Department of Defense
United States Air Force

The Commercial Application of Military Airlift Aircraft (CAMAA) Program:

Observations and Recommendations

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Introduction

With the end of the Cold War, Congress has mandated that the U.S. Air Force reduce its fleet costs. Nevertheless, the needs of the nation and the missions for the Air Force are increasing along the entire war-peace spectrum. In an effort to creatively address this concern, the Air Force has created a Commercial Application of Military Airlift Aircraft (CAMAA) program that is described in this paper. An alternative approach to cost reduction is also described.

History of CAMAA Program Experiment

The Commercial Application of Military Airlift Aircraft (CAMAA) program is conceived as a public/private partnership strategy for a portion of the nation's required airlift capacity using the BC-17X, a derivative of the Air Force C-17.

The United States Air Force, in an effort to increase its flexibility, decrease costs and improve industrial base capability, has proposed the CAMAA plan with The Boeing Company to build the BC-17X and assist the commercial carrier industry in the creation of a new heavy lift industry around the world. A commercially owned and operated BC-17X aircraft is expected to be profitable in this new segment of the commercial market while supporting Department of Defense airlift requirements.

If successful, the CAMAA strategy, as currently conceived, could ultimately save the Air Force and the taxpayer several billion dollars in life cycle costs *according to Air Force studies*.

A recent Pentagon press release says,

"The Department of Defense gets much needed additional airlift capability during a war or contingency and access to more of the most capable cargo aircraft on the market today when they truly need them. The successful operators gain the opportunity to exploit the rapidly developing heavy outsize/oversize markets. The public/private acquisition strategy will include both government funding and private financing to help get the

commercial operation off the ground. The government funding will secure use and lifetime availability of these aircraft to the Department of Defense in time of need."

While the Air Force has been asked to reduce the cost of its fleet of vehicles, it has also been asked to provide increased services and capabilities to serve the nation. The CAMAA program was conceived as an experiment in acquisition reform to find ways that the Air Force could assist private industry in helping to provide the services the nation needs, but enable industrial use of the vehicle when the nation does not need it.

The Air Force hopes that industry will provide the additional airlift/capacity services it needs with a fleet of up to ten (10) commercial derivatives of the military C-17 cargo aircraft. Boeing, manufacturer of the C-17, plans to produce and sell a Federal Aviation Agency (FAA) certified commercial version of the C-17, called the BC-17X. The Air Force believes the heavy and outsized capacity along with short austere runway capability of the BC-17X will support a unique worldwide commercial market niche.

The Air Force hopes that this program could become a unique opportunity to fulfill the nation's airlift requirements with highly capable commercial Outsize and Oversize (O&O) cargo aircraft while assisting in the development of a new global industry owned by Americans.

According to the Pre Solicitation Proposal issued in June, 2001,

"To ensure access to the operator purchased BC-17 aircraft for peacetime and wartime Civil Reserve Aircraft Fleet (CRAF) support the Air Force will consider the following financial incentives: 1) Market development assistance, and 2) Guaranteed revenue for each aircraft for a period to be negotiated that would offset the market development risk for the operator. In exchange, the offeror shall contractually commit its BC-17 aircraft fleet to the Air Force CRAF program for a period not less than thirty (30) years or the service lifetime of the BC-17, whichever is less. The CRAF commitment covers the wartime and contingency heavy and outsize cargo airlift services. Additionally, a portion of the available BC-17 fleet monthly flight hours will be accessible to the Air Force for a period, consistent with the guaranteed revenue period, for peacetime contingency heavy and outsize cargo airlift services. The terms and conditions of the peacetime

contingency shall be mutually agreeable. Also, the offeror will use its best efforts to develop/expand the Heavy Outsized Market (HOM) and Short Austere Market (SAM) worldwide commercial markets."

The Air Force will also consider a guarantee to purchase back the BC-17 aircraft under defined conditions such as business failure.

The award would be dependent upon a C-17 follow-on multi-year contract, congressional authorization for the agreement, and an export license from the U.S. Department of State approved United States Munitions List (USML).

Observations of the Development of the Program

Assumptions

Those who conceived the CAMAA program are to be congratulated for being willing to creatively solve problems that plague the Air Force and the taxpayer by conducting an acquisition reform experiment. The observers have some concerns, however, about how the feasibility studies were conducted based upon the assumptions that the CAMAA team made.

The Bigger Issue

The CAMAA team believed that the best way is to reduce the cost to the Air Force was to produce the CAMAA program. The observers think the best way to reduce the cost to the Air Force is for Boeing to produce many more planes so that the cost per plane is reduced significantly using economies of scale. This would serve two functions. The first, would serve to provide a commercial version of the plane for those industries that can utilize these planes in a global way. The second is to keep the Boeing plant in Long Beach, California open and serve the U.S. industrial base. This approach was not obvious to the CAMAA team. This also reduces the probability that planes would need to serve both commercial operators and the Air Force simultaneously since we believe that would be a mistake for the commercial operators and their business plan.

The CAMAA team was predominantly composed of Air Force and Boeing personnel. Although this may appear to be the best of corporate and military

expertise, a program such as this, that will require the development of a new global heavy airlift commercial infrastructure requires a current global commercial logistics user, such as Federal Express, General Motors or Ford Motor Company.

The BC-17X needs to be allowed to land throughout the world. This requires a broad permanent license from the U.S. Department of State, and it would need a permanent new kind of certification from the FAA, as well. These issues do not yet appear to be resolved, and may need significant interagency work to accomplish.

Issues of operators

The CAMAA team also assumed that the CRAF commercial operators, if provided sufficient financial incentives, have the capability to develop the global heavy airlift market. The observers do not believe the CRAF commercial operators have the necessary knowledge, experience or sophistication to develop global markets after extensive interviewing of operators.

The CAMAA team may not have understood that global market customers need *complete reliability*. Let's take an example using a global logistics need from industry, such as Ford Motor Company. If a commercial carrier is serving the needs of Ford by using the BC-17X to produce global just-in-time, (JIT), Ford can not shut down around the world whenever the U.S. needs to deploy and the Air Force needs their business vehicle. How would the commercial operator meet Ford's needs if their vehicle is being used by the Air Force? Under the current CAMAA program, only occasional business needs could be met. For companies to use these planes as an integral part of their business, alternatives would need to be available for those occasions when the plane was being used by the Air Force – what would those alternatives be? The commercial operators will only succeed if their global customers, such as Ford, know that they will have reliable delivery. Ford must have reliability in their process for JIT around the world.

Using this vehicle would not be an add-on to Ford's business model – it would be a fundamental change to their business model…a paradigm shift that would give them a competitive advantage in the marketplace so

powerful, they may "paradigm" the entire industry. In order for Boeing to reduce its costs, it must make more planes using economies of scale… global customers such as Ford Motor Company will be willing to buy these planes or use them assuming they are permitted to land in the countries they need to land in. Then, when GM, DCX, Toyota, VW etc… add their orders, along with other industries such as FedEx taking over parts of global shipping, Boeing's cost per vehicle should come down significantly, enabling the Air Force to meet or exceed its cost per vehicle.

This would also create new global pathways and a true alternative to global shipping. Global shipping is currently under foreign control, but with these planes, a new global air shipping industry could be developed under American control.

That is why the CAMAA team has asked us to develop a business case for Ford Motor Company and we have their interest, but also, that is why if Ford pursues this, they cannot go back to their "old" way of doing business. This project is highly confidential. It is crucial that Ford's participation in this effort be kept confidential for competitiveness reasons.

If the business case works out, Ford will decide to buy the planes themselves or ask one of their major carriers, such as Federal Express, to buy the planes to support their new global network. If the business case works out and Ford is convinced that this approach will give them a major competitive advantage in the marketplace they will find a way to acquire the necessary planes.

Boeing's Competitive Situation with Airbus

If, for whatever reason, Boeing can't deliver, because the planes have not received the correct license from the State Department or new classification by the FAA, Airbus will try to fill the void. All the business that the emerging global airlift industry has will go to the Europeans at our nation's expense – not just Boeing's. The critical infrastructure of the US industrial base is potentially put at risk every time Boeing closes a plant such as Long Beach. If Long Beach closes, it won't re-open, except at extreme costs in both human and financial capital. Some of the knowledge losses occurring at Boeing, and therefore the U.S., could also be irrevocable.

Boeing is at war with Airbus over a global industry.

One of the concerns that the observer team has is that when Boeing as a company competes globally with Airbus, they are on their own, as is true with most U.S. companies. When Airbus competes globally, it has the backing of the European Community, and several specific governments helping it along. *This is not a level playing field.* Every time Airbus beats Boeing for an order, the U.S. industrial infrastructure is eroded a bit more, and it will not be long before the industrial base is permanently weakened. This process should be of concern to all policy makers since it is an issue of National Security.

Boeing needs to learn to be more globally competitive and learn to aggressively market its planes in non-traditional ways. Its major customer is the USAF but it needs to learn how to serve corporate needs, such as Ford's which are very different processes and cultures. Nevertheless, it is in the nation's interest to assist Boeing in this learning process.

Can the CAMAA program, as currently conceived work?

Possibly, but the risks are high for failure. The observers believe that there is another viable approach that the Air Force should be exploring with regard to innovative ways to pay for the C-17 and its commercial derivative that is far less risky and discussed in this paper.

There is also a third alternative that should be explored and is also viable. In order to reduce the Air Force financial obligation for the C-17, Congress should permit the many government agencies and users of these planes to help fund them. Perhaps agencies such as the United States Agency for International Development (USAID) should be Congressionally mandated to purchase their own planes so that when the Air Force must deploy, it is a government agency activity that is cut back and a global company doesn't go out of business. There are probably at least ten planes worth of work between the many non-Air Force agencies of the federal government.

Nevertheless, without global industry purchasing the planes, the cost per plane will never be sufficiently low. So the need for global businesses to participate in a strategy is essential.

Recommendations

The current CAMAA program should be permitted to continue as an experiment in acquisition reform in spite of its limitations.

We suggest that a new study be undertaken that will explore the broader National Security implications of global infrastructure development using industry experts in automotive, shipping and related logistics. Such a study could commence at any time since we believe there is a sense of urgency with Congressional budget cuts continuing to loom large. The larger the number of planes produced by Boeing's Long Beach, California facility, the lower the ultimate cost to the taxpayer. It is therefore in the interest of the Air Force to consider such a study. At the same time, the Air Force will assist in the strengthening of the U.S. industrial base. Simultaneously, this study must develop an interagency strategy for what, how and why the State Department and FAA need to change the classification of the BC-17X so that it can land virtually anywhere on the globe.

RESUME

Sheila R. Ronis

Dr. Sheila R. Ronis is President of The University Group, Inc., a management consulting firm, specializing in strategic management, visioning and technical services. She is also an adjunct professor at the University of Detroit Mercy and Oakland University where she teaches courses such as "Strategic Management and Business Policy" and "Managing the Global Firm," in the MBA programs. She often teaches at the Industrial College of the Armed Forces (ICAF) at the National Defense University in Washington, D.C. Her B.S. is in Physics and Mathematics. Her M.A. and Ph.D. are in Organizational Behavior from The Ohio State University.

Dr. Ronis founded and directed the Institute for Business and Community Services at The University of Detroit to assist the U.S. automobile industry in becoming globally competitive by bringing systems and strategic management principles to the industry.

Joining the University of Detroit from Ameritech Publishing, Inc., where she was a Strategic Planner, she worked at AT&T and Michigan Bell before that, helping the corporation during its divestiture years. Prior to her Bell System tenure, Dr. Ronis directed a national energy program for the U.S. Energy Research and Development Administration (ERDA - now the Department of Energy), in Oak Ridge, Tennessee and Washington, D.C. While an administrative associate at The Ohio State University, she chaired the Legislative Affairs Committee, acting as the legislative liaison between the University Senate, the Ohio General Assembly, the Governor's Office and the Ohio Board of Regents. Dr. Ronis began her career working at North American Rockwell in Columbus, Ohio.

Dr. Ronis has worked with many organizations; public, private, large, small, profit and nonprofit. These include: General Motors Corporation, Ford Motor Company, the Department of Defense, the Federal Laboratory Consortium For Technology Transfer, U.S. Institute of Peace, Ameritech, USCAR, the Interstate Commerce Commission, Masco Industries, the Institute for National Strategic Studies at the National Defense University, the National Science Foundation, and The State Council of The People's Republic of China.

Dr. Ronis has authored 63 papers. In addition, Dr. Ronis worked with Dr. W. Edwards Deming including co-authoring the paper "Preparing Cadillac for the 21st Century: Systems and Strategic Thinking." She recently delivered a paper at the Pentagon entitled, "Economic Security is National Security: A Discussion of Issues Surrounding the Global U.S. Corporation." She also has recently published "Crisis on Asimov" in *Automotive Industries* Magazine, and the *Financial Times Automotive World,* which is a strategic futurist's look into the world of 2085. Dr. Ronis sits on the Boards of Directors of the Detroit Institute of Ophthalmology (DIO), the National Defense University Foundation, The Strategy Forum and is the former Vice Chairman of The Ohio State University Alumni Association. She is an advisor to the Helen Hamlyn Research Centre of the Royal College of Art in London. She is a former board member and life member of The Economic Club of Detroit. She is a member of the Detroit Association of Business Economists, Society of Automotive Engineers, the National Defense Industrial Association, the Defense Orientation Conference Association, and the Society of Automotive Analysts. She is also very active in the Detroit community with the Detroit Symphony Orchestra, Detroit Institute of Arts, Music Hall Center for the Performing Arts, and Michigan Opera Theater.

RESUME

Myron D. Stokes

Myron D. Stokes founded *Automotive Intelligence Group, Inc.* in 1988 as a firm dedicated to automotive and aerospace industry analysis and historical research. Along with colleagues who comprise the "intelligence" aspect of AIG, Stokes has provided major corporations and media groups with "deep background" analyses that have helped shape the direction of some of the most significant news stories and industry strategies.

After outlining a strategy to expand industry coverage for *Newsweek Magazine* in November of 1991, he worked in the capacity of industry correspondent and investigative reporter. His reporting included in-depth assessments of the "shake-up" at GM, the much publicized industrial espionage charges against former GM supplier executive Dr. Ignacio Lopez; the viability of Electric Vehicles which centered on advanced battery technology in both the private sector and military (*Newsweek International edition);* the difficulties then facing Japan's auto industry and the comeback of the Big Three (*Newsweek Japan);* the U.S./Japan trade issue (*Newsweek Japan)* which required significant interaction with then Secretary of Commerce Ron Brown; development of extensive severe weather meteorological data for *Newsweek* cover story (4/95) on Airline Safety; investigative analysis of possible collusion between the warring governments of Bosnia President Alijah Izetbegovich and Serbia President Slobodan Milosevic along with uncovering of plan to re-implement ethnic cleansing prior to Srebednicza massacre (6/95); and the Oklahoma City bombing.

Stokes is near to completing research for a new book containing exhaustive analysis of severe weather phenomena and their impact on flight operations since the dawn of aviation. In fact, the book will provide the basis for research into a new phenomenon, the *Clear Air Vortex.* The University of Chicago's Dr. Theodore Fujita, long recognized for his work in destructive weather and responsible for defining the *downburst,* and The University of Michigan's Atmospheric and Oceanic Sciences Department Dr. Thomas Donahue (one of the original team of scientists gathered at Woods Hole to design complete systems for the Space Shuttle in 1973) provided valuable insights and knowledge to this undertaking. The working title is *Turbulent Sky.*

His ability to thoroughly and accurately report and analyze issues of substance garnered himself and former *Newsweek* Bureau Chief Frank Washington first place in the coveted *Detroit Press Club International Golden Wheel Award for Automotive Journalism* in 1995. This competition, judged by professors from the University of Nebraska School of Journalism, included entries form 110 journalists in five countries. *Businessweek* took second place.

Stokes is a member of the *Society of Automotive Historians*, the *Society of Automotive Analysts,* the *Automotive Press Association (APA)* and the *U.S. Chamber of Commerce.*

In December 2000, he established a series of informal gatherings to discuss issues of high impact and import among invited professionals in the four-field arena of academia, media, corporate and government. The success of these gatherings led to the establishment of *e MOTION! REPORTS*, an automotive/aerospace industries research and analysis website (www.emotionreports.com) targeted to individuals comprising informal gathering attendees. The site is also providing a new vehicle for presentation of White Papers and other scholarly research to a broadened, yet very defined audience. Reader/viewers, for example, are able to download an extraordinary 100-page document outlining Boeing's development of the *Supersonic Transport* along with access to new thinking on the EP-3E incident.

Stokes is a military aviation history expert with strong interests in the development of naval weaponry over a 500 year period. He has also participated in the restoration of B-17G and B-25 aircraft.