identified the personnel and communications structures required to support "Day One" (January 1, 2000) operations as defined in the FAA BCCP, developing and executing the contingency plan by training and testing to the level suitable to various operations. This effort ranges from a review of existing manual methods to full "war games." Local facility contingency plans continue to be tested on a regular basis. We conducted a tabletop exercise earlier this month to practice sharing of Y2K information throughout the agency, recording of Y2K incidents, and reporting of aviation infrastructure failures to DOT.

I should note at this point the invaluable service that the OIG and the General Accounting Office (GAO) have rendered us in validating our systems. We have asked them to continue to conduct site visits to our field facilities, and they bring to our attention any concerns or issues they may find.

But our efforts do not end at our own front door. As our confidence in the compliance status of our own systems grows, we have aggressively increased our efforts related to our aviation industry partners, not just from a regulatory role, but by providing leadership and facilitation in the industry. I would like to take this opportunity to tell you about the status of some of our work with airports, air carriers, and foreign countries.

As of July 31, 1999, the FAA completed visits to the top 150 airports in the United States. The vast majority of those reported to us that they plan to complete their Y2K repairs by the end of September, and all of them expect to be completed by December. The FAA has identified 20 systems that may be used to comply with Part 139 regulatory requirements. We have also identified which of these systems exist at each airport. Of the 20 systems, we have identified 7 that could have an immediate impact on safety. We have told airport operators that we expect these systems to be Y2K compliant by October 15, or that an alternate means of compliance needs to be developed to meet the requirements of the regulations. For example, FAA regulations require the control of runway lighting. If that lighting is controlled by a computer system, we would expect that computer system to be Y2K compliant. The airport operator may, however, decide to control runway lighting manually in order to successfully maintain compliance with FAA regulations. We also have a plan in place for continued contact with airport operators on a regular basis to monitor the status of their systems. For those operators that do not meet the October 15 date, we will take the necessary steps to ensure that safety will not be impaired. This may involve restricting or suspending air carrier operations at the airport.

With respect to our certificate holders, the aircraft manufacturers and the airlines, the FAA developed aggressive Y2K plans to address issues that may arise over the critical date change. These plans stress the importance of safety and continued regulatory compliance. Our primary focus was on raising awareness among manufacturers and airlines that there may be Y2K errors that result in regulatory non-compliance and that may have safety impacts.

With that in mind, the FAA developed questionnaires that were sent to all their airlines, manufacturers and other certificate holders (approximately 15,000 total). There was a 98% response rate to the questionnaire that was sent to manufacturers. Those results indicated there were no impacts to safety based on Y2K for airborne products with embedded software or digital hardware, or aviation products utilizing tools controlled by digital systems. Aircraft certification inspectors will conduct pre- and post-Y2K audits of manufacturers to evaluate any risk that may be associated with the turn of the century.

For aircraft operations, we developed a detailed questionnaire that sought specific data on the status of automated systems that may be impacted by Y2K. The questionnaire specifically asked for information on 44 systems, including aircraft systems, computer record systems, flight operations systems, and others. We designed the questionnaire to gain information on the operator's Y2K planning, their Y2K program status, and whether they anticipated requesting the FAA to approve changes or deviations to their approved programs. There is a 42% response rate to the questionnaire that was sent to more than 13,000 certificate holders, including the airlines and repair stations. I should note that many of the non-respondents represent operators which have unsophisticated systems and we anticipate the Y2K impacts will be minimal to none. The top ten air carriers however, all reported they would be Y2K ready by September 1999.

Based on the data we have gathered, our inspectors are contacting operators who have not responded or have raised Y2K concerns. In many cases, inspectors will visit certificate holders to discuss potential issues or concerns. We have categorized all the questionnaire responses and established deadline dates when inspectors must complete their follow-up with certificate holders. By October 1, our inspectors will contact any certificate holder who did not respond to the questionnaire. By October 15, inspectors will follow-up with those certificate holders whose responses have been analyzed in which we identified a Y2K concern. By November 15, our inspectors will follow-up with those certificate holders whose responses were analyzed and we identified possible risks that need additional clarification. When we complete these inspections, our inspectors will determine whether we need to focus additional attention on particular operators.

We have also informed our manufacturers and air carrier certificate holders that we expect them to meet their regulatory requirements on and after January 1, 2000, and that we are working with them to minimize Y2K impacts that could affect their compliance. It does not appear, based on the data that we have gathered and analyzed so far, that Y2K problems are likely to result in the need for drastic action such as suspending certificates. We expect the need for enforcement to be minimal if the need exists at all. We are prepared, however, to issue emergency airworthiness directives over the critical holiday time frames, if necessary, to inform aircraft owners and/or operators that a safety issue has arisen as a result of a design problem.

Supplementing these efforts, the agency chairs an FAA-Industry Y2K Outreach Steering Committee, formed at the request of the President's Council on Y2K Conversion. This committee includes members from six key organizations representing the major segments of the aviation community: air carriers, airports, and manufacturers. This Steering Committee provides a crucial gateway to 23 other aviation industry partners. The resulting partnership provides an arena for exchanging information and identifying and resolving major issues that could impact the safety, security, and efficiency of the aviation and commercial space transportation sectors.

A critical focus of the Steering Committee is the need for coordinated contingency planning across the aviation industry. The committee has published a guide, the *Airline-Airport Operations Contingency Planning Guide*, that provides a self-assessment template to ensure the industry is prepared and can provide a uniform response to situations which may arise. This guide was distributed to trade association members as well as to some international entities, and is also available on the FAA's Y2K website. In addition, the Steering Committee has sponsored two workshops, the first of which focused on presenting the FAA's BCCP. The second workshop, conducted on July 19-20, 1999, brought together major service providers such as electrical power and telecommunications with airport and airline operators to discuss in-depth the process for coordinating contingency planning. The workshop helped to define the core elements of an airline-airport contingency plan for use at the national, regional, and local levels and for coordinating contingency plans across government and industry.

With less than 100 days to the new year, we know that there is an increased awareness and concern with the readiness of international aviation. The FAA has been a global leader in creating awareness of the problem and of supporting programs to mitigate any impact of Y2K problems. We have widely distributed information about our Repair Process and GAO's Business Continuity Planning process. A year ago last June, I spoke to the world's airlines and encouraged them to support the International Air Transport Association (IATA) Y2K program. IATA and the FAA worked together to have the International Civil Aviation Organizations (ICAO) address the Y2K problem. The FAA sponsored the resolution that lead to ICAO's Y2K assessment criteria and the reporting of Y2K readiness. The FAA has supported ICAO's international regional contingency planning. We are promoting the

IATA-ACI airline-airport business continuity planning project which parallels the effort of the FAA-Industry Y2K Steering Committee domestically.

The FAA is also conducting extensive international testing. By December, we plan to have conducted testing with 23 countries to ensure adequate communication exchange for those countries with which we have direct interfaces. We already have schedules in place to test both voice and data systems in order to validate the connectivity of air traffic control communication systems. This is an aggressive schedule intended to provide an extra measure of assurance for ourselves and our foreign counterparts.

In order to better inform the public, the FAA, the Office of the Secretary of Transportation, and the Department of Defense are reviewing available information gathered through ICAO and other sources on the Y2K readiness of foreign civil aviation entities. The purpose of this review is to provide useful travel planning information to the American public.

This effort is in support of the President's Y2K Conversion Council which is looking at global impact of Y2K. Based on the information we have seen and collected to date, it appears that if any Y2K impact is felt, it would take the form of limited disruption of service in some locations. Should a serious safety consideration arise involving international aviation, you may be assured that the FAA, in conjunction with other government agencies, will take appropriate steps to mitigate the problem. Since civil aviation is inherently capable of addressing potential problems, it is unlikely that serious safety issues would be a problem. In addition, international contingency planning efforts and our encouragement of business continuity planning at international airports should mitigate potential disruptions in service.

The FAA has worked diligently, not only to ensure Y2K readiness of our own systems, but to do whatever we can to help our industry partners and counterparts, domestically and internationally, to experience a smooth transition into the next year 2000. As I have told you in the past, I am proud of our accomplishments, and I have already booked my coast-to-coast flight on the evening of December 31, 1999, to demonstrate my confidence in these accomplishments. We are continuing, more aggressively than ever, to continue our outreach activities to ensure a seamless transition to the year 2000.

Knowing of your interest about further actions that the Congress may take, I would simply reiterate what the Deputy Secretary has already stated: continue the efforts of this Committee to publicize the importance of this issue. Indeed, the Committee's efforts, through these hearings and its reports, have been instrumental in keeping this issue on the forefront of our public policy.

Thank you, Senator Bennett, Senator Dodd, and Members of the Committee. I appreciate the opportunity to address the Committee this morning, and I would be pleased to answer any questions you may have.

RESPONSES OF JANE F. GARVEY TO QUESTIONS SUBMITTED BY CHAIRMAN BENNETT

Question 1. The FAA is to be commended for successfully pulling off what seemed, a year ago, to be an impossible task. Very few people believed that so many systems could be fixed, tested, and fielded in the time remaining. The FAA personnel who made this happen should be very proud of themselves for their accomplishment. It now seems the challenge will be to keep the system fixed through the changeover; that is, care must be taken in making changes or incorporating new technology so that components of the National Airspace System don't reacquire a vulnerability to the Y2K bug. Please describe how the FAA will manage the Air Traffic Control system so this problem will not occur.

Answer. The FAA ensures that certified systems remain compliant by enforcing rigorous change management processes and revalidating changed systems. The deployment of new systems and components is also monitored in order to ensure that they satisfy the same Y2K compliance criteria used for the existing systems. Finally, in order to minimize potential disruption system change, moratoria are being implemented for the National Aerospace System around the century transition (November 17–January 7) and around the leap year transition (February 1–March 8).

Question 2. The Airports Council International witness, Mr. Plavin, states that the most authoritative data on U.S. airports rests with survey information that the FAA gathered in the spring and summer of this year. It is our understanding that this information has not been made public, in spite of the fact that it was not originally collected with promises of confidentiality to the parties that provided the data. Please clarify this situation for the Committee. Isn't there some point when this information should be released to the traveling public? Doesn't it make sense to pro-

vide travelers with the best information available before they make their travel plans for the end of the year?

Answer. Airport information was originally posted on the web (*www.dot.gov/fly2k*) as of November 2, 1999 and is updated regularly.

Question 3. The witness from the International Federation of Air Line Pilots' Association has called for several actions to be taken, such as more flight crew contingency training, more fuel on board, and an extra pilot flying in the jump seat—although IFALPA says this shouldn't be necessary for flights over North America. What is FAA's position on its recommendations for American airlines that may be operating in December and January in regions where IFALPA believes this is the prudent course?

Answer. The airlines are well aware of the matters IFALPA raises. The International Civil Aviation Organization (ICAO) international contingency planning included such operations considerations. Airlines and their trade association, the International Air Transport Association (IATA), have participated in the ICAO international contingency planning efforts. The FAA considers that operational decisions such as those suggested by IFALPA are best left to the airlines, who are in the best position to determine what needs to be done on a specific route for safe operations.

Question 4. Mr. Mead stated in his testimony that the DOT Office of Inspector General recommended that the FAA require Y2K compliance of the entire aviation industry. The FAA did not follow this suggestion. Would you explain to us why this was not done? Is it practical to still do it at this time and to "require Year-200 readiness statements from the air carriers" as he suggests?

Answer. The FAA did not require Y2K certification by the aviation industry because doing so would not improve the FAA's position to take enforcement action against Y2K-related incidents. If an industry component is not Y2K compliant by January 1, 2000, the FAA's current regulatory authority is more than sufficient to take enforcement action and effectively deal with Y2K-related contingencies or emergencies. Furthermore, the relevant FAA lines of businesses (airports, flight standards, civil aviation security) have been surveying their industry components for Y2K status, and have assurances that all entities currently are, or will be, Y2K compliant before the end of 1999. Accordingly, the actions that have been taken by the FAA effectively fulfill the purpose of an industry certification.

Question 5. The Committee understands that the FAA has given the certified airports until October 15, 1999 to be compliant or to have alternate means of compliance. Would you tell us how you expect the situation to evolve after the date for airports that may not comply to your directive? How soon would they know that the FAA was initiating action? At what point would the traveling public and airlines know? Do you envision that it is going to take firm action such as the Coast Guard did on September 9, 1999 with vessels who had not responded to their requirement for Y2K information to show that the FAA is seriously going to act on this?

Answer. As of November 2, 1999, all airports surveyed had their critical systems certified Y2K-compliant or had developed alternate plans for meeting regulatory safety requirements. Consequently, no enforcement action is necessary with regard to the October 15, 1999 deadline.

Question 6. The Inspector General of the Department of Transportation pointed out in his statement the fact that the FAA plans to impose flight restrictions only in those cases in which there are known, verifiable safety concerns. He has voiced his opinion that he does not believe this approach will be sufficient in light of all that is unknown or uncertain regarding Y2K readiness in foreign countries. In fact, twenty-eight of the eighty-nine countries providing data to ICAO did not provide sufficient information to allow adequate Y2K readiness assessments by the DOT, State Department, and DOD. Shouldn't this lack of information serve as a serious warning sign to which the FAA should actively respond? In the absence of information, can we afford to take a risk where safety may be concerned? Are there other ways we can get at this information so that FAA can make truly well-informed decisions in this area?

Answer. In issues such as Y2K readiness, where the direct impact on safety or security is unclear, the FAA requires U.S. airlines to ensure their operations are conducted in a safe and secure manner, whether domestic or international. To accomplish this, U.S. air carriers, through the International Air Transport Association (IATA), have developed information worldwide on specific air traffic and airports where they operate. While not available to government regulators like FAA due to confidentiality issues, IATA has shared this with over 300 airlines worldwide. U.S. airlines, with this verified information, are well positioned to ensure the responsibility for their passengers' safety and will not fly anywhere safety is believed to be compromised, regardless of the reason. The FAA remains ready to impose flight re-

strictions as necessary to respond appropriately to known safety and security problems.

Additionally, actions taken by FAA internationally have not only raised awareness, but has greatly influenced Y2K preparedness around the world. Direct actions taken by FAA influenced the International Civil Aviation Organization (ICAO) to establish a worldwide Y2K program that encouraged compliance action and gathered considerable Y2K preparedness information about most of its 185 member States. Our direct actions with ICAO resulted in the development and harmonization of a worldwide Y2K contingency plan. That, accompanied by a strong Y2K program exercised by the International Air Transport Association (IATA), has greatly reduced any potential major impact on aviation operations around the world. As noted above, IATA has gathered first-hand information from most all countries regarding the Y2K preparedness of each country. This information is only being shared directly with over 300 member airlines.

With the proactive approach taken by the international aviation community, as well as the fact that there has been no clear indication within the aviation industry that a Y2K problem equates to a safety risk, we are confident that US passengers flying over the millennium will not be put at risk. Given the inherent safety of the system and the continuing indications that the Y2K problem is being successfully addressed, the FAA does not believe that flight prohibitions made solely on the basis of foreign country Y2K readiness information which cannot be independently verified by the FAA through direct inspection are justified.

Question 7. What benefits have been learned from Y2K projects and can they be applied to current or future projects? Please be specific.

Answer. A full report detailing the lessons learned from the FAA Year 2000 Program is being finalized and will be made available in January 2000.

Question 8. The industry response to your certification survey is less than 50%. With less than 100 days to go, wouldn't it make sense to take the Inspector General's suggestion to require compliance certification from the parties you regulate similar to what the Federal Transit Administration has done to transport operators?

Answer. As of November 30, 1999, the industry response to FAA's Flight Standards questionnaire (which was sent to 13,708 certificate holders) was sixty-three (63) percent. However, seven (7) percent of the 13,708 are no longer operating (i.e., out of business). Please see the response to question number 4 regarding the issue of the FAA requiring Y2K compliance certification from the aviation industry.

Question 9. What is the status regarding international testing? Will FAA be able to complete all planned interface testing with foreign air traffic control service providers?

Answer. Overall FAA has had a strong response from our international partners for international testing of voice and data circuits with those countries where we have direct connectivity. However, we have learned that some countries cannot test because their equipment is not date sensitive or they do not have test bed facilities and therefore cannot separate tests from live traffic. There are also some countries who have upgraded to compliant systems, completed their internal Y2K tests, and do not want to test further with us. The lack of testing in these few instances does not impact international Y2K readiness because they have satisfactorily completed internal testing or their equipment does not have date issues. Also the Y2K contingency plans are in place to address any unforeseen problems.

Question 10. ICAO Assembly Resolution A32–10, which I believe you introduced last year, calls for countries to publish appropriate aeronautical information on the Y2K compliance status of their aeronautical services, air navigation services, and aerodrome services of designated international and alternate aerodromes. ICAO is collecting and reporting on their web site the compilation of the reported country assessments. Because individual countries are voluntarily reporting their Y2K compliance, what confidence do you have in the self-assessments survey results reported by ICAO? Once you have finished, I would like to invite the other panels to share their confidence level.

Answer. FAA has been able to collect information on 136 of 138 countries it is tracking for Y2K readiness. This represents 99.4 percent of the commercial aviation operations worldwide. While A32–10 has been the best source of information, other sources such as Department of State, the International Air Transport Association (IATA), and FAA-lead international contingency planning efforts has netted a tremendous amount of information which the agency has used to cross-check that provided under A32–10 to the International Civil Aviation Organization (ICAO). Our findings to date indicate factual reporting which has greatly raised the agency's confidence level. The sense within the international aviation community is one of trust

with the understanding that if the problem is not solved prior to the rollover, it certainly will be evident immediately.

PREPARED STATEMENT OF KENNETH M. MEAD

Mr. Chairman, Vice Chairman, and Members of the Committee:

We appreciate the opportunity to testify today on the Department of Transportation's (DOT) Year-2000 readiness for safe and efficient operations. We also will comment on the readiness of the aviation, maritime, and surface transportation industries. Our testimony addresses these areas:

- Status and issues concerning DOT's readiness,
- Status and issues concerning aviation, maritime, and surface transportation industries' readiness,
- Status and issues concerning international aviation and maritime readiness.

Overall, DOT has fixed all mission-critical systems used to support critical functions such as separating aircraft, searching for and rescuing ships, and performing safety inspections. DOT has responded positively and promptly to nearly all of our recommendations. Our validation work has consistently received the support of top DOT and agency management.

Although it is unlikely that there will be major Year-2000 related system failures in DOT's own systems, we know there are no absolute guarantees because of the interdependency among computers, both internal and external. Therefore, DOT needs to continue testing its contingency plans and be prepared to activate them.

While DOT has first hand knowledge about its own systems, it primarily relies on industry self-reporting to assess industry readiness. We agree with the Committee that there is an inherent concern with self-reported data because it tends to represent the proactive and well-prepared organizations' work, and obviously cannot be counted on to represent non-responding organizations or organizations whose Year-2000 readiness data are sketchy or incomplete. Getting information from non-responding organizations and filling the voids will remain a major challenge for the rest of this year.

Based on survey results, our sense about industry readiness is that most large domestic providers in all transportation modes are making good progress and should be ready in time. Since large providers handle the majority of transportation services, Year-2000 related failures or disruptions are likely to be isolated local events in the U.S., provided that external interfaces such as power grids and fuel lines operate satisfactorily.

We are disappointed at the lack of information concerning the readiness of many smaller providers. This information void needs to be filled, particularly for those in aviation, maritime, and railroad transportation modes.

We also share the Committee's concern about international readiness. Over the past year, we raised concerns about Year-2000 readiness in the context of international air travel. With only 93 days to go, there is little time left to obtain credible information about Year-2000 readiness in the international arena. A major issue now facing FAA is what action, if any, it will take when a foreign country does not provide sufficient information for independent assessment.

DOT Systems: DOT had 609 mission-critical systems, 310 of which had Year 2000 problems that had to be fixed. These include 152 aviation-related, 87 maritime-related, and 34 surface transportation-related systems. With strong congressional oversight, leadership by the Secretary and Deputy Secretary of Transportation, modal administrators, and hard work on the part of DOT employees, DOT has fixed all 310 mission-critical systems. With the repair work done, DOT now is focusing on safeguarding compliant systems and finalizing business continuity and contingency plans.

Upgrades continue to be made to Year-2000 compliant systems after they were installed at field sites. For example, after Year-2000 fixes, FAA modified the Oceanic Automation System software to achieve a better data transfer. Coast Guard also modified the Vessel Traffic System, which is used to direct ship movement at major domestic ports, to fix software glitches. DOT must exercise extreme caution to ensure these upgrades do not "undo" the compliance work. DOT is putting plans in place to ensure this does not happen.

It is impossible to guarantee that there will be no system failures. Therefore, having workable contingency plans should be an area of focus. For FAA, air traffic controllers need refresher training on non-radar procedures, all key labor unions should be participating in contingency planning, and more hands-on testing of contingency plans should be accomplished. The controllers' union has been participating in this

effort; although invited, the major union representing system maintenance employees are not.

Domestic Transportation Industry: DOT has adopted a dual approach to ensure the private sector's Year-2000 readiness. In areas where DOT has regulatory responsibilities, it has done independent readiness surveys. The response rates were mixed, ranging from 36 percent for marine facilities, to 41 percent for air carriers (all large carriers responded), to over 90 percent for public transit. The Federal Transit Administration (FTA) took the commendable step of requiring transit operators to provide support for their Year-2000 readiness, and this accounts for the high response rate in the transit area.

In March 1999, we stated that our confidence level with respect to the entire aviation industry, particularly small carriers and suppliers, would be stronger if certification of Year-2000 readiness was required of them. FAA chose not to do this, and at this late stage, is now trying to obtain some assurance that smaller providers are ready for the Year 2000.

DOT also relies on transportation trade association surveys of their members' readiness. These associations generally represent the larger service providers that are responsible for the majority of transportation services. However, information concerning the status of smaller service providers is limited because they frequently do not belong to trade associations conducting surveys of their members' readiness.

- *Aviation*: Based on associations' reporting, the airports handling about 90 percent of passenger enplanements will be ready by the end of the year. Air carriers handing about 95 percent of passenger and cargo services reported they should be ready as of September 30, 1999. However, more information about smaller airport/air carrier operators is needed. As part of its regulatory role, FAA surveyed the readiness of about 500 airports' safety systems and 3,300 air carriers. FAA received information from all airports it surveyed. While all large carriers responded, over 1,900 smaller carriers did not respond. It still is not too late for FAA to take action on our recommendation and require Year-2000 readiness statements from the air carriers.
- *Maritime*: Ships rely on computer systems for communication, navigation and ship movement. The U.S. Coast Guard (Coast Guard) requested shipping companies to provide information about their Year-2000 readiness. The response rate of 43 percent was not sufficient. However, Coast Guard has demonstrated that failure to respond will have consequences. On September 9, 1999, Coast Guard took 175 actions against ship movements based on lack of required Year-2000 paperwork. Coast Guard is to be commended for this action. It is prepared to restrict high-risk vessels from moving into, or from, U.S. ports when transitioning to the new millennium.

  Port operations, such as crane movement and cargo transfers, are highly automated. There are over 300 U.S. ports, of which about 100 are managed by port authorities. The American Association of Port Authorities—an association of port authorities in North and South America—surveyed its members' readiness, including 83 U.S. port authorities. Thirty-three U.S. port authorities reported they are making good progress. However, there was insufficient information as to when their work will be completed and how much traffic they handle for U.S. maritime commerce. The remaining 50 U.S. port authorities did not respond. Coast Guard also surveyed readiness of marine facilities located at U.S. ports. The response rate was 36 percent. More information about ports' readiness, both large and small, is needed.

  Coast Guard, port authorities, and shipping companies have been conducting joint port exercises. To mitigate the unknown about ports' readiness, the scope of future port exercises should be expanded to cover contingencies for not only ship movement but also port operations supporting cargo movement.
- *Surface*: Both railroad and transit operators rely on computers to dispatch and operate trains. FTA surveyed over 500 transit operators. All but four operators (all in Puerto Rico) responded, 73 percent of which reported being ready, and the rest reported they would be ready in time. All commuter railroad companies provided responses to FTA's survey. Amtrak (the National intercity passenger railroad), which was not included in the FTA survey, recently reported its mission-critical systems are Year-2000 ready.

  There are about 550 freight railroad companies in the U.S. The Association of American Railroads surveyed the seven large companies. The Federal Railroad Administration (FRA) also surveyed four of the largest companies and plans to release the results in early October. Information about regional and local freight railroad companies is needed.

International Aviation and Maritime: DOT has taken an active role working with international associations in raising Year-2000 awareness and assessing inter-

national aviation and maritime readiness. As examples, FAA helped the International Civil Aviation Organization (ICAO) prepare its members for business continuity and contingency planning, and Coast Guard took a lead role in helping the International Maritime Organization (IMO) prepare its members to do Year-2000 risk assessments and contingency planning. The international maritime industry accounts for over 90 percent of U.S. overseas trade. The only association survey was by the International Association of Ports and Harbors. It surveyed 224 members and received 110 responses, but did not make the results public.

Since March 1999, DOT has established an interagency committee with the Departments of Defense and State to evaluate foreign countries' aviation Year-2000 readiness and make recommendations on international air travel. However, significant challenges still exist with international air travel. First, 34 of the 185 ICAO member countries have not responded to the ICAO survey as of September 23, 1999. Most of these countries are in Africa and Asia. Secondly, numerous other countries that responded to the survey did not provide sufficient information to allow for adequate Year-2000 readiness assessments. According to the DOT/Defense/State interagency committee, 28 of the 89 countries most frequently visited by U.S. carriers fall into this category.

As pointed out in the Deputy Secretary's statement, the whole Year-2000 phenomenon is characterized by uncertainty as to its effects. This is especially true if Year-2000 readiness on the part of a foreign country is unknown, sketchy, or known to be inadequate. As we understand the approach FAA plans to take, flight restrictions will only be imposed if there is a known, verifiable safety problem. Where there are significant uncertainties about a foreign country's Year-2000 readiness, we are not persuaded this approach will be sufficient because FAA is not likely to have verified evidence of problems until after December 31, 1999.

Status and Issues Concerning DOT

As of September 30, 1999, DOT has fixed all 310 of its mission-critical systems that had Year-2000 problems. We verified, on a sample basis, that documentation supported system implementation, validation problems had been resolved, independent verification and validation was performed for critical systems, data exchange issues were resolved, vendor-supported systems were compliant, acceptance testing was performed, and affected databases had been addressed. With the repair work done, DOT now is focusing on safeguarding compliant systems, finalizing business continuity and contingency plans, and preparing for unexpected emergencies.

Modifications to Year-2000 Compliant Systems

Upgrades continue to be made to Year-2000 compliant systems after they have been installed. For example, FAA modified the Oceanic Automation System software, after being made Year-2000 compliant, to achieve better data transfer between the Oceanic and Host computers. In June 1999, the Coast Guard also made changes to its Vessel Traffic System, which is used to direct ship movement at major domestic ports, to fix software glitches.

DOT has issued policy on modifications to Year-2000 compliant systems. This policy advises, when a Year-2000 compliant system is modified, that stringent management controls should be applied to include testing for Year-2000 compliance. FAA issued its own guidance requiring the monitoring of changes made to Year-2000 compliant systems. FAA's policy requires, when a Year-2000 compliant system is modified, that the system owner assess the modification to determine if it affects Year-2000 compliance. If the assessment identifies problems, the system owners need to revalidate and re-certify the system. During our on-site review of 10 FAA systems, we found 3 systems were modified subsequent to the Year-2000 modification without support to show the changes did not "undo" the compliance work. FAA is working on strengthening controls over system modifications and will now place a moratorium on changes to the National Airspace System from November 1999 to January 2000, and February to March 2000.

Coast Guard's Chief Information Office did not issue separate guidance. However, we found Coast Guard system owners were not aware of the DOT guidance requiring comprehensive testing when Year-2000 compliant systems are modified. We were told Coast Guard system modifications were being reviewed to ensure Year-2000 compliance.

Business Continuity and Contingency Plans

No matter how extensive the review efforts, there are no guarantees that all Year-2000 glitches have been found in internal systems, or external systems such as network service providers. Each Operating Administration has developed a business continuity and contingency plan for its critical missions such as air traffic control, maritime search and rescue, and vessel traffic movement. DOT continues to refine and test its contingency plans.

FAA developed a business continuity and contingency plan to ensure continued air traffic operations in the unlikely event of major Year-2000 related system failures. The plan is composed of two parts—FAA's existing contingency procedures and a newly developed Business Resumption Process. We found improvements are needed concerning non-radar procedures training, union participation, and testing.

The air traffic control systems contain six core processes—automation, surveillance, communications, navigation, traffic flow management, and infrastructure, such as public utilities. All core processes are supported by automated systems subject to potential Year-2000 failures. Major system failures in automation and surveillance areas would have the most significant impact on air traffic control operations.

In the unlikely event of major Year-2000 related system failures in either automation or surveillance areas, FAA plans to rely on non-radar procedures to direct air traffic. According to FAA, non-radar procedures are rarely used to support normal traffic operations, let alone high traffic volume. Representatives of the National Air Traffic Controllers Association (NATCA) have expressed concern that its members are not proficiently trained to use non-radar procedures on a large-scale basis.

FAA's Business Resumption Process calls for each system failure, regardless of type or impact, to be resolved quickly. FAA established a business resumption team that is responsible for determining causes of system failures, the severity of failures, and the actions to restore operations. Union participation in development of this plan is important to FAA's success. NATCA is now participating. Although Professional Airways System Specialist (PASS)—a major union representing employees responsible for maintaining air traffic control systems—has been invited to participate in this important effort, it has not yet played a significant role. In the event of Year-2000 related system failures, these union members will have to restore the systems.

FAA, with the assistance of contractors, recently conducted a small-scale contingency planning exercise. Preliminary results indicate the exercise went well. However, this exercise provided no hands-on practice for controllers. FAA is in process of preparing a lessons-learned document to incorporate the information learned to be used for a larger-scale exercise. FAA should use these opportunities to test the use of non-radar procedures.

The Coast Guard is in the process of completing and testing contingency plans for over 600 facilities nationwide. To date, contingency exercises have been useful and informative.

Emergency Preparedness

DOT has taken an active role in preparing for emergency responses to unexpected disruptions of transportation services during the millennium rollover. DOT used its Crisis Management Center (CMC) to conduct exercises such as activating the CMC during two sensitive date periods (The 99th day of the year 1999 and 9/9/99), and conducted contingency exercises at the senior management level to test its response capabilities based on specified Year-2000 failure scenarios. These exercises provided training for people who will monitor and report on the operational status of critical facilities during the transition to the next millennium. The exercises also have resulted in valuable "lessons learned" regarding responsibility assignment, contingency plans, and resource allocation. One critical success factor for emergency response is to have the technical expertise to quickly determine differences among non-Year-2000 related operational failures, genuine Year-2000 failures, or other problems masqueraded as Year-2000 failures. Only then can DOT response appropriately.

Actions Needed for DOT Year-2000 Readiness

- To ensure Year-2000 compliant systems remain compliant, FAA needs to continue working with its system owners to adequately assess modifications to Year-2000 compliant systems. The Coast Guard needs to issue its own policy or quickly deliver the Department's policy to its system owners. The Coast Guard also should consider a moratorium on system modifications, similar to the policy issued by FAA, to ensure that compliance is maintained.
- FAA needs to provide adequate non-radar procedures training to the controller workforce. This training is necessary since FAA's contingency plan relies on non-radar procedures in the event of major loss of surveillance and automation capabilities. Both FAA and its unions need to develop a plan acceptable to, and agreeable by, all parties. DOT Operating Administrations need to continue testing of the contingency plan, including hands-on practice, and resolve any deficiencies that are found.
- As part of its emergency preparedness, DOT needs to ensure technical expertise is available to quickly determine whether system failures, if any, are genuinely related to the Year-2000 roll-over and take actions accordingly.

Status and Issues Concerning Domestic Industry

To ensure the transportation industry's Year-2000 readiness, DOT has adopted a dual approach. In areas where DOT has regulatory responsibilities, it has done independent readiness surveys. The response rate percentages were mixed, ranging from 36 percent for marine facilities, to 41 percent for air carriers (all large carriers responded), to over 90 percent for public transit. FTA took a commendable step of requiring transit operators to provide assurances of their Year-2000 readiness, which accounts for the high response rate in the transit area. In our March testimony before the House subcommittees, we recommended that our confidence level with respect to the entire aviation industry, particularly small carriers and suppliers, would be stronger if certification of Year-2000 compliance was required of them. FAA chose not to do this, and at this late stage, is now trying to obtain some assurance that smaller providers are ready for the Year 2000.

DOT also relies on transportation trade associations' surveys of their members. These associations generally represent larger service providers that are responsible for the majority of transportation services. However, information concerning the status of smaller service providers is limited because they frequently do not belong to trade associations conducting surveys of their members.

Associations' Survey of Aviation Readiness

Under the direction of the President's Council on Year 2000 Conversion, an FAA-Industry Year-2000 Steering Committee was formed to coordinate industry-wide progress reporting. Major airport associations include the American Association of Airport Executives (AAAE) and Airports Council International-North America (ACI-NA). AAAE and ACI-NA surveyed their member airports.

Major air carrier associations in the FAA-Industry Year-2000 Steering Committee include the Air Transport Association (ATA) representing major carriers, Regional Airline Association (RAA) representing regional air carriers, and the National Air Carrier Association (NACA) representing charter and small airlines. ATA, RAA, and NACA surveyed their member carriers.

Table 1 and 2 on the next page show the break down between member and non-member airports and U.S. carriers. Table 1 shows the 728 member airports account for 14 percent of U.S. public airports. Table 2 shows the 101 member carriers account for 3 percent of the 3,343 U.S. air carriers.

Table 1
U.S. Airport Trade Membership

Public Airport Type	Number of Airports
Member Airports	
Large Hubs	27
Medium Hubs	45
Small Hubs	77
Total Hub Airports	149
Non-hub & General Aviation	579
Total Member Airports (14%)	728
Non-member Airports (86%)	4,624
Total Public Airports	5,352

Table 2
U.S. Air Carrier Trade Membership

U.S. Air Carriers	Number of Air Carriers
Member Airlines	
ATA carriers	23
RAA carriers	71
NACA carriers	7
Total Member Air Carriers (3%)	101
Non-member Air Carriers (97%)	3,242
Total Air Carriers	3,343

Based on the AAAE/ACI-NA status report to the Steering Committee, and FAA's status report for submission to ICAO, the most current status is that airports handling about 90 percent of U.S. passenger enplanements reported they should be ready by December 31, 1999. However, there are two issues concerning airports:

- Of the 579 non-hub and general aviation airports, only 107 reported completion of Year-2000 work as of March 15, 1999. More current information is needed.
- Other than getting a letter from FAA alerting them to Year-2000 problems, the 4,624 public airports not associated with AAAE/ACI-NA were not surveyed by either FAA or the trade associations. Year-2000 readiness of these smaller airports still needs to be reported.

For air carriers, the most current status indicated major carriers handling about 95 percent of U.S. passenger and cargo services reported they should be Year-2000 ready by September 30, 1999. While ATA and NACA reported when their members plan to complete Year-2000 work, RAA had not yet provided such information.

FAA's Survey of Airports and Carriers

In June 1998, FAA sent a letter to over 5,300 public airport operators to alert them to Year-2000 computer problems. Of these, under the Federal Aviation Regulation, about 500 airports are required to be certified by FAA for safe operations, adequate airport security, and adequate screening of passengers, baggage, and cargo. Automated systems often are used to meet these objectives.

- *Airport Safety Systems*: In October 1998, FAA sent a letter to 563 public airport certificate holders indicating FAA was going to conduct on-site visits or telephone interviews of Year-2000 readiness of systems used to ensure safe airport operations, such as runway lighting. FAA performed on-site reviews at the top 150 airports and conducted telephone interviews with the remaining 413 airport operators.

  As of September 23, 1999, survey results showed 83 percent of airport safety systems are Year-2000 compliant. The remaining systems are still being evaluate. In November 1999, FAA plans to issue warning letters to airport operators, who failed to provide the readiness assurance by October 15, 1999, that FAA will consider appropriate actions on January 1, 2000, including emergency certificate suspension or issuance of a Notice to Airmen restricting airport operations.

  FAA also has proposed a rulemaking requirement for airports to perform a one-time readiness test of systems critical to airfield safety and efficiency, such as airport lighting and emergency services. These tests would be performed within the first few hours on January 1, 2000 to confirm that the Year 2000 rollover had no impact on these critical systems. FAA is analyzing suggestions and plans to finalize the requirement by early October 1999.
- *Airport Security Systems*: In 1998, FAA collected information from 459 certified airport operators relating to Year-2000 readiness of computer systems used to support airport security, such as access systems. As of September 23, 1999, 51 airport operators still are working on their security systems to become Year-2000 compliant.

  In recent years, FAA has sponsored development of three advanced security systems to enhance airport security, including two explosive detection systems and one trace detection equipment. One of the explosive detection systems had to be upgraded to become Year-2000 compliant. According to FAA, all detective explosive systems requiring a Year-2000 upgrade are compliant.

In April 1999, FAA sent a questionnaire to all 3,343 certified air carriers requesting information about their systems and components that may be affected by Year-2000 computer problems. Submission of the information is voluntary. As of September 23, 1999, all large carriers had reported. However, FAA received an overall response rate of only 41 percent.

Table 3
FAA's Survey of U.S. Air Carriers' Year-2000 Readiness

Carrier Category	Surveyed	Responded	Response Rate
Large	10	10	100%
Medium	205	97	47%
Small	3,128	1,255	40%
Total	3,343	1,362	41%

The 100 percent response rate from large carriers confirmed the general observation that they are managing the Year-2000 preparation well. The large carriers provide about 95 percent of U.S. passenger service. Status of many medium and small carriers still needs to be reported.

FAA is in process of compiling the data it received. FAA has not yet determined how to report the survey results, but plans to provide specific guidance to its inspectors for follow-up review. FAA will concentrate its activities on air carriers not responding to the survey, air carriers that submitted inconsistent data, or air carriers identified as having significant Year-2000 problems. With 93 days left to go, obtaining Year-2000 readiness assurance from the non-responding certificate holders will be a very challenging plan to accomplish.

Coast Guard's Survey of Vessels and Marine Facilities

Coast Guard established temporary regulations to require U.S. owners and operators of marine facilities and vessels to report Year-2000 readiness information based on the Year-2000 questionnaire issued by the International Maritime Organization (IMO). The survey results were due to the Coast Guard by August 20, 1999. As of September 23, less than 50 percent of the marine facilities and vessel owners had responded.

- *Vessels*: Vessels rely on computer systems for communications, navigation, and ship movement. The Coast Guard controls how, when, and where the commercial vessel can move in the ports. For example, the Coast Guard can direct that the movement of the commercial vessel be under control of tugboats or be restricted to daylight hours. For the 33,000 vessels which visited U.S. ports in the past 2 years, Coast Guard received a 43 percent response rate. However, Coast Guard has demonstrated that failure to respond will have consequences. On September 9, 1999, the Coast Guard took 175 actions against ship movements based on vessel or ship operators not submitting required Year-2000 paperwork to the Coast Guard. Coast Guard is to be commended for this action. It is prepared to restrict high-risk vessels from moving into, or from, U.S. ports when transitioning to the new millennium.
- *Marine facilities*: Marine facility equipment, such as cranes for loading/unloading cargo, are highly automated. The Coast Guard surveyed over 5,000 facilities and received only a 36 percent response rate (see table 4). This information will assist the Coast Guard's Captains of the Port assessments of potential Year-2000 related malfunctions of equipment and systems.

Table 4
Coast Guard's Survey of U.S. Marine Facilities' Year-2000 Readiness

Port Zones	Total Facilities	Facilities Responded	Response Rate
West Coast	461	201	44%
East Coast	1241	479	39%
Gulf Coast	1639	707	43%
Great Lakes	269	132	49%
River Ways	539	179	33%
Off-Shore	956	127	13%
Total	5105	1825	36%

Associations' Survey of Port Authorities

Ports provide critical infrastructure (e.g., power, security, intermodal connections to rail) enabling efficient cargo shipment. There are 326 U.S. public ports, with port authorities established at about 100 larger ports. The American Association of Port

Authorities (AAPA)—representing port authorities in the United States, Canada, the Caribbean and Latin America—surveyed its members' readiness, including 83 U.S. Port authorities.

Table 5
U.S. Ports Trade Membership

U.S. Ports	Number
AAPA U.S. Member Ports	83*
Non-AAPA Ports	243
Total U.S. Ports	326

*AAPA members include port authorities which could be responsible for more than one port.

Only 33 of the 83 U.S. port authorities responded to AAPA's August 1999 survey. These 33 reported 81 percent completion of Year-2000 preparation work. However, the survey did not ask the important question of whether the port expects to be ready by December 31, 1999. There also is no indication about the volume of maritime traffic handled by these 33 port authorities since AAPA did not require the respondents to identify themselves. More information about domestic ports' readiness, both large and small, is needed. Coast Guard has been working with port authorities and shipping companies in conducting port exercises. These exercises have been successful in testing contingency for ship movement in case of breakdowns of communications or ship operating systems. However, contingency for port operations, such as port infrastructure or connection with other transportation modes (e.g., trucking, rail) has not been included. Expanding the scope of future port exercises could help mitigate the unknowns of port readiness.

Survey of Transit Readiness

FTA assists in developing improved mass transportation systems for cities and communities nationwide. FTA provides financial, technical, and planning assistance to about 550 public transit authorities. FTA required these grant recipients to report their Year-2000 readiness. All but four (all in Puerto Rico) responded to FTA's request—403 (73 percent) grantees reported being compliant, and 143 grantees reported they should be ready by December 31. FTA is following up with the four grantees. FTA's analysis of the top 30 grantees, handling 75 percent of transit ridership, showed 4 were reported compliant and 26 should be ready by the end of the year.

Survey of Rail Readiness

The seven major freight railroads were surveyed by the Association of American Railroads (AAR) in September 1999. These railroads, accounting for 91 percent of U.S. freight revenue and 71 percent of miles operated, reported they should be ready by September 30, 1999. The other 541 railroads, made up of regional and local freight railroads, have not been surveyed regarding their Year-2000 readiness.

In response to safety issues that arose as a result of computer problems with a recent railroad merger, the Federal Railroad Administration hired a contractor to perform a Year-2000 Preliminary Readiness Review for four of the seven largest freight railroads. The results are expected in early October 1999.

There are 15 commuter rail companies in the U.S. All are FTA grant recipients, and responded to FTA's survey. Amtrak, the national intercity passenger rail company, recently reported its mission-critical system as being compliant.

Actions Needed for Continued Industry Outreach

The following actions are needed to ensure the transportation industry's readiness:

- FAA needs to take action to obtain information on nearly 2,000 carriers that did not respond. It still is not too late for FAA to take action on our recommendations and require Year-2000 readiness statements from air carriers.
- Coast Guard needs to direct the non-responding marine facility and vessel owners to answer the Year-2000 questionnaire specified in the temporary regulations.
- Coast Guard needs to consider expanding the scope of port exercises to include contingencies for port operations.

Status and Issues Concerning International Aviation and Maritime

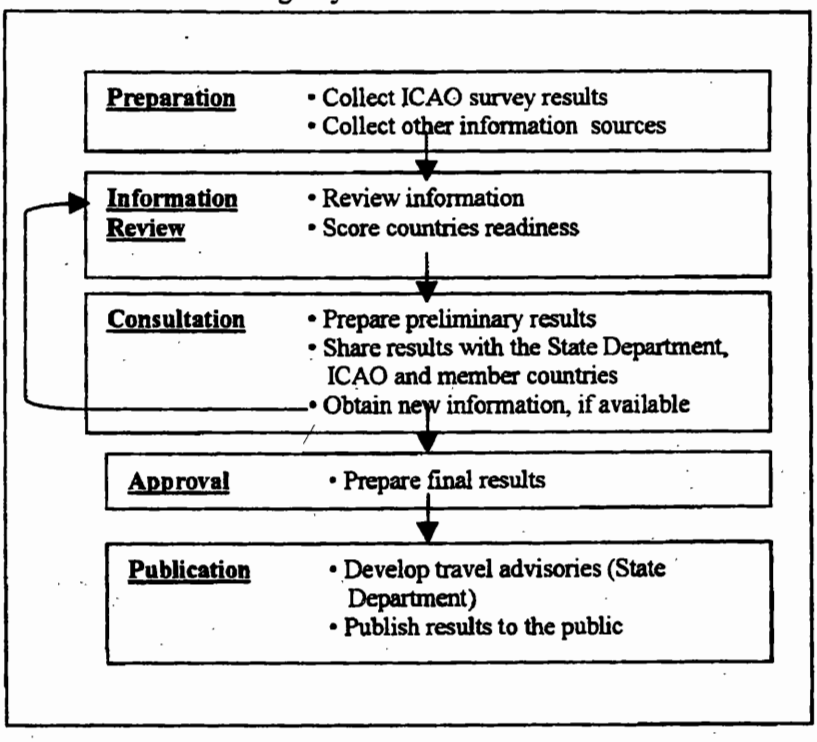
DOT has taken an active role working with international associations in assessing international aviation and maritime readiness. As examples, FAA helped the International Civil Aviation Organization (ICAO) prepare its members for business continuity and contingency planning, and the Coast Guard took a lead role in helping the International Maritime Organization (IMO) prepare its members to perform Year-2000 risk assessments and contingency planning. DOT also established an interagency committee with the Departments of Defense and State to evaluate foreign countries' aviation Year-2000 readiness and make recommendations on safety of international air travel.

International Aviation

In March 1999, we recommended that FAA develop a policy as to whether U.S. carriers will be allowed to fly to countries that are not known to be Year-2000 compliant. FAA has since developed the International Year-2000 Civil Aviation Readiness Information Review process. DOT is leading an interagency committee, with the Department of Defense and the State Department, to evaluate the Year-2000 readiness for flying to foreign countries.

DOT's interagency committee developed a comprehensive process which places emphases on collecting information from multiple sources, having representatives from multiple agencies review the information, sharing evaluation results (scoring) with all related parties, and giving countries the opportunity to enhance Year-2000 readiness through the consultation process described in the table below.

Table 6
Interagency Committee Review Process



ICAO Survey on Year-2000 Status

ICAO surveyed its 185 member countries to identify Year-2000 issues and readiness. DOT's interagency committee plans to rely on ICAO's survey as a key information source for evaluating the international aviation community's readiness for the Year 2000. Survey results were due from ICAO member countries by July 1, 1999. ICAO planned to issue a report summarizing members' status by the end of July 1999. Significant uncertainties still exist regarding foreign countries' readiness and how DOT and FAA evaluate safety of international air travel. First, 34 of the 185 member countries have not responded to the ICAO survey as of September 23, 1999. About one million passengers were flown between the United States and the 34 countries in 1998. These countries are located in the regions specified in Table 7.

Table 7
ICAO Member Survey

ICAO Member Countries	Number of Countries	Countries Not Responding	Regions
89 Countries (accounting for 97 percent of international passengers)	89	4	Caribbean & Central America (1) Asia & Pacific (2) Former Soviet Union (1)
Other ICAO Countries	96	30	Asia & Pacific (12) Middle East (3) Africa (9) Europe (1) Former Soviet Union (5)
Total	185	34	

The interagency committee planned to issue its first review results for the 89 countries (accounting for 97 percent of U.S. international travel passengers) by September 30, 1999. However, based on preliminary review results, the committee concluded that 28 of the 89 countries most frequently visited by U.S. carriers did not provide sufficient information to allow for adequate Year-2000 readiness assessment. These countries are in the Caribbean and Central America (14), South America (5), Asia and Pacific (4), former Soviet Union (3), Africa (1), and Europe (1).

With only 93 days left to go, providing timely and quality information to the traveling public remains a challenge to DOT and FAA. As pointed out by the Deputy Secretary, the whole Year-2000 phenomenon is characterized by uncertainty as to its effects. This is especially true if Year-2000 readiness on the part of foreign countries is unknown, sketchy, or known to be inadequate. As we understand the approach FAA plans to take, flight restrictions will only be imposed if there is a known, verifiable safety problem. Where there are significant uncertainties about a foreign country's Year-2000 readiness, we are not persuaded this approach will be sufficient because FAA is not likely to have verified evidence of problems until after December 31, 1999. A major issue now facing FAA is what action, if any, it will take when a foreign country does not provide sufficient information for independent assessment.

International Maritime

The international maritime industry accounts for over 90 percent of U.S. overseas trade. The Coast Guard has done a commendable job reaching out to the international maritime industry making them aware of the Year-2000 problem. For example, as a result of the IMO meeting coordinated by the Coast Guard in March 1999, IMO Circular 2121 was issued to all its members. The circular contains a Year-2000 readiness questionnaire recommended by the Coast Guard for assessing Year-2000 related risks associated with vessels and port facilities.

Notwithstanding the Coast Guards outreach efforts, the Year-2000 readiness of foreign ports is largely unknown. In February 1999, the International Association of Ports and Harbors (IAPH) conducted a Year 2000 survey with its 224 harbor authority members and received 110 responses. The results for individual ports were not made public.

Actions for International Year 2000 Readiness

- ICAO needs to continue working with its member countries to obtain information from the 34 countries that did not report on their Year-2000 readiness.
- FAA should reconsider its planned approach—i.e., only imposing flight restrictions when there are known, verifiable safety problems—where a foreign country does not provide sufficient information about its Year-2000 readiness for independent assessment.
- The Coast Guard should continue working closely with international organizations to obtain more information on the international maritime industry, especially for port readiness.

Mr. Chairman and Vice Chairman, this concludes our statement. I would be pleased to answer any questions.

RESPONSES OF KENNETH M. MEAD TO QUESTIONS SUBMITTED BY CHAIRMAN BENNETT

Question 1. You noted that DOT has fixed all mission-critical systems used to support critical functions. However, you also noted its need to continue contingency plan testing. What is the status of DOT continuity of operations and contingency plan testing? Are there any particular weaknesses found during testing that should be highlighted? How prepared is DOT to activate these plans if necessary?

Answer. DOT's continuity of operations and contingency plans continue to be tested through tabletop exercises, war games, and port exercises. DOT's Crisis Management Center (CMC) conducted tabletop exercises with its senior management (Secretary/Deputy Secretary and heads of operating administration) in May and September. FAA has conducted "war games" to test its contingencies and plans to conduct a dry run in its command center in early December. All Coast Guard captains of U.S. ports have conducted some form of Y2K drill or exercises. DOT continues to modify contingencies based on these exercises. Areas for improvement include communication coordination, availability of back-up power supplies (such as generators), and the need to have subject-matter experts on hand. DOT is well prepared to activate contingency plans.

Question 2. The Committee has struggled with the difficulty in getting information, of any type, on the Y2K readiness of small and medium-sized enterprises across all industries creating serious gaps in the collective Y2K knowledge base. You have mentioned this same difficulty a number of times in your testimony. Do you have any recommendations on what can be done to fill the information void in this area or an assessment of the risk posed within each mode due to this void?

Answer. Important actions to obtain necessary Y2K information include DOT maintenance of ongoing communication with trade associations and attaching consequences to regulated-industry enterprises that do not respond to Y2K information requests. This has worked well, for example, with the Federal Transit Administration (FTA) in requiring transit authorities to provide certificates of Y2K readiness.

Question 3. One area that is outstanding for DOT, as for other federal agencies, is that of instituting a policy to ensure compliance work is not "undone" and compliant systems are "safeguarded." Your testimony noted examples of management control issues. Are you now satisfied that management controls are in place to ensure that the DOT Y2K modification policy is adhered to and that there is sufficient awareness of the policy within DOT?

Answer. We are satisfied that management controls are in place. DOT has issued "post-implementation" policy addressing the need to ensure that compliance is maintained on certified Y2K-compliant systems. FAA and Coast Guard have also issued their own guidance advising their organizations how to handle and report on all modifications made to Y2K-compliant systems. FAA has issued a moratorium on any changes to the National Airspace System during critical Y2K periods to ensure compliance is maintained. We found they were controlling modifications.

Question 4. Looking domestically, you commend the Federal Transit Administration's efforts to assess Y2K readiness. What were the key factors that you attribute to its success? Are these applicable to other areas with poor response and is there sufficient time remaining to leverage these ideas?

Answer. We found a key success factor for gathering information on Y2K readiness is to attach consequences to non-responders. FTA stipulated that a response from transit authorities was necessary to continue funding. Similarly, Senator Dodd's mentioning that air carriers non-responsive to FAA's request for information about their Y2K status would not fly resulted in non-respondents going from 1,758 to 31 as of November 17, 1999.

Question 5. Your testimony indicated that the Federal Railroad Administration was planning to release survey results from four of the largest railroad companies in early October (results were expected this month). Tomorrow is October 1, do you have any preliminary information on this survey? If not, why is it taking so long to assess results of four companies? What is being done to refine the status information on regional and local freight railroad companies—an information problem area you pointed out?

Answer. An independent assessment of Y2K readiness of the four major freight railroads (Burlington Northern Santa Fe, CSX, Norfolk Southern, and Union Pacific) in the United States was issued on October 8, 1999. According to the report, all four companies had well-managed, well-funded Y2K compliance programs. We are follow-

ing up with the Federal Railroad Administration on the status of regional or local freight-railroad companies.

Question 6. I must say, your testimony paints a dark picture of areas that are cause for concern. This stands in stark contrast to the picture painted by the President's Council on Y2K Conversion and to an extent, that of this Committee. How do you reconcile these differences? How would you characterize the transportation industry preparedness and how concerned Americans and US businesses should be?

Answer. Our view is similar to that of the President's Council on Y2K Conversion and that of the committee. Overall, we believe that the transportation industry is prepared for Y2K. DOT systems are ready and transportation industry preparedness is good in that large providers have reported they will be ready in time. However, there might be isolated events with smaller providers. Although the number of small providers not responding has been high, they represent only a small fraction of the total transportation picture.

Question 7. Has the Office of the Inspector General performed any work on assessing US port readiness and what is your overall assessment?

Answer. Our work in this area was limited to observing three port exercises conducted by the Coast Guard, at the ports of Los Angeles/Long Beach, New York/New Jersey, and Hampton Roads, Virginia. These exercises were successful in testing ship-movement contingencies. We recommended the Coast Guard expand port exercises to cover port-operation contingencies to help mitigate the unknowns of port readiness. We will provide you with the Coast Guard's action plans upon receipt of this information.

Question 8. In your testimony, you mentioned a need to distinguish between operational failures, Y2K failures, and problems masqueraded as Y2K failures. What failures, other than Y2K should we be considering during the critical periods surrounding the millennium rollover?

Answer. A critical area for consideration during the millennium rollover is that of terrorist activities, including cyber-attacks, perpetrated under the guise of Y2K problems. The Crisis Management Center at DOT needs to ensure it has the right expertise available for early recognition of potential terrorist attacks.

Question 9. To date the Department has spent over $425 million for Y2K repairs. Has your office assessed whether the money has been properly spent? If so, what have the results been?

Answer. Our office is conducting a review of FY 1999 Y2K funding in FAA and Coast Guard. We will provide our results upon completion.

Question 10. Based on the Y2K work that you have done and the apparent successful implementation of the FAA project, do you see any lessons learned that could be used in future or ongoing FAA projects?

Answer. Yes. The successes of the Y2K project include the communications structure, the way multiple FAA organizations successfully worked together to ensure Y2K compliance, and the support and commitment of top management to the project's success. These same communications lines, organizational structure, and top management support could be used for managing the next critical area in the information-technology field-information security.

PREPARED STATEMENT OF RICHARD T. DU MOULIN

My name is Richard du Moulin. I have recently completed my tenure as Chairman of the International Association of Independent Tanker Owners ("INTERTANKO") and now serve as Chairman of INTERTANKO's North American Panel. INTERTANKO consists of approximately 300 tanker owners and operators and another 300 related organizations around the world. The INTERTANKO fleet is comprised of approximately 2000 tank vessels. We estimate that roughly 70 percent of all the petroleum and petroleum products imported by the United States are carried by INTERTANKO. I also am the Chairman, President and Chief Executive Officer of Marine Transport Corporation. We are the nation's oldest shipping company and operate a mixed fleet of U.S. and foreign flag vessels.

Like every other industrial sector, the maritime community faces significant potential for business disruption as a result of the Y2K problem. Like other sectors of the maritime industry, the tanker sector which I represent through INTERTANKO has developed action plans intended to identify vulnerabilities and to put in place hardware, software and procedures that will avoid adverse Y2K impacts. The major difficulty we face with Y2K is that it is easy to see the potential for harm, but it is very difficult to know whether the impacts will be as dire as some predict. The only prudent course is to be as thorough as possible identifying the po-

tential problems while at the same time methodically replacing systems elements that might be vulnerable.

The Y2K issue is of particular concern to tanker owners because of their commitment to and responsibility for the safe operation of vessels and the avoidance of casualties that could result in the loss of human life and the despoliation of the marine environment. The tanker industry has made tremendous strides in the last 15 years through industry-driven reforms toward eliminating mechanical fault and human error. Much of this progress has come from revisions of training and operating regimes. We also have explored changes in vessel design, construction and procedures. The spill response capabilities of most major maritime nations, including the United States, have increased dramatically in the last 10 years.

The Y2K issue is an excellent example of the interdependence of transport systems and their components. INTERTANKO has encouraged its members to promote attention to all links in what we call the "Chain of Responsibility." This chain includes not only the tanker owner but government agencies responsible for marine safety and waterways management, insurers, charterers, pilots, classes, societies, terminal operators, and the salvage industry. A failure at any link of this chain, while unlikely as a matter of statistical probability, can compromise other elements of the system. We are fully aware that these links, if damaged, can lead to serious safety and environmental threats.

Modern vessels, like modern aircraft, depend on an intricate series of sensors, monitors, and activators that are in turn linked to the operation of many systems that navigate, propel, steer and monitor a ship. This chain can be extremely intricate. It has many small links, many of its links are obscured from ready view beneath other system elements and, like the very visible components of Chain of Responsibility, a failure at particular points in this chain can expose the vessel to risk.

The Y2K problem, despite its high-tech origin, requires decidedly low-tech values in order to be countered. Good organization practices, thoroughness, and attention to detail are the ways the maritime industry, like every other industry, will avoid catastrophic impact from this potentially dangerous issue.

The primary concern for mariners and internal management is to identify accurately the sources of exposure. Our member companies and their consultants have spent untold hours locating system software and equipment that are potentially affected by Y2K. We have accompanied this inventory approach with the establishment of new and different relationships with vendors and consultants. Tanker owning companies face precisely the same kinds of concerns about Y2K as any other business concern with regard to the internal management of their companies. However, I believe these issues are well appreciated by the Committee and will be well covered by other witnesses. It is the search for vulnerabilities aboard the ship and in closely related systems that is the focus of this testimony. Our members have cooperated with the U.S. Coast Guard and other national safety agencies overseas to think through potential sources of problems and to make vessels available for testing.

It has been estimated that a typical tank vessel may contain between 50 and 200 micro-processors. This is a relatively low number compared to aircraft or even some other vessel types. As you might expect, systems controlled by Y2K-vulnerable micro-processors include the following:

- navigational systems
- telecommunication systems
- real time process controls such as engine room and cargo monitoring systems
- strength and stability monitors
- alarm systems

Within our industry, there have been reports of documented Y2K failures of ship main control, radar mapping, ballast monitoring, cargo loading, engine room vibration, and ship performance monitoring systems. None of these failures to date has resulted in major losses and some were intentionally induced as part of Y2K assessment procedures.

As has been the case with other industrial sectors, the identification of Y2K problems and their fix has been enormously expensive. About 80 percent of the costs incurred to date have arisen in the equipment and chip replacement area.

We are very concerned about problems that may occur at the links between different sectors of our industry both here and abroad. A tanker company may successfully resolve its Y2K problems, but find that a terminal cannot load or receive a cargo discharge. Aids to navigation and vessel traffic control systems could be affected in ways that will adversely impact our abilities to navigate safely. I cite these examples to indicate that there will be no partial victories in the race to identify and resolve Y2K problems. We will only succeed if everyone in every sector suc-

ceeds. We won't know until early in the year 2000 how well we have done. If there is a major spate of costly damages caused by Y2K, the absence of insurance coverage and the complex debates over fault that will ensure could have significant negative consequences for the world's economy.

Among our member companies, the matter is receiving attention at the highest level. We are receiving incentives, positive and negative, and prods from insurers, class societies, flag state authorities and port state control authorities. Every one of these entities not only is trying to make sure that vessel owners meet this challenge, but must at the same time see to its own Y2K needs. INTERTANKO notes that the U.S. Coast Guard has provided an excellent outreach and public awareness program to the industry. They have provided the industry with an information resource and a stimulus to be thorough in our systems review.

Communications between industry and maritime authorities around the world have, on this subject, generally been positive and open. For better or worse, industry and government are equally afflicted by potential problems of Y2K. We are truly all in this together. INTERTANKO appreciates the attention that this Committee has brought to the problem.

I will be pleased to answer any questions that the Committee may have.

PREPARED STATEMENT OF REAR ADMIRAL GEORGE N. NACCARA

Good morning, Mr. Chairman and distinguished members of the Committee. I am Rear Admiral George Naccara, the Coast Guard's Chief Information Officer (CIO). I have responsibility for the Coast Guard's Year 2000 (Y2K) project.

I welcome the opportunity to give this committee an update on the Coast Guard's Y2K readiness and the readiness of the global marine transportation system (MTS), which have steadily improved since I last testified before you in April.

The Coast Guard reports the status of 74 mission-critical systems to the Office of Management and Budget (OMB) quarterly. As of today, we are happy to report 100 percent completion of Coast Guard mission-critical systems. Additionally, I have ordered a special tertiary level of verification on the majority of these systems, and this initiative will continue until shortly before the end of the year. This is our CIO verification program, a comprehensive test performed with a contractor and our own Coast Guard personnel. Successful end-to-end testing of several of our systems has been accomplished. I plan to conduct several more end-to-end tests before the end of the year. We are continuing work on other, non-mission-critical systems to absolutely minimize Y2K impact on those that serve primarily administrative functions. Contingency plans are in place for all the mission-critical systems, and Business Continuity Contingency Plans (BCCPs) are in place at 100 percent of our operational units. Our units have been directed to exercise their plans and modify them as necessary in the time that remains. Though the recent end-of-week rollover of the Global Positioning System (GPS), and the rollover of computers to 9/9/99 proved to have very little impact on our systems or our ability to operate, we used both events to test and modify our incident command center watchstanding approach, as well as our procedures for passing information up and down the chain of command. At the end of the year, the Coast Guard intends to be ready to perform "Coast Guard missions in a Y2K environment," whatever that environment proves to be. As I stated to you in April, our motto is "Semper Paratus"—Always Ready—and in keeping with that, we will ensure that our systems and equipment, as well as all our processes, are ready.

As I also stated to you in April, we are keenly interested in the Y2K readiness of the industry we regulate, not only because we are charged with maintaining safety on our waterways and protection of the marine environment, but also because we are aware of the impact of this industry on the global economy. In keeping with this, we have pursued an ambitious 2-year strategy of outreach to the MTS, both domestically and internationally. The outreach has consisted of the following elements:

a) Assessment of the readiness of the global MTS. A number of initiatives are underway both in the government and private sector to assess the readiness of the MTS. Some government-contracted surveys have been completed, (such as one we recently received from the Central Intelligence Agency, which has a section that specifically assess maritime shipping and ports). The Coast Guard has also partnered with the United States Transportation Command (USTRANSCOM) in collecting information on the readiness of some key world ports. Summed up, the studies show a high level of Y2K preparation in the shipping industry, and a steadily improving picture in the world's ports, an area I will address further when I summarize our port exercise program. Some areas

of the world do raise a slightly higher level of concern than I have for U.S. ports. I do not intend to review these assessments in detail here because they have been prepared with a security classification, but they are available to this committee. Should that not be the case for some reason, I will be happy to assist you in obtaining releasable portions of them, and I also invite any member who is interested to attend, or send an appropriate representative to attend, the next classified briefing I receive from USTRANSCOM. While I am guardedly optimistic about the emerging picture for world ports, I will continue to sound the cautionary note that the MTS is a tremendously complex and fragmented, intermodally connected system. I believe, particularly because of the wide dependence on technology (particularly embedded chips) in the industry, that a level of uncertainty will remain when the new century arrives.

b) Outreach to the MTS. As I have reported previously, the Coast Guard has pursued a multi-faceted, 2-year program of outreach to the industry. This has included: Y2K conferences and industry days on all coasts, the Great Lakes, and the inland rivers; the distribution of nearly 250,000 brochures to ships' masters and port facility operators, and another 250,000 to recreational boaters; and an ambitious and continuing schedule of speaking engagements by myself and senior Coast Guard officers domestically and internationally. We also maintain websites and an (800) infoline where mariners can obtain relevant Y2K information. Characteristic of our level of effort, we undertook an especially aggressive informational campaign, including additional Notices to Mariners and press releases, concerning the GPS end-of-week rollover in August.

c) Y2K Enforcement Policy. The Coast Guard has recognized from the start of its Y2K outreach program that a consistent approach to enforcement in the global MTS is crucial, given the tremendous impact this industry can have on the world economy. Our goal, in addition to our primary focus of safety on the waterways, has been to minimize disruptions and interruptions in commerce. That is why we agreed to host the meeting of 16 international maritime trade organizations at the International Maritime Organization (IMO) in London last March. This group was representative of virtually all shipping interests and ports in the world. I have already reported to you the success of this meeting in producing a Year 2000 Code of Good Practice, which the IMO immediately issued as its IMO Circular Letter 2121. Central to the philosophy of the Circular is the open exchange of information among MTS stakeholders. I am now pleased to report that a growing number of nations have adapted their enforcement policies to Circular 2121, including among others Canada, the United Kingdom, Japan, Germany, the Netherlands, Russia, Australia, and Singapore. The Coast Guard published its enforcement policy in a Federal Register notice in June, also basing its approach on the required exchange of information using the questionnaires in the IMO Circular. We also issued policy guidance to our Captains of the Port, which contained a risk assessment matrix and risk management process. In essence, the Captain of the Port takes the information provided by the company and scores the level of risk associated with the vessel's movement or the cargo operations of a terminal. A large number of shipping companies and facilities operators have now filed their information with us. I should point out, however, that not all had filed, or filed completely, as of the 20 August filing date. So when our Captains of the Port assessed risk using the matrix during the first designated Y2K critical period of September 7–9, incomplete information was the principal cause for the issuance of 175 Captain of the Port orders to ships and 85 to facilities. Many of these orders, which reflected some level of restriction on vessel movement or cargo operations, were rescinded as the outstanding issues were resolved to our satisfaction. While the Coast Guard takes no pleasure in requiring even brief delays of this sort, which are costly to industry, we felt it served as an indication of the seriousness of our intent to ensure safety, and will prove beneficial in the overall preparation of the industry for the end of year. I am convinced this proved that U.S. ports can remain open, and that commerce can proceed safely in and out of our ports. It also sent a clear message to other nations that a viable process is available and reinforced our international leadership in Y2K readiness.

d) The port exercise program. As I told you in April, I was successful in ensuring that contingency planning information was included in IMO Circular 2121. The Coast Guard does not view these plans as passive instruments. Just as we require an operator of a passenger vessel to actually launch lifeboats when we carry out their annual inspection, we have taken a strong position on the exercise of Y2K contingency plans on ships and in ports. As of this date, we have carried out port-level exercises in a large number of U.S. ports, including some, such as Los Angeles/Long Beach, New Orleans, San Francisco, and

New York, which have received considerable media attention. However, since our view is cast on a global industry, we are interested in seeing other world ports carry out Y2K port exercises. Some, such as Hong Kong and Singapore, have already done so. To further champion this approach, we invited representatives from several nations, both G–8 nations and our primary oil supplying countries of Saudi Arabia, Mexico, and Venezuela, as well as China and Korea, to attend our port exercises in New Orleans, San Francisco, and New York. Last week in Berlin, I made a presentation advocating port exercises to representatives of G–8 countries attending a workshop on maritime and aviation contingency planning. I distributed to these representatives a playbook we have compiled from our U.S. port exercises, containing information on how to design an exercise, as well as some best practices and lessons learned from our exercises. A week ago, I met with the General Secretary of the IMO in London and presented him with a summary of our meeting in Berlin, and a copy of the playbook. I am happy to report that he has distributed these materials as IMO Circular 2158 that urges IMO member states to consider holding port exercises of their own during October and November. We also distributed copies of the contingency plan exercise playbook to 13 Caribbean countries last week. In addition, I will make the playbook widely available to any other MTS interests who desire it.

The Coast Guard will not relax its efforts during the 91 days that remain until December 31. If one were to view the Coast Guard in a corporate perspective, our primary commodity is readiness and responsiveness, and we will ensure our commodity is available to the American taxpayer. We will continue to re-evaluate all systems, both mission-critical and non-mission-critical, and continue to refine our own contingency plans. We will hold a major port exercise in Hampton Roads on October 28 in cooperation with the Navy. We will continue to assist MTS stakeholders who request our help with port exercises or other contingency planning issues, providing training, guidance, and even a Coast Guard planner as necessary to our trading partners. And we will continue our DOT interagency and interdepartmental cooperation to maximize the responsiveness and information sharing of the Federal government. All of the tools that we have developed, including the playbook, our database of industry readiness information, and our risk assessment matrix, will be made available to those public entities who desire to use them. And on December 31, the Coast Guard will be in a heightened state of readiness nationwide to respond to any threat of maritime emergency or disruption in the marine environment.

Thank you for the opportunity to discuss this important issue with you today. I will be happy to answer any questions you may have.

RESPONSES OF REAR ADMIRAL GEORGE N. NACCARA TO QUESTIONS SUBMITTED BY CHAIRMAN BENNETT

Question 1. The Maritime Safety Committee of the International Maritime Organization (IMO) has promulgated a number of guidance documents—really advice—for worldwide Y2K readiness of the shipping industry that are non-binding. Have these been effective in causing shippers to take notice of the need for Y2K remediation? Could you estimate to what extent these have been followed by the industry?

Answer. There have been four IMO Y2K Circulars calling for increased attention to resolving potential problems related to the year-end roll over. The IMO circulars are effective and are a very positive component of the international maritime Y2K awareness effort, which must be seen in the context of a much larger effort undertaken on multiple fronts worldwide to alert the maritime industry. Major international corporations have given serious attention to the issue and leadership has been displayed by a large number of international maritime trade associations and maritime nations. Notable efforts include:

a) Worldwide seminars on Y2K issues by the United Kingdom Group of Protection and Indemnity (P&I) Clubs; this organization also participated in the creation of the Ship2000 website, along with several other major maritime trade associations;

b) Distribution at the above mentioned seminars, and elsewhere, of a Ship2000 Toolkit for the design of a maritime Y2K project, by the United Kingdom P&I Clubs;

c) Conferences and industry days around the United States led by the U.S. Coast Guard, focused on Y2K;

d) Distribution by the Coast Guard of a Y2K brochure to all vessels calling at U.S. ports, as well as to facilities and recreational boaters;

e) A publication on Y2K contingency planning for ships by Lloyd's Register in cooperation with a number of other trade associations;

f) A publication on Y2K contingency planning for ports sponsored principally by the International Association of Ports and Harbors;

g) Worldwide seminars by the International Energy Agency on Y2K and the oil industry, including a maritime component;

h) A meeting convened by the U.S. Coast Guard of 16 major international maritime trade organizations at the IMO in March 1999, which produced the Year 2000 Code of Good Practice (later issued as IMO Circular 2121);

i) Addresses by the U.S. Coast Guard Chief Information Officer to two United Nations meetings of national Y2K coordinators in December 1998 and June 1999; and

j) Y2K port contingency exercises in 26 U.S. ports, several of which received considerable press attention, and some of which were attended by foreign observers.

These are just a sampling of the many efforts that have contributed to a high level of attention to the Y2K issue in the maritime industry. It would be difficult to determine which of the many forms of guidance on maritime Y2K projects have most influenced industry. Though the IMO has doubtless played a significant leadership role, it has likely been the combined influence of all these initiatives that have led to the industry's serious efforts on Y2K.

Question 2. Please describe the nature of projected/likely failures at ports, the level of seriousness, and anticipated duration?

Answer. The Coast Guard expectation is that U.S. ports will be open and operating during Y2K critical periods. Captain of the Port surveys indicate that self-imposed curtailment of operations by industry at the century rollover may run above 50 percent, but only for a few hours during the actual rollover period. As to the nature of failures that may occur in ports, it is extremely difficult to predict what might fail. Port information technology and infrastructure reflect many of the same risks that affect other sectors of the economy. Port businesses have complex IT systems and embedded processors, and some level of failure in such systems continues to be predicted by leaders in the industry. Ports are also vulnerable to disruptions in power, water, telecommunications, financial services, and supply chains to the extent that any of these occur. Minor, not major, disruptions are anticipated. An important difference is that ports are key intermodal nexus points, and disruptions in other modes, such as rail or transport, can cause slowdowns in the movement of cargo through ports. While it is impossible to predict where such disruptions might occur, the intermodal factor may have a slight magnifying effect. It is equally difficult to predict the anticipated duration of any disruptions that ports might experience, other than to say that they are more likely to be of short duration, since the overall state of readiness of the industry will undoubtedly allow affected parties to correct failures they encounter fairly quickly.

Question 3. Will the Coast Guard have additional monitoring to watch for pollution from ships with malfunctioning systems in U.S. coastal waters?

Answer. No. The Coast Guard already maintains a high state of vigilance for pollution incidents 365 days a year on a 24-hour, 7 days-a-week basis. All incidents from a minor sheen to a major spill that come to Coast Guard attention, usually through our National Response Center, are quickly investigated. As the Coast Guard intends to be at a high state of readiness for the Y2K critical periods, our vigilance will, if anything, be slightly enhanced by our increased attention to all activities in our ports and waterways. In addition, since we are reviewing the risk associated with all vessel and cargo movements in ports during the critical periods, these activities will be subject to an added level of scrutiny. In cases where factors such as weather, hazardous cargo, or previous vessel history generate a high risk rating, operational restrictions may be imposed by the Coast Guard Captain of the Port to further mitigate that risk. On balance, the potential increase in risk posed by the Y2K problem is being met with monitoring and measures that mitigate that risk.

Question 4. What confidence is there in the efficacy of commercial shipper remediation and contingency planning? That is, is it generally perceived to be thorough and effective, or cursory and ineffective?

Answer. Captains of the Port have confidence that the remediation and contingency planning actions of most of industry are thorough and effective. Coast Guard Headquarters surveyed Captains of the Port to determine the level of preparation of the industry in their zones. The latest in a series of surveys was conducted at the end of September. Responses were based upon extensive cooperation in preparing for Y2K between Coast Guard personnel and other port stakeholders, which included representatives of maritime associations, port safety advisory groups, piloting

associations, state and Federal agencies, and individual companies doing business in the port. The responses reflect a high level of awareness of the problem within the industry, and a better than 80 percent completion rate for repair, testing, and Business Continuity Contingency Planning actions. In addition, 56 percent of those surveyed considered their ports at a low state of risk, 41 percent at a medium level of risk, and 3 percent did not respond; no ports were rated at a high state of risk.

Question 5. Does a central Y2K data remediation coordinating or data collection authority (similar to ICAO or IATA) exist for ports? If so, where and how is its information made available?

Answer. Yes, a central Y2K data authority (similar to the International Civil Aviation Organization [ICAO] or the International Air Transport Association [IATA]) exists for ports. The Coast Guard established itself as a central Y2K data collection authority for carriers and facilities operating in U.S. waters for a 48-hour period surrounding January 1, 2000 and February 29, 2000. This was done through publication of an Interim Rule on June 23, 1999 requiring the filing of Y2K readiness information by shipping companies and certain facilities operators. This data, which is being stored on a Coast Guard database, is now virtually complete for companies that plan to operate during the designated Y2K critical periods. However, a word of caution is necessary since this data only represents a percentage of the total number of stakeholders operating in the maritime environment. This information is based on International Maritime Organization (IMO) Circular 2121 and represents self-reporting by the Marine Transportation System (MTS). As such, it has limited value for overall calculation but provides good "due diligence" information for Coast Guard Captains of the Port in performing risk assessments.

On an international scale, the Coast Guard is unaware of any central data collection initiative in the maritime industry that corresponds to the comprehensive data collection for the aviation industry recently undertaken by ICAO. Though an agency of the United Nations like ICAO, the International Maritime Organization has undertaken no similar assessment, undoubtedly due to the vastly more diverse and complex nature of the MTS. Numerous MTS trade associations have polled their membership, but the data, mostly incomplete even for the segment of the industry in question, cannot represent comprehensive data for all of the MTS.

Question 6. What kinds of delays might develop at the nation's ports if maritime traffic must be slowed down due to Y2K problems with ships or traffic systems? Are we talking days or hours of delays?

Answer. If delays occur at all, they are more than likely to be measured in hours. Extensive contingency plans have been prepared to deal with potential failures on board vessels and in systems and equipment ashore. For this reason, even if minor failures and disruptions occur, invocation of contingency plans should permit ship and port operations to continue at near to normal levels with little delay. A ship with a failure on the bridge, for example, should still be able to get to the dock even with Coast Guard imposed operational restrictions, such as a requirement for tugs alongside. Further, since more than 50 percent of industry has indicated that it is likely to voluntarily curtail or halt operations during Y2K critical periods, this will serve to lower the level of operations in the ports and lower the impact of any disruptions that do occur, thus mitigating delay factors. Should individual operators have more extensive disruptions to their systems, they might experience correspondingly longer delays to their operations, but in most cases these would not delay overall port operations. An important additional factor is that ports are key intermodal nexus points, and disruptions in other modes, such as rail or transport, can cause slowdowns in the movement of cargo through ports. While it is impossible to predict where such disruptions might occur, if they do, they might result in delays in the port. But only if the disruptions were major would we expect intermodally caused delays of more than several hours. A larger unknown for U.S. port operations, of course, is the potential impact of more significant disruptions offshore. Delays in key international ports could clearly delay cargoes bound for U.S. ports, as well as delay outbound cargoes.

Question 7. Where is your biggest Y2K concern in regards to international maritime activity and what is the Coast Guard doing to mitigate the risk to the U.S.?

Answer. The Coast Guard's two biggest Y2K concerns in regards to international maritime activity are:

a) The unknown impact of embedded technology. These uncertainties posed by the extensive use of embedded chips in modern ships have undergone public discussion in the past months and require no additional review. The only way to ensure Y2K compliance of an embedded microprocessor assembly is to replace these components in favor of assemblies whose functionality is absolutely known. This uncertainty will remain, and could possibly account for some disruption in the Marine Transportation System (MTS). We have, through discus-

sions within the MTS, learned that many larger carriers and facilities have performed extensive testing of embedded systems and replaced non-compliant processors.

b) The interconnectivity of the complex MTS. Multiple modes and many stakeholders have a role in getting cargo to its destination through the MTS. Disruptions in any segment of the domestic or international transportation system, or in the worldwide infrastructure that supports the MTS, can cause disruptions elsewhere in the chain.

Extensive Coast Guard outreach activities to the international MTS continue. Recognizing early on that the MTS had to be approached as an organic whole, the Coast Guard encouraged all segments of the international MTS to prepare for Y2K.

Question 8. During the period of September 7–9, the Captains of Port issued 175 orders to ships related to Y2K. What does the Coast Guard expect will happen as it relates to vessels' movements at U.S. ports over the period of December 30, 1999 to January 1, 2000? Do you have any expectations for February 29, 2000 to March 1, 2000?

Answer. The majority of the Captain of the Port orders issued during the September 7–9 period were the result of incomplete information on file with the Coast Guard for the ships in question. As a result of the September 9 enforcement actions, ship and port information is being provided at an increasing rate, and the Coast Guard anticipates all companies that plan to operate during the next two critical periods will file the appropriate information by early December. A high percentage of companies have indicated that they intend to curtail or halt operations during the next two critical periods. For those that do operate, there is now widespread familiarity in the industry with the Coast Guard risk assessment process. These operators are expected to have corrected any known problems before attempting operations in the critical period, and ensure executable contingency plans are available. For this reason, though some disruptions may occur, they are expected to be manageable.

Question 9. The port exercises conducted by the Coast Guard and the maritime industry have been successful. However, as we have heard from the Inspector General, the scope has been limited to testing the contingency for shipment movement. Are there plans for future port exercises? Do you plan to expand their scope?

Answer. Contingency plans for more than ship movements have been tested during U.S. port exercises. Contingency plans for communications, vessel traffic services, power loss, police and fire department response, chemical facility spills, customs systems failure, and U.S. Navy interface, among others, have been exercised around the country over the summer and fall. Most of the exercises in the U.S. have now been completed, though a few remain to be conducted. For example, a joint Y2K spill exercise will be conducted with the Canadians in Detroit on November 22, 1999 and a small number of exercises in foreign ports will occur in the time remaining until the end of the year. The Coast Guard will also have representatives at a port exercise to be conducted by the Mexicans in Altamira on November 27, 1999. As the need arises, we will continue to assist trading partners with port exercises upon their request through the end of the year. And though the major U.S. port exercise phase is now virtually past, we will continue not only to test and refine our own contingency plans, but continue to encourage, or in some cases require, our industry partners to do the same.

PREPARED STATEMENT OF DAVID Z. PLAVIN

The Airports Council International-North America (ACI-NA) represents local, regional and state governing bodies that own and operate commercial airports in the United States and Canada. ACI-NA Member airports enplane more than 97 percent of the domestic and virtually all the international airline passenger and cargo traffic in North America. We are pleased to be able to share our thoughts on the issue of Y2K readiness with the committee.

Our association's Y2K activity began in the spring of 1997 with the first of a series of educational seminars organized to assist our members in developing their Y2K awareness and implementing programs leading to assure readiness of our nation's airports. During the intervening two years, we organized Y2K informational meetings in Denver, Detroit, San Francisco, Cincinnati, Orlando, Washington, Dallas/Fort Worth, Seattle, Phoenix and Tampa. Many of the meetings were conducted jointly with the Air Transport Association and individual air carriers in support of an agreement between ACI-NA and ATA to cooperate extensively in this area.

ACI-NA is represented on the President's Council on Year 2000 Readiness and participates with other industry associations in the FAA Y2K Industry Steering Group. The steering group has representatives of the major airlines, regional airlines, general aviation, aviation manufacturers, and airports and is fulfilling a particularly effective role by providing a mechanism for the various elements of the aviation industry to coordinate their Y2K activities.

We would like to make several points, which often go unrecognized in discussing airports' readiness for the year 2000 transition.

STATUS OF AIRPORTS' READINESS

Because the nation's 18,000 airports are locally owned and operated it is more difficult to form a single view of their readiness status than is the case in many other industries that are more concentrated. Unlike the major airlines or the regional airlines, with their limited numbers of operators, this diverse ownership makes it infinitely more difficult to track readiness status.

Several attempts to survey airports during the past year have been unsuccessful, in part because of the large numbers of airports involved and, in part, because of the rapidly changing status of airports' readiness. In the beginning of this year the General Accounting Office reported on the status of airports based on a large survey conducted by GAO during 1998. However, that survey data was badly outdated by the time the GAO analysis was completed and the results did not accurately reflect airports' status at the time the report was published. We joined with the American Association of Airport Executives in several attempts at surveying our members earlier this year and also found that the status was changing so rapidly that consistent results were difficult to obtain. The FAA Office of Airports Safety and Standards conducted a survey in June of this year that was updated as recently as mid-August. We believe that survey will provide the most comprehensive information on the status of certificated airports. Finally, the Air Transport Association is attempting to maintain information on the status of airline suppliers, including airports. The ATA data is collected under assurances of confidentiality and has not been released to anyone other than their airline members. However, based upon discussions with ATA and FAA staff, as well as through frequent contact with our member airports, we believe the overwhelming majority of airports have completed the bulk of the remediation and testing of their affected systems and they will all be ready for the year-end date rollover.

CONTINGENCY PLANNING

It is common practice among our member airports to conduct extensive testing to assure that each affected system has been made fully Y2K compliant. It is also common practice to develop a contingency plan to assure continuation of the functions of computer systems in the unlikely event that a failure occurs that was undetected during the testing.

Many segments of American industry seldom experience large-scale disruptions of their operations and, therefore, do not regularly conduct contingency planning on the scale required for Y2K readiness. This is not the case with our nation's airports. Airports regularly develop and test contingency plans for disruptions caused by major winter storms, airfield construction programs and emergency response to accidents. These plans are formally coordinated with airlines, other airport tenants, FAA and outside emergency response agencies and are updated frequently. It is common for an airport to conduct live drills of its snow removal and emergency response plans each year. Planning major construction programs to minimize airfield disruptions has also become an annual process at many of our major airports. Y2K contingency plans are but a variation on existing emergency response, construction and winter storm plans. We are confident that high quality contingency plans will be in place at our member airports in the unlikely circumstance of an unanticipated Y2K failure.

FEW AIRPORT SYSTEMS ARE CRITICAL

The aviation industry has been subjected to unwarranted speculation regarding the potential for Y2K failures having an impact on safety. Fortunately, that speculation is completely false. Unfortunately, the speculation continues.

FAA has prepared and distributed to certificated airports a list of approximately 150 systems commonly owned by airports that might be susceptible to Y2K failure. Many other important systems (such as navigation or landing aids, baggage and fueling systems are commonly owned either by FAA or by airlines, rather than airports). Included on that list are approximately 48 systems that, in FAA's judgement, are considered critical to airfield operations or might be used in fulfillment of regulatory requirements. We believe that very few of these systems actually have potential for either significantly affecting operations or safety. Many of the systems merely serve to increase efficiency by automating functions formerly performed manually. Others provide information, are databases or record keeping in nature and do not

control operational functions. Three of the 48 systems have been the subject of frequent speculation and are worthy of additional discussion here.

Airfield Lighting Control Systems: These are tools for controlling the thousands of lights used on a typical airport runway and taxiway system. Newer systems are controlled by computers, some of which have been found to exhibit Y2K failure modes. Those systems generally have been replaced or repaired by our members and subsequent testing indicates that they are free from risk. However, given the speculation about lighting failures having the potential for catastrophe, you should understand how the regular procedures that are in place to assure safety would be applied in this case.

Even if one of these computerized systems were to fail the electrical switching gear could be operated manually, to restore airfield lights. Furthermore, if the system were to fail, aircraft would not be dispatched to that airport, flights in progress would be diverted to the alternate airport filed in the flight plan and flights on final approach would perform a missed approach if a lighting failure were to occur. In the case of low visibility landings, current requirements call for automatic switching to emergency generator within 15 seconds, if critical lighting system fails. These emergency generators are typically *not* controlled by computers.

Because these systems have been thoroughly assessed and tested and because the lighting can be manually operated, we feel that the risk of disruption due to a Y2K failure is minimal.

Airfield Access Control Systems: These are used to regulate access to the secure portion of the airfield by the thousands of airport, airline and other employees at a typical large airport. These systems, too, use computers to activate the hundreds of doors involved and some have been found to be subject to Y2K failure modes. As in the case of the airfield lighting control systems, the susceptible systems have been repaired or replaced, tested for Y2K readiness and are felt to be fully reliable. However, if a failure were to occur, despite this testing, FAA has provided guidance to airports on how to manually control access to secure areas. Assuming that any failure could not be quickly repaired, the consequence would be increased staffing and manual operation of access doors.

Airport Rescue and Fire Fighting (ARFF) Vehicles: These may contain microprocessors used in their diesel engine fuel controls or to perform data collection for maintenance functions. There has been speculation that Y2K failures may affect their performance. As in the other case described, the affected vehicles have been identified and repaired with the help of the manufacturers involved. Many airports maintain more than the minimum numbers of vehicles and, if an unanticipated failure were to occur would continue to meet the minimum regulatory requirements with spare fire engines. Even if an airport does not have a spare vehicle, the impact of a failure would most likely be the reduction in the number of vehicles available, not the loss of all fire fighting services, since few airports have fleets composed of entirely the same make and model of vehicle. Given the extremely low probability of ever needing the full fire fighting capability available at an airport and the remarkably low accident rate at our nations' airports, we are confident that the potential for a Y2K problem is minuscule, even if a failure were to occur.

However, we are concerned that a proposed change to the regulations governing ARFF preparedness being considered by FAA would increase the potential for disruption if a vehicle failure should occur at an airport without a spare vehicle. FAA is proposing to eliminating the 48-hour grace period currently allowed by 14 CFR Part 139.319(h)(3) during the first few days of the year 2000, presumably to address potential Y2K failures. The 48-hour provision is intended to allow airport operators sufficient time to acquire parts to repair a required ARFF vehicle or arrange for a replacement vehicle. By eliminating the grace period, FAA would force cancellation of flights at those airports without spare vehicles, if a failure were to occur...even if the failure is unrelated to Y2K. Perversely, rescinding the grace period would reduce the chances that an airport without a backup ARFF vehicle would be able to arrange to borrow an excess vehicle from a neighboring airport if they experienced a failure. Under FAA's proposal, the lender would also be at immediate risk of flight cancellations, should they have an unanticipated ARFF vehicle failure and would, therefore, be much less likely to lend their spare vehicle as a replacement to a neighbor.

SUMMARY

As we noted above, we feel confident that our nation's airports are fully prepared for the millennium date roll over. We feel that even if failures occur, despite the extensive testing that has been done, airport contingency plans will prevent significant disruption. We are strongly convinced that there is no safety risk from potential Y2K problems because of the excellent system of redundant safety measures that are used in aviation. We are, however, concerned that FAA should not remove

the 48 hour grace period for the repair of ARFF vehicles because that would increase the potential for disruption in the event of failure.

Finally, we are concerned that an increased public perception of risk from the millennium date change could negatively affect travel if past misperceptions of Y2K readiness is allowed to continue. It is our opinion that the US aviation system is fully prepared for the year 2000 date change, and airports have contributed their share to that success.

PREPARED STATEMENT OF EDWARD SMART

Thank you, Mr. Chairman. My name is Ed Smart and I am the air line pilot representative to the International Civil Aviation Organization (ICAO) where we, along with IATA, have a Permanent Observer seat on the Air Navigation Commission. Our organization, the International Federation of Air line Pilot Associations (IFALPA) is made up of just under 100 national member pilot associations, has approximately 120,000 air line pilot members out of the estimated 150,000 active pilots who are flying the line today. Our relations with other international organizations includes affiliation with the International Flight Engineer Organization, and we maintain a close working relationship with the International Federation of Air Traffic Controllers Associations.

While our member associations are often air line pilot unions, IFALPA is not a union, nor is it a union of unions. It has as its basic aim the development of a safe and orderly system of air transportation as well as the protection of the professional interests of air line pilots, focusing its attention and efforts on matters involving aviation related technical, safety and security issues. It may be of interest to note that IFALPA is also the trusted agent of the membership of the International Airline Passenger Associations for the detecting and reporting of safety and security deficiencies on the air side and outside of the aircraft cabin.

IFALPA is well aware of and most appreciative of all of the fine efforts which have been expended by the world's States and international organizations in increasing public awareness of the potential threat posed by Y2K related problems and in providing valuable assistance to national and international authorities, the world's airlines and airports in their efforts in taking the proactive measures necessary to eliminate or to at least minimize the potential for flight safety problems. We have received, and we have full confidence in, the assurances given to us by the major aircraft manufacturers, both in the western world and in the Former Soviet Union, that there is nothing internally within today's civil air transport aircraft or its essential which will jeopardize fundamental flight safety when the date rollovers occur.

Outside of the aircraft, we are confident that the measures already taken and still pending for completion by the end of the year will ensure continued safe flight safety for operations in the North American, and the Eastern and south Pacific and North Atlantic Regions. However, some concerns remain regarding other Regions of the world.

While we are reasonably confident that the Y2K situation is well under control regarding air traffic in the Western European area, we are somewhat less confident that the same situation exists in Eastern Europe which includes airspace eastward to Vladivostok. We noted with some consternation the recent announcement by Col. Gen. Anatoly Kornukov, who heads Russian Air Traffic Control, of his serious concerns that Russia's air traffic control system has been in critical condition since the early 1990s; and that, in his view, flight safety levels will continue to fall drastically until they are 80% below the levels of the western world. ICAO and IATA have been in the process of opening up new trans-Arctic air traffic control routes which transit remote areas over Russia and we now have some concerns as to their continued viability in light of the recent Russian government, particularly in light of the potential for additional Y2K complications. These same concerns also apply to former Soviet Socialist Republics to the north of Iran and Pakistan. The old adage that a chain is only as strong as its weakest link is also applicable in the instance of international flights.

Among our concerns is the fact that the Y2K air traffic control contingency plans developed for western Europe include the idea that some European States may close their airspace in the event of a failure of air-to-ground communications. This is something which already exists but has only rarely used and has never been employed on a large scale. In the event of implementation of this procedure for an extended time period and involving large numbers of aircraft, we believe that flight safety problems could occur due to the fact that there are some 300 daily flights inbound from North America via the North Atlantic and an additional 30 or so

flights each coming across from South and Central America, and another 60 or so daily flights inbound to Europe from Asia.

We also understand that the airspace and aerodromes along the limited number of main routes between Asia and Europe could also be closed in the event of air-ground communications failure and that there is also a possibility that the routes over Afghanistan and Turkey might become unavailable and that aerodromes in Cyprus, Syria and Turkey might also become unavailable. We are suggesting that pilots require carriage of a minimum of an extra 30 minutes of fuel over and above the normal and contingency fuel usually carried in order to assist them in coping with Y2K induced delays and diversions.

Moving outside of the areas already mentioned, we become a little less sure of the air traffic control systems in some areas to cope with the Y2K events. Over large areas of sub-Saharan Africa, for instance, the air traffic control system has never become fully functional and pilots rely on a "do it yourself" form of air traffic control called In-flight Broadcast Procedure (IFBP) by broadcasting their flight's crossing times and altitudes "in the blind" on a common radio frequency. Other aircraft then listen for these broadcasts and to minimize potential conflicts by changing their altitude so as to avoid the other aircraft.

IFBP normally works in low traffic density areas such as Africa but still there but there are difficulties. Firstly, not all aircraft are aware of or use the blind broadcast procedure as in the instance of State aircraft. This actually happened when a US Air Force C–141 and a Luftwaffe Tupelov aircraft which had a mid-air collision off the coast of Namibia some time back. Neither aircraft was aware of the existence of the IFBP procedure or of each other's presence, primarily because the procedure is not recognized or promulgated by State authorities for fear that it would be a de facto admission that their air traffic control systems were critically deficient. Secondly, not all pilots using the blind broadcast procedure use the English language, so the effectiveness of the procedure is degraded.

The reason that I am dwelling on this particular procedure as it applies to the airspace over Africa is because it is in the ICAO Y2K regional contingency plans as the primary means which will be implemented to prevent midair collisions if and when the Y2K problem becomes real and results in a complete collapse of air traffic control occurs. If ground based air traffic control does fail, pilots will be expected to revert to what is essentially a "do it yourself" air traffic control system.

One might say that we at least have a last ditch electronic means for detecting other aircraft which pose a threat and avoiding midair collisions through the use of on board Airborne Collision Avoidance Systems (ACAS) in the event air traffic control fails and the In-flight Broadcast Procedure doesn't work. However, again, there are impediments to its full effectiveness even when ACAS is installed. In order to detect a potential collision, ACAS requires that the threat aircraft be equipped with an ICAO compliant altitude reporting radar transponder; and, at present there is no mandatory requirement for the carriage of this equipment by all aircraft. Internationally, the system is not required for installation until 2003. Even then, ACAS will not be required for cargo aircraft, nor is it required for installation in the smaller commercial and non-commercial aircraft or in the instance of State aircraft which are all aircraft in use for military, police or customs purposes.

Aircraft manufactured in the Former Soviet Union (FSU) and flown domestically and in national airspace where ICAO compliant transponders are not required simply cannot be detected by ACAS. Russian transponders are coded differently and utilize meters instead of feet as their basis. As a result, there have been several near-misses in former Soviet Union airspace and there was a tragic midair collision between a Saudia 747 ACAS equipped aircraft and a Kazakh Illyushin 76 cargo airliner over India in 1996 which 350 fatalities.

In response to the unsure nature of what will occur during Y2K type of rollovers, and as a means for facilitating a safe landing at unplanned diversion airports, it was suggested to States via ICAO that during sensitive times that they consider making military aerodromes available to civil aircraft which require their unanticipated use and that civil aerodromes which have limited times of normal use extend their availability so as to make them immediately available to aircraft which are experiencing difficulties.

Our specific recommendations made to ICAO during their 7 to 9 September Second Global Y2K Contingency Planning Meeting aimed at dealing with potential flight safety problems during the Y2K rollover dates were accepted by the meeting for inclusion in an ICAO State Letter. I commend them to you for consideration:

—Additional flight crew training for crews engaging in international flights which are specific to the Y2K contingency measures that will be implemented should be undertaken. These procedures will have subtle differences in application between different ICAO Regions. The training should also cover alternative air-ground com-

munications methods and procedures such as the use of HF radio patches and ACARS for communicating with ATC through the company;

—In consideration of the fact that there are currently several versions of ACAS equipment and software now in existence and that audio and visual warnings displayed to flight crews can vary widely, it is believed that special emphasis should be given to flight crew training, to include flight simulator training so as to ensure that currently installed systems and indications are covered;

—Aircraft which are flying during the rollover dates and times should carry an extra fuel reserve, perhaps an additional minimum of 30 minutes, over and beyond the normal and contingency fuel which is normally carried so as to permit flight crews to deal with situations such as diversions around closed airspace and landing at unanticipated aerodromes;

—An extra pilot should occupy the "jump seat" on the flight deck during rollover flights to assist in coping with the increased communications load during the potential application of ATS contingency measures and to assist in visually detecting potential traffic conflicts, particularly in areas where aircraft without Mode C transponders are permitted to operate and to mix with civil air transport traffic;

—States will be encouraged by ICAO to curtail non-essential flights by military aircraft during the rollover period in order to minimize potential traffic conflicts;

—States will also wish to maintain their guard against any possible rollover type failures associated with the unscheduled leap year rollover occurring on 28–29 Feb 99.

We agree with the view that both ICAO and IATA have taken all reasonable measures that are within their means in dealing with the Y2K type of events. Mr. Chairman, we are most appreciative for the opportunity to have presented the views of the international airline pilot profession to this eminent national legislative body.

PREPARED STATEMENT OF THOMAS WINDMULLER

I am Thomas Windmuller, appearing on behalf of the International Air Transport Association (IATA). I would like to thank the Committee for providing IATA with an opportunity to appear here today and explain what we and the international air transport industry have been doing to prepare for the Year 2000. The international airline community and the civil aviation industry at large have a good story to tell about their work in this field.

The International Air Transport Association (IATA)

IATA is the trade association of the world's airlines. Its 265 Member airlines account for 98% of scheduled international traffic. Virtually every major international scheduled carrier, including all the major US carriers that provide international service, are Members of IATA. Many other carriers regularly use IATA standards and services. IATA's mission is to represent and serve the airline industry and to promote improvements in aviation safety and security.

IATA and Y2K

IATA has had a Y2K project underway since 1998 involving a range of both internal[1] and external activities. The Committee has asked that we focus today on the readiness of airlines, airports and air traffic service providers around the world to meet Y2K disruptions. These are the subject areas that we, too, have at the top of our priority list since each is critical to the safety of flight.

IATA Member Airlines

Although IATA is not systematically tracking individual airline Y2K readiness, we have been working with our Member airlines on the Year 2000 issue for more than three years. In 1996, we established the Year 2000 Group, a forum in which Member airlines could meet regularly to discuss their Year 2000 preparations in a non-competitive environment. Participants exchange information about problems encountered, solutions identified, and best practices established. Over the past three years the size of this group has grown steadily, and we now have Y2K contacts at all of our Member airlines, as well as at many non-Member airlines.

IATA has collected information on the readiness of aircraft systems from the major airframe manufacturers, Western and Russian, and made this available to Member airlines as well as to other airlines participating in our Year 2000 work.

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[1] In regard to the internal activities, IATA provides a number of services to the international airline community, including several technical, operational, and financial services like the settlement systems in which airlines settle accounts with passenger and cargo agents. It is vital, both to consumers of airline services and to the airline industry itself, that these systems continue to operate smoothly through the millennium change. In addressing the Year 2000 problem we have used widely-accepted methodologies and standards. IATA fully anticipates that all of its services will continue to operate smoothly through the millennium transition.

IATA has also been in contact with the major computer reservation systems, which since early in 1999 have been accepting reservations for dates after the rollover.

The IATA Year 2000 Industry Project

In early 1998, IATA's Member airlines were already making substantial progress with their own Y2K preparations. However, knowledge about counterpart action by their key air transport industry partners was not widely available. The airlines realized that unless these partners—airports, air traffic service (ATS) providers, manufacturers and other key suppliers—were similarly active in their own Y2K preparatory work, the efforts of individual airlines would be insufficient by themselves. The Year 2000 problem is one that affects the entire air transport industry. Given the complex network of interlocking dependencies within the industry, it is important to ensure that all parts of the industry are moving forward together on this critical issue.

It was with this objective that a group of airlines united behind a proposal to ask IATA to undertake a global, industry-wide initiative with our key air transport industry partners. In June 1998, the IATA Members at the Annual General Meeting voted unanimously to fund this initiative and to open participation in it not only to IATA Member airlines but also to non-Member airlines as well. Presently, about a dozen non-Member carriers, scheduled and charter alike, are participating in the project.

Goals

IATA's overriding goals for its Y2K Project are:

First, to **maintain the safety of the international aviation industry.** Safety is always the air transport industry's highest priority. This is true of every aspect of our work. This priority will not change on December 31st. There will be no compromise on safety during the transition period, just as there is no compromise on safety on any other day of any year.

Second, to **ensure business continuity.** To the maximum extent possible, consistent with safety, we want airlines to be able to meet the needs and preferences of their customers on January 1st as on any other day. While the evening of December 31st is traditionally a relatively "slow" period for the industry, there are always people who must or wish to fly on any given day for a variety of reasons. IATA's goal, as always, is to help our airlines provide a service that is responsive to this demand and to do so safely, reliably and conveniently.

Third, to **minimize inconvenience.** Congestion and delays have become a regrettably increasing part of air travel, especially in regions of the world such as North America and Western Europe. Airport and air traffic control delays, snowstorms and other weather disturbances are problems that airlines face every day, particularly during the holiday season. Mechanical problems, labor disputes and other factors also play a role in the life of this industry on a daily basis. We know we will face these problems on January 1, 2000, just as we do on every other day. Our goal, therefore, is simply to minimize any additional impact on the industry—and more particularly on the passengers and shippers that rely upon this industry—by the so-called Millennium Bug.

Specific Objectives

When IATA first began this project in June 1998, we established five specific objectives:

- **Create awareness** amongst airports and ATA providers[2] served by IATA Member airlines as well as amongst key industry suppliers;
- Provide a **common methodology** to airports, ATS providers and cargo customs authorities to help them recognize and assess the impact of Y2K on their operations;
- **Collect data** from these industry partners about the Y2K programs they have in place and track their progress toward full Y2K readiness;
- **Present this data** to participating carriers in an electronically accessible form; and
- **Encourage all industry partners** to address and resolve these issues as quickly as possible.

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[2] For those unfamiliar with the term, "ATS provider" is an acronym for Air Traffic Service provider. It is usually a government entity, like the FAA, that provides air traffic control services to aircraft operators making use of its airspace. This space typically is above sovereign territory, but may include oceanic airspace or even space above adjacent territory, if that space has been assigned to it by specific international agreement. An ATS provider's tools include surveillance radars and telecommunications systems that permit the provider to observe, communicate with, and direct the operations of the aircraft flying in its airspace.

In June 1999, the IATA Member airlines unanimously voted to extend and expand the program through the first quarter of 2000. As is appropriate at this stage, we are now focusing our efforts on:

- **Tracking the progress of our key industry partners** in every area of the world;
- **Encouraging airports and ATS providers** to fulfill their responsibilities for ensuring the Y2K readiness of their operations;
- Working closely with the International Civil Aviation Organization (ICAO) and individual countries to develop or adapt existing **ATS contingency plans** to a Y2K environment;
- Promoting the development of **airport business continuity plans** as a joint activity between airports and the airlines that serve them; and
- **Establishing "Regional Coordination Units"** around the world to track developments on a real-time basis as each time zone rolls over on New Year's Eve.

Project Partners

Since its inception, the IATA industry initiative has been conducted with the full support of the ICAO. Over the past 15 months this cooperation has intensified, and we are now sharing all ATS-related data with ICAO. Since Spring 1999, all visits to ATS providers have been conducted as joint ICAO/IATA visits, and the results have been shared with both organizations.

IATA's key industry ally throughout this process has been the Air Transport Association of America (ATA). The ATA, in close cooperation with the Air Transport Association of Canada, is monitoring the progress of airports and ATS providers (FAA and NAV Canada) in the United States and Canada while IATA is performing this work throughout the rest of the world. All information collected under the auspices of ATA, ATAC or IATA is posted in a common database and is available to the Members of all three associations and other participating airlines.

IATA has also developed a special relationship with the Airports Council International (ACI) on Year 2000 issues. ACI has been a firm supporter of the IATA initiative, promoting strong airline-airport cooperation on Y2K issues. Our "Airline-Airport Liaison Program," which promotes the development of airport business continuity plans by airports and the airlines that serve them, is a joint IATA/ACI initiative.

This project would not have been nearly as successful as it has been without the active support and participation of a number of other important industry players. These include various regional airline associations, such as the Association of Asia Pacific Airlines (AAPA), AITAL in Latin America, AFRAA in Africa and AACO in the Middle East. Several regional governmental organizations, including the European Civil Aviation Conference (ECAC) and EUROCONTROL in Europe, as well as the Latin American Civil Aviation Conference (LACAC), have also played very helpful and constructive roles. In the United States, ACI—North America, the Regional Airline Association (RAA) and other industry groups have actively supported the ATA's Aviation Millennium Project.

Finally, and most importantly of all, it must be emphasized that this IATA program is not one that has been carried out exclusively by the Association on behalf of its Members, but through a team effort that had the active support and participation of our Member airlines themselves. Our Members not only funded the project, but committed staff, time and a great deal of hard work to carry out the data collection visits. These participating carriers continue to follow up with our industry partners to ensure that the information flows back to IATA on a regular and ongoing basis.

Results to Date

Raising Awareness: IATA does not believe there is any international airports that is not aware of the Y2K problem and its potential impact on the air transport industry. On the air traffic service provider side, we are certain that every ATS provider in every region of the world is aware of the problem.

Common Methodology: IATA has distributed over 2,500 "toolkits" to airlines, airports and ATS providers around the world. These toolkits not only provide these organizations with the preferred IATA methodology—a methodology which conforms to all the widely accepted international standards on Y2K—but also includes an explanatory video to help these organizations through the Y2K preparatory process. These toolkits and videos were provided in a number of major world languages including English, French, Spanish, Portuguese, Russian, Chinese (Mandarin), Korean and Japanese.

Throughout the second half of 1998, we also conducted 26 training seminars for airports and ATS providers on each of the major continents, attracting over 2,000 participants. These seminars were conducted in each of the eight previously mentioned languages plus German, Italian and Greek.

Data Collection: To track the progress of our major industry partners as they address the Y2K problem, IATA has been collecting data on airports, air traffic service providers and cargo customs authorities around the globe. IATA's role is to serve as a central point of collecting this data and providing it to participating airlines. We do not provide an independent assessment of the data collected. Over the past 15 months, IATA teams, including airline representatives and specially trained external consultants, carried out visits to a majority of the world's ATS providers and to the top 71 airports (as measured by annual passenger throughput) outside North America. Individual airlines, working on behalf of the entire airline industry, have carried out independent visits to several hundred more airports. North American airports were covered by our colleagues at the Air Transport Association (ATA) and the Air Transport Association of Canada (ATAC).

As of early September we had obtained data covering more than 175 ATS sites around the world, well over 1,200 airports (including North America) and over 100 cargo customs authorities. Information on many other key industry suppliers is also available to participating airlines in this rapidly growing database. The 1,200 airports from which we have received information include well over 90% of the top 330 airports outside North America. (These figures were as of 3 September; additional airport information is being received and entered into the database.) One of the most important current objectives of the project is to obtain regular follow-up progress reports from each of the participating airports and ATS providers so that the data available to airlines is as accurate, complete and up-to-date as possible.

All of this data is stored on a password-protected database that is jointly owned by the ATA and IATA. Participating carriers can access the database either through the worldwide web or with CD-ROMs that are updated twice per month. IATA's pledge to maintain the confidentiality of this database and disclose this information only to airline users has been critical to the success of our work in this area. It has enabled airports and ATS providers to be remarkably open with us about their Y2K programs. They have provided us with a great deal of confidential business information about their systems and individual components in these systems—information that they would not normally provide even to one another, let alone to their airline customers. This pledge of confidentiality has been respected throughout the project, thereby adding to the trust and cooperation that has grown with this initiative. IATA has not and will not publish any data, nor create any "blacklists" or travel advisories, which would compromise the pledge of confidentiality we have given to all parties that have cooperated with our requests for information.

We recognize the legitimate interest of national ATS authorities in each country, on behalf of their publics, in receiving information regarding neighboring states, particularly in the context of developing regional contingency plans. Therefore, and with the consent of the ATS provider organizations, we have been sharing with ICAO the information we obtain on ATS providers since the Spring of 1999.

Contingency Planning: Over the past six months the breadth of the IATA industry initiative has increased significantly from data collection and updating to a number of new areas, one of the most important of which is business continuity and contingency planning. Contingency planning is something that the air transport industry undertakes every day of every year. Since this is an industry for which safety is the highest priority and which is committed to providing dependable service to its passengers and shippers, airlines, airports and ATS providers always have contingency plans covering almost every conceivable scenario.

The existence of such plans provided this industry with a significant advantage in preparing for the millennium transition. Nonetheless, in every sector of the industry the existing plans have had to be adapted to a Y2K environment to envision the possibility in which multiple failures may occur and where the fallback for a failed piece of equipment cannot be an identical make and model on "hot standby".

In the air traffic services arena, regional contingency plans, developed by sovereign states under the auspices of ICAO, have been finalized. ICAO and IATA have worked together in the development and adaptation of these plans in each of the major world regions. We are now working with ICAO to ensure that these regional plans fit together into a global network. Bilateral and multilateral letters of agreement will enable these contingency plans to be implemented, even across national boundaries, quickly and seamlessly from a pilot's perspective. To enable our participating airlines to remain informed about the development of the contingency plans, we have recently made available to them a contingency planning database which gives details on the ICAO-approved plans in each region.

IATA is also working with major international airports around the world to ensure that they, too, are reviewing their existing contingency plans and adapting them to a Y2K scenario. It is important that this work be done in close coordination with the airlines serving an airport and with other key industry suppliers, such as

those providing telecommunications, electrical power, aviation fuel and so forth. This "Airports-Airlines Liaison Program," developed jointly by IATA and ACI, seeks to ensure that airports have the necessary business continuity plans in place, that they have been tailored to a Y2K environment in which multiple failures have been envisaged and planned for, and that these plans have been coordinated with the airlines serving the airport. A business continuity-guidelines booklet has been developed and distributed globally, both by IATA and by ACI.

Rollover Coordination: During the actual transition period December 31, 1999-January 1, 2000, ICAO and IATA personnel will be jointly manning a network of "Regional Coordination Units" in every part of the world. These centers, located in Bangkok, Brussels, Cairo, Dakar, Nairobi, Lima and Miami, will track developments across the globe as each time zone flips over from December 31, 1999, to January 1, 2000. ICAO's role in these regional centers will be to ensure an efficient flow of aviation-related information through official channels, from individual nations to ICAO and then out to all countries. IATA's role, in parallel with that of ICAO, will be to ensure that airlines, many of which will have aircraft in the skies at the time, will have access to this information as soon as possible. ICAO and IATA will each be manning their own "Global Coordination Units" in Montreal. These global centers will not only coordinate the work of the regional centers but will also maintain links with other global command centers, including one in Herndon, Virginia, that will be manned by the FAA, by our colleagues at the Air Transport Association (ATA) and by IATA. Other links will be established with the major aviation manufacturers, providers of services such as telecommunications, and the International Y2K Coordination Center.

What we are Finding

Based upon the data available to us, we are generally satisfied with the progress we are seeing amongst all sectors of the air transport industry. With regards to ATS providers, there has been a remarkable effort and progress in all regions of the world toward Y2K readiness. As part of the ongoing tracking of progress, IATA will continue to pay particular attention to the steadily declining number of ATS providers who have yet to complete their programs to ensure there are no significant operational concerns during the rollover.

Similarly, approximately 70% of the airports that have provided us with information report that Y2K readiness work has been completed on over 60% of all systems. Indeed, 326 airports have already reported that they have completed work on 100% of all systems, and other airports are waiting until they have completed their work to report their status. IATA will continue updating this database until the end of 1999.

IATA has a high level of confidence that the data we are collecting and updating is comprehensive. For example, in addition to the reports we receive from individual governments on air traffic services, we have also obtained information from the ATS providers themselves, from the manufacturers and suppliers of ATS equipment and from more than 140 individual site visits we ourselves conducted. We are constantly cross-checking our facts and our sources to ensure that our information is as accurate, complete and current as possible.

Conclusions

In summary, IATA is confident that the international civil aviation industry has solutions to this challenge well in hand. This confidence is based on the good progress we are seeing amongst our industry partners, on the existence of robust contingency plans—many of which get implemented successfully on a regular basis—and on the real-time tracking of developments that will take place during the rollover period. Nonetheless, we are not complacent. We know many organizations have not yet completed their Y2K preparations, and we will continue to monitor their progress through the end of the year.

IATA is also confident that sufficient airspace capacity will be available under the ICAO ATS contingency plans for airlines to meet the projected levels of traffic during the rollover period. Airlines that choose to do so will be able to operate their normal year-end schedules.

Notwithstanding all efforts by airlines, airports and ATS providers, it would be unwise to predict a flawless transition into the next millennium. There may be some slight delays, cancellations or other disruptions. We hope and expect that these inconveniences will not be significantly greater during the initial stages of the new millennium than they are on any other winter weekend in the Northern hemisphere. In the days that follow the rollover, as airlines begin to ramp up their schedules, congestion and delays could increase if these contingency plans are still in effect. IATA will therefore be pressing for an early return to normal operations as soon as we are confident this can be achieved without any compromise to safety.

It is important to emphasize that these are *inconveniences*. We are very confident that with the progress being made by the air transport industry and the contingency plans that will be in place should anything unforeseen arise *there will be no compromise on safety*. As the head of one European air traffic service provider was quoted as saying recently, "If anyone has real concerns about the Year 2000, tell them to book a flight. The one place I know they will be safe is on an airplane."

A role for the United States Congress

IATA would like to take this opportunity to recognize the outstanding Y2K work performed by the Federal Aviation Administration. Above and beyond the excellent work FAA has carried out with its own Y2K program, Administrator Garvey and her team, including Ray Long, Mary Powers-King, Joe Morgan and Craig Lindsay, should be congratulated for the leadership they have demonstrated in the global arena. We are deeply grateful for the unwavering support they have provided to the industry worldwide on Y2K.

IATA would also like to salute the work of our colleagues at the Air Transport Association (ATA) here in Washington. The very high level of Y2K readiness on the part of the air transport industry in this country is to a great extent the result of the leadership ATA has demonstrated through its Aviation Millennium Project. Both the ATA and the FAA deserve to be recognized by this Committee for their highly successful Y2K initiatives.

Finally, IATA also wants to commend this Committee for its leadership in obtaining Congressional passage earlier this year of the so-called "safe-harbor" legislation, which provides limited liability protection for companies that voluntarily disclose the work they are undertaking to prepare for the millennium change. This legislation serves as a model for other national legislatures, a model that we have cited repeatedly over the past months. While a handful of countries, such as Australia, have passed similar legislation, their number is all too few. We would ask that members of the U.S. Congress use their contacts with legislators from other countries, through the North Atlantic Assembly for example, to encourage their assemblies to enact similar legislation.

We appreciate the opportunity to appear here today to discuss one of the largest challenges ever faced by civil aviation, and we thank you for your continued interest in the problems faced by those who fly planes around the world and in the welfare of those who are flown.

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