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SPECIAL AIR MISSIONS: A PATH TO THE 21ST CENTURY

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by

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Preface

When looking at the role and future of the Special Air Mission (SAM)-type fleet of aircraft, you must acknowledge that this is a very politically charged issue. The fleet has recently come under heavy reviews from the White House, Congress, and the press looking for mismanagement, excesses and abuses. For this reason, each service is very protective of its information and subsequently becomes proprietary in justifying its SAM operations. Therefore, this paper attempts to break the parochial service attitudes and develop a concept for the future of SAM operations that not only meets the national security needs of our civilian and military leaders, but fits into the economic reality of the future. I contend that, through the joint effort of the services, the resultant fleet will be far more capable and infinitely more efficient than the sum total of the current fleet.

Throughout my research, Maj Jim Ratti has kept me on track and focused—he is a true mentor. Additionally, my sincere thanks go out to Majs Russ Blaine, Jim Barefield, and Cody Smith for their continual support when I came up against the many frustrating informational roadblocks. Finally, I must thank Peggy, Joanna, and Catherine for their unconditional love and support throughout the entire research and academic process.

Abstract

Providing worldwide airlift for the most senior United States government and military leaders has been the primary mission of numerous organizations spanning each of the military services. These leaders have relied on these aircraft as flying offices while abroad, allowing them to engage wherever US national interests lie. Over the years, this fleet has grown and developed on an ad hoc basis. The primary fleet, owned and operated by the 89th Airlift Wing at Andrews AFB, has the primary mission of airlifting the President, Vice President, and other national and international leaders. Because these aircraft were often unavailable for senior military members from the sister services, the Army and Navy each established a detachment of business jet type aircraft to fill their own needs. Additionally, the various Commanders-in-Chief of the unified and specified commands have a variety of aircraft at their disposal to oversee operations in their specific areas of responsibility. Thus, Chapter one serves as the introduction to current SAM operations, outlining each of the units, their primary customers, and their aircraft.

However, due to the shrinking defense budgets and mounting costs to operate and maintain these aging and unique fleets, now is the time to plan for the next century. Therefore, Chapter two develops the SAM fleet to meet the 21st century needs. First, a foundation is established by linking the fleet to the National Security Strategy. Adding to this foundation, joint doctrine provides the basis for consolidating the CONUS-based SAM units into one organization under the umbrella of the US Transportation Command.

The result of this consolidation would be a simplified command and control structure, reduced support manning, and the opportunity to reduce the number and types of airframes in the inventory. At this point, a two phased implementation plan is described. Phase one consolidates the identified CONUS organizations and resources, and reduces excess airframes. The second phase then focuses the modernization effort toward a fleet of 8 C-32A (Boeing 757) and 12 C-20H (Gulfstream IV). Ultimately, this plan would ensure efficient, unimpeded worldwide Special Air Mission (SAM) operations well into the 21st century.

Chapter 1

The Current System

> *No other nation has the breadth and depth of air mobility resources that America has available. History clearly demonstrates this wide range of our customers' needs results in a demand for air mobility 24 hours a day, 365 days a year, whether America is at peace or war.*
>
> —1997 Air Mobility Master Plan[1]

Currently, Andrews AFB serves as the gateway to world for our national leaders. As such, each branch of the Armed Forces maintains its own fleet of SAM-type aircraft at Andrews AFB to meet its own specific needs. Hosted by the Air Force's 89th Airlift Wing (89 AW), 25 Andrews-based aircraft from the Air National Guard's (ANG) 201st Airlift Squadron (201 AS), the Army's Priority Air Detachment, and the Navy's Commander Fleet Logistics Support Wing Detachment Washington DC serve our nation's highest leadership (Figure 1). These aircraft, C-137s (Boeing 707s), C-22s (Boeing 727s), C-9s (DC-9), and C-20s (Gulfstream III and IV) provide worldwide airlift for our nation's and military's most senior leadership. The differing size and configuration of these aircraft accommodate various party sizes from 1 to 50+ passengers. Each of the four organizations operates independently from the others under its own command and control (C2) structure. In addition, each provides for its own administrative and logistics support, except for the common C-20 parts supply system.

In developing the following analysis of the entire SAM fleet, it is important to note that detailed information regarding each of the specific organizations and aircraft was severely restricted. Due to ongoing inquiries from various governmental and civilian media agencies, a virtual freeze was placed on information concerning these aircraft. Therefore, utilizing the limited data available and deriving reasonable assumptions, the analysis of the total SAM fleet begins with the 89 AW.

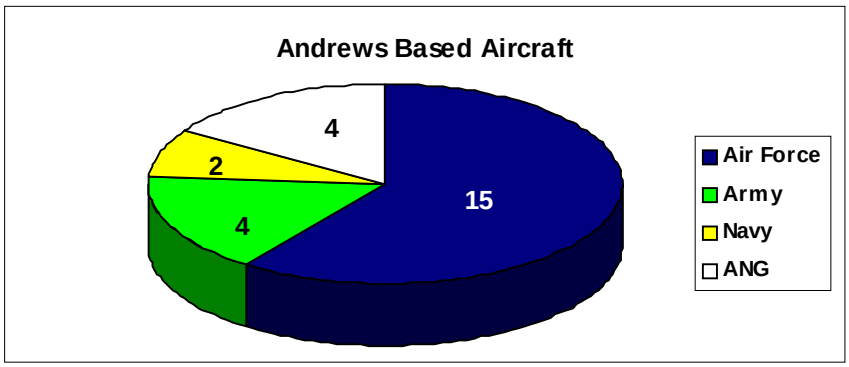


Figure 1. Andrews AFB Based Aircraft

89 AW. The mission of the 89 AW is to provide safe, comfortable, and reliable air transportation for our nation's leaders. In doing so, it acts as the primary worldwide transportation agent for the President, Vice President, members of the Cabinet and Congress, and other high-ranking national and international leaders.[2] Additionally, DoD Regulation 4515.13R further affords SAM airlift for all Distinguished Visitor (DV) codes 2 and 3 which includes Service Secretaries and Under Secretaries, Chairman and Vice Chairman of the Joint Chiefs of Staff, Service Chiefs, and 4-star General/Admiral officers.[3] Given the ever changing political world arena, these leaders often require simultaneous and immediate air travel to carry out their diplomatic missions.[4] In wartime, as in peacetime, this mission is essential when diplomacy and negotiation become critical elements of the National Security Strategy (NSS). Therefore, in this era of Engagement

and Enlargement, these aircraft and their crews play a crucial role in defining and implementing domestic and foreign policy. To meet the worldwide immediacy of this mission, the 89 AW maintains one C-20 and one augmented C-137 crew in a 1.5- and 2-hour alert posture, respectively, at all times.

Command and control of this fleet is unique. As a subordinate of the Air Mobility Command (AMC), the 89 AW receives funding and operational support from its parent command. However, AMC does not maintain operational control of the aircraft. Per DOD Regulation 4515.13R, this is directed from the Secretary of Defense through the Secretary of the Air Force (SECAF) to the Air Force Chief of Staff (CSAF) who, in turn, has delegated through the Vice Chief of Staff to the Assistant Vice Chief of Staff (AF CVA).[5] Therefore, the AF CVA acts as the responsible agent for coordinating and validating mission requirements, and tracking missions enroute.

Logistics support for the 89 AW's current fleet of SAM aircraft is by both military and contractors. All organizational level aircraft maintenance is handled by the 89th Logistics Group's Aircraft Generation Squadron (AGS) and Maintenance Squadron (MS). Additional assistance comes from Contractor Logistics Support (CLS) teams from each of the aircraft manufacturers. All supply support is provided by a Contractor Operated and Maintained Base Supply (COMBS) system. All depot level maintenance is performed by contractors, and complies with all FAA maintenance requirements. Although the normal depot cycle varies between aircraft, the average cycle is 36 months (including aging aircraft inspections).[6]

201 AS. The ANG's 201 AS fulfills its role in the SAM mission by flying four C-22 (large volume, medium range) aircraft. Designated as Operational Support Aircraft

(OSA) with a primary mission of team travel, they routinely fly large DoD and service-sponsored delegations throughout the continental United States (CONUS). However, they do sporadically receive taskings from AF CVA to support typical 89 AW SAM missions worldwide.

Falling under OSA guidelines, C2 for this unit follows two chains. The first chain, functional control, lies with the ANG. As a member of the DC ANG, the 201 AS's parent wing is the 113 Fighter Wing. Conversely, operational control of the aircraft stems from US Transportation Command's (USTRANSCOM) Joint OSA Center (JOSAC). The future of the 201 AS is currently uncertain. Due to the age and increased cost associated with supporting this very small fleet, the Air Force is retiring the C-22 fleet in FY 98 with no plans for replacement.

Army Priority Air Detachment. This detachment provides for priority air movement of primarily in support of the Department of the Army. To accomplish this mission, they operate three C-21 (Gates Learjets), and four C-20 (one G-II, two G-III and one G-IV) aircraft. Of these aircraft, six operate out of Andrews and one (G-III) operates out of Hawaii. Due to differing service aircraft classification procedures, these aircraft are designated as OSA assets in support of the Secretary of the Army (SECAR). As OSA assets, they would fall outside the scope of this paper. However, for this paper, I am identifying two of the C-20s as being dedicated primarily for the transportation of the SECAR and Army Chief of Staff (CSR). The basis for this assumption comes from comparing this unit to the Navy Detachment (described below) which requires two aircraft to accomplish a similar mission, and the GAO report on Government Aircraft that

identifies over 415 flights by the SECAR and CSR during the period Jan 93 through Mar 95.[7]

As both OSA and Executive fleet aircraft, many of same DOD regulations that govern the 89 AW also apply to the Detachment. In order to immediately respond to changing worldwide events, the detachment maintains one aircraft and crew in a continual two hour alert launch posture. In this role, they have supported numerous 89 AW SAM missions throughout the years. Manning of the detachment includes a Lieutenant Colonel commander, seven warrant officer pilots, and approximately forty enlisted maintenance and support personnel. Detachment personnel perform all on- station maintenance, and they tie into the 89 AW logistics structure where applicable. Here, they are piggybacked on all logistics support contracts as well as the COMBS system.[8]

Command and control of the Detachment flows primarily from three areas. Functional control flows through normal Army OSA Command channels and the Detachment's parent, the 12th Aviation Battalion. Operational control varies, depending on the type of mission being flown. For SECAR and CSR travel, the scheduling and operational control of the aircraft comes directly from the SECAR office. Additionally, if the mission is an OSA mission, this scheduling and operational control flows from USTRANSCOM's Joint OSA Center through the Army OSA Command to the Detachment.

Commander Fleet Logistics Support Wing Detachment Washington DC. Tasked to provide primary airlift support for the Secretary of the Navy (SECNAV), Chief of Naval Operations (CNO), and the Commandant of the Marine Corps (CMC),

Detachment DC operates and maintains two C-20D (Gulfstream III) aircraft. Like the USAF C-20Bs, these aircraft afford a small volume, medium range airlift capability.

Also governed by DOD Regulation 4515.13R, Detachment DC aircraft are also available to senior government leaders DV Code 3 or greater. Although they do not maintain a normal alert posture, they are capable of responding to immediate taskings by building a crew with available personnel and shortened crew duty days. In this capacity, they have, on several occasions provided aircraft when the 89 AW had either no aircraft or had lost the primary and back-up aircraft due to maintenance. Capable of worldwide operations, the bulk of their operations are flown along the Eastern seaboard to major naval installations or cities with large DOD contractors. Annually, they fly approximately 5 missions to Hawaii and 10-12 missions to the West coast.[9]

Much like the 89 AW, command and control of this unit follows two separate channels. All funding and administrative support comes from their parent Fleet Logistics Support Wing (FLSW) while operational control and tasking comes directly from SECNAVs office. Staffed by 84 Navy and Marine Corps personnel, this self sufficient detachment operates independently from any routine USAF support. They perform all organizational level maintenance on their aircraft, and share two Gulfstream CLS technical representatives with another Navy organization, also located at Andrews. Like the Army, they too are piggybacked onto the 89 AW's contracted COMBS system.[10]

Andrews-based SAM aircraft. The current Andrews-based SAM fleet is a culmination of an ad hoc process that procured aircraft on a piecemeal basis. The resultant fleet of non standard aircraft contains seven versions of four different aircraft (Table 1).

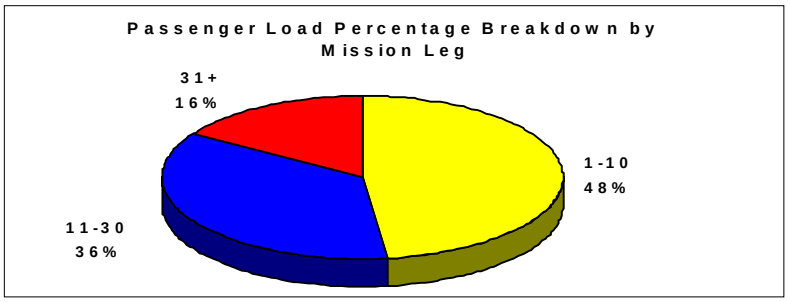
Table 1. SAM-type Aircraft and Capabilities

	C-137C	C-137B	C-9C	C-20H (G-4)	C-20B/D (G-3)	C-20A(G-2)	C-22B
NUMBER	4	1	3	3	9	1	4
CREW	18	18	7	5	5	5	8
NORMAL PAX	25	25	18	6	6	6	30
MAX PAX	60	58	42	12	12	12	50
RANGE - 0 WIND	5150	3450	2150	4000	3500	3000	1800
MIN RUNWAY	7000	7000	5000	5000	5000	5000	5000

Source: 89th Airlift Wing, "White Paper on 89th Airlift Wing Aircraft Modernization," 1996, 2.

Note 1: C-9C range severely limited by increases in passenger loads
Note 2: C-137 C/B max passenger loads vary between each aircraft/interior configuration

Operating the full range of aircraft, the 89 AW attempts to tailor customer needs with the appropriate size/range aircraft (Figure 2).



Source: 89th Airlift Wing, "White Paper on 89th Airlift Wing Aircraft Modernization," 1996, 1.

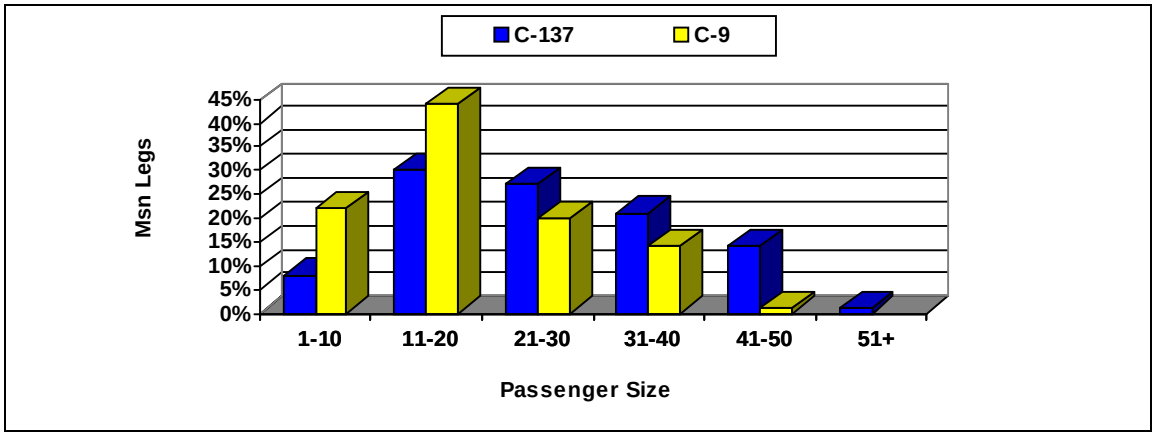
Figure 2. 89 AW Passenger Load by Mission Leg

The C-20s meet the small passenger volume, medium (B-model) and long (H-model) range requirement. The C-9s act as the swing aircraft for small and large volume/short range, and the C-137s cover the large volume/long range loads.

However, due to the prominence of the various passengers, the actual scheduling of these aircraft is often driven by customer preference vice efficient scheduling. This point is clearly evident when looking at the actual passenger loads for the C-9 and C-137

(Figure 3). Here we see that the most common use of the C-137 was to support small and medium sized passenger loads (<30 passengers) rather than the optimum C-9. Overall, range capability and passenger comfort drove the DV party toward the larger, less efficient C-137. As the defense budget continues to shrink, this type of scheduling inefficiency must be eliminated.

Concurrently, the Army and Navy built their SAM fleets based on their small party requirements. As funding became available to modernize their fleets, newer business jet class aircraft were the obvious choice. Likewise, the ANG's C-22s ideally meet their customers' team travel party requirements.



Source: HQ USAF/CVAM briefing, SAM Fleet Game Plan: Options for Modernization, Mar 96.

Figure 3. CY 92-94 Passenger Loads

However, a greater concern looms on the horizon for the entire SAM fleet as it approaches the 21st century. All of the SAM aircraft except the C-20Hs require extensive modifications or outright replacement in order to meet upcoming International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) navigation and noise pollution standards. With a price tag that could reach $1 billion, many options are currently being scrutinized throughout the DOD. The following paragraphs will further

identify the capabilities and limitations of the current fleet as well as discuss programmed and possible modernization options. As we look to the next century, this modernized fleet of aircraft will form the core of the DOD SAM fleet.

C-137B/C. Serving as the primary high volume, long range aircraft in the SAM fleet, these modified B-707s are normally used by Cabinet level and above officials on international missions. Although the most visible of the SAM aircraft, their 1950s technology makes them the aircraft with the most shortcomings.[11] First, none of these aircraft meet FAA Stage III noise pollution restrictions. Therefore, due to their noise signature, numerous airports currently restrict or prohibit C-137 operations, and the number is increasing. Additionally, none of these aircraft complies with ICAO's Future Air Navigation System (FANS) requirements. As the FANS requirements begin implementation in 1997, severe restrictions on non-compliant aircraft will prohibit operations in the Minimum Navigation Performance Standard (MNPS) airspace and in the North Atlantic Track (NAT) region. These restrictions will force non-compliant aircraft out of the optimal air route and altitude structure, thereby increasing operating costs by extending flight times and fuel consumption. Finally, FAA mandated aging aircraft inspections have drastically escalated the cost, maintainability, and availability of the C-137 fleet.[12] Due to the enormous cost of these additional inspections, two C-137Bs were retired in 1996, leaving five remaining in the fleet.

Concurrently, the CSAF directed a C-137 modernization plan that replaces the C-137s with four large and two small commercial aircraft. Therefore, in 1996 the large aircraft contract was awarded for four new C-32A aircraft (Boeing 757-200) with delivery in 1998. Currently, the Operational Requirements Document for the small aircraft is being

validated, and source selection scheduled for early 1997.[13] Expected delivery of these aircraft will immediately follow the large aircraft in 1998. Although no specifics have been released, these aircraft could range from the Gulfstream IV or V to the Boeing 737.

C-9C. Derived from the commercial DC-9 airliner, these extensively modified aircraft routinely operate worldwide from regional size airports and often provide CONUS travel for the President. Its ideal role in the SAM fleet is that of the swing airlifter—able to economically carry all three volumes of passengers. However, its range and passenger capacity are severely degraded, especially when operating from short runways. For example, on the typical Andrews to Frankfurt and back scenario, the passenger load determines the number of enroute stops the aircraft must make, with 20 passengers being the critical number for the direct westbound oceanic leg from Shannon, Ireland to Gander, Newfoundland. Carrying 25 passengers, the C-9 eastbound for Europe requires enroute fuel stops at Gander and Shannon, and westbound at Shannon; Keflavik, Iceland; and Gander.[14]

Like the C-137s, the C-9s meet neither Stage III noise nor FANS standards. To answer the Stage III requirement, AMC has established a working group to research the various options for the C-9 fleet (A- and C-model). Engineering studies show nearly equal costs to either reengine or install hush kits for the current engines. Both of these costs are substantially lower than replacing the aircraft. AMC is also contemplating the supportability of the fleet as the commercial carriers retire the DC-9s from their inventory and FAA-mandated aging aircraft inspections begin to take effect. With an estimated service life of 2094, this working group's charter is to "determine the best course of action to meet mission, as well as FAA/ICAO noise requirements."[15]

C-20H. Entering the inventory in 1995 and 1996, the three C-20H aircraft are the only SAM aircraft that meet FAA/ICAO Stage III restrictions. Using B-model aircraft as "trade ins" to help offset their purchase, these state-of-the-art Gulfstream IV(SP) derivatives bring an extended range and improved communications capability to the C-20 fleet. This extended range provides non-stop flights from Andrews to Europe, reducing travel time and costly enroute support stops. There are no upgrade or modernization efforts required for these aircraft and their usable service life extends well into the next century.

C-20A/B/D. Serving as the core of the small volume SAM fleet, the nine C-20A/B/Ds are modified Gulfstream II and III aircraft. Flying the bulk of the SAM missions, these aircraft primarily fly shorter duration, CONUS missions. Although able to operate overseas and from smaller airfields, they are limited by their medium range, and require an additional fuel stop enroute to and from Europe.[16]

Purchased in the mid 1980s, these aircraft are expected to reach their service life of 20,000 hours in 2014.[17] Although employing relatively state-of-the-art avionics, these aircraft do not meet the FAA/ICAO Stage III noise restrictions, thereby requiring reengining or replacement in order to maintain their worldwide unrestricted capability. According to AMC's Air Mobility Master Plan, there are no plans for upgrading the Air Force's B model aircraft until after the turn of the century. However, if the "trade in" option becomes available for additional H-models, this option will most likely be accepted.[18] We can assume that this holds true for the Army and Navy's aircraft as well.

CINC Support Aircraft. In addition to the Andrews Based SAM aircraft, there are 11 additional Air Force owned and operated aircraft assigned in support of the various unified Commanders-in-Chief (Table 2).

Table 2. CINC Support Aircraft

LOCATION	OWNING COMMAND	USER	#/TYPE ACFT
Howard*	ACC	CINC	1 T-43
Offutt	ACC	CINC	1 KC-135
Robins	AFSOC	CINC	1 EC-137
Robins	AMC	CINC	2 EC-135
Edwards	AFMC	CSAF	1 C-135
Cheivres	AMC	CINC	1 C-9
Hickam	PACAF	CINC	2 C-135
Ramstein	USAFE	DV	2 C-20
* Note: Moving to Miami FY 97			

Source: Engen, Donald D., Memorandum for Secretary of Defense, Dr. William Perry, subject: Review of DOD Executive Support Air Fleet, October 18, 1996, para. C.5.2.6.1.

Primarily used as intratheater assets, these aircraft provide strategic airlift for the combatant CINCs throughout their areas of responsibility. Not only used for their airlift capability, their extensively upgraded communications capabilities allow these aircraft to serve as mobile command centers for the CINC in time of crisis. Although these aircraft are available the CINCs also use the various OSA aircraft for intertheater and CONUS travel. Due to the extensive distance from Andrews, when looking at the CINC support aircraft available for consolidation in the next chapter, only the CONUS-based aircraft will be considered. Additionally, the C-135 at Edwards will not be considered for consolidation. Although extensively modified and used to support the CSAF and other senior DOD officials, flight test, not SAM airlift, is its primary mission. Therefore, its current dual test/SAM mission will continue and the aircraft will augment any consolidated SAM operation.

In addition to all of these SAM, OSA, and CINC support aircraft available for executive level travel, the Air Force maintains two Commander Joint Task Force Command and Control Modules (CJTFC2) that fit aboard specially modified KC-10s, C-17s, or any C-141. These modified Airstream trailers provide secure voice and data capability and have, on occasion, transported senior government officials such as the Secretaries of State and Defense, and the Director of the Central Intelligence Agency. However, these CJTFC2 modules are primarily considered wartime assets and not normally used for routine DV travel.[19]

Notes

[1]*1997 Air Mobility Master Plan* (AMMP) Headquarters Air Mobility Command, Director, Plans, 1996 p. iv.

[2]AMMP, 235.

[3]DOD Regulation 4515.13R, Air Transportation Eligibility, Office of the Under Secretary of Defense for Acquisition and Technology, Nov 94 p. 1-2.

[4]AMMP, 236.

[5]DOD Regulation 4515.13R, 1-2.

[6]AMMP p. 236.

[7]Government Accounting Office Report on Government Aircraft: Observations on Travel by Senior Officials, 5 June 1995, 58.

[8]Lt Col Chuck Allen, Commander, Priority Air Detachment, telephone interview by author, Jan 97.

[9]Cdr Terry Sullivan, Operations Officer, Fleet Logistics Support Wing Detachment Washington DC, Data E-Mail, Nov 96.

[10]Ibid.

[11]John H. Christ, *Special Air Missions: The History, the Requirement, and Need for Modernization* (Maxwell AFB, AL: Air War College, 1996) , 19.

[12]AMMP, 238.

[13]Ibid.,238.

[14]"White Paper on 89th Airlift Wing Aircraft Modernization," 1.

[15]AMMP, 235.

[16]"White Paper on 89th Airlift Wing Aircraft Modernization", 1.

[17]AMMP, 238.

[18]AMMP, 238.

[19]Engen, Donald D., Memorandum for Secretary of Defense, Dr. William Perry, subject: Review of DOD Executive Support Air Fleet, October 18, 1996, para. C.5.2.6.1.

Chapter 2

Joint Endeavor for the 21st Century

> *If America's experience since the end of the Cold War is instructive, America's future will be marked by rapid change, diverse contingencies, limited budgets and a broad range of missions to support evolving national security policies. Providing military capabilities that operate effectively together to meet future challenges is the common purpose of the military departments, the services, the defense agencies and other DOD elements.*
>
> —Roles and Missions Commission of the Armed Forces[1]

As we define the SAM fleet and its mission for the 21st century, we find that there is no foundational plan on which to build. In the past, the makeup of the entire SAM fleet has been the summation of an ad hoc process within each service, typically accepting aircraft procured out of cycle. For example, three C-137s were purchased in 1958, one in 1962, one in 1972, and two in 1988. The resultant fleet of like MDS aircraft are, however, each configured differently, both on the flight deck and in the passenger compartments. This non standardization of like aircraft has, in turn led to significant scheduling problems based on customer preference of aircraft interior configuration and range capability. Unfortunately, a similar piecemeal procurement program has emerged in the C-20 fleet, with the C-20 A/B/D aircraft being individually replaced by C-20H aircraft when service fallout money becomes available. Since each of these new aircraft takes advantage of the most current avionics and communication upgrades, the new fleet of C-

20H aircraft is becoming increasingly nonstandard. In order to avoid the scheduling problems that have plagued the C-137 fleet, a comprehensive modernization plan that standardizes aircraft configurations is vital.

Likewise, each of the service fleets emerged not out of careful planning, but out of a service-designated need. Each of the CINC support aircraft was designated to meet the CINC's long-range airlift needs and decrease his reliance on outside sources of lift. Similarly, the Navy and Army found difficulty in obtaining the airlift support they required for their senior officials. Therefore, they designated aircraft at Andrews primarily to support their requirements. This flexible luxury was available in the 1980s when the defense budget could support such specialized designation of resources. However, three significant events force us to rethink this parochial way of doing business.

The paramount issue is the ever shrinking defense budget. From 1990 to 1997, the defense budget has shrunk 36.1 percent.[2] The resultant effect of this decrease forces each service to carefully scrutinize its existing roles, missions, and requirements to determine how it can maintain its warfighting capability in a fiscally hostile environment. In performing this review, services must consider every opportunity to achieve efficiency through a unity of effort, regardless of parochial interests. Closely tied to this unity of effort concept is the second major event forcing this reevaluation, the Goldwater-Nichols DOD Reorganization Act of 1986. Among its various mandates, it charters the DOD to "provide for the more efficient use of defense resources."[3] Here, the each service has the responsibility to identify and reduce overlapping roles, missions, and functions, without respectively affecting combat capability. The result of this tenet has led to an increased emphasis on an integrated joint force team. According to the Chairman of the Joint

Chiefs of Staff, Gen John Shalikashvili, "The nature of modern warfare demands that we fight as a joint team."[4]

The final factor revolves around the fleet age. As the SAM fleet approaches and exceeds its intended service life, the need to modernize becomes more and more vital. With 30 year old aircraft becoming the norm, the FAA now requires aging aircraft inspections. These depot-level inspections are over and above normal periodic depot maintenance, and seriously impact operating and maintenance costs. The severity of these costs is exemplified by the Air Force decision to retire one C-137 before undergoing the inspection, and retiring another undergoing the inspection due to ever mounting costs. Additionally, as the additional FAA and ICAO mandated navigation and noise pollution requirements are phased in, worldwide operation of non compliant aircraft will become increasingly restricted. These restrictions, if unaddressed, will severely degrade the SAM unit's ability to fulfill its mission. The aircraft will be forced out of the optimum airspace on transoceanic crossing and restricted from operations in major international airfields.

So as we turn our focus to the SAM fleet of the 21st century, we see that merely maintaining the status quo is not an option. It is a relatively small fleet of aircraft in desperate need of modernization and consolidation. Therefore, a fundamental evaluation of this fleet, from who it is to support and its role in national security to actual composition and capabilities is in order. Joint Pub 1 describes this concept of establishing congruence of objectives and focusing all energy toward a common goal as ensuring unity of effort—the first principle of war.[5]

Likewise, as we build the fleet of the next century, we must apply the Principles of Logistics as outlined in Joint Pub 4. The first principle identifies responsiveness as the

keystone to logistics. Responsiveness is the ability to place the "right support in the right place at the right time."[6] The second principle, simplicity, addresses avoidance of complexity, and standardizing procedures. Next, flexibility is described as the ability to adapt to the changing environment. The fourth principle addresses the limited availability of resources. Economy ensures the required level of support is available at the least cost. Finally, attainability and sustainability address the ability to provide the minimum level of support to conduct the mission and the ability to maintain at least that level of support to all customers throughout the near- and long-term.[7] Using these principles as guideposts, the resultant SAM fleet will thrive well into the next century.

Currently, each of the SAM-type units provides airlift for only the most senior government and military officials (Table 3).

Table 3. Sam Users

SAM USERS			
President	Congress	Army Chief of Staff	CINC STRATCOM
Vice President	Secretary of Army	Chief of Naval Operations	CINC TRANSCOM
White House Directed	Secretary of Navy	Commandant of the Marine Corps	CINC SOCOM
Secretary of State	Secretary of Air Force	Air Force Chief of Staff	CINC PACOM
Secretary of Defense	Chairman, JCS	CINC ACOM	CINC EUCOM
Other Cabinet	Vice Chairman, JCS	CINC SOUTHCOM	FOREIGN DIGNITARIES
		CINC CENTCOM	OTHER VIP CODE 2/3

The use of these assets is governed by various regulations and departmental memoranda and is limited primarily to missions that are: Defense related; in direct support of the President, Vice President, or First Family; specifically directed by the President; required to meet national security concerns; or support DOD personnel that must use military aircraft (primarily for security purposes).[8] Because of their leadership roles in our government, these users will not change in the future.

This high level of user also identifies the importance of this fleet in both supporting our National Security Strategy (NSS) and the National Military Strategy (NMS). This fleet directly impacts our national leadership's ability to pursue its engagement and enlargement NSS. These aircraft not only provide a safe means of travel around the globe, they also maintain constant communication to vital command centers thereby ensuring continuity of our government. In this same capacity, they directly support the NMS of flexible and selective engagement. They constantly carry our senior civilian and military leaders throughout the world allowing them to directly accomplish our two national military objectives: "promoting stability and thwarting aggression."[9]

The question now turns to what type of fleet will efficiently carry out this mission. As mentioned earlier, the current fleet of aircraft is the result of an ad hoc acquisition of aircraft in a time of large budgets. For the next century, we must apply sound logic to develop the requirements and, wherever possible, consolidate missions, resources, and logistics to glean every ounce of efficiency out of this fleet. Except for PACOM and EUCOM, all of the primary users of this fleet are located within the continental United States (CONUS). Further, of the CONUS users, all but SPACECOM (Note: SPACECOM is not currently a primary user) are located within three flying hours of Washington DC.

This fact is the key to allowing us to pool all of the aircraft assigned to CONUS user support at one location, Andrews AFB. Logistically, this provides the maximum efficiency for this small fleet and will not adversely impact the non-Washington DC based users. If these customers require immediate transportation, three options would be available. Either an alert SAM aircraft at Andrews or an alert OSA C-21 aircraft (closer

to the customer) could be launched, or in an extreme case, an OSA aircraft could be diverted from a lesser priority mission. However, since none of the current CINC support aircraft sits day-to-day alert, the alert capability of the consolidated SAM organization actually provides a better time-critical service to the customer.

To further take advantage of efficiency, modernization of the fleet must be an integrated effort. Taking advantage of current modernization efforts on the long-range, large volume aircraft, the four C-32s purchased to replace the C-137s would comprise the backbone of the SAM fleet. In addition to filling the long-range, large-volume role, the C-32 ideally covers the range of passenger requirements identified in Figures 2 and 3. Its capabilities not only fill the large aircraft requirements, they cover the requirement for the long-range, medium-volume aircraft as well. In essence, it eliminates the need for this class of aircraft (e.g., C-9 and C-22s).

Likewise, the 89 AW, Army, and Navy units each have Gulfstream IV aircraft in their inventories that could serve as the backbone of the long-range, small volume fleet. All of these state-of-the-art aircraft meet or exceed upcoming noise and navigation requirements, and clearly take advantage of the most fuel efficient technology available. Ultimately, these two types of aircraft, the C-32 and Gulfstream IV, meet the customers' needs by providing long range capable aircraft that fit the customer's passenger requirements.

Further, operating and maintaining a fleet of two aircraft types from one consolidated location provides tremendous savings. These savings come in the areas of logistics support and manpower. First, from a logistics standpoint, the consolidated unit is much simpler to support as all supply and maintenance support focus on only two MDS based at one location. For example, the current logistics system must support the eight various

MDS types at five CONUS locations. Looking closer, we see that, at four of these locations, the CINC support aircraft are tenant aircraft as well as the lone MDS on station. Therefore, these aircraft require their own individualized, or extended logistics support structures in order to operate. Specifically, with all other T-43s located at Randolph AFB, Texas, an individualized logistics network is in place to operate the lone aircraft out of Howard (Miami). Likewise, similar accommodations have been made in the C-137 system to support the lone EC-137's operations out of Robins. Finally, extended logistics support systems are necessary at Robins (primary aircraft: KC-135R) and Offutt (primary aircraft: RC- and EC-135) to support the two EC-135s and lone KC-135 operations respectively. Thus, by consolidating the SAM fleet into two MDS, these extended logistics tails would be eliminated, and the remaining two systems would concentrate to one location.

The second area of savings associated with the consolidation comes from manpower reductions. Closing and consolidating the various units would directly result in the elimination of approximately 150 support billets, ranging from administration to avionics maintenance. In addition to the manpower savings, this move allows for a more efficient use of personnel. For example, at Andrews, each of the three services employs numerous redundant maintenance specialists to support their own fleet of C-20 aircraft. However, consolidating all C-20 maintenance into one organization, these redundant positions would be eliminated, resulting in an efficient utilization of available manpower. Further savings will come from reduced aircrew manning as a result of modernizing the fleet. These savings will be detailed later in the paper.

Clearly, a consolidated unit falls in line with the basic logistics principles of economy and simplicity. Likewise, through its alert commitment, this unit would also meet the customer's airlift needs and fulfill the additional principles of responsiveness and flexibility. Now we must determine the size of the fleet. Table 4 directly addresses this issue and identifies the primary users, their current support aircraft, and their supporting aircraft of the next century.

Each of the primary users is assigned a priority index. This index serves two purposes. First, it establishes a rank order of priority for use of the aircraft. Obviously, the President receives the top priority and the Cabinet Secretaries, CJCS, VCJCS, and Unified CINCS next. The index also provides an aircraft factor for determining the number of aircraft required in the fleet. These factors represent the user's overall need level for a particular type of aircraft.

Table 4. SAM User/Aircraft Matrix

USER	1996 PRIMARY AIRLIFT		21st Century PRIMARY AIRLIFT		C-32 USER	C-32	C-20 USER	C-20
	OSEAS	CONUS	OSEAS	CONUS	PRIORITY	ACFT FACTOR	PRIORITY	ACFT FACTOR
President	VC-25	VC-25, C-9	VC-25	VC-25, C-32	1	0.25	1	0.1
Vice President	C-137	C-137,9,20	C-32	C-32,20	2	0.75	2	0.25
White House Directed	C-137,9,20	C-137,9,20	C-32,20	C-32,20	2	0.75	3	0.5
Secretary of State	C-137	C-137,9,20	C-32	C-32,20	2	0.75	3	0.5
Secretary of Defense	C-137	C-137,9,20	C-32	C-32,20	2	0.75	3	0.5
Other Cabinet	C-137,9,20	C-137,9,20	C-32,20	C-32,20	3	0.25	3	0.5
Congress	C-137,9,20	C-137,9,20	C-32,20	C-32,20	3	0.25	4	0.25
Secretary of Army	C-20	C-20,21	C-20	C-20,21	4	0.1	3	0.5
Secretary of Navy	C-20	C-20	C-20	C-20	4	0.1	3	0.5
Secretary of Air Force	C-135	C-20,21	C-135	C-20,21	4	0.1	3	0.5
Chairman, JCS	C-137,135	C-137,9,20	C-32	C-32,20	3	0.25	3	0.5
Vice Chairman, JCS	C-137,135	C-137,9,20	C-32	C-32,20	3	0.25	3	0.5
Army Chief of Staff	C-20	C-20,21	C-20	C-20,21	4	0.1	3	0.5
Chief of Naval Operations	C-20	C-20,21	C-20	C-20,21	4	0.1	3	0.5
Commandant of the Marine Corps	C-20	C-20,21	C-20	C-20,21	4	0.1	3	0.5
Air Force Chief of Staff	C-135	C-20,21	C-32	C-20,21	4	0.1	3	0.5
CINC ACOM		C-20,21	C-32,20	C-20,21	3	0.25	3	0.5
CINC SOUTHCOM	T-43		C-32,20	C-20,21	3	0.25	3	0.5
CINC CENTCOM			C-32,20	C-20,21	3	0.25	3	0.5
CINC STRATCOM	KC-135	C-21	C-32,20	C-20,21	3	0.25	3	0.5
CINC TRANSCOM	EC-135*	C-21	C-32,20	C-20,21	3	0.25	3	0.5
CINC SOCOM	EC-137		C-32,20	C-20,21	3	0.25	3	0.5
CINC PACOM	C-135		C-135		4	0.1	5	0.1
CINC EUCOM	C-20,9		C-20,9		4	0.1	5	0.1
FOREIGN DIGNITARIES	C-9,20,137*	C-9,20,21,137*	C-32,20,21*	C-32,20,21*	4	0.1	3	0.5
OTHER VIP CODE 2/3	C-9,20,137*	C-9,20,21,137*	C-32,20,21*	C-32,20,21*	4	0.1	3	0.5
TRAINING/MAINTENANCE						1		1
*Other Aircraft as Available					TOTAL	7.85	TOTAL	12.3

For example, the President's primarily support is from the VC-25 and Senior Executive Service C-20s. Therefore, his need for the SAM C-32 or C-20 aircraft is

limited to periods when a VC-25 is undergoing periodic maintenance or when the mission requires short field capability. Thus, the President is assigned a factor of .25 for the C-32 and 0.1 for the C-20, representing and approximate percentage of time each aircraft is required. These factors are used throughout the matrix and helps derive the number of aircraft required to meet mission requirements. Over and above these requirements, one additional aircraft in each MDS will support unit-level training and unit- and depot- level maintenance. This one aircraft buffer would adequately cover normal mission, training, and maintenance requirements. Only during occasional mission surge periods would there not be an aircraft available for training, and this only for short periods of time. Thus, the consolidated fleet of the 21st century requires 8 C-32s and 13 C-20H-type aircraft.

To validate these numbers, an overall logic test is warranted. In a sample worst case scenario, the future SAM fleet will need to provide C-32 (long range, large volume) airlift during a time of crisis involving two nearly simultaneous major regional conflicts. In this scenario, assume that one C-32 is performing Presidential duty (due to one VC-25 undergoing periodic depot maintenance), and one is undergoing C-32 depot maintenance, leaving six available for customer support. These aircraft will be able to support the Vice President, and Secretaries of State and Defense as they carry out our National Security concerns. Executing the national military concerns, the fleet will support the CJCS, and transport the two unified CINCs (primary supported commanders) sequentially to their theaters of operation. The final C-32 will be available to support a Congressional delegation throughout either of the two conflict arenas. Ideally, the two aircraft used to transport the CINCs to their theaters will immediately return to SAM service as the CINC utilizes theater OSA aircraft for intratheater airlift. These two aircraft would, upon their

return to Andrews, support additional Congressional delegations as necessary. Concurrently, each of the remaining users (service secretaries, service chiefs, other CINCs, etc.) will be supported by the fleet's C-20H-type assets, with C-32 support as available. In order to ensure mission coverage during this surge period, the Edwards-based C-135 test aircraft and the CJTFC2 modules mentioned earlier would fill in as necessary. However, only in extreme situations, and subject to availability, would the CJTFC2 modules support SAM operations.

Although this scenario details a SAM surge-type of operation, it is supportable by the streamlined fleet. Ensuring optimized utilization of this fleet requires a unified command and control (C2) system. As mentioned earlier, each service and CINC has its own C2 structure that tasks, validates, and monitors its respective assets. Again, this is a redundancy that can not continue. Foundationally, the C2 structure to oversee this consolidated SAM fleet is already in place—USTRANSCOM. In February 1992, the Secretary of Defense issued a directive that established USCINCTRANS as the single manager for all DOD transportation except service-unique or theater-assigned assets.[10] From this charter, USTRANSCOM derived its mission to, "Provide air, land, and sea transportation for the Department of Defense both in time of peace and time of war."[11] Serving only the most senior government and DOD officials, the current and proposed mission of this unit is not service specific, nor is it theater assigned. Therefore, C2 responsibility falls under the purview of USTRANSCOM.

To fulfill this responsibility, USTRANSCOM should establish a Joint Special Air Missions Center (JSAMC). This center should mirror the recently established Joint Operational Support Airlift Center (JOSAC) which oversees the operation of all CONUS

OSA airlift. This center would perform all oversight functions, to include scheduling, validating, prioritizing, and tracking of SAM airlift missions. Ideally, the JSAMC and JOSAC should merge into one organization at USTRANSCOM. However, due to the political nature of the mission and the central location in Washington DC of the primary customers, this merger, in reality, is not practical. Although not optimal from a C2 standpoint, this physical dislocation from the parent command maintains the personal service currently in place at each of the scheduling agencies and is an integral to the overall effectiveness of SAM operations.

Further, functional control of all SAM aircraft should fall under USTRANSCOMs air component, Air Mobility Command (AMC). At this point, this unit would then fall into AMC's existing command structure and logically fit into the 89 AW. The resultant effect of establishing this clear chain of command, both operationally and functionally, would enhance the safe execution of the SAM mission and minimize interservice conflicts.

The manning for this consolidated SAM unit poses an interesting opportunity. Due to the overall non-service specific nature of the missions, this unit is an ideal candidate for joint-service manning. The precedent for this manning scenario has already taken place. Joint-service squadrons now perform all undergraduate navigator and much of the undergraduate pilot training. Likewise, with both Navy and Air Force aircrew members, the first two joint-service EA-6B Prowler squadrons became operational in 1996.[12] Service integration of the consolidated SAM unit fulfills three sensitive manning issues. First, it enhances the overall joint service team as mandated by the Goldwater-Nichols act. Training and operating in this joint unit exposes each individual to the various ideological differences between each service and ultimately will help mold the joint warrior of the 21st

century. However, the paramount goal of this type of unit is, according to Gen Shalikashvili, to create a truly seamless joint team that builds on the complementary capabilities of each service.[13]

In addition to molding joint warriors, this combined service unit will ease each service's manning requirements, especially in critical personnel specialty codes. For example, with each Army and Navy pilot assigned to the squadron, an Air Force pilot is then able to remain in a warfighting MDS, and vice versa. The ripple effect throughout the system may be relatively small, however, when combat ready units are under 100 percent manned, every pilot counts. Similar manning savings will occur in the support specialties as well. For example, the as the maintenance function is consolidated, various redundant Army, Navy, Air Force, and Marine specialist billets are eliminated, thus releasing critical personnel to fill other warfighting unit needs. Ultimately, enhancements in total service readiness and warfighting capability are the result this consolidation of personnel. The third manning issue this joint unit addresses is the potential political perception of having service specific customers being supported by same service aircrews. Interservice concerns delicately surround the SAM fleet's role in supporting our national leaders. Ensuring each service plays a role in the future SAM unit is crucial to suppressing the perception that any one service is infringing on the mission of a sister service. Making this a joint unit is the only way to satisfy this concern. In addition to the manning savings from consolidating all SAM assets into one joint organization, building an associate arrangement with the DC ANG's 201 AS will accentuate manpower savings. Their crews and maintainers would qualify in the C-32 and C-20 and augment the active duty joint

organization at every level. Since their C-22 aircraft are being retired in 1998, this squadron is ideally suited for this transition, making this a total force team.

The implementation of this joint force SAM operation should occur in two phases. In Phase 1, the JSAMC should stand up and assume its primary C2 mission. Concurrently, the Andrews-based Army and Navy units would begin combining assets and initiate standardized training programs. By the end of Phase 1, which coincides with the arrival of the four C-32s, all CONUS- based CINC support aircraft and the C-22s would be excessed or retired. Table 5 depicts this fleet with the resultant 23, 26, and 38 percent decrease in total crew manning, total aircraft, and total MDS respectively. Additionally, elimination of approximately 150 maintenance and administrative support positions occur as a result of the service and CINC support detachments closing. The estimated completion time frame for Phase 1 is FY 98-2.

Table 5. Aircraft Inventory Reduction

1996 CONUS INVENTORY				
TYPE	**NUMBER**	**CREW RATIO**	**CREW NBR**	**TOTAL CREW**
C-137	6	1.5	15	135
C-9C	3	2	8	48
C-20H-type (G-IV)	3	2	4	24
C-20B-type (G-III)	8	2	4	64
T-43	1	2	6	12
C-22	4	2	8	64
EC-135	2	2	6	24
KC-135	1	2	6	12
TOTAL	28			383

PHASE 1				
TYPE	**NUMBER**	**CREW RATIO**	**CREW NBR**	**TOTAL CREW**
C-32	4	2	8	64
C-137C	4	1.5	15	90
C-9C	3	2	8	48
C-20H-type (G-IV)	3	2	4	24
C-20B-type (G-III)	6	2	4	48
TOTAL	20			274
28% CREW REDUCTION		**38% MDS REDUCTION**		
28% AIRCRAFT REDUCTION				

PHASE 2				
TYPE	**NUMBER**	**CREW RATIO**	**CREW NBR**	**TOTAL CREW**
C-32	8	2	9	144
C-20H-type (G-IV)	12	2	4	96
TOTAL	20			240
37% CREW REDUCTION			**75% MDS REDUCTION**	
28% AIRCRAFT REDUCTION				

From this point on, all SAM operations will operate as described throughout this chapter while the Phase 2 transition takes place. Phase 2 is the modernization phase for the fleet. Throughout this phase, standardization of the fleet is the overarching concern. More than likely, aircraft procurement will not occur in lump packages like the four C-32s. This mandates that the ad hoc procurement process be carefully monitored to ensure the end state of just two MDS aircraft. Given the politically driven past of this process,

this will be the most challenging part of this phase. However, drawing down to this two MDS fleet is only part of the standardization process. The second part is to ensure standardization of internal configurations. For example, after the initial four C-32s are delivered, all additional C-32s must carry the same configuration. Likewise, in the C-20H fleet, the current four aircraft must be modified to the same configuration which, in turn, will serve as the standard for future procurement. Depending on funding availability, the target completion date for Phase 2 is 2003, to coincide with the worldwide ICAO implement date of the Stage III noise restrictions. Again, Table 5 depicts the resultant fleet and identifies the 32, 26, and 75 percent overall decrease in aircrew manning, aircraft, and MDS decrease from the 1996 fleet.

In addition to these reductions, the joint, consolidated unit significantly affects future SAM fleet acquisitions required in Phase 2. Although any modernization plan is costly, it is substantially lower than the one-for-one replacement that will occur if we remain structured like the status quo. To fully see this, we must look at the most pressing modernization program and how it effects the current and future fleet. This program is the C-137 replacement program which will provide the initial four C-32s. The second part of this replacement program provides for the additional acquisition of two small VC-X (smaller than the C-32) aircraft. The requirements for these aircraft are currently under review, with source selection slated for FY 97-2. In keeping a focus on the two MDS end state SAM fleet, the ideal aircraft for the small VC-X is the C-20H. Therefore, at the end of Phase 1, the Air Force would actually provide four of eight C-32s, and four of twelve C-20Hs. Combined with each of the Army's C-20H-type aircraft, almost half of the Phase

2 fleet will already be in place (vice four listed in Table 5). Table 6 demonstrates the estimated total cost savings of Phase 2 compared to replacing the entire fleet.

Table 6. Aircraft Replacement Costs

ACFT (REPLACEMENT)	NBR	COST/ACFT	TOTAL ($ M)
C-9 (C-32-TYPE)	3	64	192
C-20 (C-20H-TYPE)	8	30	240
C-22 (C-32-TYPE)	4	64	256
K/EC-135 (C-32-TYPE)	3	64	192
TOTAL	18		880

ACFT	NBR	COST/ACFT	TOTAL ($ M)
C-32	4	64	256
C-20	7	30	210
TOTAL	11		466

Note: C-32 cost estimated from commercial Boeing 757 cost sheet, C-20 cost estimated from Jane's "green" aircraft cost

Source: Air Force Selects Boeing 757 for Special Air Missions News Release (http://www.boeing.com/news.release.960808.html) 8 August 1996. And Paul Jackson, ed., *Jane's All the World's Aircraft* (Frome, United Kingdom: Butler and Tanner, Ltd, 1997), 609.

Finally, referring back to the logistics principles guideposts, this modernization plan ensures that an attainable, minimum level of airlift service would be available to all SAM customers. Likewise, with aircraft that meet current and future performance and pollution restrictions, this modernized fleet would provide sustained worldwide support for decades. Thus, based on joint doctrine and principles, this consolidation and modernization plan provides a firm framework for the future of SAM operations.

Notes

[1] Directions for Defense, the Roles and Missions Commission of the Armed Forces report to Congress, the Secretary of Defense, and the Chairman of the Joint Chiefs of Staff (Washington, D.C., Government Printing Office, May 24, 1995) Executive summary.

[2]George C. Wilson, "Tough Choices Loom for the Services," *Air Force Times*, January 20 1997, p. 14.

[3]James R. Locher, III, Taking Stock of Goldwater-Nichols, Joint Forces Quarterly, Autumn 1996, Number 13, p. 10.

[4]Joint Vision 2010 (Washington, D.C., Government Printing Office), i.

[5]Joint Pub 1, *Joint Warfare of the Armed Forces of the United States*, 10 January 1995, III-1.

[6]Joint Pub 4-0, *Doctrine for Logistic Support of Joint Operations*, 27 January 1995, II-2.

[7]Joint Pub 4-0, *Doctrine for Logistic Support of Joint Operations*, 27 January 1995, II-2.

Notes

[8]Engen, C.2.2 - C.2.3.

[9]National Military Strategy of the United States of America, (Washington, D.C., Government Printing Office, 1995) i.

[10]Joint History Office, The History of the Unified Command Plan, 1946-1993 (Joint Operations Coursebook, Air Command and Staff College) 51.

[11]Bishop, Robert D., Colonel, USAF, TRANSCOM briefing to ACSC, 4 Feb 97.

[12]Stephen Watkins, "Ship to Shore", *Air Force Times*, 19 August 1996, 13.

[13]Ibid., 13

Chapter 3

Conclusion

> *Simply to retain our effectiveness with less redundancy, we will meet to wring every ounce of capability from every available source. That outcome can only be accomplished through a more seamless integration of Service capabilities. To achieve this integration while conducting military operations, we must be fully joint: institutionally, organizationally, intellectually, and technically*
>
> —Joint Vision 2010[1]

The current fleet of SAM-type aircraft is a product of an ad hoc process that placed aircraft and units together to meet specific service and command needs. The 89 AW's aircraft were individually procured, primarily on a fallout funds basis. Numerous attempts to develop a plan that matches requirements with modernization have not come to fruition. These plans fell victim to the political reality of such a visible and unique fleet. Likewise, each of the services established its own detachments to fulfill a capability shortfall in executive air transportation for their most senior civilian and military leaders. At the same time, numerous other aircraft were extensively modified to fill the various CINC's travel needs throughout their AORs. The result is the 7 different CONUS organizations, each with its own command and control structure, flying 28 aircraft of 8 varying MDSs. Most of these aircraft are aging beyond their expected service life and will require extensive modifications or outright replacement to operate and comply with 21st century aviation

requirements. In a time of ever decreasing defense budgets, alternatives must be reviewed for this fleet to continue to support our national strategy of engagement and enlargement.

Consolidation, at every level, is mandatory to make this fleet efficient and supportable. The result of this consolidation effort would be the creation of one joint organization to support the CONUS generated SAM missions, and establishment of clear command and control authority with USTRANSCOM. Further, it reduces the number of aircraft, MDS, and aircrew by 28, 71, and 37 percent respectively. This, in turn, simplifies the logistics structure and reduces overall supporting manpower requirements. Through this consolidation, an efficient fleet emerges that readily supports all current and future customers.

Throughout history, a direct link between the SAM fleet and US national and military interests has emerged. As we approach the 21st century, the need for this mission is as great as ever. Capitalizing on the shifting parochial paradigms, the future of SAMs lies in joint operations.

Notes

[1] Joint Vision 2010, 6.

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