

DAY 2: CONCURRENT PANEL SESSIONS (PANEL 2B)

National Security and Defense

Frank Weber, *U.S. Transportation Command, Moderator*

J. A. (Bert) Kinghorn, *Rear Admiral, Office of Intelligence and Security,
U.S. Department of Transportation*

James Caponiti, *Maritime Administration*

John M. Ledden, *U.S. Air Mobility Command*

William Lucas, *Military Traffic Management Command*

OVERVIEW

Frank Weber

I am Deputy Director for Logistics and Business Operations at the U.S. Transportation Command, located at Scott Air Force Base in Illinois. Our job is global air, land, and sea transportation for the U.S. Department of Defense (DOD) and a whole lot of other people around the world in peace and in war. The purpose of this session is to review lessons learned and demands on the intermodal system as military commercial partnering for intermodal freight movements increases.

To set the stage, I would like to give you a 40,000 ft view of why intermodalism is important to DOD. It really dovetails well with Bill Lucas's opening remarks yesterday and with General Brown's comments last night.

Intermodalism is important to the DOD for a very simple reason—we need to move a lot of stuff. The wartime planning strategy against which we size our mobility forces is based on the ability to fight two nearly simultaneous major fatal wars on opposite sides of the globe, and clearly mobility and transportation are a key part of that. It is a big movement requirement. We thought Desert Shield was big. This two-conflict deployment has to close in about one-third of the time. We took 205 days at the height of the buildup to close the force that ultimately commenced Operation Desert Storm. This two-conflict force has to close in less than 75 days.

At the height of Desert Storm, we averaged an aircraft landing on the Saudi peninsula about every 11 minutes and

a ship strung out for about every 50 mi (80 km). Imagine then the demand that a two-conflict set of requirements puts out there. It is not just moving the force, but it is sustaining that force once it is there. Clearly, if we are going to be successful in this, we need a transportation system that can bring both mass and speed to the fight, and intermodalism is a key part of that.

We look at intermodalism as a critical part of our force projection strategy and really we talk in terms of end-to-end throughput capability. You can call it fort-to-foxhole if you would, or origin-to-destination. You pick the description. We talk in terms of throughput, bringing together the infrastructure, the assets, and the information technology. We invest a lot in the pieces to make all this happen. At the end of the day, our measure of success is our ability to close that force when it is required, sustain it once it is there, and bring it home at the end.

Yesterday, Bill Lucas mentioned the importance of doctrine and, in fact, that is really the linchpin of everything else we do. Once something is in doctrine, then training force structure and all those other things that enable something to occur take place. Everything we do is measured against mobility and readiness. Equally important are security and safety in transit visibility and in the end-to-end focus.

DOD has invested big bucks on the various pieces of this system—more than \$1.0 billion in the past decade on basic infrastructure, which includes our depots, our installations, our key strategic ports, and key nodes in our system. With respect to the assets and intermodal equipment, many of you are aware of the investments made in

buying the big items like the C-17 and the large medium-speed roll-on/roll-off (LMSR) ships. What gets less attention—but is equally important—is the materials-handling equipment, the container-handling equipment, and the railcars and all those sorts of things that allow you to rapidly throughput people and cargo to take advantage of those big ticket items. Processing systems help us work the linkages to pull that together.

Also important are training and exercises. We now have a series of intermodal exercises. Bill Lucas mentioned the turbo intermodal surge yesterday, a program that continues to evolve. We are gradually breaking down barriers based on perceptions of intermodal capabilities within DOD. However, we still have a lot of work to do. We learn something new every time we do that. The industry learns something, and our unit commanders learn something. Clearly, the last piece is working with industry to exploit those technologies.

The point I want to make is that intermodalism really is a key enabler and this is recognized within DOD. The thought I want to leave you with is that we think we have the pieces in place, but we are not as far as we need to be with respect to interoperability. How do we make them work for a seamless end-to-end movement? Within DOD we face a lot of the same challenges the private sector faces, but it is something we are committed to doing. Certainly, it is a timely topic and we have a group of panelists today who are eminently qualified to talk about the security and defense issues surrounding that partnership and the defense structure's use of the intermodal system.

U.S. DEPARTMENT OF TRANSPORTATION SECURITY AND INTELLIGENCE

Rear Admiral J. A. (Bert) Kinghorn

Rear Admiral Bert Kinghorn, U.S. Coast Guard, is Director of the U.S. Department of Transportation (DOT) Office of Intelligence and Security. U.S. DOT is the lead agency for the national transportation sector for the Critical Infrastructure Protection Program, implemented under Presidential Decision Directive 63 (PDD 63). It established the administration's policy on critical infrastructure protection, with the objective of ensuring the continuity and viability of critical infrastructures and eliminating any significant vulnerabilities to the physical and cyber tax on those assets. Under PDD 63, Rear Admiral Kinghorn is the sector liaison coordinator for transportation.

As a brief overview, I am going to describe a somewhat unconventional or nontraditional approach to national defense. That is, I intend to talk about

critical infrastructure protection and what I believe our needs are in this area. I also will propose, perhaps somewhat offhandedly and certainly gallantly, a couple of research topics in this area that I think would be helpful to the nation as we move forward in this area.

Although most of the points of my discussion are centered on the information or the cyber side, certainly critical infrastructure requires protection of both our physical and our information infrastructures. I focus on the information side, because I believe it is the glue that makes the intermodal part of our transportation work. Without the connections, the ability to pass information between modes, and so forth, we lose efficiencies and, in some cases, we lose the reason for even adapting the intermodal methods. I am going to propose three potential research topic areas. A couple are fairly simple and fairly easy to come up with; however, the last one you may find a bit more extended and more difficult to come by.

Over the last couple of weeks, I think everybody is aware of the distributed denial of service attacks that took place in some of the Internet service areas, some of the e-commerce people. The press certainly gave it lots of visibility and I think most of us have a good sense of what happened. We have less of a sense of who did it and what their objectives may have been. I think it is useful to recognize that the denial of service fell way short of what the possibilities might have been in terms of the effect on the American people and on our national defense as a whole. These attacks also gave us a pretty good understanding of the difficulty of protecting our infrastructures, especially in this information age where we use the Internet and are becoming increasingly dependent on it. They have also given us a pretty good idea of how difficult it is to identify culprits and to identify causes and methods.

Let me step back and give you an example of an event that occurred a couple of years ago. Although it did not get the same kind of press visibility, I think it will give us a better sense of what the possibilities are in the transportation area. Imagine if you will a couple of teenage boys in a bedroom somewhere with a 286 computer, a 1200-baud modem, and a connection to the Internet. Their thought process is something like this: Let's see what we can do to get easy and cheap access to talk to our girlfriends in another part of the country right now. They approach a local telephone switch, based on information that they were able to pull down off the web. When they got to the address, there was a banner page that said, you have just approached the page of such-and-such telephone company. You are forbidden from going any further, but if you need access beyond this level, call this number, and it was a 1-800 number. So, they picked up their phone, called 1-800, and said they were company so and so in need of some maintenance on this telephone switch and asked how to get access. Being very helpful,

the telephone company personnel who answered the phone said sure, and your access code is "xxxx" and please be our guest and help fix this problem.

These two young lads now have a password to go into the telephone switch and they are off and on their way to having a way to gain access so they can call their girlfriends in other parts of the country at no cost. Believe it or not, they got into the switch. They played around a little while using some software they had downloaded from other parts of the Internet. It did not take long before they caused the switch to fail and, at that point, as you can well imagine, all the telecommunications that were served by that particular switch were affected.

It just so happened that included in the list of other infrastructures or other enterprises that were supported by that switch was the Worcester, Massachusetts, airport. Not only were their normal telephone communications connected this way, but the runway lighting system was switched through the telephone system. Not only that, but their voice and radio communications with the planes that were working in the area they controlled and that were on final approach to the airport were also transferred or carried by the same telephone lines through the switch and then on to the remote transmitting and receiving site. The airport went down for about 6 hours.

What are the implications of this? Here you have a couple of kids with no malicious intent but simply want to make a couple of free telephone calls to somebody on the other side of the country. Certainly they had no intentions or expectation that they would affect transportation, but they interrupted both freight and civil aviation flights into and out of that area and certainly affected some of the other flights going into the Boston area.

I think one of the key messages here is that we have become a very interdependent society and the information piece of it, in particular, extends those interdependencies far beyond what we may have been accustomed to before. Certainly this particular attack, if you want to call it that—this accident, which it certainly was—did have a fairly substantial impact that, at least from the standpoint of the people who needed to transport goods and people out of the Worcester area, negatively affected their ability to do other forms of business and not just to do business across the Internet with an Internet commerce company. This is not a real pretty picture, but it does give us a sense of what the possibilities are in the future.

Let me ask you to now to think back to an earlier administration, to a president who was certainly not known for farsighted proverbs, if you will. But in one of his many speeches he talked about a new order. That term has caused a good bit of concern among some of the vigilante groups in this country, the militias and so forth, in the context of a new government. But it may be that before we will ever see this new sort of world govern-

ment order, there is a new social order and new business order. We are moving into an environment where I would propose that is the case. We have a global market. We certainly have global interaction. We are depending on these information technologies and new transportation technologies to communicate, order, and deliver goods and people. These systems are generally built without any concerns about their security or about their potential effects on other infrastructures and other activities. The transportation system of our country and the global transportation system play a very significant part in this revolution.

When my daughter buys a new piece of music, she goes onto the web, goes to one of the digital music providers, downloads the music, and then copies it to a CD after she buys it. In an earlier time, she would have walked down the street to a local record store, using her two feet as transportation. In the current case, the transportation system is actually a wire. Certainly, we have not come that far in terms of the harder goods and services, the capital goods and the sorts of things that we still need to move people about, and the systems that we depend on to deploy our military services to their points of engagement. In all cases, however, the transportation system is an enabling function and it complements the information technology.

Expanding on the comment about a new order, some believe that intermodalism makes political boundaries obsolete. Given that our legal structures are frequently framed through these political structures, we ought to be thinking about how we create our legal structures and the need to support both the transportation and the information commerce we have out there.

In the past few years, in my capacity as the critical infrastructure protection liaison officer for U.S. DOT and for the transportation sector, I can tell you that the transportation sector is not as progressive as some of the other sectors out there. The financial sector is certainly way ahead of all the rest, and you may have seen evidence of this recently in discussions of how some financial companies knew about the attacks before they happened. Why? Because the financial sector recognized very early on that their futures were based on public confidence and their ability to deal with and manage information, both in the traditional areas and in the newer arenas of electronic information, passwords, and so forth.

The financial sector had set up an information-sharing center, through which they keep in touch with all their members. They were also in touch with a good number of the service providers on the Internet—Cisco Systems and others—so there were queries when the anomalies appeared on the web. They become aware of what is happening and then adjust their business practices to compensate for those things. As it turns out, we do not know if they were directly tested, and I am not sure they would

tell us, but certainly they were in a position to know; had they been tested, they could have reacted in a way that would have allowed them to continue their business far more reliably than some of the other organizations out there who were shut down entirely.

How do we help the transportation sector reach the point, and then surpass the point where the financial sector is now? Transportation industries are a very diverse group and although there are some who are very concerned and very progressive in their efforts to protect themselves, a great number are not, and they do not recognize the fact that they may be vulnerable. When you talk with them, they frequently say, "Why would they attack me?" When I talk about the Worcester airport case or other similar cases, they have trouble associating it to their business and the fact it could affect their ability to continue business and their ability to support their customers in the United States government in the context of national defense.

We need to ask ourselves whether the transportation sector is going to wait until it is motivated by external sources, when insurance companies say they cannot protect you anymore, when customers say they cannot use you as a form of conveyance, or the federal government says it has to go elsewhere or find some other means to mobilize troops.

I mentioned earlier some research areas that the Transportation Research Board might champion:

- The first of these would be a credible, believable, business case to which the transportation industries can relate that would help them understand why protecting their infrastructures is not just important but makes good business sense because it affects their bottom line, their profit line.

- The second is an easily communicated template for vulnerability assessments within the transportation arena. I spoke earlier about interdependencies. When most transportation companies conduct vulnerability assessments, they think in terms of the fence around the terminal area. They do not think in terms of those other activities they need to support them, the other companies that support them, and the protection that might be required in a broader context to help them continue and perpetuate the businesses.

- Finally, I refer back to the new social order, an area in which political boundaries become irrelevant. It would be very useful if the Transportation Research Board could champion an effort to build a new legal structure for this new commercial arena in which we find ourselves. We have evolved to a new social context, a new business context, but we do not have the legal framework to support this in a way that helps us truly identify what the lost costs are, identify liability in the context of those costs, and then also to support it with a criminal

system that is global in nature and adapted to this information environment.

I want to again mention the Critical Infrastructure Protection Program. Although you may hear mention of PDD 63 in some circles, I have found it is very difficult to convince transportation companies to recognize the effect it has on them personally and on their business practices, their internal efforts, and their requirements and ability to carry on in the future. Hopefully, I have stimulated some thinking on your part, beyond the traditional how do we mobilize, how do we defend our assets in a physical context, and so forth. It is my hope that as a result of the discussions here, we will have a better sense of the interdependencies within the transportation area as a result of intermodalism but also as it results from our dependencies on other areas of commerce and business to support transportation activity. Thank you.

VOLUNTARY INTERMODAL SEALIFT AGREEMENT PROGRAM

James Caponiti

James Caponiti is Associate Administrator for National Security at the Maritime Administration (MARAD). He has been at MARAD for more than 25 years, holding a number of positions including Director of the Office of Ship Operating Assistance and Director of Sealift Support. Caponiti is also a plank holder in the creation of the Voluntary Intermodal Sealift Agreement.

I want to first say a few words about the ready reserve force (RRF) mentioned earlier by General Brown. It is a program administered by MARAD, which owns and maintains 91 vessels. The RRF is the largest component of the surge fleet and has been immensely improved since the 1979 vessel activations that occurred during Desert Storm. Although the RRF is not the focus of my presentation today, I wanted to mention it briefly because all sealift depends on intermodalism. The government's organic fleet is not thought of as an intermodal fleet, but it is. All the connectors and all the supply-chain management influence how that organic fleet works.

I also want to talk a little about the marine transportation system (MTS). A task force was convened about a year and a half ago to look at the MTS, its current state, and what we need to do to improve it to be ready for the year 2020. MTS is very important to what the panelists here must do on their jobs. MTS includes the waterways, ports, and all the intermodal connectors as well as the users and service providers. It is very important commer-

cially, with 95 percent of the overseas international trade and 25 percent of U.S. domestic trade dependent on the U.S. MTS. It is also important when we get into a contingency, as we stress that system by requiring it to take on the added responsibility of trying to get military goods and people where they need to be for a contingency.

There are a number of readily apparent problems within the MTS, not the least of which is an aging and undersized infrastructure. Many of the existing berths and channels are not able to accommodate the new and future generations of ships. We need to examine and prepare for the future and think about how to adapt to future trends in trade and commerce. This includes dredging as well as access to and from the ports to ensure an efficient supply chain. The task force developed a number of recommendations and I want to highlight some that are particularly germane to national security and mobility. Basically the infrastructure that has served us well in the recent past may not be adequate to serve us well in the future. In a situation in which we have a full-blown military contingency such as Desert Storm on top of maximum commercial activity, we put a lot of stress on the system.

Another critical area is the continuing and growing need for a qualified workforce. One of the things MARAD is looking at in detail right now is the adequacy of the pool of commercial mariners who crew the government organic fleets and, of course, the commercial fleets in peace and during a contingency. That same workforce, the commercial mariners, are the same mariners who will man the RRF, the LMSRs, and the fast sealift ships. The mariner base is shrinking as the U.S. commercial fleet shrinks. It is a natural consequence of bigger ships, fewer companies, industry consolidations, and smaller crew sizes resulting from the added technology on the newer ships. We think we can crew the fleets now with an activation, but we are a little bit concerned about certain scenarios in which we may need to activate the fleet quickly, or, if it is a long enough conflict, in which you have to replace the crews. The size of the manpower base is at a stage to raise concerns. MARAD is working with the U.S. Coast Guard to try and better identify the pool and, based on those conclusions, determine where we are and come up with some ideas about how to enhance the manpower base. It is a broad area, but it is one that is very critical to MARAD right now.

Making an assessment of the strategic ports and waterways is also very important. We have a system that essentially relies on 13 strategic ports, which Military Traffic Management Command (MTMC) will rely on in a contingency. One of the challenges is to take a close look at these ports and the infrastructure that supports them. Is the system what is needed to get the supplies and equipment and where it is needed in all contingencies?

I will now shift to the focus of my presentation—the Voluntary Intermodal Sealift Agreement (VISA pro-

gram), an effort that began about 5 years ago. The impetus for the program was, in part, after-action thinking from Desert Storm in which there was heavy reliance on and utilization of the commercial fleet. It was believed there was a better and more systematic way to do this. The maritime security program, MARAD's current assistance program to keep a fleet of ships available, was in the works. This included an emergency preparedness program requirement to provide the ships and the intermodal assets related to the operation of those ships to the government in an emergency. MARAD, U.S. Transportation Command (USTRANSCOM), and the industry came together in a collaborative effort to put together this program. It was a partnership in every sense of the word and it has been difficult to pull together. There were contracting issues that were difficult to overcome, but there is now a program in place that will be effective and will serve the nation well in a contingency. It was put together under the authority of the Defense Production Act of 1950, which was also used to put together the Civil Reserve Air Fleet (CRAF) program that Mike will talk about later. Much of the VISA program was modeled after the CRAF program. It is a staged response, with stages where there is a buildup of the force and activation stages to meet contingency levels. It is capacity driven, with the focus more on capacity than on specific ships.

The previous sealift readiness program was a ship-oriented program, in which an entire ship was chartered. The VISA program gives us the flexibility to utilize the capacity on a vessel so that a carrier can provide capacity to DOD while still conducting its normal liner service. There is the flexibility to do this in conjunction with a liner service, or to charter the vessel much as was done in the past. The carriers like the innovation in the new program. From their standpoint, it is user friendly, in that they do not have to break down their systems and they do not have their ships pulled completely away from them and out of their service chains. Depending on the conflict, where it is and the intensity of it, it may be possible to utilize these vessels and allow the company to continue serving their peacetime customers.

Another major new element to the VISA program is a formal process for joint planning called the Joint Planning Advisory Group, which meets several times a year in a secured environment so that the government planners, the industry, MARAD, and USTRANSCOM can meet to plan how to deal with different contingency scenarios. This is unprecedented and has been a valuable learning tool—government has learned a lot from the carriers and the carriers have learned a lot from the government, particularly how to ramp up to a contingency.

There are also a number of incentives for carriers to join the program and 48 are currently enrolled in the program. For the maritime security program carriers, which provide 70 percent of the capacity, it is really not

voluntary because they have to enroll and give over those assets. Many of the other carriers are involved because they are given priority to DOD peacetime cargo as a quid pro quo for enrollment in the program.

VISA is a program in which we use the vessel and the intermodal system. The challenge is to figure out how to use the complete transportation services available through the commercial carriers to the government's maximum benefit. There are a number of things to look at in the future to optimize the partnerships with these carriers. Among these is the recognition that this is more than just the ship, it is a professional transporter that knows how and that can help the government get where it needs to go.

Finally, there is a simple message that ties together the MTS and the VISA—upgrading the MTS will serve the nation well for a number of reasons. It will optimize the carriers' intermodal systems to the maximum benefit. The next problem in a major contingency is not going to be the ships—we have the RRF, the LMSRs, the fast sealift ships, and the VISA program. We have the available ship assets and can probably get them to where we need them. The challenge is going to be the supply chain and whether the intermodal system is intact, in place, and able to work without a glitch. This could determine whether the ships leave full or half full. The bottlenecks are going to be in the infrastructure, not so much is the ship on berth in time. This is the big challenge and upgrading the MTS will help solve some of the potential problems that may develop down the line.

The message is that VISA is up and running, having been approved by the Secretary of Defense as a sealift readiness program by Secretary Perry in January 1997. The contracts are in place, but the program is still developing and ways will continue to be found to maximize the potential of the program. Thank you for your attention.

AIR MOBILITY COMMAND AND THE CIVIL RESERVE AIR FLEET

John M. Ledden

John M. (Mike) Ledden is Principal Deputy Director for Transportation Operations at headquarters Air Mobility Command stationed at Scott Air Force Base. Ledden began his career in 1968 with the Air Force Logistics Command as an engineer and has held positions in human engineering, computer systems design, depot maintenance engineering, quality control, industrial facilities, and equipment engineering. In his current position, one of his key responsibilities is the care and feeding of the CRAF program, which is a long-standing program that really reflects the state of partnership between DOD and the civil aviation industry.

CRAF of the U.S. Air Mobility Command has over 36 airlines and 700 aircraft that provide over 40 percent, and in some cases 50 percent, of our capability. Before talking about the somewhat checkered future of CRAF, I would like to tell you a little about the history.

In 1925, legislation was passed called the Kelly Act—the first national policy to promote commercial aviation, and it was the U.S. Post Office. This became the legal basis for the airline system we have today. In 1934, the Baker Board (named after the Secretary of War at that time) recommended three basic principles: (a) there must always be a close relationship between the military and civilian arms of the aviation industry; (b) they should be kept separate; and (c) the civilians should be used as the reserve for national emergencies. These principles have carried forward to today.

In 1941, the Army Air Corps Ferrying Command was created with only 11 four-engine aircraft available from Pan Am and an entity called Transcontinental and Western, known today as TWA. By 1942, we had only 254 transport aircraft available, with the airlines providing 88 percent of the air transportation at the beginning of the war. In addition, commercial crews were used to fly the airplanes from aircraft factories to their bases. There were 9,000 pilot trainees in airline schools in 1943.

After World War II, when we had thousands and thousands of airplanes and set up a worldwide system through the military, the Finletter Commission looked at the situation and determined there was not enough airlift for national policy requirements and that access to the commercial world would require a formal contract. This is when the term CRAF was first introduced.

In 1950, the Douglas reports outlined a program for the establishment of CRAF. The first-line reserve was the equivalent of 400 C-54s—which was the old DC-4 built right here in the Long Beach plant of Douglas. The second-line reserve was the equivalent of 100 C-54s. This is the airlift capability they wanted to have available within 48 hours, with a backup reserve of another 400 from the commercial industry. At the time, if you took that reserve and put it on active duty doing the national will, the commercial airline industry essentially would have disappeared.

CRAF was formally established in 1951 by Executive Order 10219 issued by President Truman, under the Defense Production Act of 1950 and with the stimulus of the Korean War. In 1960, the National Airlift Policy was implemented, with the Military Air Transport Service, which was a combination of Air Force and Navy fleets of airplanes—mostly C-118s, C-121s, Constellations, and DC-6s—responsible for the hard core military requirements. Routine cargo and passenger traffic would go to the commercial industry. This is very important, because this is the reason the 707s were purchased by U.S. air-

lines and put into commercial service. There were so many airplanes flying military families and people and equipment across the ocean that the commercial carriers saw no advantage to making the investment—hence, that business was given to them and the Air Force and the Navy got out of the business of flying C-97s, C-121s, and C-118s across the ocean, carrying all their people and a lot of the cargo.

In 1987, the National Aviation Policy was formalized in NSDD-280, with a big reemphasis on CRAF. This policy set forth the following:

- Military and commercial airlift resources are equally important; both are necessary for deployments in time of war.
- The organic fleet has to be a minimum size and have minimum utilization rates; the military is not in the business of being in competition with the commercial industry or in spending vast amounts of money on airplanes that would not have workload in peacetime. If you look at the military airplanes, they all have special design features—high wings, T-tails, ground loading—very inefficient compared with commercial airliners. The C-17 and C-5 are very inefficient compared with a 747 for range, mileage, the amount of poundage they can carry; however, you cannot get a Blackhawk helicopter into a 747. Hence, there is a mixture, a blend, and a requirement.
- The capability beyond the organic fleet will come from the commercial sector, from which the government will procure peacetime airlift from CRAF carriers and provide incentives for CRAF participation.

Therefore, CRAF is voluntary and contractually mandated by national policy. With this premise, the commercial sector gives the military wartime capability and the government gives the participating commercial carriers peacetime business.

Over a 9-month period during the Persian Gulf crisis, strategic airlift included 5,556 commercial aircraft and 22,224 military aircraft; hence, 20 percent of the missions were flown by commercial aircraft. During deployment, 62 percent of passengers and 27 percent of cargo moved on commercial aircraft. A lot of passengers also moved in the back of military cargo planes, which tended to make some of them pretty surly by the time they got there and was perhaps good for ground troops. On redeployment, less cargo came back by air and a larger share came back by ship; 84 percent of passengers and 40 percent of cargo came back on commercial aircraft. The total number of dollars that went to industry was about \$1.35 billion. However, during this time when the government called up and activated CRAF, those carriers lost commercial business and lost market share, particularly the cargo carriers on the Pacific routes whose aircraft had been called into active duty.

The organic equivalent of providing all that airlift, having those planes available within the U.S. Air Force, would be a massive investment of \$3.0 billion a year. Commercial fleets today have expertise in bulk cargo, small package, and, in most cases, nonhazardous cargo movements. They have both short-range and long-range capability, taking it as close to an area as possible. Commercial airlines are not flown into combat areas. Although they did fly into Saudi Arabia, there was some question about whether that would be a combat area. One contractor and the air crew were sitting in Rome watching CNN and it was clear there were no secrets anymore. The crew in Rome saw scud missiles going into Saudi Arabia and they refused to take off and fly in. CNN is now in all the command posts and is tracked by the military. The government cannot force the contractor to fly in, but they are asked to go in as close as possible. For example, if the airlift is needed for Korea, the CRAF contractor would fly into Japan. The issue remains of how to get the cargo from Japan to Korea; this is but one of the problems that must be dealt with. For the most part, commercial airlines are also for carrying people, for carrying the troops.

Current figures for wartime planning show that most of the passengers (93 percent) go by commercial air. For cargo, about 41 percent goes by commercial air, primarily bulk cargo. The remainder, including bulk, oversize, and outsize cargo goes on the organic fleet, which includes KC-15, C-141, C-17, and C-4 aircraft. The C-141, of which there were once 270 aircraft, are scheduled to go out of active duty by 2003 and out of the reserves by 2006. There is projected to be a shortfall of airlift for outsized and oversized cargo.

To give you an idea of the diminishment of the fleet, in July 2000 the Tanker Airlift Command Center at Scott Air Force Base will have, on average each day, 60 organic airplanes to schedule worldwide—20 C-17s, 20 C-141s, and 20 C-5s—compared with an estimated 200 per day available to schedule not too long ago. Clearly, the fleet is diminishing. As the C-141s go out, for every two that come out, they are replaced by one C-17. However, the C-141s are going out quicker than the C-17s, which are also being built here in Long Beach, come in. Only 50 of them are currently available. A presidential trip or a deployment to Bosnia or some other event can tie up that fleet in a heartbeat. Although it is a much more useful airplane, it offers less flexibility and some require that commercial airlift be used to backfill.

There are three segments in the CRAF: (a) international, which is long range—short range; (b) domestic and Alaskan, for which there is a contractor still flying DC-6s; and (c) aeromedical evacuation, a very critical element. The C-141s are going out and that is what was used with special equipment to fly patients back to state-

side hospitals. These are among those going out of the inventory. The replacements are commercial airlines—767s provided by Delta, USAir, and TWA with conversion kits. That comprises the strategic capability in the very near future and makes the military very dependent on CRAF for the vital transport of casualties.

What occurs when CRAF is activated? Stage I is called up for a regional crisis. The Persian Gulf crisis was somewhat more than a regional crisis, so a portion of Stage II was called up, primarily in the cargo category, because there are several air cargo industry volunteers involved with CRAF. This was the only time CRAF had ever been activated. Commercial carriers are in the program, they are given incentives in the form of peacetime business, and they agree to be called up during a crisis. During the Persian Gulf crisis, they were called up and some lost market share. This became and remains quite a political issue. Stage III is all-out national mobilization and may involve multiple theater wars. The commander in chief of USTRANSCOM can activate any stage with approval of the Secretary of Defense, but all these stages are also subject to political approvals. As of January 1, 2000, the total number of aircraft in CRAF at the various stages of activation is summarized in Table 1. The numbers are cumulative, with the aircraft in Stage I included in the Stage II and III figures, and so forth.

As noted previously, in a Stage III activation, the total number of aircraft available is 729—aircraft that are totally within our system and under our command and control. The aircraft are provided to use with all maintenance support, fuel, and four air crews. They fly wherever we tell them to go.

A review of the CRAF business base over the past 10 years indicates there were some carrier defections in 1992 and 1993. Two major American passenger airlines bailed out of the program because they feared being drafted and were concerned about the impact this would have on their fleets. These carriers try to keep their airplanes very busy in commercial lanes. For example, Southwest Airlines never has more than one airplane in maintenance on any business day. All their other aircraft are flying in revenue service. It is difficult to entice a carrier like that back into the program.

We analyzed data on all military contracts as well as General Services Administration (GSA) contracts to come up with a strategy for getting carriers back into the program. The total for all military contracts—both passenger and cargo—was \$537 million in fiscal year 95, and the total was \$863 million for what is termed “GSA City Pairs.” This includes airline tickets for government travelers, a large share of which are DOD travelers, traveling both domestically and internationally on commercial airliners—a big chunk of business for the carriers. We

TABLE 1 CRAF Organization: Numbers of Aircraft (All Types), January 1, 2000

Segment	Section		Stage		
			I	II	III
International	Long	P	44	126	325
		C	37	96	207
		P		13	84
		C		4	4
National	Domestic	P			44
		C			0
	Alaskan	P			0
		C		6	6
Aeromedical evacuation				25	59
Total			81	270	729

Note: P = passengers, C = cargo.

looked at those numbers and decided to change the rules a bit. We said we would stop buying blocks of seats on international flights and require any carrier that participates in the GSA contract to be a member of CRAF. The airlines that defected came back. In fiscal year 1999, the total CRAF business base totaled \$1.874 billion, of which \$1 billion was in GSA City Pairs, \$778 million was in all military contracts, and \$96 million was the combined total for the GSA domestic small package contract and the worldwide express international contract. This amounts to nearly \$2 billion worth of incentives for carriers participating in CRAF.

What will happen in the future? As DOD is shrinking, so too is the nation's strategic airlift fleet. As it gets smaller, reliance on the commercial sector increases. Two of the biggest challenges are having commercial freighters available for hauling outsized and oversized freight and having those commercial airlines capable of operating in the optimal air space anywhere around the world and not just on the routes in which they typically operate.

The 747-400 is a long-range aircraft capable of carrying lots of people much farther. There is an effort under way to offer incentives to get the commercial sector to include that aircraft in the CRAF contracts. Consideration is also being given to the MD-17, which is a commercial version of a military aircraft with some of the military features taken off. Produced here in the Long Beach area, it offers outsized capability to carry helicopters, desalinization plants, water purification plants, tanks, and other outsized shipments.

Another issue that will become of greater concern in the future is ensuring the CRAF fleet is compliant with all the international regulations for global air traffic management. Because of improvements in avionics and navigation systems, where there used to be one aircraft flying in a given space across the North Atlantic, there will soon be nine airplanes flying in that same block of air space. This demands that aircraft be equipped with very specialized equipment and be certified. The commercial carriers have to spend money on these improvements if they want their airplanes to fly in those blocks of air space. The alternative is to fly at lower altitudes, burn more fuel, and go around the major tracks. This can cause delays, which in turn could result in an inability to meet critical military needs and time frames.

The bottom line is that the government and military cannot get there without the commercial airlift capabilities and is unable to go to war without them. CRAF is a long-term successful program that the nation needs—the nation's airlift capability is a combination of civilian cargo and passenger airlift that complements and supplements the organic fleet. Thank you very much.

MILITARY TRAFFIC MANAGEMENT COMMAND SECURITY PROGRAMS

William Lucas

William Lucas is Deputy Commander at the Military Traffic Management Command (MTMC), where he has a long and distinguished record of service. His previous assignments include serving as Acting Assistant Director of Transportation on the Army Staff at the Pentagon. Earlier in his presentation on the DOD report card, Lucas provided a good overview of what DOD has been doing in the 1990s to make intermodalism and the use of intermodalism a reality within DOD. It has been, at times, an uphill battle, but MTMC has really taken the lead in working with industry to make that happen. Today, Lucas will talk about national defense demands on global intermodal freight in the 21st century and what we see in DOD as deployment issues for rail, truck, sea-ports, and ocean carriage.

From my perspective, all moves are intermodal when you are going from a fort to a theater of operations. However, there is multimodality and if there are shortfalls in one mode or another, the intermodal system simply will not fit together. Figure 1 indicates the military's dependence on the commercial transportation infrastructure.

Mike Ledden provided a good overview of the airlift situation. On the sealift side, the United States has a fairly robust organic sealift capacity, certainly the most robust in the world. However, when you look at land transportation within the continental United States (CONUS), the military is almost totally dependent on the commercial industry. This is the primary focus of my remarks, particularly with respect to things that have to be fixed within the next 5 to 10 years.

Back in the Desert Shield time frame, the nation was in a recession and there was excess capacity. This certainly helped in our ability to get to the war. The situation is different today. Prosperity is great, but it means that people are rationalizing assets and, as noted in earlier presentations, there are some concerns that capacity is shrinking. Industry is most efficient when minimizing excess capacity. If commercial customers need to have more efficient peacetime transportation operations, carriers may ratchet down the fleets available. This means the military cannot rely on having a constant flow of assets, with the result being a spike and a big stress on the system, which means there are likely to be some defense risks.

First, a look at DOD reliance on commercial rail carriers and the planning scenario for a nearly simultaneous

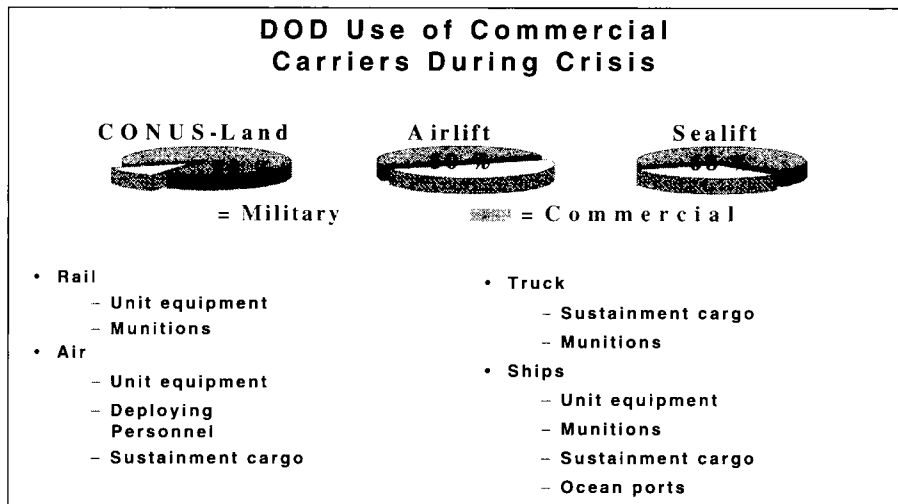


FIGURE 1 Military's dependence on commercial transportation infrastructure.

two major theater war. Everybody would like to have 89-ft chain tie-down cars, but unfortunately they are not in supply. Hence, the peak demands on railcars for the first 7 days are measured in 60-ft equivalents:

- Peak week demand for 60-ft equivalent flatcars exceeds 6,600;
- Seven-day surge demand for 60-ft equivalent flatcars is estimated to be 5,000;
- Seven-day surge demand for all types of railcars is estimated to be 7,000.

The question is, what is the supply? There are about 1,150 chain tie-down flatcars in the organic fleet inventory, but there are only about 5,900 commercial chain tie-down cars in the commercial inventory right now. A little quick math, and the realization that it takes time to reposition rail assets to where you need them, illustrates there are some serious management issues that need to be worked through. In addition, as the military moves to become more intermodal oriented, more ammunition is going to be moved by container, making an even heavier dependence on container-on-flatcar assets.

What are the possible solutions? Although you do not want to be late for the war, this is nonetheless a realistic option. The next possible solution is to offset these shortfalls by acquiring additional DOD-owned assets, but can the military afford to do that? Preferably not. There have been some acquisitions by default, including the 1,150 flatcars and 349 containers on flatcars that are positioned at the depots to ensure early shipments of ammunition get out. The military would like to be able to rely on the commercial industry. However, the reality is that in this particular line of business those cars are averaging 30 years old, they are being retired, and they are simply

not being replaced, because the nation no longer has the heavy instrument, construction machinery market it once had.

The preferred solution is to work a partnership with industry; MTMC and the Association of American Railroads are doing just that with three groups looking at specific elements of such an agreement. One group is looking at the future requirement. Another group is looking at what is available, what could be modified, and what design features could be created in new equipment to meet that requirement. A third group is looking at business practices. Perhaps there could be some type of "readiness hook" in the agreement (similar to what was mentioned in the CRAF presentation), a kind of quid pro quo in which they entice the carriers to participate by assuring them more business. It is hoped there will be a rail asset solution sometime in the not very distant future.

Trucking, by and large, has not been a big problem for the military, although significant commercial sector growth is projected and much has been said about shortages of drivers. Although one speaker recently talked about this issue more in terms of driver turbulence instead of a shortage, the industry chases itself in circles, training and retraining drivers who are simply moving on to different companies within the same sector. Admittedly, there are occasions when there are spot shortages. For example, December 1999 was the 10th anniversary of Operation Just Cause in Panama, a fairly small-scale operation in terms of deployments. However, I recall sitting on the phone around Christmas and personally calling a lot of presidents of munitions carriers offering \$15,000 bonuses to any team they could roll out to go to Hawthorn, Nevada, and pick up some shipments that were needed on the East Coast for ship-

ment to Panama. Those teams could not be broken out; they were parked and home for the holidays. Fortunately, some alternative arrangements were made and the shipments were put on special expedited rail and then, ultimately, did not have to be shipped out because Noriega was captured. In fact, back in the late 1980s was in the days of "rote logistics"—if everything that was ordered had actually been shipped, the isthmus of Panama probably would have sunk.

Ammunition carriers is a niche market that draws a lot of concern about the future, because it is not a growth industry and it is not the kind of business a lot of people want to be in. There are special training requirements and increased insurance requirements. Satellite tracking was laid on them before it was a fashionable thing to do. MTMC requires two-person teams, one of whom always has to be awake and alert within 10 ft of the shipment. In addition, ammunition depots are not a 24 by 7 operation. This means that a two-person team can be dispatched on a Wednesday afternoon to a destination where they will arrive at 5 p.m. Thursday evening, only to find that the depot closed at 3:30 and will not reopen for receiving until Monday morning. The result is a nonrevenue-producing piece of equipment and two very unhappy drivers who are parked out in a field inside the installation—hopefully, for a weekend. Something must be done to ensure there is no bleeding of the current capacity, that existing ammunition carriers can be retained, and that there is a transition plan when there is a need to expand capacity. During peacetime, MTMC ships small lots of ammunition in CONUS for practice firing and those kinds of things—what are called dromedary shipments—the carriers just "diddle-bop" here and there picking up and dropping off. When they go to war, this massive spigot is turned on to ports on the East or West Coast, and the material moves by container loads, a significantly different requirement for equipment.

Among the solutions being proposed are (a) encouraging the purchase of additional twist-lock container trailers and (b) some type of truck-rail interchange to cause trucking and rail to operate more in a partnership. There are, of course, some special considerations in this area, not the least of which is the fact that not many rail piggyback yards have a massive net explosive weight unrestricted access. People have concerns about putting too much explosives at one point at one time. When explosives are loaded, it is a pretty heavy and dense commodity, and specific loading diagrams are needed. For example, if a load is picked up off the road and put on top of a railcar, the center of gravity changes. MTMC is working aggressively with the industry on these and other issues, through efforts such as the Munitions Carrier Readiness Program, which includes a joint planning advisory group that is trying to develop solution sets on how to improve the situation.

Looking at seaports, there are port planning orders with 13 commercial strategic seaports, which essentially says they will make certain preidentified space and equipment available within 48 hours. However, this is not always practical or possible. For example, if the port of Tacoma has thousands of telephone poles sitting on the preidentified space, it will take a while to clear that space for military use. One of the keys with the seaports is to conduct a lot of exercises, many of which are being done on the local level by the local port readiness committees. There is also a need for lots of preplanning and being able to get word to the ports as early as possible. A couple of years ago U.S. DOT (MARAD) had a contract to work on a port disruption model, the premise of which would be what if a hurricane hits, how does one quantify what the impact is on the port? At MTMC, the view is that a military deployment is about the equivalent of a natural disaster at a port, because in the old mindset, it meant potentially trying to put a division on the ground, which is about 1 million ft² (0.3 million m²), and then having the ships show up to load; this is an incredible disruption.

Part of what is being done on the seaport side is to figure out better ways to meter the flow into the port to meet the ships. The LMSRs are 380,000 ft² (115 824 m²)—twice the size of the fast sealift ships used to load in Desert Shield–Desert Storm. Instead of choking the port, an effort is being made to have some good end-to-end planning that will enable the flow to be metered. It is good to hear that some of the focus of the MTS is being put on the connectors that will get movements to the ports.

With regard to sealift, a lot was said about the VISA program in an earlier presentation. There is a lot of organic lift, an estimated 10 million ft² (3 million m²) of DOD-owned sealift, much of which has occurred since Desert Shield, with the acquisition of 19 LMSRs that will finish delivery in 2002. However, there is still a shortfall, which is made up through the VISA program, getting that commitment of capacity from the carriers, going early and in stages, much like the CRAF program. The commercial sector gives up the 15 percent for Stage I, 40 percent for Stage II, 50 percent for Stage III, and what is bought in terms of additional capabilities and types of ships. The sealift issue has long been a very strong focus and now the seaport issue is the one that needs to be worked on for the near-term future.

All these pieces must be put together to improve the deployment process. There is not much discipline in the current process. A few years back, I sat in on an "as is-to be" session for the deployment process and no one could really define the "as is" because it seems like when there is a deployment, it is done on an ad hoc basis—it is a little different every time. The process needs to be tightened up. Readiness hooks need to be

part of all contracts that quid pro quo as in the VISA and CRAF programs, in which a carrier makes a commitment to go early, knowing it may lose some market share, but knowing it will be first in line for DOD's peacetime business. This needs to be part of the process with all modes.

Better use of existing capacity is a priority and the current processes do not maximize existing capacity. Along

those lines is the strategic distribution management initiative that USTRANSCOM has undertaken with the Defense Logistics Agency, in which a virtual organization is created to work the supply-chain issues in an effort to improve utilization of the available capacity and to focus on that all-important metric of customer wait time.

Thank you.