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Fact Sheet for Congressional Requesters

April 1987

AIRCRAFT BASING

Decision to Base Navy TACAMO Aircraft at Tinker Air Force Base, Oklahoma

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National Security and
International Affairs Division

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April 3, 1987

The Honorable Dale Bumpers
The Honorable David Pryor
The Honorable James Sasser
United States Senate

On October 8, 1986, you requested that we review the Navy's decision to base its new E-6A TACAMO (Take Charge and Move Out) aircraft at Tinker Air Force Base, Oklahoma. You asked that our review cover the factors considered by the Navy in deciding to base these aircraft at Tinker, including expected costs.

This fact sheet summarizes information provided to your offices on January 30, 1987 (see app. I).

BACKGROUND

TACAMO aircraft provide emergency communications with ballistic missile firing submarines. At least one aircraft operates over the Atlantic Ocean and another over the Pacific Ocean at all times. Currently, 18 EC-130 TACAMO aircraft are assigned to two squadrons. The Atlantic squadron is based at Patuxent River, Maryland, and the Pacific squadron is based at Barbers Point, Hawaii.

The E-6A is presently in development and will replace the EC-130. A prototype was delivered in December 1986. Fourteen operational E-6As are to be delivered in 1989 and 1990. The E-6A is a derivative of the Boeing 707-320 commercial aircraft and will use a version of the commercial CFM-56 jet engine. Most of the EC-130 avionics equipment will be removed, refurbished, and installed aboard the E-6As. In the mid-1990s, this equipment will be upgraded or replaced.

EVENTS LEADING TO THE
E-6A BASING DECISION

The E-6A TACAMOs were originally expected to be based at the same locations as the EC-130s. However, in January 1986 the Secretary of the Navy directed the Chief of Naval Operations to

> "take immediate action to arrange for Air Force to provide required hangars and facilities to support TACAMO operations from the CONUS [continental United States . This plan will eliminate the requirement for MILCON [Military Construction funding and should be no more expensive to operate and maintain than if the Navy was to provide this support."

The Airborne Strategic Communications Project Office (PMA-271) in the Naval Air Systems Command is responsible for executing the Secretary's January 1986 guidance. The Office of the Assistant Secretary of the Navy for Shipbuilding and Logistics directed the project manager to find a single Air Force base near the middle of CONUS for both E-6A squadrons. According to the project manager and the Office of the Assistant Secretary, such basing offered various operational advantages, including reduced vulnerability to enemy attack and reduced family separation.

The Air Force developed a list of 20 bases for consideration. The Navy narrowed this list to seven and a joint Navy/Air Force team performed preliminary site surveys of these seven bases from April 22 through May 9, 1986, to determine which facilities were available (e.g., whether there were spare hangars and space for administrative and training purposes).

The Navy concluded that Little Rock was the best candidate for E-6A TACAMO basing, followed by Dyess Air Force Base, Abilene, Texas. The Navy favored Little Rock because a Titan missile wing at that location was being deactivated. However, none of the bases, including Little Rock, had spare hangars with maintenance facilities.

Tinker Air Force Base was not among those suggested by the Air Force; however, the Navy advised us that it had informally discussed the possibility of basing its E-6As at Tinker with the Air Force before the Secretary's

January 1986 memorandum to the Chief of Naval Operations. The Air Force had advised the Navy that Tinker had no available facilities.

An official in the Office of the Assistant Secretary of the Navy for Shipbuilding and Logistics told us that Tinker offers operational advantages. The Air Force bases its E-3A Airborne Warning and Control System aircraft there, which, like the Navy's E-6As, are derivatives of the Boeing 707. Tinker is also where the Air Force performs depot-level maintenance of the E-3As and the F108 engines. These F108 engines are similar, though not identical, to the Navy's CFM-56 engines.

This official indicated that it seemed logical to use Tinker. Accordingly, he directed the E-6A project manager to perform a site survey even though the Air Force had not offered it as a candidate base.

A preliminary site survey was performed from July 15 through 16, 1986. The site survey team found that there were no excess buildings or hangars. It concluded, however, that it would be possible to acquire an adjacent 56-acre tract of land, which would be suitable for hangars and other facilities.

On October 1, 1986, the Secretary of the Navy requested the Secretary of Defense's permission to base the E-6As at Tinker. Approval has not been formally granted. However, the Deputy Secretary of Defense indicated in an October 6, 1986, letter to Representative Mickey Edwards that the Navy's recommendation had his approval.

During the week of November 17, 1986, the Navy performed a second, more detailed site survey at Tinker that confirmed that there were no excess facilities.

NAVY'S REASONS FOR DECISION TO BASE E-6As AT TINKER

The estimated cost to construct necessary facilities at Tinker is $107.2 million, whereas the estimated cost for Little Rock is $29.3 million.[1] However, the Navy believes that, over time, the savings in logistics

[1]Changes to these estimates are discussed on pages 5 and 6.

support will substantially exceed the increased initial costs. The project office compared the life-cycle costs for using each base over a period of 30 years. This showed that, excluding the cost of temporary basing, the life-cycle cost was $318.3 million for Tinker as opposed to $364.3 million for Little Rock. Thus, Tinker would cost $46 million, or 12.6 percent, less than Little Rock.

The Navy attaches equal importance to the belief that there is an unquantifiable "synergetic" benefit in basing at Tinker. Tinker is where the Air Force has aircrews and maintenance technicians experienced with operating and maintaining similar type aircraft and engines. The Navy believes basing the E-6As at Tinker will permit the exchange of experiences between Air Force and Navy aircrews and allow the Navy to draw on the expertise of Air Force maintenance technicians to solve problems.

We were unable to verify cost estimates comparing Tinker and Little Rock due to a lack of supporting data. We found that they had been based extensively on judgment and conversations with base personnel. Moreover, the cost comparison did not consider the time value of money. To compare two or more cost alternatives on an equal economic basis, it is necessary to consider each cost at its discounted or present value. This recognizes that money has earning power or alternative uses over time. In choosing a time value of money, we examined the current returns on government securities and adjusted these returns for estimated inflation over the life of the project. We had to adjust for inflation because the Navy's cost figures did not include any price increases due to inflation. We decided to use a range of discount rates--from 3 to 5 percent.

For the purposes of making such an analysis, we assumed that the investment costs would occur over 5 years and that the E-6As would be maintained for 30 years. Using these assumptions and a 5-percent discount rate, we found the cost advantage from basing at Tinker, rather than at Little Rock, would be about $10 million, rather than the $46 million initially calculated by the project office. Using a 3-percent discount rate, the estimated cost advantage from basing at Tinker, rather than at Little Rock, would be about $20 million.

OTHER MATTERS OF INTEREST

Basing the E-6As at any location in the middle of the continent may cause the Navy to have to buy a 16th aircraft, costing $60 million.

The Air Force has proposed Little Rock Air Force Base as a "rail garrison" candidate site for stationing a quantity of MX (Peacekeeper) missiles. Basing MX missiles at Little Rock would reduce the feasibility of having E-6As there.

VIEWS OF AGENCY OFFICIALS

Officials of the Office of the Secretary of Defense and Air Force agreed with the information presented in this report; however, Navy officials offered additional information for our consideration relative to the costs of basing at Tinker versus Little Rock.

The Navy advised that it now believes the cost of facilities at Little Rock would be $55.3 million, rather than $29.3 million. This change is not supported by a formal cost study, and the Navy has not revisited Little Rock to perform a second site survey. Part of the difference between the two estimates is attributable to the fact that subsequent to the Navy's decision to base the E-6As at Tinker, the Army obtained permission from the Air Force to station a unit of about 300 Army personnel at Little Rock. This unit will utilize some of the excess space that was available at Little Rock; therefore, more construction would be required than was previously estimated.

The rest of the difference between the $55.3 million and the $29.3 million is attributable to a further analysis by the Navy--primarily of the costs required to build hangars equal in size and capabilities to those included in the facilities cost estimate for Tinker.

The Navy has also concluded that construction of military family housing at Tinker is not required. Elimination of military family housing reduces the facilities cost estimate for Tinker by $18.3 million. Also, the Navy has concluded that improvements to the officers club and the gymnasium facility estimated to cost $3.4 million are not essential. Subtraction of these amounts from the Tinker facilities estimate of $107.2 million reduces it to $85.5 million.

Furthermore, the Navy advised that as of March 16, 1987, it and the Air Force were still studying the possibility that certain facilities at Tinker may be underutilized or excess and consequently available for use by the Navy. To the extent such facilities are found, the facilities cost estimate for Tinker may be reduced further.

In addition, the Navy believes it will be possible to achieve further savings of approximately $16 million from basing at Tinker by being able to make a smaller initial investment in spare parts than previously anticipated. The Navy believes it can achieve these savings by relying on Air Force inventories. Achieving these savings will apparently be dependent on obtaining the concurrence of the contractor that will initially provide maintenance support for the E-6As since this contractor will be asked to guarantee a certain level of aircraft readiness. Thus, the contractor will have to rely on Air Force inventories. The Navy believes that obtaining contractor concurrence will not be a problem. Expected savings on replenishment spare parts are included in the life-cycle cost estimate.

The Navy now estimates the total life-cycle cost advantage of basing at Tinker, rather than at Little Rock, as being $70 million. We discounted this figure to present value using a 5-percent rate and found it to be $32 million. Using a 3-percent rate, we found it to be $43 million. In making these calculations we assumed the investment for initial spares would be made over 3 years.

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We did not address the issue of vulnerability to enemy attack or other operational considerations that may have entered into the Navy's decision to base the E-6As in mid-CONUS. In performing our work, we obtained information from officials of the following offices:

--Project Manager, Airborne Strategic Communications, Naval Air Systems Command;

--Assistant Secretary of the Navy (Shipbuilding and Logistics);

--Director, Space, Command and Control, Chief of Naval Operations;

--Deputy Chief of Staff, Programs and Resources, U.S. Air Force; and

--the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence).

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this fact sheet until 7 days from its date. At that time we will send copies to interested parties and make copies available to others on request.

If you have any questions please contact me at 275-6504.

John Landicho
Senior Associate Director

APPENDIX I

NAVY'S DECISION TO BASE E-6A TACAMO AIRCRAFT AT TINKER AIR FORCE BASE OKLAHOMA CITY, OKLAHOMA

WHAT WAS THE REVIEW OBJECTIVE?

-- LETTER DATED OCTOBER 8, 1986, FROM SENATORS PRYOR, BUMPERS, AND SASSER ASKED THAT WE REVIEW THE FACTORS CONSIDERED BY THE NAVY IN DECIDING ON TINKER BASING, INCLUDING EXPECTED COSTS.

HOW WAS THE REVIEW CARRIED OUT?

-- INFORMATION OBTAINED FROM THE E-6A PROJECT OFFICE, THE OFFICES OF THE SECRETARY OF THE NAVY AND THE CHIEF OF NAVAL OPERATIONS, THE OFFICE OF THE AIR FORCE CHIEF OF STAFF, AND THE OFFICE OF THE SECRETARY OF DEFENSE.

WHAT ARE TACAMOs? HOW ARE THEY USED AND WHAT IS THE STATUS OF THE E-6A TACAMO PROGRAM?

-- FINAL LINK IN CHAIN OF COMMUNICATIONS WITH BALLISTIC MISSILE FIRING SUBMARINES.

-- PRESENT TACAMO FLEET, COMPOSED OF 18 EC-130 AIRCRAFT, IS DIVIDED INTO TWO SQUADRONS. ONE IS BASED AT PATUXENT RIVER, MARYLAND, AND THE OTHER AT BARBERS POINT, HAWAII.

-- EC-130 AIRCRAFT TO BE REPLACED BY 15 E-6A AIRCRAFT.

-- E-6A IN ENGINEERING DEVELOPMENT; PROTOTYPE DELIVERED DECEMBER 1986; FIRST OPERATIONAL AIRCRAFT TO BE DELIVERED IN JANUARY 1989, LAST ONE IN NOVEMBER 1990.

-- E-6A AIRCRAFT TO BE DIVIDED INTO TWO SQUADRONS BASED AT TINKER AIR FORCE BASE, OKLAHOMA CITY, OKLAHOMA.

-- E-6A AND AIR FORCE E-3A DERIVED FROM THE BOEING 707-320 COMMERCIAL AIRCRAFT.

-- E-6A TO BE BIGGER, HAVE MORE RANGE, AND BE MORE MAINTAINABLE THAN THE EC-130.

-- MOST OF THE MISSION AVIONICS EQUIPMENT ABOARD THE EC-130 AIRCRAFT TO BE TAKEN OFF AND INSTALLED ON THE E-6A AIRCRAFT. THIS EQUIPMENT IS TO BE UPGRADED OR REPLACED IN THE 1990S.

WHAT WERE THE EVENTS LEADING TO THE E-6A BASING DECISION?

-- E-6A AIRCRAFT ORIGINALLY EXPECTED TO BE BASED WHERE EC-130 AIRCRAFT ARE LOCATED.

-- JANUARY 1986 SECRETARY OF THE NAVY MEMORANDUM DIRECTED THE CHIEF OF NAVAL OPERATIONS TO OBTAIN AIR FORCE BASING FACILITIES TO SAVE NAVY MILCON COSTS BUDGETED AT $66.8 MILLION; NOTHING SAID ABOUT ONE BASE IN MID-CONUS.

-- FOLLOWING JANUARY MEMORANDUM, E-6A PROJECT OFFICE DIRECTED BY OFFICE OF SECRETARY OF THE NAVY TO FIND ONE AIR FORCE BASE WITH MID-CONUS LOCATION FOR BOTH E-6A SQUADRONS. REDUCED VULNERABILITY AND LESS FAMILY SEPARATION.

-- AIR FORCE DEVELOPED LIST OF 20 MID-CONUS BASES. TINKER NOT INCLUDED. THE NAVY SELECTED 7 OF THE 20 BASES FOR SITE SURVEYS--LITTLE ROCK, WHITEMAN, BLYTHEVILLE, GRISSON, ELLSWORTH, DYESS, AND OFFUTT.

-- PRELIMINARY SITE SURVEYS CONDUCTED BY NAVY/AIR FORCE FROM APRIL 22 THROUGH MAY 9, 1986. LITTLE ROCK DEEMED MOST SUITABLE, FOLLOWED BY DYESS. LITTLE ROCK FAVORED BECAUSE OF EXCESS SPACE.

- FACILITIES COST ESTIMATE: LITTLE ROCK $24.7 MILLION, DYESS $34.8 MILLION, AND MEMPHIS NAVAL AIR STATION $54 MILLION.

-- FOLLOWING SITE SURVEYS, PROJECT OFFICE DIRECTED TO PERFORM PRELIMINARY SITE SURVEY AT TINKER EVEN THOUGH AIR FORCE HAD NOT OFFERED IT. NAVY BELIEVED TINKER HAD ADVANTAGES RESULTING FROM BEING DEPOT FOR E-3A AIRFRAMES AND CFM-56 ENGINES. NAVY HAD ASKED ABOUT TINKER BEFORE.

-- PRELIMINARY SITE SURVEY AT TINKER MADE BY NAVY/AIR FORCE JULY 15-16, 1986. SURVEY FOUND NO EXCESS FACILITIES AT TINKER. NECESSARY TO ACQUIRE 56 ACRES OF LAND TO CONSTRUCT REQUIRED FACILITIES.

- FACILITIES COST ESTIMATE FOR TINKER WAS $65.2 MILLION. REVISED ESTIMATE FOR LITTLE ROCK WAS $29.3 MILLION.

-- MORE DETAILED SITE SURVEY PERFORMED BY NAVY/AIR FORCE FROM NOVEMBER 17 TO 21, 1986. EARLIER FINDINGS ON LACK OF EXCESS FACILITIES CONFIRMED.

-- LATEST FACILITIES COST ESTIMATE FOR TINKER IS $107.2 MILLION. LITTLE ROCK NOT RESURVEYED.

- MOVING COSTS OF $32 MILLION; ALSO VARIOUS OTHER COSTS AMOUNTING TO $23.9 MILLION.

- ENVIRONMENTAL ASSESSMENT REQUIRED.

<u>WHY WAS TINKER SELECTED FOR E-6A TACAMO BASING?</u>

-- ALTHOUGH INVESTMENT COSTS WERE HIGHER AT TINKER THAN THEY WERE AT LITTLE ROCK, THE NAVY BELIEVED RECURRING SAVINGS IN MAINTENANCE COSTS AT TINKER WOULD SURPASS HIGHER INVESTMENT COSTS.

- UNSUPPORTED LIFE-CYCLE COST STUDY SHOWED LITTLE ROCK INVESTMENT COSTS WOULD BE $38 MILLION LESS THAN TINKER.

THE STUDY SHOWED, HOWEVER, THAT OVER 30 YEARS, COSTS AT TINKER WOULD BE $46 MILLION LESS THAN THOSE AT LITTLE ROCK.

- GAO'S PRESENT VALUE ANALYSIS SHOWS SAVINGS OF ONLY $10 MILLION, ASSUMING 5-PERCENT DISCOUNT RATE, OR $20 MILLION, ASSUMING A 3-PERCENT RATE.

-- THE NAVY BELIEVES THERE IS AN UNQUANTIFIABLE SYNERGETIC EFFECT OF HAVING NAVY AND AIR FORCE AIRCREWS AND MAINTENANCE PERSONNEL COLLOCATED.

WHAT OTHER MATTERS OF INTEREST WERE NOTED IN THE REVIEW?

-- AN ARMY UNIT COMPOSED OF 300 PEOPLE WILL MOVE TO LITTLE ROCK. MIGHT LESSEN POSSIBILITY THAT LITTLE ROCK COULD BE USED FOR TACAMO MISSION. PRESS REPORT THAT FIRST GROUP OF STEALTH BOMBERS WILL GO TO WHITEMAN AIR FORCE BASE.

-- THE NAVY WANTS TO SAVE MONEY BY MOVING INTO TINKER BEFORE CONSTRUCTION IS COMPLETED IN 1992, DESPITE SITE SURVEYS THAT SHOW NO EXCESS FACILITIES ARE THERE. THE NAVY IS ALSO LIKELY TO TRY TO PUSH THE AIR FORCE TO FIND PERMANENT EXCESS SPACE AT TINKER TO REDUCE THE NAVY'S CONSTRUCTION COSTS. WHETHER THE NAVY WILL BE SUCCESSFUL IN OBTAINING EXCESS FACILITIES WILL DEPEND UPON THE ACTIONS THAT THE AIR FORCE TAKES.

-- BASING AT ANY MID-CONUS LOCATION MAY CAUSE THE NAVY TO HAVE TO BUY A 16TH E-6A, COSTING $60 MILLION.

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