



**STRATEGY
RESEARCH
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AIR MOBILITY: ANYWHERE, ANYTIME?

BY

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What do Joint Vision 2010, Army Vision 2010, Global Engagement, and Operational Maneuver from the Sea all have in common? Besides being the epithets of the military services, they all require military forces to be lifted to some place on the globe to support our National Military Strategy. The air arm providing that lift falls under the once mighty wings of the Air Mobility Command. Although our strategic leaders espouse that the U.S. military can fight “anywhere, anytime” they fail to add, as long as we have the airplanes, enroute structure, and multinational support. Unless we take a serious look at our dwindling air mobility capabilities and take some positive “proactions”, we will no longer be able to support the National Military Strategy.

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Air Mobility: Anywhere, Anytime?

From the Hump on I have been convinced that we can carry anything anywhere anytime - General William Tunner¹

Anywhere, anytime was a proud motto repeated by a long line of airlifters since the days of General Tunner, the commander of the Herculean airlift effort over the China Burma India Theater, known as the Hump. In WWII, Tunner's boast was backed up with capability ... can we justifiably sport the same slogan today? According to our civilian and military commanders, our National Security Interests depend on our ability to project power. In fact, the military visions for the 21st Century rely on our ability to respond anywhere in the world rapidly with the right balance of forces. The question is: are our leaders willing to commit their resources to support global reach - the results of the Quadrennial Defense Review (QDR) and the National Defense Panel will certainly bear that out. During the QDR process our leaders must address many issues - chief among them must be lift. Why? Because, in the 21st Century, power projection will be the key element in exercising the military instrument of power. Unfortunately, the prognosis for the air mobility structure is not so promising: our airlift fleet is aging, the international enroute support structure is decreasing, and our precious airlift assets are being managed inefficiently. In short, the U.S. airlift capability falls woefully short of the requirements. It is

not enough, though, to point out the shortfalls, our leaders must also develop some answers. This paper attempts to provide a stimulus to get us out of the airlift "pit" by first identifying the major problems contributing to the airlift deficit and then by suggesting some answers in four areas: 1) redefining the airlift requirement, 2) improving the airlift fleet, 3) refocusing on enroute requirements, and 4) efficiently managing lift. Unless our leaders take a serious look at our dwindling air mobility capabilities and take some positive "proactions", we will no longer be able to support the National Military Strategy.

Problems Facing Air Mobility Today

The Cold War is over, and with that so are our requirements to maintain the military force we enjoyed during that era. As our leaders wrestle with the difficult job of restructuring our military via the QDR process, one of the areas that must be kept in mind is the capability to get forces to the hot spots. Although it is true lift has become an important part of every services' agenda, there still remains a lift deficit for four main reasons: 1) We've been lulled into a sense of complacency basing our airlift requirements on fiscally constrained goals and not what the CINCs require, 2) Our airlift fleet is aging quicker than we can replace it, 3) The enroute infrastructure is dwindling away, and 4) The precious lift capability we do have is inefficient due to improper management techniques at every level.

1. Airlift Requirement Based on Fiscal Constraints

In a prepared statement to the Senate Armed Services Committee, on February 23, 1995, General Rutherford, then CINC USTRANSCOM, stated : "Today's DTS [Defense Transportation System] is ready to support the war-fighting CINCs' war plans assigned by the Joint Strategic Capabilities Plan and the requirements outlined by the NCA."² Based on current requirements studies, it would appear he was on the mark. Looking between the lines

though, it becomes quite obvious that our leaders have been lulled into a sense of complacency, relying on a lift goal that has been lowered in the past 16 years so that the U.S. military could meet the standard. According to Air Force Doctrine Document (AFDD) 30, entitled Airlift Operations:

Estimating total airlift requirements for the United States is difficult because of the many factors contributing to the overall equation. Foremost among these factors are national security policy goals and objectives, regional stability factors, international political factors, as well as size and sophistication of the likely threats. The distance to likely crisis locations and availability of en route structure and transportation nodes in the theater will also affect the optimum amount and type of airlift. Finally, budget constraints place upper limits on airlift forces. Since these factors are difficult to assess, efforts to quantify airlift requirements will at best provide realistic estimates rather than exact predictions of total requirements.³

Beginning with the Congressionally Mandated Mobility Study (CMMS) in 1981⁴, and continuing to the most current Mobility Requirements Study Bottom Up Review (MRS/BURU), the goal (requirement) has been lowered so that the current mobility capabilities could meet the requirement. The different studies revealed a great disparity between what the Combatant CINCs said they needed to fight two major wars and what the Congress said we could afford. For example, to fight a war in Saudi Arabia and a war in Korea would require the movement of approximately 120 Million Ton Miles per Day (MTM/D).⁵ To fight a war in Europe and Korea simultaneously required 105 MTM/D.⁶ The CMMS top number came to 66 MTM/D!

Even though it fell very short of what the CINCs needed, the number was accepted as the goal for airlift, due to fiscal constraints. The story does not end here. The Mobility Requirements Study (MRS), completed between the CMMS and the MRS/BURU, reviewed once again the lift requirement in 1992 and came up with 57 MTM/D!⁷ Most recently, the MRS/BURU concluded with an even lower standard - 49.7 MTM/D.⁸ The bottom line: the goal Air Mobility Command (AMC) is trying to attain is a diluted goal that falls very short of actual requirements, leaving us with a hollow force that cannot support National Military Strategy or National Security Interests.

2. *Aging Mobility Fleet*

Unfortunately, supporting the Mobility Requirements Study (MRS/BURU) goal of 49.7 MTM/D will be extremely tough with the type of air mobility fleet we're projected to have. The charts AMC planners use to forecast airlift capability leave leaders with an optimistic outlook for the future.⁹ However, the criterion for the charts leave some doubt as to whether the facts support the optimism. According to the Air Mobility Master Plan for 1997: "The maximum strategic cargo airlift capacity is a notional depiction of the entire system capability, under optimum conditions, measured in million ton miles per day (MTM/D). AMC can produce at this level only after full Air Reserve Component (ARC)

mobilization and Civil Reserve Air Fleet (CRAF) Stage III activation."¹⁰ By optimum, they mean at surge utilization (UTE) rates, with reliable military airlift, backed up by a capable CRAF fleet.

Unfortunately, the airlift fleet we will have for the next several years will not be able to attain the surge rates required for this chart to be valid. "Since 1991, a nearly continuous stream of operations, returning forces from Desert Storm and emergency deployments to Somalia, Rwanda, South Florida, Haiti, and Southwest Asia has taken its toll on an aging airlift fleet."¹¹ The "backbone" of the airlift fleet since the early 1960s has been the Lockheed C-141 Starlifter. Capable of lifting up to oversize cargo around the globe, this mainstay's UTE rate has been very low. According to AMC/LGS (Analysis), the daily UTE rate for the past 12 months has been 2.51. This pales in comparison to the required UTE rate of 12.1!¹² In addition, it has some severe deficiencies that will ultimately result in retirement: 1) Aircraft structural integrity problems have severely limited C-141 capability - 121 require center wing box repair or replacement. For the past year, this process reduced availability by 7 aircraft a day. 2) The avionics and autopilot are increasingly difficult to support as mean time between failure decreases.¹³ Now, the long term plan is to retire the C-141

fleet by 2006 (that's equal to 8.74 MTM/D).¹⁴ For strategic airlift, that leaves the U.S. military with the C-5 providing the foundation. Sporting a less than 75% on-time reliability rate, this venerable leviathan carries a lot of baggage: 1) size and lack of ground agility restrict normal use to main operating bases, 2) overall depot flow times are significantly high, keeping them out of service too long, and 3) the entire fleet does not meet Stage III noise standards. The C-5 represents 48% of strategic military airlift capability (14.6 MTM/D).¹⁵ In 2007, the C-5A will begin its retirement ceremony.¹⁶ Enter the C-17! With only 120 C-17s by 2006, it can hardly replace the retirement of 240 C-141's and 73 C-5A's.¹⁷

Effects of High Operations Tempo

The operations tempo exacerbates the wearing down of the fleet. As our forces become less forward based, it becomes more important to deploy forces from the CONUS. According to Gen Handy, the former USTRANSCOM director of Operations and Logistics, "The nearly unprecedented pace of contingency operations in late 1994, forced the command to suspend or delay many of the missions it flies daily in routine support of troops worldwide."¹⁸ Concern for running the aging airlift fleet into the ground was best voiced by Lt Gen Wykle, Deputy USTRANSCOM Commander: "Unless we act first, at some point the lines representing an increased

tempo of operations and a rapidly aging airlift fleet are going to cross ... at that point the fleet will be so old, and break down so often, that it will no longer be dependable."¹⁹ Some would say we are at that point now.

Airlift Support for Allies

On top of all this, the Air Mobility Command provides strategic lift for our Allies, digging deeper into our strategic lift "pot". During Desert Storm, the Military Airlift Command (now AMC) provided lift for France, England, Holland, Germany, Czechoslovakia, Romania, and Argentina. Today, AMC continues airlifting foreign peacekeeping troops around the globe (most recently into Liberia). AMC is stretched to the limits, supporting not only the National Military Strategy (NMS), but also the requirements of the world.²⁰

Civil Reserve Air Fleet (CRAF) - Can We Count on Them?

With that in mind, airlift planners are hard at work ensuring the CRAF is available in a crunch. Unfortunately, the CRAF is not totally reliable due to two limitations - aircrew and aircraft. First, using civilians in time of war can put our nation in an interesting predicament. Gen. Tunner, "Mr. Airlift" from the Hump to Military Air Transport Service (MATS), understood the problem:

"I did not feel that MATS should count on using civilian equipment or personnel in peacetime to hot spots, or in full participation in time of war. As the commanding officer of a military

organization with a highly important and strategic war mission, I considered it imperative to have my personnel subject to the Articles of War. Civilian pilots and equipment could perform important functions, but for duty in danger areas, or without warning, military personnel alone would do."²¹

CRAF lift can be used, but not in high threat areas. AFDD 30 suggests that even if they can, CRAF crews are not required to go to high threat areas: "A main factor limiting CRAF use during a MRC is that the CRAF crews are not required to enter threatening environments."²² Next, and probably more important, does CRAF provide the equipment we need to fight the fight? AFDD 30 suggests the answer is no.

"CRAF airframes are commercial aircraft designed for civilian air movement and are generally not compatible with larger sized military equipment. These commercial aircraft are normally more productive in terms of gross capacity per air mile than their military core airlifter counterparts when operating on developed route structures; however, they can be severely limited when operating at underdeveloped bases within a theater. These limitations result from the necessity of more specialized on-load and off-load equipment that may not be available at many theater bases."²³

In addition to that, the primary customer for AMC, the Army, does not want to show up for the fight as light as they once did. The equipment they now require is more oversized and outsized than ever before. While AMC does have enough civil air carriers on contract for CRAF, they do not have enough of the right type (that can carry outsized cargo).²⁴

Finally, there is the concern that CRAF carriers will balk

at the next CRAF call-up, especially if it looks like they'll be needed for a long term. Until its first use in Desert Storm, commercial carriers enjoyed a free ride. They received contracts to carry troops around the world in exchange for being available in time of urgency. After Desert Storm, it became apparent the commercial sector was not as "gung ho" for this contract. Col. Porter, the CRAF program manager said: "Desert Shield drove home to participants the fact that an activation could really happen and impact on their commercial operations, and that resulted in carriers having less commitment to the program."²⁵

Before we begin leaning too heavily on civil augmentation for our airlift needs, we better ensure they will be there when the balloon goes up and that when they do show up, they have the kind of equipment required to do the job.

3. *Enroute Infrastructure Problems*

Even if we had a healthy air mobility force and could maintain 49.7 MTM/D, the international enroute structure would provide the strategic chokepoint. During Desert Shield/Storm, nearly 84% of airlift going to the Gulf region went through Frankfurt, Germany and Torrejon, Spain.²⁶ Since the end of the Gulf War, our use of both of these runways has been seriously curtailed. We are only allowed to use Frankfurt on a case by case basis and Torrejon is off limits. The results are significant - during surge

requirements, our airlift aircraft are often going into delay, sitting in the U.S. waiting for space on the crowded ramps of Ramstein, Germany and Rota, Spain.²⁷ Likewise, in the Pacific Theater of Operations, the runways in the Philippines, Guam, and possibly Okinawa are gone.

The runways that are available for operations in the enroute structure fall very short of requirements for any large contingency. Ramstein AB, now our primary European staging point for air mobility operations is a base with many missions. It's host to USAFE, NATO fighters, C-130's, Operational Support Aircraft, and strategic airlifters. The working Maximum On the Ground (MOG) for Ramstein is 5 C-141 equivalents -- as opposed to Rhein Main, which used to provide a MOG of approximately 16 C-141 equivalents. In Spain, our airlift forces stage out of Rota, a Naval Air Base. Once again the ramp space and maintenance support is wanting: MOG of 2 C-141 equivalents.²⁸

There can be little doubt that the decrease in enroute support impacts the air mobility mission. That, together with an aging airlift fleet results in an unreliable air mobility system, putting our ability to reach globally in question.

4. Inefficiencies in Managing Air Mobility

Add on top of that the wasteful use of the airlift resources we have and you spell disaster. One of the tenets of airpower has always been centralized control and decentralized execution. As we drew down our personnel overseas, we did away with two regional command and control sites that worked for their respective Air Force (834 Airlift Division (ALD) for 22 AF and 322 ALD for 21 AF). In its place we built a centralized command and control center for airlift and air refueling (air mobility) called the Tanker Airlift Control Center (TACC). According to the Air Mobility Master Plan, "The TACC is AMC's primary command and control agency. It is the central planning, scheduling, tasking, and execution agency for all operations involving AMC forces and provides users with a single entry point to the air transportation system."²⁹ The main concern in moving to the centralized structure is that it has moved the controller away from the operator, resulting in a tendency to practice centralized execution. The training program for a TACC controllers is impressive, yet it does not enable the new members a chance to go into the field to see the system they are to command and control. In practice, TACC operators rarely, if ever have an opportunity to travel the airlift system. AMC saw this as a problem and initiated a program, code named Range Rider, using O-6s to fly with the operators

to see first hand what was going on in the enroute structure and to smooth relations with TACC. This good idea, unfortunately became embroiled in red tape - the O-6's often were so tied up in paperwork, briefings, and meetings on the staff that they hardly flew with the units they were associated with.³⁰ The bottom line: Attempting to control and execute from a central location has contributed to a lack of understanding of the airlift system and ultimately contributed to an inefficient use of airlift resources.

TACC cannot take all the blame for inefficient management of the air mobility force; at the very least, they share it with the Combatant CINCs, the AMC staff, and at the Air Force. First, TACC responds to requirements (via USTRANSCOM) from the combatant CINCs. AFDD 30 explains:

"When USTRANSCOM receives validated transportation requests, it determines the appropriate transportation mode. If the requirement must go by air, USTRANSCOM's Mobility Control Center (MCC) relays the tasking to the AMC Tanker Airlift Control Center (TACC)... Because requirements invariably exceed capacity, a priority system is used to allocate resources."³¹

To insure the air mobility forces are used in the most efficient manner, AMC uses a priority code for determining who gets airlift support. Unfortunately, the requirements are often poorly thought out and inflated. Knowing anything below a 1B3 will provide very little return, the CINCs play the game and place a higher priority on the mission than it really requires.³² The result, air mobility forces being

stretched to the limit, and an unreliable, inefficient system - no one comes away a winner.

TACC tracks efficiency of airlift via many means; the most used (and the least useful) has been the home station departure reliability rate. A short explanation may be helpful here. Each mission is scheduled to depart its home station at a particular time to insure the cargo is delivered to the user on time. This departure time also takes into account downrange availability, diplomatic clearances, quiet hours, etc. Anything outside of the departure window (20 minutes prior to 14 minutes after) is considered a deviation and must be reported to TACC. If on time reliability rates dip, the wing commander's job is literally on the line. Operational Readiness Inspections look hard at the home station reliability as an indicator of the readiness of that wing to go to war. The problem with all this is that it focuses on the launching of the aircraft. Once airborne, all the focus seems to be on the next departure, not on whether the cargo arrives on time. There is currently no measure to report on a wing's effectiveness to **deliver** the goods on time! It isn't that the aircrews give up after they leave home station - it **is** that the energy seen at the home station launch is gone. The current focus on using home station departure reliability as the measure for airlift effectiveness is on the wrong end of

the mission, contributing again to mismanagement of our limited air mobility assets.

Shortsighted management of our airlift resources is also at the Air Force level - the logistics structure at the airlift wings is broken - directly contributing to the inefficiency of our air mobility force. Too often airlift resources are sitting on the ramp, broken, awaiting parts, partially or not mission capable. In fact the 1996 NMC (Not Mission Capable) rates were: C-5 - 28.93% and C-141 - 25.4%.³³ There are a number of reasons for this: The make up of the maintenance corps, the loss of Quality Assurance, and the misappropriation of spare parts. First, lets look at the maintenance corps. Airmen entering the maintenance specialty are no longer taught to be specialists, they are groomed as generalists. This trend began in the late 1980's. Since the generalists have taken over, the reliability rate has suffered.³⁴ To exacerbate this problem, as specialists went away, so did the Quality Assurance (QA) Office. QA personnel used to be the "old heads" who would check the work of the young airmen to insure the product met standards. Today there are no authorized slots for QA. Without QA, we have young generalist maintainers making their best guess and nobody checking their work for standards.

Even if we had the best maintainers around, they don't have the right parts to fix the fleet. The spare parts program is mismanaged. The Air Force and AMC have failed to focus on the most used spares. What we have is a warehouse of spares we don't need. The high issue parts take too long to find, often leading to the accepted solution to an on time departure - cannibalization (taking the part from an airplane that is not scheduled to fly). This situation turns into a "Catch 22" - when the part is cannibalized, and the mission makes it off on time, the short term maintenance problem has been fixed, and unfortunately the part shortage has not been noted. In the past, the problem has been noted as a maintenance shortfall and not a supply shortfall. In the mean time, the cannibalization rates are at an all time high (2707 C-5 cannibalizations occurred between July and December 1996).³⁵ This "missed" focus by the Air Force and AMC reinforces a poor logistics concept.

Proposed Solutions

Air mobility is facing some real problems. From fiscally constrained goals that will never meet the requirements, to an aging fleet, and from a gutted enroute structure to a mismanaged command structure, the deficit in lift seems insurmountable. With no changes, the problem will only grow - action must be taken at all levels now. What can we do? There are four main areas to work on: We can 1) redefine the airlift requirement, 2) make our air mobility fleet healthy, 3) refocus on enroute requirements, and 4) efficiently manage lift.

1. Redefine the Airlift Requirement

The first thing that must be done is to nail down what the actual air mobility requirements are. Whatever the measure, it must be arrived focusing primarily on warfighter requirements, not on fiscal constraints levied by the Congress. The ones best suited for this task are the warfighting CINCs. They need to look at their OPPlans and CONPlans and determine what lift they need and when. Once the requirements are in, the numbers should be validated at USTRANSCOM and reviewed by the CJCS. Finally, the airlift requirement must be annotated and made record. It is only with this **requirements based number** that we can determine how great the air mobility deficit is.

2. Make our Air Mobility Fleet Healthy

With requirements identified, we can now move toward the goal, to meet the CINCs' requirements. The second step is to bolster our air mobility fleet. With the C-141 on its way out, more focus must be placed on enhancing C-5 reliability, accelerating C-17 delivery, and insuring CRAF availability. Although the C-5A is scheduled to begin retirement in 2007, AMC plans to keep the C-5B running well into the 21st Century.³⁶ Acknowledging that the C-5 reliability is on a downward spiral (the C-5A has slipped to a 58.8% reliability rate and the C-5B has maintained a 69% rate)³⁷, AMC planners developed a strategy to stop the trend. The list of fixes is hoped to increase C-5 efficiency to the AMC standard 75% reliability rate. One major fix, though seems missing- a new engine. In the past several years, one of the primary causes of delays has been the TF 39 engine. While several small fixes are in place, the engine continues to cause problems, especially in the thrust reverser area. Although costly, re-engining the C-5 would allow a more reliable airplane and enable it to improve its gross carrying capability (especially important as the Army continues to rely on outsized cargo).³⁸

The C-17 has proven more than capable and the total force (120) will finally be on line by 2006.³⁹ Two considerations would assist in alleviating the airlift

deficit. Accelerating the delivery to 2005 or earlier would be a tremendous boost to the airlift system. In addition to that, with the C-141 retiring and the C-5 battling a reliability problem, the original requirement of 210 C-17s should be reviewed again. With no other strategic airlift platform being developed, it would serve our country well to purchase up to the original number to insure we can fulfill our international requirements.⁴⁰

All of this puts a greater reliance on our commercial peers to provide airlift year round via the CRAF. Although the AMC Master Plan insinuates the CRAF force is alive and well, there are several concerns. The greatest of these, and the most current, is the type of airframe the commercial industry is going to supply for CRAF lift. AMC must insure there are enough of the right kind of airframes via CRAF to carry outsized cargo to the AOR.⁴¹ In addition, the aircraft that can handle outsized cargo must carry additional equipment to offload the cargo. The other aspect that needs some research is the use of civilians during war. What is their status if captured? Will they have the communication gear and classified IFF gear the military airlifters have to enter a hot AOR? These are not insurmountable problems, but they must be planned for.

An idea outside the box to relieve the pressure on the air mobility fleet while it is in transition, is to push for

multinational strategic airlift support from those countries who have lift assets (e.g. Russia) and encourage Foreign Military Sales to those countries that want to build strategic airlift. Russia and the Ukraine have over 800 Il 76 aircraft (C-141 equivalent) and 54 AN 124 aircraft (C-5) equivalent. Additionally, they are building the IL 106 (C-17) equivalent.⁴² Now that they are our ally, let them support UN deployments and support exercises with that robust force, where they are involved with other nations. Also, several other countries have hinted at purchasing the C-17 (United Kingdom, Japan, and Australia).⁴³ We should encourage them, so they can relieve the U.S. of the burden to transport soldiers from other nations. This would enable AMC to concentrate on supporting the warfighting CINC, slowing the operations tempo, and prolonging the life of AMC's mobility assets.

3. Refocus on Enroute Requirements

With our fleet on the mend, the next area is the enroute infrastructure. According to the AMC Master Plan, AMC is hard at work on the CONUS enroute structure. Missing in the plan though is a cogent study on strengthening the overseas enroute structure. As mentioned earlier, the structure for air mobility overseas has been on a steady decline. Efforts need to be made now in the diplomatic arena pushing for opening of large runways with large ramps

for contingency operations and multinational exercises. Places to start would include Frankfurt, Germany, Torrejon, Spain and Clark AB, Philippines - mainstays for global lift. The U.S. could offer to provide assistance in upgrading runways within selected countries with the agreement we would have access to them in time of contingencies. In addition to opening up new runways, the ones we use now need to be improved. The ramps at Rota and Ramstein must be enlarged to allow a larger MOG. The runway at Ramstein should be lengthened, to allow airplanes to take off with maximum gross weight (limited now to 680,000 lbs (C-5), 160,000 lbs below wartime maximum gross weight).⁴⁴ Support at those same enroute bases needs to be improved (including transportation, messing, billeting).⁴⁵ Without these improvements in our current overseas "staging areas", Europe will be the chokepoint for air mobility operations. Much more can be done in this area - the benefits to air mobility will be far reaching.

4. Efficiently Manage Lift

Where we can reap the greatest benefit, though, is in efficiently managing what we have in the air mobility fleet. Proposals for better management will be broken down into 4 general areas: 1) Tanker Airlift Control Center, 2) Combatant CINCs, 3) AMC Staff, and 4) Air Force Leadership

Tanker Airlift Control Center (TACC)

Daily command and control of the air mobility force occurs at the TACC - this is where improvements in management will be most instantly felt. The very idea of centralized control of the fleet makes sense - it is one of the tenets of airpower. However, TACC must steer away from the temptation to execute from their location. As Gen Patton said: "Don't tell people how to do things; tell them what to do and they'll surprise you with their ingenuity."⁴⁶ TACC's focus should be in giving the airlift wings the mission and the requirements. Then, they should allow the operators to accomplish the mission, offering assistance as the command and control arm of AMC. As part of TACC controller training, a "crossflow" program should be instituted between operators and TACC controllers to foster understanding between the two groups. TACC controllers should fly on an operational mission with airlift wings once every 6 months as part of their "currency" requirement. In turn, aircraft commanders (AC's) should work within the TACC for at least a week as part of their AC upgrade. Although this suggestion seems a little out of the box, and will result in a delay in the AC upgrade program, the benefits to the overall air mobility system will outweigh the costs. Finally, the O-6 Range Rider program must receive greater support from TACC and the wings. The Range Rider must be

allowed to spend more time on the line and be allowed direct access to the TACC Commander. The Range Rider reports must then make it back to the unit he/she flew with so that the wings see some positive results to the program. TACC can be a great boost to the air mobility system if it is used properly.

Combatant CINCs

The warfighting CINCs need to readdress the priority they place on airlift missions. Inflating the ratings, they have cut the efficiency of cargo delivery. AMC should host a quarterly meeting with representatives from the different commands and review lift priorities, charting by CINC where the ratings have been on the mark and where they have been misused. The CINCs that follow the guidelines in applying the appropriate priorities should then be rewarded with cheaper rate for lift or a priority for lift.⁴⁷ Hand in hand with this, USTRANSCOM must appraise the CINCs of the actual airlift they can provide. USTRANSCOM needs to start holding the line and not just being the yes man of airlift. With limited resources, the CINCs need to know what they can realistically expect. Being truthful with the CINCs and rewarding them for properly using the priority system will enable the airlift resources to be used most efficiently.

Air Mobility Command

If the CINCs do their job to correct the misuse of the priority system, then AMC needs to return the favor by pushing for on-time delivery of the goods - this can't be done by focusing on home station departure reliability as the measure of effectiveness. AMC must begin using on-time delivery of the goods as the measure of success.⁴⁸ There are many who say this measure cannot be tracked - they're wrong. This information currently resides on the Global Decision Support System (GDSS). It requires training and discipline in the command and control system to make it work. This supports the current drive to follow Total Quality Management - support to the customer. Ask the CINC what he wants - cargo on time at the right place. AMC should recognize the wings and squadrons with the best on-time arrival rates (quarterly and yearly). AMC can do this with a traveling plaque or trophy. In addition to that, HQ AMC ORIs should focus on on-time arrival when the overall effectiveness of the wing is developed. On-time arrival is AMC's job - it should be AMC's measuring stick. With this focus, air mobility will increase in efficiency and effectiveness.

Air Force

Finally, the Air Force must do its job to insure our limited air mobility resources are used most efficiently;

their efforts should be placed in the maintenance corps and reduction of cannibalization. First of all, the current bent toward manning the maintenance career field with generalists must be changed. The wings, together with AMC and the Air Force Personnel Center (AFPC) need to begin bringing specialists back into the work force.⁴⁹ We can no longer afford wasting time trying to fix a component "by the manual" when specialists can get right to the problem and get the mission on the road. The right answer is to have specialists at home and TDY at enroute bases. Allow the generalists to be the Dedicated Crew Chiefs that fly with the airplane and are able to handle the normal, everyday maintenance problems. If a peculiar problem occurs either at home or on the road, the right maintainer will then be available to tackle the problem, allowing the mission to continue on, delivering the cargo on time. In addition, AMC and the wings need to reinstitute the Quality Assurance (QA) program. Maintenance standards must be adhered to and checked by maintenance professionals. The current reliance on the aircrew to check for discrepancies causes problems between flyers and maintainers and often results in inefficient lift. Allowing QA personnel to roam the line, checking on workmanship will make the maintenance quality improve, give direct feedback to the young maintainers who

often are learning on the job, and will enable the aircrew to get on with the business of flying the airplane.

Secondly, the Logistics leadership at the Air Force and AMC needs to review the spare parts program. The goal should be to reduce the needless warehousing of low use spares, to increase the availability of high use spares, and to bring the cannibalization of aircraft to zero. The bottom line: Airplanes sitting on the ramp serving as a warehouse of parts for the others is not the answer to the spare parts question - reorganizing the spare parts system is. All of these items are things the Air Force in concert with AMC can do; albeit, several may take some time and effort, the results will benefit air mobility well into the future.

Conclusion

The proposals cited above provide a panoply of actions that can be taken at all levels of command to identify mobility requirements and then drive our efforts to meet the requirements. Although some of them may be considered "out of the box", it is hoped they will stimulate more ideas to cut the lift deficit, provide a reliable service for the combatant CINCs, and prove that the U.S. can project military forces around the world at a moment's notice.

Our National Security Interests depend on our ability to project power overseas. Secretary of the Air Force, Sheila Widnal recently acknowledged: "Rapid Global Mobility provides the nation its global reach and underpins its role as a global power. The ability to move rapidly to any spot on the globe ensues that tomorrow, just as today, the nation can respond quickly and decisively to unexpected challenges to its interests."⁵⁰ How, then do we ensure we're headed in the right direction? First, we need to determine what our **real** lift requirement is. Then, with that requirements goal in mind, a concerted effort needs to be made not only in modernizing the future fleet, but in bolstering the present fleet, fixing enroute infrastructure problems allowed by past administrations, and re-looking at how we manage the air mobility fleet. Once our leaders take that hard look and follow it with actions toward the right answer, we may then

begin to dig ourselves out of the lift deficit "pit" and be able to support our National Military Strategy "anywhere, anytime".

ENDNOTES

¹ William H. Tunner, *Over the Hump*, (New York: Duell, Sloan, and Pearce, 1964), p. 10.

² Gen Rutherford, past CINCTRANS, shared his optimism with the SASC, February 1995 in his prepared statements published by *Defense Issues*. He also mentioned some shortfalls he saw with the lift system and provided some answers. Gen Kross, CINCTRANS, told Army War College students: "Don't worry, we'll get you there." The question is: when can we get you there?

³ *Air Force Doctrine Document 30, Airlift Operations*, Secretary of the Air Force, 1995, p.12.

⁴ Telecon with a Mr. Merrill, AMC/XPY

⁵ The measure Million Ton Miles per Day (MTM/D) has been used by airlift planners for some time to define airlift requirements and try to put our arms around our airlift capability. The formal definition in the Air Mobility Master Plan for 1997 is provided for you information: "Quantifying requirements and assessing capability is the first step in evaluating force structure. A simplistic method to measure airlift capability or requirements is million ton miles per day (MTM/D). Using MTM/D allows for a quick comparison; however, recognizing its limitations is critical. MTM/D ignores the wide range of potential contingencies and the requirements for timing, unit integrity, system interactions, infrastructure constraints, and the differences between bulk, oversize, and outsize cargo. MTM/D is an aggregate, unconstrained measure of airlift capacity used as a top-level comparative metric. The equation for MTM/D for one aircraft is:

(Objective utilization rate) x (Blockspeed) x (Payload) x (Productivity factor)/ 1,000,000 nautical miles"

⁶ Telecon with a Mr. Merrill, AMC/XPY.

⁷ AF Briefing to USAWC; also mentioned in Air Mobility Master Plan 1997

⁸ *Air Mobility Master Plan 1997*, p. 49.

⁹ *Ibid*, p. 48.

¹⁰ *Ibid*, p. 49.

¹¹ James Kitfield, "The Long Haul," *Government Executive* 27 (March 1995) : 32.

¹² Per telecon with CMS Papp, HQ AMC/LGS, February 1997. Those who would argue that you cannot mix peacetime rates with projects wartime requirements must understand that military airlift operations have remained at peak levels since Desert Shield/Storm. For airlifters, a "wartime" pace has continued since 1990. The low C-141 UTE rate has limited our ability to support the numerous operations/contingencies across the globe (the kinds of operations we will likely continue to support in the 21st Century).

¹³ *Air Mobility Master Plan 1997*, p. 294.

¹⁴ *Ibid*, p. 296.

¹⁵ *Ibid*.

¹⁶ Per telecon with Maj Wells, AMC/XPD

¹⁷ *Air Mobility Master Plan 1997*, p. 296. With 240 C-141s retiring by 2005 and 73 C-5As beginning retirement in 2007, the loss in MTM/D cannot be replaced by 120 C-17s. The point is, we need to offset this loss in some other way. The planners at AMC say we should require a maximum of 25 MTM/D from CRAF. CRAF carries the bulk cargo; the rest of the CINC requirement, including outsized cargo, must be carried by our strategic airlifters, C-5s and C-17s. The projected force of 50 C-5Bs and 120 C-17s can provide only a part of the remaining requirement!

¹⁸ James Kitfield, "The Long Haul," *Government Executive* 27 (March 1995) : 32.

¹⁹ Ibid.

²⁰ "Appendix E - Deployment," *Conduct of the Persian Gulf War*, April 1992, p. 376.

²¹ William H. Tunner, *Over the Hump*, (New York: Duell, Sloan, and Pearce, 1964), p. 295. I highly encourage anyone that is interested in airlift to read this book!

²² *Air Force Doctrine Document 30, Airlift Operations*, Secretary of the Air Force, 1995, p. 7.

²³ Ibid.

²⁴ Telecon with a Mr. Merrill, AMC/XPY

²⁵ James Kitfield, "The Long Haul," *Government Executive* 27 (March 1995) : 33.

²⁶ "Appendix E - Deployment," *Conduct of the Persian Gulf War*, April 1992, p. 376.

²⁷ This occurrence was a constant frustration to me as an Operations Officer and as a Squadron Commander. My crews would do everything they could to get the cargo moved on time, only to be put into delay for 24 hours waiting for ramp space at Ramstein or Rota.

²⁸ Per telecon with Lt Col Papka, AMC/ TACC Mobility Management. He concurred that there are big problems in the MOG chokepoint at Ramstein. The MOG has recently been reduced further while maintenance is being performed on the parking apron. For contingency operations, Rota's numbers go to 12 C-141 equivalents; however, that number should be taken with a little bit of trepidation. Rota's ramp can easily be come saturated with Navy airplanes. Even during contingencies, Rota has not shown the capability to host that many airlifters – the infrastructure and support base would have to have some time to build up.

²⁹ *Air Mobility Master Plan 1997*, p. 8.

³⁰ In 22 months in command of the 9AS, I only saw our Range Rider once on one leg of a mission.

³¹ *Air Mobility Master Plan 1997*, p. 69.

³² During my last tour at Dover AFB, the missions going through both squadrons were primarily 1B3 or higher (more than 80% of the time), causing problems on where to shift our priority (especially when we didn't have the resources [planes or crews] to support all the high priority missions).

³³ Per telecon with Chief Master Sergeant Papp, AMC/LGQ (Analysis)

³⁴ Reliability rates for the C-5 in the early 1980's, averaged around 85%. Today, they struggle to meet the 75% standard. This information, quite honestly was very hard to locate at AMC; reliability rates are tracked by the AMC Reliability Office, but only retained for 2 years; in the age of computers, I find this

rather alarming. The number came from going back to my early C-5 years in the 80s and remembering the reliability rates that were briefed to the Wing Commander daily.

³⁵ Per telecon with Capt Cannon, AMC/LGS, February 1997. Interestingly, in 1995, I was on a tiger team to improve C-5 reliability. One of the LG solutions was to look into the high rate of cannibalizations and try to stem the tide by focusing on the high use spares. The briefing from our tiger team made it through 21 AF and all the way to AMC. According to Capt Cannon, it was this briefing that prodded AMC into looking at the problem as a supply issue. Of the 2707 Cannibalizations referred to, 43% were caused by only 49 parts. AMC worked through depots to acquire those parts. The next 6 months, the "cann" rate dropped to 2000. Capt Cannon said they will continue to work on this area, beginning to focus on the disconnect between depot and maintenance on interchangeable parts. AMC is also trying to use this method with the C-141. This all ties into improving the availability of airlift.

³⁶ *Air Mobility Master Plan 1997*, p. 297.

³⁷ Ibid.

³⁸ Lockheed understands the problem and is advertising a re-engining program for the C-5B (called C-5M), that will cost approximately 32 Mill as opposed to the C-17 (180 mill). Gen Kross does not want to put all eggs in one basket with the C-17, so it would appear Lockheed may get some support in this area.

³⁹ Per telecon with Maj Wells, AMC/XPD

⁴⁰ Skeptics may say our requirements will change as we turn more inward, focusing on domestic concerns. If that is the case, this argument will become "moot". However, the current National Security Strategy bridging us to the 21st Century suggests that we will continue at the current rate and must plan for at the very least 1 MRC on top of that. All of this adds emphasis to the point I made at the very beginning – we must start by defining our real requirements.

⁴¹ Telecon with a Mr. Merrill, AMC/XPY

⁴² Paul Jackson, ed., *Jane's All the World's Aircraft 1996-1997* (Alexandria: Jane's Information Group, Inc., 1996), pp. 360 and 503.

⁴³ Telecon with a Mr. Merrill, AMC/XPY.

⁴⁴ 436 AW/OGV

⁴⁵ The Air Mobility Master Plan 1997 does talk about efforts, via a Global Laydown "system" to provide a "bare base" support plan for various kinds of contingencies. I'm concerned with the lack of support from major airlift hubs, like Rota and Ramstein.

⁴⁶ *AF Academy Contrails*, 23 (1977-1978): 150.

⁴⁷ Obviously, this idea would take some artful work. The rates are currently established by law. Introducing rate incentives would require a change in how rates are developed. Priority incentives would be easier to work. Several questions would need to be answered. One would be, how does a CINC get out of the "dog house"? The incentives could not last forever or else a CINC could not recover. The incentives would have to be monthly, quarterly, or semi-annually.

⁴⁸ Regardless of constraints imposed upon airlift, the measure must always be on time delivery.

⁴⁹ This can be done by using contract maintainers as the specialists and Air Force personnel as the generalists. The use of Air Reserve Technicians at bases that have associate reserve wings also lends towards this idea.

⁵⁰ "Rapid Global Mobility Delivers Worldwide Power," Excerpts from Air Force News Service, 22 January 1997.

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