089691 RESTRICTED --- Notto be released outside the General Accounting Office except on the basis of specific approval by the Office of Congressic jal Relations, a record of which is kept by the Distribution Section, Publications Branch, OAS

RELEASED

4:15.15 74-0334

Cost Of Stationing The 101st Airborne Division (Airmobile) In Georgia Rather than in Kentucky

133376

Department of the Army

BY THE COMPTROLLER GENERAL OF THE UNITED STATES



JAN. 28, 1974



COMPTROLLER GENERAL OF THE UNITED STATES WASHINGTON, D.C. 20548

B-133316

The Honorable Ronald Bo Ginn House of Representatives

Dear Mr. Ginn:

On March 21, 1973, you requested that we make a review to determine whether there would have been any savings to the Government if the Army had stationed the 101st Airborne Division (Airmobile) at Fort Stewart-Hunter Army Airfield, Georgia, rather than at Fort Campbell, Kentucky.

N 12

We reviewed the Army's estimates in the latest two division-stationing studies--the 1968 Division Stationing Analysis and the 1970 Long-range Stationing Plan for the Army (Boatwright report).

The cost of stationing an airmobile division at Stewart-Hunter was said to be greater by \$24 million (1968 study) and \$49 million (1970 study) than stationing such a division at Fort Campbell. We could not properly analyze the estimated costs or verify them because Army officials said the data supporting the estimates in the two studies could not be located.

However, we found that Fort Campbell did not meet the Army's essential criteria for range area, and the acreage required to meet the desirable criteria for maneuver areas has been met by obtaining permits for the use of privately owned or public land off post.

The House Appropriations Committee Surveys and Investigations Staff considered Stewart-Hunter to be the best possible airmobile post, whereas Fort Campbell would fill a short-term need only and would always be inferior in maneuver and range areas.

In accordance with discussions with your office, we have not requested written comments from the Department of Defense.

We do not plan to distribute this report further unless you agree or publicly announce its contents.

ncerely yours.

Comptroller General of the United States

Contents

Page

DIGEST 1 CHAPTER 1 INTRODUCTION 3 4 Stationing studies Division Stationing Analysis 4 5 Boatwright report 6 Scope 2 COST ESTIMATES FOR STATIONING AN AIRMOBILE 7 DIVISION Barracks, BOQs, etc. 8 Aircraft facilities 9 Acquisition of land 10 INCREASED COSTS FOR FAMILY HOUSING 3 11 4 MANEUVER AND RANGE AREAS 13 14 Maneuver areas 15 Ranges EXHIBIT Α Fort Campbell and Off-Post Maneuver Areas 17 APPENDIX Ι Letter from Congressman Ronald Bo Ginn, dated March 21, 1973 19 Excerpts from hearings on Military Construc-ΙI tion Appropriations for 1973 20 ABBREVIATIONS bachelor officer's quarters BOQ GAO General Accounting Office

TVA Tennessee Valley Authority

COMPTROLLER GENERAL'S REPORT TO THE HONORABLE RONALD BO GINN HOUSE OF REPRESENTATIVES COST OF STATIONING THE 101st AIRBORNE DIVISION (AIRMOBILE) IN GEORGIA RATHER THAN IN KENTUCKY Department of the Army B-133316

<u>DIGEST</u>

т

1

L

1

WHY THE REVIEW WAS MADE

Congressman Ginn asked GAO to make a cost analysis of the savings, if any, had the lolst Airborne Division (Airmobile) been located at Fort Stewart-Hunter Army Airfield, Georgia, rather than at Fort Campbell, Kentucky. The lolst was returned in April 1972 to Fort Campbell following service in Southeast Asia where it became an airmobile division (capability to deliver troops by helicopters). (See p. 3.)

FINDINGS AND CONCLUSIONS

Cost analysis

The 1968 and 1970 Army studies concluded that both Fort Campbell and Stewart-Hunter had good potential as airmobile stations but would need additional facilities. (See pp. 4 to 6.)

The 1968 study showed an estimated cost of \$129 million for the facilities to accommodate an airmobile division at Stewart-Hunter, or \$24 million more than the \$105 million estimated for Fort Campbell.

Major items of higher cost at Stewart-Hunter were family housing and other quarters, while major items of higher cost at Fort Campbell were land acquisition and aircraft facilities. (See p. 7.) The 1970 study presented estimated costs of \$184 million at Stewart-Hunter, or \$49 million more than the \$135 million at Fort Campbell.

The study showed that Stewart-Hunter needed \$69 million more than Fort Campbell, mainly for family housing and other quarters, while Fort Campbell needed \$20 million more than Stewart-Hunter for aircraft facilities but nothing for land. (See p. 8.)

According to Army officials, data supporting the Army's estimated costs to adapt Fort Campbell or Stewart-Hunter for stationing an airmobile division could not be located. GAO therefore could not properly analyze such costs or determine the savings, if any, had the lOlst Division been located at Stewart-Hunter rather than at Fort Campbell. (See p. 7.)

Due to policy changes in family housing eligibility since the 1970 study, additional family housing would be needed at whichever post the 101st Division was located. GAO estimates that the total cost of family housing would be about \$120 million at Fort Campbell and about \$155 million at Stewart-Hunter. (See pp. 11 and 12.)

Maneuver and range area requirements

Both Army studies considered

division-stationing criteria for maneuver area, range area, cantonment (administration, housing, maintenance, etc.) area, and airfield facilities. The 1970 study said that the Army considered maneuver and range areas to be the most important requirements and that Stewart-Hunter met both requirements. (See pp. 4 to 6.)

Comparison of the acreage of Fort Campbell with Army criteria shows that the on-post maneuver area meets essential, but not desirable, requirements whereas the range area is far below essential requirements. (See p. 13.)

Area	Crite	ria	Actual
	Essen-	Desir-	at Fort
	tial	<u>able</u>	<u>Campbell</u>
		(acres)	
Maneuver	55,000	137,000	69,000
Range	130,000	190,000	22,800

The 1970 study held that if maneuver rights were obtained on land owned by the Tennessee Valley Authority, Fort Campbell would provide sufficient area, even though additional aerial gunnery ranges would have to be constructed. (See p. 10.)

The 101st, as of June 1973, had permits to use various parcels of privately owned and public land totaling about 138,000 acres for maneuvers. (See p. 14 and exhibit A.)

The House Appropriations Committee Surveys and Investigations Staff

considered Stewart-Hunter to be the best possible airmobile post, whereas Fort Campbell would fill a short-term need only and would always be inferior in maneuver and range areas. (See p. 26.)

The Army, in its comments on a March 1972 staff report to the House Appropriations Committee, cited several factors for selecting Fort Campbell. The selection

--was based on longstanding plans,

--was reconfirmed by recent studies,

--met immediate requirements,

- --utilized cantonment facilities and housing already existing, and
- --minimized the short- and longrange investment costs at Fort Campbell.

The Army said that these factors weighed heavily in favor of Fort Campbell, despite the more expansive and less restricted range and maneuver areas at Stewart-Hunter, as indicated above. (See p. 3.)

GAO cannot predict the effect that restricted range and maneuver areas at Fort Campbell may have on training and future plans for the lolst Division. (See p. 15.)

Written comments on this report were not requested from the Department of Defense in accordance with discussions with the Congressman's office.

CHAPTER 1

INTRODUCTION

At the request of Congressman Ronald Bo Ginn, dated March 21, 1973, we made a study of the savings, if any, which would accrue if the 101st Airborne Division (Airmobile) had been located at Fort Stewart-Hunter Army Airfield, Georgia, rather than at Fort Campbell, Kentucky. (See app. I.)

In April 1950, the Army designated Fort Campbell as a permanent installation. From September 1956 to December 1967, the 101st Division was stationed at Fort Campbell. After being sent to Southeast Asia in December 1967, the division returned to Fort Campbell in April 1972. While in Southeast Asia, it was one of the units that developed the airmobile capability. (Currently the 101st Division is the only airmobile division.) This means that the division can deliver infantry to the battle zone by landing helicopters rather than by dropping the soldiers by parachute.

In comments on a report prepared by the House Committee on Appropriations Surveys and Investigations Staff in March 1972 (see app. II), the Army stated why it stationed the 101st Division at Fort Campbell. The selection

--was based on longstanding plans,

--was reconfirmed by recent studies,

--met immediate requirements,

- --utilized cantonment facilities and housing already existing, and
- --minimized short- and long-range investment costs at Fort Campbell.

The Army believed that these factors weighed heavily in favor of Fort Campbell, despite the more expansive and less restricted range and maneuver areas of the Stewart-Hunter complex. (See table on p. 13.)

The Army recognized that there were some limitations to the use of certain equipment at Fort Campbell, but the overall

evaluation of operational and economic factors clearly favored the selection of Fort Campbell in the Army's opinion.

STATIONING STUDIES

From 1961 to 1970 various studies were made of Army installations to identify which would be suited for the stationing of divisions. The two most recent studies, the Division Stationing Analysis of July 1968 and the Long-range Stationing Plan (Boatwright report) of November 1970, both identified Fort Campbell and Stewart-Hunter as potential division stations.

These studies, in addition to identifying installations suited for stationing a division, identified the types of divisions that could be stationed at each installation. They did not specifically identify which particular division should go to each installation.

Division Stationing Analysis

The purpose of this study made by the Office, Chief of Engineers, was to establish broad criteria for stationing Army divisions at various posts to facilitate the Army's long-range plans for the use of its real estate.

Two levels of criteria were set: essential--the minimum level utilizing temporary and permanent facilities--and desirable--the essential requirements plus those items needed to provide maximum efficiency and effectiveness. The criteria were divided into four major categories: training or maneuver areas, ranges, cantonments, and airfield facilities. Other factors, such as nuclear vulnerability and potential for obtaining maneuver rights, also affected the stationing plan.

The study also examined the potential of each installation to meet the above criteria for a permanent station for the various types of divisions--armored, infantry, mechanized, airborne, and airmobile. It also estimated costs related to the stationing of divisions at various installations.

The study concluded that Fort Campbell was well suited as an installation for stationing an infantry division and was marginally suited for stationing an airborne or airmobile division. It also concluded that Stewart-Hunter was marginally suited for stationing an infantry, airborne, or airmobile division. Regarding the potential of each installation and the

type of division an installation would be best suited for, the study considered Fort Campbell to have the potential to become an excellent infantry division station or a good airborne or airmobile division station. It also considered Stewart-Hunter to have the potential to become a good infantry, airborne, or airmobile division station.

The study showed that the major limitations to stationing an airmobile division at Fort Campbell were the need for (1) substantial construction of airfield facilities and (2) large land acquisition for aerial gunnery ranges and maneuver areas. The major limitation cited for the use of Stewart-Hunter as an airmobile station was insufficient housing (included under cantonment facilities).

Boatwright report

In 1969 and 1970, a group headed by Major General Linton Boatwright conducted a study of Army installations to devise a long-range stationing plan. The report was issued in November 1970. However, Army representatives told us the report had not been approved by the Army and therefore it is not an official Army document and should not be regarded as expressing the official Army position on the subject matter covered.

Again, the criteria were broken down into categories of installation capabilities: maneuver areas, ranges, cantonment areas, and airfields. The report stated that, although difficult to assess, maneuver areas and range capabilities were the most important considerations.

The report showed that Fort Campbell had good potential as an airmobile station. The major limitation cited by the report was a lack of adequate aviation facilities. Although not so stated in the report, a deficiency of range area at Fort Campbell was recognized. The report noted that, as long as use permits for land owned by the Tennessee Valley Authority (TVA) west of the post could be obtained, additional land acquisition could not be justified.

The report concluded that Stewart-Hunter had more potential as an airmobile division station than any other post in the Army inventory. Major limitations at Stewart-Hunter were the lack of troop housing and family quarters. The report

stated that Stewart-Hunter should be programed for long-range expansion and improvement of housing to enable it to become a division post and use its superior potential.

More specific information on the two studies is contained in the following chapters.

SCOPE

We reviewed the Division Stationing Analysis (July 1968), the Long-range Stationing Plan for the Army (Boatwright report, Nov. 1970), and other documents related to the stationing of the 101st Division. We discussed the Army's actions with officials at Army Headquarters, Washington, D.C., and at Fort Campbell.

CHAPTER 2

COST ESTIMATES FOR STATIONING AN AIRMOBILE DIVISION

The 1968 and 1970 Army studies showed that the estimated cost of stationing an airmobile division at Stewart-Hunter was greater by \$24 and \$49 million, respectively, than stationing such a division at Fort Campbell. Neither study attempted to arrive at the exact cost of stationing a unit and neither contained any estimates of operating costs. The 1970 study regarded the estimates as realistic figures which were useful in comparing relative costs of various posts. We were unable to obtain adequate supporting information to verify the accuracy of the estimates because Army officials advised us that they could not locate the backup workpapers. We did, however, compare the estimates in each study and noted the major differences.

The 1968 Division Stationing Analysis showed the following estimates for stationing an airmobile division.

	Estimated costs		Stewart- Hunter
	Fort	Stewart-	higher or
<u>Cost area</u>	Campbell	Hunter	<u>lower(_</u>)
		_(millions)	
Station echelon (notes a, b) Organizational support	\$ 41.3	\$ 40.3	\$_1.0
(note a)	17.0	19.5	2.5
Barracks, BOQs, etc. (notes			
a,c)	27.7	42.6	14.9
Family housing (note a)	-	24.3	24.3
Aircraft facilities	7.4	2.7	-4.7
Acquisition of land	12.0		_12.0
Total	\$ <u>105.4</u>	\$ <u>129.4</u>	<u>24.0</u>

^aThese items make up the cantonment area.

^bBasically those costs related solely to post strength regardless of mission, such as facilities for the post headquarters, provost marshal, and post engineer.

^CBachelor officer quarters (BOQ).

The 1970 Boatwright report showed the following estimates.

	Estimated costs		Stewart- Hunter	
	Fort	Stewart-	higher or	
<u>Cost area</u>	<u>Campbell</u>	Hunter	<u>lower(_</u>)	
		-(millions)-		
Station echelon Organizational support	\$ 59.6 17.8	\$ 61.7 25.6	\$ 2.1 7.8	
Barracks, BOQs, etc.	37.5	59.1	21.6	
Family housing	-	38.0	38.0	
Aircraft facilities	20.2	-	-20.2	
Acquisition of land			-	
Total	\$ <u>135.1</u>	\$ <u>184.4</u>	\$ <u>49.3</u>	

BARRACKS, BOQs, ETC.

As shown in the following table, Fort Campbell had enough permanent barracks spaces for enlisted personnel to meet the requirement but not enough permanent BOQ spaces. Stewart-Hunter was short of required permanent barracks and BOQ spaces by about 10,000 and 270, respectively.

	Enlisted men's <u>barracks</u>	BOQs
	(number of spa	aces)
Requirement Fort Campbell:	14,000	320
Permanent	14,377	110
Temporary	13,997	553
Total available	a <u>28,374</u>	<u>663</u>
Stewart-Hunter:		
Permanent	3,830	54
Temporary	1,673	164
Total available	b <u>5,503</u>	<u>218</u>

 $a_{2,052}$ barracks spaces had been diverted for other uses. b_{630} barracks spaces had been diverted for other uses.

According to Army officials, the cost estimates in the Boatwright report for Fort Campbell were for modernization of existing barracks and BOQs and for the construction of additional BOQs. At Stewart-Hunter the estimates were for modernization of existing structures and the construction of additional barracks and BOQs.

- - -

The estimates for family housing are discussed in the following chapter.

AIRCRAFT FACILITIES

The 1968 Division Stationing Analysis showed that, to meet the criteria used, Stewart-Hunter needed about 130,000 square feet of additional aircraft maintenance facilities estimated to cost \$2.7 million. At Fort Campbell, three times that amount (394,000 square feet) of aircraft maintenance facilities would be required together with about 327,000 square yards of parking aprons.

As shown in the following table and according to the Boatwright report, Stewart-Hunter met the requirements for parking aprons and maintenance facilities; however, Fort Campbell did not.

Aircraft facility requirements		Existing assets		
		Fort Campbell	Stewart-Hunter	
Parking aprons				
(sq. yds.)	432,000	211,000	1,923,000	
Maintenance facili- ties (sq. ft.)	405,000	127,000	405,000	

The Boatwright report estimated that aircraft facilities needed at Fort Campbell would cost about \$20.2 million. Subsequent to the report and over the last 3 years, the Army requested about \$25.4 million for the construction of those facilities at Fort Campbell. If the amount the Army requested is adjusted for the inflation that has occurred since the Boatwright report, the \$25.4 million would be reduced to about \$20 million.

ACQUISITION OF LAND

The estimate for Fort Campbell in the 1968 Division Stationing Analysis showed \$12 million for the acquisition of about 89,000 acres of additional land to meet the desirable requirement for maneuver areas and ranges.

According to the study, the Stewart-Hunter complex had about 285,000 acres under Army control with 100,000 acres for maneuvers. The study stated that this was the only post east of the Mississippi where both tank firing and aerial gunnery ranges were available so that practice with each type weapon could be carried on simultaneously.

The Boatwright report did not contain an estimate for the acquisition of additional land at Fort Campbell. Regarding real estate, it stated:

"To provide sufficient land on the reservation to construct additional aerial gunnery ranges and provide maneuver area for an airmobile division would require the acquisition of a minimum of 45,000 acres. * * * As mentioned previously * * * if maneuver rights are obtained on the TVAowned land west of the Cumberland River, the post will provide sufficient area even though additional aerial gunnery ranges must be constructed."

If it were necessary to acquire additional land at Fort Campbell, this could add significantly to the cost of stationing an airmobile division there. For further discussion on the maneuver and range areas see chapter 4.

CHAPTER 3

INCREASED COSTS FOR FAMILY HOUSING

The Boatwright report stated that Fort Campbell had 2,856 housing units available and that no additional on-post housing construction was required. The report stated that Stewart-Hunter had 1,219 units on post and needed about 1,800 additional units costing \$38 million in order to have adequate family housing for an airmobile division.

Subsequent to the Boatwright report, the Department of Defense notified the Army that it could, for program purposes, include all Grade E-4 enlisted men in computing requirements for family housing. The Army incorporated this change into its regulation on requirements for family housing in August 1972.

In March 1972, during hearings on the fiscal year 1973 Military Construction Appropriation, the House Appropriations Committee Surveys and Investigations Staff submitted to the Subcommittee on Military Construction a report concerning the decision as to where to station the 101st Division. (See app. II.)

Army officials stressed in their statements to the investigations staff early in 1972 that Fort Campbell was chosen over Stewart-Hunter because of the latter's need for greater initial investment in family housing, barracks, and other personnel accommodations for the division.

The staff report stated that an official in the office of the post engineer at Fort Campbell had advised them that a housing survey was being made and a deficiency might be found. When the installation's survey report was issued in August 1972, it showed a family housing deficit of about 4,400 units, due mainly to the inclusion of all E-4s in the requirements. We estimate that the costs to meet this family housing deficit at Fort Campbell will be \$120 million.

We estimate that the cost of family housing at Stewart-Hunter would also have increased because of two factors. First the cost of the additional 1,800 units in the Boatwright report would increase due to inflation from \$38 to

\$50 million. Second, because of the change in eligibility outlined above, Stewart-Hunter would require an additional 4,100 family housing units. A housing survey made subsequent to the Boatwright report shows that some of this deficit could be met by off-post housing. For the remaining deficit, we estimate that about 3,800 additional units at a cost of \$105.8 million would have to be constructed on post. Thus the total cost for family housing at Stewart-Hunter would be about \$155 million.

CHAPTER 4

MANEUVER AND RANGE AREAS

The Army testified before the Subcommittee on the Department of Defense, House Committee on Appropriations, in April 1973, that the criteria to determine which bases and activities should be consolidated, reduced, realigned, or closed provided for maximum use of existing Government facilities with minimum expenditures for new facilities. The installation capabilities of prime concern in base realignment actions vary with the mission under consideration. For combat and combat-support units, adequate firing ranges and maneuver areas are an important requirement. Also availability of housing (bachelor and family) is a significant element to consider.

As previously noted, the Army decided to station the 101st Division at Fort Campbell in order to use existing facilities and thereby minimize immediate investment costs. The Army felt that this outweighed the disadvantages imposed by maneuver and range area restrictions at Fort Campbell.

The acres available for maneuver and range areas at Fort Campbell and Stewart-Hunter in relation to the acreage requirements are shown in the following table. The Army furnished these requirements for an airmobile division to the Subcommittee on Military Construction, House Committee on Appropriations, early in 1972.

	Requirements		Fort	Stewart-
	<u>Essential</u>	Desirable	Campbell	Hunter
		(acres)		
Maneuver areas Range area	55,000 130,000	137,000 ^a 190,000	69,023 22,809	150,000 (b)

^aNot furnished to the Subcommittee by the Army, but set forth in Army Regulation 210-21, dated Nov. 18, 1968.

^bBoth the Division Stationing Analysis and the Boatwright report indicated that the available range area was adequate.

MANEUVER AREAS

Before the 101st Division went to Southeast Asia in December 1967, the division had short-term maneuver permits for nonexclusive use of about 200,000 acres of TVA land in the Fort Campbell area. (See exhibit A.) No consideration was paid, and division-size maneuvers were conducted in 1966 and 1967. The Boatwright report stated that the 200,000 acres would still be available through a use permit for division maneuvers. Also there were about 45,000 acres west of the reservation which were privately owned and had been contemplated for lease at one time.

Early in 1972, the Army provided the above information to the House Appropriations Survey and Investigations Staff. A TVA official told us, however, that TVA had received authority to develop a recreation project on its land and by 1970 the development and use of property were such that he believed that the Army could not have had use of it since 1970. In addition, he said the privately owned property around the project is being developed for recreational purposes and may not be available to the Army through use permits.

Although the 200,000 acres of TVA land between the lakes may not be available, the Army apparently has access to enough total acreage to perform maneuvers. As of June 1973, the 101st Division had about 138,000 acres of off-post land in the Fort Campbell area available for maneuvers. Use of this land had been obtained without cost through permits with private owners and by permits on parcels of public land. (See exhibit A.) Arrangements have been made with several of the private owners for 5-year permits to use about 90,000 acres of land through June 1978.

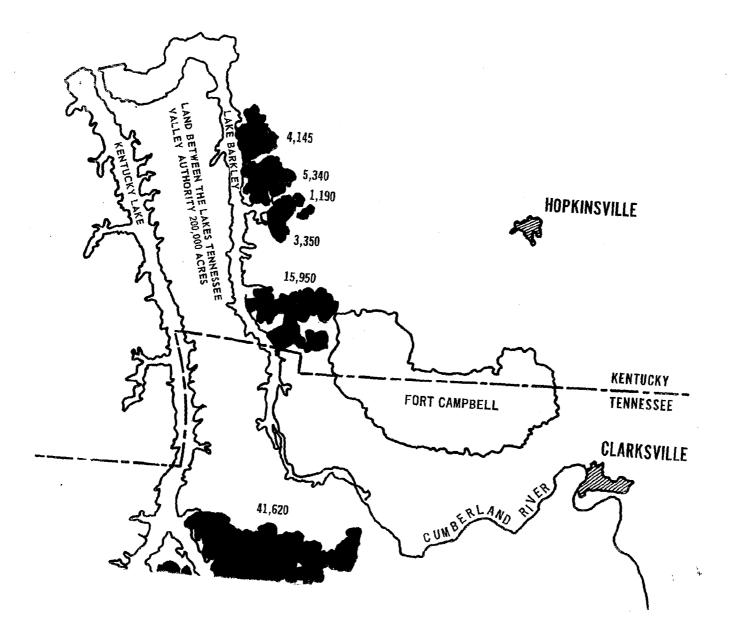
In examining a typical permit for the use of properties through 1978, we found that the Government has to notify the owner, in writing, at least 20 days before the use period, stating the period of use and brief information concerning the exercises. After such notice the owner may decline the use of land for that period by giving 10 days' notice, in writing, to the Government. In addition, the owner or the Government may cancel the entire permit at any time by giving at least 7 days' notice, in writing, to the other party. The permit does not allow for the use of tanks or live ammunition on the property. Stewart-Hunter has adequate maneuver areas according to the Boatwright report.

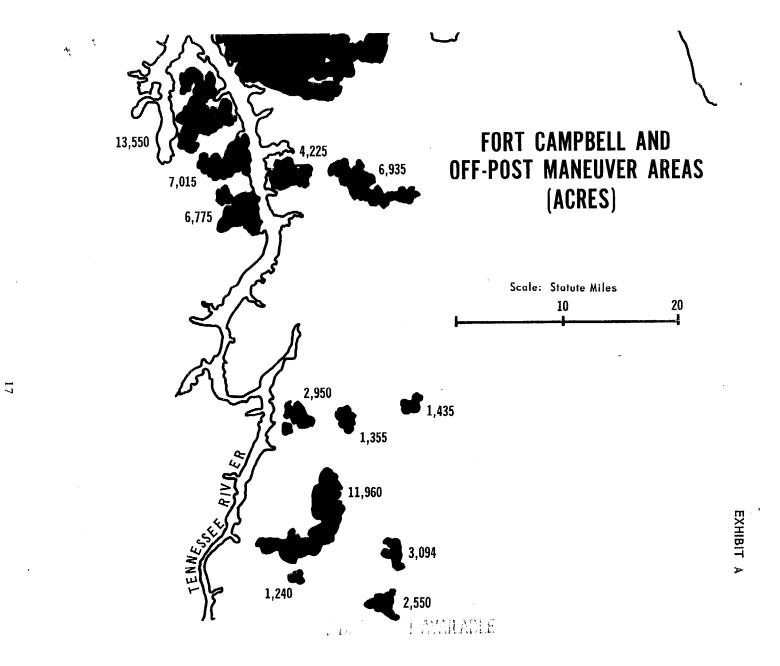
RANGES

Because Fort Campbell has only 105,000 acres, it is impossible for it to meet the criteria for ranges (130,000 acres for an airmobile division). Fort Campbell only has 22,809 acres available for impact areas, although Army regulations recommend an impact area of 65,000 acres in the range requirements.

The Division Stationing Analysis and the Boatwright report indicated that available range areas at Stewart-Hunter were adequate.

We cannot predict the effect that restricted range and maneuver areas at Fort Campbell may have on training and future plans for the 101st Division.





RONALD BO GINN

508 CANNON BUILDING 202-225-5831

APPENDIX I

COMMITTEES: PUBLIC WORKS MERCHANT MARINE AND FISHERIES

Congress of the United States House of Representatives

Washington, D.C. 20515

March 21, 1973

Honorable Elmer Staats Comptroller General of the United States Room 7000 General Accounting Office 441 G Street, N.W. Washington, D. C. 20548

Dear Mr. Staats:

It has come to my attention that an investigation commissioned by the House Appropriations Committee last year indicated that the Army is being forced to spend several million dollars in renovation costs to accomodate the 101st Airborne Division at Ft. Campbell, Kentucky, upon the unit's return from Vietnam. This report further states that the 101st could have been located at the Hunter Army Air Field-Ft. Stewart complex at a great savings because of its extensive runway facilities which are compatible with the 101st's new airmobile role.

Additionally, I note that the commander of Ft. Campbell has recently appealed for help in finding housing for military personnel at Ft. Campbell and that this housing shortage is working a hardship on personnel at the base.

The Army has indicated that it believes the decision to locate the lolst at Ft. Campbell was fully justified.

In the light of the serious questions raised by the official House report, I would like to request that you conduct a cost-analysis study of the comparative savings, if any, that would have accrued to the Federal Government if the lolst had been located at the Hunter-Stewart complex.

As a matter of information, I am enclosing two news articles that relate to this issue.

With kindest regards, I am

Sincerely,

Enclosures

MILITARY CONSTRUCTION APPROPRIATIONS FOR 1973

HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

NINETY-SECOND CONGRESS

SECOND SESSION

SUBCOMMITTEE ON MILITARY CONSTRUCTION APPROPRIATIONS

ROBERT L. F. SIKES, Florida, Chairman

EDWARD J. PATTEN, New Jersey CLARENCE D. LONG, Maryland JULIA BUTLER HANSEN, Washington K. GUNN MCKAY, Utah

ELFORD A. CEDERBERG, Michigan CHARLES R. JONAS, North Carolina BURT L. TALCOTT, California

ROBERT C. NICHOLAS III, Staff Assistant

PART 1

ARMY (excluding SAFEGUARD) ASSISTANT SECRETARY OF DEFENSE FOR INSTALLATIONS AND LOGISTICS

Printed for the use of the Committee on Appropriations



U.S. GOVERNMENT PRINTING OFFICE WASHINGTON : 1972

76-124 O

REPORT OF SURVEYS AND INVESTIGATIONS STAFF

Mr. SIKES. We have a report here from the surveys and investigations staff of the committee, dated March 1972, on Fort Campbell, and in particular the airfield complex. It is marked "Secret" but we propose to have it sanitized so that it can go in the record.

General McConnell. Yes, sir.

Mr. SIKES. A copy will be made available to the Army so that you may make comments on the points that are brought out in this report. (The report follows:)

MEMORANDUM FOR THE CHAIRMAN

MARCH 7, 1972.

Page

Re: Military construction program for fiscal year 1973; airfield complex (second phase), Fort Campbell, Ky., Department of the Army.

By directive dated January 25, 1972, the committee requested that an investigation be made into the proposed airfield complex (second phase), Fort Campbell, Ky., which is included in the fiscal year 1973 military construction program of the Department of the Army.

The results of this study are incorporated in the attached report.

This report contains information which was classified by the Department of the Army as "secret" and, therefore, the entire report has been so classified. Respectfully submitted.

C. R. ANDERSON, Director, Surveys and Investigations Staff, House Appropriations Committee.

TABLE OF CONTENTS

I	. Introduction
II.	The Organization of the 101 Airborne (airmobile) Division
III.	The Criteria for Stationing an Airmobile Division
IV.	Comparison of Bases Suitable for Stationing an Airmobile Division
V.	The Selection of Fort Campbell as the Home of the 101st Airborne
	(Airmobile) Division
VI.	The Justification, Schedule, and Status of the Planned Contruction
	A. Phase I
	B. Phase II
	C. Phase III

I. INTRODUCTION

By letter dated January 25. 1972, the House Appropriations Committee requested that the surveys and investigations staff conduct an investigation of the construction of an airfield complex at Fort Campbell, Ky. This construction has been divided into three phases. Phase 1 was funded in the military construction appropriation for fiscal year 1972, the second phase has been included in the budget request for fiscal year 1973, and phase 3 is programed for fiscal year 1974. The committee requested that the staff enquire into the requirement for this airfield complex; the availability of other aircraft support facilities within the Army or the other services which are now available or may become available for the purpose; and an analysis of the timing of design, construction, and the dates at which all phases of the facility realistically will be required. The construction of the airfield complex is alleged to be necessary in order to provide for the support and training of the 101st Airborne (Airmobile) Division as a ready division upon its return from Vietnam.

II. THE ORGANIZATION OF THE 101ST AIRBORNE (AIRMOBILE) DIVISION

The 101st Airborne Division was stationed at Fort Campbell prior to its deployment to Vietnam in the last quarter of calendar year 1967 and at that time its table of organization and equipment called for only 88 aircraft. The facilities at Fort Campbell were sufficient to support this number of aircraft.

During the Vietnam war the capability was developed for delivery of infantry to the battle zone by the landing of helicopters immediately behind the zone rather than by dropping the soldiers by parachute. Soldiers delivered by landing helicopters are now referred to as airmobile forces to distinguish them from the airborne forces which are delivered to the battle zone by parachute. The table of organization and equipment of the 101st Airborne Division was changed so that it would have this new airmobile capability with two of its maneuver brigades, while a third brigade would continue to be made up of airborne paratroopers. This latter brigade, the 173d Airborne Brigade, along with the 82d Airborne Division stationed at Fort Bragg, N.C., make up the paratroop forces of the U.S. Army.

In order to reflect the change in its mission and at the same time to preserve its previous title, the division is now designated as the 101st Airborne Division (Airmobile).

The new table of organization and equipment for such an airmobile division is still being studied and is subject to change, but under the current planning, the authorized aircraft strength of the division has now been established as 422 rather than the 88 previously authorized the division solely for an airborne mission. These additional aircraft are deemed to be needed to provide the air mobility for the two airmobile maneuver brigades of the division, and other support functions; 196 of these aircraft are to be distributed as follows throughout the division :

12 aircraft (4 utility, 8 observation) to each of the 3 maneuver brigades

	-
(2 airmobile and 1 airborne)	. 36
The 326th Medivac Battalion	12
The division artillery	. 58
The division air cavalry	. 85 .
The 5th Transportation Corps Battalion	. 5

Total _____ 196

The balance of 226 divisional aircraft are assigned to the division aviation group which has the mission of providing the aircraft mobility to the two airmobile brigades. These 226 aircraft are to be assigned as follows:

Total _____ 226

In addition to the above 422 aircraft authorized for the 101st Division, an additional six administrative aircraft are authorized to the Campbell Army Airfield and nine heavy CH 54 helicopter cranes, assigned to the 3d Army and not a part of the 101st Division, will also be stationed at this field. A total of 437 aircraft, therefore, must be accommodated at the Campbell Army Airfield if the 101st Airborne (Airmobile) Division should be stationed there in full strength.

III. THE CRITERIA FOR STATIONING AN AIRMOBILE DIVISION

A long range stationing study group was established in the Office of the Assistant Vice Chief of Staff of the Army on June 27, 1969, to devise a plan for stationing the Army during the 1972–90 time frame. The chairman of this study group was Maj. Gen. Linton S. Boatwright and the report of this group will be referred to hereinafter as the Boatwright report. The report was issued in November 1970 and is still being studied by the Army staff and other appropriate Army organizations. It has not been approved by the Army and, according to Army representatives, it is not, therefore, an official Army document and cannot be regarded as expressing the official Army position on the subject matter covered.

The Boatwright report sets forth the criteria deemed by the group as important in deciding whether a particular base is suitable for the stationing of each of the various types of Army organizations. One group of organizations for which stationing criteria were recommended were divisions, brigades and nondivisional aviation. The types of divisions considered were infantry, infantry-mechanized, armored, airborne, and airmobile.

The criteria for the stationing of the airmobile divisions are evidently acceptable to the Army because they were furnished to the committee in the Army military construction appropriation hearings for 1972 as evidence of the fact that Fort Campbell was found to be the best suited station for an airmobile division.

These criteria are briefly as follows:

Maneuver_area requirements are for moderately rough or broken terrain. A minimum acceptable standard of training, morale and support requires at least 55,000 acres. This would permit maneuvering one of the three brigades against a numerically smaller force. It is regarded as desirable that 137,000 acres be available for this purpose in order to provide optimum efficiency in the operations and training. This larger acreage would permit the maneuvering of two brigades against a smaller force.

The range area criterion calls for a minimum of 130,000 acres.

The criteria for the cantonment area are divided into essential requirements to provide minimum acceptable standards including the use of temporary facilities, and desirable requirements to provide optimum efficiency based on the standards used in the construction of permanent facilities.

In the cantonment area the following number of square feet of floor space was recommended as desirable and essential :

	Desirable (square feet)	Essential (square feet)
Administrative office space		163, 500 230, 000 280, 00 0

The criteria recommended that barracks be available for 14,000 enlisted men and bachelor officers quarters be provided for 320 officers. It was deemed desirable that these barracks and quarters be of permanent construction in accordance with the current standards. These standards for barracks provide for two to three enlisted men in a room with 90 square feet per man. It is also considered as desirable for bachelor officers' quarters to have one man per suite of 360 square feet per warrant officer and grades 0–1 and 0–2 and 500 square feet for grades 0–3 and above with sitting room, private bath, and cooking facilities.

As for family housing, it was recommended that a total of 7,680 units be available either on or off the post.

The airfield criteria for an airmobile division were recommended as follows:

Runway-taxiway system (square yards)	52,000
Parking aprons (square yards)	432,000
Maintenance facilities (square feet)	405,000
Minimum length of runway (linear feet) corrected for elevation and	
temperature	3,000

IV. COMPARISON OF BASES SUITABLE FOR STATIONING AN AIRMOBILE DIVISION

In the Boatwright report, in considering Army posts which might be suitable for stationing of divisions, brigades, and nondivisional aviation, all posts with less than 100.000 acres were not considered as suitable. Other posts which are peculiarly adapted for the missions now being served by them, such as the White Sands Missile Range, were not considered.

APPENDIX II

	Choices
Fort Benning, Ga	1. Infantry.
	2. None.
Fort Bliss, Tex	1. Armored.
	2. Mechanized infantry.
Fort Bragg, N.C.	1. Airborne.
	2. Airmobile.
Fort Campbell, Ky	1. Airmobile.
	2. Airborne.
Fort Carson, Colo	1. Armored.
	2. Infantry.
	3. Mechanized infantry.
Fort Hood, Tex	1. Armored.
,,,	2. Mechanized infantry.
	3. Airmobile.
Fort Lewis, Wash	1. Infantry.
	2. None.
Fort Polk, La	1. Airmobile.
	2. Infantry.
Fort Riley, Kans	1. Infantry.
	2. Mechanized infantry.
Fort Stewart/Hunter Army Airfield, Ga	1. Airmobile.
,, _,	2. None.
Schofield Barracks, Hawaii	1. Infantry.
	2. None.

Eleven posts were selected as suitable for stationing of divisions. These posts are listed below with the choices from the five types of divisions deemed suitable for each listed in the order of suitability: ~

Taking in reverse order those posts above not regarded as suitable for stationing of an airmobile division, Fort Riley, Kans., and Schofield Barracks, Hawaii, are regarded as not suitable for an airmobile division because the range and maneuver areas are too small to meet the criteria.

Fort Lewis, Wash., has extensive permanent facilities but is too small in acreage to support airmobile forces with the added obstacles that there is a low flying ceiling in the area of 150 days per year and the air space is crowded because McCord Air Force Base and civilian airways are in the area.

Fort Carson, Colo., was not selected for a possible airmobile division because of its altitude, and it will be better suited for mechanized infantry which was the use recommended for it.

Fort Bliss, Tex., was eliminated from consideration for stationing an airmobile division because the open, flat terrain degrades it as an zirmobile or infantry station. Otherwise this post exceeds all of the criteria with a large proportion of the facilities being of permanent construction, permanent barracks for 19.297 men, and permanent bachelor officers' quarters for 917 men. The airfield facilities more than meet the criteria as do the sizes of the maneuver and range areas. This post is not fully utilized, according to the report, by the Air Defense Artillery School and it is expected that there will be a further reduction in this activity. Yet, the Boatwright Report did not recommend the future

stationing of any division, brigade, or nondivisional aviation at this post. The elimination of Fort Benning as a suitable airmobile division post is also based upon a close decision. It was said to have inadequate aviation facilities and that the siting of such facilities now would be difficult. It is noted, however, that the runway (8,200 feet) far exceeds the criterion of 3,000 feet and the parking aprons (647,000 square yards) also exceed substantially the criterion of 432,000 square yards. The maintenance facilities (367,000 square feet) substantially meet the criterion of 405,000 square feet.

The maneuver area at Fort Benning was also said to be severely restricted (66,296 acres), but this area compares favorably with the 65,700 acres belonging to the Government at Fort Campbell. The latter does, however, have a permit to use, on a nonfiring basis, 200,000 acres of TWA land in the area. The range areas at both Benning and Campbell have the same capabilities. At both, helicopters are limited, according to the report, to firing front and side

door machine guns, 40-millimeter grenades and 2.75-inch rockets.

In the cantonment area, Fort Benning exceeds the criteria in all categories. It has 940,000 square feet of administrative space, has an 850-bed hospital, 2,131 bachelor officers' quarters with 917 being of permanent construction and 3,634 family housing units on post. These facilities appear to meet the division requirements better than those at Campbell where officials advised the staff they have less than one-half of the required company, administrative and supply complexes, and a shortage of welfare-type facilities, such as gymnasiums, chapels, etc. The motor pool is only one-third complete.

Benning is now used as a school post, according to the Boatwright report, and while, on the above list Benning was shown as only suitable for infantry, it was recommended later in the report, as will be seen hereinafter, that it be used as a post for an airmobile division less one brigade as an interim post until the cantonment at Fort Stewart/Hunter Army Airfield can be expanded.

On the above list, two posts were named as being suitable for stationing an airmobile division, but were designated as more suitable for other types of divisions. One of these, Fort Bragg, N.C., was recommended as more suitable as a station for an airborne division rather than an airmobile division. It would however cost much less (\$7.7 million in 1970 dollars) to make it suitable for use by airmobile divisions than the estimate in the report (\$29.8 million) to develop Campbell as an airmobile station even with maximum use being made of temporary facilities.

Likewise, Fort Hood was determined to be the best post for armored forces and is, according to the report, the current station of the III Corps, 1st Armored Division and the 2d Armored Division and supporting forces. While it has potential as an airmobile post, it has, according to the report, sufficient acreage to support two armored divisions and can be more fully utilized in this manner. It is noted that the report is based upon the assumption that the force structure of the Army will include two armored divisions.

Three posts were designated in the Boatwright report as being most suitable for stationing of an airmobile division. Listed in the order of their potential in this regard, they are Fort Stewart/Hunter Army Airfield, Ga., Fort Campbell, Ky. and Fort Polk, La.

Fort Polk, while listed as more suitable for an airmobile division, was characterized as being potentially the best infantry division station in the continental United States. It has, however, an almost complete lack of permanent facilities. All barracks and bachelor officers' quarters are temporary and there are only four family housing units. There is also a substantial shortage in airfield facilities to meet the criteria for an airmobile division station. In the recommended for stationing the assumed force structure, Fort Polk was not recommended for any division, brigade, or nondivisional aviation.

Fort Stewart/Hunter Army Airfield, a former Strategic Air Command base, has, according to the Boatwright report, the best Army aviation facilities in the continental United States and the largest reservation east of the Mississippi with excellent terrain and concealment throughout the area. Its ideal flying weather and its proximity to the deep water port of Savannah, Ga., were also advantages cited in arriving at the conclusion that this post has the best potential for an airmobile division station in the continental United States. No additional construction of airfield facilities would be required to station such a division, and in addition to the largest maneuver ground east of the Mississippi, the ranges are the only ones sufficiently large so that small arms, tank artillery, and helicopter armament can be fired simultaneously without interfering with each other. The maneuver, range and airfield areas and facilities more than meet all of the criteria for an airmobile division post. If crowded airways should become a problem as is anticipated at Fort Campbell, as will be seen hereinafter. a separate landing field will not have to be constructed as one already exists at Travis Field, as part of the complex, with a 11,375 foot runway, 38 miles from Stewart and 4½ miles from Hunter.

The deficiencies in this post consist of a lack of barracks (3.830 permanent and 1.673 temporary plus 630 diverted to other uses for a total of 6,133, a deficiency of 7,867 based on the criterion of 14,000 men) and a deficiency of 102 bachelor officers' quarters (54 permanent and 164 temporary for a total of 218) based upon the criterion of 320 men. There is also a deficiency in family housing (1,219 units available as compared with 2,856 at Campbell) and the cantonment maintenance area is 228,500 square feet as compared with the criterion of 230,000 square feet as essential and 334,000 square feet desirable. Ample medical and administrative areas are available, according to the Boatwright report.

At Fort Campbell, the other post recommended as an airmobile division station. the greatest deficiency is in the airfield facilities and the maneuver and range areas where Stewart/Hunter had no deficiencies. The desirable maneuver area under the criteria is 137,000 acres while the entire post at Campbell is only 105,415 acres. The maneuver area of 65,700 acres (the Staff was advised by a post engineer official that it is 69,023 acres) does comply with the essential criterion and in add#tion 200,000 acres of Tennessee Valley Authority land not contiguous but in the area west of the Cumberland River is available for use under a permit prohibiting firing. Approximately 50,000 acres of land between the post and the Cumberland River has been leased in the past for exercises with restrictions on its use and provision for compensation to the lessors for damages.

The range and impact area, according to an official of the post engineer's office, consists of 22,809 acres as compared with the essential criterion of 130,000 acres, a deficiency of more than 83 percent. According to the Boatwright report, helicopter gunnery will be limited to front and side door machinegun fire and to the use of 40 millimeter grenades and 2.75-inch rocket firing.

As for the airfield facility deficiencies, the old Strategic Air Command runway is more than ample, but little of it can be adapted to other use without losing the airlift capability for the division and restricting the training of the remaining one airborne brigade in the division. There is a large deficit, however, in maintenance hangars and hardstands to support the airmobile brigades and the aviation group. The criteria call for 432,000 square yards of parking apron and while the existing runway consists of 412,222 square yards and the existing taxiways have 416,850 square yards of pavement, as compared with the criterion of only 52,000 square yards for the runway-taxiway system, little of it can be adapted to parking apron for helicopters, according to officials of the post engineer's office and the 101st Division Aviation Group because of the airlift mission referred to above. The Boatwright report shows only 127,000 square yards of parking apron available, a deficiency of 305,000 square yards. An official of the post engineer's office advised the staff there is actually 250,000 square yards of parking apron plus 89,000 square yards of hardstand, making the deficiency 93,000 square yards.

In regard to airfield maintenance facilities, the criteria called for 405,000 square feet while the existing maintenance hangars at the Campbell Army Airfield consist of only 113,174 square feet of permanent and 34,935 square feet of temporary buildings, according to an official of the post engineer's office, resulting in a deficiency of 256,891 square feet based upon the criterion.

In regard to the cantonment area, the deficiencies are less than those at Stewart/Hunter. In comparison with the criterion calling for barracks for 14,000 men, Campbell can accommodate under the current standard of 90 square feet per man about 10,000 enlisted men, leaving a deficiency of 4,600 permanent barracks spaces, according to an official of the post engineer's office. Ample temporary barracks are available to take care of this deficiency (13,997 spaces). The Boatwright report shows permanent barracks available for 14,377 men, but this is without adjustment of the barracks to meet the current standards of two to three men in a room with 90 square feet per man.

There is also a deficiency in bachelor officers' quarters. The criterion calls for space for 320 men. The officials at Campbell advised the staff that with the increased ratio of warrant officer and other lower officer grades the requirement will be over 900 spaces. These officials advised the staff that there are only 76 adequate bachelor officers' quarters and there is an urgent housing requirement in this regard. There is also a shortage in welfare-type facilities, such as, chapels and gymnasiums. No deficiency in family housing has been established when available housing off the base is combined with the 2,854 units on base, but an official of the post engineer's office advised that a survey of the support from the community in this regard is now being made and a deficiency may be found.

In the administrative area, when the temporary facilities are included, there is sufficient square footage to meet the desirable requirement of 291,200 square feet but the permanent facilities—34,922 square feet—are well below the essential criterion of 163,500. The hospital of semipermanent—brick veneer—construction has ample floor space—563,159 square feet—to meet the desirable criterion of 325,000 square feet and also to meet the requirement for 300 beds. There are presently 550 beds, and the Boatwright report states that the number of beds can be expanded to 1.874.

The area of the facilities for vehicle, ordnance, and installation maintenance consists of 183,415 square feet of permanent facilities and 840,854 square feet of temporary space. The Boatwright report gives a lesser combined figure of 887,000 square feet. So that with the latter space the desirable criterion of 334,000 square feet is met, but the square footage of the permanent facilities does not come up to the criterion for the amount of space deemed essential. An official of the office of the post engineer advised the staff that the roundout of the post

76-124 O - 72 - pt. 1 - 16

with operational, administrative, and welfare facilities has been slow. Less than one-half of the company administration and supply facilities has been provided, and only about one-third of the permanent organizational vehicle maintenance facilities has been constructed. Also, only one-half of the general purpose warehouse requirements has been met, and the motor pool is less than one-third complete.

ł

Of the bases considered above, it would appear that five with potential as an airmobile division station will not be fully utilized if additional forces are not assigned to them. Fort Bliss is not fully utilized by the Air Defense Artillery School assigned there and this activity will probably be cut back further. Fort Benning is used solely as a school post. Fort Campbell has experienced low utilization since the 101st Airborne Division went to Vietnam. Fort Polk is used solely as an Army training center, and Fort Stewart/Hunter Army Airfield serves as a maneuver ground for the Southeast Armor Training Center, an auxiliary field for the aviation school at Fort Rucker and for certain National Guard activities.

Based upon the data in the Boatwright report supplemented by that obtained by the investigative staff at Fort Campbell, Ky., the following observations are made in summarizing the comparison of the suitability of the above five posts as stations for the 101st Airborne Division (Airmobile).

1. Fort Stewart/Hunter Army Airfield:

a. Deficiencies.—(1) Lack of cantonment facilities.

b. Required.-Large immediate outlay of funds and time required for construction.

c. *Result.*—Best possible airmobile division post with all permanent facilities up to current standards.

2. Fort Bliss:

a. Deficiencies.—(1) Lack of concealment during maneuvers due to nature of the terrain.

b. Required.—All necessary facilities are available immediately.

c. *Result.*—Good facilities and good range available immediately with no expenditure of construction funds. The one deficiency, lack of concealment, would remain unrectifiable.

3. Fort Benning:

a. *Deficiencics.*—(1) Statistically sufficient airfield facilities, but Boatwright report characterized them as inadequate. (2) Range area limited, and (3) maneuver acreage slightly within the minimum acceptable criterion with doubtful possibility of acquiring additional acreage.

b. Required.—Comparatively small funding required to accommodate division. c. Result.—Post available within short time with permanent barracks and bachelor officers' quarters and substantial cantonment and airfield and with essential maneuver area, but limited range.

4. Fort Campbell:

a. Deficiencies.—(1) Inadequate airfield facilities. (2) range limited to same extent as at Benning, (3) maneuver acreage similar in size to Benning with additional acreage available under permit and lease for restricted use. and (4) substantial deficiency in permanent cantonment facilities.

b. *Required.*—Because of available temporary facilities, funding can be spaced over longer period than possible at Stewart/Hunter.

c. Result.—Post available immediately with makeshift airfield facilities for 3 years, with substantial amount of cantonment in temporary facilities until permanent construction can be funded in future years. Maneuvering ability will remain restricted and range capabilities will remain limited.

5. Fort Polk:

a. Deficiencies.—(1) Airfield facilities inadequate and (2) almost no permanent cantonment. (3) Only four family housing units are available.

b. *Required.*—Largest immediate funding for airfield facilities would be required based upon the extent of the deficiency. The construction necessary to achieve a permanent cantonment would also be the largest amount of all five bases although with the temporary facilities available funding could be over a longer period than at Stewart/Hunter.

c. Result.—Post would be available immediately with even more makeshift airfield facilities than at Campbell for the period required for construction.

Funding would require a greater immediate outlay of funds. The cantonment would still be almost entirely in temporary facilities until permanent construction could be funded in future years. ż

V. THE SELECTION OF FORT CAMPBELL AS THE HOME OF THE 101ST AIRBORNE (AIRMOBILE) DIVISION

The Boatwright report based its recommendations as to stationing of airmobile divisions ———. An official of the Installations Management Division of the Office of the Deputy Chief of Staff for Logistics was requested to furnish the rationale of the decision for stationing of the 101st Airmobile Division. He advised the staff that according to his file it was clear that it was assumed from the time the 101st Airborne Division left Fort Campbell for Vietnam in 1967 that that division would return to the same home from which it left.

He was requested to furnish any decision document available which would outline the rationale for the decision and that would especially indicate whether an effort had been made to examine the advisability of deploying the division to some other aircraft support facility in the Army or available or about to become available from another service which might better accommodate the division without the necessity of building the additional facilities required at Campbell.

Subsequently the investigative staff was furnished by this official with a document purporting to evidence the rationale for the stationing decision in question. The memorandum dated May 1, 1970, was prepared by the Office of the Deputy Chief of Staff for Logistics for the purpose of informing the Army Chief of Staff of the low utilization of the facilities at Fort Campbell. This memorandum stated that utilization of the troop housing was at 75 percent and family housing was at 90 percent with average vacancies being 290 units.

The memorandum stated that the decision had been announced by the Army on April 21, 1970, that the first airmobile division returning from Vietnam would be stationed at Fort Campbell. The memorandum further stated that until such an airmobile division is redeployed there, the utilization of Fort Campbell would become much lower. Because of the need to reduce the training structure, the memo stated, the total disestablishment of the Army Training Center at Fort Campbell was unavoidable.

The memorandum continued that if the airmobile division should be redeployed to Campbell by the end of fiscal year 1971, the period of low utilization would be short. The Continental Army Command was being advised to give consideration to stationing at Fort Campbell appropriate nondivisional units redeployed to the United States prior to the airmobile division so as to limit partially the impact of any delays which should occur in the redeployment of the airmobile division.

The official was asked whether the data set out in the Boatwright Report was considered in reaching the above decision. He said that the announcement of the stationing on April 21, 1970, was made at the Long Range Stationing Study Group staff briefing on that date concerning division and major unit stationing. It is noted, however, that this briefing was seven months before the date of the Boatwright Report and it would be difficult to say whether the decision was influenced by the report or the report by the decision. It is also noted that a Master Planning Conference, attended by representatives of all headquarters in the chain of command, was held at Fort Campbell one year prior to the above announcement of April 21, 1970, at which the plans, now being initiated, were made for an airfield complex to accommodate the return of the 101st Airborne as an airmobile division. This at least does not contradict the statement that that division was stated to return to Campbell from the time it left for Vietnam. Also it appears that the stationing had been settled, at least to the extent of making definite plans, even before the Long Range Stationing Study Group was established and over a year and a half before the group reported in November 1970.

The document of May 1, 1970, referred to above, makes no reference to other available bases within the Army or other services. The official said the services are very careful to consider other bases available within the Department of Defense, but he could not furnish any detail as to bases which may have been considered prior to this stationing decision. Nor could he suggest any other official outside of his installations management division who could furnish such information. The memorandum seems to base the decision principally upon the desire to maintain a high utilization of Fort Campbell, but this does not explain why the same concern for low utilization was not felt for the other four stations named above.

In the hearings concerning the request for \$9,996,000 in the fiscal year 1972 budget for the first phase of the construction of the airfield complex, it was testified that Fort Campbell was chosen for the stationing of the 101st Division because this fort was found in a long-range study (identified to the investigative staff by an Army official as the Boatwright study) to be the one best suited for an airmobile division. Emphasis in the testimony was placed on the suitability of the maneuver area and the operating area at Fort Campbell making it the only place which lends itself to becoming the station for the 101st Division. But, as has been stated above, the maneuver area owned by the Government is barely above the essential acreage (69,023 acres as compared with 55,000). Other acreage is available only on a restricted permit or lease basis. The ranges are of even more limited use. Stewart/Hunter, on the other hand, has completely desirable maneuver and range areas.

desirable maneuver and range areas. If the favorable "operating area" at Fort Campbell referred to in the testimony means aircraft facilities, Stewart/Hunter also is much the best post as it would require no construction because extensive aircraft facilities are available there. If "operating area" refers to the cantonment, it is true that Stewert/Hunter is considerably more deficient in this regard than Fort Campbell. Two Army officials stressed in their statements to the investigative staff that Fort Campbell was chosen over Stewart/Hunter because of the latter's greater deficiency in barracks and other accommodations for the personnel of the division.

Based upon these statements, it would appear, therefore, that the need for comparatively large scale funding immediately at Fort Stewart/Hunter Army Airfield may well have eliminated that station while the availability of temporary facilities at Campbell makes possible installment-type funding there while still accommodating the division on a less than desirable and efficient level. But the overall cost of the construction at Fort Campbell is far greater than the request for \$6,948,000 in construction funds for fiscal year 1973 for phase II of the airfield complex at the fort.

The entire funding for the airfield complex alone for the 3 years. fiscal years 1972–74, is currently estimated at \$26.244,000. None of this expenditure would be necessary at Stewart/Hunter. It is true that a substantial amount of cantonment facilities would have to be provided there, but these would be top standard, permanent structures. When the construction work at Campbell funded in fiscal year 1972, requested in fiscal year 1973, and programed for subsequent years to add additional facilities, upgrade the permanent structures and eliminate the temporary structures is taken into consideration. a serious question is raised as to whether this post, with inferior maneuver and range facilities, will cost less, on a long-range basis, than the Stewart/Hunter post with its unlimited range and maneuver areas and exceptional airfield facilities as the station for the 101st Airborne Division.

The additional construction already funded, requested for fiscal year 1973, and programed for future years to modernize existing permanent barracks, to provide additional permanent barracks, to alleviate to some extent the shortage of bachelor officers' quarters, to round out the maintenance and administrative facilities, and to provide a commissary, gymnasiums and an arts and crafts shop amount to \$44,545,000 not including the three-phase airfield complex construction of \$26,696.000.

In 1951 and 1952 Fort Campbell received \$32 million for a construction of permanent barracks to accommodate 13,000 enlisted men. A program for modernization of these barracks was commenced in fiscal year 1972 when \$1,760,000 was appropriated for this purpose. Originally, these funds were to be used for modernization of 24 barracks by putting in partitions to provide separate rooms for two men each with mechanical ventilation. The Department of the Army subsequently decided in connection with the voluntary army program to use the money to bring the barracks up to the highest standards with complete air conditioning. This reduced the number of barracks which could be modernized from 24 to five. A request for an additional \$11,018,000 is included in the fiscal year 1973 budget to continue the modernization of 31 additional permanent barracks. In the fiscal year 1974 program, as it is now formulated, 10 more of the barracks will be modernized at an estimated cost of \$4 million. An item for an additional \$4,832,000 is currently in the fiscal year 1978 program to complete the modernization, but plans are now being considered to consolidate this request in the fiscal year 1974 budget.

While the permanent barracks were originally designed to provide space for 13,000 men, the modernization has caused a shortage of 4,600 spaces in the total necessary to house the 101st Division and supporting units. New barracks and facilities sufficient to provide for 700 men are in the fiscal year 1976 program at an estimated cost of \$9,161,000. An official of the office of the post engineer advised the investigative staff that an attempt will be made to fit an item for the balance of the permanent barracks requirement in the next 5-year construction program for the fort.

Although there is a requirement for 900 bachelor officers' quarters and only 76 adequate ones are available, funding for only 124 additional spaces was included in the fiscal year 1973 budget request, at an estimated cost of \$1,730,000. An additional 236 spaces for bachelor officers are in the construction program for fiscal year 1975 at an estimated cost of \$3 million. Funds for the remaining deficiency of 464 spaces are not in the program for future years at this time.

addition to the funds for 124 bachelor officers' quarters, for modernizing
permanent barracks, and for the second phase of the airfield complex construction in the fiscal year 1973 budget request, there are also items for two brigade gymnasiums (\$1,517,000), a commissary (\$3,093,000), and an arts and crafts shop (\$515,000), for a total fiscal year 1973 request of \$25,293,000.
In fiscal year 1974, \$3,500,000 is programed for a division/fort headquarters

In fiscal year 1974, \$3,500,000 is programed for a division/fort headquarters and \$419,000 for an automatic data processing building. These construction costs of \$44,545,000 for improvements in the cantonment

These construction costs of \$44,545,000 for improvements in the cantonment area when added to the estimates for the construction work in the airfield complex during fiscal year 1972-74, comes to a total of \$70,789,000. In addition, the program for fiscal year 1974 through fiscal year 1978 calls for further construction to improve the airfield complex in the sum of \$6,850,000. In fiscal year 1975, a range center (\$503,000), an airfield control tower (\$262,000), an instrument trainer building (\$514,000), and an ammunition renovation shop (\$598,000) are programed. In fiscal year 1978, an aircraft field maintenance shop (\$770,000) and 9 tactical equipment shops and facilities (\$4,183,000) are in the construction plans. These additional construction items bring the total construction costs up to \$77,639,000. When it is realized that at Steward/Hunter, with its exceptional airfield facilities, at least a major part of the \$33,094,000 of the above amount required in connection with the airfield would not have to be expended, a serious question is raised as to whether the Army is getting the most for its money in an airmobile station at Campbell. It also seems highly probable that, based on the data in the Boatwright report, at least an equal facility could be obtained at Fort Benning with an expenditure of less money.

VI. THE JUSTIFICATION, SCHEDULE, AND STATUS OF THE PLANNED CONSTRUCTION

Based upon the assumption that Fort Campbell is the best home for the 101st Division from an operational and economic standpoint, there does not appear to be any question but what additional airfield facilities are necessary. The deficiencies of the existing complex in this regard, based upon the criteria established for an airmobile division station, have been outlined hereinbefore. The principal deficiency is in maintenance hangers and hardstand to support the 437 aircraft which will be stationed at the fort.

The master planning conference held at Fort Campbell in April 1969 was important because it designed for the 101st Airborne the first permanent helicopter facility in the Army and from this conference the manual on such facilities was developed. At the conference, Army officials advised the staff, particular attention was given to securing the best possible utilization of existing facilities and airspace without conflicts with ranges, impact areas, and civilian air traffic. The first effort to obtain the new airfield complex as planned at the master planning conference was made in the fort construction program for fiscal year 1971 when a line item was included for the entire heliport. This request by Fort Campbell was reduced in scope during the review by the Department of the Army and the construction was divided into three phases, with the first phase postponed until the fiscal year 1972 budget request.

PHASE 1

At the planning conference, it was decided that the three existing permanent hangars, totaling 113,714 square feet, would be used to accommodate the aircraft of the three maneuver brigades—two airmobile, one airborne—with 12 aircraft each, total 36); the aviation general support company of the aviation group (the 163d with 20 aircraft); the medivac battalion (326th with 12 aircraft); and the six administrative aircraft assigned to Campbell Army Airfield. These existing facilities will support, therefore, 74 of the 437 aircraft to be located at the field. In addition, these facilities will provide sufficient space for the general support maintenance work at the airfield.

It was decided that first priority should be given in phase I to the construction of a parking apron for the more expensive, large, heavy aircraft of the assault support battalion of the aviation group (48 Chinooks) and for the nine heavy CH 54 helicopter cranes to be stationed at the field by the 3d Army. This parking apron is to be constructed a short distance off of the main runway and adjoining one of the existing dispersal taxiways which will provide access to the main runway for the Chinooks and heavy cranes.

Across the taxiway from the new parking apron there will be a unit maintenance hangar of approximately 42,000 square feet for each of the three companies in the assault support battalion. There will also be a smaller unit maintenance hangar (24,000 square feet) for the heavy cranes and a hardstand wash rack. Also, at this location there will be another hangar of about 32,400 square feet to provide direct support maintenance, which is at the intermediate level between unit and general support maintenance. The total space provided in these hangars will be 182.372 square feet. The access ways to these maintenance facilities and the apron in front of them plus the parking apron across the existing taxiway will provide 177.850 square yards of parking hardstand.

This construction is designed to support 57 additional aircraft, which, with the 74 to be supported by existing facilities, brings the total to 131.

In phase I, a new flight surgeon's dispensary of 8,000 square feet will also be provided in a new separate building at the airfield. In the hearings for fiscal year 1972, it was testified that the services of this dispensary cannot be provided at the main hospital. And it would appear that flight surgeons specifically assigned to maintain close surveillance of the physical condition of the 900 aviators, the 200 air traffic controllers, and the 400 crew engineers who will be stationed at the field are highly advisable. Physical examinations of these men are required frequently including every time they should become sick. In evaluating their capability to perform their duties, the examining physician should have personal knowledge of their background, their families, any medication they may be taking, and other factors which may cause stress affecting their efficiency.

These considerations do not, however, indicate the necessity for a separate building for this facility. In the hearings for fiscal year 1972, it was testified that the flight surgeon should have equipment designed specifically for his monitoring of the health of his men. An examination of the existing facility by the investigative staff did not reveal any unique equipment. At least, there was none which could not be housed in space at the hospital. The only equipment which would require anything more than a room of usual construction would be the audiogram used to test hearing. This requires a soundproof room or booth.

It was also testified that the new dispensary would be at the airfield 3 miles from the general hospital, but the present flight surgeon advised the investigative staff that the new dispensary will not be designed to handle emergencies, such as men injured in aircraft accidents. These would all be handled at the general hospital. Being 3 miles closer to the airfield, therefore, does not appear to offer a huge advantage.

The Boatwright report gave the hospital capacity as 248 beds with a capability of expanding to 1,874. The hospital commander advised that the hospital now has 550 beds with 300 occupied. He said the current population of the post is is 9.000 men. With an increase of about 10,000 men with the arrival of the 101st Division, it is probable that all beds will be occupied. With this increase, he expects the number of births, for instance, which are now two per day, to at least double. He supports the requirement for a separate facility for the flight surgeon's dispensary, but concedes that it could be housed at the hospital. An official at the fort in the personnel office advised that the fort population is currently 10,936 and he projected an increase by September 1972 to 23,396, not including those without hospital privileges.

From the above facts, it would appear that a new, larger dispensary is required, and it would be nice to have it in a separate building close to the airfield. but that space is available at the general hospital for this facility. The \$9,996,000 for the phase I construction was funded in the fiscal year 1972 Army construction program, but none of the funds have as yet been obligated. The work has been divided into three packages.

The first one is only for the electrical substation and transmission line to the new maintenance area. The Corps of Engineers' estimate of the cost of this work was \$201,575. Bids were solicited and a low bid was received January 25, 1972, of \$166,887.50. The award of the contract has been delayed, however, because of the necessity of filing an environmital impact statement with the Council on Environmental Quality giving 30 days' notice of intentions to carry out the project. The impact statement was submitted on or about February 15, 1972.

The second package of this project consists of the balance of the construction of the aircraft facilities in phase I, including the five maintenance hangers, the parking apron, and boiler plant. Bids have been solicited for this work and are scheduled to be opened March 14, 1972. The current working estimate for this work is \$9 million.

The third package is the flight surgeon's dispensary. This building is presently being designed and this work is 40 percent complete. The Corps of Engineers plans to advertise for bids in May 1972 and hopes to be able to award the contract by June 1972.

In regard to the timing of the completion of these facilities in phase I with the need for them, the Corps of Engineers estimates that it will require 540 days after the contracts are awarded for the facilities to be completed. The facilities would, therefore, be available at about the end of calendar year 1978. The need for them, on the other hand, will arise in ______. It is in that month, the commanding officer of the aviation group advised the investigative staff, that the division is scheduled to be at ______ percent of the authorized strength. During the interim until the new facilities are available, it is planed to keep the Chinook helicopters in one of the existing hangars and the nine cranes will be parked on the apron at the end of the main runway in space provided for fixedwing parking.

B, PHASE II

The phase II construction is the subject of the current budget request for fiscal year 1973 in the sum of \$6,948,000. It will provide parking aprons, two unit maintenance hangars, and a wash rack for the utility, observation, and gun ship helicopters of the two assault battalions of the aviation group (158th and 101st: 78 aircraft each) and the two utility aircraft of the 159th Assault Support Battalion and the five of the 5th Transportation Corps Battalion, for a total of 163. For these 163 smaller helicopters, the number of square feet of unit maintenance hanger to be provided is 99,200 square feet (608 square feet per aircraft) as compared with 149,972 square feet for only 57 of the heavy, large helicopters in phase I (2,631 square feet average per helicopter). Likewise, the parking apron per helicopter will be smaller (333 square yards, for a total of 54,280 square yards) as compared with 3,120 square yards' average per helicopter, totaling 177,850 square yards for the large helicopters. A further difference between the two parking aprons is that included in the above hardstand for the phase II aircraft is a strip of landing pads necessary because the parking area for the small helicopters is separated from the main runway by the parking apron in phase I for the large helicopters. Also, rather than having a pavement taxiway to the parking apron, as will be provided for the heavy helicopters, the light ones will be provided in phase II with only turf from the landing pads to the parking apron because these helicopters will hover to their parking stations rather than travel along the surface.

Also in phase II a new airfield operations building will be constructed to replace the one now used which was constructed by the Air Force in 1953. It is deemed to be inadequate in size (8,202 square feet). The new building, estimated to cost \$423,000, will have 12,726 square feet of space in it. The old building is scheduled for demolition upon completion of the new building.

Other facilities in the phase II program are a fire and rescue station (\$183,000) and an addition to the boiler plant (\$220,000).

It was estimated by the Corps of Engineers that the construction work in this phase will also require 1½ years after award of the contract for completion. The corps hopes to be able to award the contract in February or March 1973, so the light helicopters which will have arrived at Campbell Airfield in September 1972 will be without these facilities until the latter part of 1974.

In the interim, it is planned to park most of these aircraft on a portion of the existing taxiways off of the main runway. Part of these taxiways will be covered

.

by the new construction, but a sufficient area of existing taxiway will be available for the aircraft of the two assault battalions (158 aircraft). Maintenance facilities will be housed in tents alongside these taxiways and power will be provided by the field generators organic to these battalions.

The balance of these aircraft will be located in a field adjoining the family housing in the cantonment area. The field in question was at one time a tank park and has very heavy concrete roadways, which will be available for landing and takeoff. Parking pads are being devised from old pierced steel plank (PSP) removed from the site of the phase I construction, and the aircraft will hover from the roads to these pads.

C. PHASE III

The remaining aircraft of the 101st Division, those of the Division Artillery (58 aircraft), and of the Division Air Cavalry (85 aircraft) will also be stationed at the old tank farm until construction in phase III can provide new facilities for them. Since these aircraft carry most of the attack armament of the division. their location during the interim adjoining the family housing area is highly objectionable. Maintenance will be housed in tents as in the other interim area, and an existing building in this field will provide a temporary direct support maintenance hangar.

Details as to the size and design of the phase III construction have not been established. Nor is any date available as to the estimated date for completion of this work.

At the present time it is planned to locate this facility 5 to 6 miles across Fort Campbell from Campbell Airfield. The object of this separation of these facilities from those of the airfield is to avoid overcrowding the airspace over Campbell Airfield. The 294 aircraft for which facilities will be provided at the airfield, along with the arrivals and departures of fixed-wing aircraft of the Air Force in support of the airlift mission, will create the maximum density advisable at the field, according to an official of the Corps of Engineers. It is also appropriate that the Division Artillery and Air Cavalry be so segregated since a large proportion of the aircraft of these units will be heavily armed, attack helicopters.

The site chosen is already partially cleared, having been used in a research project in the past, but because of its separation from the airfield, duplicate airfield facilities, such as operations building, control tower, and fire and rescue station, will have to be provided.

Assuming that the maintenance and parking apron requirements will be comparable to those in phase II. 47,619 square yards of parking apron will have to be provided (143 aircraft at 333 square yards per aircraft) and 86,944 square feet of maintenance hangars will be necessary (608 square feet per aircraft).

In summary, a comparison of the currently available maintenance and parking apron plus that to be provided in all three phases of the construction with the criteria suggested in the Boatwright Report, shows that the Campbell Army Airfield Complex will exceed the criteria of 432.000 square yards of parking apron and 405,000 square feet of maintenance facilities, as follows :

Maintenance Facilities

[In square feet]

Existing facilities	148,109
Phase I	182.372
To be provided :	, -
	99, 200
Phase IIIPhase III	¹ 86, 944
1 11100 1111-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
Total	516.625
Excess	$^{2}111,625$
	,

¹Based on assumptions stated hereinabove. ²If temporary existing facilities (34,935 square feet) are disregarded, the excess is 76,690 square feet.

Parking Apron and Hardstand

[In square yards]

Existing facilities	339, 000
To be provided :	
Phase I	
Phase II	54,280
Phase III Phase III	¹ 47, 619
Total	619,749
Excess	187,749

¹ Based on assumptions stated hereinabove.

As was stated at the beginning of this report, the Table of Organization and Equipment of an airmobile division, which is a new concept in Army, is subject to change with changes in this new concept. Since the initial planning, there has already been a reduction in the number of aircraft to be authorized for such a division and new helicopters now being developed are larger than those now in use and this change will affect the utilization of the new complex. The reduction in the number of current aircraft is believed sufficient to accommodate on the planned facilities the larger size of the new helicopters.

ARMY COMMENTS

Comments on "A Report to the Committee on Appropriations, U.S. House of Representatives, on the Airfield Complex (Second Phase) Fort Campbell, Ky., Department of the Army" prepared by surveys and investigations staff, March 1972.

Review of the report shows that it contains a great deal of factual data, makes appropriate comparisons and in general reflects a fair estimate based on the data utilized. The report, however, evaluates only a limited number of the considerations connected with stationing of the 101st Airborne Division (Airmobile) and for this reason tends to create a somewhat distorted picture.

The report draws heavily on the criteria and capabilities for stationing of type divisions as established in Volume II of the "Boatwright study." This study, although a valuable planning document, is not an Army master plan. In its seven volumes, the study addresses the present and future requirements and evaluates the existing and potential capabilities of installations for meeting requirements, not only of type organized units, but also for schools, manufacturing plants, depots and training centers. Using either established or assumed criteria, the "Boatwright study" manipulates an assumed model force, without short term constraints, to arrive at both mid-term and long range conclusions. It considers present use of installations, MCA investments which have already been made, and those which will be required in the future to develop permanent installations. Data from the "Boatwright study" is considered extensively in stationing decisions. The study, however, cannot become a master plan or the sole basis for stationing since current criteria, short term constraints, current force levels and composition, present day contingencies, reserve training, and mobilization requirements must be accommodated.

The use of Fort Campbell as a division post has been a firm part of the Army stationing scheme for an extended period and construction toward providing adequate facilities has been accomplished through the years. In the 1961 issue and again in the 1966 revision of the Army's stationing plan for permanent construction. Fort Campbell was shown as a division post. Planning for the use of the fort in support of the 101st Airborne Division has continued over this entire period, including the time the division was deployed in Vietnam. This accounts for the fact that planning conferences were in progress prior to the time the comprehensive "Boatwright study" was completed.

The report to the committee places considerable emphasis on a memorandum date May 1. 1970, prepared in the Office of the Deputy Chief of Staff, Logistics, for the Chief of Staff concerning the utilization of Fort Campbell. Clearly this document is not a decision paper concerning the stationing of the 101st Airborne Division (Airmobile). The document was furnished to provide an indication as to when the decision to return an airmobile division to Fort Campbell had been reaffirmed. It merely pointed out that the decision was reached during an inprocess review of the Boatwright effort. The memorandum per se dealt with low utilization of Fort Campbell and suggested possible remedies. There was no reason for any other post to be addressed in this particular memorandum. The Boatwright study concludes that Fort Campbell can be made usable for

an airborne division (airmobile) for the least immediate cost by providing additional aircraft related facilities. Further, in the long term it can be fully developed as an airmobile division post for about \$50 million less than the nearest competitor. It has certain limitations. However, there are very few installations which fully meet all desirable criteria.

Utilization of many installations is generally lower than it has been in the past. Stationing is usually based on utilization of facilities which exist and the minimum total long range costs of meeting additional and replacement requirements. In the event bases become uncovered or are left without a mission, a consideration in selecting those for closure is the least loss of usable facilities. Total costs, however, may well dictate closure of installations having substantial quality facility investment.

The data on-future construction requirements at Fort Campbell are presented in considerable detail in the report to the committee. However, many of the items indicated as being required at Fort Campbell are of such a nature that they would also have to be provided to accommodate the Army in permanent facilities regardless of where the construction is accomplished in CONUS. For this reason such requirements should not be considered as relating to Fort Campbell alone.

The stationing of the 101st Airborne Division (Airmobile) was not an arbitrary decision. It was based on longstanding plans, was reconfirmed by recent studies, meets the immediate requirements. utilizes cantonment facilities and housing which already exist, and minimizes the investment costs in the immediate future and long range at Fort Campbell. These factors weighed heavily in favor of this selection despite the more expansive and less restricted range and maneuver areas at Stewart-Hunter. Although there are some limitations to the use of the more sophisticated low-density equipment at Fort Campbell, the overall evaluation of operational and economic factors clearly favored the selection of Fort Campbell.

이 이야한 동안 수 있는 것은 것은 이 있는 것은 것은 것은 것을 알았다. 이 동안은 이 것은 것을 가지 않는 것이 있다. in a fair and the second المراجع المراجع المشاور المستحصر متوائية ومحاج الروريان مراجع ومحمرهم والالا الشورات الروريان متدرأ ستتقدوا ألا 2.18 பத்திலையும் நிறையாடு பியின்றுகள் கொடர்கள் பிருந்து காட்டும் இருந்து பிருந்தின் காட்டிருந்தும் காட்டி நிறையும் ப பிருந்துக்கும் கற்றுகள் பிருந்துகள் பிருந்து திரைத்தில் காட்டுக்கு கண்டு பிருந்தில் காட்டிருந்தும் காட்டி பிருந் 이 것 그렇게 이 있는지 않는 것 것 것 것 것 같아요. 이 이렇게 가셨었는지 것 an transference and the second sec Rago na astrono en 1982, en transferencia de la construcción de la c and entry and the second se and the second an sea 🙀 a state a state a sea a 1.14.1 ം കുംഷിപ്പോളം പ്രതിന്നെ പ്രതിന്നും ജോക്കിന് ആപ്പിക്കുക്കാന് നിന്നും കുടന്നും പ്രതിന്നും പട്ടിന്നും പ്രതിന്നും പുത്തന്നും കുടന്നും പ്രതിന്നും പ്രതിന്നും പുത്തന്നും കുടന്നും പ്രതിന്നും പുത്തന്നും കുടന്നും പ്രതിന്നും പ്രതിന്നും പ്രതിന്നും പുത്തന്നും കുടന്നും പ്രതിന്നും പുത്തന്നും പുത The state of the $\left(d_{ij} + d_{ij} \right) = \left(\left(\left(\frac{1}{2} \right)^{2} + \left(\frac{1}{2} \right)^{2} \right)^{2} + \left(\left(\frac{1}{2} \right)^{2} + \left(\frac{1}{2} \right)^{2} + \left(\left(\frac{1}{2} \right)^{2} + \left(\frac{1}{2} \right)^{2} \right)^{2} \right)^{2} \right) \right)$ n na managana n Na managana na m

÷