Transforming the Civil Reserve Air Fleet

By MICHAEL W. GRISMER, JR.

The United States remains the only nation able to project and sustain large-scale military operations over extended distances. We maintain superior capabilities to deter and defeat adaptive enemies and to ensure the credibility of security partnerships that are fundamental to regional and global security. In this way, our military continues to underpin our national security and global leadership, and when we use it appropriately, our security and leadership is reinforced.

— President Barack Obama, National Security Strategy, May 2010

C–17 Globemaster III aircraft lands at Fort Hunter Liggett, California, during joint field training exercise U.S. Air Force (Donald R. Allen)

U.S. Air Force (Michael Longoria)

U.S. Airmen offload cargo from fourth 747 commercial aircraft within a month at Al Asad Airbase, Iraq

The expeditionary nature of U.S. warfare today relies on rapid global reach to defeat irregular threats in the farthest corners of the Earth, to deter rogue dictators who seek to acquire nuclear or biological weapons, and to deliver humanitarian aid to the impoverished regions of the world. Enter the U.S. Transportation Command (USTRANSCOM), a supporting unified command providing joint mobility forces to geographic combatant commanders and also serving as the Defense Distribution Process Owner. The mission of USTRANSCOM is to get the warfighters to the fight, sustain them during the fight, support rapid force maneuver and patient movement, and finally, bring the warfighters home.[1]

Projecting and sustaining joint forces over great distances have always been strengths of the U.S. military. The emphasis and challenge today, however, is the speed of force projection, which is critical to campaign success and achievement of U.S. national security objectives.[2] Speed in delivery, especially for the landlocked environments in which the United States currently operates, means integrated airlift, both intertheater (strategic) airlift and intratheater (tactical) airlift. Air Mobility Command (AMC) is USTRANSCOM's component command responsible for providing strategic and tactical airlift, air refueling, and aeromedical evacuation services for U.S. forces.[3] AMC provides global reach through a mix of organic aircraft, and through commercial airlines via the Civil Reserve Air Fleet (CRAF) and other contracts to move Department of Defense (DOD) passengers and cargo.

Lieutenant Colonel Michael W. Grismer, Jr., USAF, is assigned to the J3 East Division U.S. Central Command Branch of the U.S. Transportation Command at Scott Air Force Base, Illinois.

USTRANSCOM's timely delivery of forces and cargo would not be possible without the CRAF. The quid pro quo relationship between DOD and CRAF commercial airline partners provides DOD airlift in time of national emergency, in exchange for the opportunity to bid on DOD peacetime business. Today, CRAF participation and annual DOD payments to CRAF carriers for airlift services are at an all-time high, nearly $3.4 billion.[4] This enormous price tag comes at a time when DOD is facing record high budgets and a doubling of wartime supplemental defense spending since 9/11.[5] With DOD fixed costs at an all-time high and recapitalization requirements in every direction, the challenge to win two wars and reset for the next in a fiscally constrained environment is nearly untenable. As requirements continue to exceed funding, DOD must leverage capabilities that work and scrutinize spending across the board.

USTRANSCOM's current challenge is to find innovative ways to leverage CRAF capability to gain speed, efficiency, and capacity for the warfighter. USTRANSCOM Commander General Duncan J. McNabb recently testified to Congress that "rapid global mobility is critical to USTRANSCOM's quick reaction capability to meet the needs of the joint forces and we need to continue recapitalizing our air mobility force."[6] As DOD moves forward into the next decade of economic uncertainty and shrinking defense spending, CRAF brings the most capability at the lowest price. Because CRAF represents DOD's most flexible and economical capacity for surge airlift, this article draws the conclusion that USTRANSCOM must transform CRAF capabilities to meet the evolving joint deployment mission in a fiscally constrained environment.

Background

The CRAF experiment was born out of the U.S. experience in World War II when President Franklin D. Roosevelt granted authority to take possession of any commercial aircraft required by the war effort.[7] Just as today, the early CRAF program provided DOD with planning options to meet emergency airlift requirements that exceeded capacity of the organic military fleet. The importance of the military and civilian airline industry partnership was solidified again in 1987 by President Ronald Reagan's National Airlift Policy, which states, "It is therefore the policy of the U.S. to recognize interdependence of military and civilian airlift capabilities in meeting wartime airlift requirements, and to protect those national security interests contained within the commercial air carrier industry."[8] The National Airlift Policy also clarifies that during peacetime, the CRAF can be used to meet passenger and cargo requirements that cannot be met by the DOD organic fleet.[9] One key component of CRAF is that it remains a voluntary program with an incentive to bid on DOD peacetime business. CRAF partners receive no compensation unless they are activated to meet DOD surge airlift during

national emergencies, or they fly peacetime DOD missions. The relationship between CRAF partners and DOD is alive and well today, with 32 airlines committing more than 1,100 aircraft.[10]

The majority of DOD's organic strategic airlift capability lies with AMC's C–17 and C–5 fleets, which, unlike the CRAF fleet, have capacity and capability to deliver outsize cargo. The complementing CRAF fleet is comprised of three main segments: International, National, and Aeromedical Evacuation (AE), with segment assignment predicated on DOD requirements and aircraft performance characteristics.[11] Additionally, to tailor airlift for a national emergency, the CRAF is divided into three stages for incremental activation, and carriers are required to respond within 24 hours of activation. Stage I activation is for expanded peacetime requirements or a minor regional crisis and is comprised of long-range assets only.[12] Stage II is for one major theater war and is comprised of national, international, and AE segments.[13] Finally, Stage III is for periods of national mobilization and involves a total CRAF airlift recall.[14] Over the 60-year history of CRAF, it was activated twice. Both were Stage I activations of the international passenger carriers. The first was from August 18, 1990, through May 24, 1991, in support of Operations *Desert Shield* and *Desert Storm*, and the second was from February 8, 2003, through June 18, 2003, in support of Operations *Iraqi Freedom* (OIF) and *Enduring Freedom* (OEF).[15] In both cases, CRAF provided timely and economical surge airlift. To illustrate, CRAF carriers were paid $1.5 billion during these activations, a fraction of the estimated $15 to $50 billion required to provide similar DOD organic capability.[16]

Events following the 9/11 terrorist attacks drove DOD airlift requirements to all-time highs while many segments of the commercial airline industry saw business plummet. In the post-9/11 high operations tempo environment, CRAF peacetime operations, or operations during nonactivation stages, are now best described as "steady-state operations." To compare steady-state operations in 2009, the CRAF flew 5,453 trips for USTRANSCOM, which is nearly equal to the 5,600 trips made by the CRAF during the entire 1991 Gulf War, when the program was activated.[17] CRAF partners are best able to employ resources to support their primary commercial obligations and steady-state DOD business when they can see all requirements in advance. Consequently, USTRANSCOM gains more participation from CRAF partners by providing steady-state requirements in advance. This was evidenced by increased voluntary participation during requirement spikes throughout OIF and OEF, which avoided further CRAF activation during high-ops periods following the 9/11 attacks.[18]

Shared trust and fair financial incentives have sustained CRAF as a model government/private industry partnership that meets the DOD airlift gap and assures CRAF partners guaranteed income with predictable operations. USTRANSCOM's goal is to keep the CRAF a viable strategic and operational asset, able to rapidly respond to changing wartime requirements. Since commercial airline participation in CRAF is voluntary, USTRANSCOM goes to great lengths to reach a modus vivendi with both passenger and cargo partners. The maintenance of a symbiotic relationship between CRAF carriers and DOD is a success story. Today, DOD planning factors rely on the CRAF as the primary means of delivering passengers and bulk cargo in the event of an activation.[19] Additionally, according to the Mobility Capability Requirements Study (MCRS), which informs DOD mobility planning, 57 percent of CRAF cargo capacity and 55 percent of CRAF passenger capacity are needed to meet activation requirements.[20] Unfortunately, even with excess CRAF capacity, there are policy and equipment barriers that reduce capability.

USTRANSCOM's goal is to keep the CRAF a viable strategic and operational asset, able to rapidly respond to changing wartime requirements

Enhance Current Capabilities

While just over half of current CRAF capacity is required to meet DOD worst-case scenarios, the entire CRAF fleet is vulnerable to Federal Aviation Administration (FAA) policy, limiting employment capability. DOD could realize full CRAF capability if partner airlines received relief from FAA operating restrictions while flying DOD missions. Since CRAF partners are required to be U.S. flagged carriers, they must operate under FAA Part 121 or 135 rules (commercial or commuter airlines) that regulate activities even while flying DOD missions. Depending on the mission, these restrictions can limit capability and efficiency of CRAF operations when compared to similar organic DOD missions that are not encumbered by FAA restrictions. One example of an FAA restriction is Special Federal Aviation Regulation No. 77, which prohibits operations in Iraqi airspace.[21] Another more recent FAA mandate changes the way commercial carriers (including CRAF) schedule their crews to ensure compliance with new crew rest and duty day requirements. It is too early to estimate impacts of this regulation on the CRAF, but it could force international CRAF flights to land short of the normal destinations to make a crew change and then continue the mission.[22] Nonetheless, additional takeoffs, landings, and crew changes result in delivery delays and extra costs, which will ultimately be paid by the user.

Another operational limitation to CRAF capability is restricting carriers from operating in designated high threat areas, where many of USTRANSCOM's customers require airlift. In several cases, the restriction is due to CRAF aircraft lacking costly defensive systems designed to counter Man Portable Air Defense Systems (MANPADS) threats common to many of the nonpermissive airfields U.S. forces use today. MANPADS are portable shoulder-launched surface-to-air missiles that pose the greatest threat to aircraft during takeoff and landing phases. Future threats may also limit CRAF aircraft from operating in a chemical or biological contamination area. These restrictions typically force CRAF aircraft to land short of a destination and transload cargo to an AMC aircraft with defensive systems. Another operational workaround is to schedule CRAF aircraft on strategic missions outside of the threat area, preserving the organic fleet for the threat areas. To illustrate, prior to 9/11, CRAF flew 24 percent of DOD channel cargo missions, the regularly scheduled time-sensitive resupply missions delivered directly to the user at DOD installations with major air cargo hubs.[23] Today, CRAF flies 72 percent of DOD channel cargo missions, freeing up the AMC organic fleet for deliveries to high threat areas.[24]

Mitigating the MANPADS threat will allow the CRAF fleet to operate without restriction in more locations and bring more capability to the warfighter. Regrettably, aircraft mounted defensive systems like Large Aircraft Infrared Countermeasures (LAIRCM) are cost prohibitive to install on the CRAF. Another cost-effective option to allow access to high threat airfields is to install counter-MANPADS technology to protect specific airfields. One such ground-based system called the Counter Man-Portable Air Defense System (CMAPS) detects multiple threats, tracks them, and destroys the targets using directed energy, similar to LAIRCM protocol.[25] Portable land-based protection would counter the MANPADS threat, allowing theater direct delivery to maximize CRAF capability. CMAPS is just one technology that brings more capability to the CRAF. The commercial airline industry offers additional new technology options to enhance CRAF capabilities, which will be reviewed.

New Commercial Capabilities

Because CRAF leverages existing commercial airline capabilities, the DOD focus has always been on strategic airlift. A new contractor capability to investigate is the civilian air tanker, which is gaining momentum as enterprising companies seek to meet expanding military aerial refueling requirements around the world. Additionally, there are two new multirole tanker/transport aircraft. The Boeing KC–46A and the EADS KC–45 are mobility platforms with CRAF potential.

The idea of paying a premium to CRAF carriers for new capability began during the 1980s, when the U.S. Air Force paid more than $600 million to modify 24 commercial CRAF airplanes to accommodate outsize equipment.[26] To incentivize modifications, DOD also paid operating subsidies to these CRAF carriers. Additionally, in the mid-1990s, DOD asked AMC to investigate providing incentives to CRAF carriers to purchase the most efficient commercial cargo jet, the Boeing 747–400.[27] Eight CRAF partners expressed interest, but the aircraft did not fit their commercial business strategy and DOD would not subsidize equipment modifications or higher operating costs.[28]

Adding air-refueling capability to the CRAF is not a new concept. In 1997, USTRANSCOM formed a Contract Aerial Refueling Working Group (CARWG) to explore commercial air-refueling options.[29] The group examined options, but without an established requirement, the fee-for-service model was not pursued. Since then, there has been significant change in requirements and technology while the KC–135 fleet has aged another 14 years and the Air Force only recently awarded the KC–X contract to Boeing in February 2011. This contract will recapitalize a portion of the KC–135 fleet with Boeing KC–46A aircraft, which will come off the production line requiring no modifications and have flexibility for use as a tanker, cargo, or passenger aircraft. If a similar KC–X capability was available in the CRAF, it would easily be the most capable aircraft in the DOD commercial fleet and perhaps worthy of a premium for the unique capability provided.

The 2010 DOD Mobility Capabilities and Requirements Study highlights the Air Force tanker shortfall. This 2-year study examined three representative scenarios that would employ mobility assets. The Air Force tanker fleet came up 93 aircraft short of meeting requirements in the 2 most constrained cases.[30] To make matters worse, the KC–135, which makes up the majority of the Air Force tanker fleet, is 50 years old, and the KC–46A replacement aircraft will replace only one-third of the aging KC–135 fleet. Due to budget constraints, tanker recapitalization funding is limited to $3.5 billion annually, allowing for a projected procurement rate of 12 to 18 aircraft per year.[31] By the time the KC–135 fleet is recapitalized, the last aircraft will be more than 85 years old. In testimony to the Senate Armed Services Committee, General McNabb stated, "My number one recapitalization priority is replacing the fleet of 415 Eisenhower-era KC–135s with a new platform to preserve a unique asymmetric advantage for our nation. The KC–X . . . will

U.S. Air Force

Soldiers board Air Force transport

address the significant risk we are currently carrying in air-refueling capacity."[32]

The business case for a civilian tanker serving military needs has already been proven. Omega Air Refueling provides worldwide fee-for-service probe-and-drogue aerial refueling to a host of customers including the U.S. Navy, U.S. Marine Corps, Germany, Canada, Australia, and the Royal Air Force.[33] Omega Air is paid through the Navy Flying Hour Program, and offers capability similar to the AMC KC–135 and KC–10 at a rate of $7,890 per flying hour for its KC–707 (KC–135 equivalent) and $12,500 for its KDC–10 (KC–10 equivalent).[34]

Current joint DOD doctrine includes plans for refueling platforms to augment the airlift fleet.[35] Unfortunately, the KC–135 is used primarily as a tanker and is restricted in the airlift role to carrying 6 lightweight cargo pallets and up to 50 passengers. Both commercial KC–X competitors (Boeing KC–46A and EADS KC–45) will deliver about 1.1 to 1.3 times the air-refueling capacity of the KC–135, but because they are designed with cargo loading floors and doors, they will far exceed the KC–135 in cargo and passenger capacity. Boeing's KC–46A (767–200 derivatives) carries 190 passengers and 19 bulk cargo pallets, while the EADS North America KC–45 (Airbus A330–200 derivative) carries 226 passengers and 32 pallets.[36] Equipped with defensive systems to allow theater direct delivery, the KC–X candidates will move easily between tanker and transport roles, or a combination of the two. Additionally, because the aircraft can deliver and receive fuel, it will have nearly unlimited range to transport cargo and passengers to the warfighter. With an aging fleet and limited buying power, now is the time to explore tanker CRAF options, to include taking advantage of foreign capability.

Partnerships

In today's global economy, innovative options are needed to bring foreign capability to the CRAF. USTRANSCOM is required to first award airlift contracts to U.S. flag carriers that are part of the CRAF. However, when CRAF does not have capability, partners are allowed to subcontract to approved foreign flag carriers that meet the requirement.[37] One example is that CRAF carriers lack capability for outsize cargo. Worldwide, strategic airlift of outsize cargo is limited to the U.S. C–5, C–17, and the Russian/Ukrainian An-124 and Il-76.[38] The An-124 and Il-76 both fly outsize DOD cargo, and USTRANSCOM has leveraged them heavily. From September 11, 2001, through June 22, 2010, An-124s, and Il-76s augmented the CRAF fleet with more than 4 million flight hours, earning $1.5 billion in CRAF revenue from DOD.[39]

The United Kingdom (UK) is in a similar situation to the United States, with an aging tanker fleet of 19 aircraft, more tanking requirements than capacity, and no money to recapitalize. Enter the Future Strategic Tanker Aircraft (FSTA) program, a private finance initiative with AirTanker Limited, a consortium group, to provide a new fleet of 12 Airbus A330–200 multimission tanker/airlifters.[40] The United Kingdom pays a fee for service, while AirTanker provides air-refueling and airlift capacity for a contracted period of 27 years and pays all capital costs to include infrastructure modifications to the host UK airfield.[41] The United Kingdom will retain permanent access to nine aircraft and the remainder will be available for commercial use by AirTanker, to include making the aircraft available to other governments.[42] Reviewing the FSTA as a business model for a U.S. Tanker–CRAF would be a worthwhile endeavor, especially if a commercial contractor offered EADS KC–45 service to the CRAF.

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Exploring options to capture foreign capability for the CRAF should also include options for offering excess CRAF capacity to international partners at a reasonable reimbursement rate. The opportunity to strengthen international partnerships and build new ones using commercial resources that already operate globally offers efficiency and effectiveness. Additionally, building these global partnerships can be beneficial to DOD by taking advantage of commercial expertise operating outside of the continental United States and providing competitive bid pricing. By way of example, USTRANSCOM recently awarded 12 contracts worth $2.4 billion for vertical lift technology and for short takeoff and vertical landing (STOVL) capability in Afghanistan.[43] These contracts went to both U.S. and foreign companies, as will another $5.5 billion for similar services in the near future.[44]

Adding foreign carriers to CRAF will bring new capabilities, competitive pricing, and local expertise for niche services like STOVL and heavy vertical lift. Allowing foreign ownership in CRAF may eventually open the door for foreign ownership of U.S.-based airlines as well. Foreign investment in the U.S. airline industry (including CRAF) has been limited for four reasons: increased competition to domestic carriers, possible transfer of U.S. jobs to a foreign workforce, unfair competition from airlines receiving foreign government subsidies, and DOD concern for negative impacts to CRAF.[45] Each of these concerns appears dated, and many economists believe that more foreign investment in U.S. airlines would improve the financial health of the airline industry. Additionally, the Department of Transportation (DOT) recently supported legislation raising the allowable foreign ownership of U.S. airlines to allow easier access to foreign capital for U.S. airlines.[46] As USTRANSCOM continues leveraging foreign commercial aviation capability, future foreign technologies should also be investigated.

Partner with Industry

USTRANSCOM and CRAF partners share many common interests, making future lift technologies beneficial to both. As DOD begins research, development, and testing on the next generation of mobility aircraft, it is beneficial to dialogue with CRAF partners to determine if there is a business case for a civilian variant. Future purchases of military aircraft will be more cost effective in both production and sustainment if they can be tied to a commercial production line. One such future technology with mutually beneficial opportunity is the heavy lift hybrid airship. With payload estimates in the 1,000-ton category, advocates believe this future platform will fill voids between sea lift ships and cargo aircraft.[47] A recent study estimated that the life cycle cost to develop and procure 14 to 16 heavy lift airships is the same as the cost of 21 C–17 aircraft ($11 billion), but the airship would deliver cargo at 3 times the rate.[48] Realizing this potential, USTRANSCOM and AMC continue to investigate hybrid airship concepts for mobility mission areas.[49]

Advances in vertical lift technologies will have applications for several sectors of the commercial market, making them ideal candidates for the CRAF. Today, some 32 companies worldwide are involved in the

design or manufacture of commercial airships and aerostats.[50] Another possibility to partner with the airline industry, multiple services, or perhaps a multinational partner is on development of the Joint Future Theater Lift aircraft. This platform will have similar capabilities to a C–130 or a heavy lift helicopter, and be able to operate from naval vessels to ensure access to remote areas.[51] Such an aircraft would be of use in landlocked countries like Afghanistan, requiring extensive vertical lift resupply, much of which is contracted out to non-CRAF carriers. Finally, a strategic partnership is already in place between manufacturer Boeing and logistics solutions provider SkyHook International, a Canadian company, to build a hybrid airship/helicopter for commercial applications.[52]

New lift technologies can offer a tradeoff between speed and lift capacity that will likely find application in the commercial airline industry. As the technology matures and efficiencies are made, the CRAF offers opportunity to bring new capability to DOD, and in many cases avoid accompanying research, development, and testing costs.

Counterargument

With participation and DOD payments to CRAF carriers at the highest level in history, future capacity appears assured. Organic fleet sizes and contingency planning factors have been adjusted to take full advantage of CRAF capacity. In 2008, former USTRANSCOM commander and now Air Force Chief General Norton Schwartz testified before the Senate Armed Services Committee that limiting Air Force C–17 purchases to 205 airplanes was needed because the DOD organic fleet competes in peacetime with the CRAF.[53] Boeing will deliver the last Air Force C–17 in 2013, leaving CRAF as the only means to absorb future wartime surges. Despite the guarantee of DOD business, at least one area of concern remains. Since the CRAF is an annual contract, partner carriers may find that commercial revenues are more profitable than DOD business and elect not to renew their contract. USTRANSCOM is keenly aware of this risk and is fully engaged to prevent this possibility.[54]

In 2002, the House Armed Services Committee, concerned about CRAF health, commissioned a General Accounting Office (GAO) study that identified two areas for improvement. First, stronger financial participation incentives were needed, and second, since partners with Boeing 747s were receiving the majority of the DOD peacetime missions, the recommendation was to look at employing smaller wide-body CRAF aircraft.[55] USTRANSCOM addressed these concerns and further strengthened the CRAF business model by creating joint venture teams. During nonactivation periods, CRAF partners who find civilian business more profitable than DOD have the flexibility to fill DOD requirements by selling their peacetime entitlements to CRAF teammates who rely on DOD for the majority of their business.[56] Moreover, Congress, in recognizing the importance of strengthening CRAF participation, granted USTRANSCOM authority in the fiscal year 2009 National Defense Authorization Act to guarantee minimum levels of business and to improve predictability of DOD requirements.[57] Finally, in May 2010, USTRANSCOM established an Executive Working Group (EWG) that met with all CRAF carriers and DOT. The EWG met to strengthen the strategic relationship between all parties and agreed to several proposals providing fair incentives for capability, reliability, efficiency, and activation, to name a few.[58]

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The immediate future of CRAF appears secure, with partners committing nearly double the number of airplanes required for DOD's most demanding war plans.[59] While surge capacity is not a problem today, the long-term focus needs to be on achieving more CRAF *capability*. Because CRAF represents DOD's most flexible and economical source for surge airlift, USTRANSCOM must continue to transform CRAF capabilities to meet the evolving joint deployment mission in a fiscally constrained environment.

Recommendations

The previous arguments offer opportunities for USTRANSCOM to investigate further each of the four recommendation areas summarized below.

Enhance Current Capabilities. The first recommendation is to develop a comprehensive list of FAA operating restrictions that limit the CRAF. A possible discussion forum to gain insight from CRAF carriers is the newly created CRAF EWG. After reaching a consensus, USTRANSCOM can begin a dialogue with the FAA to determine pragmatic solutions that would afford CRAF carriers on DOD missions relief from restrictive operating regulations. Another recommendation to enhance capability by flying CRAF aircraft into airfields threatened by MANPADS is to investigate options to employ CMAPS at selected airfields. Adding this capability to the Air Force Contingency Response Wing's airfield opening and sustainment functions is a possible employment option.

New Commercial Capabilities. Implementing the second recommendation, adding commercial capability, will take further discussions between USTRANSCOM and industry. With the KC–46A still not in production and the KC–135 fleet approaching 50 years, reestablishment of the CARWG to review options with industry appears to offer an established venue. A future review by the CARWG should also include U.S. allies who have already begun taking advantage of KC–X technologies. Japan and Italy purchased the Boeing KC–767 (a similar version of the KC–46A), while Australia, Great Britain, Saudi Arabia, and the United Arab Emirates bought EADS KC–45s.[60] Since there is no plan to recapitalize the last KC–135 until it is 85 years old, a tanker CRAF appears to be a viable option to manage aerial refueling effectiveness, thus ensuring capability. Finally, a tanker CRAF appears to offer a hedge against risk for the KC–135 fleet that continues operating beyond planned life expectancy, forcing AMC to invest more capital and maintenance manpower, while receiving less capability in return.[61]

International and Multinational Partnerships. As USTRANSCOM adds foreign capability to the CRAF, the EWG offers another forum to investigate options for offering excess CRAF capability to our international partners. The opportunity to strengthen international partnerships and build new ones using commercial resources that already operate

globally appears to offer efficiency and effectiveness.

The main hurdle to overcome before foreign capability can be added to the CRAF is the Fly American Act, which requires CRAF carriers to be U.S. flagged.[62] One option is for foreign carriers desiring to do business with DOD to establish a U.S. affiliate company. Another option to add foreign investment in CRAF is to amend current legislation to permit foreign ownership. As USTRANSCOM has already learned, foreign carriers bring capital, capability, and efficiencies not found in the U.S. commercial aviation industry, like outsize airlift. Congress recently provided legislative incentives to preserve CRAF capacity, and with DOD and DOT support, updating legislation to allow foreign ownership of CRAF will bring capability, competition, and efficiency. Requesting legislative relief today fits the current climate for DOD fiscal restraint, and the establishment of foreign CRAF partnerships could also prove to be an effective diplomatic tool.

Partner with Industry on Future Technologies. Partnering with the transportation industry is one of USTRANSCOM's functions as the deployment and distribution process owner and architect of future DOD transportation systems. As USTRANSCOM moves forward in developing the next generation of mobility capabilities, opportunities exist to create a formal mechanism like the CARWG or the EWG that will partner with the commercial airline industry to leverage their innovations and efficiencies. Since CRAF carriers compete for profitability with many of the same capabilities as AMC, understanding the future commercial marketplace will prove beneficial as USTRANSCOM defines future requirements. Additionally, since future military production lines will achieve the greatest cost savings when tied to a commercial production line, early dialogue with CRAF partners and airline manufacturers offers opportunities to create sustainability and efficiency and to bring new capabilities in a fiscally responsible manner.

Today more than ever, DOD needs fiscally sound and pragmatic solutions to maximize capability, minimize cost, win the long war, and recapitalize the force. Former Secretary of Defense Robert M. Gates also emphasized that future DOD budget growth must stop. Zero growth, together with the increasing cost of energy, operations, and sustainment, will disproportionately affect future procurement accounts. Additionally, with economic uncertainty and the focus on debt reduction, Congress will tighten supplemental wartime funding, forcing more capability from the DOD budget. The Congressional Budget Office calculated the cost of operations in Iraq and Afghanistan to date at $1.1 trillion, and estimates another $1.7 trillion will be spent over the next decade to complete these operations.[63] Secretary Gates affirmed that U.S. strategic strength is linked to the fiscal health of the Nation and that "DOD's track record as a steward of taxpayer dollars leaves much to be desired."[64] DOD will make difficult fiscal choices to secure the right capabilities needed to win current and future conflicts. Admiral Mike Mullen, Chairman of the Joint Chiefs of Staff, in congressional testimony, said it best: "This will be hard work and will require difficult choices . . . choices [that will] be painful, even unnatural for the services, for the department, and for the Congress."[65]

Boeing

KC–46A is to replace Air Force KC–135 Stratotankers fleet to provide air refueling capability

Future operations are sure to be marked with a need for increased rapid global mobility, requiring both airlift and air refueling to enable joint forces. Without CRAF, DOD cannot meet mission requirements. Growing capabilities within CRAF by leveraging commercial aviation strengths brings more capability at a fraction of the cost. With constrained DOD budgets and U.S. defense industrial base concerns, CRAF offers the best opportunity to meet future global mobility requirements. CRAF also offers great prospect to leverage innovation and cost savings from the commercial aircraft industry. Transforming CRAF capabilities will take leadership at many levels. Innovation is never automatic or inevitable; it takes deliberate leadership. **JFQ**

NOTES

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