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# CORNELL AERONAUTICAL LABORATORY, INC

Report No. 11-1208-9-11  
**A REVIEW OF AIRSPACE USE IN RESTRICTED  
AREA R-40 -- CAMP A. P. HILL, VA.**  
Prepared for the  
Operations Analysis Directorate  
Bureau of Research Development  
Federal Aviation Administration  
April 1961

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## ACKNOWLEDGMENTS

The Cornell Aeronautical Laboratory, Inc acknowledges the assistance provided by the personnel of Camp A. P Hill, 2nd Army Headquarters, Fort Meade, Fort Belvoir, Fort Eustis, Military District of Washington, and Langley Air Force Base

## SUMMARY

### Introduction

The Cornell Aeronautical Laboratory, Inc under contract with the Operations Analysis Directorate of the Federal Aviation Agency, Bureau of Research and Development, reviewed the activities of Camp A P Hill, Virginia during the period from July 1 to December 31, 1958. In particular, the activities which constitute a hazard to the operation of aircraft in the assigned restricted airspace R-40 were examined. Camp A P Hill is one of approximately 13 facilities of the 2nd Army and is used as a training site for various U. S. Armed Forces organizations.

The facility was used by Fort Belvoir, Fort Meade, Fort Eustis, Military District of Washington, Langley Air Force Base and miscellaneous units consisting of Reserve, National Guard and Marine units during the six months study. In addition to the records available from Camp A. P Hill, additional data were obtained by visits to Fort Meade, Fort Belvoir, Fort Eustis, Langley Air Force Base, and 2nd Army Headquarters at Fort Meade.

### Camp A P Hill - R-40

The restricted area R-40 (Figs 1 and 2) is located near Fredericksburg, Virginia. It covers approximately one-half of the ground reservation of Camp A P Hill, approximately 120 square miles. Victor 157 and Amber 7 airways pass along the western side and Red 19 airway passes along the northeast side of the restricted area. All firing activity occurs on the ground reservation area covered by the air restricted area, troop training and bivouac areas are in the other half of the ground reservation.

The Camp A P Hill facility was purchased for 2 5 million dollars in 1941 and improvements up to 1959 amounted to 2 million dollars The permanently stationed military personnel at Camp A P Hill, who maintain and administer the area for the visiting training units number approximately 94. Approximately 86 civilians are employed on the post in administrative work

Telephone is the only means of range communication, although the Air Force maintains radio communications at an observation tower with Air Force aircraft during practice bombing runs The 3rd Armored Cavalry from Fort Meade is the main group using the area and is the largest user of weapons reaching high altitude (7000 feet, maximum) The Fort Belvoir group is basically an engineering unit and its firing activities are mainly confined to small caliber weapons, this is also true of the Fort Eustis group, which is a transportation unit. Very little high altitude firing is done by the troops from Military District of Washington and the other miscellaneous groups using the area The 345th Bombing Group from Langley Air Force Base used the area for low altitude bombing. However, it was stated by Langley AFB personnel that their operations at Camp A P Hill would be suspended after April 1, 1959

#### Survey of Camp A P Hill Activities (July 1 - December 31, 1958)

The daily troop strength reports and the range firing schedules were used to determine the activity The daily strength reports are records showing the number of men from each unit that are occupying the camp on a particular day The range firing schedules are a record of the number of men from each unit that were assigned the firing ranges during each day, and the time during which they actually used the range

ACTIVITY DURING SURVEY PERIOD - 184 DAYS

No Days Units Used Facilities	Man-Days of Use	Avg. No of Men/Day	No. of Days of Hi-Alt Firings	No of Days of Lo-Alt. Firings	No of Days of Non- Firing	No of Days of Aircraft Bombing
184	236,085	1,283	74	128	40	25

No hi-altitude firings were made on the days the Air Force practiced bombing

The high altitude firings normally do not exceed an altitude of 7000 ft while the low altitude firings have a maximum altitude of 200 ft. The practice bombing of the Air Force utilized 10,000 ft of altitude. Ft. Detrick occasionally used the area for experimental tests in which a tethered balloon reached an altitude of 5000 ft, however their activity was not recorded during the survey period.

The range utilization was concentrated in the southern portion of the restricted area. The firing time at a range was usually listed as 0700 to 1700 hours, indicating that the firing unit occupied the range all day, although the actual firing might have taken only a portion of this time. Very few firings occurred on Saturday or Sunday.

The 2nd Army and Washington Air Traffic Control have entered into a tentative agreement whereby Camp Hill normally controls the airspace below 7000 feet from 0700 to 1700 hours but retains the right to request altitudes to 22,000 feet during all hours. (See Appendix I-G, page I-15)

Helicopters and light aircraft were used to support the ground troops. They were not used in the restricted area and normally fly at an altitude of 300-500 ft.

ORGANIZATIONAL USERS - 184 DAYS

(July 1 - December 31, 1958)

Organization	Basic Training Units Using Camp A. P Hill	Man-Days of Use	Days of Stay	Days of Hi- Alt Firing
Fort Meade	3rd Armored Cavalry	133,631	184	65
Fort Belvoir	Engineering	16,501	68	1
Fort Eustis	Transportation	38,140	139	0
Military Dist of Washington	Hospital, Helicopters Infantry	12,729	72	4
Miscellaneous	National Guard, Reserve, Marines	35,084	87	4
Air Force	Langley AFB, 836 Air Base Group		25	25



## INTRODUCTION

The Cornell Aeronautical Laboratory, Inc , under Contract No FAA/BRD-15, Task Order #11, performed a study of the utilization of the Camp A P Hill Restricted Area R-40 for the Operations Analysis Directorate of the Federal Aviation Agency, Bureau of Research and Development Particular attention was given to activities which would constitute a hazard to the operation of aircraft in the airspace To reach the objective of the program, a survey of the activities between July 1 and December 31, 1958 was made The survey was augmented by other factual data which describe the over-all Camp A P Hill ground operation

## CAMP A P HILL

### A Restricted Area - R-40

Restricted airspace R-40 of Camp A P Hill and the controlled airspace in the vicinity of Washington, D C are shown in Fig 1 The geographical boundaries of R-40 are defined in Appendix I-A, page I-1 R-40 is located near Fredericksburg, Virginia and is on a line between Richmond, Virginia and Washington, D C. The restricted area covers approximately one-half of the 120 square miles of the ground reservation of Camp A P Hill and is controlled by the 2nd Army

Figure 2 presents a more detailed picture of the restricted area, R-40, and the Camp A P Hill ground reservation Airways Victor 157 and Amber 7 bound the western side of the restricted area and Red 19 airway borders the northeast side

During the period of the survey, the airspace restriction was specified for an unlimited time up to 22,000 feet Since that time, the 2nd Army and the Washington ARTCC have entered into a tentative agreement for joint use of the airspace (see Appendix I-G, page I-15) This agreement gives control of the airspace to the 2nd Army from 0-7000 feet altitude during the hours 0700 to 1700 and to the Washington ARTCC altitudes above 7000 feet during these hours and all altitudes during all other times The 2nd Army retains the right of use of altitudes up to 22,000 feet during any hours by request to Washington ARTCC

## B Camp A P. Hill Organization and Operations

Camp A P. Hill is a permanent post of the 2nd Army Command manned by approximately 94 military and 86 civilian permanent personnel. It is maintained to provide training facilities for various military units. Figure 3 shows the various basic organizations that use the facilities and Appendix II-C, page II-4 is a list of all of the users during the survey period July 1 through December 31, 1958.

Camp A. P. Hill is divided by U. S Highway 301 which crosses the ground reservation in a southwesterly direction and separates the camp into two approximately equal parts (Fig 4). This figure also shows the facilities on the ground reservation which indicates basically the bivouac and troop training areas are north of U S Highway 301 in the unrestricted area. All firing is confined to the area south of Route 301 which is, generally, the area covered by R-40 restricted area. Sixteen firing ranges and a bombing range are located in this area (Fig 5), the high altitude firings (7000 feet, maximum) occur in the southwest portion of the restricted area.

The area to the north of U S Highway 301 is used for ground maneuvers, and the training of transportation -- both truck and helicopter -- and engineering military units.

Four airstrips are located within the ground reservation boundaries, two to the north of U S 301 and two to the south (Fig. 4), which are capable of handling light liaison type aircraft occasionally used as artillery "spotters". However, neither the helicopters, which operate at altitudes ranging to a maximum of 1000 feet, nor the liaison aircraft ever fly over that part of the ground reservation covered by the restricted area R-40.

## 1 Use of Facilities

Various units request the use of the facilities through the 2nd Army and Post Headquarters of Camp A. P. Hill. When the request is approved, the Post Operations and Range Officer assigns to the requesting unit the bivouac and training areas, together with the firing ranges desired. The Air Force used the area on the days high-firing weapons were not used. Appendix III, page III-2, indicates the general activity at Camp A. P. Hill.

Fort Meade utilizes the area primarily for proficiency training of the 3rd Armored Cavalry, which makes the greatest use of high altitude weapons, the 81mm and 4.2 inch mortars and the 105mm howitzer. These weapons have a maximum potential ordinate altitude of 7000 feet at the normal range of 4000 yards used at Camp A. P. Hill.

Fort Belvoir is basically an engineering organization that confines most of its firing activity to small arms except for high altitude weapon demonstrations.

Fort Eustis is a transportation organization and does not use any mortars or howitzers. The only weapons it uses on the firing ranges are 30 and 50 cal machine guns. Its average strength per unit at Camp A. P. Hill is 120 men, and fire an average of 70 rounds per man per stay. Fort Eustis employs light aircraft and helicopters in its operations at Camp Hill. Two flights per week are made to the area but all of the airway activity is outside of the restricted area. During training, these aircraft drop "flour bags" which simulate bombs or they drop smoke bombs which simulate gas or nuclear attacks on truck columns or bivouac areas. The altitude of the aircraft are usually at 500 feet or below and never exceed 1500 feet.

The Military District of Washington comprises the metropolitan area of Washington and five surrounding counties. Their major components are the 3rd Infantry, Military Police, Helicopters, two Field Hospitals and the Headquarters Company. The 3rd Infantry utilizes mortars in its training at Camp A. P. Hill while the other units only use small arms firing. The helicopters are used outside of the restricted area and normally fly at "tree top" level over the bivouac and administrative areas.

Other military units that use the area are the Marines, National Guard, and Reserve units. However, only a small percentage of their activity involves high altitude weapons. ROTC units from Fts. Meade, Belvoir, and Eustis visit Camp Hill and during their stay observe a demonstration of altitude weapons.

The Headquarters Squadron 836th Air Base Group 345th Bombing Wing at Langley Air Force Base, Virginia under permit by the 2nd Army (Appendix I-E, page I-10) was the only Air Force unit that used Camp A. P. Hill during the survey period. Due to the inactivation of some of their units, it was stated that this group will probably cease all operations at Camp Hill on or before April 1, 1959 (see Appendix I-F, pages I-13 and -14). Previous to the survey period the air arm of the Marines and the Navy, through the Air Force, used this bombing range for similar exercises.

The typical profiles of LABS practice bombing used by the Air Force is shown in Fig. 8 and the Air Force utilization of Camp A. P. Hill is shown in Appendix III-A, page III-8.

Radio communication is maintained between the aircraft and the observation tower at Camp A. P. Hill using one of 18 channels on ARC-27 type UHF radio equipment.

Some other activities with only occasional use are

The Engineering Research and Development Group of the Office of the Corps of Engineers to conduct several types of explosive and demolition experiments such as breaching a reinforced concrete wall. The estimate of their activity is about three times a year with about 30 days used in the experiments.

The Chemical Research and Development Unit of Fort Detrick attached to Edgewood conducts experiments with a tethered balloon at 5000 ft altitude.

Amateur rocketeers and the American Rocket Society use the area on a scheduled basis with a possible altitude utilization of about 6000 ft.

## C Range Control and Communications

### 1 Range Control

The control center for the ranges during firing are operated by the Post Range Officer at the Post Operations Office, Building T-129, located in the Post Headquarters Area or at the Post Range House at Range No. 6. Upon arrival at a firing range, every unit establishes and maintains telephone communication with the Post Range Officer during the unit's presence on the range. The telephone communication is through the central switchboard at Post Headquarters. There are no direct lines from the ranges to the Post Operations Office or Post Range House. Telephones are not available at Ranges 2, 4, 14, or 15 and the units using these ranges are required to station a mobile radio receiver-transmitter at the range used as well as at the nearest telephone in order to maintain telephone communications with the Post Range House and Post Operations office. The units assigned to a range are not permitted to fire on the range before or after the

assigned times. When the unit is ready to fire, it requests permission to start firing from the Post Range Sergeant and when the firing ceases, he is informed. This information is recorded on a monthly utilization chart indicating the range used, the starting and finishing time, the name of the unit and the number of personnel using the range.

No permanent radio facilities are established at Camp Hill except those which are used by the Air Force during practice bombing flights and the radio-telephone network to other posts in the 2nd Army Command. There are no means available to contact or warn any aircraft that inadvertently flies over the area at any time except during aircraft bombing practice, and then only if the passing aircraft is capable of receiving on, and is tuned to, the guard channel. During practice bombing flights, radio contact is maintained between an observation tower near the bombing area and the aircraft. Telephone communication is maintained between this tower and the Post Range House and Post Range Operations at Headquarters. The bombing flights, and possibly most of the firings, could be halted in a matter of minutes, except in cases where time is consumed in communicating with a unit which is at a range without a telephone.

Aircraft violating the restricted area are generally not reported due to the difficulty of identification, but on good flying days approximately three violations of the airspace have been noted each day. Any aircraft desiring passage through the restricted area is required to contact the Camp A. P. Hill Post Headquarters and the Post Range Operations Officer, who would grant or deny permission depending on the intended use of the range on that day.

The Post Range Officer normally requests users of high altitude weapons to fire into the designated impact area (see Fig. 5). This is a clearing in the woods, and facilitates removal of shells and duds. During the survey period, all of the units complied. This requirement limits the maximum distance the high altitude weapons can fire and therefore limits the potential altitude of these weapons.

## CAMP A P HILL ACTIVITIES STUDY

### A Data Collection

The data available to describe the activity at Camp A P Hill were in the form of utilization schedules, daily strength reports, daily bulletins, range firing schedules, and Air Force records of practice bombing flights

The utilization schedules, which denote the units scheduled to use Camp A P Hill, their strength in personnel, bivouac area, logistic support required, and type of training to be conducted, are published at approximately monthly intervals (see Appendix III, page III-5) The daily strength reports record all units at Camp A P Hill with their respective personnel strength The daily bulletins are schedules of training units assigned to the various firing ranges (see Appendix III, page III-6) The range firing schedule is maintained by the range control house operator and presents a monthly record of each firing indicating the firing range, number of personnel, and the times the range was opened and closed

By combining the information from the daily strength reports (Appendix III-B - III-G, pages III-9 - III-14) range firing clearances, (Appendix III-H - III-M, pages III-15 - III-20) and Air Force bombing records (Appendix III-A, page III-8) it was possible to determine the type and amount of firing activity engaged in by the various military units using Camp Hill



## B Results

### 1 Analysis of January-December 1958 Data

#### a. Comparison of Sample

Data were collected from the strength reports for the entire 1958 period for "sample vs year" comparison purposes. These data present the man-days of occupancy per month by visiting military units and indicate that the activity of Camp A P Hill during the selected sample period was double that of the first six months of the year (Fig 6). This typical increase in utilization during the July-December period is caused by increased activity by members of the 3rd Armored Cavalry of Fort Meade and the ROTC and Reserve Groups of Forts Meade, Belvoir and Eustis.

### 2 Analysis of Survey Data

#### a. High Altitude Weapons and Aircraft

The sixteen firing ranges and the practice bombing range at Camp Hill are used for the following training purposes:

<u>RANGE NO</u>	<u>TYPE OF FIRING</u>
1	Mortar Training Shell
2	Pistol
3	Machine Gun Transition
4	1000" (Small Arms)
5	Hand Grenade, HE
6	Known Distance (Small Arms)
7	4 2", 60 and 81mm Mortar, HE
8	Rifle Grenade
9	Rifle Transition
10	Sub-Machine Gun
11	Combat in Cities
12	Close Combat
13	Infiltration
14	4 2", 81 and 105mm Mortar, HE
15	105mm Howitzer
16	76 and 90mm Tank Guns
Demonstration	All Weapons
Bombing	A F Practice Bombing

Of the above weapons only the mortars and howitzer are used for indirect fire (ranges 7, 14, and 15) and, consequently, are the only weapons attaining a maximum altitude of appreciable magnitude (7000 feet). The small arms, machine guns, and tank weapons are used in direct fire and attain a maximum altitude of approximately 200 feet. Because of their low firing elevation angles a ricochet potential does exist when these weapons are fired. Efforts are made to eliminate ricochet by restricting the type of ammunition used in the tank weapons.

The maximum ordinate altitude in each of the two types of trajectories possible with the high altitude weapons (the 4.2 inch and 81mm mortars and the 105mm howitzer), are shown for various ranges in Fig. 7. This figure indicates the envelope of the range-altitude characteristics of the various weapons with various shell-charges. Except for the maximum range case, a given range may be achieved by either of two trajectories -- high or low angle. The maximum altitudes obtainable at Camp A. P. Hill are limited by the normal maximum range distance of 4000 yards indicated by the heavy line on Fig. 7. All firing at Camp A. P. Hill is conducted so that all rounds fall into a cleared impact area the outer boundary of which is at a maximum range of 4000 yards. The range limitation in turn limits the maximum ordinate of the altitude utilizing weapons as follows:

<u>WEAPON</u>	<u>MAX. ORDINATE ALTITUDE</u>
4.2 Mortar	6000 ft
81mm Mortar	7000 ft
105mm Mortar	7000 ft

By permission of the 2nd Army (Appendix I-E, page I-10), the USAF 836th Air Base Group stationed at Langley Field, Va. uses the bombing range, also located in the cleared impact area, to practice high and low angle "LABS" type bombing from B-57 aircraft (Fig. 5). Normally, 25 to 250 lb practice bombs, with spotting charges, are dropped, but occasionally practice bombs as large as 1600 lbs are used. The maximum altitude of the aircraft during these bombing

runs is 7000 feet, but the bombs may attain altitudes as high as 10,000 feet (Fig 8) The bombing range is used only when the mortar and howitzer ranges (Nos 7, 14, and 15) are not in use

A composite of the azimuth and range extremities of each of the firing ranges, the areas of high altitude utilization, and the impact area are shown in Fig. 5 It is evident that all high altitude firing is confined to the southwest quadrant of R-40

b Range and Altitude Utilization

The monthly range records of the range control house were used to determine the total number of firings, as well as to indicate the responsible military units and number of personnel, during the six-month survey period The data presented are for firing clearances which were the only means available to define firing activity A firing clearance is a block of time issued by the range control house for a firing on a particular range or for practice bombing aircraft flights Since most firing clearances were in effect throughout the entire day, each firing is referred to as a "range-day" of activity The degree to which reserved time was used for actual firing could not be determined.

During the six-month period studied, 473 range-days of firing and aircraft bombing activity were conducted A range distribution of the activity is shown in Table II-B, page II-3 A summary of the activity is as follows

ALTITUDE UTILIZATION, RANGE-DAYS PER MONTH

Range No	Altitude	NO OF RANGE-DAYS							% Range-Days
		JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL	
7, 14, 15 1-6, 8-13, 16	High	32	0	16	21	11	9	89	19.1
	Low	86	63	47	77	62	24	359	75.6
USAF	Practice Bombing	4	9	2	3	3	4	25	5.3
Total		122	72	65	101	76	37	473	100.0

The distribution by month of the number of days of high or low altitude firing, A F bombing flights, and non-firing is shown in Fig 9

The daily strength reports were used to determine the dates of visit and strength in personnel of each military unit utilizing the Camp A P Hill reservation. The range records were then used to determine the range and altitude utilization, low or high, of each unit. A monthly distribution of the number of high, low, and non-altitude using units, with their personnel strength, is shown in Fig 10. A corresponding monthly distribution of the total unit-days and man-days expended by these units at Camp A P Hill is shown in Fig 11.

The range records were also used to ascertain the number of days each military unit was involved in firing activity during its stay at Camp A P Hill. A monthly distribution of the total unit-days of visit, broken down into unit-days of high and low altitude firing and non-firing (Fig 12), indicates that 29% of the unit-days were expended in firing activity with only 9% devoted to high altitude firing. The distribution by week of the number of men per day engaged in high and low altitude and non-firing activities (Fig 13) shows that about 24% of the men perform range firing, with only 4% engaged in high altitude firing.

In order to determine the most frequent users of Camp A. P Hill and its high altitude ranges, the distribution of unit-days of visit, divided into high and low altitude and non-firing activities, for various types of military units was examined (Fig 14). This distribution indicates that the 3rd Armored Cavalry units from Fort Meade are the heaviest users of the high altitude ranges, and the student officers of Fort Belvoir and the ROTC units are the only other groups to use the high altitude ranges to any substantial degree. Of the 74 days in which high altitude firing was conducted, 51 were used by 1st, 2nd and 3rd Battalions of the 3rd Armored Cavalry in proficiency training. A total of 4500 rounds of mortar and howitzer ammunition was expended. The strength reports indicate

that personnel of the 3rd Armored Cavalry were present at Camp Hill on 183 days of the survey period with an average of 500 men per day. In actual practice, three battalions, each with a strength of 700-800 men, visit the camp. Each battalion stays approximately 30 days for proficiency training, and at all other times, small groups visit the camp. The remainder of the high altitude firing is performed in familiarization training by personnel of student officer, Military District of Washington, reserve, and national guard groups and in demonstrations for ROTC groups.

**SUMMARY OF 6 MONTHS ACTIVITY - CAMP A.P. HILL**  
**JULY - DECEMBER 1958 - 184 DAYS**

CAMP A.P. HILL R-48 STUDY JULY DEC 1958
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USERS	DAYS OF STAY	MAN-DAYS	AVERAGE MEN PER DAY	FIRING DAYS	HI-FIRING DAYS	LO-FIRING DAYS
FT. MEADE	184	133,631	722	79	65	36
3RD ARMORED CAV	183	89,621	490	61	51	21
ROTC (JULY)	30	27,753	925	16	14	15
OTHER				2	0	2
FT. BELVOIR	68	16,501	216	49	1	49
ENGINEERS						
ROTC & OTHERS						
FT. EUSTIS	139	38,140	279	20	0	20
TRANSPORTATION						
ROTC & OTHERS						
MILITARY DISTRICT OF WASHINGTON	72	12,729	175	47	4	47
INF., HEL., HOSP						
MISCELLANEOUS	87	35,084	404	35	4	35
MARINES, NAT. GD, RES						
<b>TOTAL</b>	<b>550</b>	<b>236,085</b>		<b>230</b>	<b>74</b>	<b>187</b>
<b>AIRCRAFT - 25 FLIGHT - DAYS</b>						

## SURVEY SUMMARY

### AIRSPACE

CAMP A.P. HILL  
R-40 STUDY  
JULY DEC  
1958

#### AIRSPACE UTILIZATION

1. ALL HIGH ALTITUDE FIRING WAS CONFINED TO SOUTHWEST QUADRANT OF R-40.
2. HIGH ALTITUDE FIRINGS ATTAINED A MAXIMUM ALTITUDE OF 7000 FEET.
3. A.F. PRACTICE BOMBING UTILIZED A MAXIMUM ALTITUDE OF 10,000 FEET.

#### COMMENTS

1. A.F. WILL NOT USE AREA AFTER 1 APRIL 1959.
2. TENTATIVE WASHINGTON ARTCC - 2ND ARMY AGREEMENT FOR USE OF AIRSPACE:

ALTITUDE	CONTROL OF USE	
	2ND ARMY, CAMP A.P. HILL	WASHINGTON ARTCC
SURFACE TO 7000 FT.	0700 TO 1700 EST.	1700 TO 0700 EST.
7000 TO 22,000 FT.	BY REQUEST TO ARTCC	UNLIMITED
ABOVE 22,000 FT.	NONE	UNLIMITED

APPENDIX I

GENERAL CAMP A P HILL AND R-40 UTILIZATION  
DOCUMENTARY DATA

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- I-A Geographic Description of Airspace R-40 (Copy)
- I-B 2nd Army Letter to Department of Army re Retention of Restricted Area R-40 (Copy)
- I-C 2nd Army Request on the Utilization of Assigned Air Space - R-40 (Copy)
- I-D 2nd Army Report on the Utilization of Assigned Air Space - R-40 (Copy)
- I-E Copy of Air Force Use Permit of Camp A P Hill Restricted Area R-40
- I-F Copy of Air Force Consent to Reduction of Restricted Altitude to 7000 feet
- I-G Joint Washington Center and 2nd Army Headquarters Agreement for Use of Restricted Area R-40 (Copy)



APPENDIX I-A -- Geographic Description of Airspace - R-40

FEDERAL AVIATION AGENCY

Washington 25, D C

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Y

March 3, 1959

Mr Milton D Smith  
Cornell Aeronautical Laboratory  
4455 Genesee Street  
Buffalo 21, New York

Dear Mr Smith

In response to your recent request there is set forth below the geographic description of the Camp A P Hill Restricted Area (R-40)

'Beginning at Latitude 38°07'30" North, Longitude 77°07'00" West, thence south-southwest to Latitude 38°02'50" North, Longitude 77°08'00" West, thence westerly following the county road to Latitude 38°00'25" North, Longitude 77°16'30" West, thence north-northwest to Latitude 38°01'30" North, Longitude 77°16'50" West, thence North to Latitude 38°08'40" North, Longitude 77°17'25" West, thence north-northeast to Latitude 38°10'40" North, Longitude 77°16'20" West, thence southeasterly along U S Highway No 17 to Latitude 38°07'30" North, Longitude 77°07'00" West, the point of beginning "

If we can be of any further help to you in this regard, please feel free to call upon us

Sincerely yours,

/s/ Ralph H Fletcher

for Walter E Britton, Chief  
Airspace Use Branch  
Bureau of Air Traffic  
Management

APPENDIX I-B -- 2nd Army Letter to Dept of Army re Retention of  
Restricted Area R-40

AIABC-F S63 1

8 May 1958

SUBJECT Retention of Restricted Area R-40, Camp A P Hill

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TO Deputy Chief of Staff for Military Operations  
Department of the Army

1 References

- a Paragraph 9, AR 385-63
- b Message, DA 335980, DCSOPS, 5 May 1958
- c Letter, AIAAV-52A, this headquarters, 28 April 1958, subject  
"Camp A P Hill Restricted Area R-40, Increase in Altitude Limitations"

2 Retention of Restricted Area R-40 is vital to the accomplishment of missions involving the national defense. Camp A P. Hill is the only installation east of the Allegheny Mountains in this Army Area with range facilities adequate to train the assigned combat troops whose training is essential to the defense of the National Capital and the states of Maryland, Virginia, Pennsylvania and Delaware.

3 Camp A P Hill is utilized by Army, Navy and Tactical Air Force organizations to accomplish mandatory training and readiness operational requirements. It accommodates range firing for high-angle fire weapons and air delivery weapons that require air space to the following altitudes:

a Ground artillery and mortars maximum ordinates for maximum allowable ranges:

- (1) Howitzer 155mm - 24,637 feet plus MSL (Range limited by present ceiling)
- (2) Howitzer 105mm - 17,660 feet plus MSL
- (3) Mortar 4 2 inch - 9,642 feet plus MSL
- (4) Mortar 81mm - 6,986 feet plus MSL

b Current requirements for US Navy elements utilizing Camp A P Hill are to an altitude of 35,000 feet MSL (Reference 1a above)

AIABC-F S63 1

SUBJECT Retention of Restricted Area R-40, Camp A P Hill

c Current requirements for the USAF TAC are 22,000 feet MSL for MARS, LABS and dive bombing maneuvers

4 The USAF TAC has flown 553 sorties during the period 1 January - 1 May 1958. Range firing by high-angle fire weapons has been conducted on 30 firing days during the same period. Minimum estimates are that 1000 sorties will be flown by USAF and 150 days of high-angle weapons firing will be conducted during the remaining months of this calendar year. The naval requirements are not included in these estimates and will be in addition to them.

5 Because Camp A P Hill is the only training site east of the Allegheny Mountains in this Army Area that has a range impact area that approaches the size adequate to any degree to meet the needs of this command, Armored Cavalry units stationed at Fort George G Meade, Maryland, must train there. They cannot accomplish any firing other than small arms, primarily due to air space limitations at Fort Meade. All the high-angle weapons firing and transition firing for automatic weapons of these units has to be conducted at Camp A P Hill, where there is allowable air space as well as adequate impact areas. Utilization of Indiantown Gap Military Reservation could not substitute for Camp A P Hill due to the restrictions in terrain and impact areas.

6 Not only does Camp A P Hill serve units of this command but the following also utilize the range facilities there:

a US Army Engineer Center and Fort Belvoir

Due to loss of air space at Fort Belvoir, Virginia, effective 1 October 1957, all range activities of the Engineer Center were transferred to Camp A P Hill and the Fort Belvoir Ranges closed.

b Military District of Washington

Units and installations in the Military District of Washington rely almost entirely on the ranges at Camp A P Hill for all firing. It is the only range area to accommodate the firing of crew-served and high-angle fire weapons of the 1st Battle Group, 3d Infantry Regiment.

c Other installations utilizing facilities at Camp A P Hill are Fort Holabird, Fort Eustis and occasionally Fort Lee. Fort Eustis utilizes range facilities approximately nine months of the year with the strength of a battalion in training almost continuously.

AIABC-F S63 1

SUBJECT Retention of Restricted Area R-40, Camp A P Hill

d ROTC summer encampments from Fort Meade, Fort Belvoir and Fort Eustis are established annually at Camp A P Hill Firing by artillery, mortars, and the delivery of live ordnance by tactical aircraft is conducted during the encampment

7 Rescission of Restricted Area R-40 would adversely affect the capability of the Commanding General, Second US Army, to accomplish assigned missions and would force measures such as the following to be taken

a Relocate priority units to stations west of the Alleghenies to enable them to accomplish mandatory readiness training requirements This would be extremely detrimental to missions involving the seat of government and other sensitive areas located within Second US Army Area and would be inordinately costly

b Reopen and activate Camp Pickett, Virginia This would be extremely costly and also add a higher cost of travel for units because of distances involved

c Acquisition of other real estate This would impose prohibitive costs In this regard, previous surveys by this command reveal that other real estate is not available to establish training areas of the types necessary along the eastern seaboard

8 As stated in the foregoing paragraphs, retention of Restricted Area R-40 is imperative The utilization of Camp A P Hill depends on this retention In the interest of the responsibilities of commanders to attain required states of readiness vital to the national defense of the United States, the loss of the Restricted Area will necessitate the initiation of drastic and costly measures to provide facilities to replace those affected

FOR THE COMMANDER

1 Incl  
Utilization of  
Camp A P Hill

t/E A CUMMINGS  
Colonel, GS  
Acting Chief of Staff

Copy furnished  
CG, USCONARC

APPENDIX I-C -- 2nd Army Request on the Utilization of Assigned Airspace -  
R-40

HEADQUARTERS  
SECOND UNITED STATES ARMY  
Fort George G. Meade, Maryland

C  
O  
P  
Y

9 December 1958

AIABC-F 353.1

SUBJECT Utilization of Assigned Airspace (Reports Control Symbol  
CSGPO-170)

TO Commanding Officer  
Camp A. P. Hill

1. Reference letter, AIABC-F 353.1, this headquarters,  
7 March 1958, Subject "Review of Airspace Requirements."

2. Department of the Army, in order to maintain complete up-  
to-date information pertaining to Army utilization of assigned airspace, has  
requested that a semi-annual report be submitted in the format attached  
hereto in order that proper review of requirements for assigned restricted  
and warning areas may be made.

3. It is therefore requested that an initial report covering  
information pertinent to Restricted Area R-40 be submitted in quintuplicate  
so as to reach this headquarters, Attention AIABC-F by 6 February 1959  
and subsequent reports, also in quintuplicate, forwarded so as to reach this  
headquarters by 1 June and 1 December annually.

FOR THE COMMANDER

/s/

HENRY J BILLINGS  
CWO, W-2 USA  
Asst Adj Gen

1 Incl  
Format

FORMAT

UTILIZATION OF ASSIGNED AIRSPACE

(Reports Control Symbol CSGPO-170)

- 1           Number of Area
- 2           Type of Area
3.          Name and Location of Installation
- 4           Activities performed by Army within the Area  
            (Be specific)
- 5           Joint usage information (List other services or agencies which  
            use the area, their activities, and percentage of time used)
- 6           Controlling Command (Include information pertaining to any  
            delegated control )
- 7           Effective Altitude (Assigned)
8.          Time of Use (Assigned)
- 9           Justification (Include average hours area is actually used for  
            Army activities per day and per week. If average hours do not  
            adequately portray continuing need for the area, appropriate  
            comment should be submitted )
10.         Information pertaining to feasibility of releasing and/or for  
            reducing size of area, altitude and time restrictions
11.         Additional Remarks (as appropriate).

NOTES

a    Information should be listed in the order outlined above, using a single letter size sheet for each area (using back if necessary) Sheets should be forwarded as inclosures to a cover letter

b    In instances where no change has occurred since the last report was submitted, the notation "No Change" may be entered for any portion of the report, except that information identifying the area should always be included (paragraph 1-3)

APPENDIX I-D -- 2nd Army Report on the Utilization of Assigned Airspace -  
R-40

AIBAFT 268/15

C  
O  
P  
Y

Major Bruce/bcg

19 Jan 1959

SUBJECT Utilization of Assigned Airspace

TO Commanding General  
Second United States Army  
Fort George G Meade, Maryland  
ATTN AIABC-F

In compliance with paragraph 3, letter AIABC-F 353.1,  
Headquarters Second United States Army, 9 December 1958, subject as  
above, the attached report on Utilization of Assigned Airspace is forwarded.

FOR THE COMMANDER

William E Smith  
Administrative Officer

1 Incl

a/s

HEADQUARTERS  
CAMP A. P HILL, VIRGINIA

UTILIZATION OF ASSIGNED AIRSPACE  
(Reports Control Symbol CSGPO-170)

19 JAN 1959

1. R40
2. Range firing area
3. Camp A. P. Hill, Virginia
4. Range firing to include mortar and artillery
5. USAF for high and low angle bombing for approximately thirty (30) percent of time for a total of 1125 sorties for calendar year 1958
6. Commanding Officer, Camp A P. Hill, Virginia
7. 22,000 feet
8. 24 hours per day
9. Active Army and Reserve Components fired high angle weapons on 117 days during calendar year 1958
10.
  - a. Reference Department of Army Permit Allowing Department of the Air Force to use Camp A P. Hill as an Aerial Gunnery Range.
  - b. As long as reference permit remains valid (expires 15 November 1959) it is not feasible to effect any changes to the present restrictions.
  - c. Provided reference permit was revoked, high angle weapon firing, scheduled not less than seven (7) days in advance, would facilitate reducing the time requirement for the area by using NOTAMS, indicating specific dates and time, as well as altitude, based upon maximum ordinate of weapon to be fired.
  - d. Under present conditions the Air Force is permitted to use the Aerial Gunnery Range when there is no conflict with Army range utilization. Therefore, since very little notification is possible, due to Army requirements, the Air Force has to take advantage of every opportunity to utilize the range on short notice, precluding the use of NOTAMS



TAB B

COPY OF USE PERMIT

DEPARTMENT OF THE ARMY  
PERMIT TO OTHER FEDERAL GOVERNMENT DEPARTMENT OF AGENCY  
TO USE PROPERTY ON THE

CAMP A P HILL MILITARY RESERVATION, Virginia

The Department of the Air Force (Tactical Air Command), is hereby granted a permit for a term of five (5) years, beginning 16 November, 1954, and ending 15 November, 1959, but revocable at will by the Secretary of the Army, to use, jointly with the Department of the Army, a portion of the Impact Area, Camp A P Hill, Virginia, as shown substantially in red on Exhibit A, attached hereto and made a part hereof, as an aerial gunnery range

THIS PERMIT is granted subject to the following conditions

- 1 That the use and occupation of the said premises shall be without cost or expense to the Department of the Army, under the general supervision and subject to the approval of the officer having immediate jurisdiction over the premises, and subject also to such rules and regulations as he may from time to time prescribe
- 2 That the permittee shall, at its own expense and without cost or expense to the Department of the Army, maintain and keep in good repair and condition the premises herein authorized to be used
- 3 That any interference with or damage to property under control of the Department of the Army incident to the exercise of the privileges herein granted shall be promptly corrected by the permittee to the satisfaction of the said officer

4 That the permittee shall pay the cost, as determined by the said officer, of producing and/or supplying any utilities and other services furnished by the Department of the Army or through Department of the Army facilities for the use of the permittee

5 That no additions to or alterations of the premises shall be made without the prior consent of the said officer

6 That if for any reason it should be deemed necessary or expedient for the Department of the Army to perform functions and/or render services which are the responsibility of the permittee, the said officer may, in lieu of reimbursement, require the permittee to furnish the personnel and/or materials required for the performance of said functions and/or for the rendering of said service. In addition to furnishing personnel and/or materials, the permittee shall reimburse the Department of the Army for any costs incurred by the Department of the Army in connection with said functions and/or services. Selection of such personnel will be subject to the approval of the said officer

7 That on or before the date of expiration of this permit or its relinquishment by the permittee, the permittee shall vacate the said premises, remove its property therefrom, and restore the premises to a condition satisfactory to the said officer, ordinary wear and tear and damage beyond the control of the permittee excepted. If, however, this permit is revoked, the permittee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army designate

8 That it is understood that the requirements of this permit with respect to maintenance, repair and restoration of the premises by the permittee as subject to the availability of appropriations therefor

9 That the scheduling of use of the aerial gunnery range shall be controlled by the said officer, to preclude interference with the primary mission of the installation

10 That all bombing runs will be confined to Danger Area -40 below an altitude of twenty-two thousand feet (22,000')

11 That the visibility during runs will be from four (4) to six (6) miles at two thousand feet (2000')

12 That only practice bombs, inert type, ranging from three (3) pounds to sixteen hundred (1600) pounds will be used

13 That air to ground communications will be maintained by the U S Air Force during all runs on target

14 This transaction is not affected by Section 601 of the Act of Congress approved 28 September 1951 (Public Law 155, 82nd Congress, 1st Session)

IN WITNESS WHEREOF I have hereunto set my hand this eighth day of December 1954, by authority of the Secretary of the Army and under direction of the Chief of Engineers

/s/t/ RAY ADAMS  
Colonel, Corps of Engineers  
District Engineer

APPENDIX I-F -- Copy of Air Force Consent to Reduction of Restricted  
Altitude to 7000 feet

ROUTINE

X

AF

ORIG

C  
O  
P  
Y

CMDR TAC LANGLEY AFB VA

AF MEMBER, NY REGIONAL SUBCOMMITTEE, FEDERAL BLDG,  
JAMAICA, LONG ISLAND, NY

UNCLASSIFIED FROM TOOT-OS 11 0643 Subject R-40 Reference Telephone  
conversation between Maj Lamison and Maj Reese, Hq TAC This headquarters  
has no objection to proposed action concerning R-40

10

NOV 58

TOOT-OS

MAJOR REESE  
5149

Maj Reese/5149/10 Nov 58/TOOT-OS

COLONEL ROSE  
TOOT-T - 5141

C  
O  
P  
Y

SUBJECT R-40

TO TOD

FROM TOOT

DATE 10 Nov 58 Comment #1

Maj Reese/5149

PROBLEM Proposed loss of R-40 (AP Hill)

BACKGROUND CAA and the Army are preparing an agreement to allow establishment of an airway from Washington, D C , to Richmond which will be directly over A P Hill The Army has agreed to turn R-40 over to Washington Center 1700-0700 daily and give the center control of all airspace above 8000 feet at all times, except during special firing missions at which time coordination would be effected with the center at least 12 hours prior to firing Since the 345th TBW is the only TAC unit using R-40 now and their requirements will be deleted in the near future, we have agreed to voice no objections to the above actions

RECOMMENDATIONS Approval of inclosed message

1 Incl  
a/s

Brig Gen CHILDRE  
TOOT - 26204

COLONEL ROSE  
TOOT-T - 5141

JOINT WASHINGTON CENTER AND SECOND U S ARMY HEADQUARTERS  
AGREEMENT

SUBJECT Agreement For Use of Restricted Area R-40  
EFFECTIVE \_\_\_\_\_

C O C O  
P P  
Y Y

The following agreement covers procedures for the use of Restricted Area R-40, by the Washington Air Route Traffic Control Center and the Second U S Army

The airspace contained within Restricted Area R-40 has been designated as controlled airspace by the Administrator, Federal Aviation Agency, for use under the terms described below

1 The Second U S Army (Camp A P Hill) will use that portion of Restricted Area R-40, between the surface and 7,000 feet, MSL, from 0700 EST to 1700 EST, daily. Between the hours of 1700 EST and 0700 EST, this portion will be used by the Washington Air Route Traffic Control Center for air traffic purposes. In addition to the above, the following procedures apply to this portion of the restricted area

- (a) When not in use by Camp A P Hill during the hours of 0700 EST to 1700 EST daily, immediate notification and release of this portion will be given to the Washington Air Route Traffic Control Center
- (b) In the event of release of this portion to the Washington Air Route Traffic Control Center under the conditions stated in (a) above, and subsequently, Camp A P Hill has need for the area, at least one hour notification will be given the Center before use of the area by Camp A P Hill
- (c) In the event that Camp A P Hill has need for use of this area other than from 0700 EST to 1700 EST daily, at least 12 hours notice must be given before Washington Air Route Traffic Control Center will release this portion

2 The Washington Air Route Traffic Control Center will use R-40 above 7,000 feet, MSL, for air traffic purposes. The Washington Air Route Traffic Control Center will release that portion of R-40 from 7,000 to 22,000 feet inclusive, MSL, whenever the Commanding Officer, A P Hill requests such usage. Such request will be upon twelve (12) hours prior notification to the Washington Air Route Traffic Control Center

3 No other concurrent operations by Camp A P Hill will be conducted in this airspace which would constitute a hazard to the air traffic operating under the control of the Federal Aviation Agency

COMMUNICATIONS Communications between Camp A P Hill and the Washington Air Route Traffic Control Center will be conducted on Service F direct interphones

/s/ JAMES J BOYLE  
JAMES J BOYLE  
Chief, Washington Center

/s/ RINALDO VAN BRUNT  
RINALDO VAN BRUNT  
Major General, GS  
Chief of Staff

APPENDIX II  
CAMP A P HILL SUMMARY REPORT DATA

<u>Table No</u>	<u>Title</u>	<u>Page No</u>
II-A	Summary of Personnel at Camp A P Hill January - December 1958	II-2
II-B	Range and Altitude Utilization by Range-Days July - December 1958	II-3
II-C	Coding and Location of Units Using Camp A P. Hill	II-4
II-D	Monthly Distribution of Man-Days and Days of Firing by Unit	II-5
II-E	Weekly Distribution of the Average No of Men Per Day By Firing Activity - Based on 5-day week	II-6
II-F	Monthly Distribution of Unit-Days of Firing Activity By Type of Unit	II-7
II-G	Monthly Utilization & Firing Activity by Various Users	II-8
II-H	Monthly Distribution of Unit-Days and Man-Days by Firing Activity	II-9



**TABLE II - A SUMMARY OF PERSONNEL AT CAMP A.P. HILL  
JANUARY - DECEMBER 1958**

MONTH	JAN		FEB		MAR		APRIL		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A	MAN-DAYS	D/A
ALL MILITARY																								
(1) E M	18,463	596	27,940	898	25,780	832	21,343	711	14,046	453	21,644	721	64,816	2091	18,743	606	95,861	1195	62,431	2014	34,984	1166	16,214	523
(1) W O	98	3	136	5	97	3	119	4	0	0	137	5	67	2	81	3	57	2	398	13	137	5	34	1
(1) OFF	1501	48	1402	50	1985	62	1285	42	1842	50	1,828	61	12,778	412	2168	70	1783	60	4851	150	3869	129	1073	35
(1) TOTAL	20,062	647	29,478	1053	27,812	897	22,727	758	15,888	503	23,609	787	77,661	2505	21,002	677	37,711	1257	67,480	2177	38,990	1300	17,321	559
(2) TOTAL													69,297	2230	21,913	710	38,706	1290	67,725	2180	44,887	1500	19,812	640
PERMANENT MILITARY																								
(1) TOTAL	4247	137	3836	137	2870	137	3828	131	4195	135	4189	140	4638	150	4796	155	3994	133	4098	132	4030	134	3987	129
(2) TOTAL													4638	150	4798	155	4004	133	4098	132	4318	144	4399	142
VISITING MILITARY																								
(1) TOTAL	15,815	510	25,642	916	24,942	780	18,799	627	11,920	385	19,420	647	73,023	2355	16,204	522	33,717	1124	63,382	2045	34,960	1166	13,334	430
(2) TOTAL													64,859	2066	17,115	552	34,702	1157	63,627	2052	40,569	1352	15,413	497
CIVILIAN																								
(1) TOTAL	3065	99	2828	101	3142	101	3611	120	2848	131	2786	133	3127	142	2812	134	2077	99	2109	92	1981	99	1895	90

NOTE (1) FROM CAMP A P HILL MONTHLY STRENGTH SUMMARY RECORDS  
(2) FROM CAMP A P HILL DAILY STRENGTH RECORDS AND RANGE FIRING SCHEDULES AS USED IN THE SURVEY ANALYSIS

CODING B/A - DAILY AVERAGE OF MEN  
E M - ENLISTED MEN  
W O - WARRANT OFFICERS  
OFF - OFFICERS

TABLE II - B RANGE & ALTITUDE UTILIZATION BY RANGE-DAYS

RANGE NO	TYPE OF FIRING	RANGE-DAYS							TOTAL	% 6 MO'S TOTAL
		JULY	AUG	SEPT	OCT	NOV	DEC			
1	MORTAR TRAINING SHELL	0	0	0	0	2	3	5	1.1	
2	PISTOL	0	2	2	10	2	0	16	3.4	
3	MACHINE GUN TRANSITION	10	1	0	2	7	3	23	4.9	
4	1000" (SMALL ARMS)	10	6	4	7	5	5	37	7.8	
5	HAND GRENADE, HE	5	1	0	3	4	3	16	3.4	
6	KNOWN DISTANCE (SMALL ARMS)	16	35	27	26	9	3	116	24.5	
7	4.2", 60 & 80 MM MORTAR, HE	10	0	0	0	1	3	14	3.0	
8	RIFLE GRENADE	7	4	3	8	10	6	38	8.0	
9	RIFLE TRANSITION	0	0	0	2	0	0	2	0.4	
9A	500" & 1000" (SMALL ARMS)	8	7	3	5	3	0	26	5.5	
10	SUB-MACHINE GUN	8	0	2	2	0	0	12	2.5	
11	COMBAT IN CITIES	0	1	0	1	0	0	2	0.4	
12	CLOSE COMBAT	0	0	0	0	4	0	4	0.8	
13	INFILTRATION	2	1	1	3	4	0	11	2.3	
14	4.2", 81 & 105 MM MORTAR, HE	3	0	7	0	0	2	12	2.5	
15	105 MM HOWITZER	17	0	9	19	9	4	58	12.3	
16	76 & 90 MM TANK GUNS	20	4	5	8	12	1	50	10.6	
DEMO	ALL WEAPONS	2	1	0	2	1	0	6	1.3	
A/C	A F PRACTICE BOMBING	4	9	2	3	3	4	25	5.3	
TOTAL		122	72	65	101	76	37	473	100	
% 6 MO'S		25.9	15.2	13.7	21.3	16.1	7.8	100		

TABLE II - C CODING AND LOCATION OF UNITS USING CAMP A.P. HILL

CODE NO.	UNIT NAME	LOCATION	CODE NO	UNIT NAME	LOCATION
1A	HQ CO. USAC CAMP AP HILL	CAMP HILL	4C	ROTC	FT. BELVOIR
1B	19TH AAA DET	CAMP HILL	4D	411TH ENGR BR	FT. BELVOIR
1C	836TH AFT DET	CAMP HILL	4E	USAECR - COE 1ST BN	FT. BELVOIR
2A	1ST BN 3/AC	FT MEADE	4F	91ST ENGR. BN	FT BELVOIR
2B	2ND BN 3/AC	FT MEADE	4G	71ST AAA	FT. BELVOIR
2C	3RD BN 3/AC	FT MEADE	4H	RIFLE TEAM	FT. BELVOIR
2D	ROTC -	FT MEADE	5A	M D.W	FT MEYER, MDW
2E	19TH ENG BN	FT MEADE	5B	7TH FIELD HOSPITAL	FT MEYER, MDW
2F	69TH SIG BN	FT. MEADE	5C	3RD INFANTRY	FT. MEYER, MDW
3A	557 TRUCK CO	FT EUSTIS	5D	13TH FIELD HOSPITAL	FT MEYER, MDW
3B	4TH TTC	FT. EUSTIS	6	345TH TBW	LANGLEY, VA
3C	24TH T BN	FT EUSTIS	7	USMC (RES) 105 HOW	RICHMOND
3D	514TH TRANS.	FT. EUSTIS	8	PATUXENT MARINES	PATUXENT
3E	544 TRANS. CO	FT. EUSTIS	9	318TH INF REG (RES)	RICHMOND
3F	598 TRUCK CO	FT. EUSTIS	10	787 FA BN (FIELD ART )	ELKTON, VA.
3G	322 TRANS GR	FT. EUSTIS	11	EXPLOSIVE ORDNANCE DET	FT MEYER, FT MC NAIR
3H	116 TRANS CO	FT EUSTIS	12	FT. DETRICK (CHEM WARFARE - 5000')	FT. DETRICK
3I	63 TRK. CO.	FT. EUSTIS	13	410TH ENGR. BR.	NEW YORK, N Y
3J	10TH 62 T. CO	FT EUSTIS	14	874TH ENG BN.	STAUNTON, VA.
3K	1ST RFA (RES FORCE ACT)	FT. EUSTIS	15	79TH ENG'R.	
3L	48TH TRANS. GP	FT. EUSTIS	16	1030TH ENG (N.G.)	
3M	159TH T. BN.	FT EUSTIS	17	280TH FIELD ART. (N.G.)	
3N	29TH T. BN	FT. EUSTIS	18	37TH SIGNAL CORPS	
3O	ROTC	FT. EUSTIS	19	610TH ENGR.	
3P	10TH T. BN	FT EUSTIS	20	3RD HEL. CO	
3Q	14TH T. BN	FT. EUSTIS	21	3RD BN 176 RCT (RESERVE)	RICHMOND, VA.
4A	STUDENT OFFICER DET.	FT. BELVOIR	22	280TH FA BN (R)	MANASSAS, VA
4B	ENG. REG	FT BELVOIR	23	147TH ENGR GP USAR CAMP	

TABLE II - D MONTHLY DISTRIBUTION OF MAN-DAYS & DAYS OF FIRING BY UNIT

JULY							
UNIT NO	MAN DAYS	NO MEN PEAK DAY	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2B	19,233	700	31	7	8	8	8
2D	27,753	1874	30	16	14	15	15
2E	72	72	1	0	0	0	0
2F	236	29	10	0	0	0	0
TOTAL 2	47,294	1874	31	23	20	19	19
3H	1054	148	12	0	0	0	0
3-I	66	22	3	0	0	0	0
3J	576	182	3	0	0	0	0
3-O	9374	986	18	1	0	1	1
TOTAL 3	11,070	986	21	1	0	1	1
4A	703	170	5	3	1	2	2
4C	4363	692	13	5	0	5	5
4E	833	204	5	1	0	1	1
4H	158	43	3	3	0	3	3
TOTAL 4	6047	692	18	11	1	11	11
5A	116	116	1	1	0	1	1
5E	32	16	2	0	0	0	0
TOTAL 5	148	116	3	1	0	1	1
8	80	20	5	5	0	5	5
11	20	2	10	0	0	0	0
TOTAL MISC	100	20	10	5	0	5	5

AUGUST							
UNIT NO	MAN DAYS	PEAK DAY MEN	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2C	917	75	31	0	0	0	0
2D	261	85	4	0	0	0	0
2F	849	208	5	2	0	2	2
TOTAL 2	2027	208	31	2	0	2	2
3G	308	154	2	0	0	0	0
3K	375	160	8	0	0	0	0
3L	5928	452	25	6	0	6	6
3M	292	292	1	1	0	1	1
TOTAL 3	6903	452	27	6	0	6	6
4A	721	173	5	4	0	4	4
4B	370	165	5	5	0	5	5
4G	195	65	3	2	0	2	2
4H	76	76	1	1	0	1	1
TOTAL 4	1362	173	11	8	0	8	8
8	277	20	20	18	0	18	18
11	58	2	31	1	0	1	1
13	8377	800	11	3	0	3	3
16	72	72	1	0	0	0	0
23	39	39	1	1	0	1	1
TOTAL MISC	6823	800	31	21	0	21	21

SEPTEMBER							
UNIT NO	MAN DAYS	PEAK DAY MEN	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2C	20,142	719	30	20	16	5	5
TOTAL 2	20,142	719	30	20	16	5	5
3C	516	86	6	1	0	1	1
3E	894	149	6	0	0	0	0
3F	101	101	1	0	0	0	0
3K	921	219	8	0	0	0	0
3L	6589	319	30	0	0	0	0
3M	905	157	9	3	0	3	3
TOTAL 3	8926	319	30	4	0	4	4
4A	344	172	2	1	0	1	1
4B	632	158	4	4	0	4	4
4D	402	201	2	2	0	2	2
TOTAL 4	1378	201	7	6	0	6	6
5C	3781	352	23	20	0	20	20
TOTAL 5	3759	352	23	20	0	20	20
11	4	4	1	0	0	0	0
19	283	31	9	0	0	0	0
21	216	72	3	3	0	3	3
TOTAL MISC	503	72	13	3	0	3	3

OCTOBER							
UNIT NO	MAN DAYS	NO MEN PEAK DAY	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2A	5844	650	9	5	5	2	2
2C	15,798	700	23	10	10	1	1
2E	2030	406	5	0	0	0	0
TOTAL 2	23,662	700	31	15	15	3	3
3A	104	17	8	0	0	0	0
3B	17	17	1	0	0	0	0
3C	1470	372	11	0	0	0	0
3D	1192	149	9	0	0	0	0
3L	948	240	8	1	0	1	1
3P	2179	406	6	4	0	4	4
3Q	400	200	2	1	0	1	1
TOTAL 3	6310	406	24	6	0	6	6
4A	1098	176	8	8	0	8	8
4B	49	49	1	1	0	1	1
4E	366	136	4	4	0	4	4
4F	70	14	5	0	0	0	0
TOTAL 4	1573	176	11	11	0	11	11
5B	600	120	5	1	0	1	1
5C	3609	631	10	10	0	10	10
5D	545	109	5	1	0	1	1
TOTAL 5	4754	631	20	11	0	11	11
7	330	185	2	2	2	0	0
8	94	30	4	2	0	2	2
9	360	180	2	0	0	0	0
10	876	189	4	2	0	2	2
11	2	2	1	0	0	0	0
12	36	6	7	0	0	0	0
14	70	35	2	2	0	2	2
15	28,152	1207	26	0	0	0	0
17	470	235	2	2	2	0	0
18	78	19	4	0	0	0	0
19	62	31	2	0	0	0	0
TOTAL MISC	27,328	1207	31	6	4	6	6

NOVEMBER							
UNIT NO	MAN DAYS	NO MEN PEAK DAY	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2A	15,131	636	24	14	9	7	7
2B	3100	620	5	0	0	0	0
2E	11,161	412	27	0	0	0	0
TOTAL 2	29,392	636	20	14	9	7	7
3A	1000	90	18	0	0	0	0
3B	1273	113	12	0	0	0	0
3G	732	244	3	3	0	3	3
3H	1036	84	11	0	0	0	0
TOTAL 3	4041	244	24	3	0	3	3
4A	1708	189	11	10	0	10	10
4E	88	68	1	0	0	0	0
4F	2072	259	8	0	0	0	0
TOTAL 4	3848	259	16	10	0	10	10
5C	1217	340	8	6	1	6	6
TOTAL 5	1217	340	8	6	1	6	6

DECEMBER							
UNIT NO	MAN DAYS	NO MEN PEAK DAY	DAYS OF STAY	DAY OF FIR	HI FIR DAYS	LO FIR DAYS	LO FIR DAYS
2B	9466	625	31	5	5	0	0
2E	1048	412	4	0	0	0	0
TOTAL 2	11,114	625	31	5	5	0	0
3A	890	86	13	0	0	0	0
TOTAL 3	890	86	13	0	0	0	0
4B	222	46	4	3	0	3	3
TOTAL 4	222	46	4	3	0	3	3
5C	2857	157	18	9	3	9	9
TOTAL 5	2857	157	18	9	3	9	9
7	330	185	2	0	0	0	0
TOTAL 7	330	185	2	0	0	0	0

NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

TABLE II - E WEEKLY DISTRIBUTION OF THE AVERAGE NO. OF MEN PER DAY  
BY FIRING ACTIVITY - BASED ON A 5-DAY WEEK

MEN/DAY WEEK	HIGH ALTITUDE FIRING	LOW ALTITUDE FIRING	VISITING CAMP A P HILL
1	144	194	760
2	84	1090	2021
3	193	522	3664
4	310	540	2680
5	17	37	258
6	0	117	272
7	0	142	595
8	0	197	1171
9	0	347	964
10	0	47	595
11	74	378	1387
12	0	156	1361
13	70	150	1285
14	83	445	1560
15	134	493	2975
16	19	441	2201
17	0	28	2164
18	48	40	1311
19	62	63	1553
20	62	188	1463
21	3	262	1368
22	25	196	945
23	93	222	1172
24	6	145	877
25	5	120	335
26	0	0	1

HIGH ALTITUDE = ACTUAL NO. OF MEN USING HIGH ALTITUDE RANGES  
LOW ALTITUDE = ACTUAL NO. OF MEN USING LOW ALTITUDE RANGES

TABLE 11 - F MONTHLY DISTRIBUTION OF UNIT-DAYS OF FIRING ACTIVITY BY TYPE OF UNIT

	JULY				AUGUST				SEPT				OCT				NOV				DEC				TOTALS			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
A ARMORED CAVALRY (2 a b, c)	31	7	6	6	31	0	0	0	30	20	5	16	32	15	3	15	29	14	7	9	31	5	0	5	184	61	21	51
B ROTC - (2d 3-o 4a 4c)	66	25	23	15	9	4	4	0	2	1	1	0	8	8	8	0	11	10	10	0	0	0	0	0	96	48	46	15
C ENG BATT - (2e 4b, d, e, f, 13, 14, 15 18 19, 23)	6	1	1	0	18	9	9	0	15	6	6	0	45	7	7	0	36	0	0	0	8	3	3	0	128	26	26	0
D TRANSP - (3 - EXCEPT 3-o)	18	0	0	0	36	7	7	0	60	4	4	0	47	6	6	0	44	3	3	0	13	0	0	0	218	20	20	0
E INFANTRY - (5a c 7, 8, 9, 21)	6	6	6	0	20	18	18	0	26	23	23	0	18	14	12	2	8	6	6	1	20	9	9	3	98	76	74	6
F MISC - (SIG BATT 2f, 5e, 18 F A 10, 17, 22 KOSP 5b, d HEL 20, 4g, h, 11, 12)	25	3	3	0	40	6	6	0	1	0	0	0	28	6	4	2	0	0	0	0	0	0	0	0	94	15	13	2
TOTAL	152	42	39	21	154	44	44	0	134	54	39	16	178	56	40	19	128	33	26	10	72	17	12	8	818	246	200	74
G AIRCRAFT - (6)	4	4	0	4	9	9	0	9	2	2	0	2	3	3	0	3	3	3	0	3	4	4	0	4	25	25	0	25

CODE 1 TOTAL UNIT-DAYS - UNITS X DAYS OF STAY AT CAMP HILL  
 2 TOTAL FIRING UNIT-DAYS - UNIT X DAYS UNIT FIRED  
 3 LO-ALT FIRING UNIT-DAYS - UNIT X DAYS UNIT FIRED LO-ALT WEAPONS  
 4 HI-ALT FIRING UNIT-DAYS - UNIT X DAYS UNIT FIRED HI-ALT WEAPONS

TABLE II - G MONTHLY UTILIZATION & FIRING ACTIVITY BY VARIOUS USERS

MONTH	JULY	AUGUST	SEPT	OCT	NOV	DEC.	TOTAL	%
DAYS	31	31	30	31	30	31	184	
2 FT MEADE								
MANDAYS	47,294	2027	20,142	23,662	29,392	11,114	133,631	56.6 %
PEAKDAY MEN	1874	208	719	700	641	625	1874	
DAYS OF STAY	31	31	30	31	29	31	183	99.5 %
DAYS OF FIRING	23	2	20	15	14	5	79	42.6 %
DAYS OF HI-FIRING	20	0	16	15	9	5	65	35 %
DAYS OF LO-FIRING	19	2	5	3	7	0	36	19.5 %
3 FT EUSTIS								
MANDAYS	11,070	6903	8926	6310	4041	890	38,140	16.1 %
PEAKDAY MEN	986	452	319	406	244	86	986	%
DAYS OF STAY	21	27	30	24	24	13	139	75 %
DAYS OF FIRING	1	6	4	6	3	0	20	10.8 %
DAYS OF HI-FIRING	0	0	0	0	0	0	0	0 %
DAYS OF LO-FIRING	1	6	4	6	3	0	20	10.8 %
4 FT BELVOIR								
MANDAYS	6047	1362	1378	1573	6919	222	16,501	7.0 %
PEAKDAY MEN	692	173	201	175	261	45	692	
DAYS OF STAY	19	11	7	11	16	4	68	35.6 %
DAYS OF FIRING	11	8	6	11	10	3	49	26.5 %
DAYS OF HI-FIRING	1	0	0	0	0	0	1	.54%
DAYS OF LO-FIRING	11	8	6	11	10	3	49	26.5 %
5 MILITARY DIST OF WASHINGTON								
MANDAYS	148		3763	4754	1217	2857	12,729	6.4 %
PEAKDAY MEN	116		352	631	340	147	631	
DAYS OF STAY	3		23	20	8	18	72	39 %
DAYS OF FIRING	1		20	11	6	9	47	25.4 %
DAYS OF HI-FIRING	0		0	0	1	3	4	2.16%
DAYS OF LO-FIRING	1		20	11	6	9	47	25.4 %
6 MISC - MARINES RESERVE UNITS								
MANDAYS	100	6823	503	27,328		330	35,084	14.9 %
PEAKDAY MEN	20	800	72	1207		165	1207	
DAYS OF STAY	10	31	13	31		2	87	47 %
DAYS OF FIRING	5	21	3	6		0	35	18.9 %
DAYS OF HI-FIRING	0	0	0	4		0	4	2.16%
DAYS OF LO-FIRING	5	21	3	6		0	35	18.9 %
TOTAL MANDAYS	64,659	17,115	34,702	63,627	40,569	15,413	236,085	
DAILY AVG OF MEN	2086	552	1157	2052	1352	497	1283	

TABLE II - H MONTHLY DISTRIBUTION OF UNIT-DAYS AND MAN-DAYS BY FIRING ACTIVITY

ALTITUDE USE	JULY		AUG		SEPT.		OCT.		NOV		DEC		TOTAL	
	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS	UNIT- DAYS	MAN- DAYS
BOTH														
LOW & HIGH	66	47,710	0	0	30	20,151	23	15,800	32	16,366	18	2830	169	102,857
HIGH ONLY	0	0	0	0	0	0	13	6650	0	0	31	9456	44	16,106
LOW ONLY	45	14,931	77	15,916	45	6434	51	9996	14	2440	4	177	236	49,894
NON-FIRING	41	2018	77	1199	55	8117	86	31,181	82	21,563	19	2950	360	67,228
TOTAL	152	64,659	154	17,115	130	34,702	173	63,627	128	40,569	72	15,413	809	236,085

## WHERE:

UNIT-DAYS = ACTIVITY OF UNIT X DAYS OF STAY AT CAMP A P HILL

MAN-DAYS = TOTAL MEN IN UNIT X DAYS OF STAY AT CAMP A.P HILL



## APPENDIX III

### CAMP A P HILL UTILIZATION DATA

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## GENERAL INFORMATION ON ACTIVITY AT CAMP A P HILL

### Scheduling

#### I Request for Ranges for Firing

- a Commanders desiring the use of range(s) only submit a written request through Headquarters, Second United States Army, 30 days in advance of desired date. This request contains the following information:

- (1) Range(s) desired
- (2) Weapon(s) to be fired
- (3) Dates and hours of firing
- (4) Number of targets (firing points) desired
- (5) Name(s) of unit range officer(s) and unit safety officer(s)

- b For all indirect firing, units submit an overlay for approval to the Post Range Officer, Camp A P Hill, indicating firing points, safety limits, observation post and danger area. Request for indirect firing contains the following information:

- (1) Type of weapon(s)
- (2) Number of firing point desired
- (3) Type of projectile(s) and fuse(s) to be fired
- (4) Maximum range desired (in yards)
- (5) Name of Unit Range Officer(s) and Unit Safety Officer(s)

#### II Request for Training Areas

Commanders desiring to utilize training areas at Camp A P Hill, submit a written request through Headquarters, Second United States Army at least 60 days in advance of desired date. This request is submitted in accordance with Memorandum 12, of A P Hill headquarters, dated April 2, 1958 and will include the following:

- a Area(s) desired, accompanied by an overlay
- b Dates and hours area(s) will be used
- c Purposes for which area(s) will be used
- d Name(s) of responsible officer(s)

#### III Request for Bivouac Areas

A request for bivouac areas is submitted through Headquarters, Second United States Army to Commanding Officer, Camp A P Hill, at least 60 days in advance of desired date(s). This request is submitted in accordance with Memorandum 12, of A P Hill headquarters, April 2, 1958 and includes the following information:

- a Area(s) desired, accompanied by an overlay
- b Dates area(s) will be used

- c Utilities desired
- d Name(s) of responsible officer(s)

All requests, when approved by Headquarters Second Army, are sent to the Commanding Officer Camp Hill for final approval and he is usually given approval to communicate directly with the requesting unit to give approval, denial or to make alternate arrangements

The Post Operations and Range Officer, Camp A P Hill, publishes the Utilization Schedule every 1 - 3 weeks on which all of the units are listed with the dates they will use the facilities, their strength, location(s) they will use, their mission and logistical support required. A daily bulletin is published by the Post on every Tuesday and Thursday giving the time, date, weapon and unit for each range that is scheduled for firing. This includes aircraft practice bombing flights

#### IV Aircraft - Bombing training

The Department of the Air Force has been granted a permit for use of the area for aircraft bombing training. The 836th Air Base Group stationed at Langley Field Virginia has been the only unit utilizing the area permanently assigned have a detail of men in charge of a Sergeant at Camp Hill. When the Post Range Officer sets up the projected monthly utilization chart, he notifies the Air Force Sergeant the days which are available for aircraft bombing training. These are the days on which high altitude weapons will not be used. The Sergeant in turn notifies the 836th Air Base Group the available days and they then schedule their operations and so notify the Post Range Officer who then schedules them in. The Air Force Sergeant notifies the Camp A P Hill Post Range Officer between 1500 & 1700 on the day previous to the scheduled bombing operation whether the Air Force will make use of the range or will cancel. In the event other services such as the Department of the Navy or Marines desire the use of the area, their requests are directed thru the Department of the Air Force

### Range Control

#### Method of Range Control

- a The control center for the ranges during firing are operated by the Post Range Officer at the Post Operations Office, Building T-129, located in the Post Headquarters Area or Post Range House at Range #6
- b Upon arrival at a range every unit establishes and maintains telephone communication with the Post Range Officer during the units presence on the range. The telephone communication is thru the central switchboard at Post Headquarters. There are no direct lines from the ranges to the Post Operations Office or Post Range House. Phones are not available at ranges 2, 4, 14, 15 and the units using these ranges are required to station a mobile radio receiver - transmitter at the range used as well

as at the nearest telephone in order to maintain telephone communications with the Post Range House & Post Operations office. The Units assigned to a range are not permitted to fire on the range before or after the assigned times. When the unit is ready to fire, they request permission to start firing from the Post Range Sergeant and when the firing ceases they so inform him.

This information is recorded on a monthly utilization chart indicating the range used, the starting and ending time, the name of the unit and the number of personnel using the range.

No permanent radio facilities are established at Camp Hill except that which is only used by the Air Force during practice bombing flights and the radio - telephone network to other posts in the Second Army Command.

There are no means available to contact or warn any aircraft that inadvertently flies over the area at any time except during aircraft bombing practice and then only if the passing aircraft is capable of receiving and is tuned to the guard channel.

During practice bombing flights, radio contact is maintained between an observation tower near the bombing area and the aircraft. Telephone communication is maintained between this tower and the Post Range House and Post Range Operations at Headquarters. The bombing flights can be halted in a matter of minutes and possibly most of the firings except in the cases when time is consumed in telephoning a unit which is at a range without a phone and the message is transmitted via mobile radio to the actual firing personnel. Aircraft violating the restricted area are not reported to any civil agency due to the difficulty of identification but on a good flying day approximately 3 a day have been noted. Any aircraft desiring passage thru the restricted area is required to contact the A P Hill Post Headquarters and the Range Operations officer would grant or deny permission depending on the use of the range on that day.

### Communications

- a. Telephones thru a central switchboard are available at all ranges except 2, 4, 14, 15
- b. No permanent radio facilities except air to ground during aircraft bombing practice
- c. No visual means of communication or warning devices are available

The maximum range distance normally used at Range #7 is 1000 yds and the maximum range distance at Ranges #14 & 15 is approximately 4000 yds. The maximum altitude obtainable at Range #7 with the weapons used is 1200 ft and at Ranges 14 & 15 is 7000 ft.

# SAMPLE UTILIZATION SCHEDULE

## HEADQUARTERS CAMP A.P. HILL, VIRGINIA

### UTILIZATION SCHEDULE

S-3 MEMORANDUM  
NR 16

18 AUGUST 1958

DATE	UNIT	STRENGTH	LOCATION	LOG SUPPORT REQUIRED	MISSION
18 - 31 Aug	410th Engr Brig	900	Port Royal	Bread boxes fld type, chairs folding metal mosquito bars latrine boxes tables tentage & cots folding	T RF
4 Aug - 1 Sep	48th Trans Bp	300	Moss Neck	Rations POL, tentage & tent floors	T, RF
2 Sep - 21 Oct	3d Bn 3d A/C	775	Rappahannock & Winder	Rations POL tents stoves, refrigerators	T, RF
1 - 5 Sep	Ft Belvoir (S)	180	Hq Area	Rations, cots POL CP tent BP tents, mess tables kitchen fly & latrine boxes	RF
8 - 17 Sep	159th Trans Bn	Max 785	Moss Neck	CP tent BP tents cots mess tables kitchen fly rations co a, POL & latrine boxes	T RF
13 - 14 Sep	176th RCT	535	Howard Corner	None	RF
15 - 19 Sep	1st RFA Tng Co	105	Skinkers	CP tent kitchen tent & refrigerators	T
1 Sep - 31 Oct	48th Trans Bp	Unkn	Moss Neck	Unkn	T
8 Sep - 10 Oct	1st Bat Bp 3d Inf	Unkn	Delos Lake	Unkn	RF
29 Sep - 3 Oct	Ft Belvoir (S)	200	Hq Area	Rations POL & cots	RF
3 - 20 Oct	79th Engr Bp & 13th Fld Hosp	1000	Port Royal (ADM) Nice (ADM) Moss Neck (ADM) Skinkers (ADM) Theatre (ADM)	Rations tents cots, refrigerators ice boxes tent stoves fire barrels & POL	T RF
19 - 28 Oct	79th Engr Bp & 13th Fld Hosp	1000	Entire Post Tng Areas	Rations, tents cots refrigerators, ice boxes tent stoves fire barrels & POL	ATT
11 - 15 Nov	Ft Belvoir (S)	180	Hq Area	Rations, cots & POL	RF
22 - 26 Nov	Ft Belvoir (S)	180	Hq Area	Rations cots & POL	RF
24 Oct - 25 Nov	1st Bn 3d A/C	Apprx 700	Rappahannock	Rations POL tents stoves & refrigerators	T RF
28 Nov - 15 Dec	2d Bn 3d A/C	Apprx 700	Rappahannock	Rations POL tents stoves & refrigerators	T RF

**DISTRIBUTION**

CO	2	Med Det	2
EXO	1	SSD	1
Sgt Major	1	Compt	2
S-4	4	PX Manager	3
Engr	4	Range Bgt	3
Tran	3	Area Custodians	1 ea (8)
Sig	2	S-3 File	1
QM	2	S-3 Extra Copies	25
Hq Co	2		

**LEGEND**

T	- Training
TT	- Tactical Training
RF	- Range Firing
(S)	- Fort Belvoir Engineer School
(R)	- Fort Belvoir Engineer Regiment
ETA	- Expected time of Arrival
ETD	- Expected time of Departure

/s/

for ROBERT S. BRUCE Maj Inf  
S-3

Issued on Tuesdays & Thursdays

HEADQUARTERS  
Camp A. P. Hill, Virginia

DAILY BULLETIN  
NUMBER 8

22 January 1959

OFFICIAL

1. CHANGE IN SIGNATURE. Effective 21 January 1959, correspondence and reports prepared for the signature of the Post Commander will be as follows

C. B. CUSHING  
Lt. Colonel, Arty  
Commanding

2. ROUTINE AND PRIORITY MESSAGES. All routine and priority messages prepared by unit and staff sections of this headquarters will be signed by the writer in order to serve as certification that the higher precedence is necessary.

3. RANGE FIRING. a. Firing by units at Camp A. P. Hill will take place as follows

<u>Date</u>	<u>Range</u>	<u>Weapon</u>	<u>Time</u>	<u>Unit</u>
23-25 Jan. 59	2	Non-firing	0700-1700	3d Inf
23-25 Jan 59	3	30 Cal MG	0700-1700	3d Inf
26 Jan. 59	17	Practice Bomb	0700-1700	836th AF Det
27 Jan. 59	6a	M1 Rifle	0930-1700	Belvoir (S)
27 Jan. 59	13	30 Cal MG	0800-2300	Belvoir (S)
27 Jan. 59	17	Practice Bomb	0700-1700	836th AF Det
28 Jan. 59	3	30 Cal MG	0700-1200	Belvoir (S)
28 Jan. 59	Demo	All Weapons	0700-1900	Belvoir (S)
29 Jan 59	2	Pistol 45 Cal	1300-1700	Belvoir (S)
29 Jan 59	4	30 Cal MG	0700-1700	Belvoir (R)
29 Jan. 59	6a, b, c	M1 Rifle	0700-1700	Belvoir (S)
29 Jan 59	8	3 5 Rkt Launcher	0700-1700	Belvoir (R)
29 Jan 59	9a	30 Cal MG	1300-1700	Belvoir (S)
29 Jan. 59	16	3 5 Rkt Launcher	0700-1700	Belvoir (S)
30 Jan. 59	5	Hand Grenade	0700-1200	Belvoir (S)
30 Jan. 59	8	3 5 Rkt Launcher	0700-1700	Belvoir (S)
30 Jan 59	12	30 Cal MG	0800-1700	Belvoir (S)
5 Feb. 59	4	30 Cal MG	0800-1700	Belvoir (R)
5 Feb 59	8	3 5 Rkt Launcher	0800-1700	Belvoir (R)

- b Responsible Officer - to be announced
- c Firing on Ranges 4 and 8 is cancelled on 22 January 1959

FOR THE COMMANDER

OFFICIAL

WILLIAM E SMITH  
Administrative Officer

/s/

WILLIAM E SMITH  
Administrative Officer

TABLE III - A DAYS OF AIR FORCE PRACTICE BOMBING\*

SORTIES		
DAY OF FLIGHT	SCHEDULED	COMPLETED
28 JULY	23	21
29 JULY	14	9
30 JULY	17	11
31 JULY	14	9
1 AUG	8	4
4 AUG	4	0
5 AUG	8	2
6 AUG	11	0
7 AUG	2	2
8 AUG	7	7
18 AUG	21	12
19 AUG	13	8
21 AUG	16	13
22 AUG	15	12
25 AUG	9	0
26 AUG	4	0
7 SEPT	22	20
17 SEPT	21	16
13 OCT.	6	6
14 OCT	9	7
17 OCT.	11	11
18 NOV	6	4
20 NOV.	6	5
25 NOV	14	6
26 NOV	5	0
2 DEC	17	11
9 DEC	11	11
11 DEC	12	9
18 DEC	14	12

\* Information supplied by Col Morrison, Langley Air Force Base, covering B-57 utilization of A.P. Hill Range

Dates were those scheduled by the Army. Utilization of A.P. Hill Range is dependent on the Army's commitments. Sorties can be considered as  $\frac{1}{2}$  Low Angle LABS, and  $\frac{1}{2}$  High Angle LABS. Incompleted sorties are due mostly to weather conditions.

Roll out Altitude on release of bomb - both high and low angle - 7000'

Maximum trajectory of bomb on release - 30 deg. low angle - 3500-4000'  
 90 deg - 9500', 100 deg. - 10000', 130 deg. - 8000'.

Approach heading and altitude of run. 250 degrees and 500 feet absolute above terrain.

Other areas used for same type of maneuver:

Wallops Island - not available now

Tangiers Range - being closed by the Navy

Speed on run average 420K

IP entry on run is on Rappahannock River some 8.3 nm from target

First IP is located 5.3 nm from target.



TABLE III - B  
CAMP A.P. HILL PERSONNEL STRENGTH

JULY

DATE	UNIT NO & NO OF MEN																			TOTAL
	1A	1B	1C	2B	2D	2E	2F	3H	3-I	3J	3-O	4A	4C	4E	4H	5A	5E	8	11	
1	127	14	5	697									20							863
2	127	14	5	697	11		5						23							882
3	127	14	5	697	12		5						32	88						980
4	127	13	5	697	12								32							886
5	127	13	5	697	12								32							886
6	127	13	5	697	12								32							886
7	127	13	5	697	12								32							886
8	129	13	5	702	118		29	75		192			696	29			16			2004
9	129	13	5	704	118	72	29	75		192			695	204	18		16			2270
10	122	13	5	704	277		29	88		192			692	204						2326
11	125	13	5	704	287		29	163	22				986	689	205					3228
12	125	13	5	704	701		29	141	22				986	689						3415
13	125	13	5	705	701		29	141	22				986	689						3416
14	125	13	5	705	1858		26	75					986			116				3909
15	128	13	5	698	1876		26						962							3708
16	128	13	5	698	1874			74					962		43					3797
17	128	13	5	697	1867			74					986							3770
18	128	13	5	684	1886			74					986							3776
19	128	13	3	676	1786			74					986							3666
20	128	13	3	676	1786															2606
21	141	13	3	674	1786						101	23								2741
22	141	13	3	674	1786						83	171							2	2873
23	141	13	3	677	1722						69	169							2	2796
24	141	13	3	642	1722						65	169		103					2	2860
25	141	13	3	642	1722						68	171			97				2	2859
26	141	13	3	642	1721						54								2	2576
27	141	13	3	642	1721						54								2	2576
28	141	13	3	641	92						54							20	2	966
29	141	13	4	21	92													20	2	293
30	147	13	4	21	92													20	2	299
31	147	13	4	21	91													20	2	298
TOTAL	4100	406	132	19,233	27,753	72	236	1054	66	676	9374	703	4353	833	158	116	32	80	20	69,297
	4638					64,659														

NOTE DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS  
NOTE FOR CODE SEE APPENDIX 11-C PAGE 11-4

TABLE III - C  
CAMP A.P. HILL PERSONNEL STRENGTH

AUGUST

DATE	UNIT NO & NO OF MEN																			TOTAL
	1A	1B	1C	2C	2D	2F	3G	3K	3L	3N	4A	4B 4E	4G	4H	8	11	13	16	23	
1	141	13	4	21	85										20	2				286
2	141	13	4	21	85										20	2				286
3	141	13	4	21	85										20	2				286
4	141	13	4	21	6										20	2				207
5	141	13	4	21					243						19	2				443
6	138	13	4	21					242			38			3	2				461
7	138	13	4	21					241			71			3	2		72		565
8	138	13	4	21					9	282					3	2				472
9	138	13	4	21					9						3	2				190
10	138	13	4	21					9						3	2				190
11	138	13	4	21		19			9	38					3	2				247
12	138	13	4	24		208			153	454					20	2				1016
13	138	13	4	24		208			168	448					20	2				1025
14	137	13	4	21		207			9	452					20	2				927
15	137	13	4	21		207			9	282					20	2				695
16	137	12	4	21						282					20	2				478
17	137	12	4	21						288					20	2				482
18	137	12	4	21						286		30			20	2				512
19	136	12	5	19						286		173			20	2	790			1443
20	136	12	6	21						282		174	34			2	790			1457
21	136	12	6	17				154		286		172				2	805			1590
22	136	12	6	17				154		287		172				2	809			1595
23	136	12	6	17						287						2	48			508
24	136	12	6	17						287						2	43			503
25	136	12	6	75						287						2	43			561
26	136	12	6	75						287			65			2	726			1309
27	136	12	6	75						20	292			65	76		2	763	39	1486
28	136	12	6	17								165	65			2	780			1183
29	136	12	6	61						25						2	780			1022
30	136	12	6	61						25										240
31	136	12	6	61						33										248
TOTAL	4262	387	149	917	261	849	308	375	5928	292	721	370	195	76	277	68	6377	72	39	21,913
	4798			17,115																21,913

NOTE DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS  
NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

TABLE III - D  
CAMP A.P. HILL PERSONNEL STRENGTH

SEPTEMBER

UNIT NO & NO OF MEN																		
DATE	1A	1B	1C	2C	3C	3E	3F	3K	3L	3M	4A	4B	4D	5C	11	19	21	TOTAL
1	136	12	6	61					33									248
2	121	12	6	661					32									832
3	121	12	6	661					32									832
4	122	12	6	684					32	26								882
5	122	12	6	684					35	26								885
6	122	12	6	684					35	35								894
7	122	12	6	684					35	35								894
8	122	12	6	670					319	159			201	116				1605
9	113	12	6	683					319	159			201	116				1609
10	113	12	5	666					292	155				234				1477
11	113	12	5	668					292	155		158		234				1637
12	113	12	5	666				12	292	155				4				1259
13	113	12	5	666				12	292					4			72	1176
14	113	12	5	668				12	292					4			72	1176
15	113	12	5	682				223	275					157			72	1539
16	113	12	5	681				222	275					161				1469
17	113	12	5	700				215	262					242				1549
18	113	12	5	710				215	275			158		248	4			1740
19	113	12	5	707				10	259					4				1110
20	113	12	5	712					19									861
21	113	12	5	712					88									930
22	113	14	6	712			101		88					164		33		1230
23	113	14	5	714					192					164		33		1235
24	112	14	5	717					192					172		31		1243
25	112	14	5	717	86	149			222			158		352		31		1846
26	112	14	6	718	86	149			222					352		31		1689
27	112	14	5	718	86	149			222					352		31		1689
28	112	14	5	718	86	149			222					352		31		1689
29	112	14	6	721	86	149			222		172			151		31		1663
30	112	14	5	699	86	149			222		172	158		170		31		1818
TOTAL	3467	378	159	20142	516	894	101	921	5589	905	344	632	402	3753	4	283	216	38,706
	4004			34,702														38,706

NOTE DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS  
NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

TABLE III - E  
CAMP A.P. HILL PERSONNEL STRENGTH

OCTOBER

DATE	UNIT NO & NO OF MEN																															TOTAL
	1A	1B	1C	2A	2C	2E	3A	3B	3C	3D	3L	3P	3Q	4A	4B	4E	4F	5B	5C	5D	7	8	9	10	11	12	14	15	17	18	19	
1	112	14	5	698					86	149	222		172						191								46				31	1726
2	112	14	5	696					82	149			171	49					350								46			31	1715	
3	112	14	5	696					92	149		50	174						350								50				1692	
4	112	14	5	696					82	149		50							350								50				1518	
5	112	14	5	684								50							154								50				1069	
6	112	14	5	684					91	149	400								154							1140			19	2768		
7	112	14	5	684					91	149	400								167							1144			19	2785		
8	112	14	5	689					91	149	415								631							1147			19	3272		
9	112	14	5	696					91	149	407								631							1144			19	3268		
10	112	12	5	691							240	407					136		631							1151				3285		
11	112	12	5	692							87															35	1192	235		2550		
12	112	12	5	693							87															35	1159	235		2518		
13	112	12	5	691							87															1205				2141		
14	112	12	5	698							87															1209				2152		
15	112	12	5	699							69															1203				2475		
16	112	12	5	699							69															1208				2559		
17	112	12	5	704							69															1208				2324		
18	112	12	5	667																						1208				2113		
19	112	12	5	664																						1208				2110		
20	112	12	5	669																						1208				2115		
21	112	12	5	667																						1208				2121		
22	112	12	5	663																						1202				2121		
23	112	17	5	650																						1181				2822		
24	112	17	5	650																						1195				2284		
25	112	17	5	650																						1195				2433		
26	112	17	5	650																						1195				2433		
27	120	17	5	650																						1195				1405		
28	120	16	5	661																						1195				1672		
29	120	16	5	649																						1195				1636		
30	120	16	5	643																						1195				1328		
31	120	16	5	641																						1195				1267		
TOTAL	3512	431	155	5844	15788	2030	104	17	1470	1192	948	2179	400	1098	49	356	70	600	3609	545	330	94	360	676	2	36	70	25152	470	76	62	67,725
	4098																															63,627

NOTE DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS  
NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

**TABLE III - F  
CAMP A.P. HILL PERSONNEL STRENGTH**

NOVEMBER

UNIT NO. & NO. OF MEN																
DATE	1A	1B	1C	2A	2B	2E	3A	3B	3G	3N	4A	4E	4F	4T	5C	TOTAL
1	120	16	5	641		406	18				110		259	257		1832
2	120	16	5	641		406	18				110		259	257		1832
3	120	16	5	641		406	18	93		86			259	257		1901
4	120	16	5	637		473	18	96		86			259	258		1968
5	120	16	5	640		473	18	90	244	96			259	259		2220
6	122	16	5	638		473	18	90		96			259	261		1978
7	122	16	5	638		473	18	113		96			259	261		2001
8	122	16	5	638		402		113		96			259	261		1912
9	122	16	5	638		402		113		96						1392
10	122	16	5	638		398		113		96						1388
11	122	16	5	638		398		113		96						1388
12	122	16	5	638		398		113	244	96	183					1815
13	122	16	5	627		399		113	244	96	183	68				1873
14	122	18	5	638		398	96	113			183					1573
15	122	18	5	638		398	96				183					1460
16	122	18	5	638		398	96									1277
17	122	18	5	630		398	96								176	1445
18	122	18	5	628		398	71								176	1418
19	122	18	5	628		398	71								176	1418
20	122	18	5	628		398	96								340	1607
21	122	18	5	628		398	96								340	1607
22	124	18	5	594			52								3	796
23	124	18	5	594			52				188				3	984
24	124	16	5	594			52				188				3	982
25	124	16	5			410					190					745
26	124	16	5		620	412					190					1367
27	124	16	5		620	412										1177
28	124	16	5		620	412										1177
29	124	16	5		620	412										1177
30	124	16	5		620	412										1177
TOTAL	3668	500	150	1513	3100	11161	1000	1273	732	1036	1708	68	2072	2071	1217	44,887
	4318			40,569											44,887	

NOTE: DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS

NOTE: FOR CODE SEE APPENDIX II-C PAGE II-4

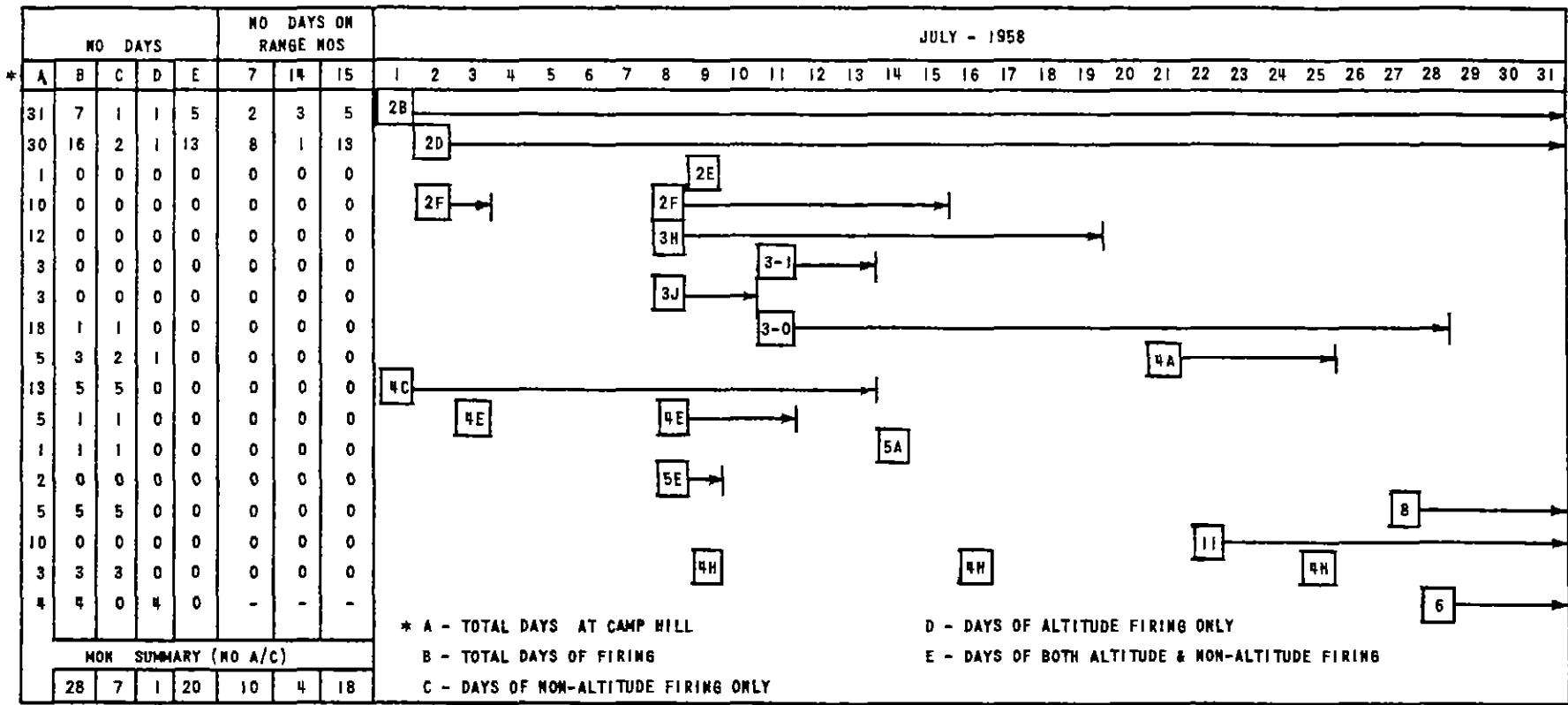
**TABLE III - G**  
**CAMP A.P. HILL PERSONNEL STRENGTH**

DECEMBER

UNIT NO & NO OF MEN										
DATE	1A	1B	1C	2B	2E	3A	4B	5C	7	TOTAL
1	124	16	5	625	412			153		1335
2	124	16	5	620	412		44	197		1418
3	124	17	5	625	412		44	152		1379
4	124	17	5	625	412	8	44	152		1387
5	124	18	3	625		86		152		1008
6	124	18	3	625		86		152		1008
7	124	18	3	625		86		186		1042
8	124	18	3	625		86		186		1042
9	124	18	3	625		86		186		1042
10	124	18	3	625		86		161		1017
11	124	18	3	625		85	45	149		1004
12	124	18	3	625		85	45	149		1004
13	124	18	3	625		64		147		981
14	124	18	3	625		64		147		981
15	124	18	3	625		64		147		981
16	118	18	3	6		4		147	165	461
17	118	18	3	6				147	165	457
18	118	18	3	6				147		292
19	118	18	3	6						145
20	↑	↑	↑	↑						↑
21	↑	↑	↑	↑						↑
22	↑	↑	↑	↑						↑
23	↑	↑	↑	↑						↑
24	↑	↑	↑	↑						↑
25	↑	↑	↑	↑						↑
26	↑	↑	↑	↑						↑
27	↑	↑	↑	↑						↑
28	↓	↓	↓	↓						↓
29	118	18	3	6						145
30	118	17	3	6						144
31	118	17	3	6						144
TOTAL	3748	550	101	9466	1648	890	222	2857	330	19,812
	4399			15,413						19,812

NOTE - DATA FROM STRENGTH REPORTS AND FIRING UTILIZATION CHARTS  
NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

TABLE III - H TIME OF VISIT & DAYS OF FIRING BY UNIT



NOTE FOR CODE SEE APPENDIX 11-C PAGE 11-4

SI-15



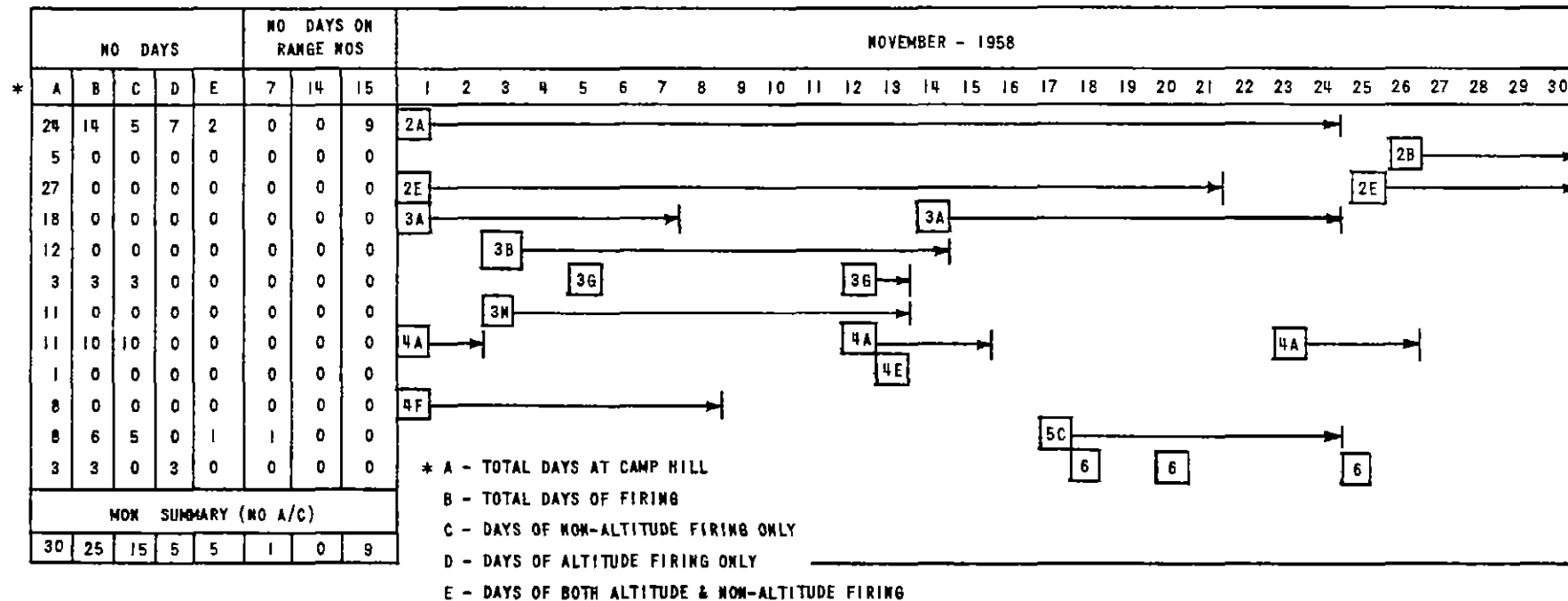






TABLE III - L TIME OF VISIT & DAYS OF FIRING BY UNIT

III-19



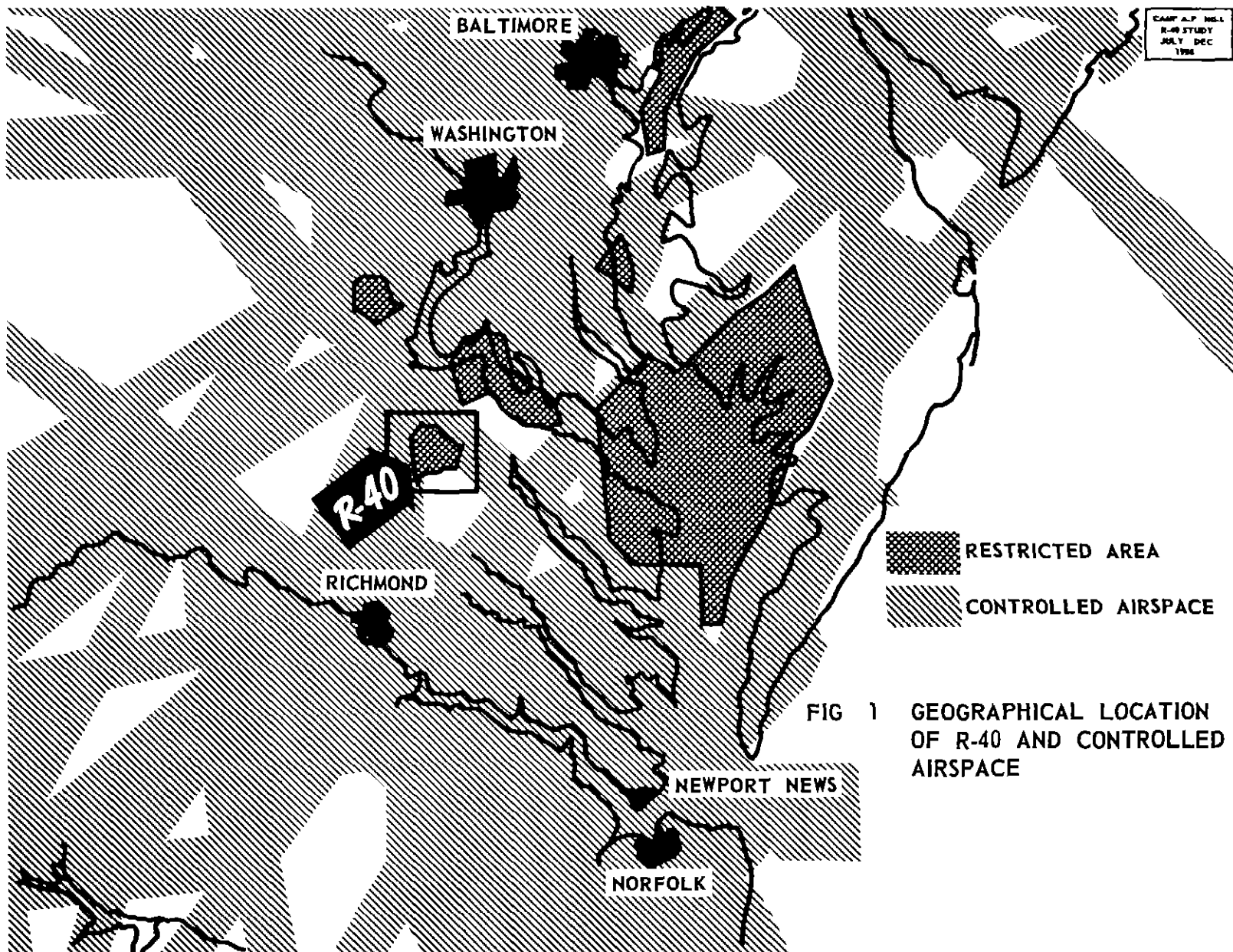
NOTE FOR CODE SEE APPENDIX II-C PAGE II-4

TABLE III - M TIME OF VISIT & DAYS OF FIRING BY UNIT

NO DAYS					NO DAYS ON RANGE NOS			DECEMBER - 1958																															
A	B	C	D	E	7	14	15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
31	5	0	5	0	0	2	4	2B	→																														
4	0	0	0	0	0	0	0	2E	→																														
13	0	0	0	0	0	0	0	3A	→																														
4	3	3	0	0	0	0	0	4B	→			4B																											
18	9	6	0	3	3	0	0	5C	→																														
4	4	0	4	0	0	0	0	6									6	6															6						
2	0	0	0	0	0	0	0																		7														
MON SUMMARY (NO A/C)																																							
31	13	6	4	3	3	2	4																																

\* A - TOTAL DAYS AT CAMP HILL  
 B - TOTAL DAYS OF FIRING  
 C - DAYS OF NON-ALTITUDE FIRING ONLY  
 D - DAYS OF ALTITUDE FIRING ONLY  
 E - DAYS OF BOTH ALTITUDE & NON-ALTITUDE FIRING

NOTE FOR CODE SEE APPENDIX II-C PAGE II-4



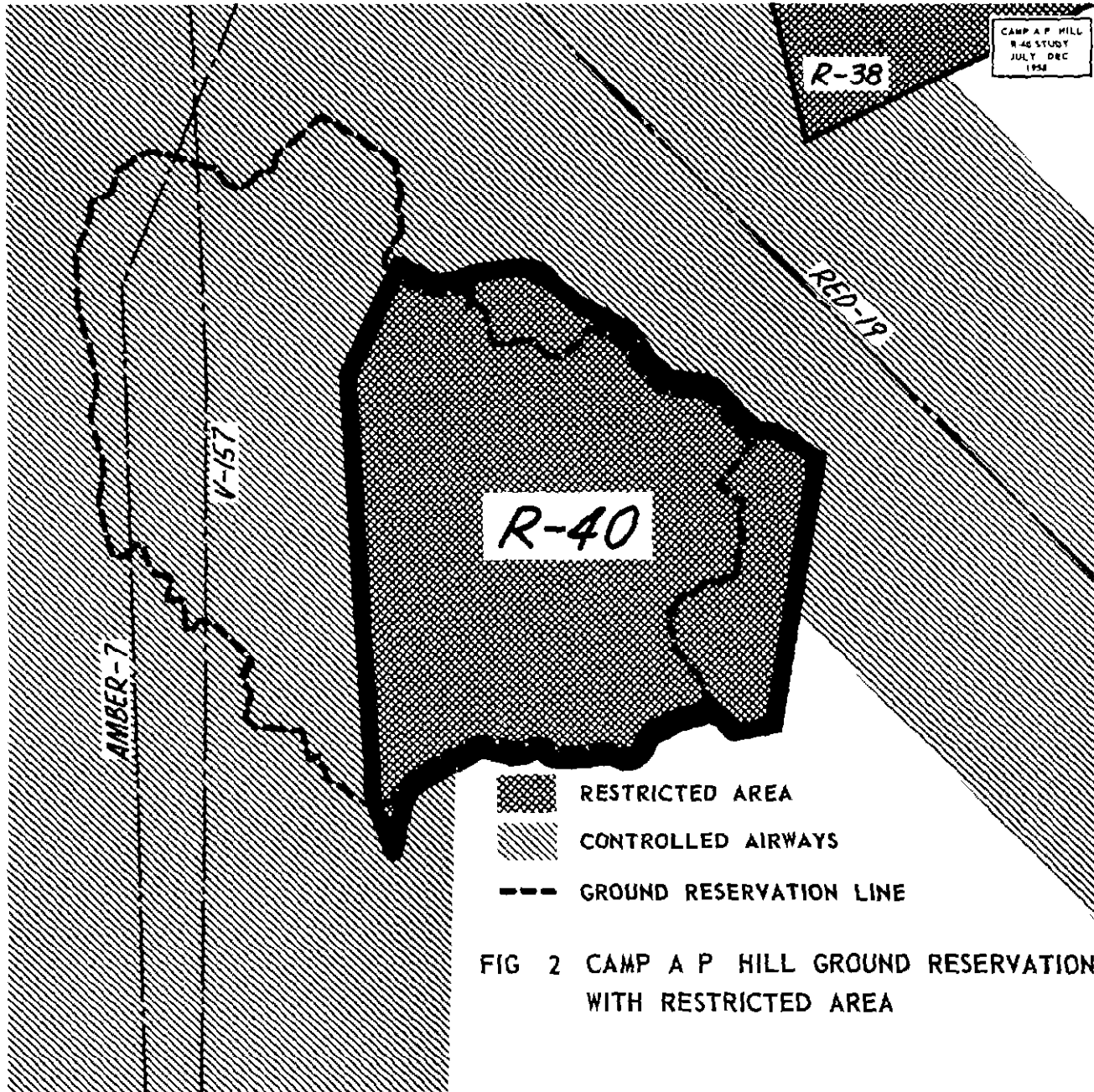
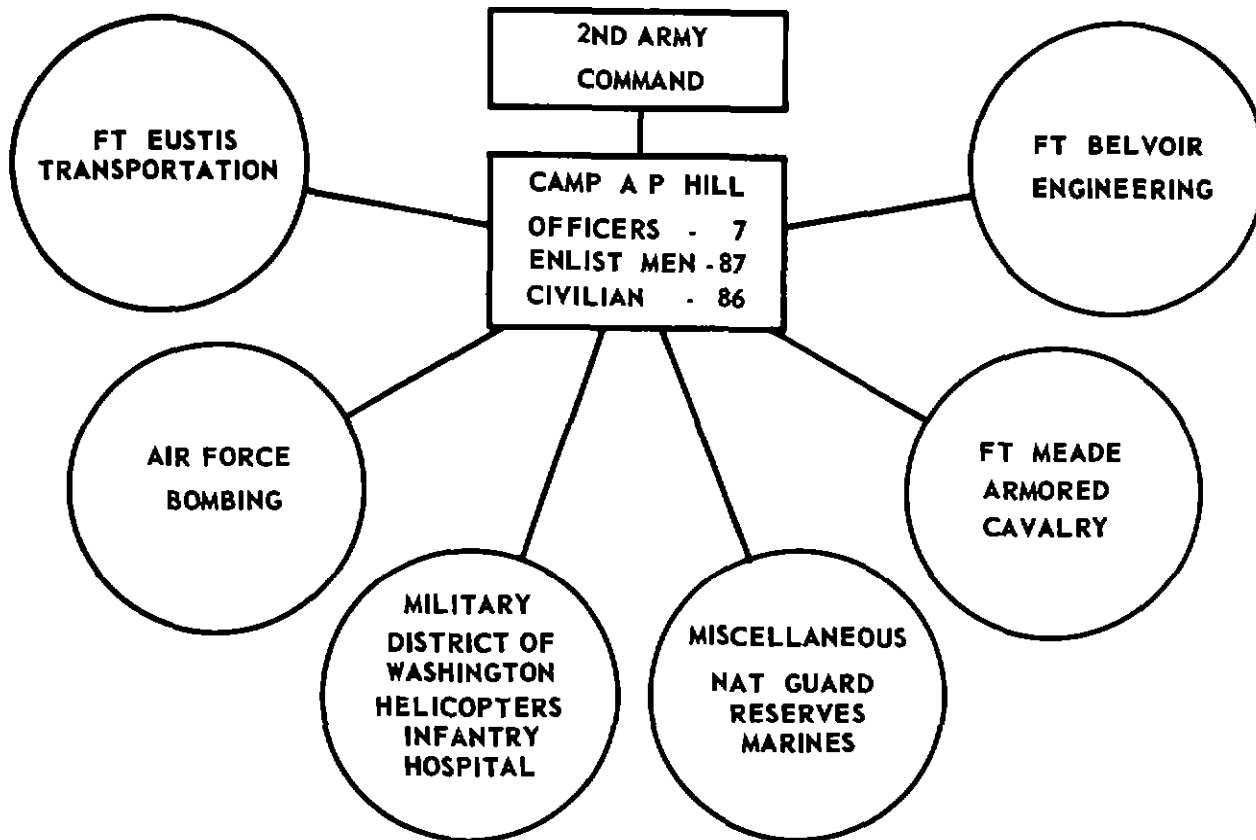


FIG 2 CAMP A P HILL GROUND RESERVATION WITH RESTRICTED AREA

**FIG 3 CAMP A P HILL**  
**ORGANIZATIONS USING CAMP A P HILL FACILITIES**

CAMP A P HILL  
 R-66 STUDY  
 JULY DEC  
 1958



**DOLLAR VALUATION OF INSTALLATION**

PURCHASE PRICE - 1941 ————— 2 5 MILLION  
 FACILITIES & IMPROVEMENT COST TO 1959 — 2 0 MILLION  
 TOTAL — 4 5 MILLION

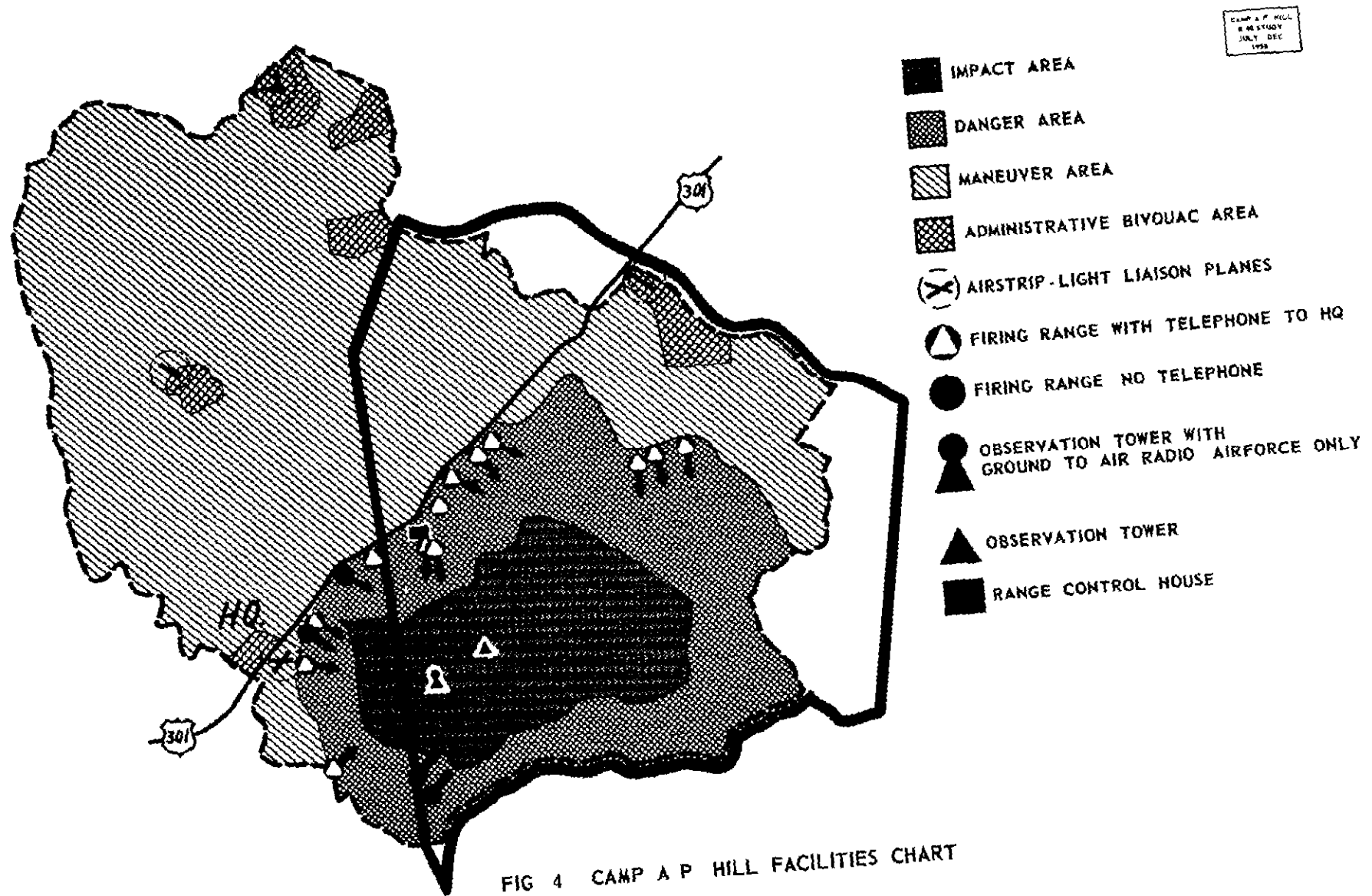


FIG 4 CAMP A P HILL FACILITIES CHART



CAMP A. P. HILL  
RE STUDY  
JULY - DEC  
1958

IMPACT AREA



NORMAL HIGH  
ALTITUDE RANGE



LOW ALTITUDE AND  
DANGER AREA

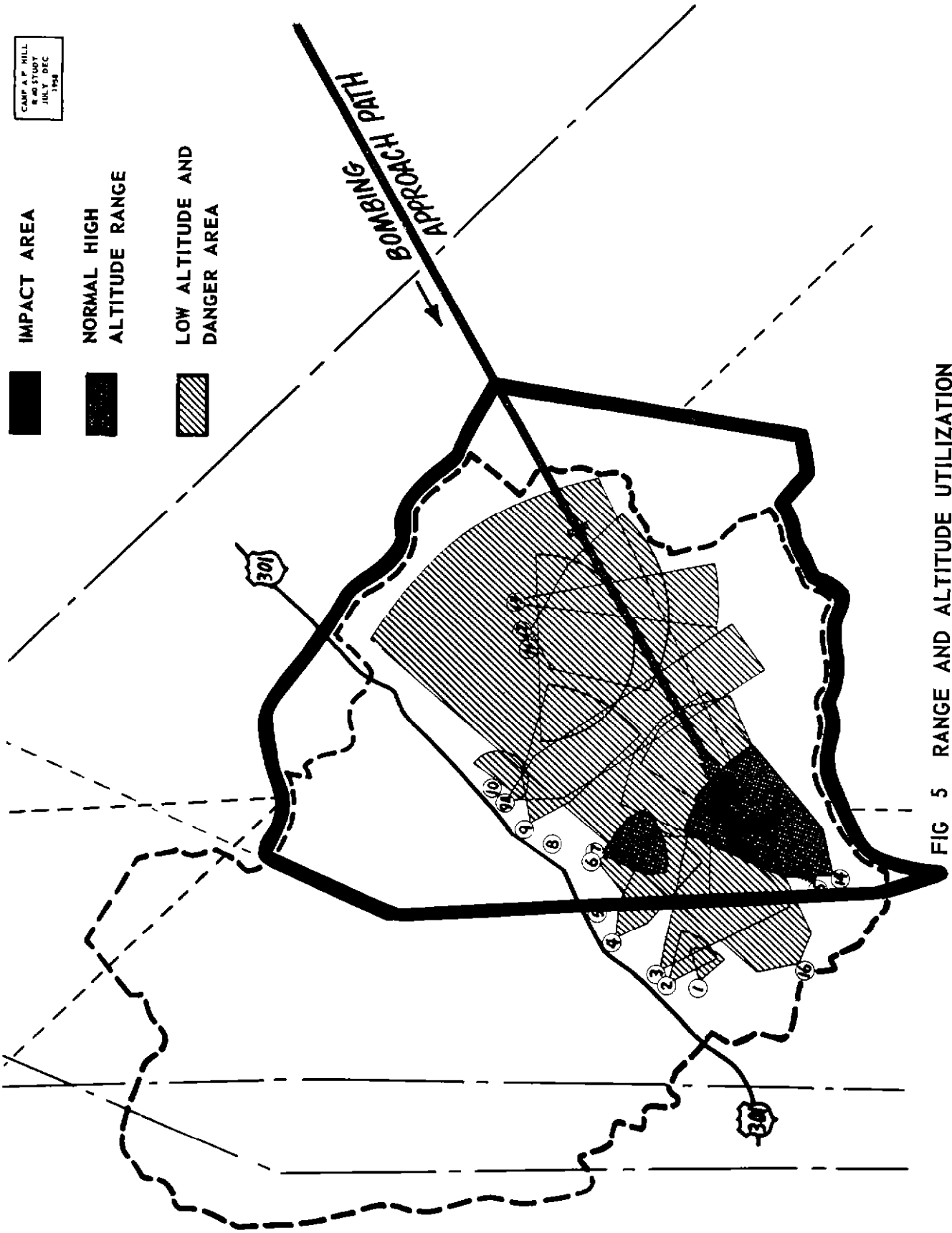


FIG 5 RANGE AND ALTITUDE UTILIZATION

**FIG 6 AVERAGE DAILY STRENGTH**  
JANUARY THRU DECEMBER - 1958

CAMP A.F. HILL  
R-48 STUDY  
JULY DEC  
1958

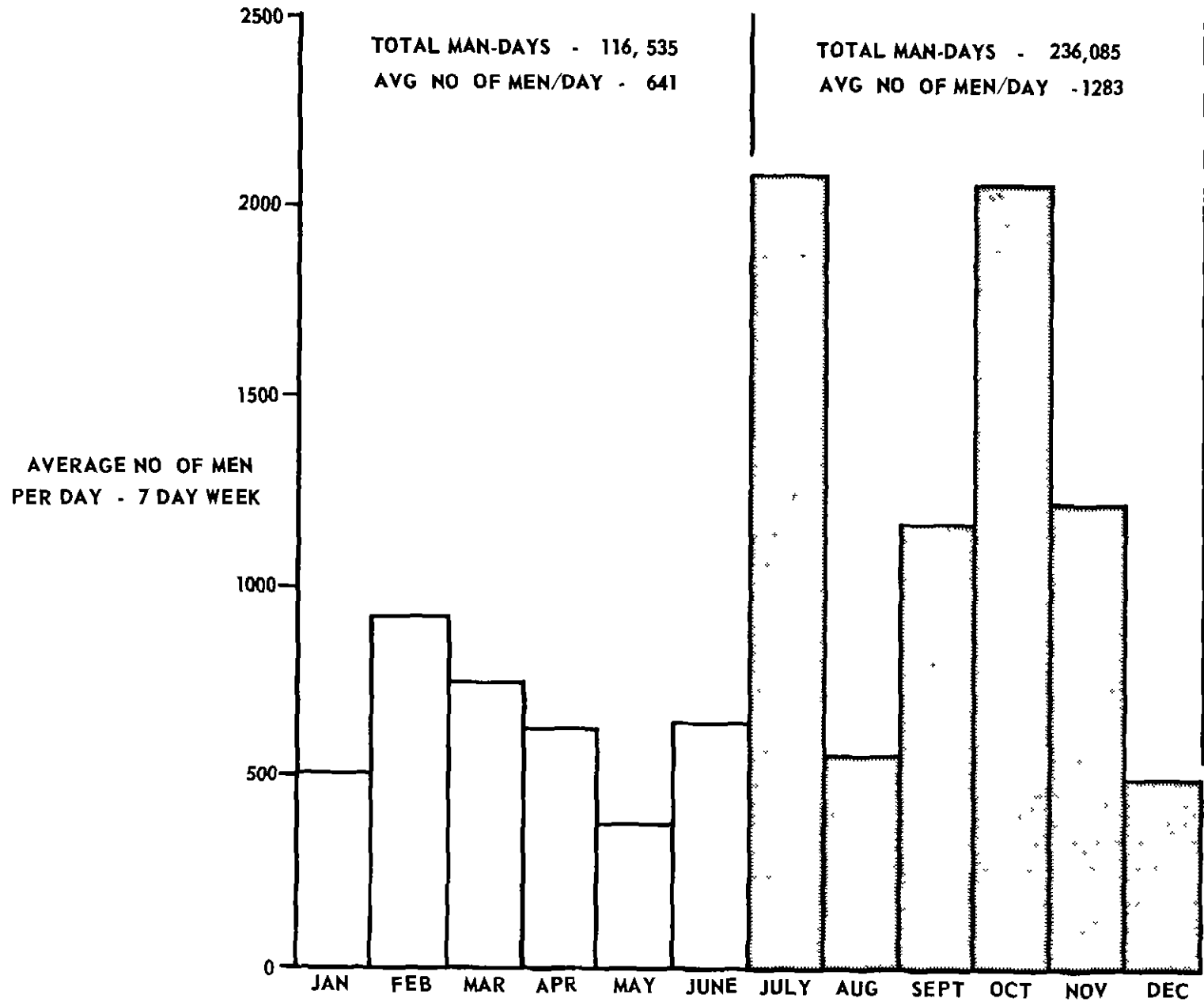


FIG 7 ALTITUDE RANGE CHARACTERISTICS FOR HIGH ALTITUDE WEAPONS

STAFF S. P. HILL  
S-40 2700  
JULY 1962  
7000

BASED ON DATA PUBLISHED IN RANGE TABLES

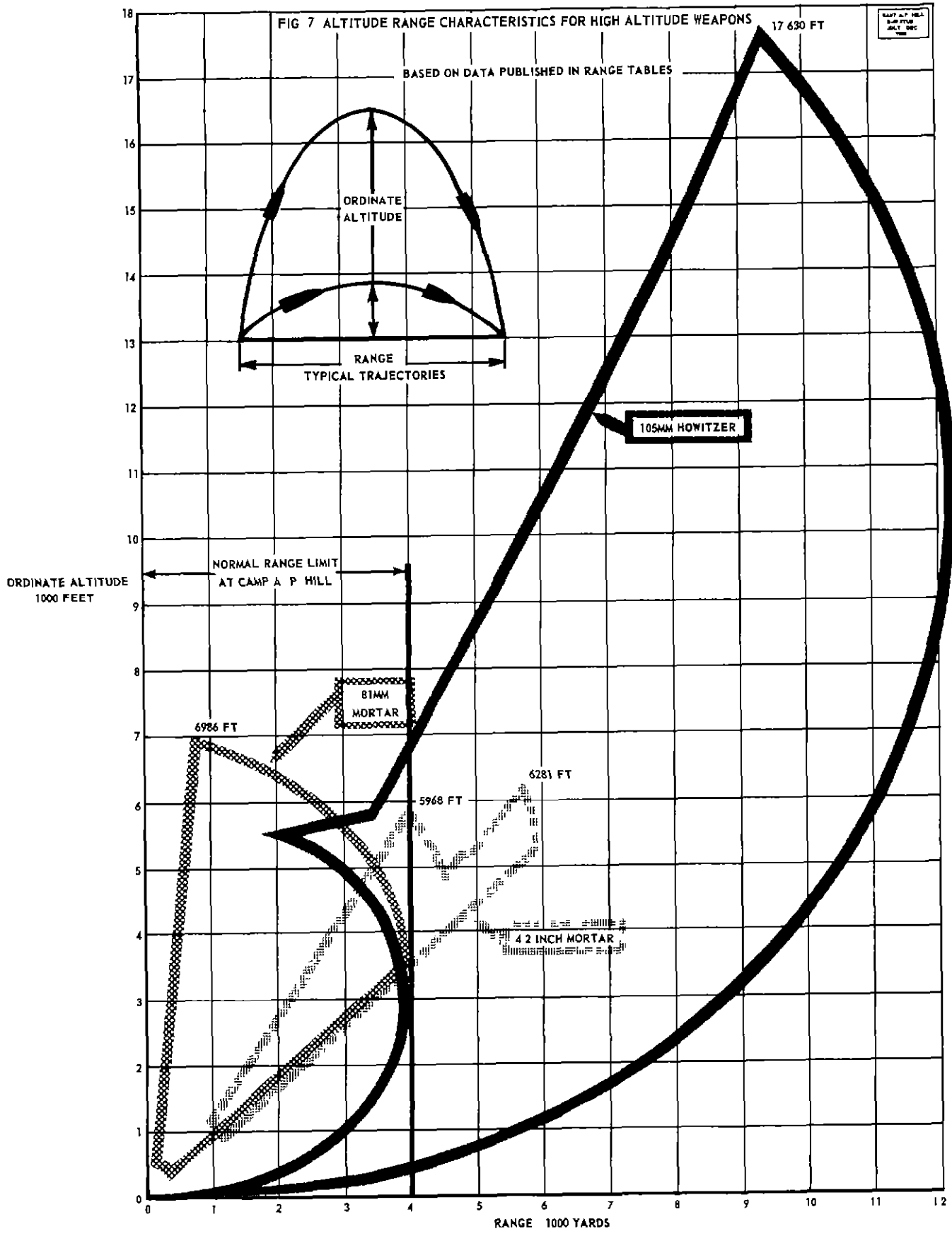
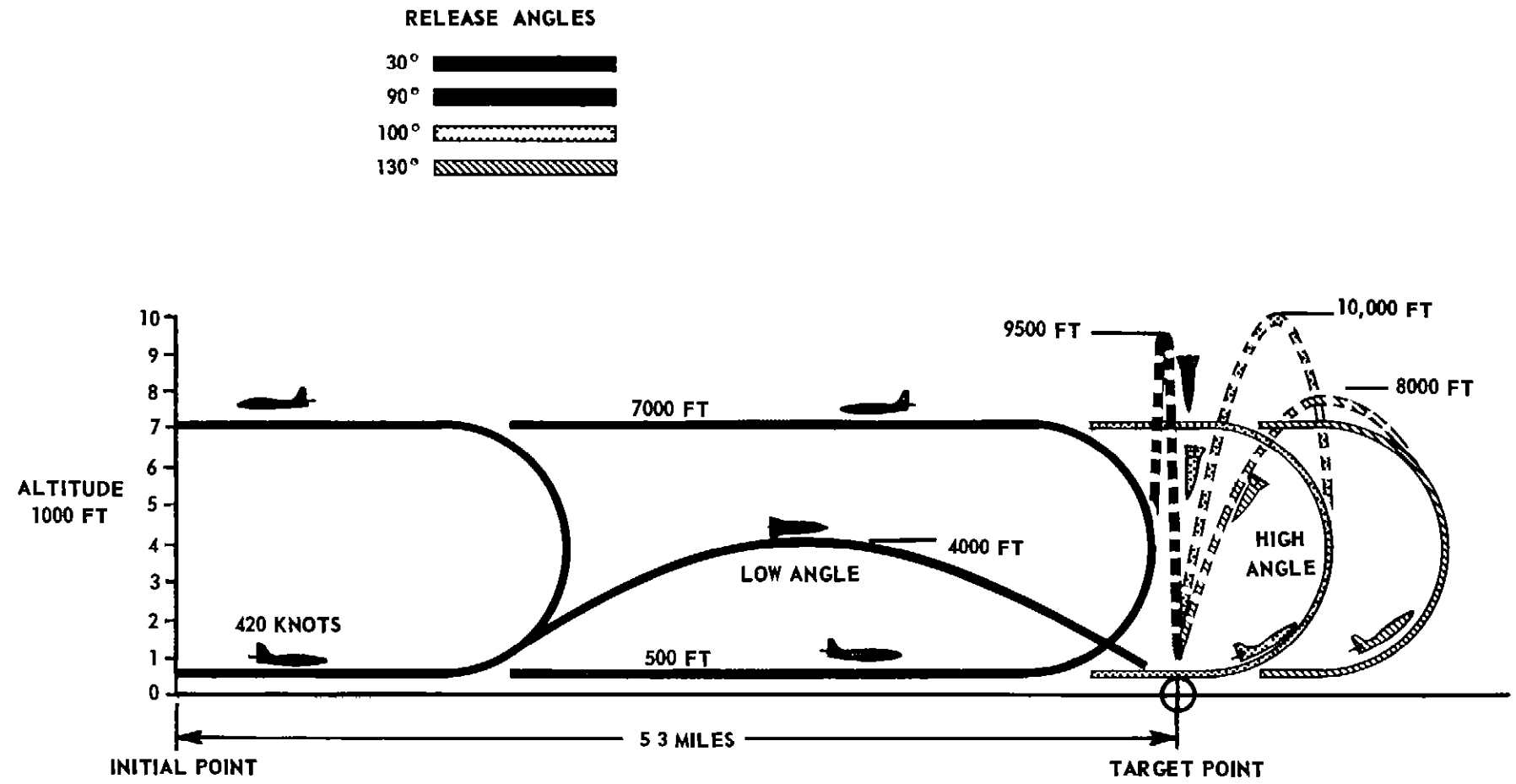
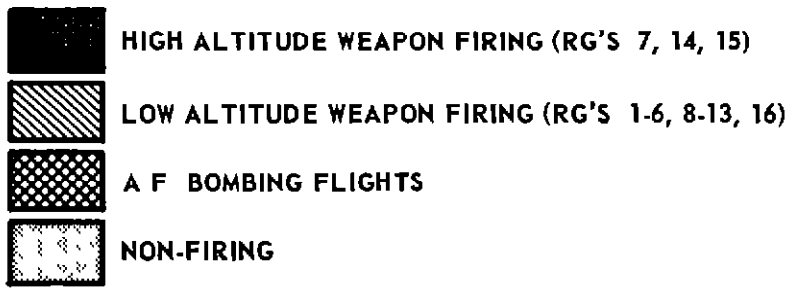


FIG 8 ALTITUDE UTILIZATION WITH VARIOUS "LABS" BOMBING RELEASE ANGLES





6 MONTH SUMMARY

NO DAYS	WEAPON
74	HIGH ALTITUDE WEAPON FIRING
25	A F BOMBING FLIGHTS
122	LOW ALTITUDE WEAPON FIRING
40	NON-FIRING

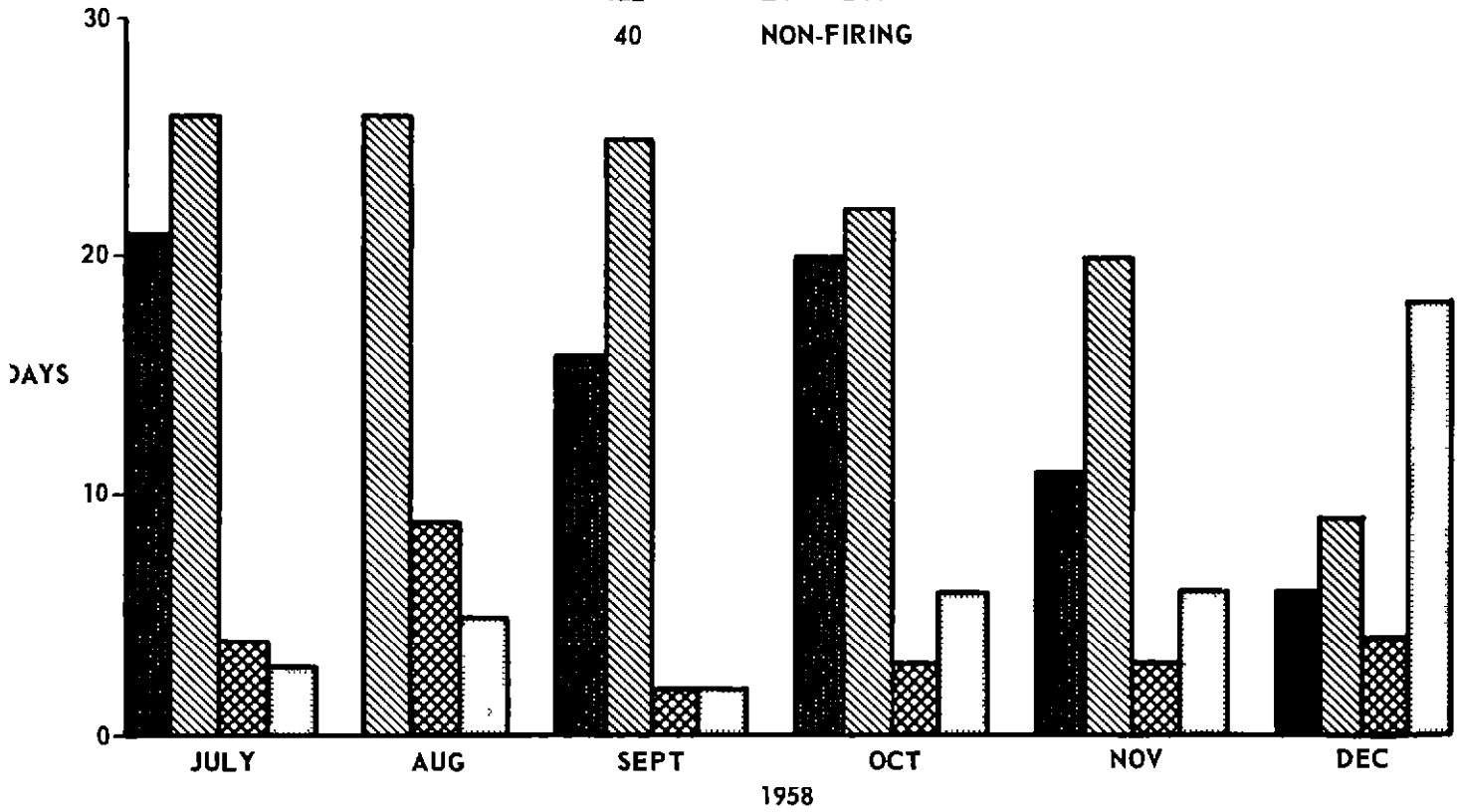


FIG 9 DAYS OF RANGE UTILIZATION

CAMP A P HILL  
R-60 STUDY  
JULY DEC  
1958

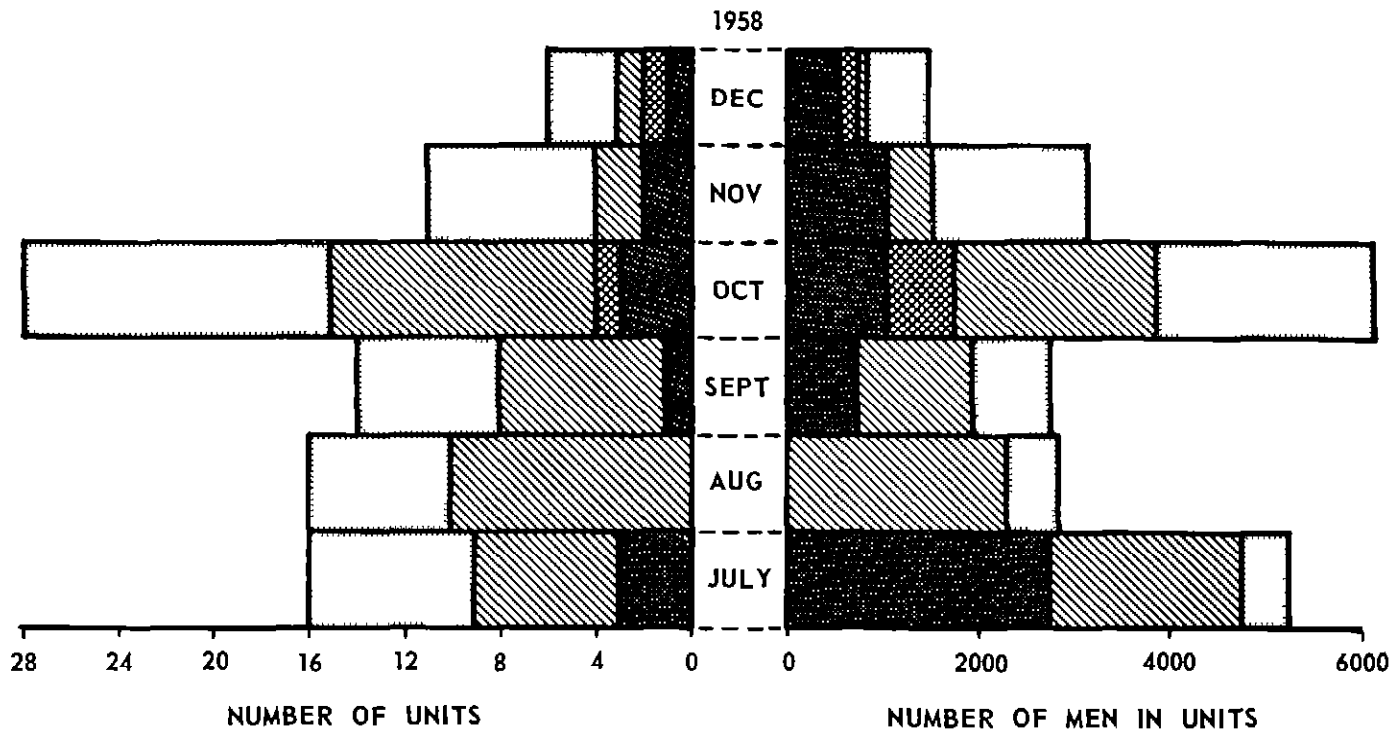
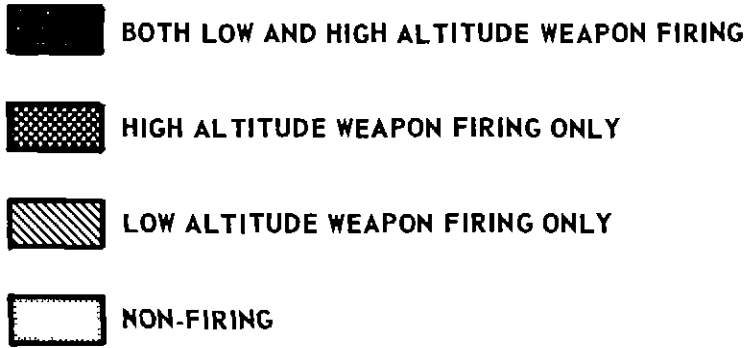


FIG 10 MONTHLY DISTRIBUTION OF UNITS & MEN  
WITH ALTITUDE UTILIZATION

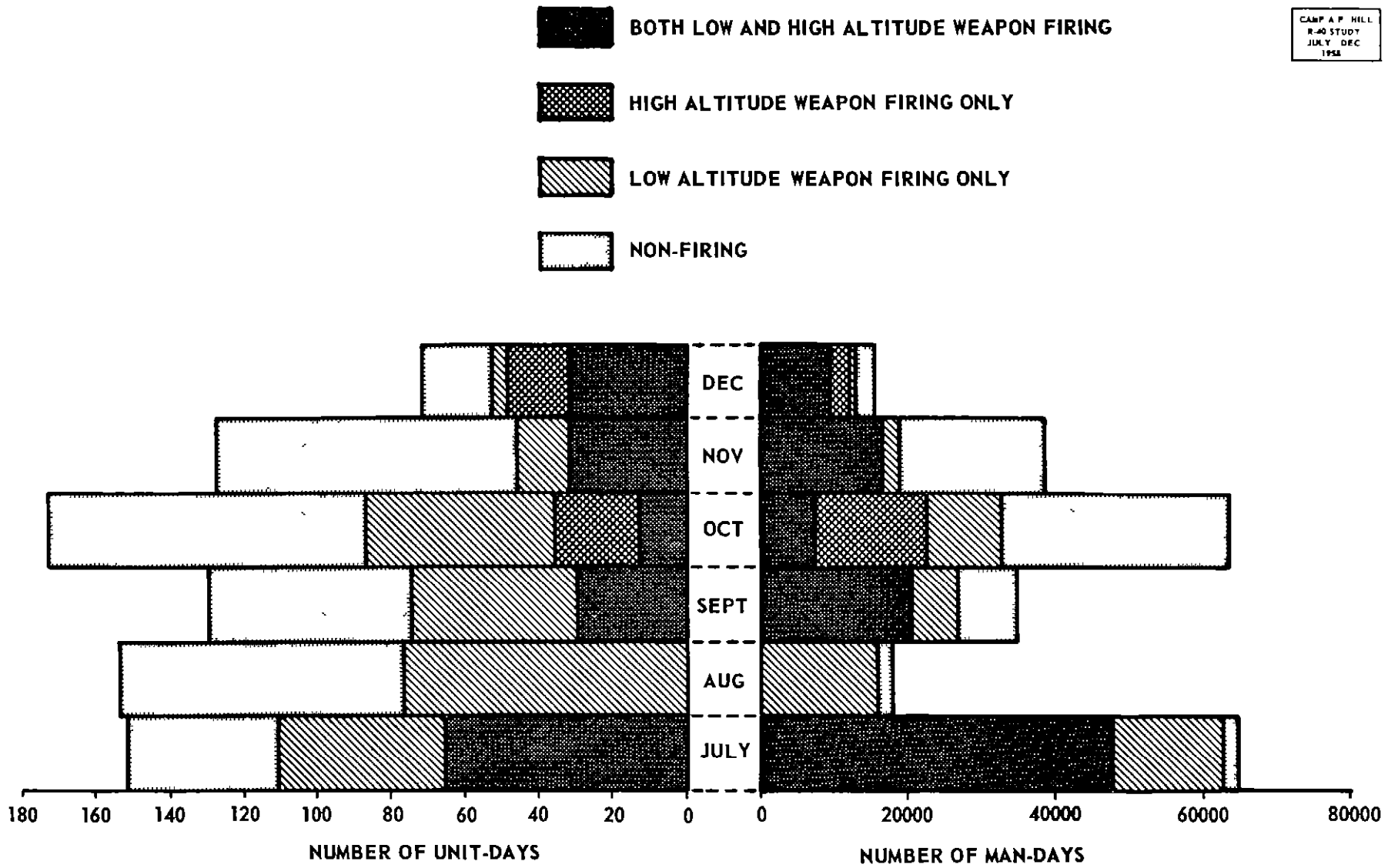


FIG 11 MONTHLY DISTRIBUTION OF UNIT-DAYS & MAN-DAYS  
WITH ALTITUDE UTILIZATION

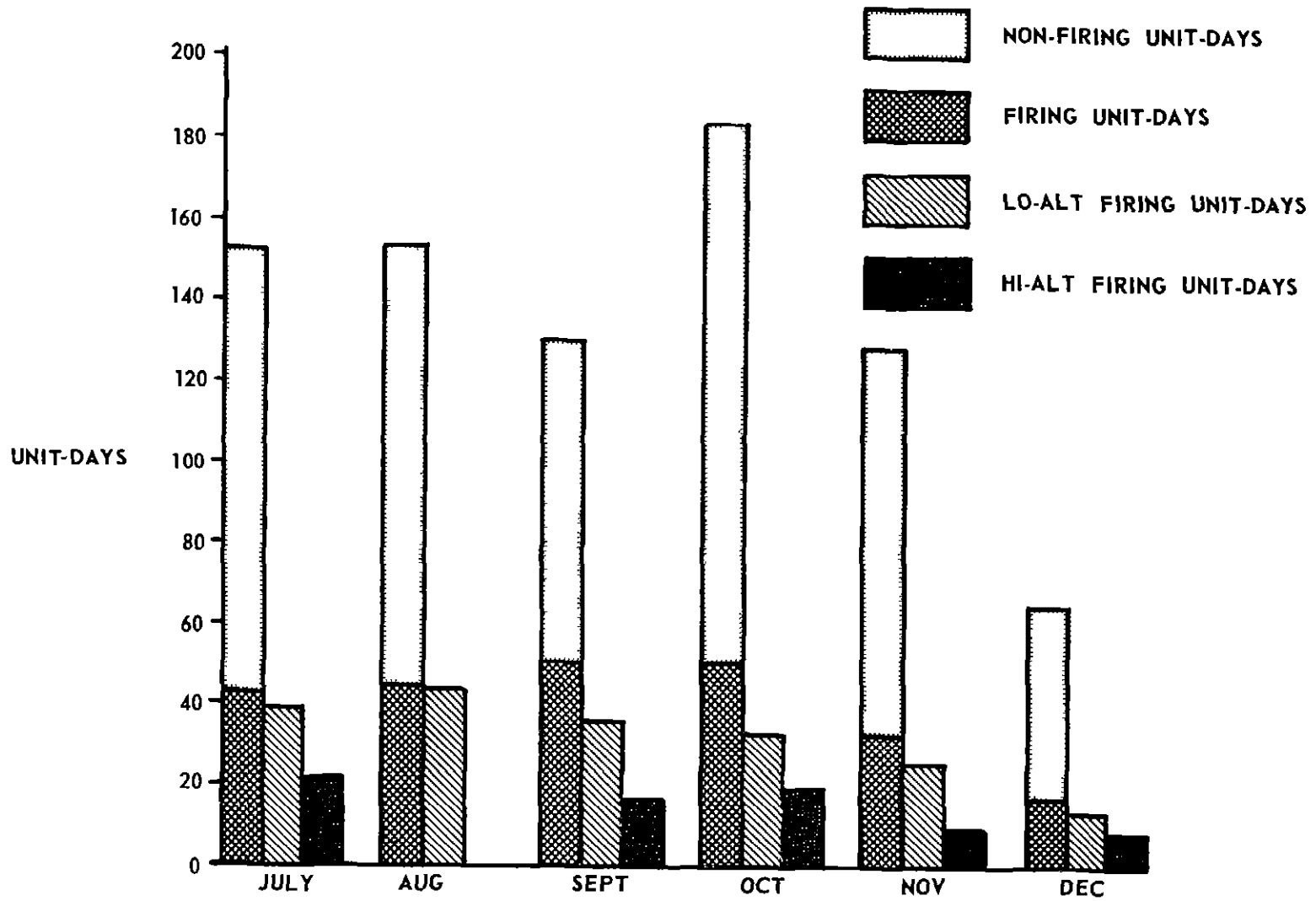


FIG 12 UNIT-DAYS OF RANGE UTILIZATION  
(UNIT-DAYS = UNIT X NO OF DAYS OF ACTIVITY)



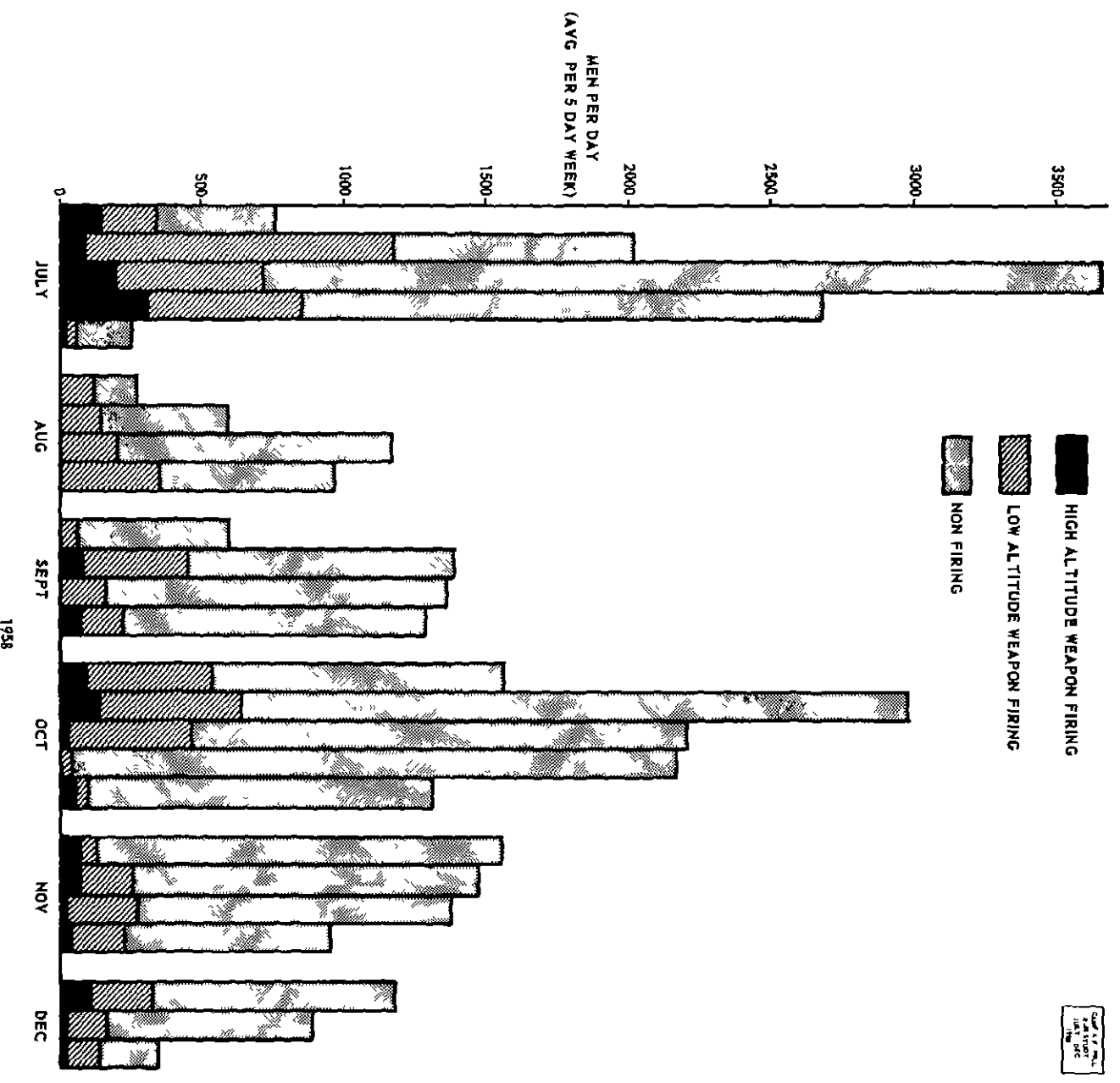


FIG 13 WEEKLY DISTRIBUTION OF MEN AND FIRING ACTIVITY

0  
 100  
 200  
 300  
 400  
 500  
 600  
 700  
 800  
 900  
 1000  
 1100  
 1200  
 1300  
 1400  
 1500  
 1600  
 1700  
 1800  
 1900  
 2000  
 2100  
 2200  
 2300  
 2400  
 2500  
 2600  
 2700  
 2800  
 2900  
 3000  
 3100  
 3200  
 3300  
 3400  
 3500

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JULY DEC  
1988

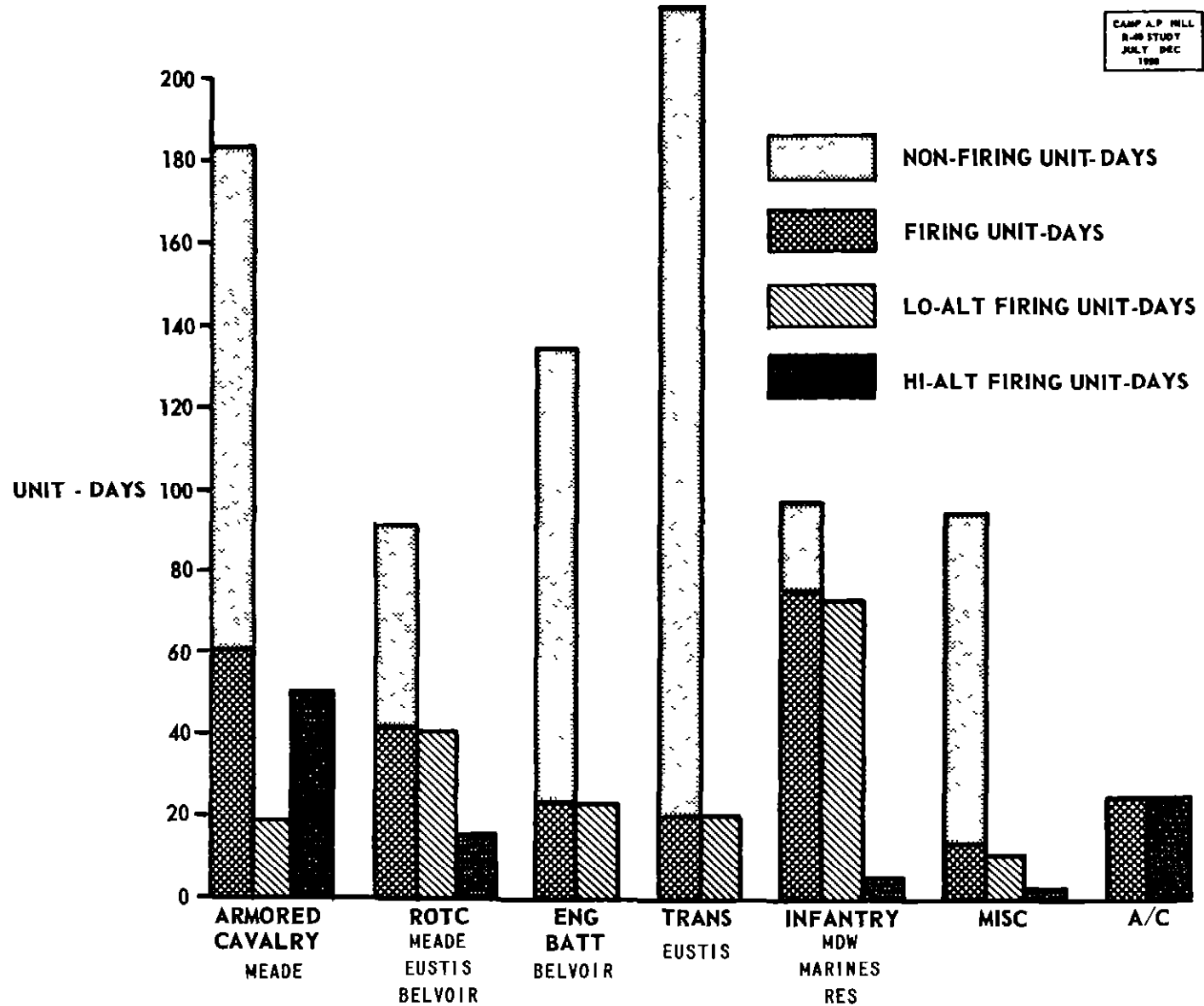


FIG 14 RANGE UTILIZATION BY UNIT TYPE