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Methods for Planning Unit and Displaced Equipment Training as Applied to the Light Helicopter Family (LHX)

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This project investigates and develops a training scheduling method for application during the materiel acquisition process. The method developed is a four-step process in which the analyst employs and interacts with an automated model of the training process to develop and refine alternative training schedules to ultimately arrive at an optimal training schedule within a given set of resource constraints. The four steps are (1) training requirements identification, (2) model development, (3) model application, and (4) analysis and comparison of training schedule alternatives. The result is a viable training schedule or set of alternative schedules for introducing a new weapon system into the Army force structure. The project develops prototypes for the method by devising a schedule for initial unit training on receipt of new LHX equipment (not sustainment training) and develops a displaced equipment training (DET) program for units receiving the AH-1S and OH-58 aircraft displaced by the LHX. The unit training schedule
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commences in November 1995 with the initial production of the LHX helicopter and continues through January 2005. The schedule plans training for 185 active and reserve component units, with the active duty units requiring an average unit training time of 17.57 weeks and the reserve component units requiring an average training time of 89 weeks. The DET program is a 10-week program that enables a National Guard unit to complete DET without any additional active duty training time but is flexible enough to use active duty time when and if it is made available.

METHODS FOR PLANNING UNIT AND DISPLACED EQUIPMENT TRAINING AS APPLIED TO THE LIGHT HELICOPTER FAMILY (LHX)

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Introduction

Background

During the concept development and evaluation phase, estimating training requirements in detail is complicated by the simultaneous introduction of new and emerging technologies into an as yet hypothetical system. These new technologies are applicable not only to the system itself but also to its training delivery and support systems. The effort to obtain maximum benefit from the latest technology requires the introduction of many other variables into the total military environment. These include introduction of new individual skills, elimination of old skills, consolidation of military occupational specialties, adjustments to the force structure, and adjustments to doctrine. Furthermore, these all must be described in such a way as to leave maximum flexibility for the contractors but enable the government to evaluate the effectiveness and efficiency of the contractor's proposal.

In light of the above, the solution to the problem must not only make a reasonable estimate of the training requirements on the basis of current information, the solution must also include the ability to identify the relative sensitivity of the various elements of the training system to changes in the entire new system as well as the ability to readily update the training estimates and plans as new information becomes available and as decisions relating to the new system and its acquisition are made. A top down approach is the preferred method because it matures as information becomes available, thereby requiring adjustment only to a specific area affected as opposed to a total rework of a data base or set of plans.

Purpose

The current research effort represents one segment of a comprehensive research program designed by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to meet the MANPRINT (Manpower and Personnel Integration) challenge. Its purpose is to investigate and develop methods and models to facilitate and enhance training planning during the acquisition of new weapon systems. In keeping with the ARI philosophy of conducting MANPRINT research which provides immediate benefits to the Army, the effort focuses on the training aspects of the Light Helicopter Family (LHX) acquisition program. The LHX program serves as the frame of reference for acquisition procedures, milestones, and timing of events. Additionally, the prototyping of the methods and models contributes to the development of the LHX program. Therefore, the second purpose of the research effort is to contribute to training planning for the LHX.

Scope

This effort will investigate two aspects of training that emerge during the proof of concept phase of a weapon system's acquisition. They are the training resource requirements associated with (1) the unit training[1] of organizations to be equipped with the new system and, (2) the individual qualification training for units which will receive the equipment that is displaced by the new acquisition. For the purposes of prototyping, the method developed during the investigation is to be applied to the LHX program to devise a fielding schedule that adheres to the proposed procurement schedule and distribution plan and is operationally effective. The schedule will sequence units into a unit training program that is devised to optimize the overall unit training time and resource requirement. Further, the method is to be applied to individual qualification training for personnel assigned to units that will receive the OH-58 and AH-1S helicopters displaced by the LHX.

Objectives

The specific objectives of this research effort are to: (1) translate the approved LHX Distribution Plan into a phased unit training schedule which will result in the most cost effective and resource efficient method of fielding LHX units in the Active and Reserve Components; and (2) develop an individual qualification training schedule for equipment displaced to the Reserve Components which will result in the most cost effective and resource efficient method of fielding that displaced equipment to the Reserve Component units.

Inherent in these objectives is the development of a method and models which may be used to refine and expand these training schedules as more definitive information becomes available. The desired characteristics of the method and models to be developed are a top down approach to enable effective training planning before detailed system data are available, flexibility to accept changes and refinements as the system matures and data become more specific; and simple and relatively fast operation so as to enable the exploration of training alternatives without the need for consensus among the acquisition community, thus preventing the premature foreclosure of options.

Limitations

Although the method and models are intended to have generic application to other weapon systems, this effort excludes individual institutional training for the new weapon system except as the institutional training can be identified to be

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[1]"Unit training" in the context used throughout the report is that initial training a unit receives on receipt of new equipment and is not sustainment training.

competing for the same or similar resources as unit training. Also this effort is not a job or task analysis as contemplated by the Systems Approach to Training. The information necessary for such detailed and specific analysis is not available at this early stage of development. However, it is envisioned and intended that once those analyses are completed, the results can be incorporated into the training system to optimize resource utilization.

Report Organization

This report is presented in four sections and 3 appendices. The first section, entitled Introduction, presents an overview of the problem and the research conducted. The second section, entitled Method, contains an explanation of the method used to perform the research. A further description of the method developed is provided in third section, Application to the LHX. The last section, entitled Findings and Conclusions, presents the results and conclusions of the study to include a discussion of their impact on developing systems.

Method

Overview

The purpose and objectives of this effort were discussed in the Introduction. The method developed to achieve them consists of four major steps.

1. Identification of Training Requirements
2. Model Development
3. Model Application
4. Analysis and Comparison of Training Schedule Alternatives

Step 1 is the determination of training requirements which includes identifying the target audience scheduled to receive the developing system, determining the training required and estimating the resources needed. Step 2 is a model development stage in which the relationships between the training required, resources required, and an effectiveness measure are defined. In Step 3, training schedule alternatives are identified by varying parameters such as location, and pre-positioning TOE (Table of Organization and Equipment) equipment, and by combining selected training components. The model is then applied to alternatives developed to investigate the relative sensitivities of the various elements of the alternatives such as resource demands, start times, and areas of training. This process is reiterated until the desired program effectiveness is achieved within the stipulated resource constraints or until the opportunities for improving each alternative are exhausted. The last step is the analysis of the model outputs in terms of program effectiveness and resource efficiency. The result is a viable training schedule or set of alternative schedules for transitioning a new

weapon system into the Army force structure. As the development process continues and information becomes more precise, the process may and should be employed to update the results.

Identification of Training Requirements

The first step of the method identifies the types of organizations scheduled to receive the new system and the system's predecessors. An investigation is then made of the comparability of existing systems and the emerging system. Where appropriate, existing training concepts and plans are adjusted to accommodate the new system and to incorporate advances in training technology. If the introduction of entirely new technology demands it, original training concepts are also formulated. The concepts are then grouped according to common characteristics and merged into a single cohesive outline of the training required for the new system. Training resource estimates are then developed in a similar way, retaining the applicable requirements from the predecessor systems and adjusting as necessary to implement the updated training outline. The result includes the collective tasks inherent in the unit's mission and the training resources required to perform one iteration of each task. Successful accomplishment of this phase entails detailed research into training literature for current systems to include Army Training and Evaluation Programs (ARTEPs), soldier training publications, and mission and function statements as well as a diligent investigation of the requirements for, and characteristics of the emerging system. Included in the latter are the entire body of studies, plans and reports required by the acquisition system and current literature on the technologies being applied.

Model Development

The second step of the method is to model the cumulative relationships of training resources to training requirements and to develop an algorithm to determine the most program-effective and resource efficient method of transitioning units receiving the new weapon system.

Modeling Objectives. The primary objective of the model is to measure the relative effectiveness of training schedule alternatives. Specifically, the model demonstrates the relationships between training requirements and training resources. As part of the process, the model is calibrated to the training outlines developed in Step 1. The calibration process is accomplished by identifying the resources and rates of consumption required to support one iteration of the training outline. In turn, it expands the outline to include provisions to complete training for the entire transition program. The result is an initial training schedule to be used as a baseline case. In order to facilitate later comparisons of alternatives, the baseline case is intentionally simplistic and avoids complex sequencing or combinations of resources.

The baseline case also serves as a departure point for the development of training schedule alternatives. The alternatives are arrived at by varying the sequence, combinations of resources, and location of training in more complex ways that appear to present opportunities to enhance effectiveness or reduce resource requirements. The model functions as a computer supported data filing, manipulation, and aggregation system that can be used to evaluate the alternatives.

Model Structure. The basic modeling scheme is a variant of an input-output (Leontief) structure. An input-output structure was chosen because it permitted rapid fidelity in the treatment of resource requirements and was sensitive to differences in training schedule alternatives. Leontief structures typically allow for electronic case filing to foster reproducibility and rapid modular correction and update capability. Due to the tentative nature of the problem, it was necessary to employ a structure that allows for easy modification and maturation as additional information about the developing system is obtained.

Other features of an input-output structure include: the ability to deal with constraints easily, the ability to develop feasible alternatives, and the ability to identify the key drivers and limiting constraints of different alternatives. Input-output models also provide the ability to present trade-offs graphically among and within the various alternatives.

An input-output model can represent causal relationships between the training resources needed by the system and the system's consumers. In the model developed, the training required, the training resources required and the rate at which training resources are consumed, are inputs to the model for each training requirement. The model then aggregates this information for multiple resources, organizations, and training requirements and establishes the resources required for an organization to accomplish training in a given time frame.

The physical structure of the model has essentially four dimensions that are depicted in two, three-dimensional elements. The dimensions represent the different training components or sectors of the training system. The specific components represented in the model are training resources, training requirements, type of resource consumption, and time. The first element illustrated in Figure 1, consist of two arrays which file the training requirements and rates of resource consumption. The array is stored in such a way that the information can be manipulated and aggregated with respect to time in the second element of the model. The second element, illustrated in Figure 2, is also stored in an array and converts the training requirements, resource requirements, and the rate of consumption into a schedule of training required for each organization in calendar time periods. Each cube formed by the intersection of the planes contains the coefficient representing resource consumption in unit weeks for each organization. The aggregation

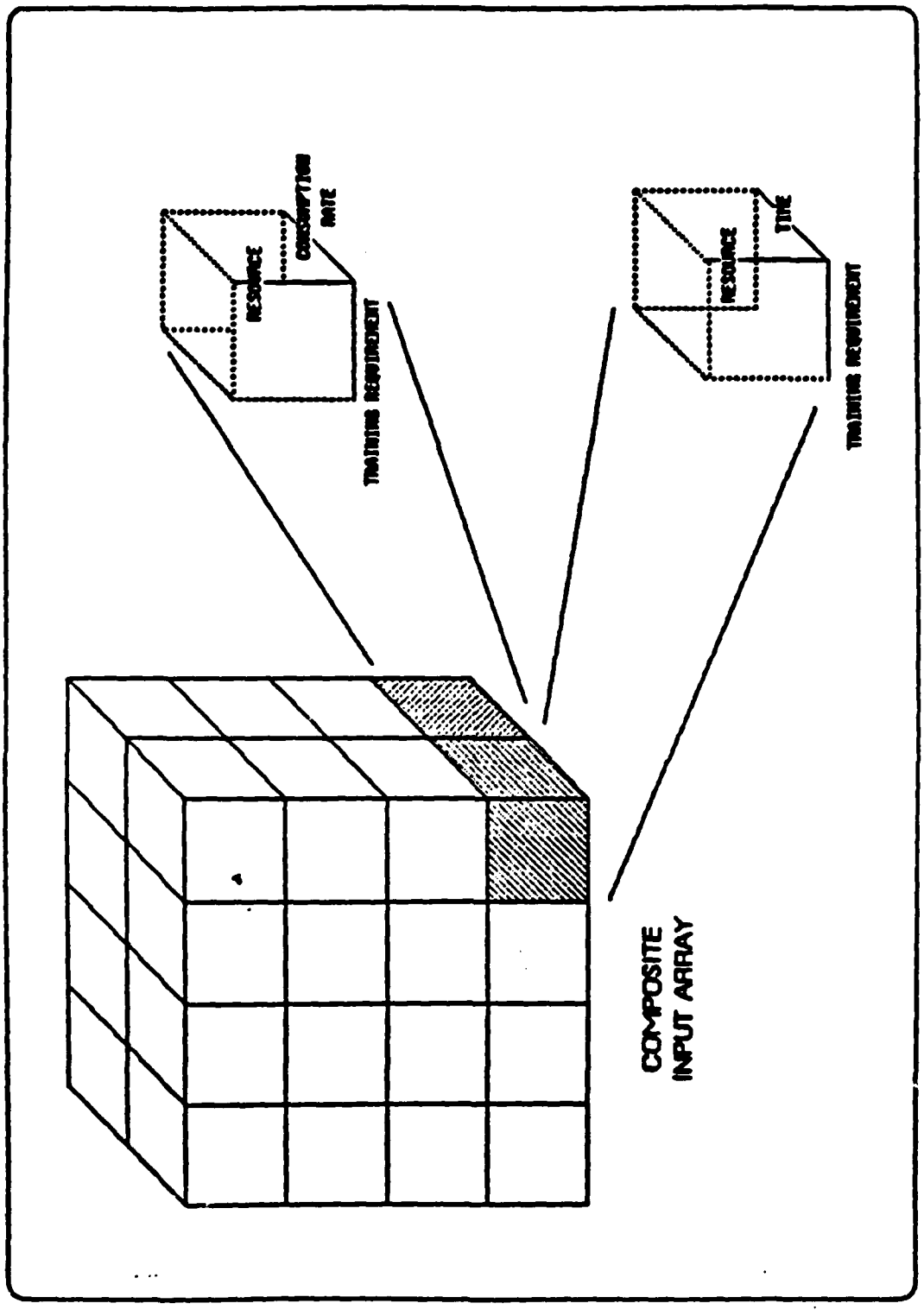

Figure 1. Model element 1.

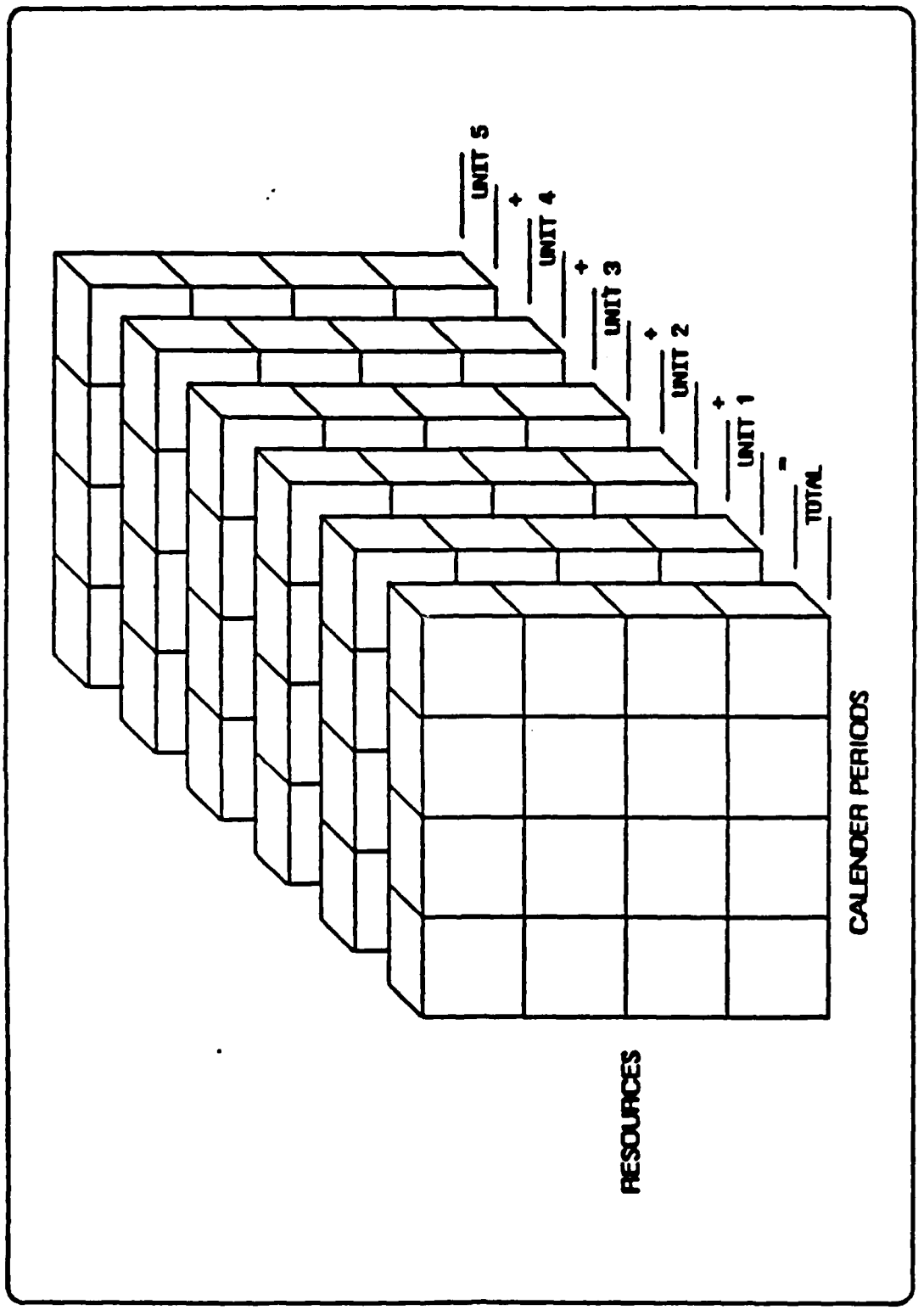

Figure 2. Model element 2.

provides the total amount of resources required for a certain period of time or during a specified time interval. A further detailed discussion of the model, including an example is presented in Application to the LHX section.

Model Application

The third step of the method involves the development of alternatives and applying the model developed in second step to those alternatives.

Previously there was not an algorithm available that provided the ability to analyze training schedule alternatives. The algorithm developed is an iterative process of selecting apparent alternatives and then refining those alternatives for improved efficiency. Alternatives are derived from the baseline case discussed by varying the major parameters such as location, sequence, or adding or deleting resources or requirements. Alternatives constitute separate and distinct training outlines. Parameters are varied within alternatives to assess the sensitivity of the training requirements and to maximize their efficiency and effectiveness. The modifications may include variations in start dates for individual units, trade-offs between training resources and changes in constraints.

For each of the alternatives, a comparison is made across organizations to be trained to determine the critical resources demanded. Critical resources are those resources that are determined to be necessary to maintain system operability at established levels. They are based upon subjective considerations to include considerations of cost, real world availability and substitutability. Any conflicts in demand for resources and any resources for which substitution is feasible are identified at this point. An example of conflicting resources is two or more units requiring use of a gunnery range at the same time. An example of a substitutable resource is the use of an aircraft simulator for actual flying hours. Once the critical and conflicting resources are identified, each alternative is refined to deconflict the resources and still accomplish the training required on an acceptable timetable. The process of resource deconfliction is reiterated until all resources have been deconflicted or until no more deconflictions can be made without violating the developing system's constraints.

Analysis and Comparison of Training Schedule Alternatives

The fourth step of the method consists of analyzing the model outputs for each alternative to determine the feasibility of each alternative as a viable training schedule. The evaluation of alternatives entails consideration of the combination of resource efficiency and program effectiveness.

Resource efficiency may be either a subjective evaluation of the total distribution and amount of resources required or if sufficient detailed information exists, it may entail expressing each resource in common terms such as dollars or manhours.

Program effectiveness is measured in terms of the average time required to train a single unit, the total time required to complete the entire program, and the maximum number of units trained at any one time. It is essential to consider the combined effect of all three measures. An apparent improvement in one measure can be to the detriment of the overall program. For example, it is conceivable that an alternative reducing the training time would involve a sequencing that would delay the entry of units into the program causing a delay in program completion and thus rendering the alternative less effective. An alternative could reduce training time and speed up completion of the program but in doing so might require an unacceptable number of units which may adversely impact the effectiveness of the alternative.

The next section provides a detailed description of the application of these measures when evaluating training schedule alternatives for a developing system, namely the LHX.

Application to the LHX

Application of the method previously described to the LHX was done concurrently with and was an integral part of the development of the training scheduling model. The nature of the project was such that at times the information available drove the architecture of the model and at other stages the demands of the model established the requirement for specific elements of data. There were two distinct applications attempted. The first developed an optimal unit training schedule for the LHX that adheres to the proposed procurement schedule and distribution plan. Subsequently, the method was applied to investigate the individual qualification training required to staff reserve units scheduled to receive the OH-58 and AH-1S helicopters displaced by the LHX. The LHX program lends itself well to the prototyping role because it is sufficiently complex to exercise the method fully. That is, the LHX is a technologically sophisticated emerging weapon system subjected to a streamlined acquisition process and is incorporating the MANPRINT initiative in its development. Applying the method to the LHX requires completing the following four steps as discussed in Method section.

1. Identification of LHX Training Requirements
2. Model Development
3. Model Application
4. Analysis and Comparison of Training Schedule Alternatives

Application To Unit Training

The primary driver of the model development and application steps of the method was the investigation of training requirements of units scheduled to receive the LHX. Units receiving the LHX are good candidates for top down demonstration since the LHX program is still under development and unit training requirements for the system have yet to be defined and are dependent upon the technology incorporated into the system. The top down approach employed to develop the model is consistent with the lack of detailed definition for the system's training requirements. Furthermore, it provides the opportunity to integrate a higher level of detail as more information regarding the LHX becomes available.

Identification of LHX Training Requirements

To estimate the unit training needed accurately for all units receiving LHX aircraft required the identification of the numbers of unit types receiving the system. From an examination of the Draft LHX Distribution Plan (U.S. Army, 1986), it was determined that 54 attack, 53 utility, 62 reconnaissance, and 16 medevac units were scheduled to receive LHX aircraft. Appendix A contains tables displaying the unit types for all LHX units, the associated parent units, the areas where units are to be deployed and the sequence in which they are scheduled to receive the aircraft. To avoid the need for a security classification, it was necessary to develop training schedules in accordance with the procurement schedule without reference to specific individual units or areas of location.

After consolidating the data in the LHX Distribution Plan, an investigation was made of the comparability of the predecessor systems to the LHX. In the case of the LHX, the predecessor systems examined were the AH-1S, OH-58, UH-60, UH-1, and the AH-64. These systems were selected for the comparability analyses in order to represent the spectrum of missions to be performed and to approximate the level of technology of the LHX most closely. Although the AH-64 (Apache) and UH-60 (Blackhawk) are not light helicopters and will not be displaced by the LHX, training references were reviewed for the Apache and Blackhawk aircraft because they are the most technologically advanced in comparison to the LHX. From the review of predecessor system training documents, the unit training requirements for each system were determined and compared to the general training requirements of the LHX. Specifically the question was asked, do the missions still exist and does the application of advanced technology change the inherent tasks or methods of training for those missions? Therefore, LHX documents including the Individual and Collective Training Plan for the LHX (U.S. Army Aviation Systems Command [USAAVSCOM], 1985), Annex F to the Required Operational Capabilities (ROC) for the LHX (U.S. Army Aviation Center, 1985), and the LHX Full Scale Development Request for Proposal (USAAVSCOM, 1986) were examined to

determine training differences between the LHX and predecessor systems. The examination of LHX documentation provided for the incorporation of new training concepts brought about by advances in training technology. Although many of the skills, knowledges, and individual tasks will change, there is no indication that there will be any significant changes in the collective training tasks for the LHX. For example, the automated cockpit will change gunnery tasks but primarily from an individual as opposed to a collective training perspective.

The training requirements for each type of LHX unit were grouped into training outlines that specify the training required for a particular type unit to achieve full mission capability. The investigation indicated a high correlation between LHX and AH-64 unit training. Therefore, the AH-64 unit training phases were perpetuated. They are the following:

Phase I - Individual and Crew Training
Phase II - Company and Unit Training
Phase III - Gunnery Training
Phase IV - Battalion Training
Phase V - ARTEP

Although the aircrew qualification course (AQC[2]) is not considered collective training, it was considered throughout the effort for its resource impact on other phases of unit training. Based upon information in the AH-64 Unit Training Plan, it was estimated that the five phases of unit training and AQC for the LHX, would be accomplished in a 20 week time frame. Figure 3 is a timeline displaying the training outline for a typical LHX equipped unit. For the purposes of this analysis, a unit is a company-sized organization. It is important to note that although all LHX unit training can be catalogued into one of the five phases, there are some units that do not undergo training in each of these phases. For example, most of LHX utility units do not perform battalion level training. Also there are two TDA (Table of Distribution and Allowances) units scheduled to receive LHX utility aircraft and these organizations only perform individual AQC.

Training resource estimates were established in much the same way by re-examining the requirements for the predecessor aircraft systems for applicable resources and adding resources specific to the LHX. They were then combined into packages sized to implement a single iteration of each of the training outlines. Resources specific to the LHX include the tactical team trainer, the Integrated LHX Training System, and the Dummy Stinger.

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[2]AQC, as used throughout this report, refers to individual training which both officer and enlisted personnel receive to become MOS (Military Occupational Specialty) or ASI (Additional Skill Identifier) qualified on the new equipment.

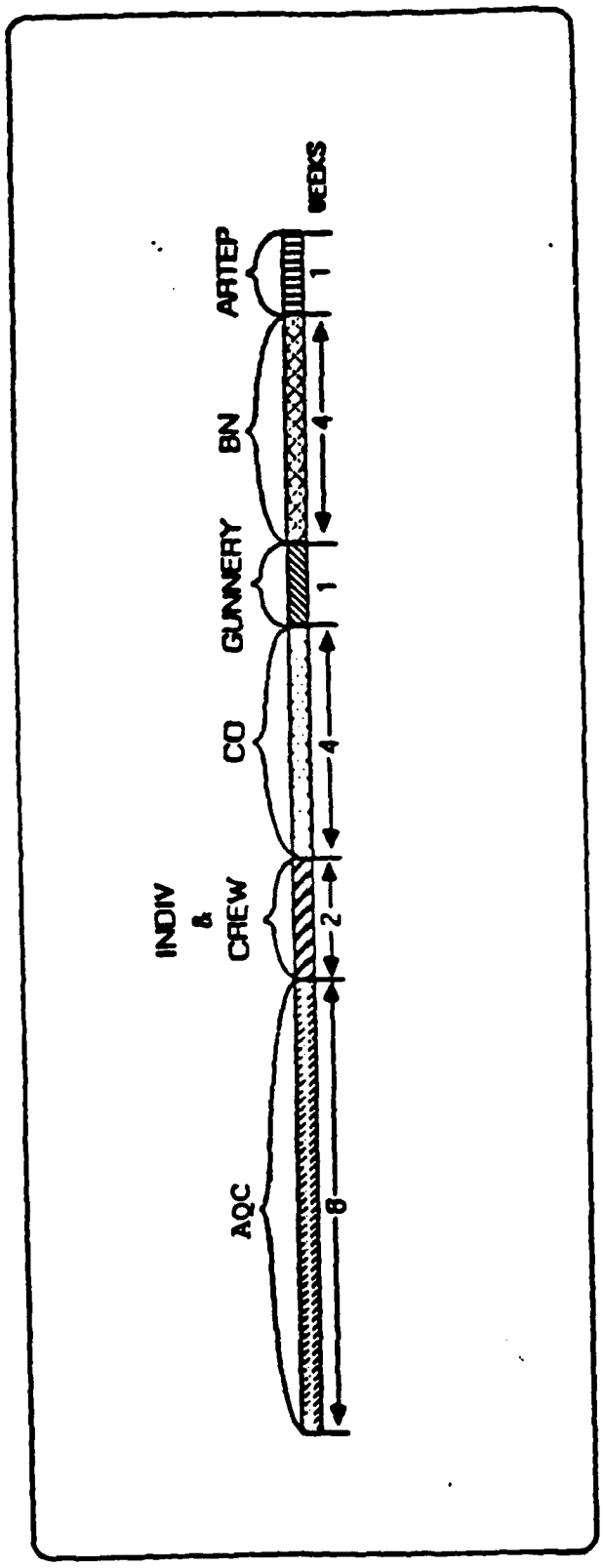

Figure 3. Timeline of training outline.

Table 1 illustrates the resource packages identified for each of the different LHX missions. A total of 19 resource packages were identified for LHX units performing attack missions. A total of 20 resource packages were identified for the units performing utility missions. An examination of predecessor system documents revealed that training for units performing reconnaissance missions requires the same resources as training for units performing attack missions. The same is true for utility and medevac units. Therefore, throughout the rest of this discussion, the training outlines for attack and utility units apply to reconnaissance and medevac units respectively.

Table 1

Resources Required for LHX

Required Resources Identified for LHX Attack and Reconnaissance Missions	
Maneuver Area	Dummy Hellfire
Classroom and Briefing Rooms	Dummy Stinger
Airfield and Stagefield	ATGM (AntiTank Guided Missile) System
Garrison Facilities	Flying Hours
Aerial Gunnery Range	External Aircraft
Opposing Forces (OPFOR)	External TOE Equipment
Friendly Forces	Maintenance
Evaluators	Supply
Integrated SCAT (Scout/Attack) Training System	Tactical Team Trainer
MILES/AGES (Multiple Integrated Laser Engagement Simulation/ Air-to-Air Ground Engagement System)	

Required Resources Identified for LHX Utility and Medevac Missions	
Maneuver Area	Dummy Hellfire
Classroom and Briefing Rooms	Dummy Stinger
Airfield and Stagefield	ATGM System
Garrison Facilities	Flying Hours
Aerial Gunnery Range	External Aircraft
OPFOR	External TOE Equipment
Friendly Forces	Maintenance
Evaluators	Supply
Integrated Utility Training System	Tactical Team Trainer
MILES/AGES	RCMAT

Model Development

An objective of the model's application to the LHX training system was to develop an effective and resource efficient schedule for conducting unit training of the LHX. To that end, the training outlines developed previously were expanded to include the resources and rates of consumption necessary to support the training required in the outlines. The model converts the outlines and resources to a file containing total training required by week for the entire program. The aggregation of training outlines into a single proposed training schedule represents the baseline case from which alternatives were developed.

An example of the model applied to a simple case in which only one resource is considered for three units is described below. In this case, the resource under consideration is "maneuver area." Figures 4 through 6 present the number of maneuver areas needed for each phase of unit training for three different units respectively. In this case, unit 001 and 003 require one maneuver area for each phase of training, except gunnery. Unit 002 is a utility unit and requires maneuver areas for all phases except the gunnery phase and battalion phase of training.

The three units are then combined as shown in Table 2 to illustrate the amount of maneuver areas needed for each week of the training cycle during each of the training phases. The scheduling of units begins at the first full week after the aircraft is delivered to the unit. Table 2 can be displayed in Figure 7 where each bar represents a unit's requirement for maneuver areas throughout the training cycle. Figure 7 illustrates the possible conflicts where multiple units compete for the same resource. In this example, the start time of unit 003 in Figure 7 can be shifted eight weeks to the right in order to reduce the conflict of maneuver areas between unit 001 and unit 003. This example can be expanded to include all units receiving the LHX and to include all resource packages necessary to complete one iteration of the training cycle.

The baseline case demonstrates the relationships between the training required and the training resources needed to transition LHX units. In keeping with the objective of developing a baseline case that is simplistic and avoids complex sequencing of training events, the baseline case used for the LHX is one in which all units perform all unit training with the exception of gunnery (Phase III) at their home stations with TOE equipment. Gunnery training requires ranges and firing areas which are not usually available at each unit's home station. Although AQC is not considered collective training, it was considered throughout the effort for its resource impact on other phases of unit training.

	AQC	INDIV/ CREW	CO	GUNNERY	BN	ARTEP
MANEUVER AREA	1	1	1	0	1	1

FIGURE 4. MANEUVER AREA REQUIRED FOR UNIT 001

	AQC	INDIV/ CREW	CO	GUNNERY	BN	ARTEP
MANEUVER AREA	1	1	1	0	0	1

FIGURE 5. MANEUVER AREA REQUIRED FOR UNIT 002

	AQC	INDIV/ CREW	CO	GUNNERY	BN	ARTEP
MANEUVER AREA	1	1	1	0	1	1

FIGURE 6. MANEUVER AREA REQUIRED FOR UNIT 003

Table 2

Maneuver Areas Required During Training Cycle

PHASE / WEEK	AQC	INDIV/ CREW	CO	GUNNERY	BN	ARTEP
1	1					
2	1					
3	2					
4	2					
5	3					
6	3					
7	3					
8	3					
9	2	1				
10	2	1				
11	1	1	1			
12	1	1	1			
13		1	2			
14		1	2			
15			2	0		
16			2	0	1	
17			1	0	1	
18			1	0	1	1
19				0	1	0
20				0	1	1
21					1	0
22					1	0
23					1	0
24						1

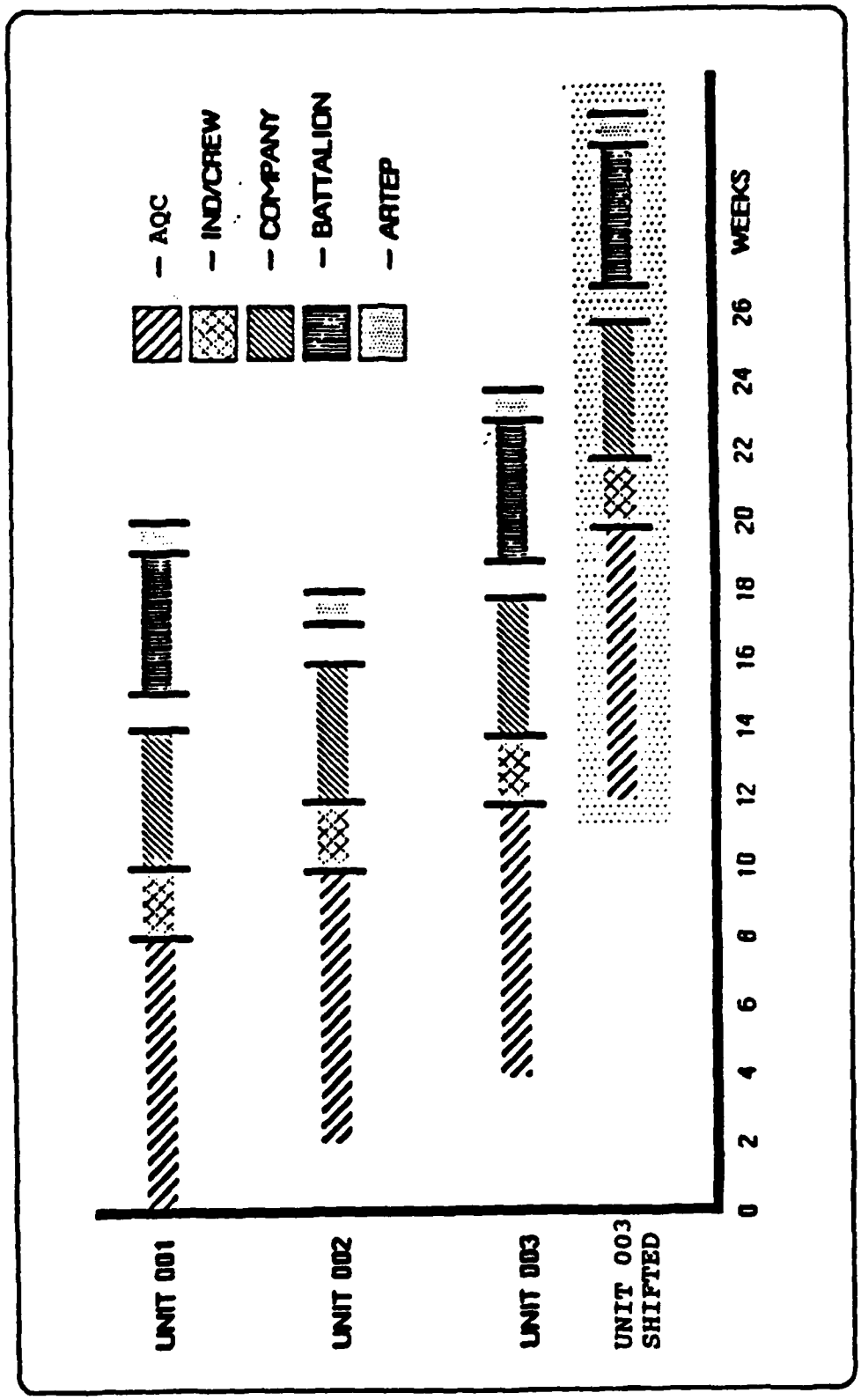

Figure 7. Training outline for three sample units.

Figure 8 displays the baseline case for the fielding of the LHX in fiscal year (FY) 2000. FY 2000 was chosen as the slice to be investigated since it is the year in which the greatest amount of LHX aircraft will be fielded and thus will present the most difficulty when planning unit training. The schedule displayed in Figure 8 is based upon the LHX Distribution Plan. Units were scheduled to begin individual and crew training (Phase I) at the earliest possible start time (i.e., upon receipt of equipment). From that point a period of 10 weeks was added preceding Phase I training for AQC[3]. This 10 week period allows two weeks for travel time to and from AQC. Examining Figure 8, it can be seen that unit training for the LHX in FY 2000 will be accomplished in 58 weeks with an average unit training time of 24 weeks.

The next step in the model development process for the LHX was to identify the critical resources to be examined for the baseline case and throughout the analysis of each alternative. The critical resources were identified based upon the subjective consideration of cost, real world availability, and impact on training. The following is a list of the critical resources for LHX unit training in order of descending importance.

Administrative time
Flying hours
Aerial gunnery range
Maneuver area
OPFOR
External aircraft
External TOE equipment
Tactics Team Trainer
Door gunnery range

In the initial application of the baseline case, there is a conflict within 10 SCAT units since Christmas falls within weeks 10 and 15. Historically, the U.S. Army Training and Doctrine Command (TRADOC) has not conducted training over the Christmas holidays nor is it operationally practical to conduct training during this time. Therefore, the baseline case was modified to allow for a two week administrative period for those units scheduled for training during the holidays. This rationale can also be applied to the utility units since the holidays affect seven utility units. Figure 9 illustrates this refinement in the baseline case for both SCAT and utility units.

When allowing for a break in training for the holidays, 15 SCAT units are affected. More than 50% of the SCAT units complete training in 37.9 weeks and the average unit training time increases from 24 weeks to 24.8 weeks. Eleven utility units are affected by the two week break during the holidays. More than 50% of the utility units complete training in 28.7 weeks and the average unit training time is 17.2 weeks.

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[3]AQC is identified by the letter "N" in Figure 8.

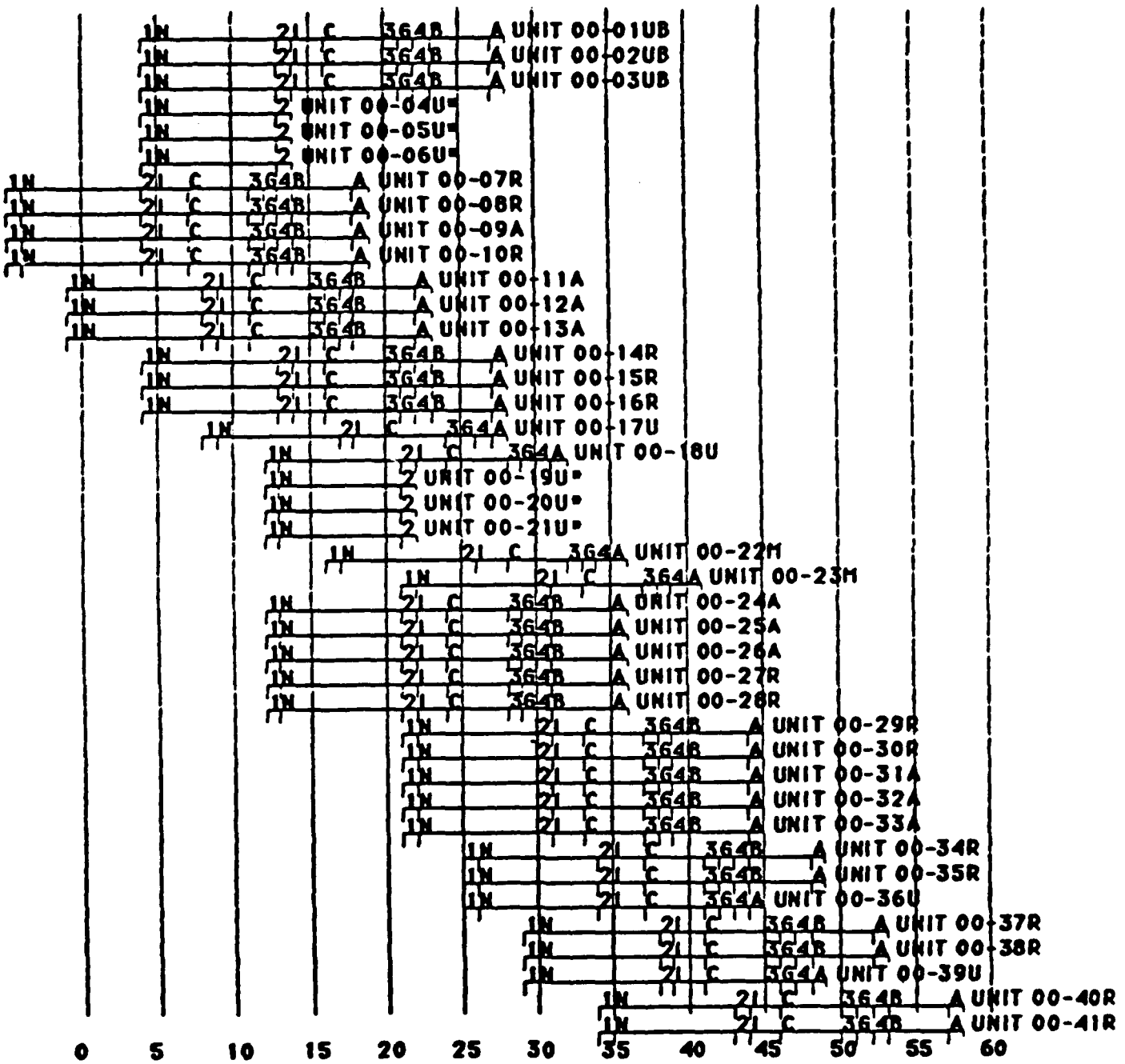

Figure 8. Training schedule for LHX in FY 2000.

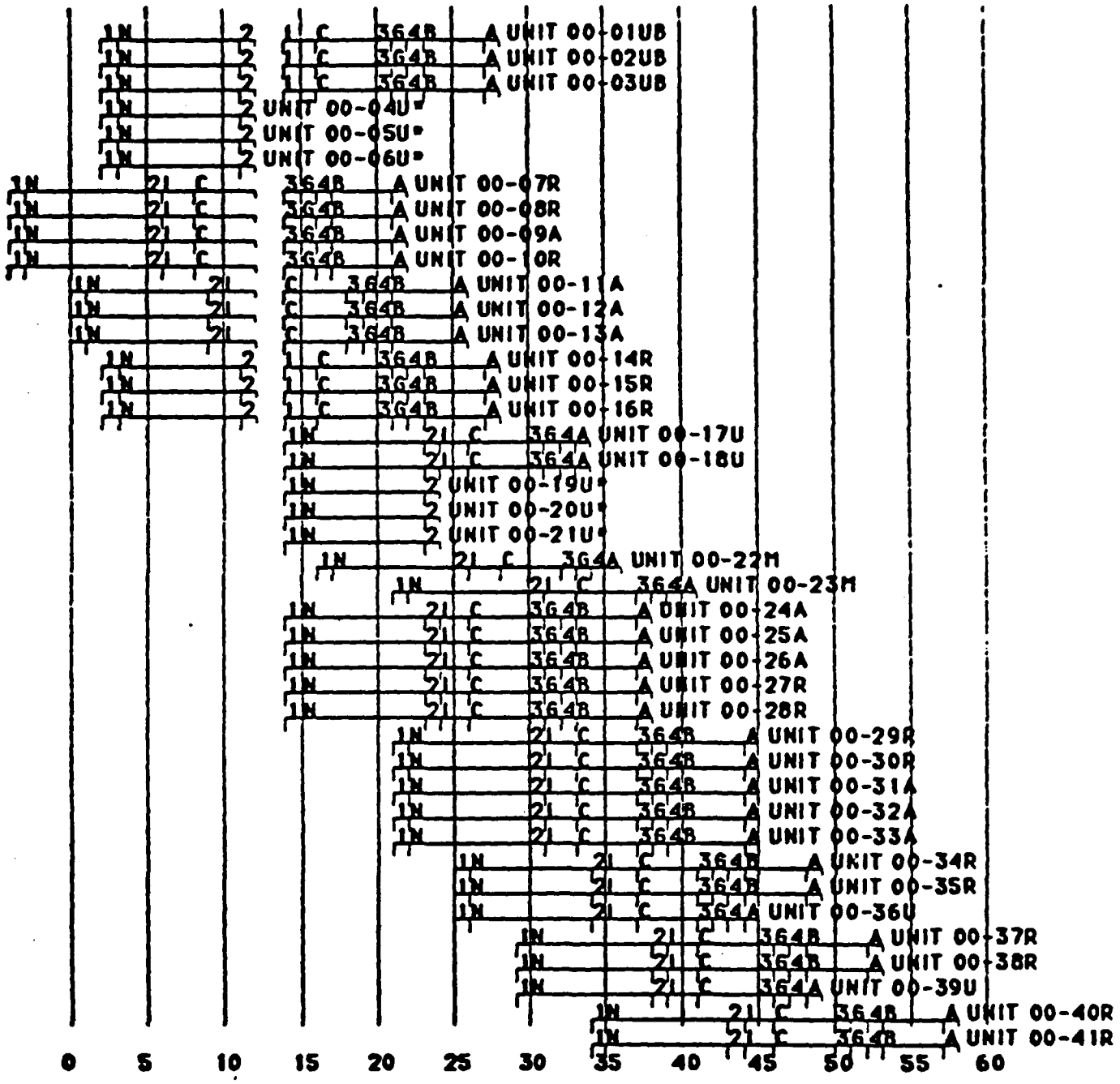

Figure 9. Training schedule for baseline case with refinement for Christmas holidays.

From an examination of Figure 9, it can be seen that after allowing for a break in training over Christmas, there remains a large number of units attending AQC[4] at one time. Specifically, there are 17 units scheduled to be attending AQC at week 22 which

[4]AQC is identified by the letter "N" in Figure 9.

would require a 40% improvement in the student to aircraft ratio over the current student to aircraft ratio for the AH-1S aircraft. Such an improvement is not likely. Therefore, the baseline case was refined again as shown in Figure 10, to reduce the number of units attending AQC[5] at any one time.

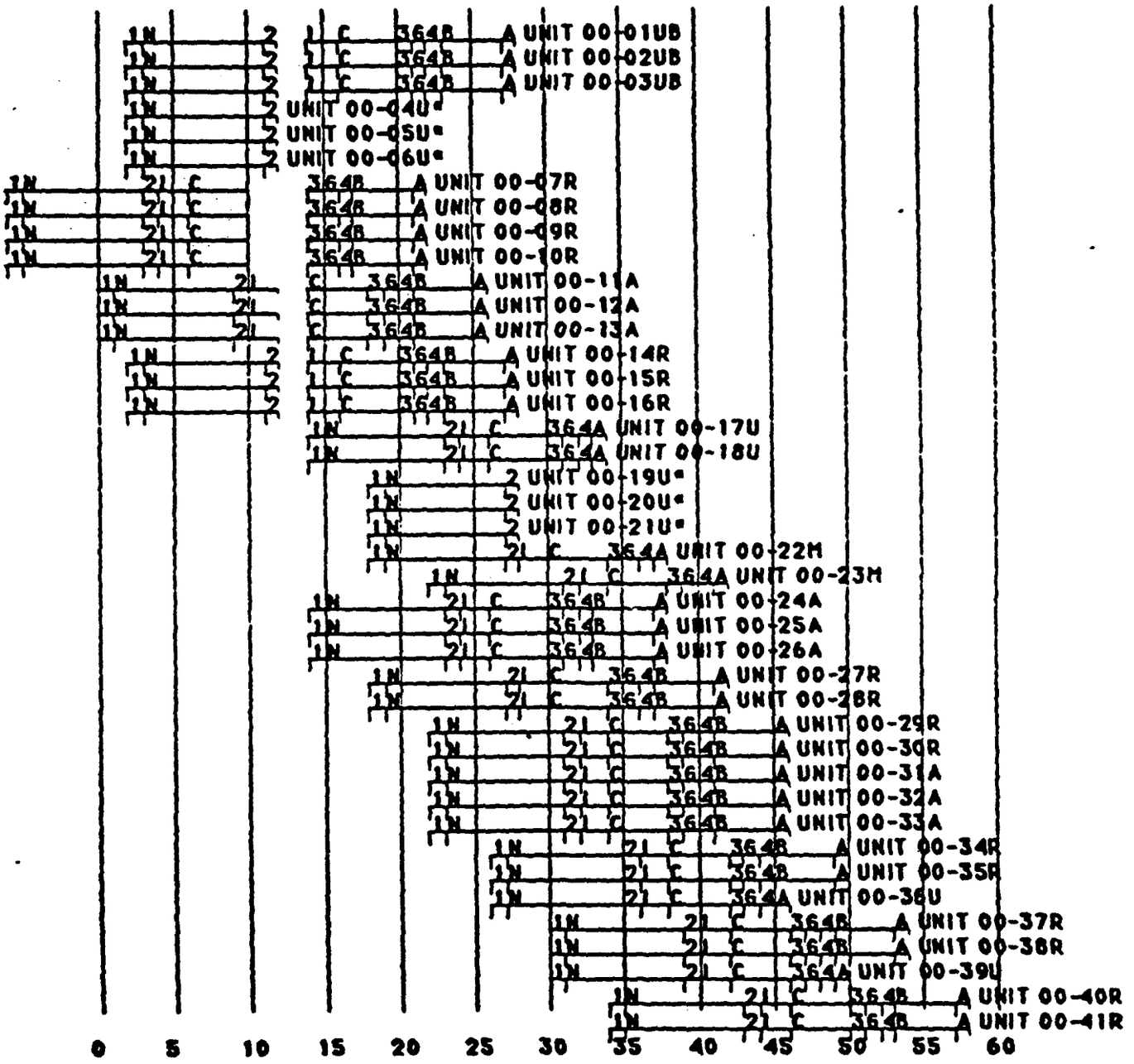

Figure 10. Deconflicted baseline case.

[5]AQC is identified by the letter "N" in Figure 10.

The other nine critical resources were examined for the baseline case. Figures 11 through 21 illustrate the distribution of each of the critical resources required throughout the training cycle for the baseline case. However, upon examination, no substantial conflicts were identified that could be deconflicted in such a way as to reduce training burdens and maintain a reasonable unit training time. This finding is in keeping with the definition of the baseline case, of simplicity and maximum independence among training requirements.

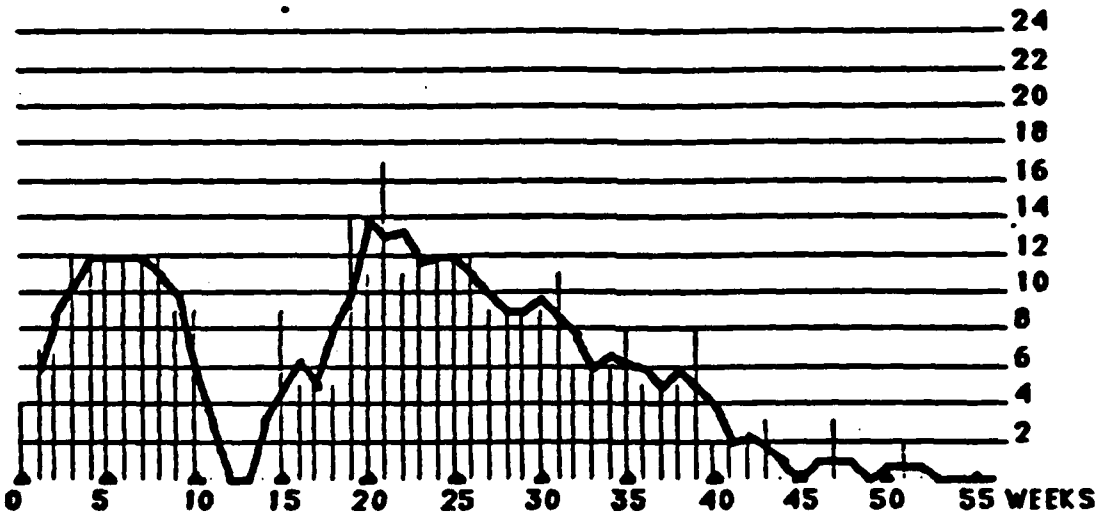

Figure 11. Aerial gunnery range for baseline case.

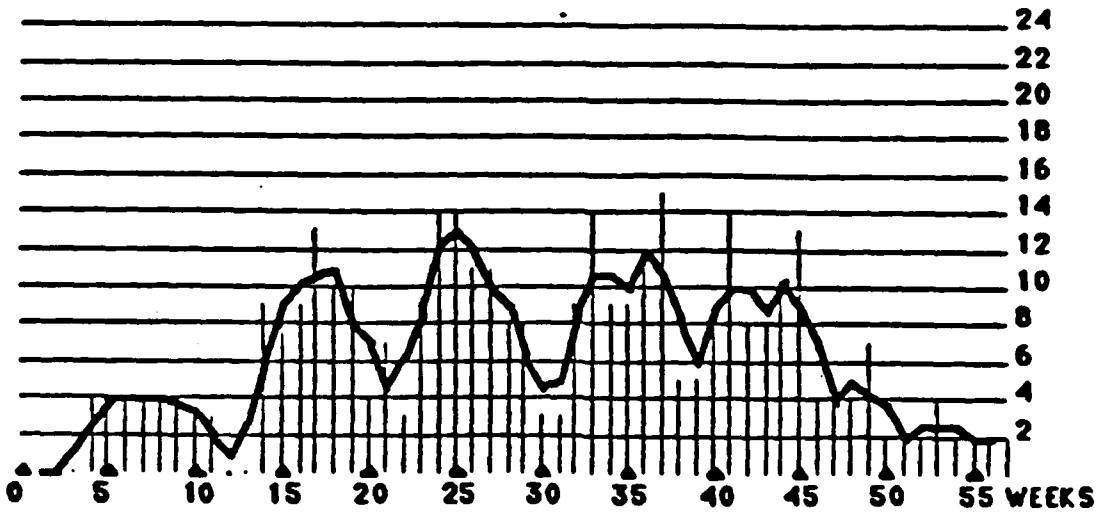

Figure 12. Maneuver area for baseline case.

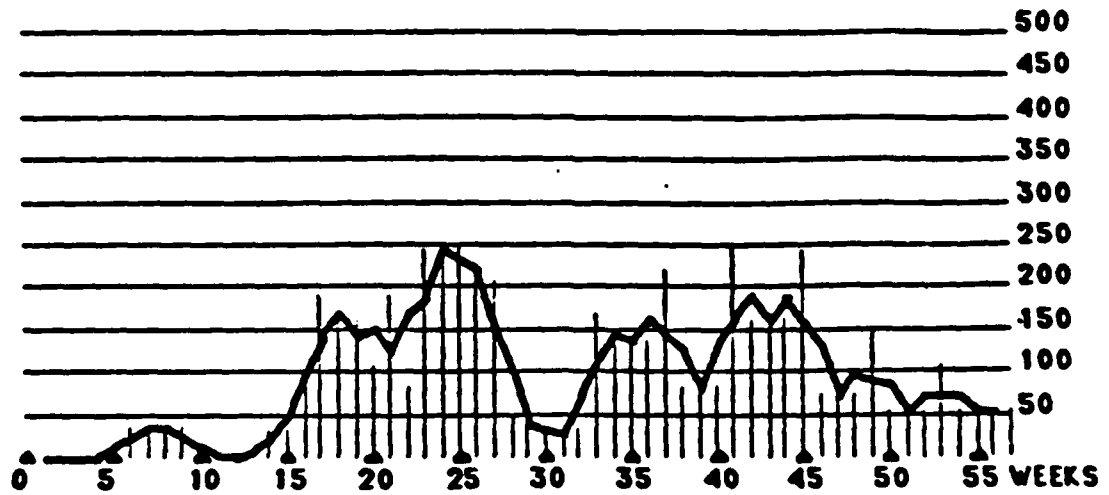

Figure 13. OPFOR for baseline case.

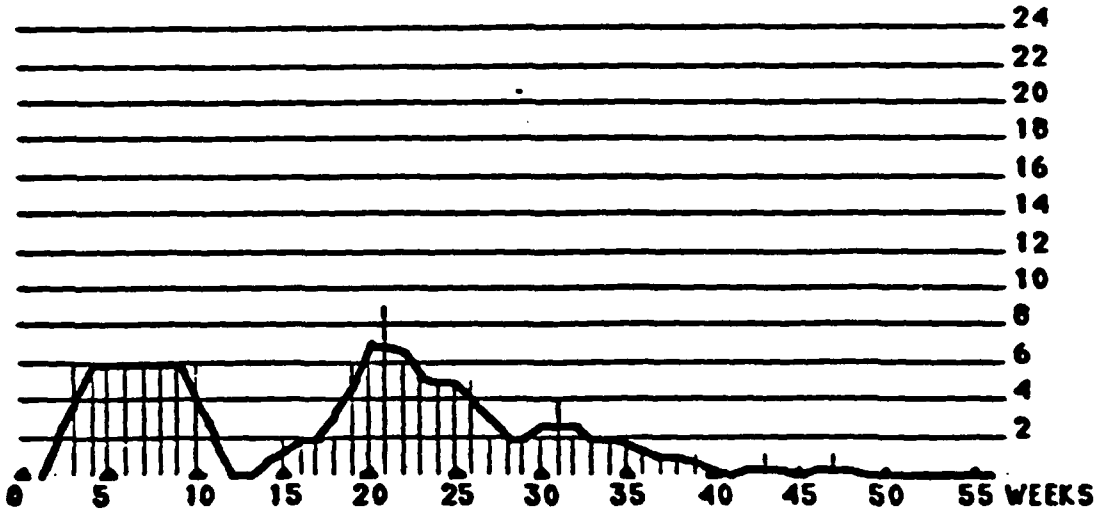

Figure 14. Door gunnery range for baseline case.

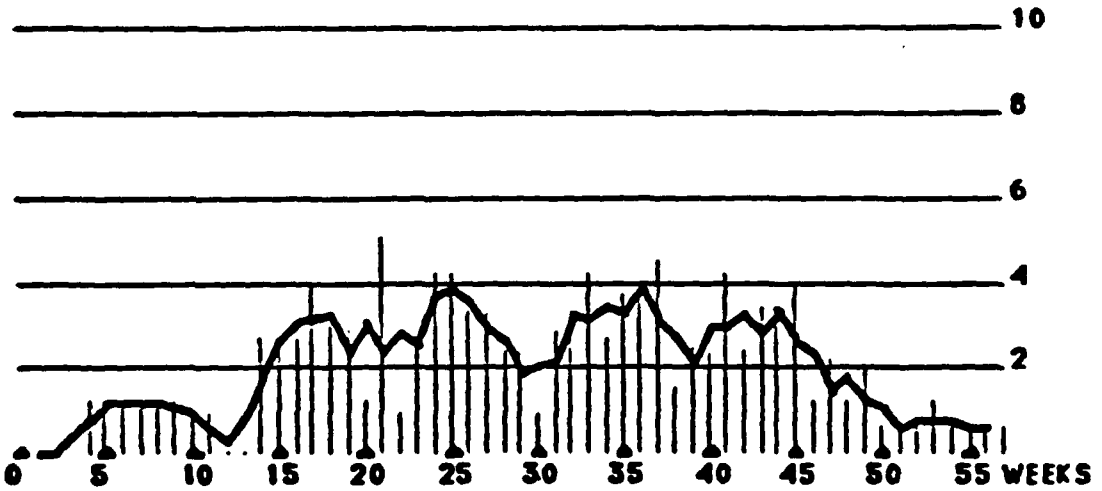

Figure 15. Tactics team trainer for baseline case.

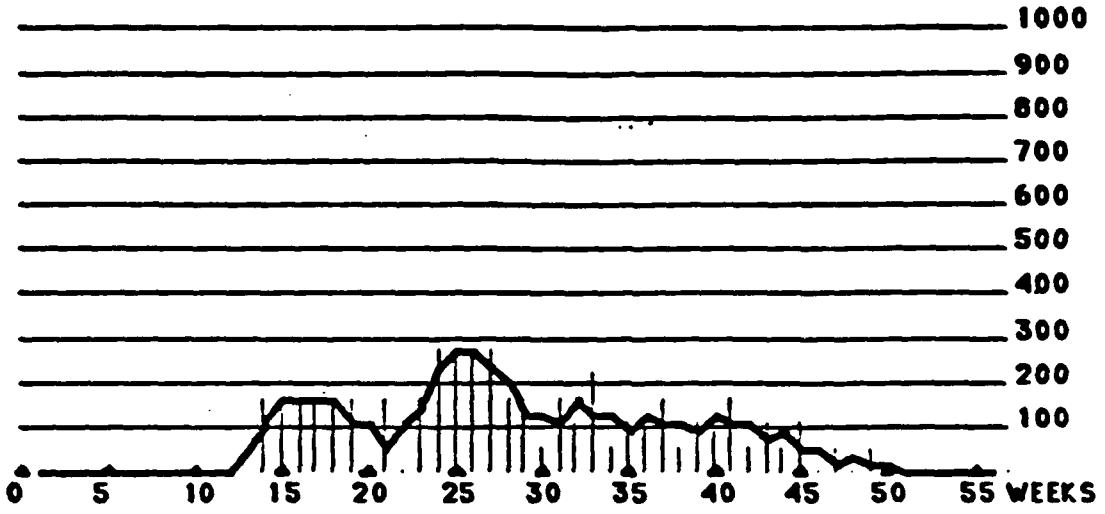

Figure 16. Utility flying hours for baseline case.

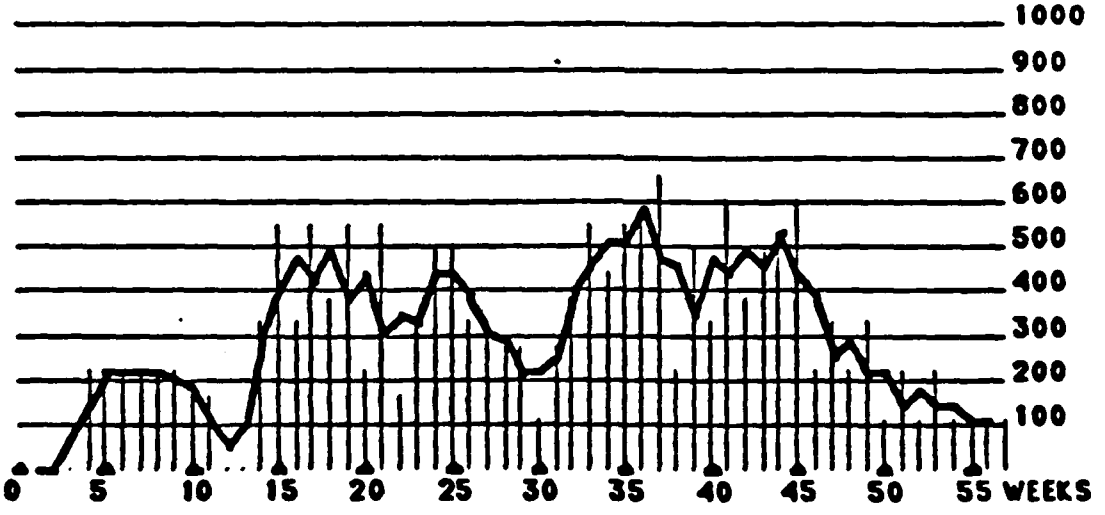

Figure 17. SCAT flying hours for baseline case.

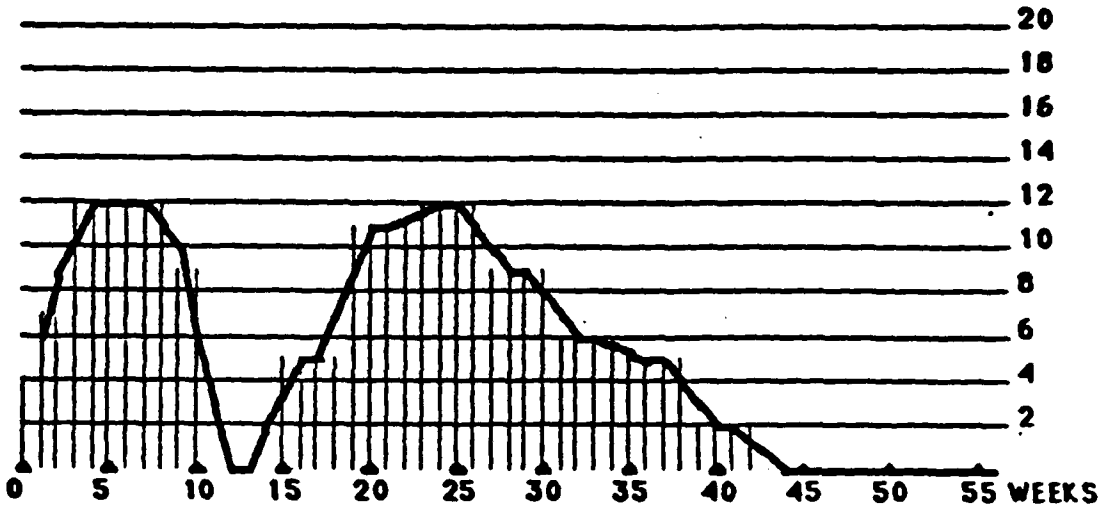

Figure 18. External TOE equipment for baseline case.

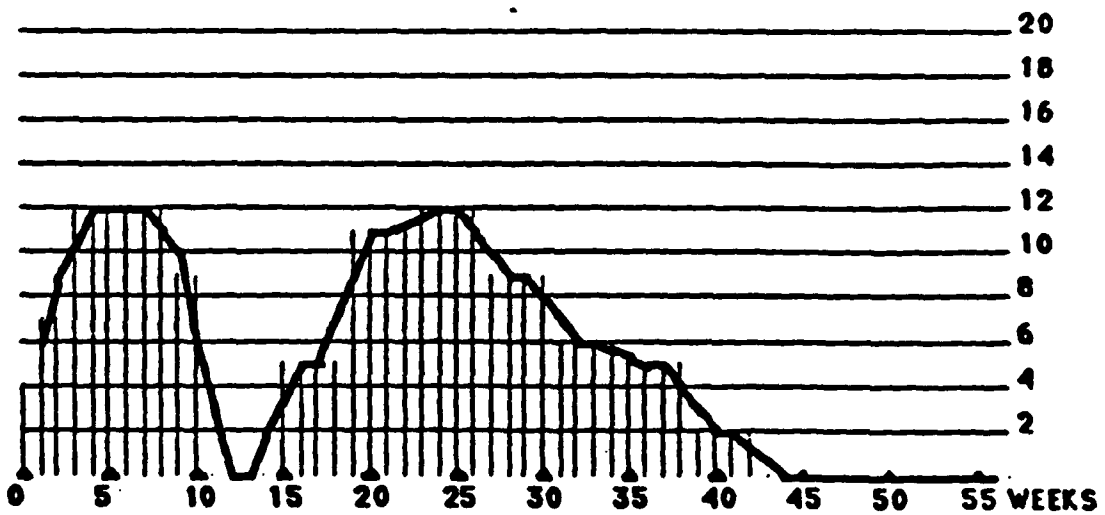

Figure 19. External aircraft for baseline case.

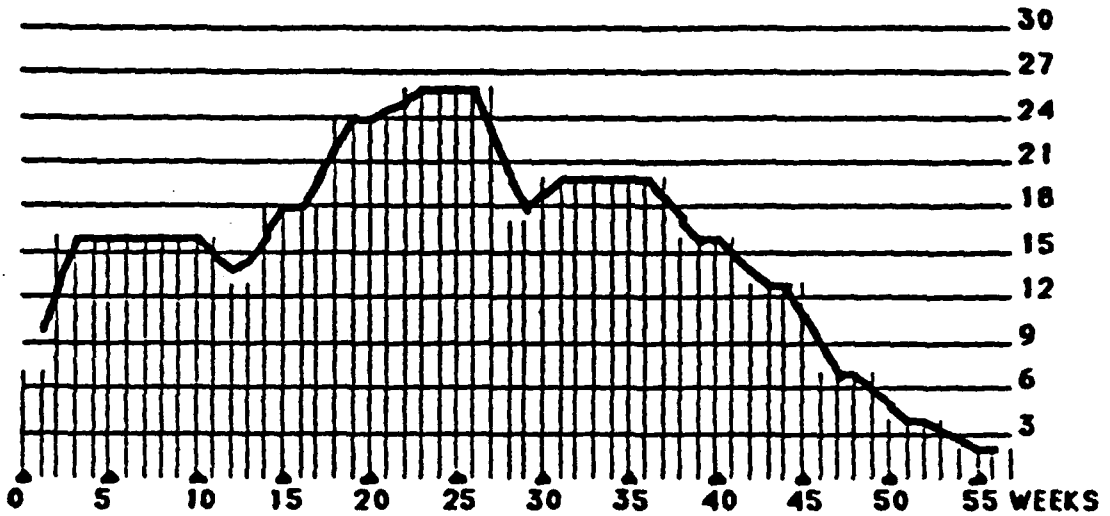

Figure 20. Average unit training time for baseline case.

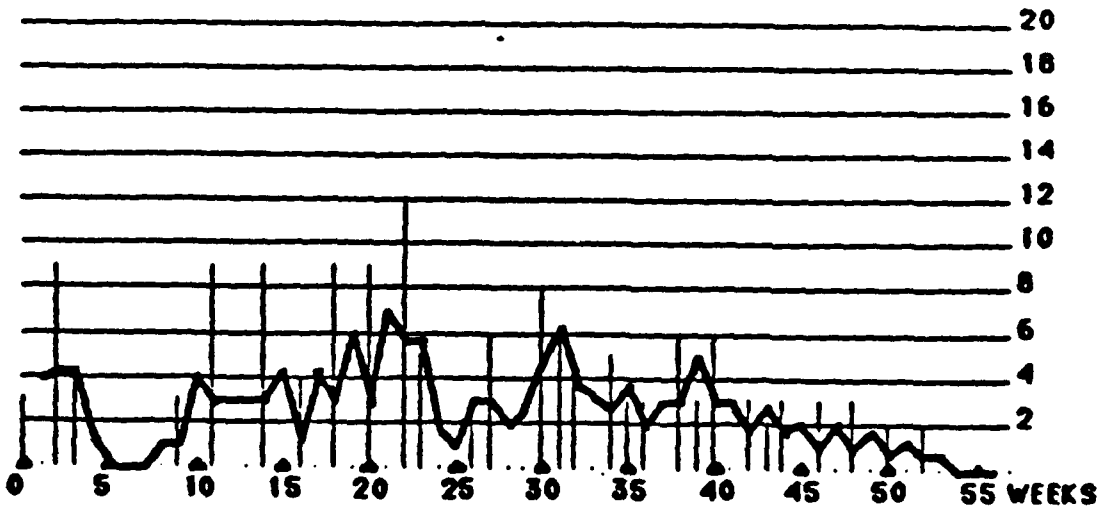

Figure 21. Administrative time for baseline case.

Model Application

After refinement and calibration of the model for the baseline case, three unit training schedule alternatives were developed for each type of LHX unit. They were derived from the baseline case by varying the location of training from home stations to area training centers, pre-positioning equipment, eliminating training Phases I and III, and combinations of these alternatives. Appendix B presents training schedules, unit training times and critical resource distribution graphs of the baseline case and each alternative.

Sensitivity analyses were performed on each of the three alternatives and the baseline case in an attempt to deconflict critical training resources and to provide unit training to the largest number of units in the smallest amount of time. These analyses were done for the LHX by varying unit start times for training, and varying administration time within a training cycle. This process of resource deconfliction and reduction was repeated for each of the three alternatives.

Alternative 1. Alternative 1 was derived from the baseline case by eliminating Phases I and III from the unit training schedule. In this excursion, an examination was made of the resource and training time impact when individual and crew, and gunnery training was conducting during AQC. Figure 22 illustrates this alternative before any deconfliction analyses have been performed. In this case, the average unit training time is 17.6 weeks with more than 50% of all units completing training by week 32 of FY 2000. Upon examination of the nine critical resources required throughout the training cycle for this alternative, it was determined that in week 23, 20 aerial gunnery ranges are required. This is not surprising since there will be 20 units undergoing AQC[6] at this time.

From an examination of Figure 22, it was noticed that only seven units are attending AQC during week 24. These seven units also contribute to the gunnery conflict in week 23. Thus the scheduled start times of the units with aerial gunnery range conflicts were shifted, as illustrated in Figure 23, so that there would be a more uniform number of units attending AQC[7] during this time frame, thus reducing the number of aerial gunnery ranges required in week 23 to 14.

The remaining critical resources were examined for additional conflicts. However, it was determined that there were no substantial conflicts in critical resources demanded that could be reduced without a large increase in unit training time. Comparing the alternative before and after resource

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[6]AQC is identified by the letter "N" in Figure 22.

[7]AQC is identified by the letter "N" in Figure 23.

deconfliction, the average unit training time remains unchanged while the time required for 50% of the units to complete training is increased by .9 weeks.

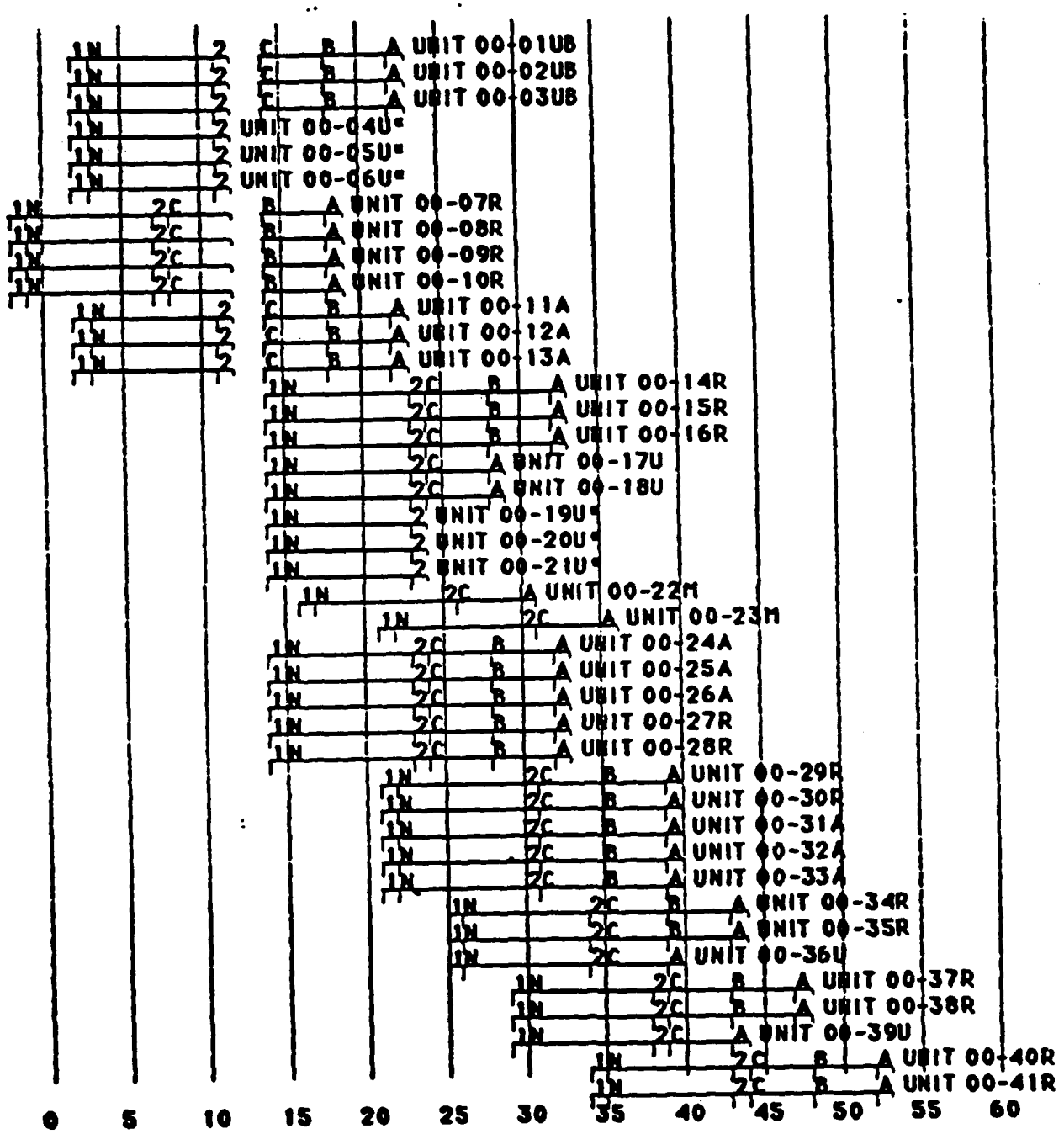

Figure 22. Alternative 1 prior to deconfliction analyses.

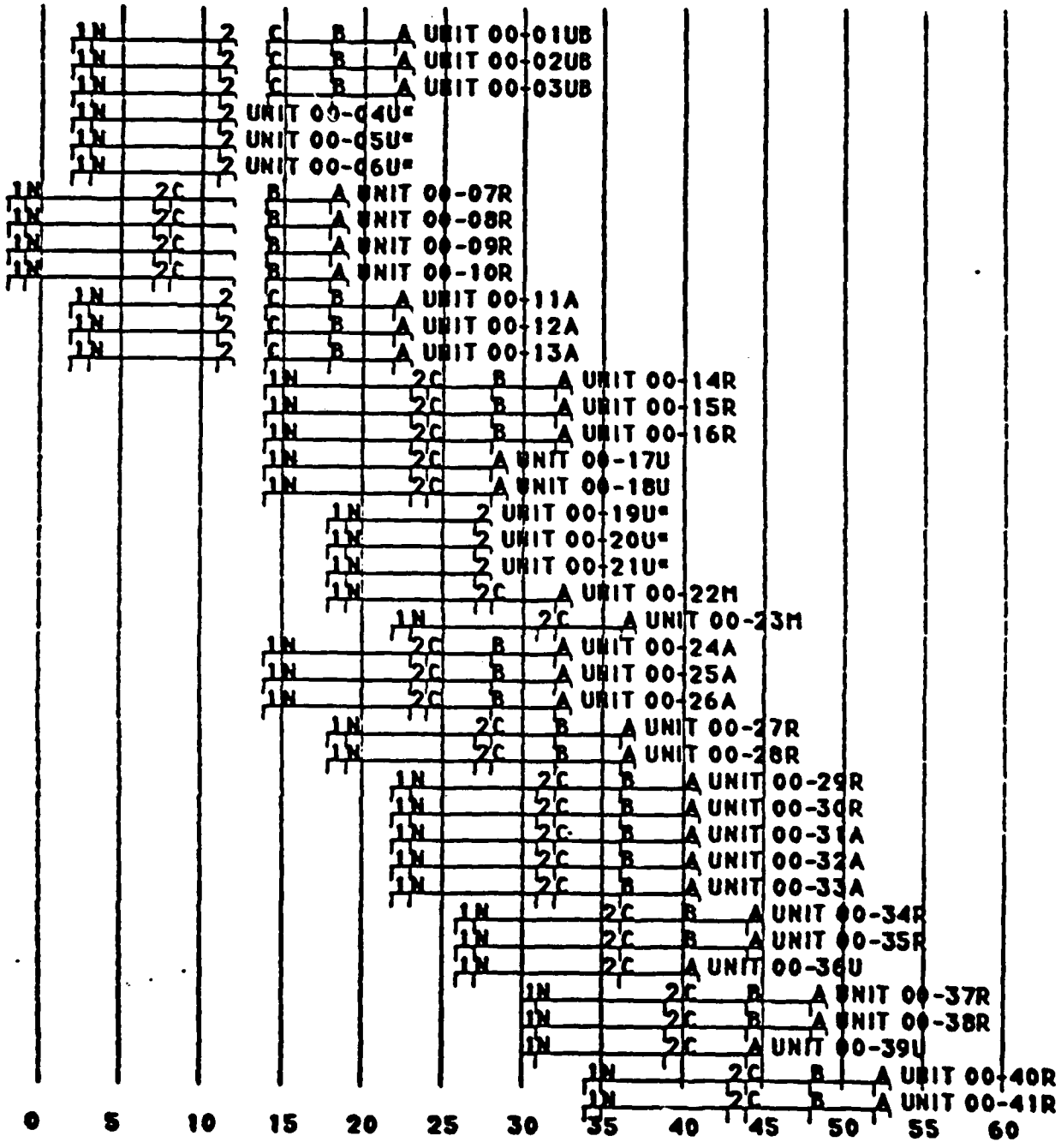

Figure 23. Alternative 1 after deconfliction analyses.

Alternative 2. The second alternative is one in which all training is conducted at one central training location with phases I and III subsumed in AQC[8]. From an examination of Alternative 1, it was determined that the resource consumption and effectiveness degradation was of sufficient magnitude to convince the research team that in no case would training be effective or efficient unless Phases I and III were subsumed in AQC. Thus, the remaining alternatives developed assume that individual and crew and gunnery training will be performed during AQC. Figure 24 illustrates the scheduling of units for this alternative before any deconfliction analyses are performed. In this case, the average unit training time is 17.7 weeks and the time required for 50% of the units to complete training is 31.3 weeks. Upon examining the distribution of the nine critical resources, it was determined that in weeks 4-7, there was a requirement for 16 aerial gunnery ranges whereas a maximum of 12 ranges is required during the remaining weeks. Additionally, it was determined that in weeks 14-18, a total of 13 maneuver areas are required whereas most training requiring maneuver areas requires less than 10 maneuver areas at any one time.

In an attempt to balance better the number of maneuver areas and aerial gunnery ranges required, it was noticed that the requirement for aerial gunnery ranges only occurred when units were undergoing AQC and that the requirement for maneuver areas occurred when units were undergoing company, battalion, or ARTEP training. Thus when deconfliction analyses were performed by rescheduling the number of units undergoing AQC and thereby reducing the number of aerial gunnery ranges required, the number of units performing company level, battalion level, or ARTEP training increased. The increase in the number of units undergoing company, battalion, or ARTEP training also increased the number of maneuver areas required. Likewise, attempting to reduce the amount of maneuver areas required by rescheduling units to balance better the number of units performing company, battalion, or ARTEP training at one time resulted in an increase in the number of units undergoing AQC. Thus a balance between the two was required as shown in Figure 25. When deconflicting for aerial gunnery ranges and maneuver areas, the average unit training time is decreased to 17.6 weeks and the time required for 50% of the units to complete training is increased to 32.4 weeks. However, the trade-off of time to number of units trained provided a reduction of two maneuver areas and two aerial gunnery ranges required at any one time.

Alternative 3. The third possible alternative to conduct unit training was to conduct all training with the exception of AQC at area training centers. Before any deconfliction analyses were performed, Alternative 3 is identical to Alternative 1 because the resources required are the same for each unit as when they are conducting training at their home stations. The

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[8]AQC is identified by the letter "N" in Figures 24 and 25.

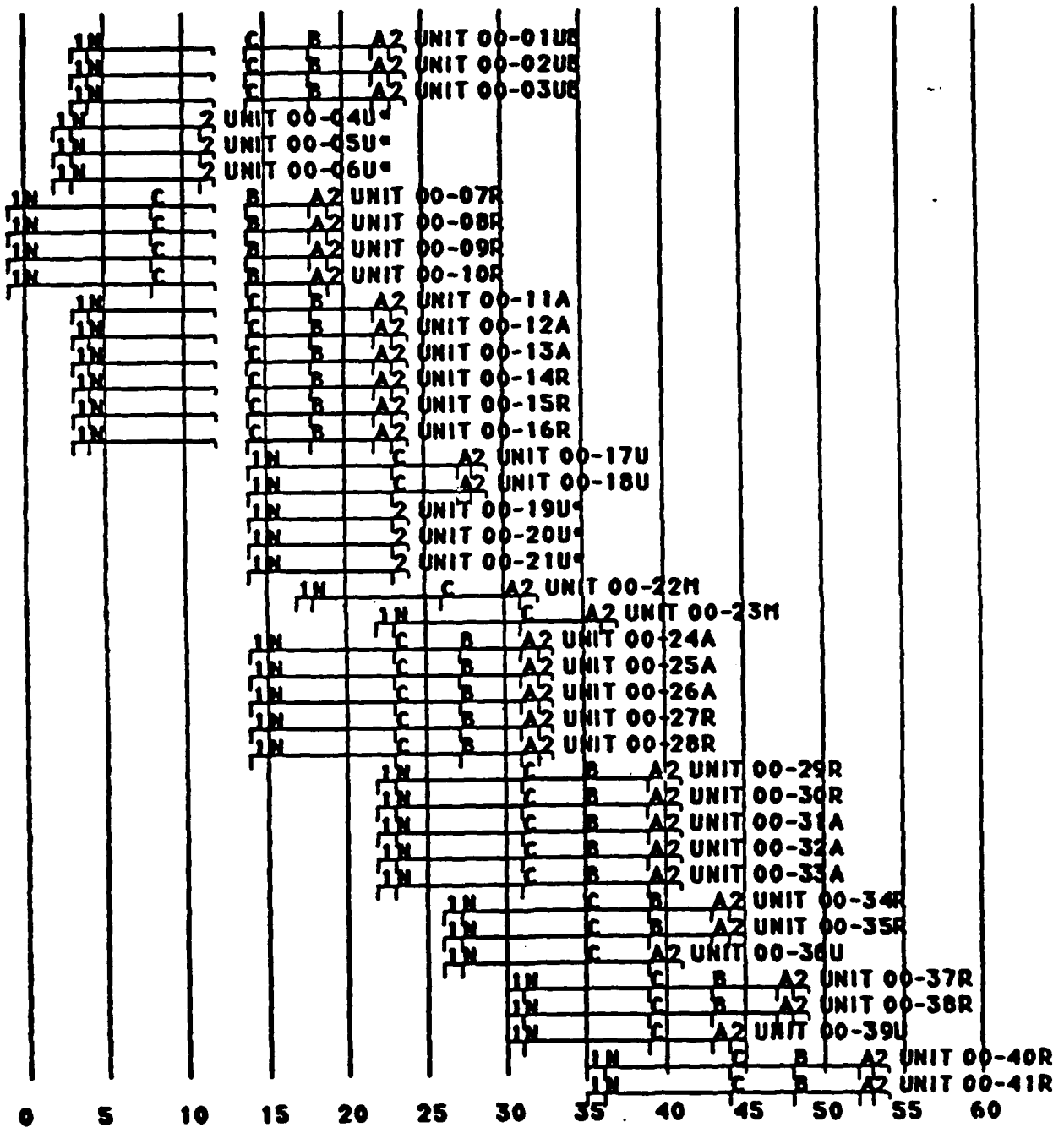

Figure 24. Alternative 2 prior to deconfliction analyses.

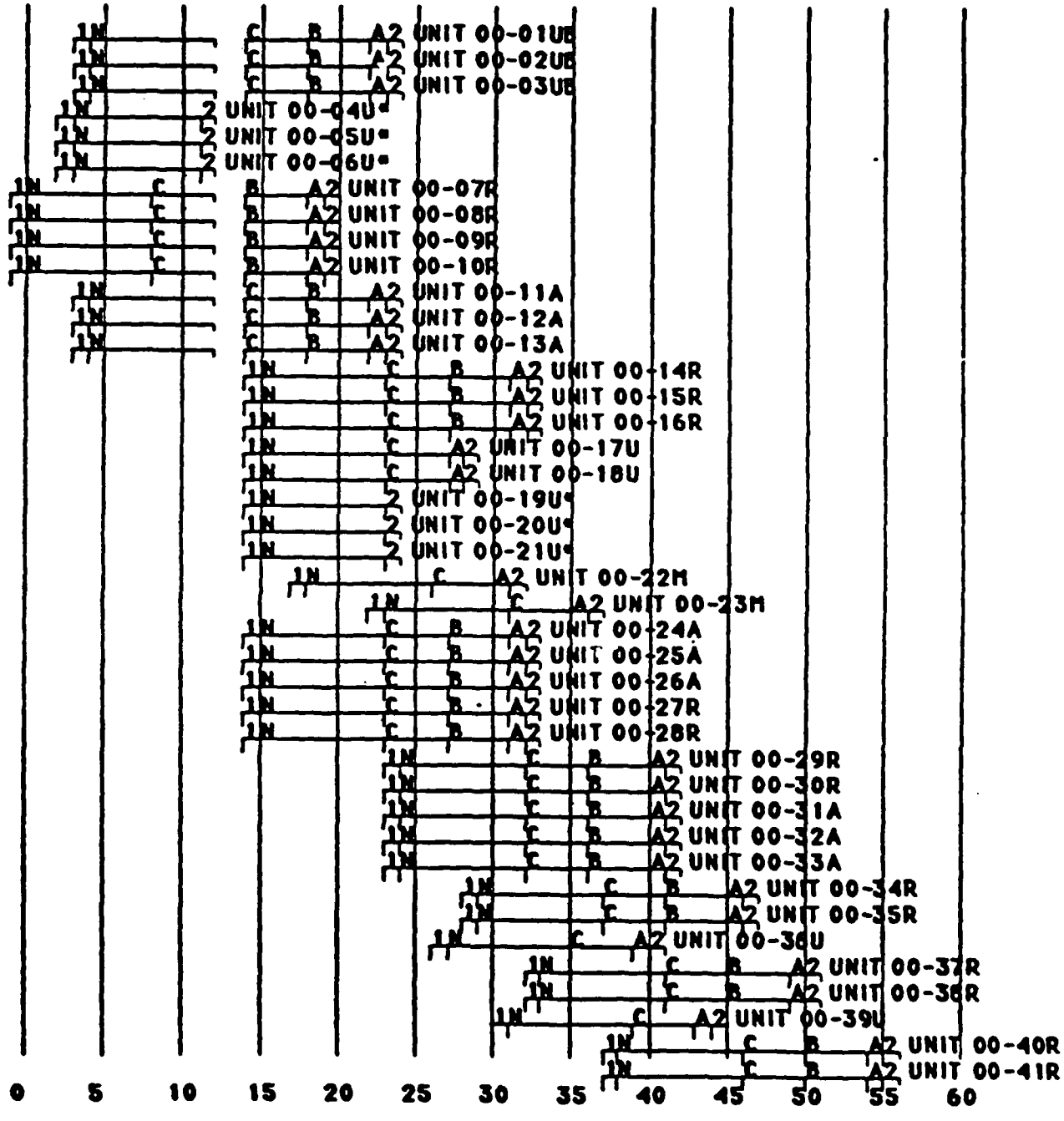

Figure 25. Alternative 2 after deconfliction analyses.

critical resources were then examined and the alternative was refined to reduce the number of units requiring aerial gunnery ranges during week 22 as was discussed in Alternative 1. After refining the schedule to deconflict any of the critical resources, Alternative 3, as shown in Figure 26, remains identical to Alternative 1.

The only resource that may be affected when training at area training centers is "garrison facilities" since in Alternative 3, units would be training away from home station throughout the training cycle. Figure 27 illustrates the amount garrison facilities required throughout the training cycle for this alternative. Upon examination, it can be seen that in week 32, there is a requirement for 21 garrison facilities, whereas in Alternative 1, only a maximum of 14 garrison facilities are required (Figure 28). However since this alternative has already been deconflicted in Alternative 1 to the maximum extent possible without a large increase in training time, it is not possible to reduce the number of garrison facilities required to train units at area training centers without increasing the training time. Therefore, there is no difference in Alternative 1 and Alternative 3 in the average unit training time or in the time it takes to complete training.

Analysis and Comparison of Training Schedule Alternatives

The model applications were examined by the research team to determine the most feasible scheduling alternative in terms of total number of units trained and resource requirements for fielding the LHX. The alternative selected achieves the desired objective to schedule unit training in the most effective manner and remains within the resource constraints established by the system.

When comparing the baseline case and the three alternatives, it can be seen that unit training for the LHX in FY 2000 would be accomplished between week 53 and week 58 where the baseline case requires the longest time (58 weeks) to accomplish training. Alternative 1 requires the least number of weeks to achieve unit mission capability for all units undergoing training in that year. The average unit training time for the baseline case and each alternative is summarized below.

ALTERNATIVE	AVERAGE UNIT TRAINING TIME (weeks)
Baseline	22.2
Alt. 1	17.6
Alt. 2	17.6
Alt. 3	17.6

Upon examination, it can be seen that there is no real difference between the three alternatives in terms of average unit training time. Additionally, the time required for 50% of the units to complete training varied only by .2 weeks between

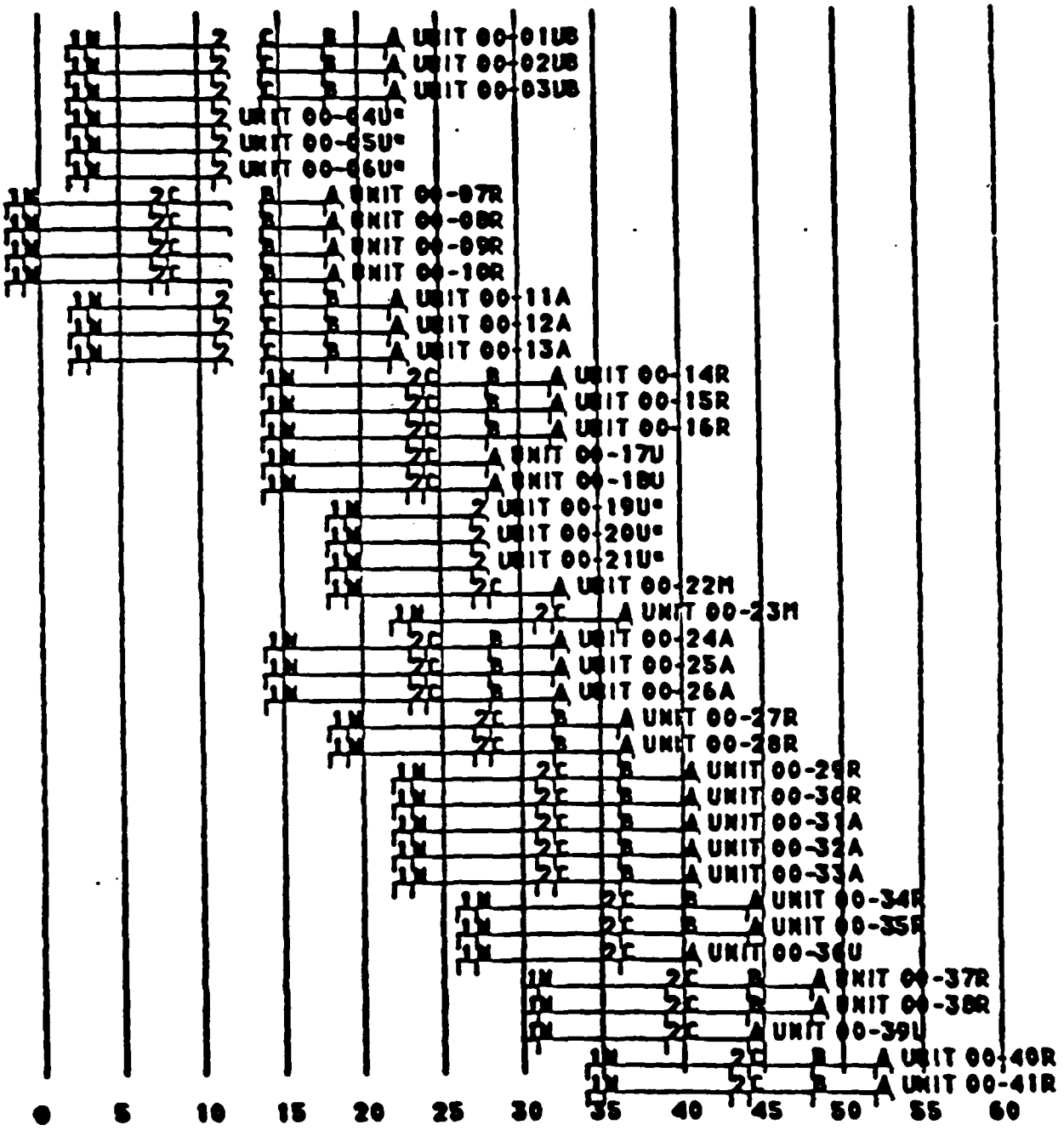

Figure 26. Alternative 3 after deconfliction analyses.

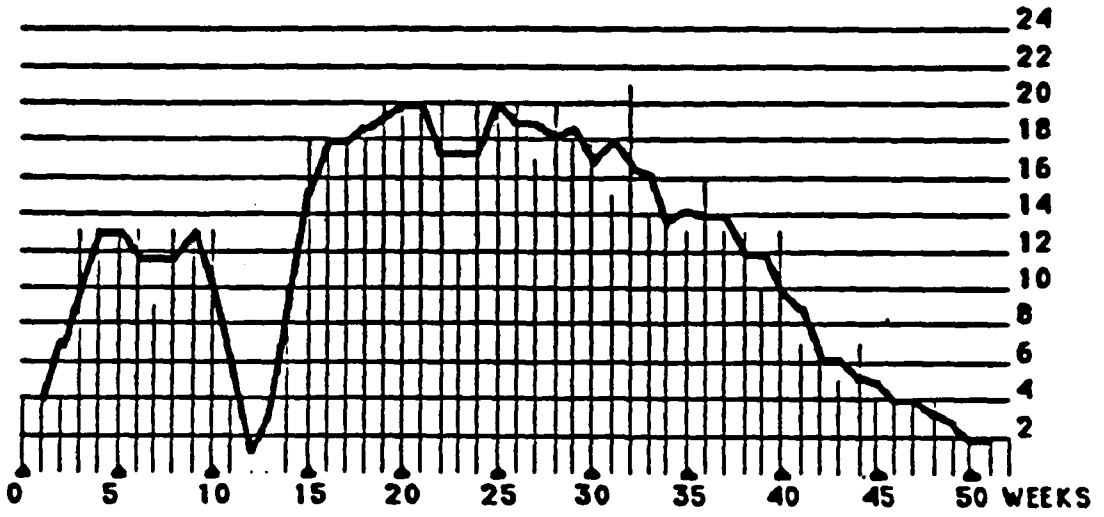

Figure 27. Garrison facilities required for alternative 3.

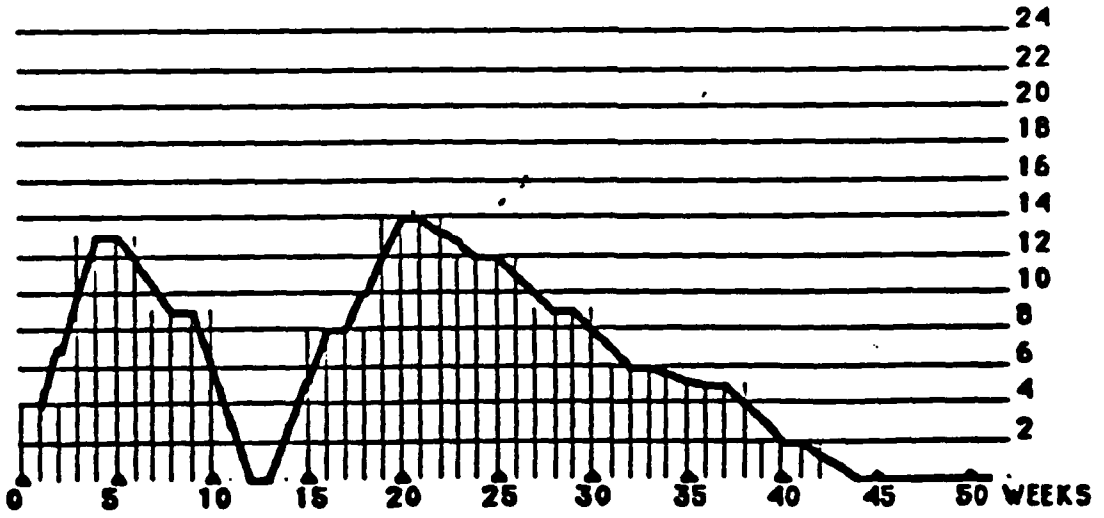

Figure 28. Garrison facilities required for alternative 1.

the three alternatives. The time required for 50% of the units to complete training did vary significantly between the three alternatives and the baseline case. The time required for 50% of the units to complete training was determined to be 35.4 weeks for the baseline case whereas the time required for 50% of the units to complete training for the alternatives ranged from 32.2 to 32.4 weeks.

After examining the critical resources required for each alternative and the baseline case, it was determined that the resource requirements did not vary significantly between the training possibilities except in the case of aerial gunnery ranges, and maneuver areas.

In the case of aerial gunnery ranges, the baseline case requires a maximum of 17 aerial gunnery ranges at one particular time whereas the alternatives only require a maximum of 14 aerial gunnery ranges at any one time. The baseline case requires more aerial gunnery ranges because gunnery training, Phase III, is conducted at home stations. In all other alternatives, gunnery training is conducted during AQC and thus fewer aerial gunnery ranges can used for a larger number of units.

When examining the maximum number of maneuver areas required for each of the different alternatives and the baseline case, it was determined that all cases require a maximum of 15 maneuver areas with the exception of Alternative 2 which only requires a maximum of 11. Alternative 2 is the case in which all unit training is conducted at one central training location, thus the total number of maneuver areas required is less because more units can occupy one maneuver area when scheduled accordingly.

Application To Displaced Equipment Training (DET)

A slightly varied approach was taken to address the individual and qualification training for the reserve units receiving equipment displaced by the LHX. The primary difference between the baseline case developed for LHX units and reserve units is that since the displaced systems currently exist in the force structure, the training requirements for units receiving displaced equipment have already been established. The method applied to the scheduling of displaced equipment units coincides with the method applied to LHX equipped units in that the four steps were followed. The training requirements of the systems were first identified and the model of a baseline case was then established. Alternatives were developed from the baseline case and then applied to the model to investigate the sensitivities of the various elements on the training system. Finally, an analysis was performed on the different alternatives to evaluate the effectiveness and resource efficiency of the system.

The research was limited to an investigation of individual training requirements to become qualified in the AH-1S aircraft because it requires the most significant individual qualification

training and provides the highest percentage of personnel to be trained when compared to the other aircraft system being displaced. Once the training requirements have been successfully established for the AH-1S, success is assured for the OH-58 because the training and resources required are less than those required for the AH-1S.

Identification of Training Requirements. Unlike the process required to identify the training requirements for the LHX, identification of the training requirements for DET required only a review of the Program of Instruction (POI) for the AH-1S. Because individual qualification training already exists for the AH-1S, there was no need to estimate any new resources required of the system. The POI contained a list of the training required to qualify aviators, for both active and reserve personnel, in the operation of the AH-1S helicopter. Additionally, it provided the quantity and cost of the resources required to accomplish one course iteration. The complete training cycle is to be accomplished in a six week time period with the maximum number of aviators per class restricted to 26. The training required for displaced equipment training consists of the following six components.

1. Transition Training
2. Combat Skills and Gunnery Training
3. Aircraft Systems Training
4. Weapon Systems Training
5. Tactical Subjects Training
6. Performance Planning

The resources required to accomplish this training include: instructor pilots, platform instructors, aircraft, assorted training devices, facilities, ammunition, ranges, and AH-1S flight simulators. Several time resources are also required to conduct training such as drill time, academic hours, and the most critical, Active Duty Time (ADT). ADT was determined to be the most critical resource because it is very costly since reserve personnel must be paid per diem while serving on active status and only two weeks of ADT per year are required of them. All other ADT is accomplished only on a voluntary basis.

Model Development. The baseline case used to develop alternatives for training those reserve component units receiving the AH-1S was one in which all displaced equipment training is conducted at one central training center. This was chosen as the baseline case because individual qualification training for the AH-1S is currently conducted at a central training center, namely the U.S. Army Aviation Center at Fort Rucker, Alabama. As more active units receive the LHX, there will be fewer active duty personnel requiring individual qualification training and more reservists requiring DET. Figure 29 illustrates the amount of resources required in the baseline case to train one battalion size unit in each of the six training requirements.

In this case all training is performed at Fort Rucker and since the length of the individual qualification course is established at 6.2 weeks, it will require 6.2 weeks of ADT[9] to qualify reservists in the AH-1S under this option. Although this option requires a large amount of ADT, it also requires the least amount of training resources needed for the largest amount of training to be accomplished in one year. In the baseline case a total of five battalions can undergo individual qualification training using one set of resources in a one year period.

Model Application. The first alternative developed from the baseline case discussed above is one that investigates the feasibility of conducting as much as possible of the individual qualification training for reservists receiving displaced equipment at home stations using TOE equipment. This alternative only requires two weeks of ADT since the only training that is being conducted at a central training center is the transition training and aircraft systems training. The remainder of the training would be accomplished in eight weeks consisting of three drill days per week. Figure 30 illustrates the amount of training resources required to conduct DET for one battalion size unit under this alternative.

The second alternative is a combination of the baseline case and the first alternative. In this case, it is assumed that some people will be available to attend individual qualification training on active duty status and that some will accomplish individual qualification training during regular drill time. Figure 31 illustrates the resources required for this alternative when 50% of reservists train for six weeks at one central training location. In this case, it will require 6.2 weeks of ADT time[10] for 50% of Army National Guard (ARNG)[11] personnel to become AH-1S qualified with the remainder of ARNG personnel becoming AH-1S qualified in 10 weeks.

Analysis and Comparison of Training Schedule Alternatives. Because the AH-1S redistribution plan is not available, the sequence or number of units needed to be trained is not known and prohibits the ability to develop a training schedule for ARNG units undergoing DET. Another limiting factor in determining a training schedule for personnel requiring DET is that the percentage of people requiring training is not known since there are some people in ARNG units that are already AH-1S qualified

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[9]If one totals the ADT (Weeks) row in Figure 29, the result is in excess of 6.2 weeks. This is because some of the training for the various components occurs concurrently.

[10]See Footnote 9.

[11]ARNG in the context used throughout the rest of the report refers to the Reserve Components, i.e., Army National Guard and Army Reserve.

RESOURCE \ TRAINING REQ	TRANSITION	COMBAT SKILLS GUNNERY	AIRCRAFT SYSTEMS	WEAPON SYSTEMS	TACTICAL SUBJECTS	PERFORMANCE PLANNING
ACADEMIC HOURS	81	102	26	30	11	3
DRILL DAYS	0	0	0	0	0	0
ADT (WEEKS)	2.6	3.4	2.2	2.5	.9	.3
INSTRUCTORs (1 PER 2 STUDENTS)	20	20	0	0	0	0
PLATFORM INSTRUCTORS	0	0	2	2	2	2
AIRCRAFT (1.2 PER STUDENT)	48	48	0	0	0	0
TRAINING DEVICES (1 PER CLASS)	0	0	2	2	0	0
FACILITIES (1 PER CLASS)	2	2	2	2	2	2
AMMUNITION (1 PER STUDENT)	0	40	0	0	0	0
RANGE (1 PER CLASS)	0	2	0	0	0	0
AH-1 FLIGHT SIMULATOR (1 PER CLASS)	1	1	0	0	0	0

* RESOURCE REQUIREMENTS ARE ESTIMATES TO TRAIN ONE BATTALION SIZE UNIT (APPROX. 40 PERSONNEL)

Figure 29. Resources required for DET baseline case.

RESOURCE \ TRAINING REQ	TRANSITION	COMBAT SKILLS GUNNERY	AIRCRAFT SYSTEMS	WEAPON SYSTEMS	TACTICAL SUBJECTS	PERFORMANCE PLANNING
ACADEMIC HOURS	81	102	26	30	11	3
DRILL DAYS	0	17	3	4	2	CONCURRENT W/TRANSITION
ADT (WEEKS)	2	0	CONCURRENT W/TRANSITION	0	0	0
INSTRUCTORs (1 PER 2 STUDENTS)	20	10	0	0	0	0
PLATFORM INSTRUCTORS	0	0	1	1	1	1
AIRCRAFT (1.2 PER STUDENT)	48	0	0	0	0	0
TRAINING DEVICES (1 PER CLASS)	0	0	1	1	0	0
FACILITIES (1 PER CLASS)	2	0	1	0	0	0
AMMUNITION (1 PER STUDENT)	0	1	0	0	0	0
RANGE (1 PER CLASS)	0	1	0	0	0	0
AH-1 FLIGHT SIMULATOR (1 PER CLASS)	2	1	0	0	0	0

* RESOURCE REQUIREMENTS ARE ESTIMATES TO TRAIN ONE BATTALION SIZE UNIT (APPROX. 40 PEOPLE)

Figure 30. Resources required for DET alternative 1.

RESOURCE \ TRAINING REQ	TRANSITION	COMBAT SKILLS GUNNERY	AIRCRAFT SYSTEMS	WEAPON SYSTEMS	TACTICAL SUBJECTS	PERFORMANCE PLANNING
ACADEMIC HOURS	81	102	26	30	11	3
DRILL DAYS	0	17	3	4	2	CONCURRENT W/TRANSITION
AOT (WEEKS)	2	3.4	2.2	2.5	.9	.3
INSTRUCTORs (1 PER 2 STUDENTS)	10	15	0	0	0	0
PLATFORM INSTRUCTORS	0	0	2	2	2	2
AIRCRAFT (1.2 PER STUDENT)	24	24	0	0	0	0
TRAINING DEVICES (1 PER CLASS)	0	0	2	2	0	1
FACILITIES (1 PER CLASS)	1	1	2	1	1	0
AMMUNITION (1 PER STUDENT)	0	20	0	0	0	0
RANGE (1 PER CLASS)	0	2	0	0	0	0
AH-1 FLIGHT SIMULATOR (1 PER CLASS)	1	2	0	0	0	0

* RESOURCE REQUIREMENTS ARE ESTIMATES TO TRAIN ONE BATTALION SIZE UNIT (APPROX. 40 PEOPLE)

Figure 31. Resources required for DET alternative 2.

and do not require training. Due to the lack of available information, the only operational, and reasonably accurate method to evaluate the feasibility of the alternatives developed is a subjective one in which the baseline case and the two alternatives are compared on the basis of the number of resources required, and the length of time to accomplish training.

Although the baseline case presents the method in which individual qualification training in currently conducted, it is not the most feasible way in which to conduct individual qualification training for reservists receiving equipment displaced by the LHX. Reservists are only required to take two weeks of ADT per year and to conduct DET for reserve units at one central training location would require 6.2 contiguous weeks. This is not feasible as most reservists would have to take leave from their primary job in order to become AH-1S qualified.

Alternative 1 requires only two weeks of ADT which coincides with the amount of ADT required for ARNG personnel each year. In this alternative it is assumed that unit training normally requiring ADT would be accomplished in the fiscal year preceding the arrival the aircraft. Comparing this alternative with the baseline case, four weeks of pay and allowances are saved per student since only two weeks are spent using ADT as opposed to six weeks of ADT required in the baseline case. However, Alternative 1 extends the training time required per unit by four weeks.

Alternative 2 allows for the maximum flexibility for scheduling the training of instructor personnel, and other key personnel. These ARNG personnel are the most likely personnel to attend training at a central training center since they are full time ARNG personnel and are continuously on active duty status.

When comparing the three possible means to accomplish individual qualification training for ARNG personnel, it appears that the most realistic alternative is Alternative 2. Alternative 2 provides the option of accomplishing training completely at a central training center or only performing the transition training at a central training center. The optimal mix of the baseline case and Alternative 1 is dependent upon the number of full time ARNG personnel needed to be trained and the distribution of aircraft.

Until detailed information becomes available regarding the number of personnel to be trained and the re-distribution of aircraft, it is not possible to develop an actual training schedule. However, once the information is available, the optimum number of personnel to attend full individual and qualification training at Fort Rucker can be established using the method developed in this research effort.

Application To The LHX

The application of the method developed to the LHX provided the research team with the ability to validate the model and procedures developed as well as develop a training schedule for the fielding of the LHX. The method was applied to both unit training and DET training to certify the flexibility and sensitivity of the model. The model provided the research team the ability to evaluate the various training alternatives to determine the most effective and resource efficient schedule for training units receiving LHX aircraft and units receiving aircraft that is to be displaced by the LHX.

When evaluating the proposed unit training schedule alternatives, it was determined that Alternative 1 in which all unit training is accomplished at home stations with individual and crew (Phase I) and gunnery (Phase III) training being conducted during AQC was the best alternative. In this case the average unit training time is 17.6 weeks and training for all units is completed by week 53 in the year 2000. Additionally, any of the alternatives consolidating training at a single location require increased garrison and support resources.

Appendix C contains the training schedule under this alternative for each year[12] of the entire fielding plan. Throughout the ten year cycle, the average unit training time for active LHX units is 17.57 weeks, and the average unit training time for ARNG LHX units is 89 weeks.

According to the LHX Distribution Plan, ARNG units begin to receive LHX aircraft at week 18 of year 2002. When examining Figure 32, it can be seen that ARNG units begin training at week 16 of that year. Since ARNG personnel are only authorized two weeks of ADT per year, only a two week portion of AQC[13] will be performed at a central training center. The remainder will be accomplished at home station at the rate of 2 drill periods per week. Company training and all battalion level training save one week are also accomplished at home station but at a rate of two drill periods per month. The last week of battalion level training is accomplished during the next ADT phase.

Resource rates of consumption are based upon the training described above. The resources required are the same as the resources required to train active duty units but are consumed differently due to the lack of ADT available to conduct unit

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[12]For active Army units only; ending in FY 2002. There is one training schedule for ARNG units which begins in FY 2002 and continues through January 2005.

[13]AQC is identified by the letter "N" in Figure 32.

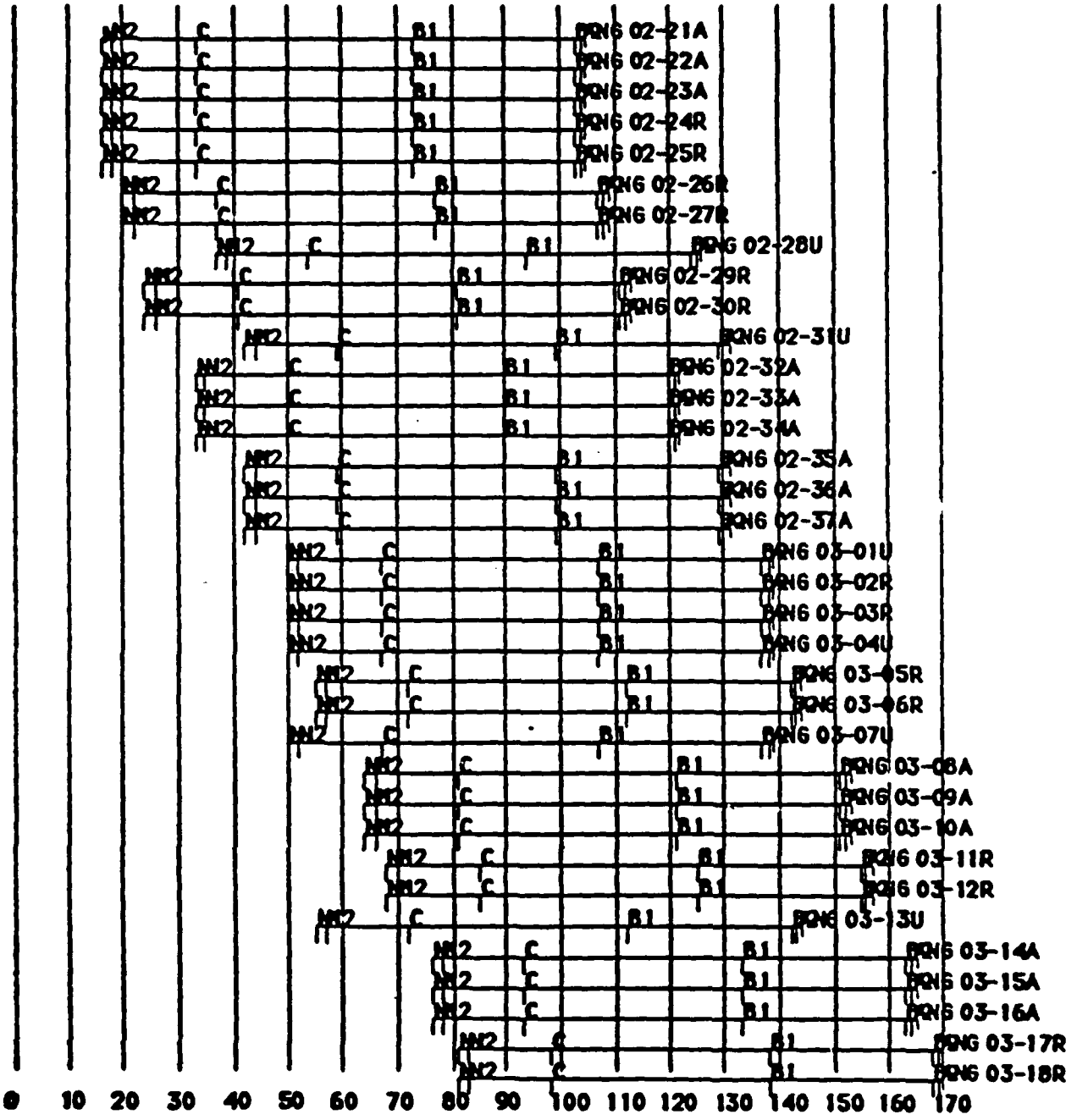

Figure 32. Training schedule for ARNG units beginning in FY 2002.

training. In this case resources are allocated where they are in competition with the total force structure. Thus AQC is scheduled to begin three weeks prior to the availability of delivered aircraft because the aircraft are required to conduct the home station portion of AQC.

Development of a Training Schedule Model

The model developed was successfully applied to the LHX acquisition program. The successful application to different portions of the training system assure the applicability of the method to the entire training system. The model developed is flexible to provide for the incorporation of new training requirements or additional resources, and can measure the consumption of resources or the optimum productivity from a given set of resources. Additionally, actual cost data can be incorporated into the model to determine the cost of training in terms dollars as well as average unit training time lost and resource consumption.

The research team has concluded that further investigation and development of the method is warranted. The methods may be expanded to include application to other aspects of training systems such as course scheduling, and response distribution.

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U.S. Army. (1986). Draft LHX distribution plan (U). Washington, DC. CONFIDENTIAL.

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Appendix A

LHX Distribution Plan Input Data

Appendix A presents a consolidation of the input data extracted from the LHX Distribution Plan. It contains a listing by year of the units scheduled to receive LHX aircraft, their parent unit, the number and type aircraft they are to receive, and deployment area. All units are identified by code containing the year of receipt, type aircraft, and sequence of distribution. All deployment areas are referenced by number such as Area 1, 2 or 3.

For the purposes of this analysis, a unit is a company-sized organization. It is important to note that although all LHX unit training can be catalogued into one of the five phases, there are some units that do not undergo training in each of these phases. For example, most of LHX utility units do not perform battalion level training. Also there are two TDA (Table of Distribution and Allowances) units scheduled to receive LHX utility aircraft and these organizations only perform individual NET. These exceptions are identified with an asterisk.

TABLE A-1

LHX Transition Training Plan Unit Input Data for FY 1996

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
96-1R	96-A	Area 3	SCAT	10	S1	RECON
96-2R	96-A	Area 3	SCAT	10	S2	RECON
96-3U	96-3	Area 3	UTILITY	6	U1	UTILITY

TABLE A-2

LHX Transition Training Plan Unit Input Data for FY 1997

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
97-1A	97-A	Area 3	SCAT	12	S3	ATTACK
97-2A	97-A	Area 3	SCAT	11	S4	ATTACK
97-3A	97-A	Area 3	SCAT	11	S5	ATTACK
97-4A	97-B	Area 4	SCAT	12	S6	ATTACK
97-5U	97-B	Area 4	UTILITY	17	U2	UTILITY

TABLE A-3

LHX Transition Training Plan Unit Input Data for FY 1998

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
98-1A	98-A	Area 1	SCAT	12	S7	ATTACK
98-2A	98-A	Area 1	SCAT	11	S8	ATTACK
98-3A	98-A	Area 1	SCAT	11	S9	ATTACK
98-4R	98-B	Area 1	SCAT	10	S10	RECON
98-5R	98-B	Area 1	SCAT	10	S11	RECON
98-6U	98-6	Area 1	UTILITY	6	U3	UTILITY
98-7A	98-C	Area 2	SCAT	12	S12	ATTACK
98-8A	98-C	Area 2	SCAT	11	S13	ATTACK
98-9A	98-C	Area 2	SCAT	11	S14	ATTACK
98-10U	98-10	Area 2	UTILITY	6	U4	UTILITY
98-11U	98-11	Area 2	UTILITY	12	U5	UTILITY
98-12U	98-12	Area 2	UTILITY	15	U6	UTILITY
98-13U	98-13	Area 2	UTILITY	15	U7	UTILITY
98-14U	98-14	Area 2	UTILITY	15	U8	UTILITY
98-15U	98-15	Area 2	UTILITY	2	U9	UTILITY

TABLE A-4

LHX Transition Training Plan Unit Input Data for FY 1999

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
99-1R	99-A	Area 2	SCAT	10	S15	RECON
99-2R	99-A	Area 2	SCAT	10	S16	RECON
99-3A	99-B	Area 2	SCAT	12	S17	ATTACK
99-4A	99-B	Area 2	SCAT	11	S18	ATTACK
99-5A	99-B	Area 2	SCAT	11	S19	ATTACK
99-6R	99-C	Area 2	SCAT	10	S20	RECON
99-7R	99-C	Area 2	SCAT	10	S21	RECON
99-8R	99-C	Area 2	SCAT	10	S22	RECON
99-9A	99-D	Area 2	SCAT	12	S23	ATTACK
99-10A	99-D	Area 2	SCAT	11	S24	ATTACK
99-11A	99-D	Area 2	SCAT	11	S25	ATTACK
99-12A	99-E	Area 2	SCAT	12	S26	ATTACK
99-13A	99-E	Area 2	SCAT	11	S27	ATTACK
99-14A	99-E	Area 2	SCAT	11	S28	ATTACK
99-15A	99-F	Area 2	SCAT	12	S29	ATTACK
99-16A	99-F	Area 2	SCAT	11	S30	ATTACK
99-17A	99-F	Area 2	SCAT	11	S31	ATTACK
99-18R	99-G	Area 2	SCAT	10	S32	RECON
99-19R	99-G	Area 2	SCAT	10	S33	RECON
99-20R	99-G	Area 2	SCAT	10	S34	RECON
99-21R	99-G	Area 2	SCAT	10	S35	RECON
99-22M	99-22	Area 2	UTILITY	15	U10	MEDEVAC
99-23U	99-23	Area 3	UTILITY	16	U11	UTILITY
99-24U	99-24	Area 2	UTILITY	12	U12	UTILITY
99-25M	99-25	Area 2	UTILITY	15	U13	MEDEVAC
99-26M	99-26	Area 2	UTILITY	15	U14	MEDEVAC
99-27M	99-27	Area 2	UTILITY	15	U15	MEDEVAC
99-28M	99-28	Area 2	UTILITY	15	U16	MEDEVAC
99-29M	99-29	Area 2	UTILITY	15	U17	MEDEVAC

TABLE A-5

LHX Transition Training Plan Unit Input Data for FY 2000

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
00-1U	00-A	Area 2	UTILITY	15	U18	UTILITY
00-2U	00-A	Area 2	UTILITY	15	U19	UTILITY
00-3U	00-A	Area 2	UTILITY	15	U20	UTILITY
00-4U*	00-B	Area 2	UTILITY	1	U21	UTILITY*
00-5U*	00-B	Area 2	UTILITY	1	U22	UTILITY*
00-6U*	00-B	Area 2	UTILITY	1	U23	UTILITY*
00-7R	00-C	Area 2	SCAT	10	S36	RECON
00-8R	00-C	Area 2	SCAT	10	S37	RECON
00-9R	00-C	Area 2	SCAT	10	S38	RECON
00-10R	00-C	Area 2	SCAT	10	S39	RECON
00-11A	00-D	Area 6	SCAT	12	S40	ATTACK
00-12A	00-D	Area 6	SCAT	11	S41	ATTACK
00-13A	00-D	Area 6	SCAT	11	S42	ATTACK
00-14R	00-E	Area 6	SCAT	10	S43	RECON
00-15R	00-E	Area 6	SCAT	10	S44	RECON
00-16R	00-E	Area 6	SCAT	10	S45	RECON
00-17U	00-17	Area 6	UTILITY	12	U24	UTILITY
00-18U	00-18	Area 6	UTILITY	10	U25	UTILITY
00-19U*	00-19	Area 6	UTILITY	1	U26	UTILITY*
00-20U*	00-20	Area 6	UTILITY	1	U27	UTILITY*
00-21U*	00-21	Area 6	UTILITY	2	U28	UTILITY*
00-22M	00-22	Area 6	UTILITY	15	U29	MEDEVAC
00-23M	00-23	Area 6	UTILITY	15	U30	MEDEVAC
00-24A	00-F	Area 3	SCAT	12	S46	ATTACK
00-25A	00-F	Area 3	SCAT	11	S47	ATTACK
00-26A	00-F	Area 3	SCAT	11	S48	ATTACK
00-27R	00-G	Area 3	SCAT	10	S49	RECON
00-28R	00-G	Area 3	SCAT	10	S50	RECON
00-29R	00-H	Area 4	SCAT	10	S51	RECON
00-30R	00-H	Area 4	SCAT	10	S52	RECON
00-31A	00-H	Area 4	SCAT	11	S53	ATTACK
00-32A	00-H	Area 4	SCAT	11	S54	ATTACK
00-33A	00-G	Area 4	SCAT	11	S55	ATTACK
00-34R	00-I	Area 4	SCAT	10	S56	RECON
00-35R	00-I	Area 4	SCAT	10	S57	RECON
00-36U	00-36	Area 4	UTILITY	12	U31	UTILITY
00-37R	00-J	Area 4	SCAT	10	S58	RECON
00-38R	00-J	Area 4	SCAT	10	S59	RECON
00-39U	00-39	Area 4	UTILITY	12	U32	UTILITY
00-40R	00-K	Area 4	SCAT	10	S60	RECON
00-41R	00-K	Area 4	SCAT	10	S61	RECON

TABLE A-6

LHX Transition Training Plan Unit Input Data for FY 2001

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
01-1R	01-A	Area 4	SCAT	10	S62	RECON
01-2R	01-A	Area 4	SCAT	10	S63	RECON
01-3U	01-3	Area 4	UTILITY	12	U33	UTILITY
01-4U	01-B	Area 4	UTILITY	15	U34	UTILITY
01-5U	01-B	Area 4	UTILITY	15	U35	UTILITY
01-6U	01-B	Area 4	UTILITY	15	U36	UTILITY
01-7U*	01-7	Area 4	UTILITY	2	U37	UTILITY*
01-8R	01-C	Area 4	SCAT	10	S64	RECON
01-9R	01-C	Area 4	SCAT	10	S65	RECON
01-10U	01-10	Area 4	UTILITY	12	U38	UTILITY
01-11R	01-D	Area 3	SCAT	10	S66	RECON
01-12R	01-D	Area 3	SCAT	10	S67	RECON
01-13U	01-13	Area 3	UTILITY	12	U39	UTILITY
01-14A	01-E	Area 4	SCAT	11	S68	ATTACK
01-15A	01-E	Area 4	SCAT	11	S69	ATTACK
01-16A	01-E	Area 4	SCAT	11	S70	ATTACK
01-17R	01-E	Area 4	SCAT	10	S71	RECON
01-18R	01-E	Area 4	SCAT	10	S72	RECON
01-19R	01-F	Area 4	SCAT	10	S73	RECON
01-20R	01-F	Area 4	SCAT	10	S74	RECON
01-21U	01-21	Area 4	UTILITY	12	U40	UTILITY
01-22U	01-22	Area 5	UTILITY	6	U41	UTILITY
01-23A	01-G	Area 5	SCAT	12	S75	ATTACK
01-24A	01-G	Area 5	SCAT	11	S76	ATTACK
01-25A	01-G	Area 5	SCAT	11	S77	ATTACK
01-26R	01-H	Area 5	SCAT	10	S78	RECON
01-27R	01-H	Area 5	SCAT	10	S79	RECON
01-28A	01-I	Area 3	SCAT	11	S80	ATTACK
01-29A	01-I	Area 3	SCAT	11	S81	ATTACK
01-30A	01-I	Area 3	SCAT	11	S82	ATTACK
01-31R	01-I	Area 3	SCAT	10	S83	RECON
01-32R	01-I	Area 3	SCAT	10	S84	RECON
01-33U	01-J	Area 4	UTILITY	15	U42	UTILITY
01-34U	01-J	Area 4	UTILITY	15	U43	UTILITY
01-35U	01-J	Area 4	UTILITY	15	U44	UTILITY
01-36U*	01-36	Area 4	UTILITY	3	U45	UTILITY*
01-37U*	01-37	Area 4	UTILITY	10	U46	UTILITY*

TABLE A-7

LHX Transition Training Plan Unit Input Data for FY 2002

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
02-1R	02-A	Area 2	SCAT	10	S85	RECON
02-2R	02-A	Area 2	SCAT	10	S86	RECON
02-3U	02-3	Area 2	UTILITY	12	U47	UTILITY
02-4R	02-B	Area 3	SCAT	10	S87	RECON
02-5R	02-B	Area 3	SCAT	10	S88	RECON
02-6U	02-6	Area 3	UTILITY	12	U48	UTILITY
02-7U	02-C	Area 3	UTILITY	15	U49	UTILITY
02-8U	02-C	Area 3	UTILITY	15	U50	UTILITY
02-9U	02-C	Area 3	UTILITY	15	U51	UTILITY
02-10U*	02-10	Area 3	UTILITY	1	U52	UTILITY*
02-11U*	02-11	Area 3	UTILITY	1	U53	UTILITY*
02-12U*	02-12	Area 3	UTILITY	1	U54	UTILITY*
02-13U*	02-13	Area 3	UTILITY	1	U55	UTILITY*
02-14M	02-14	Area 3	UTILITY	15	U56	MEDEVAC
02-15M	02-15	Area 3	UTILITY	15	U57	MEDEVAC
02-16M	02-16	Area 3	UTILITY	15	U58	MEDEVAC
02-17M	02-17	Area 3	UTILITY	15	U59	MEDEVAC
02-18M	02-18	Area 3	UTILITY	15	U60	MEDEVAC
02-19M	02-19	Area 3	UTILITY	15	U61	MEDEVAC
02-20M	02-20	Area 3	UTILITY	15	U62	MEDEVAC
02-21M	02-C	Area 2	SCAT	11	S89	ATTACK
02-22A	02-C	Area 2	SCAT	11	S90	ATTACK
02-23A	02-C	Area 2	SCAT	11	S91	ATTACK
02-24R	02-C	Area 2	SCAT	10	S92	RECON
02-25R	02-C	Area 2	SCAT	10	S93	RECON
02-26R	02-D	Area 3	SCAT	10	S94	RECON
02-27R	02-D	Area 3	SCAT	10	S95	RECON
02-28U	02-28	Area 3	UTILITY	12	U63	UTILITY
02-29R	02-E	Area 2	SCAT	10	S96	RECON
02-30R	02-E	Area 2	SCAT	10	S97	RECON
02-31U	02-31	Area 2	UTILITY	12	U64	UTILITY
02-32A	02-F	Area 2	SCAT	12	S98	ATTACK
02-33A	02-F	Area 2	SCAT	11	S99	ATTACK
02-34A	02-F	Area 2	SCAT	11	S100	ATTACK
02-35A	02-G	Area 2	SCAT	12	S101	ATTACK
02-36A	02-G	Area 2	SCAT	11	S102	ATTACK
02-37A	02-G	Area 2	SCAT	11	S103	ATTACK

TABLE A-8

LHX Transition Training Plan Unit Input Data for FY 2003

UNIT	PARENT	AREA	TYPE A/C	NUMBER REQUIRED	SEQUENCE	MISSION
03-1U	03-1	Area 2	UTILITY	6	U65	UTILITY
03-2R	03-A	Area 2	SCAT	10	S104	RECON
03-3R	03-A	Area 2	SCAT	10	S105	RECON
03-4U	03-4	Area 2	UTILITY	6	U66	UTILITY
03-5R	03-B	Area 2	SCAT	10	S106	RECON
03-6R	03-B	Area 2	SCAT	10	S107	RECON
03-7U	03-7	Area 2	UTILITY	6	U67	UTILITY
03-8A	03-C	Area 2	SCAT	12	S108	ATTACK
03-9A	03-C	Area 2	SCAT	11	S109	ATTACK
03-10A	03-C	Area 2	SCAT	11	S110	ATTACK
03-11R	03-D	Area 2	SCAT	10	S111	RECON
03-12R	03-D	Area 2	SCAT	10	S112	RECON
03-13U	03-13	Area 2	UTILITY	6	U68	UTILITY
03-14A	03-E	Area 2	SCAT	12	S113	ATTACK
03-15A	03-E	Area 2	SCAT	11	S114	ATTACK
03-16A	03-E	Area 2	SCAT	11	S114	ATTACK
03-17R	03-F	Area 2	SCAT	10	S116	RECON
03-18R	03-F	Area 2	SCAT	10	S117	RECON

Appendix B

Summary Data

Appendix B presents summary data for the baseline case and each alternative investigated for FY 2000. It includes the following information for each option.

1. A training schedule before and after deconfliction analyses.

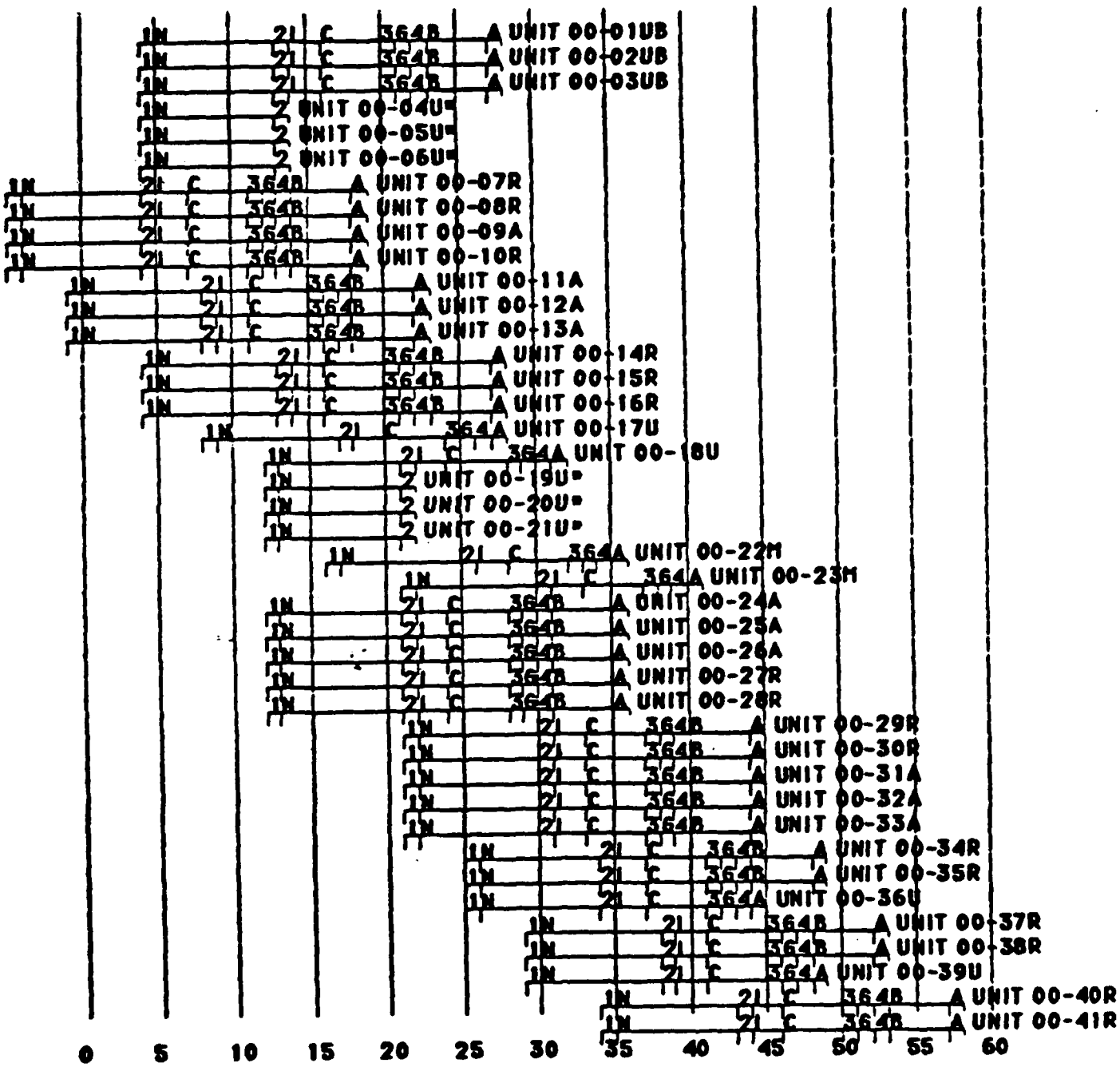
2. A table displaying the training start time, completion time and duration for each unit.

3. Graphs illustrating the critical resource distributions.

For the purposes of this analysis, a unit is a company-sized organization. It is important to note that although all LHX unit training can be catalogued into one of the five phases, there are some units that do not undergo training in each of these phases. For example, most of LHX utility units do not perform battalion level training. Also there are two TDA (Table of Distribution and Allowances) units scheduled to receive LHX utility aircraft and these organizations only perform individual NET. These exceptions are identified with an asterisk.

BASELINE CASE PRIOR TO DECONFLICTION ANALYSES

TRAINING SCHEDULE

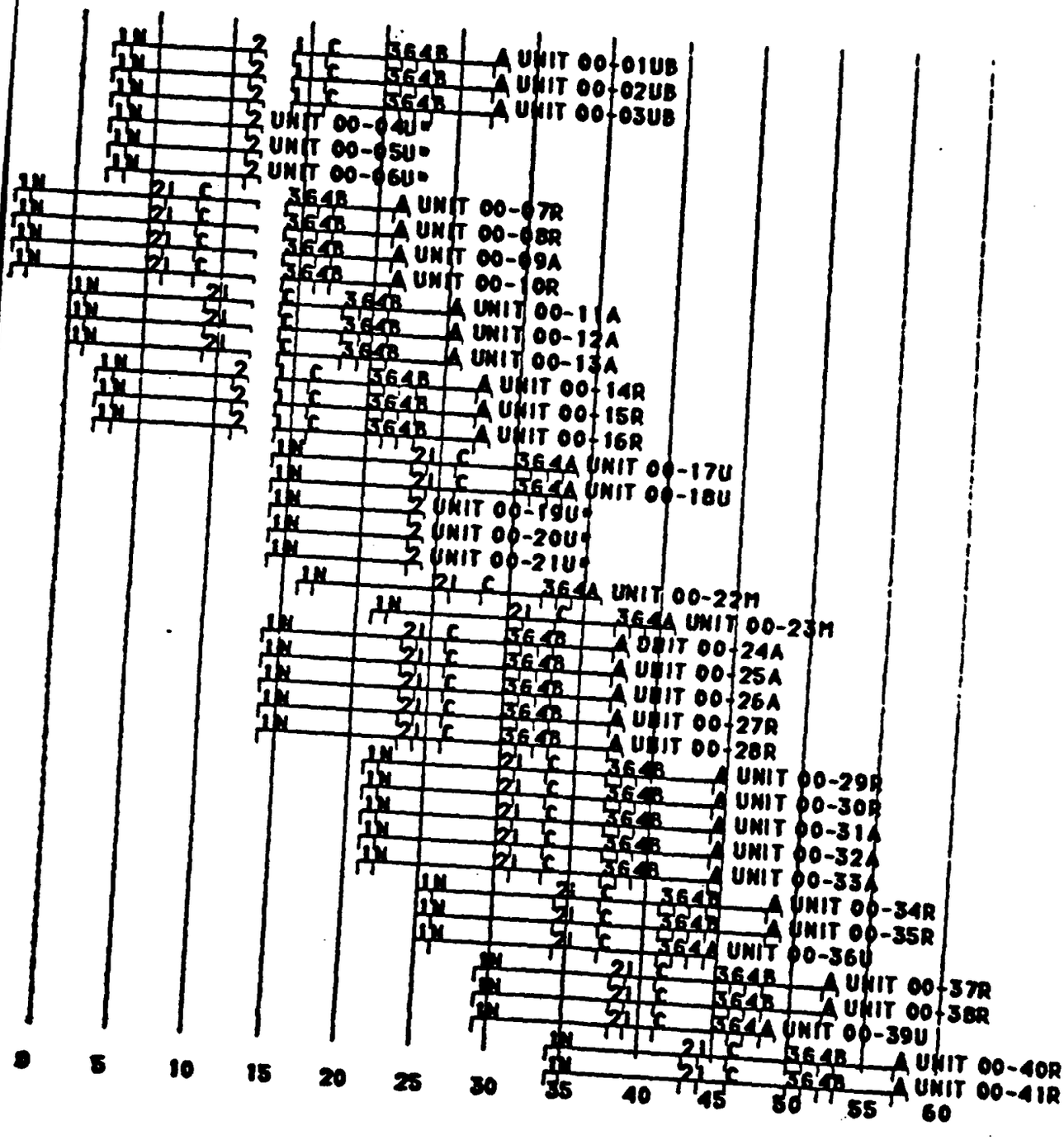


UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	4	28	24
UNIT 00-02UB	4	28	24
UNIT 00-03UB	4	28	24
UNIT 00-04U*	4	14	10
UNIT 00-05U*	4	14	10
UNIT 00-06U*	4	14	10
UNIT 00-07R	-5	19	24
UNIT 00-08R	-5	19	24
UNIT 00-09R	-5	19	24
UNIT 00-10R	-5	19	24
UNIT 00-11A	-1	23	24
UNIT 00-12A	-1	23	24
UNIT 00-13A	-1	23	24
UNIT 00-14R	4	28	24
UNIT 00-15R	4	28	24
UNIT 00-16R	4	28	24
UNIT 00-17U	8	28	20
UNIT 00-18U	12	32	20
UNIT 00-19U*	12	32	10
UNIT 00-20U*	12	22	10
UNIT 00-21U*	12	22	10
UNIT 00-22M	16	36	20
UNIT 00-23M	21	41	20
UNIT 00-24A	12	36	24
UNIT 00-25A	12	36	24
UNIT 00-26A	12	36	24
UNIT 00-27R	12	36	24
UNIT 00-28R	12	36	24
UNIT 00-29R	21	45	24
UNIT 00-30R	21	45	24
UNIT 00-31A	21	45	24
UNIT 00-32A	21	45	24
UNIT 00-33A	21	45	24
UNIT 00-34R	25	49	24
UNIT 00-35R	25	49	24
UNIT 00-36U	25	45	20
UNIT 00-37R	29	53	24
UNIT 00-38R	29	53	24
UNIT 00-39U	29	49	20
UNIT 00-40R	34	58	24
UNIT 00-41R	34	58	24

Average unit training time is 21.4 weeks.
Time required for 50% of the units to complete training is 33.6 weeks.

TRAINING SCHEDULE REALIGNED
FOR CHRISTMAS HOLIDAYS



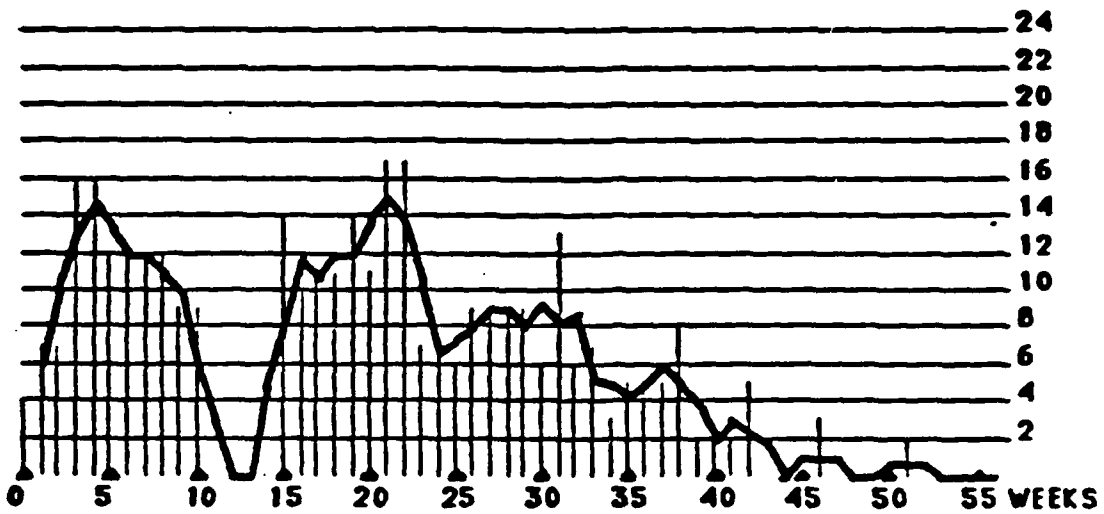
UNIT TRAINING TIMES REALIGNED FOR CHRISTMAS HOLIDAYS

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	28	26
UNIT 00-02UB	2	28	26
UNIT 00-03UB	2	28	26
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-4	22	26
UNIT 00-08R	-4	22	26
UNIT 00-09R	-4	22	26
UNIT 00-10R	-4	22	26
UNIT 00-11A	0	26	26
UNIT 00-12A	0	26	26
UNIT 00-13A	0	26	26
UNIT 00-14R	2	28	26
UNIT 00-15R	2	28	26
UNIT 00-16R	2	28	26
UNIT 00-17U	14	34	20
UNIT 00-18U	14	34	20
UNIT 00-19U*	14	24	10
UNIT 00-20U*	14	24	10
UNIT 00-21U*	14	24	10
UNIT 00-22M	16	36	20
UNIT 00-23M	21	41	20
UNIT 00-24A	14	38	24
UNIT 00-25A	14	38	24
UNIT 00-26A	14	38	24
UNIT 00-27R	14	38	24
UNIT 00-28R	14	38	24
UNIT 00-29R	21	45	24
UNIT 00-30R	21	45	24
UNIT 00-31A	21	45	24
UNIT 00-32A	21	45	24
UNIT 00-33A	21	45	24
UNIT 00-34R	25	49	24
UNIT 00-35R	25	49	24
UNIT 00-36U	25	45	20
UNIT 00-37R	29	53	24
UNIT 00-38R	29	53	24
UNIT 00-39U	29	49	20
UNIT 00-40R	34	58	24
UNIT 00-41R	34	58	24

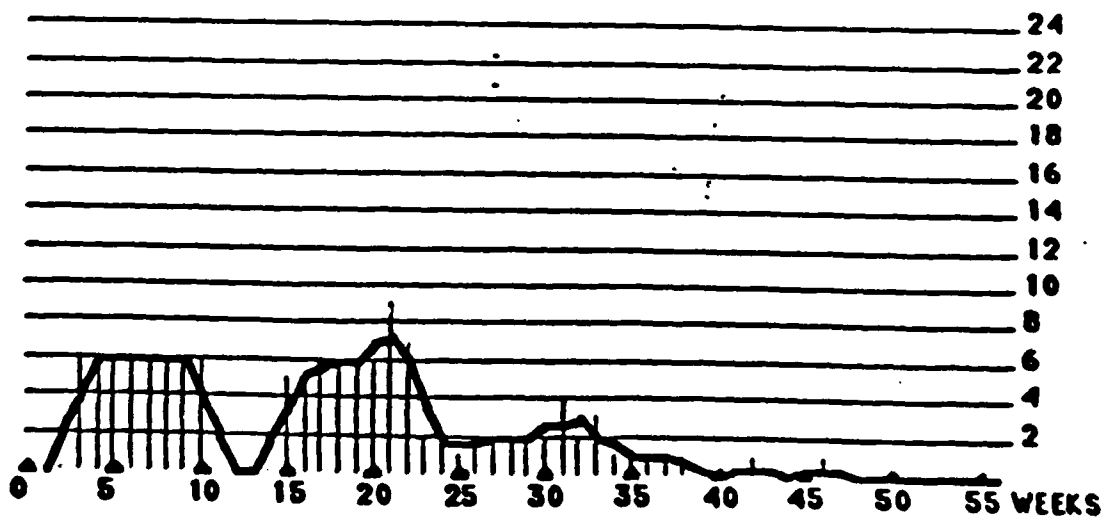
Average unit training time is 22 weeks.
Time required for 50% of the units to complete training is 34.5 weeks.

CRITICAL RESOURCE DISTRIBUTIONS FOR BASELINE CASE

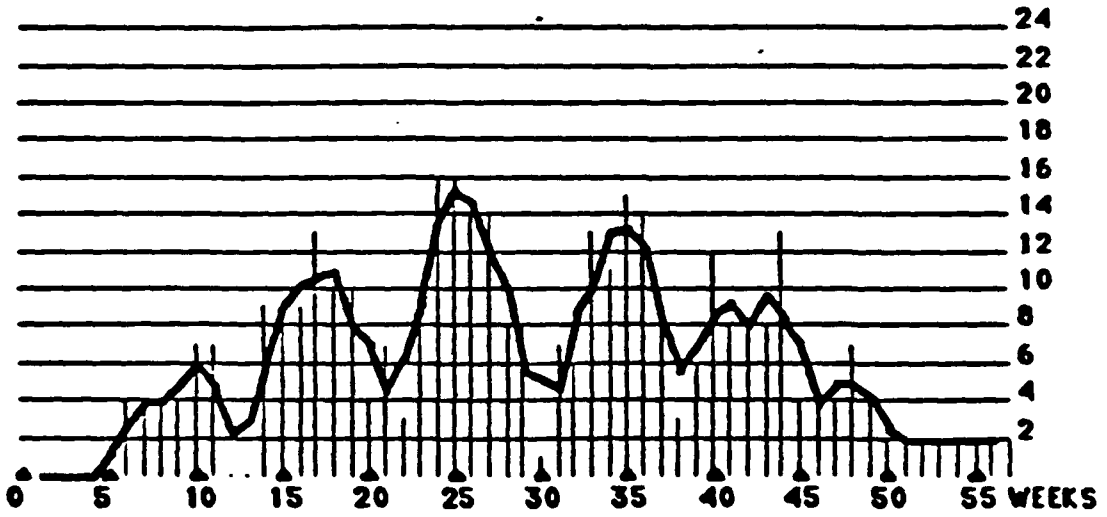
AERIAL GUNNERY RANGE



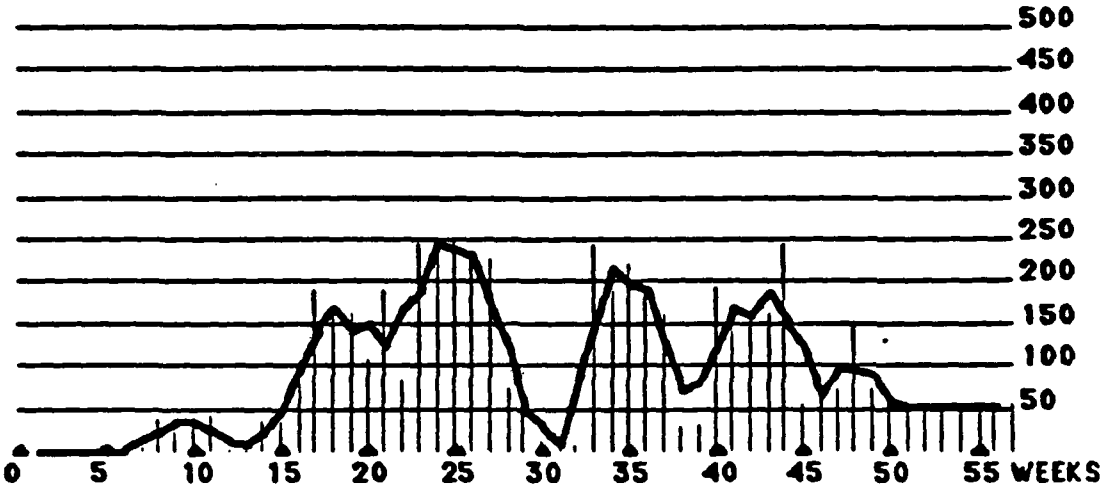
DOOR GUNNERY RANGE



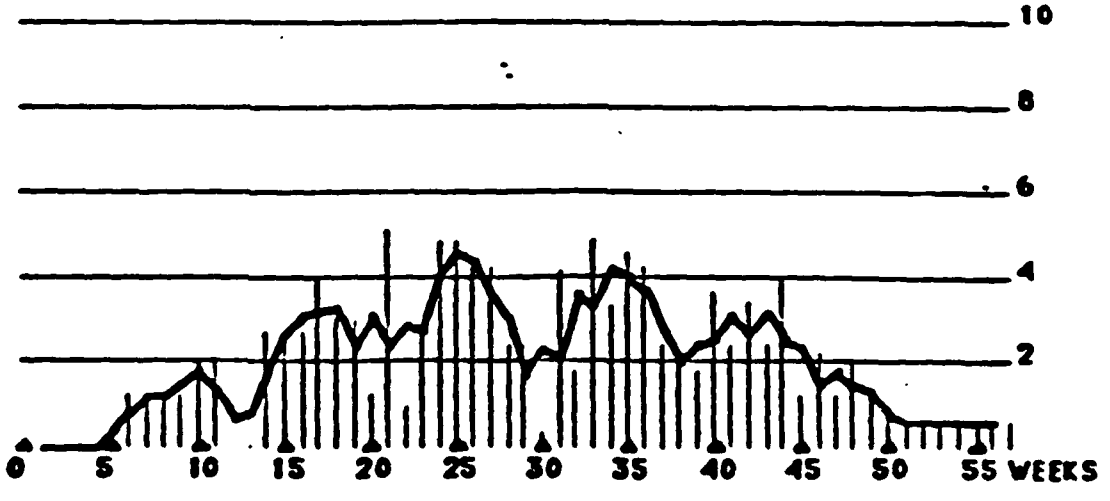
MANEUVER AREA



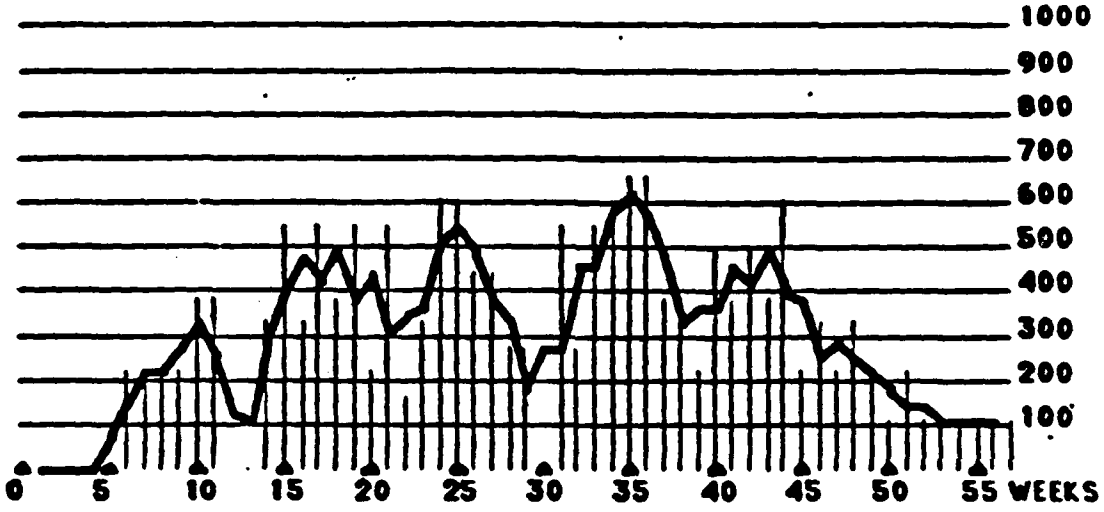
OPFOR



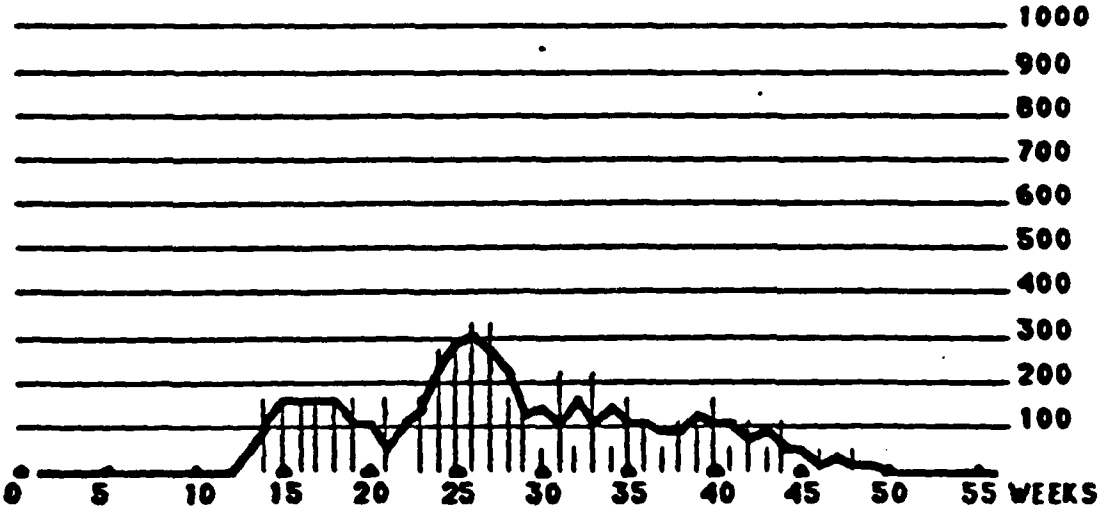
TEAM TRAINER



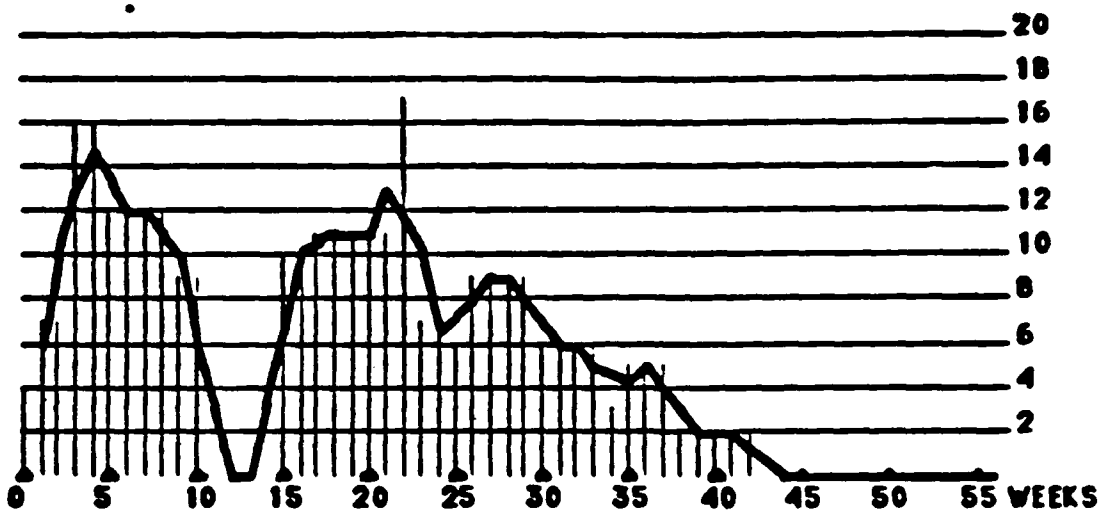
SCAT FLYING HOURS



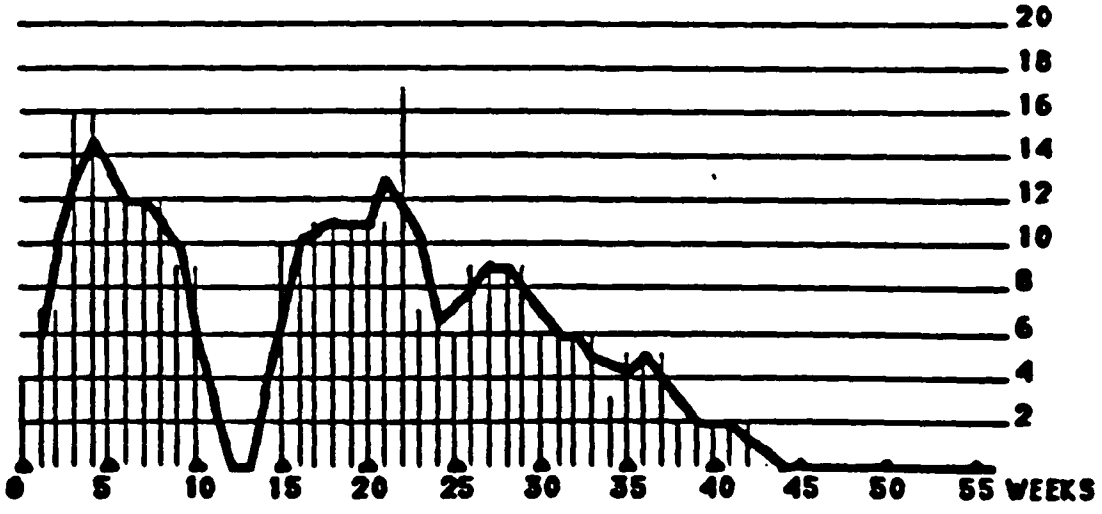
UTILITY FLYING HOURS



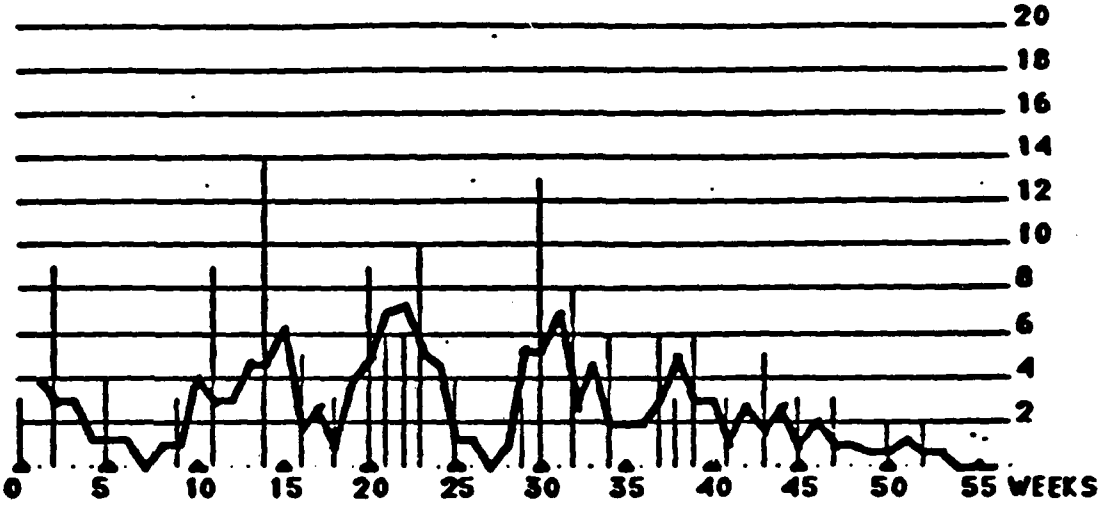
EXTERNAL AIRCRAFT



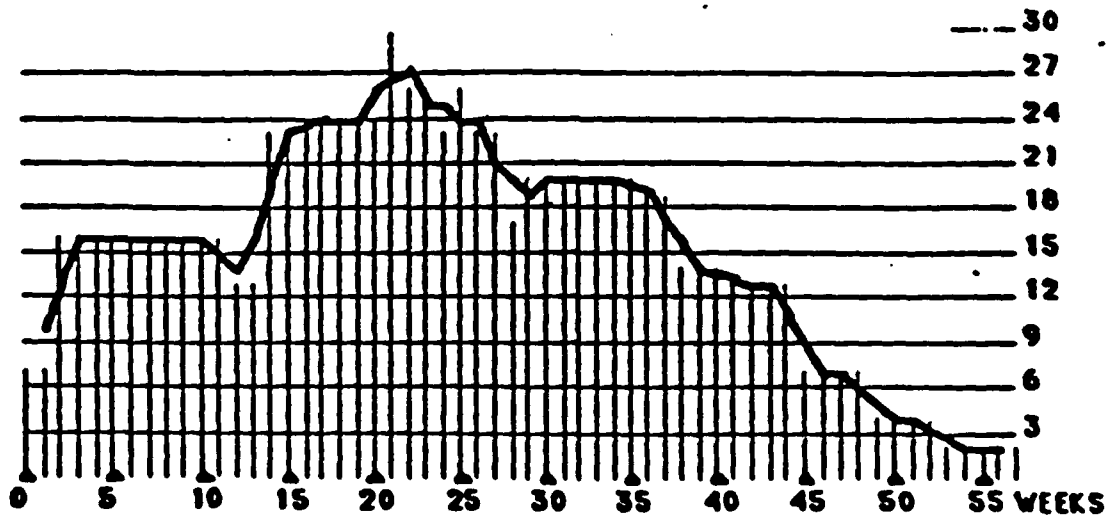
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

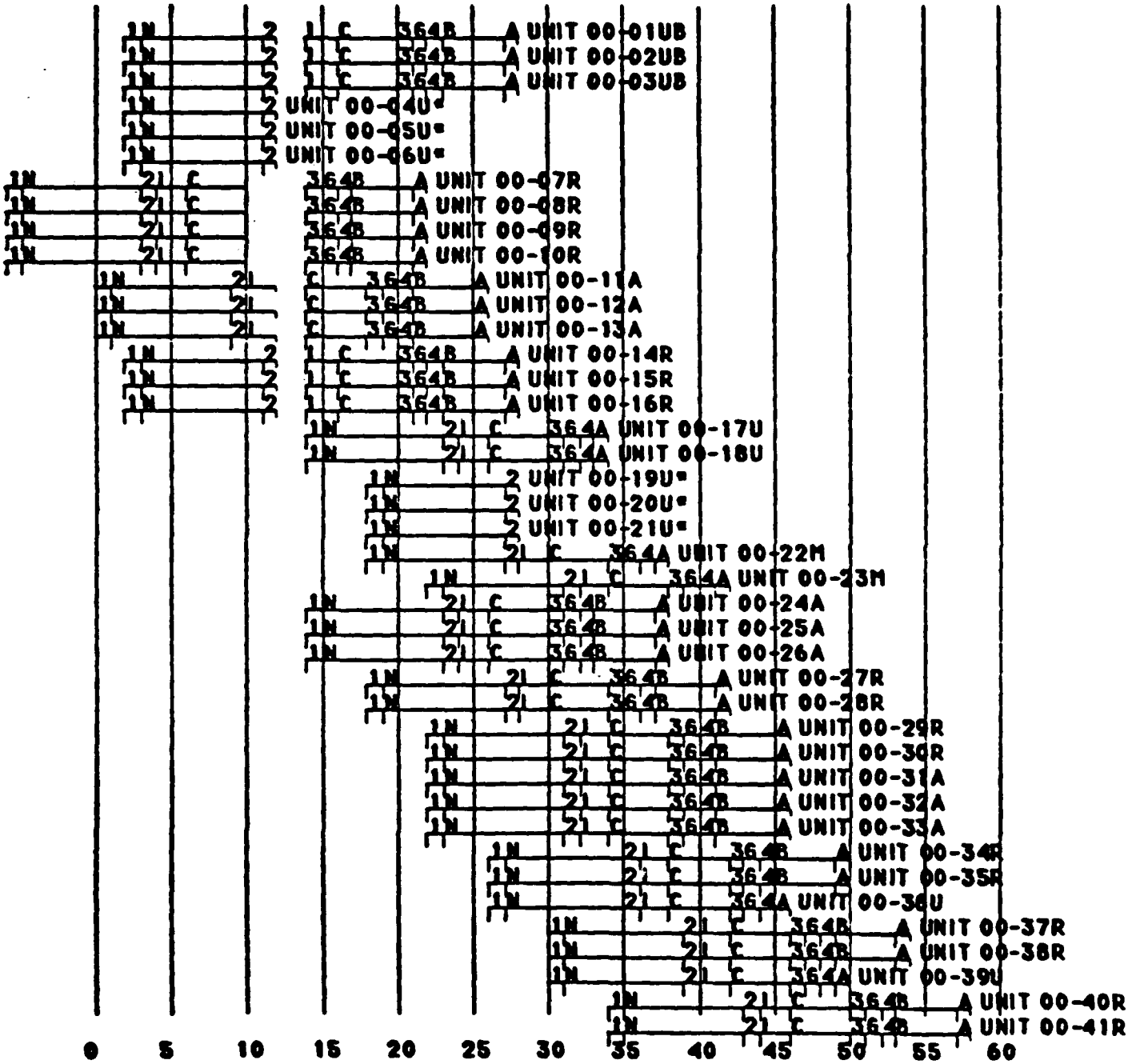


DOWNTIME



BASELINE CASE
DECONFLICTED

TRAINING SCHEDULE



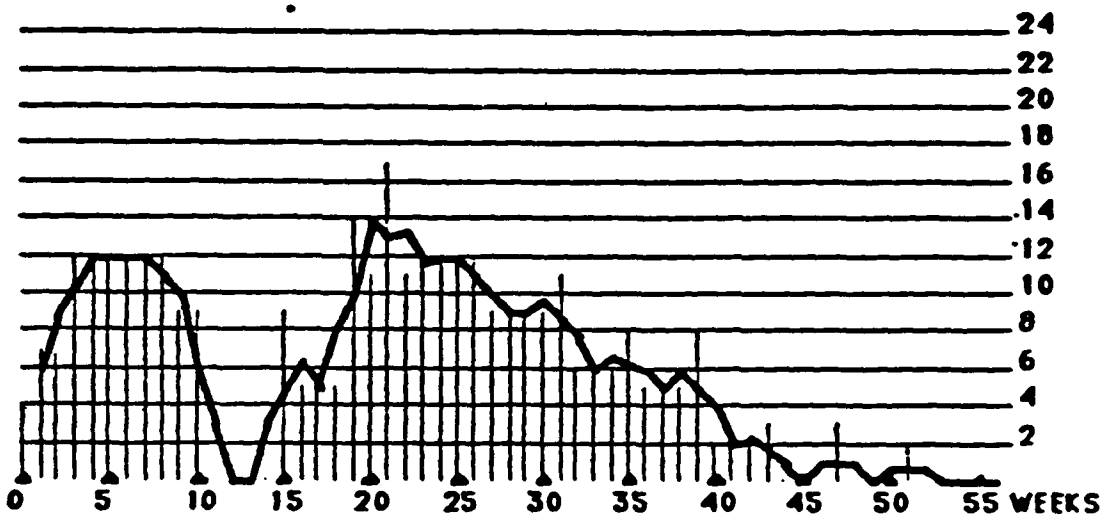
UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	28	26
UNIT 00-02UB	2	28	26
UNIT 00-03UB	2	28	26
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-6	22	28
UNIT 00-08R	-6	22	28
UNIT 00-09R	-6	22	28
UNIT 00-10R	-6	22	28
UNIT 00-11A	0	26	26
UNIT 00-12A	0	26	26
UNIT 00-13A	0	26	26
UNIT 00-14R	2	28	26
UNIT 00-15R	2	28	26
UNIT 00-16R	2	28	26
UNIT 00-17U	14	34	20
UNIT 00-18U	14	34	20
UNIT 00-19U*	18	28	10
UNIT 00-20U*	18	28	10
UNIT 00-21U*	18	28	10
UNIT 00-22M	18	38	20
UNIT 00-23M	22	42	20
UNIT 00-24A	14	38	24
UNIT 00-25A	14	38	24
UNIT 00-26A	14	38	24
UNIT 00-27R	18	42	24
UNIT 00-28R	18	42	24
UNIT 00-29R	22	46	24
UNIT 00-30R	22	46	24
UNIT 00-31A	22	46	24
UNIT 00-32A	22	46	24
UNIT 00-33A	22	46	24
UNIT 00-34R	26	50	24
UNIT 00-35R	26	50	24
UNIT 00-36U	26	46	20
UNIT 00-37R	30	54	24
UNIT 00-38R	30	54	24
UNIT 00-39U	30	50	20
UNIT 00-40R	34	58	24
UNIT 00-41R	34	58	24

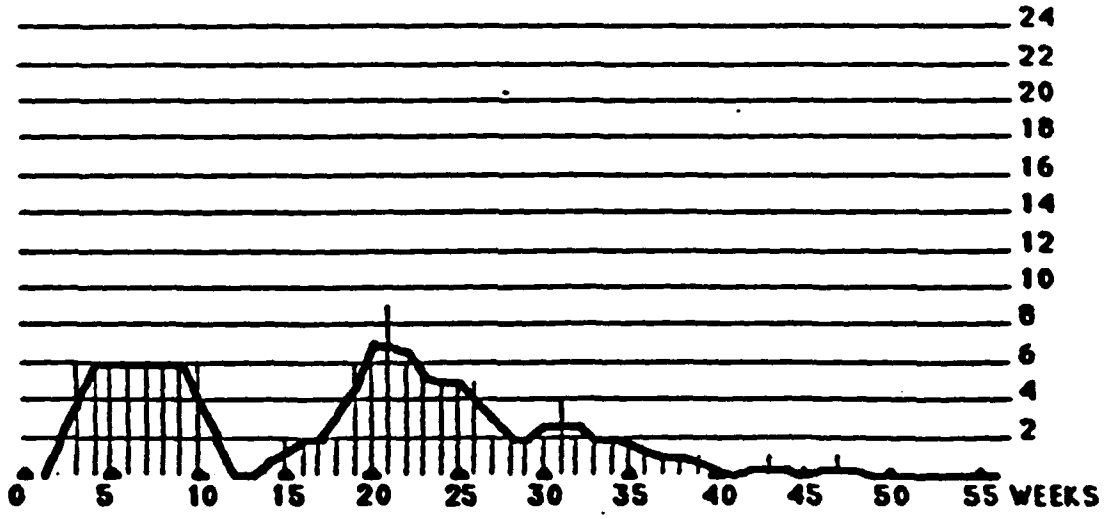
Average unit training time is 22.2 weeks.
Time required for 50% of the units to complete training is 35.4 weeks.

CRITICAL RESOURCE DISTRIBUTIONS FOR BASELINE CASE (DECONFLICTED)

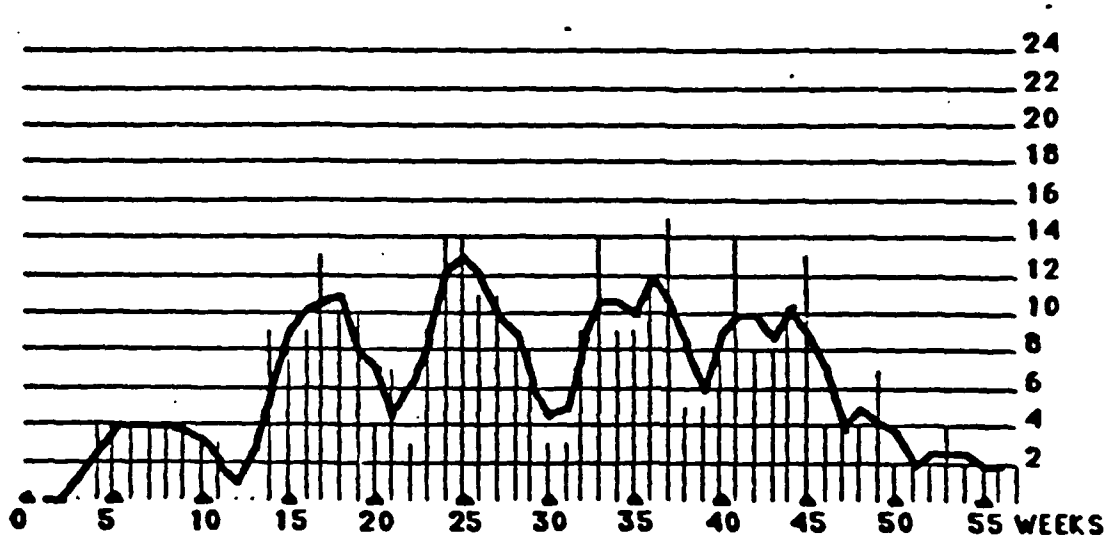
AERIAL GUNNERY RANGE



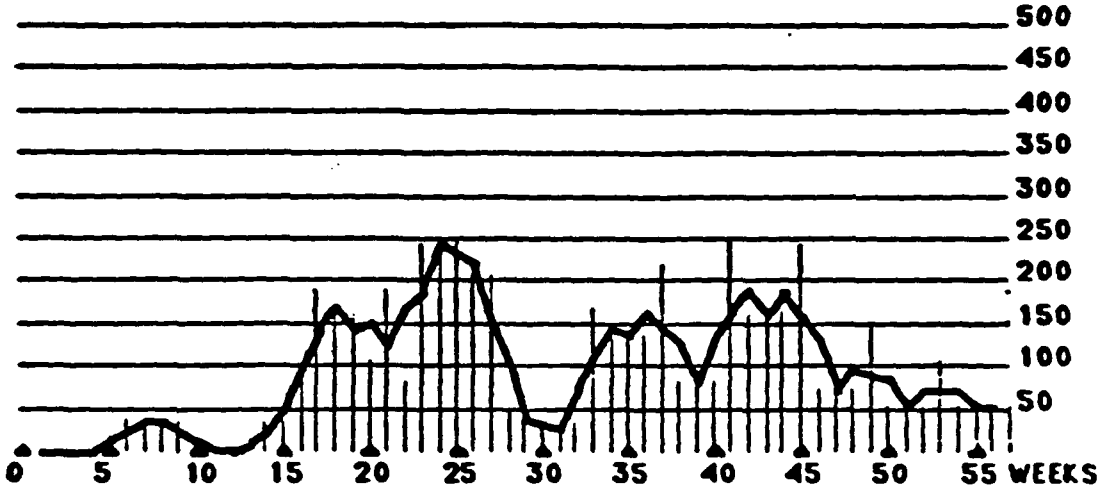
DOOR GUNNERY RANGE



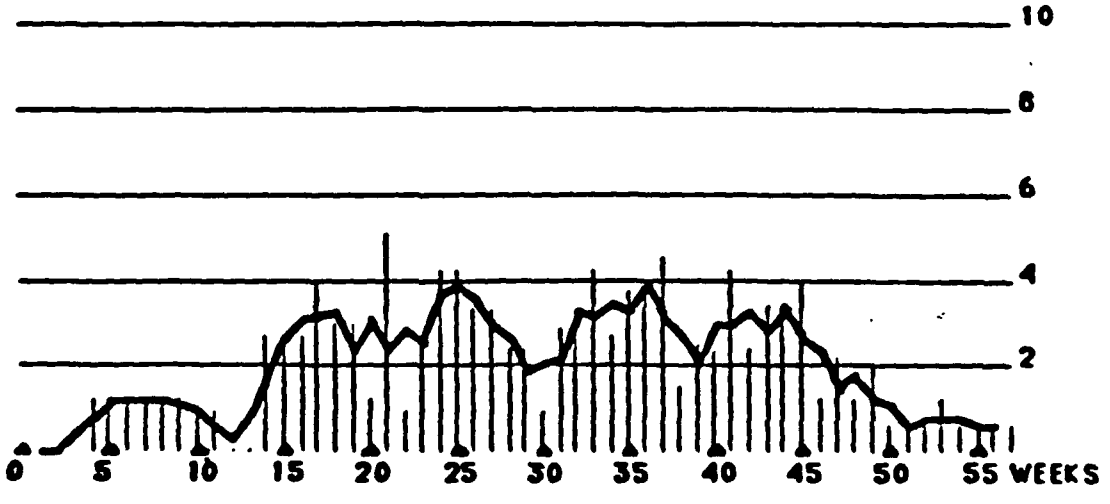
MANEUVER AREA



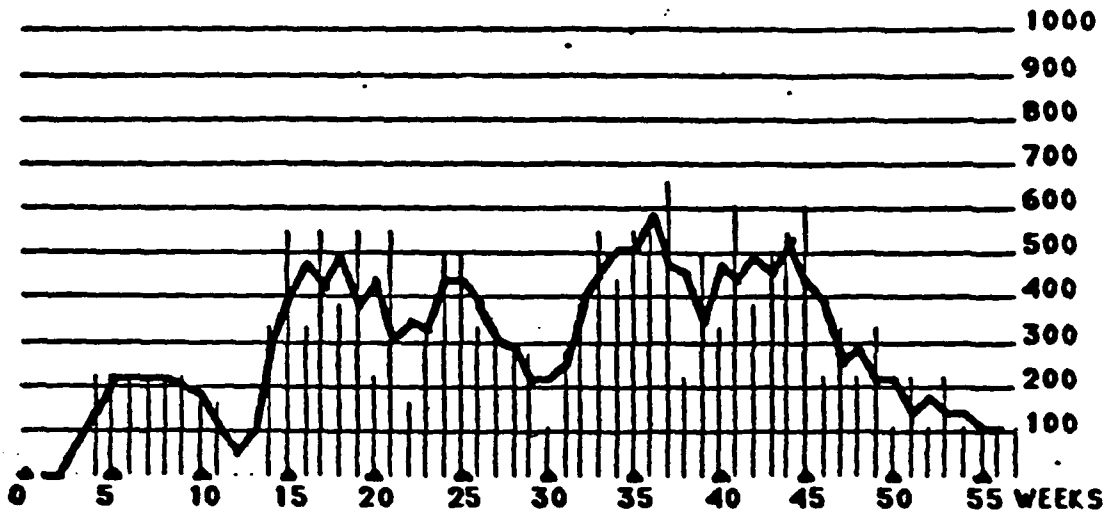
OPFOR



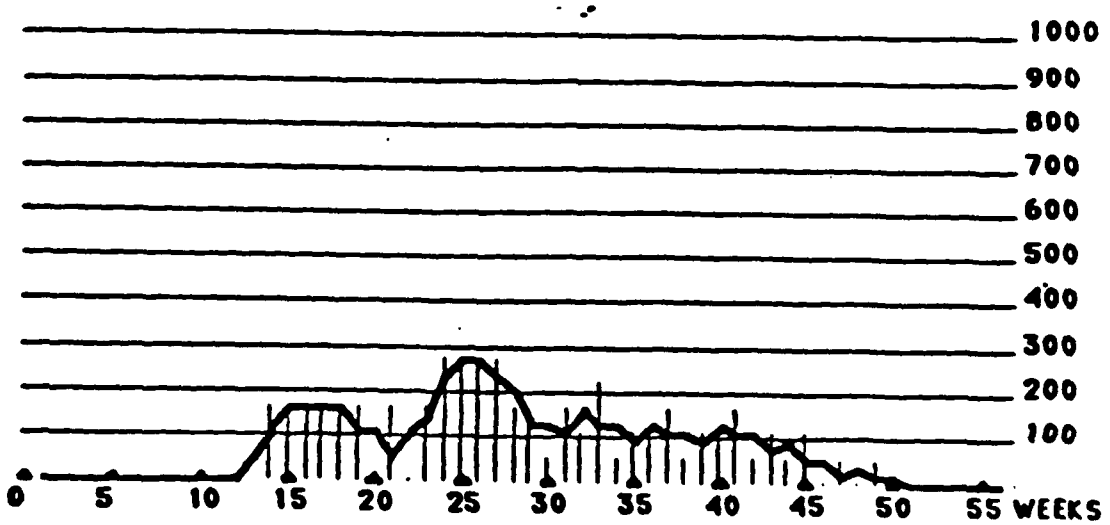
TEAM TRAINER



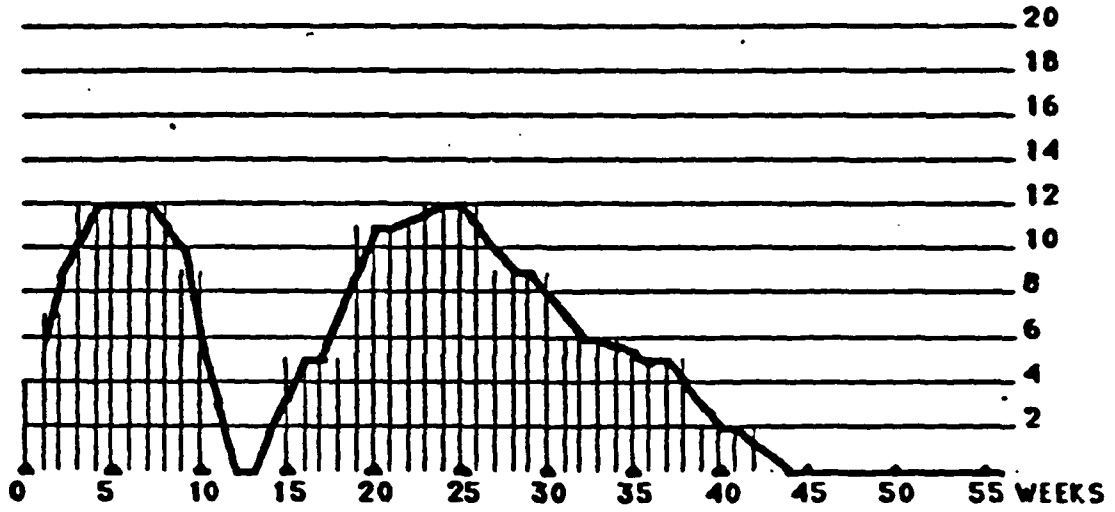
SCAT FLYING HOURS



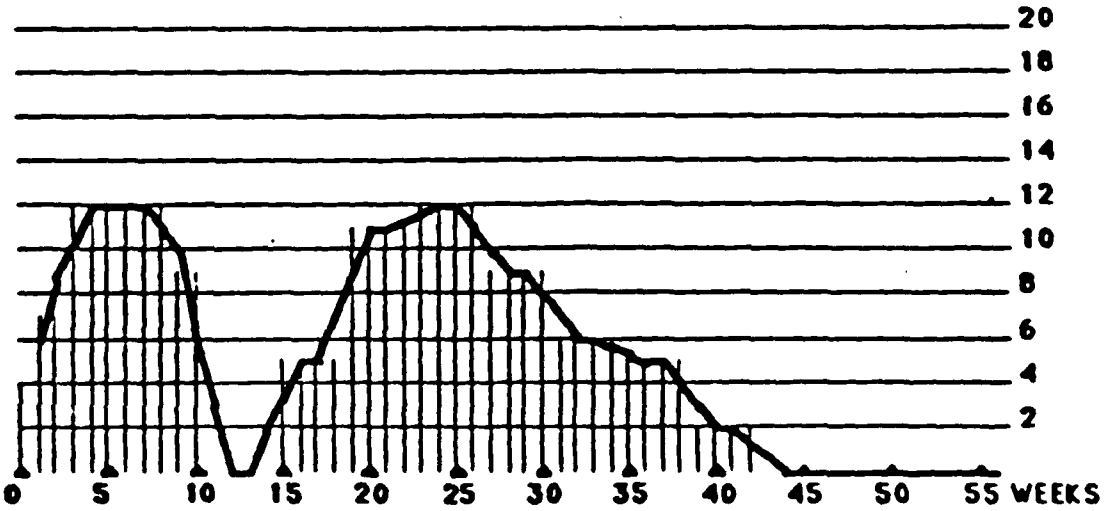
UTILITY FLYING HOURS



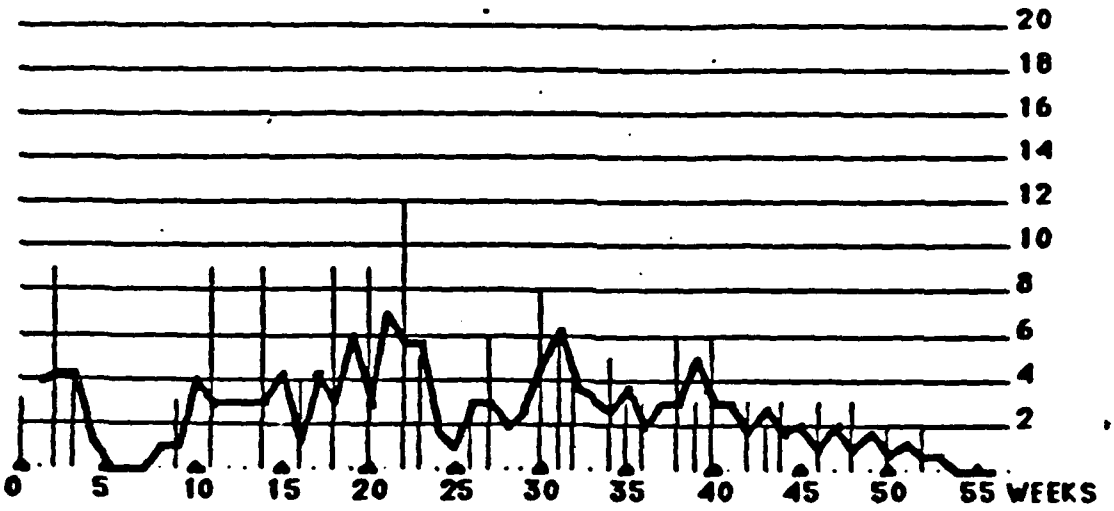
EXTERNAL AIRCRAFT



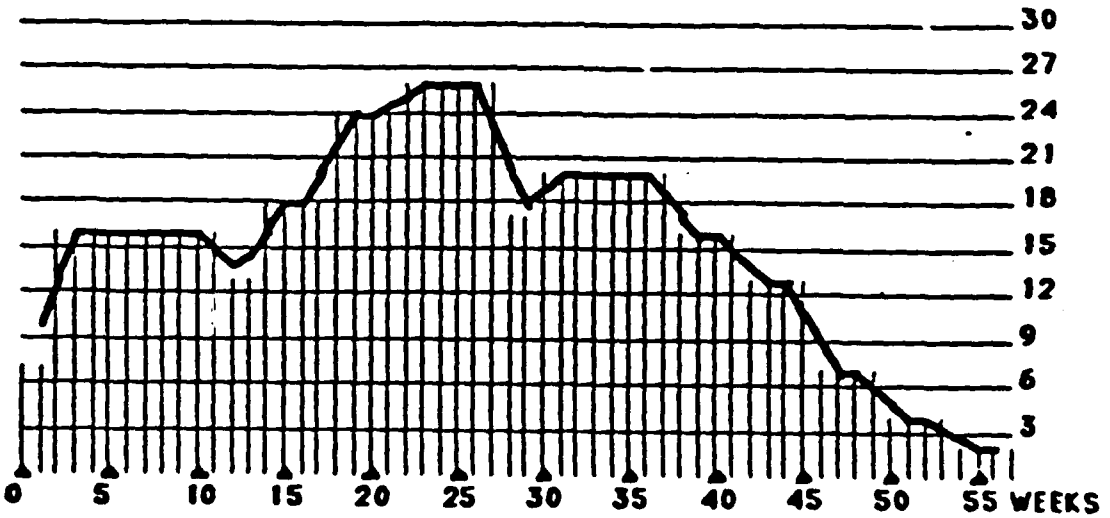
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

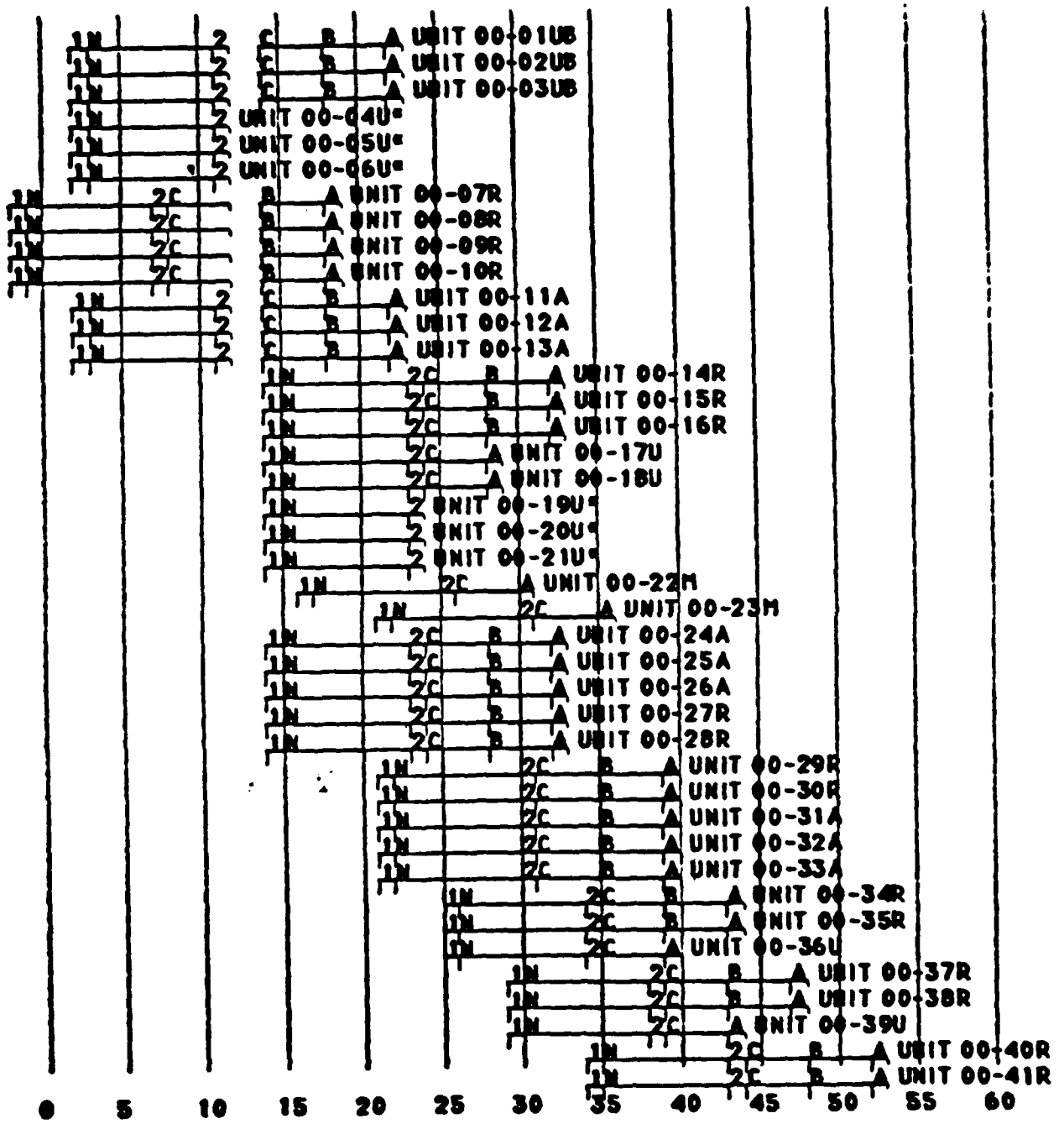


DOWNTIME



TRAINING ALTERNATIVE 1
PRIOR TO DECONFLICTION ANALYSES

TRAINING SCHEDULE



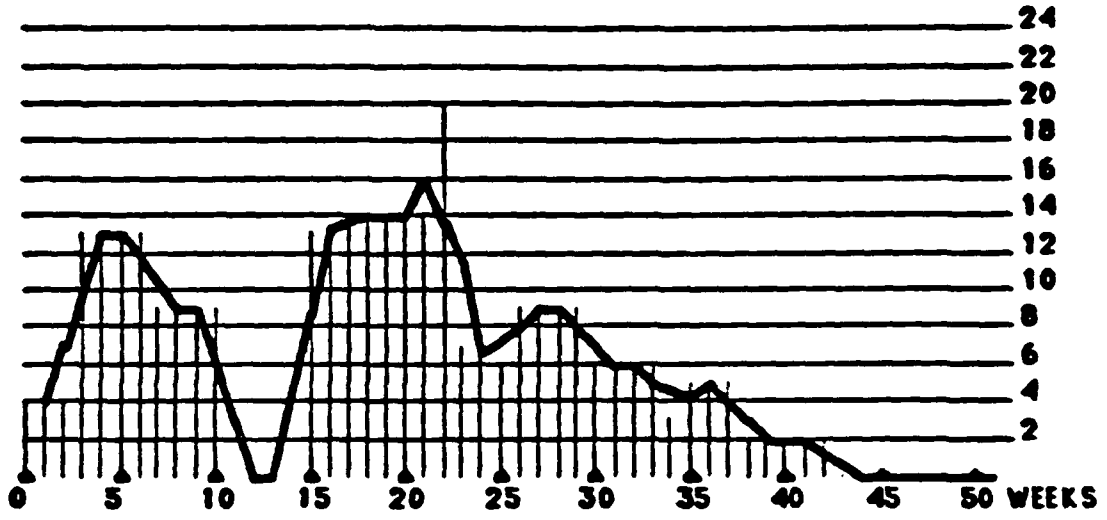
UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	23	21
UNIT 00-02UB	2	23	21
UNIT 00-03UB	2	23	21
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-2	19	21
UNIT 00-08R	-2	19	21
UNIT 00-09R	-2	19	21
UNIT 00-10R	-2	19	21
UNIT 00-11A	2	23	21
UNIT 00-12A	2	23	21
UNIT 00-13A	2	23	21
UNIT 00-14R	14	33	19
UNIT 00-15R	14	33	19
UNIT 00-16R	14	33	19
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	14	24	10
UNIT 00-20U*	14	24	10
UNIT 00-21U*	14	24	10
UNIT 00-22M	16	31	15
UNIT 00-23M	21	36	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	14	33	19
UNIT 00-28R	14	33	19
UNIT 00-29R	21	40	19
UNIT 00-30R	21	40	19
UNIT 00-31A	21	40	19
UNIT 00-32A	21	40	19
UNIT 00-33A	21	40	19
UNIT 00-34R	25	44	19
UNIT 00-35R	25	44	19
UNIT 00-36U	25	40	15
UNIT 00-37R	29	48	19
UNIT 00-38R	29	48	19
UNIT 00-39U	29	44	15
UNIT 00-40R	34	53	19
UNIT 00-41R	34	53	19

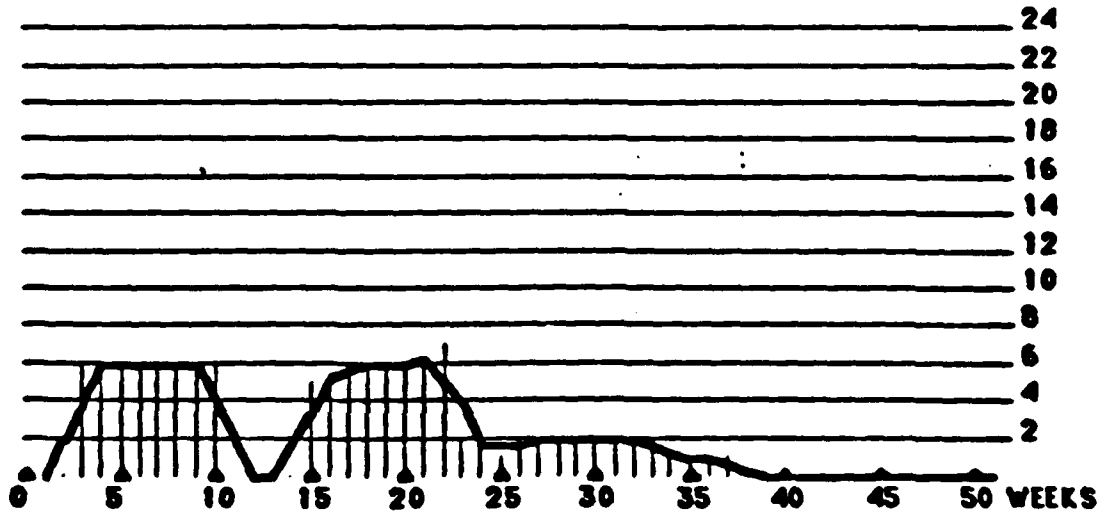
Average unit training time is 17.6 weeks.
Time required for 50% of the units to complete training is 31.3 weeks.

CRITICAL RESOURCE DISTRIBUTIONS FOR TRAINING ALTERNATIVE 1

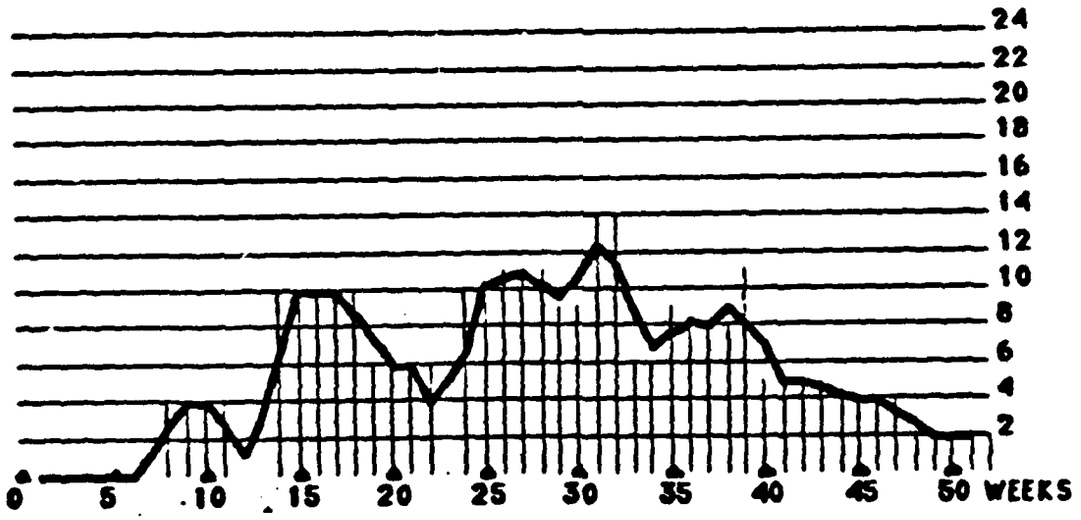
AERIAL GUNNERY RANGE



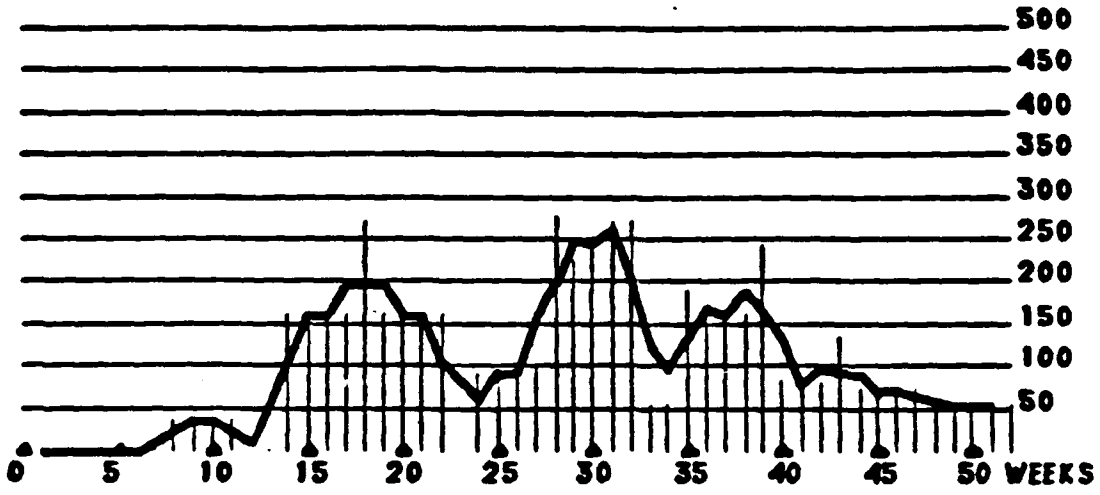
DOOR GUNNERY RANGE



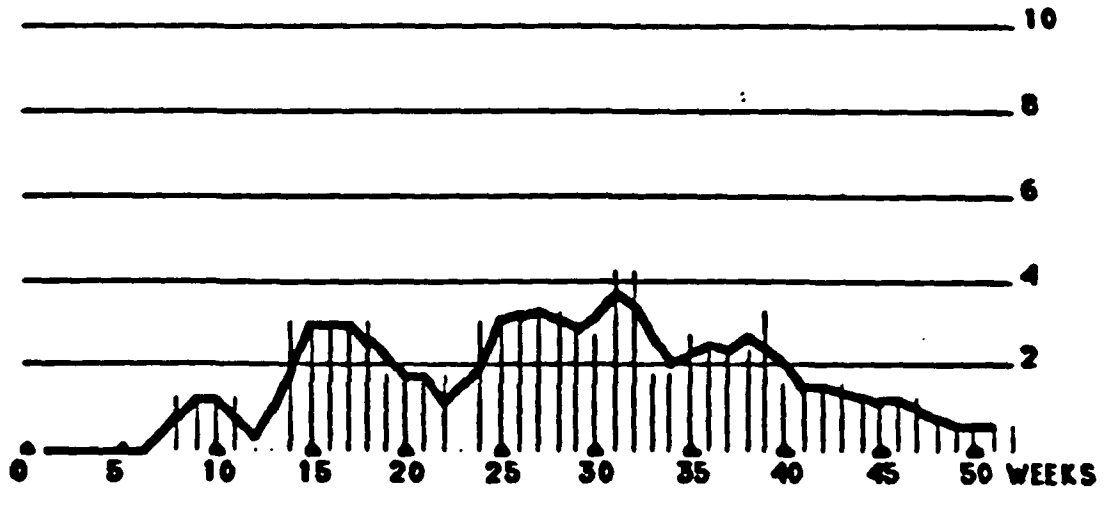
MANEUVER AREA



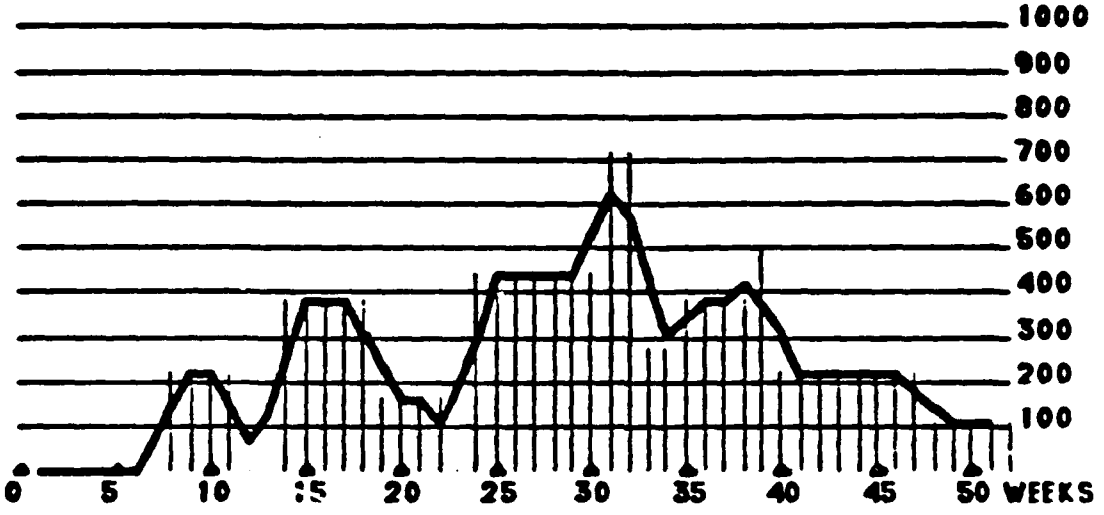
OPFOR



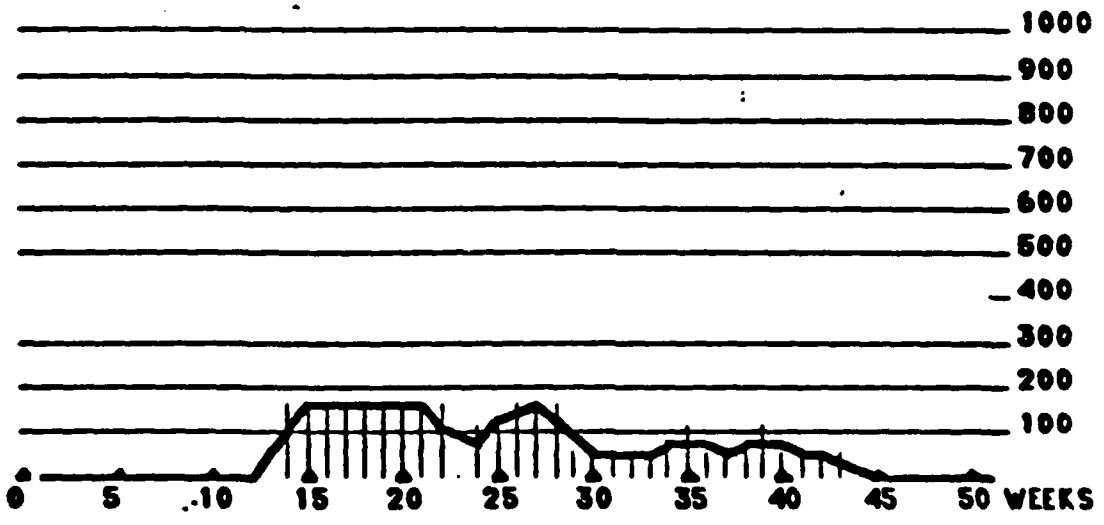
TEAM TRAINER



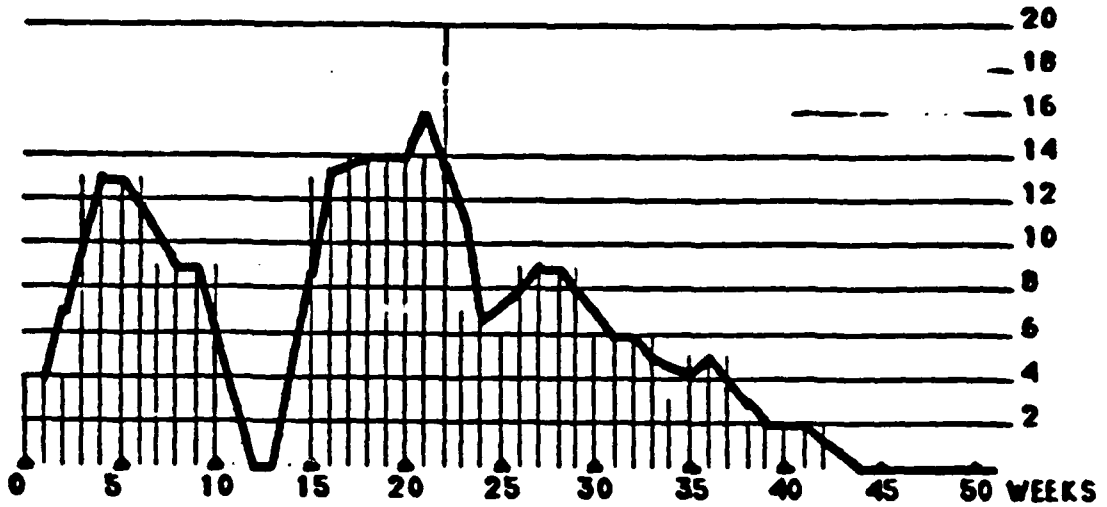
SCAT FLYING HOURS



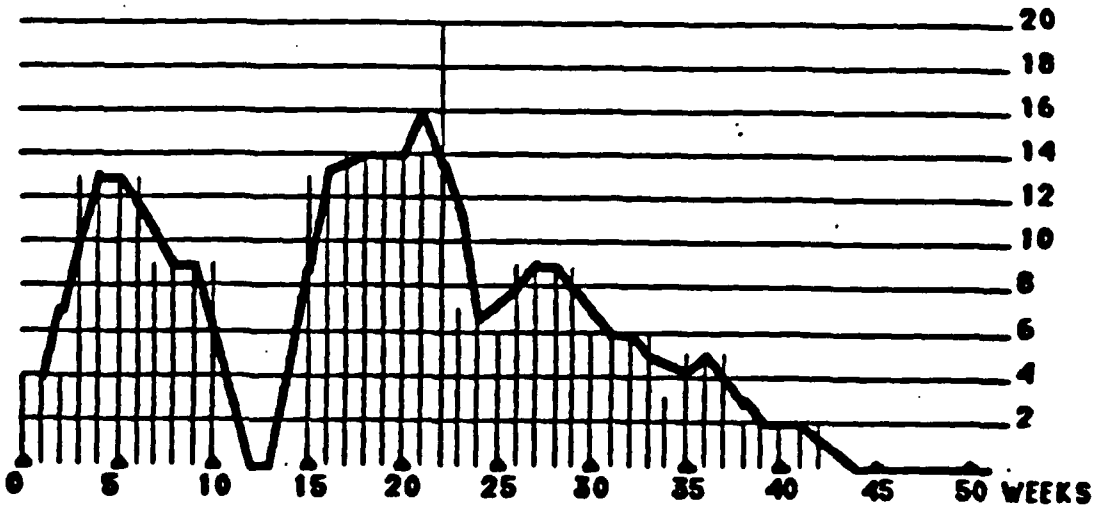
UTILITY FLYING HOURS



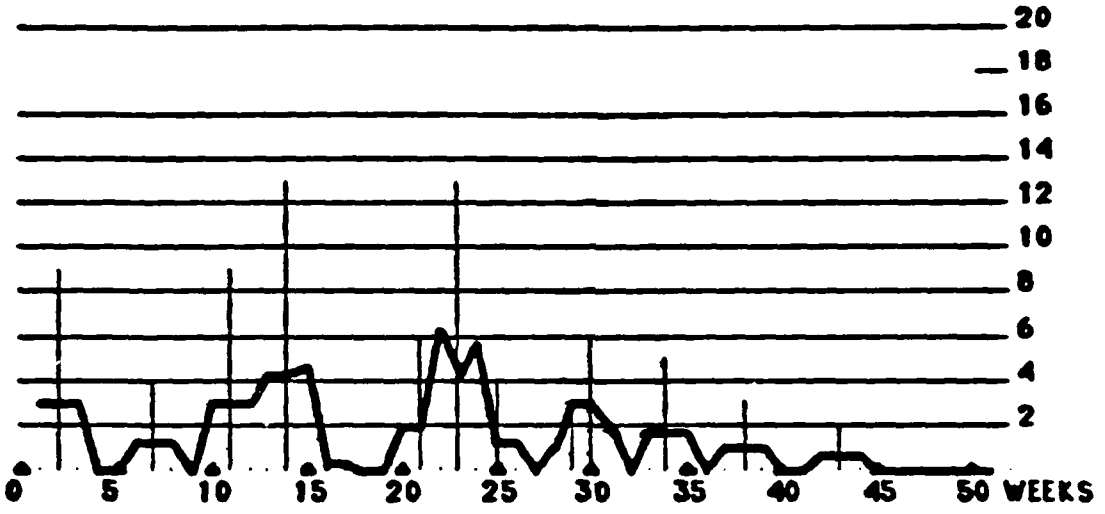
EXTERNAL AIRCRAFT



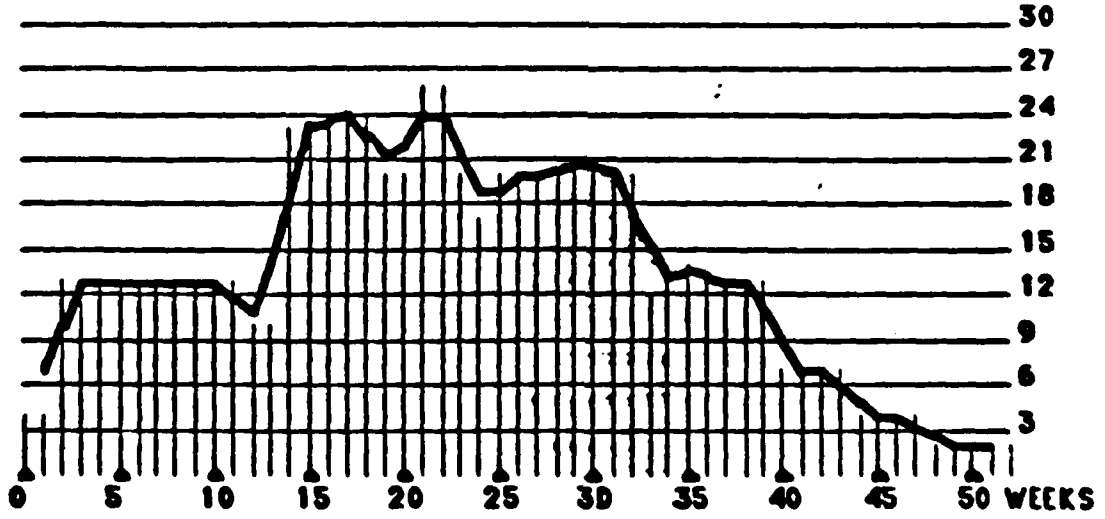
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

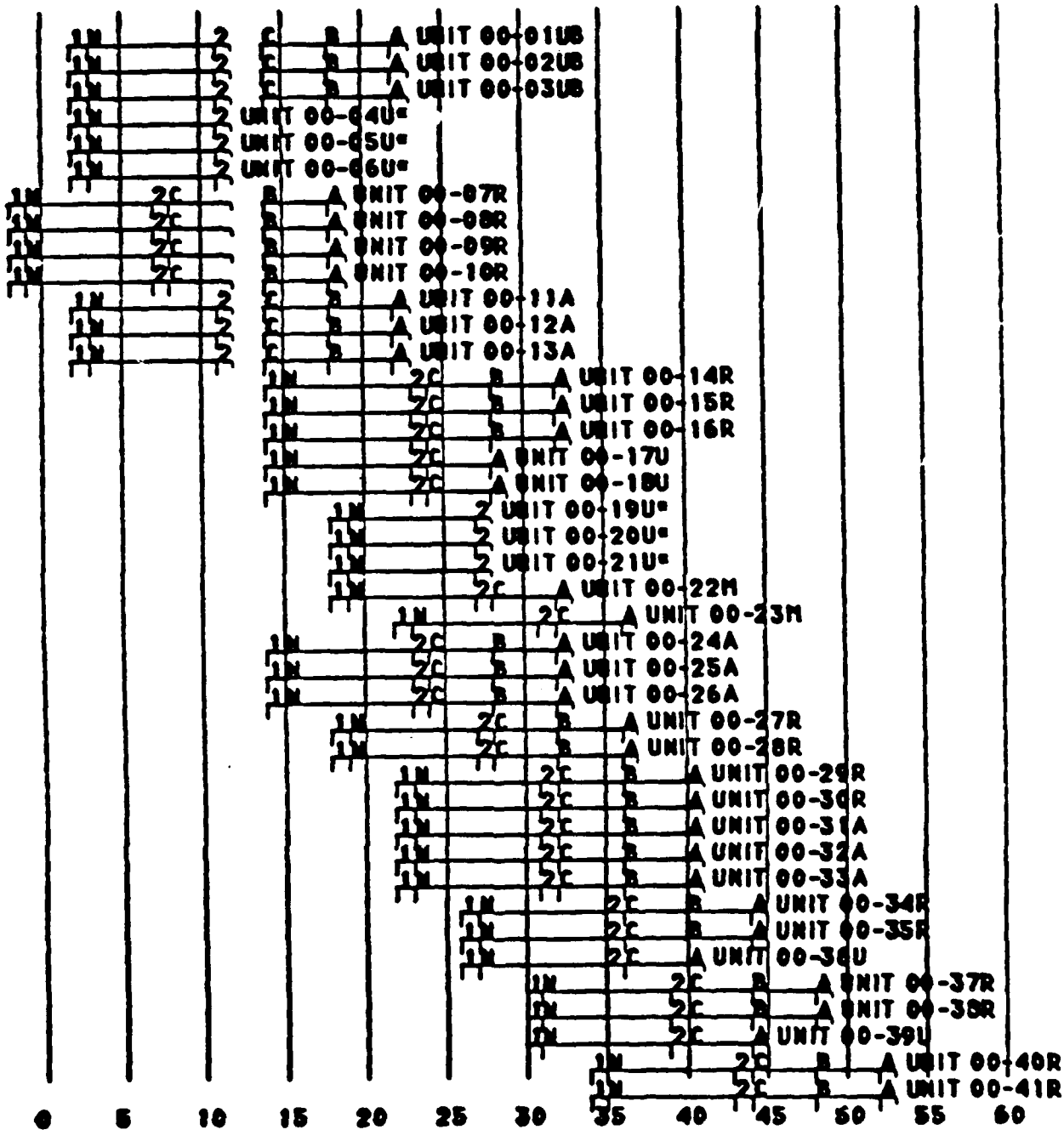


DOWNTIME



TRAINING ALTERNATIVE 1
DECONFLICTED

TRAINING SCHEDULE



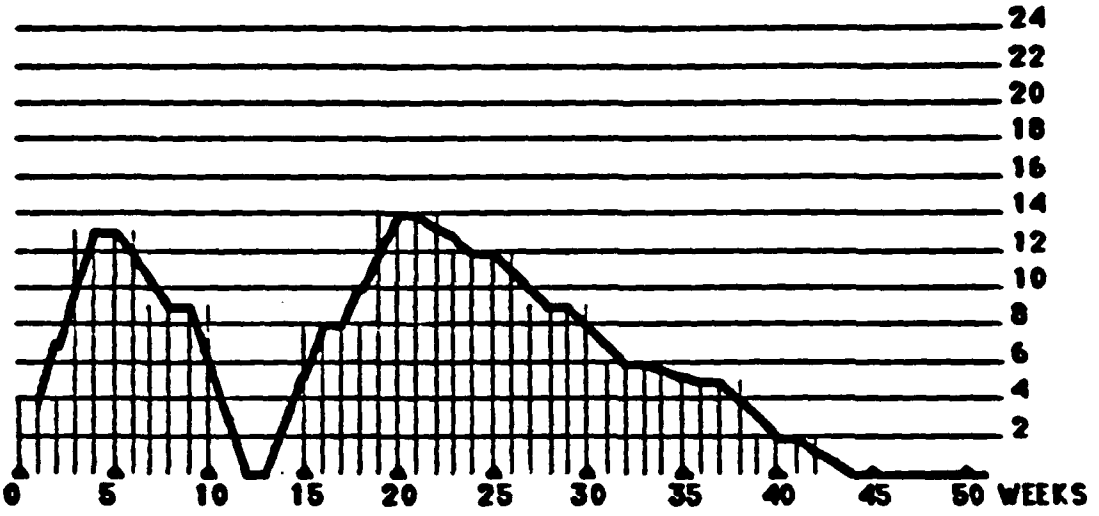
UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	23	21
UNIT 00-02UB	2	23	21
UNIT 00-03UB	2	23	21
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-2	19	21
UNIT 00-08R	-2	19	21
UNIT 00-09R	-2	19	21
UNIT 00-10R	-2	19	21
UNIT 00-11A	2	23	21
UNIT 00-12A	2	23	21
UNIT 00-13A	2	23	21
UNIT 00-14R	14	33	19
UNIT 00-15R	14	33	19
UNIT 00-16R	14	33	19
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	18	28	10
UNIT 00-20U*	18	28	10
UNIT 00-21U*	18	28	10
UNIT 00-22M	18	33	15
UNIT 00-23M	22	37	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	18	37	19
UNIT 00-28R	18	37	19
UNIT 00-29R	22	41	19
UNIT 00-30R	22	41	19
UNIT 00-31A	22	41	19
UNIT 00-32A	22	41	19
UNIT 00-33A	22	41	19
UNIT 00-34R	26	45	19
UNIT 00-35R	26	45	19
UNIT 00-36U	26	41	15
UNIT 00-37R	30	49	19
UNIT 00-38R	30	49	19
UNIT 00-39U	30	45	15
UNIT 00-40R	34	53	19
UNIT 00-41R	34	53	19

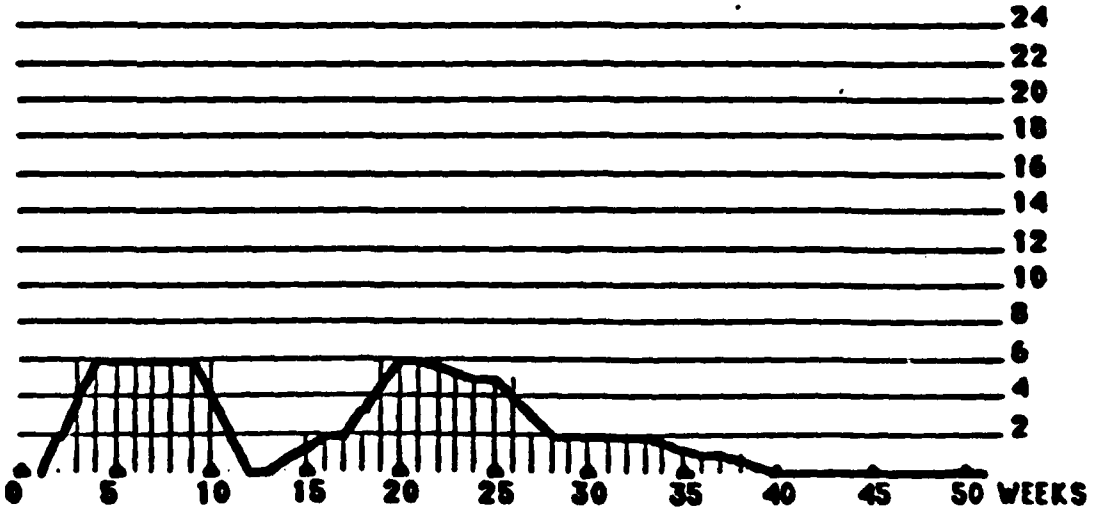
Average unit training time is 17.6 weeks.
Time required for 50% of the units to complete training is 32.2 weeks.

CRITICAL RESOURCE DISTRIBUTIONS FOR TRAINING ALTERNATIVE 1 (DECONFLICTED)

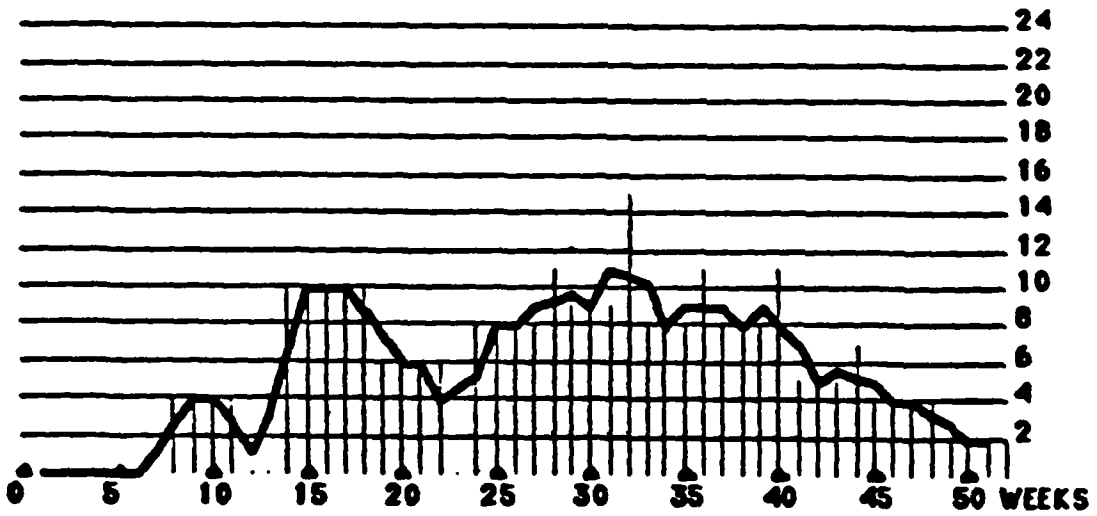
AERIAL GUNNERY RANGE



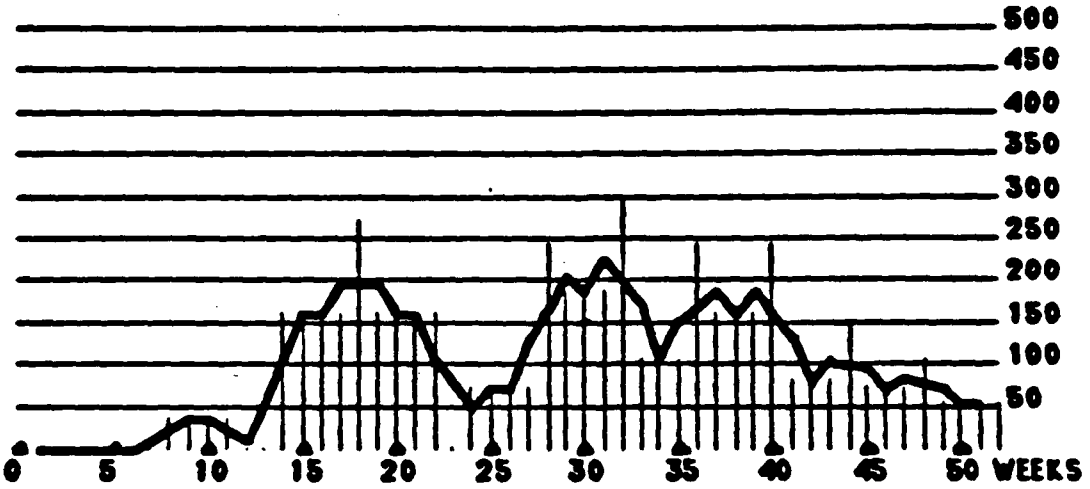
DOOR GUNNERY RANGE



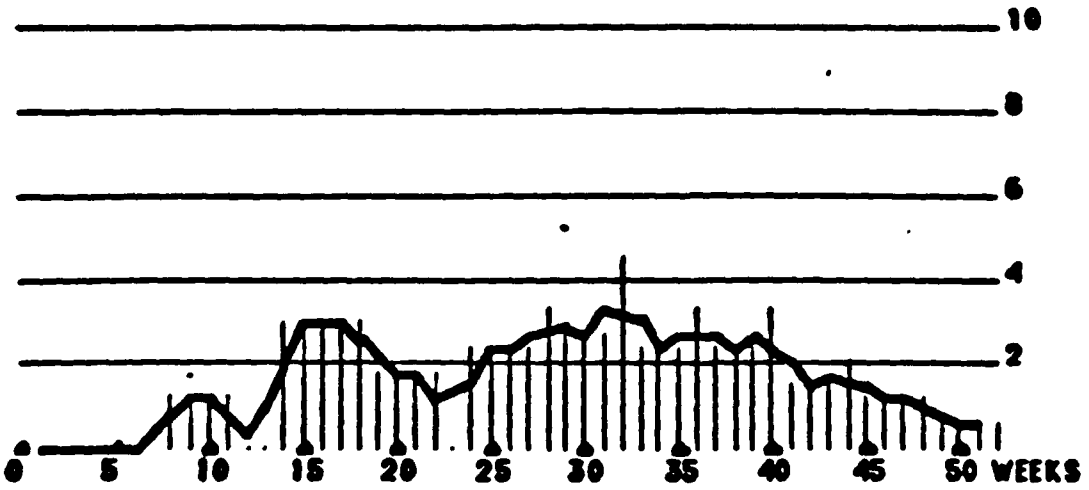
MANEUVER AREA



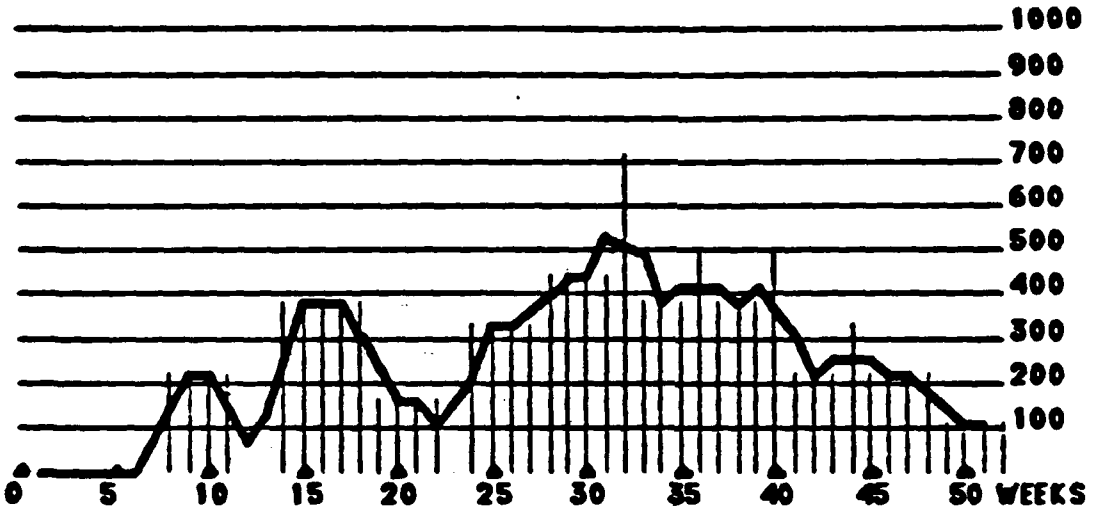
OPFOR



TEAM TRAINER

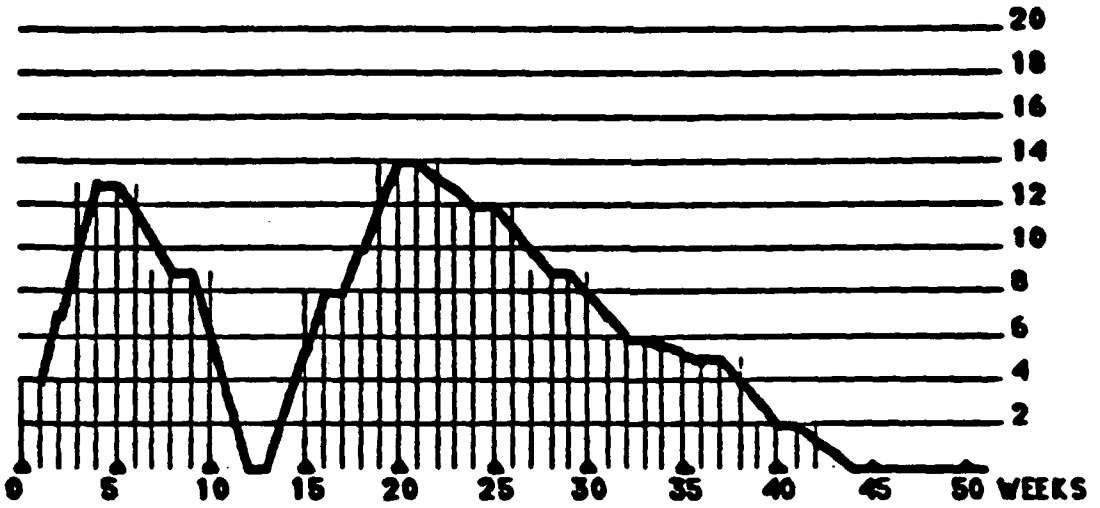


SCAT FLYING HOURS

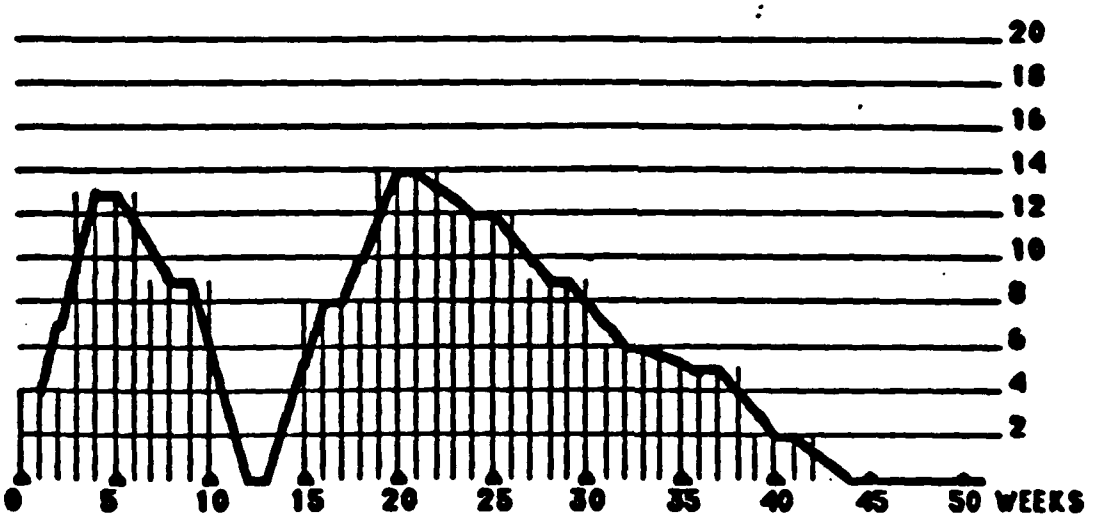


UTILITY FLYING HOURS

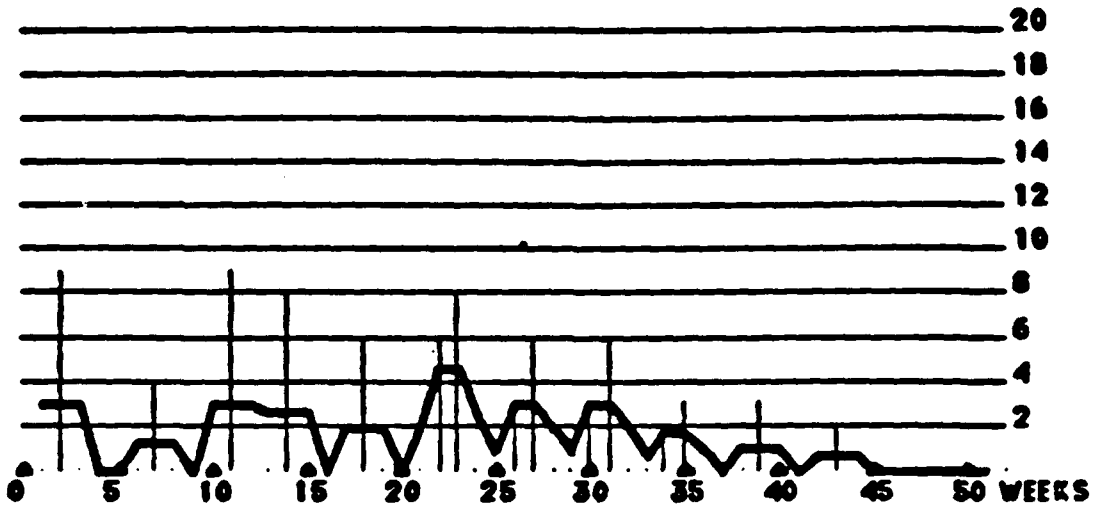
EXTERNAL AIRCRAFT



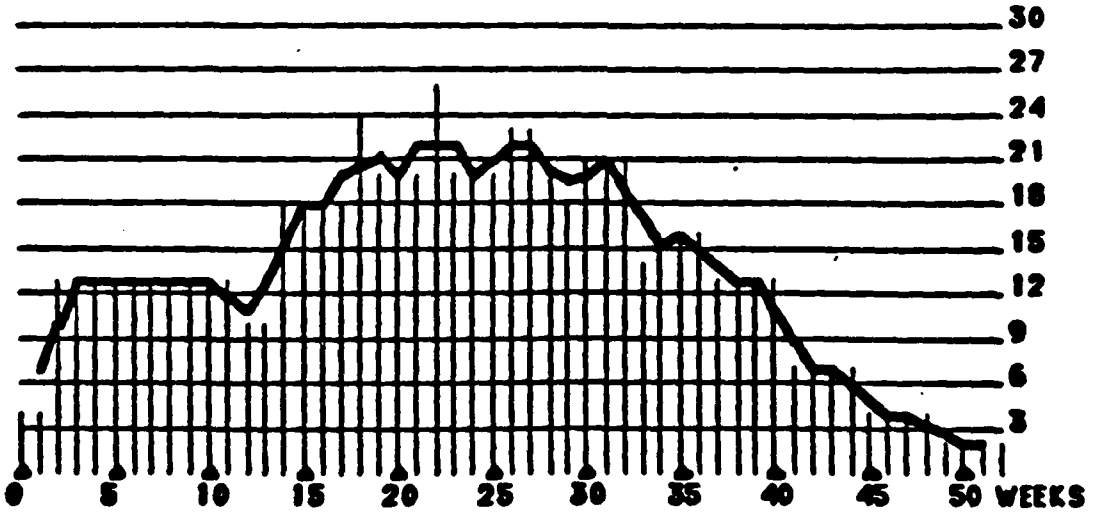
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

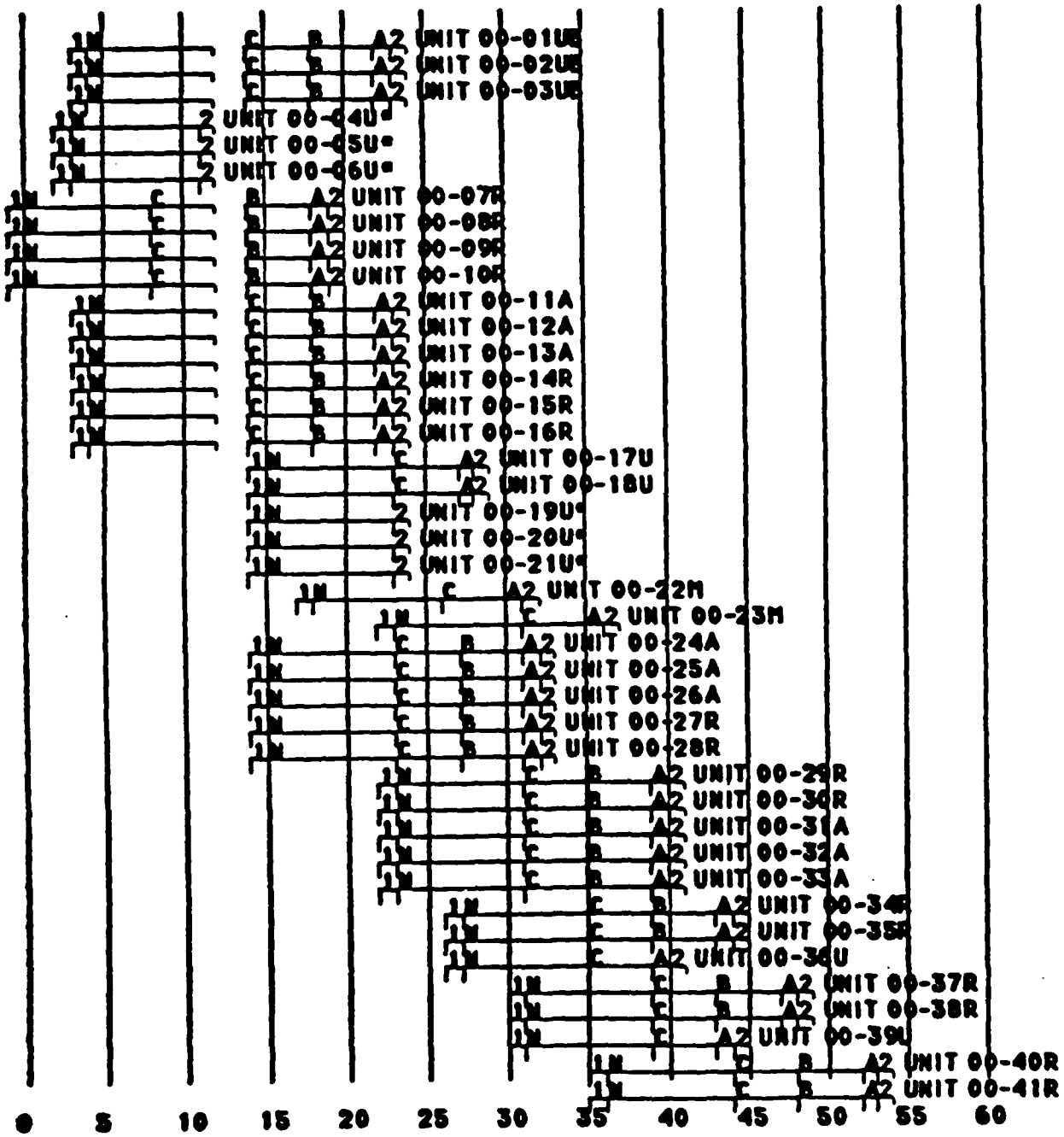


DOWNTIME



TRAINING ALTERNATIVE 2
PRIOR TO DECONFLICTION ANALYSES

TRAINING SCHEDULE



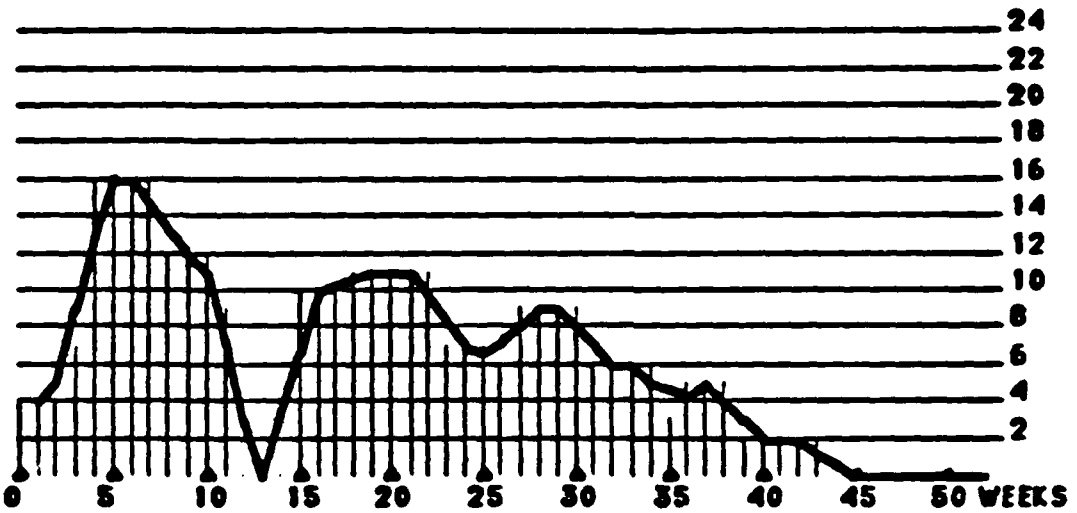
UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	3	24	21
UNIT 00-02UB	3	24	21
UNIT 00-03UB	3	24	21
UNIT 00-04U*	2	12	10
UNIT 00-04U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-1	20	21
UNIT 00-08R	-1	20	21
UNIT 00-09R	-1	20	21
UNIT 00-10R	-1	20	21
UNIT 00-11A	3	24	21
UNIT 00-12A	3	24	21
UNIT 00-13A	3	24	21
UNIT 00-14R	3	24	21
UNIT 00-15R	3	24	21
UNIT 00-16R	3	24	21
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	14	24	10
UNIT 00-20U*	14	24	10
UNIT 00-21U*	14	24	10
UNIT 00-22M	17	32	15
UNIT 00-23M	22	37	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	14	33	19
UNIT 00-28R	14	33	19
UNIT 00-29R	22	41	19
UNIT 00-30R	22	41	19
UNIT 00-31A	22	41	19
UNIT 00-32A	22	41	19
UNIT 00-33A	22	41	19
UNIT 00-34R	26	45	19
UNIT 00-35R	26	45	19
UNIT 00-36U	26	41	15
UNIT 00-37R	30	49	19
UNIT 00-38R	30	49	19
UNIT 00-39U	30	45	15
UNIT 00-40R	35	54	19
UNIT 00-41R	35	54	19

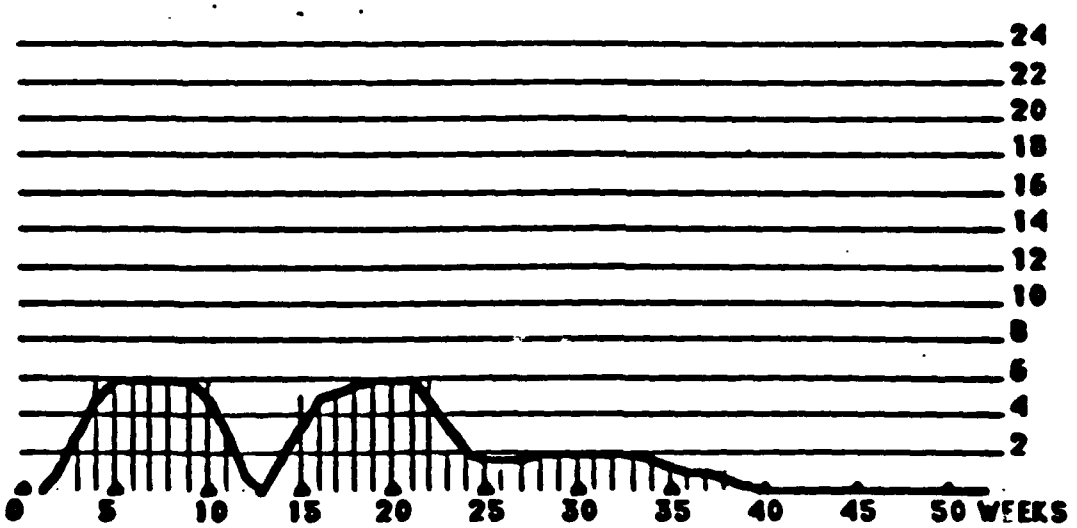
Average unit training time is 17.7 weeks.
Time required for 50% of the units to complete training is 31.3 weeks.

CRITICAL RESOURCE
DISTRIBUTION FOR
TRAINING ALTERNATIVE 2

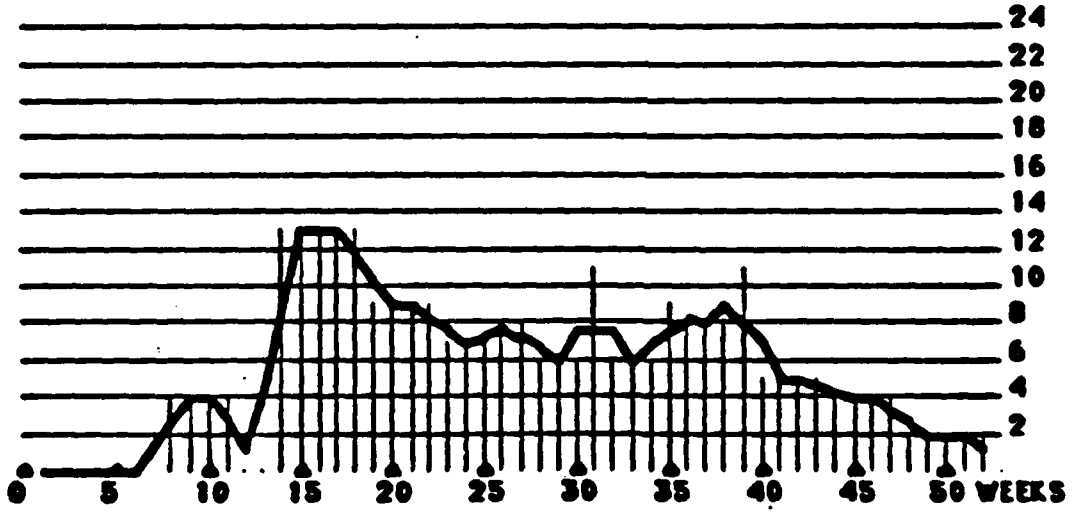
AERIAL GUNNERY RANGE



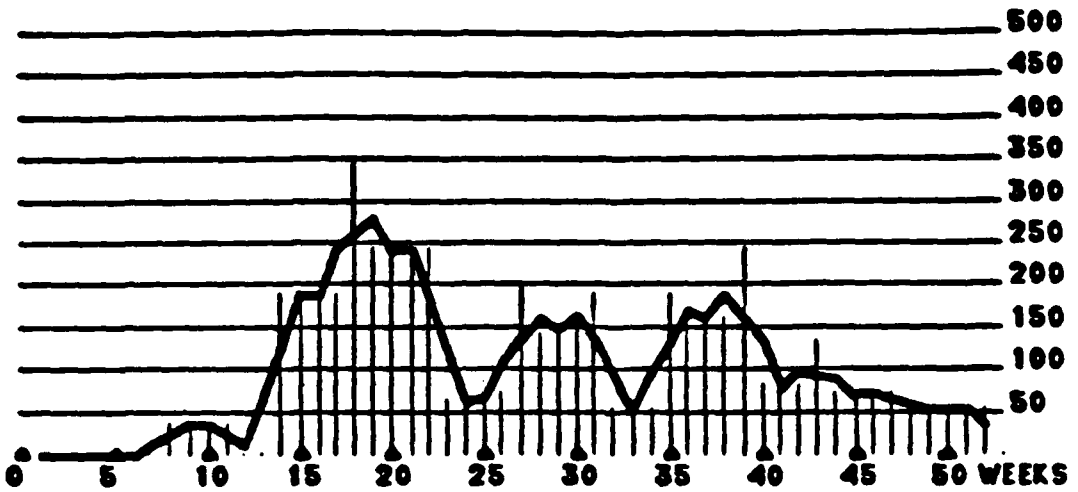
DOOR GUNNERY RANGE



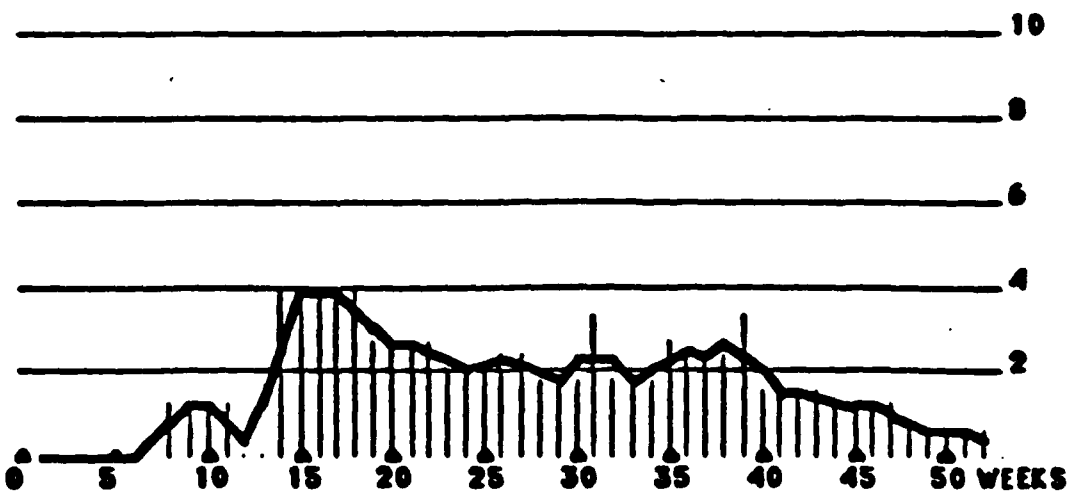
MANEUVER AREA



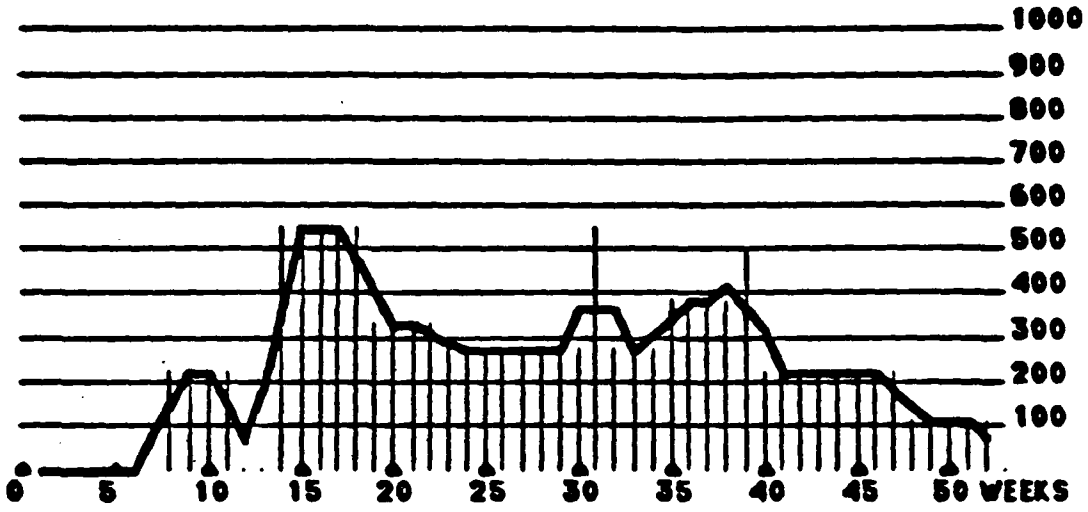
OPFOR



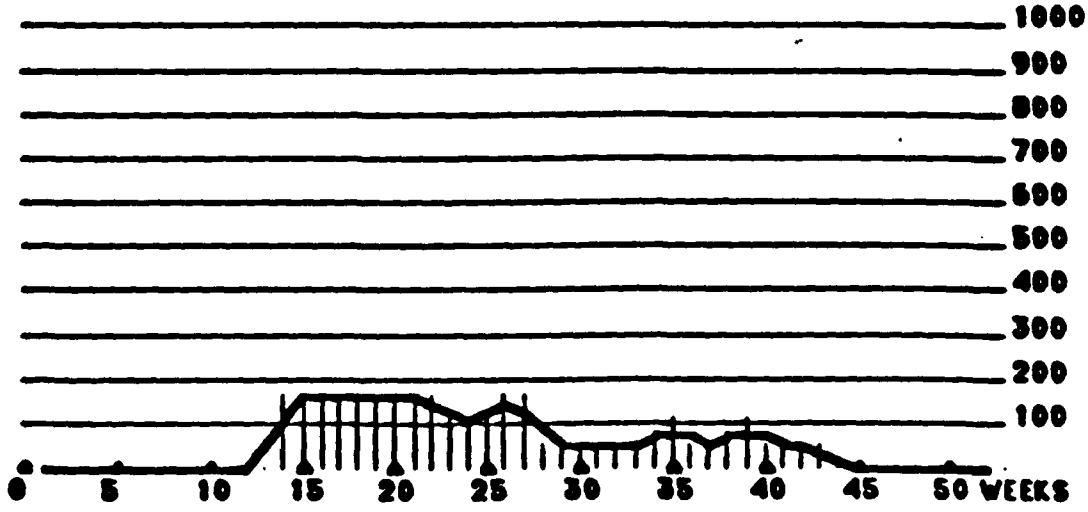
TEAM TRAINER



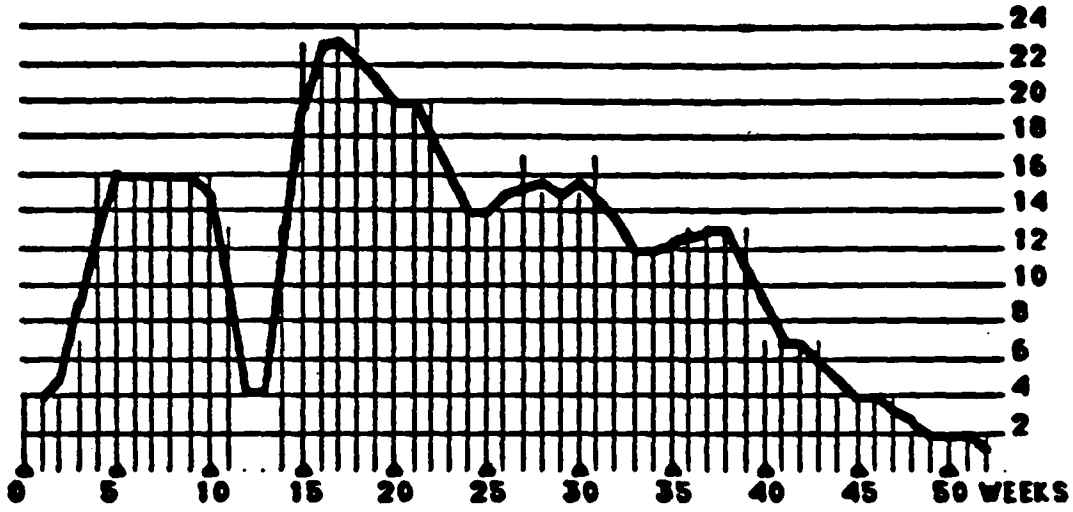
SCAT FLYING HOURS



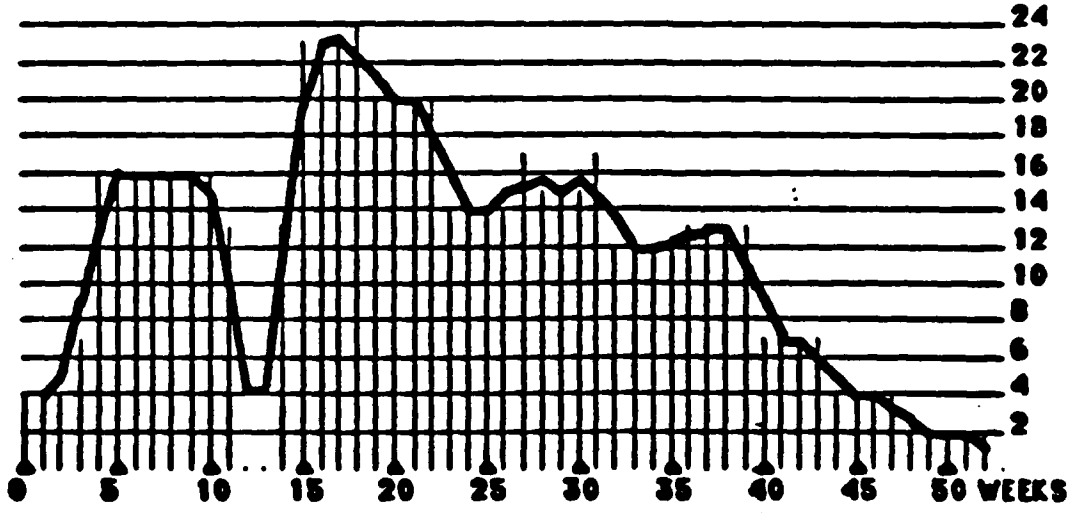
UTILITY FLYING HOURS



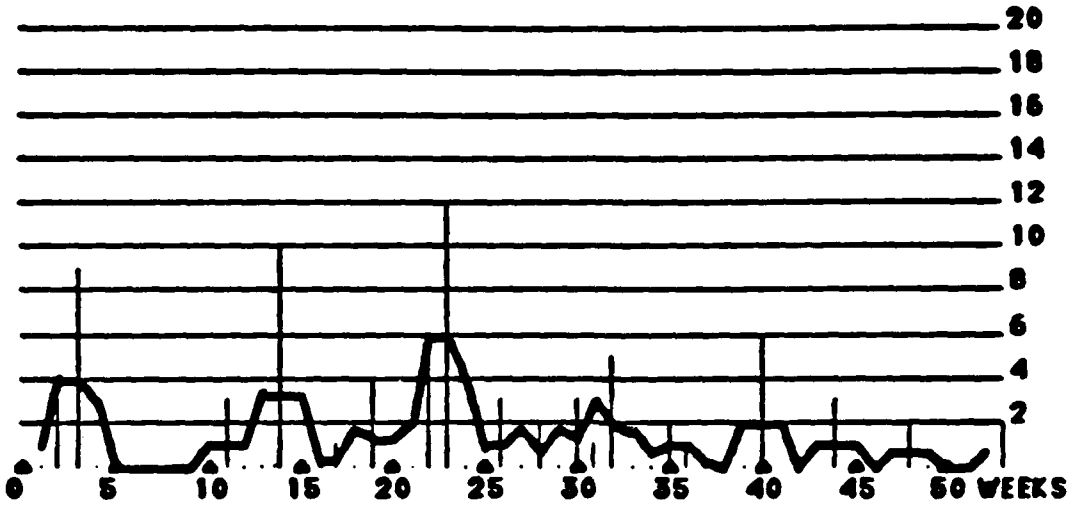
EXTERNAL AIRCRAFT



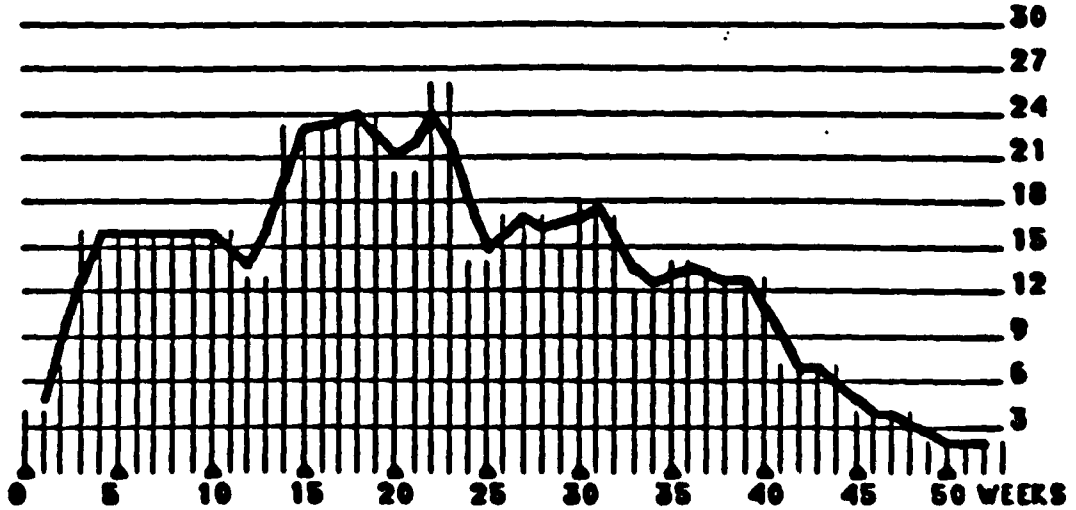
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

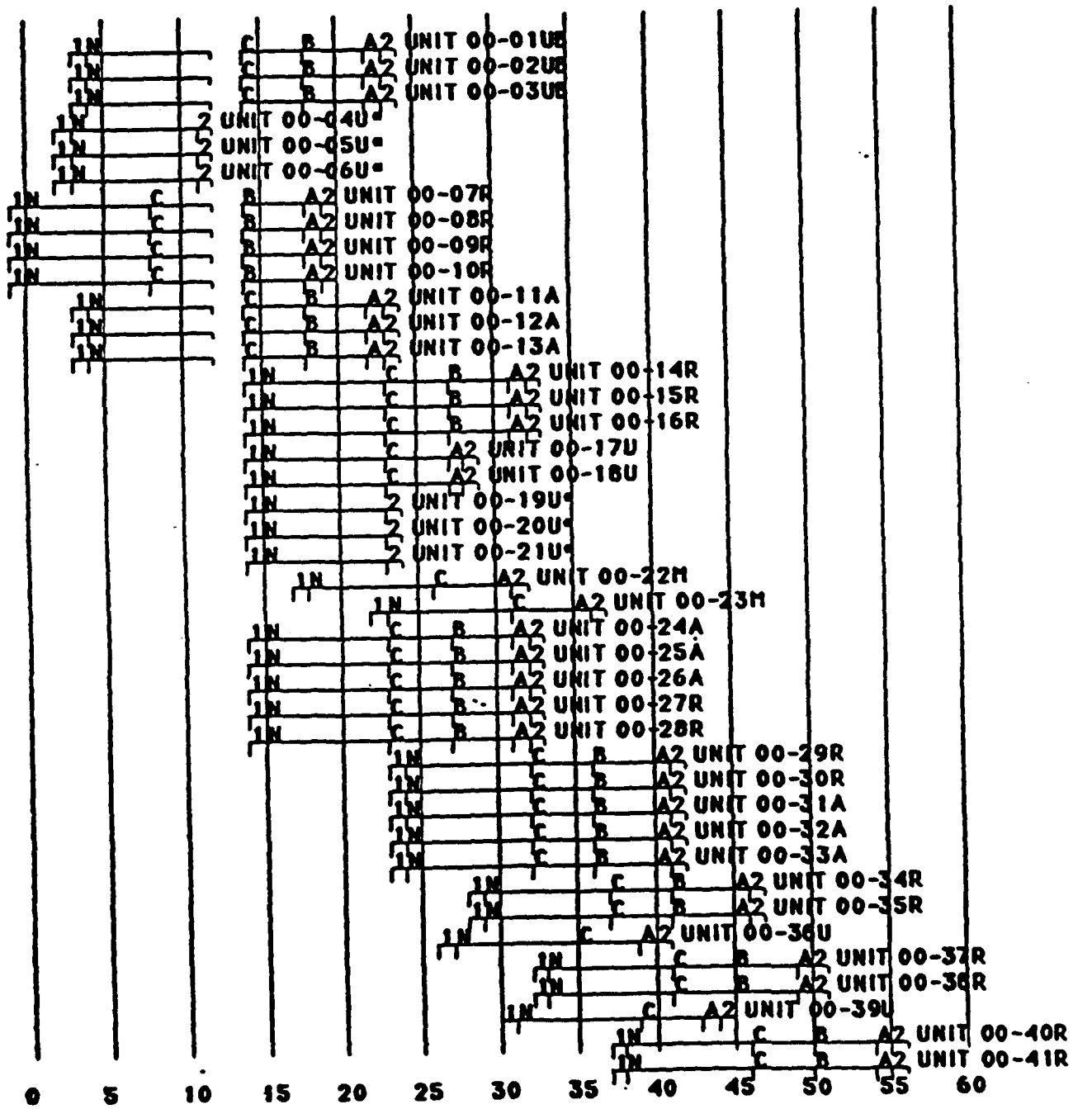


DOWNTIME



TRAINING ALTERNATIVE 2
DECONFLICTED

TRAINING SCHEDULE



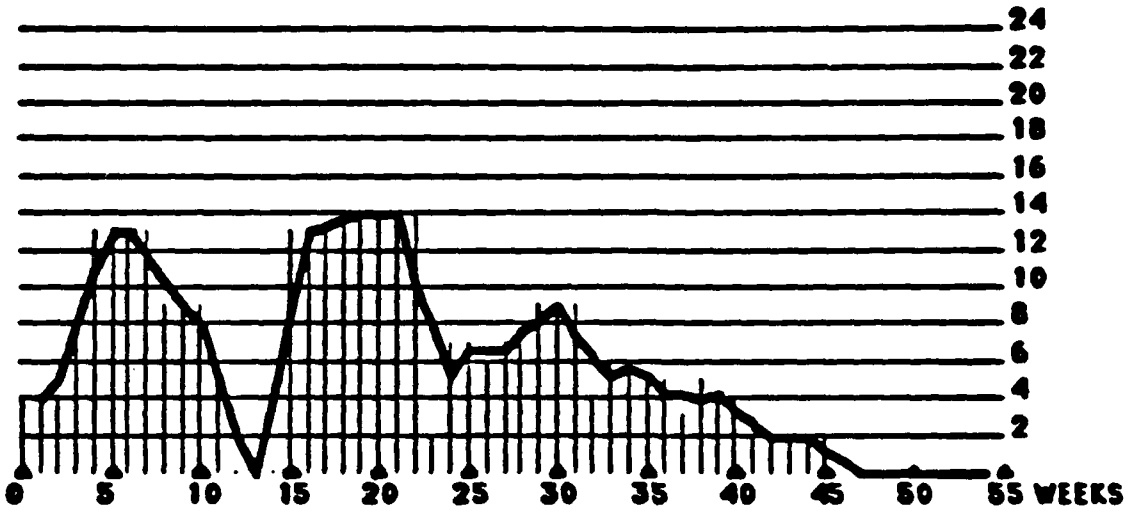
UNIT TRAINING TIMES

Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	3	24	21
UNIT 00-02UB	3	24	21
UNIT 00-03UB	3	24	21
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-1	20	21
UNIT 00-08R	-1	20	21
UNIT 00-09R	-1	20	21
UNIT 00-10R	-1	20	21
UNIT 00-11A	3	24	21
UNIT 00-12A	3	24	21
UNIT 00-13A	3	24	21
UNIT 00-14R	14	33	19
UNIT 00-15R	14	33	19
UNIT 00-16R	14	33	19
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	14	24	10
UNIT 00-20U*	14	24	10
UNIT 00-21U*	14	24	10
UNIT 00-22M	17	32	15
UNIT 00-23M	22	37	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	14	33	19
UNIT 00-28R	14	33	19
UNIT 00-29R	23	42	19
UNIT 00-30R	23	42	19
UNIT 00-31A	23	42	19
UNIT 00-32A	23	42	19
UNIT 00-33A	23	42	19
UNIT 00-34R	28	47	19
UNIT 00-35R	28	47	19
UNIT 00-36U	26	41	15
UNIT 00-37R	32	51	19
UNIT 00-38R	32	51	19
UNIT 00-39U	30	45	15
UNIT 00-40R	37	56	19
UNIT 00-41R	37	56	19

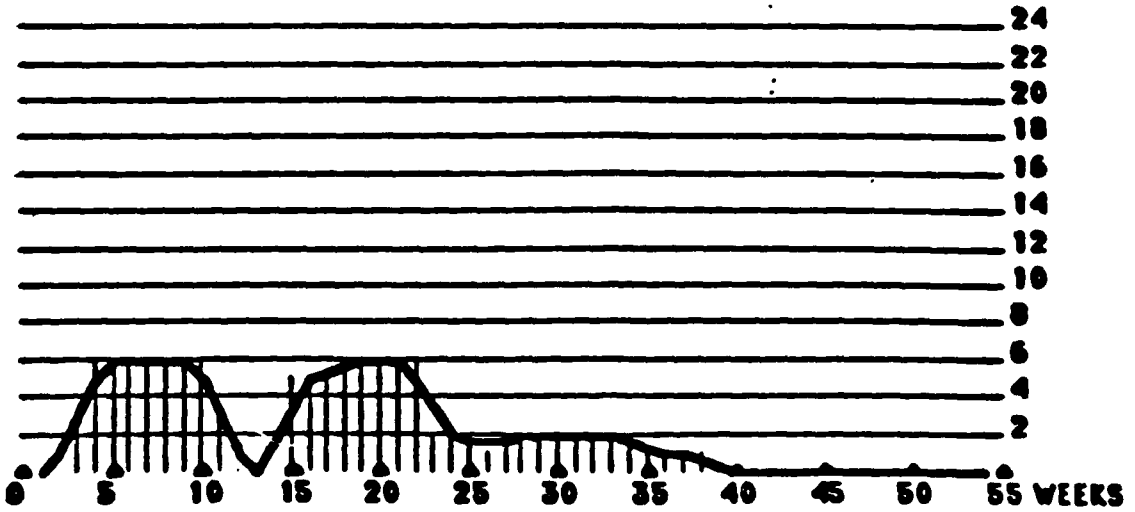
Average unit training time is 17.6 weeks.
Time required for 50% of the units to complete training is 32.4 weeks.

CRITICAL RESOURCE DISTRIBUTION FOR
TRAINING ALTERNATIVE 2
(DECONFLICTED)

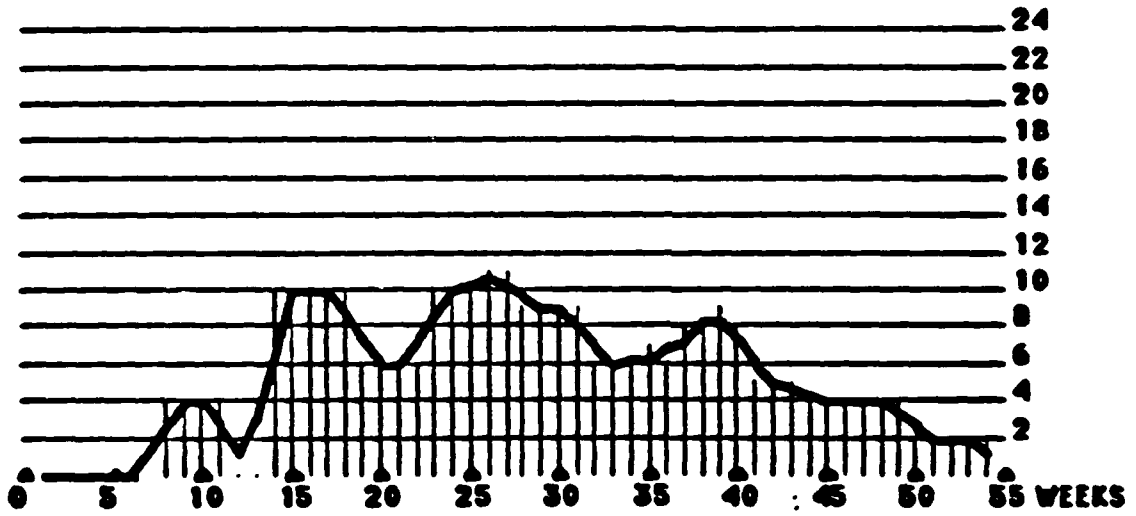
AERIAL GUNNERY RANGE



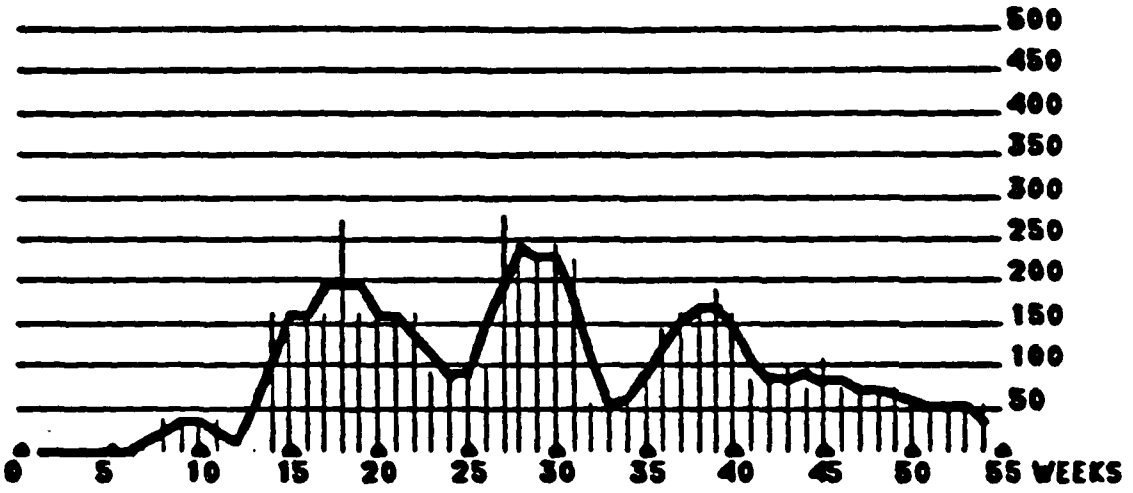
DOOR GUNNERY RANGE



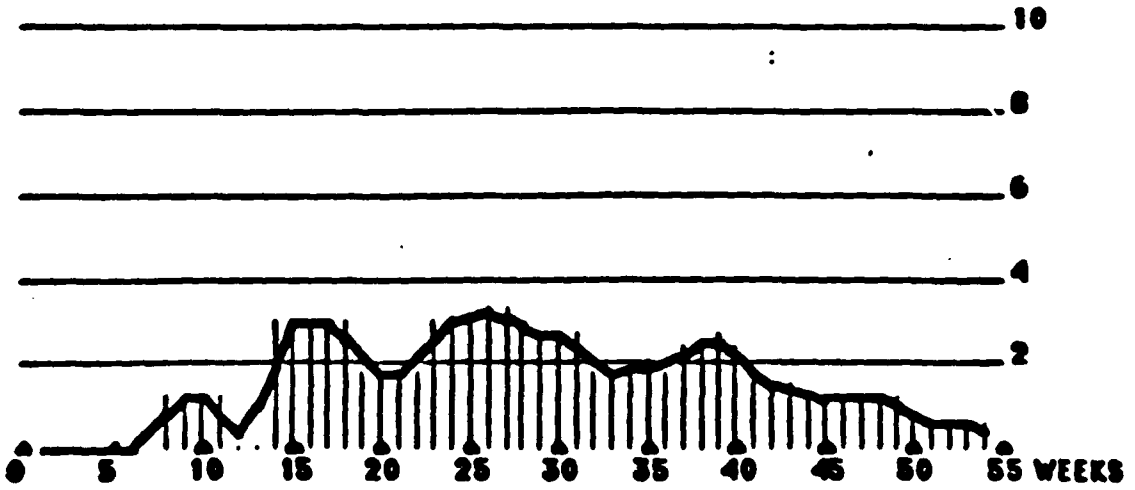
MANEUVER AREA



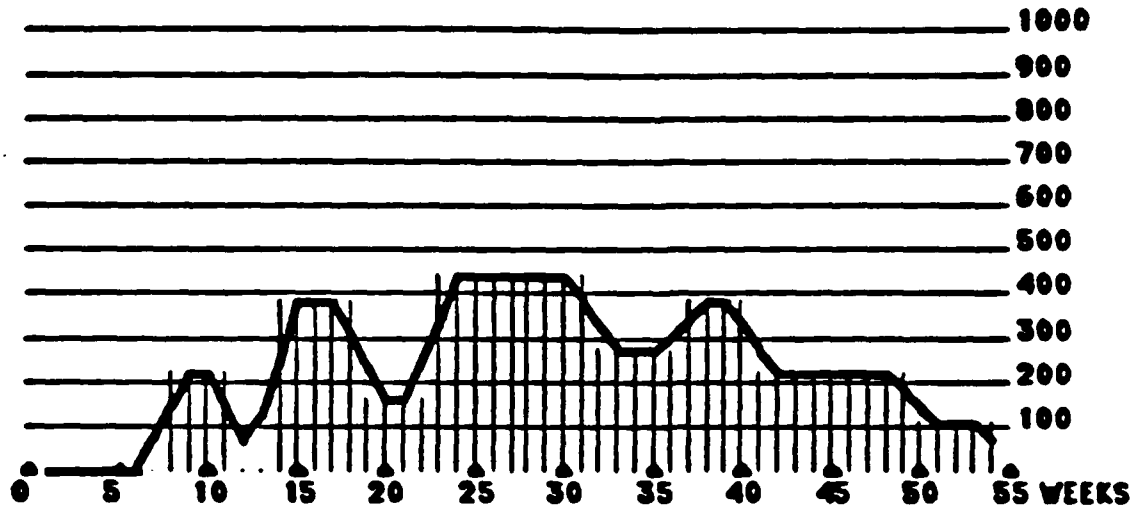
OPFOR



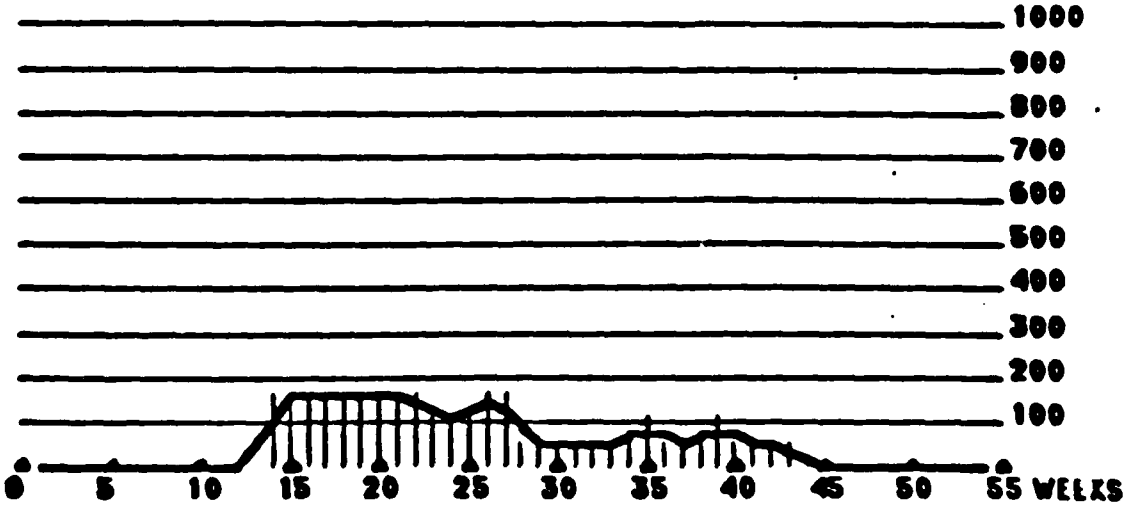
TEAM TRAINER



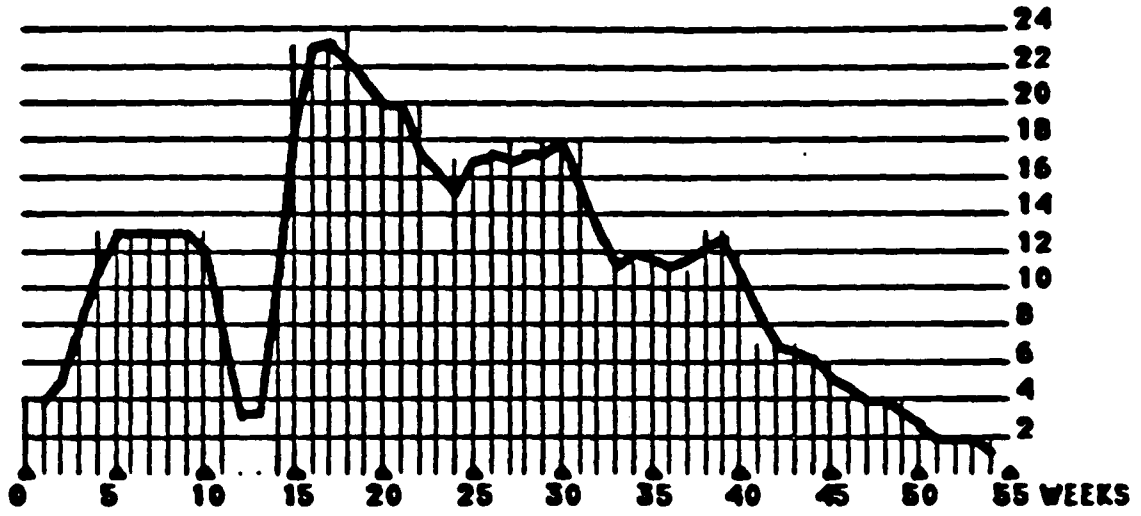
SCAT FLYING HOURS



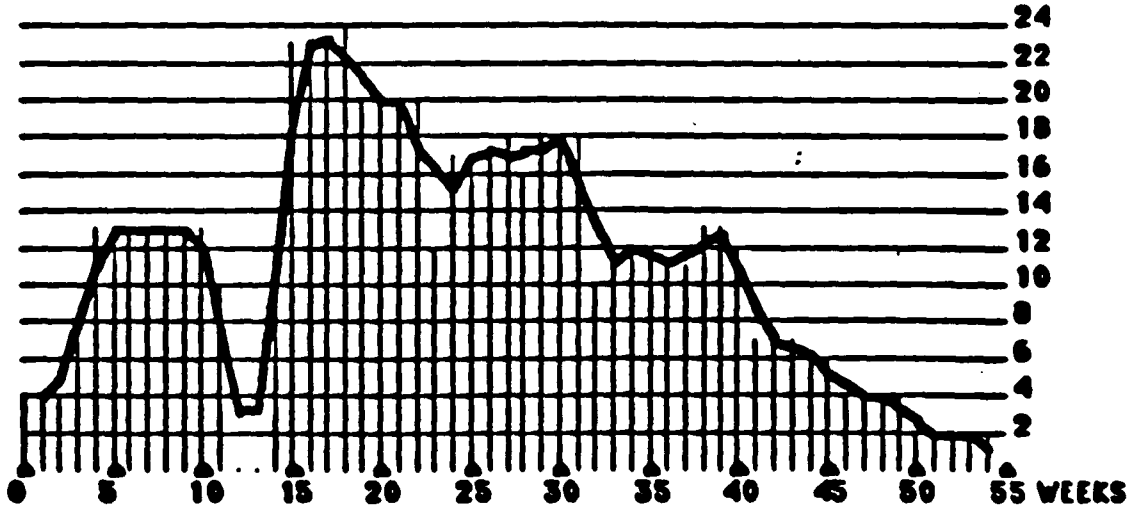
UTILITY FLYING HOURS



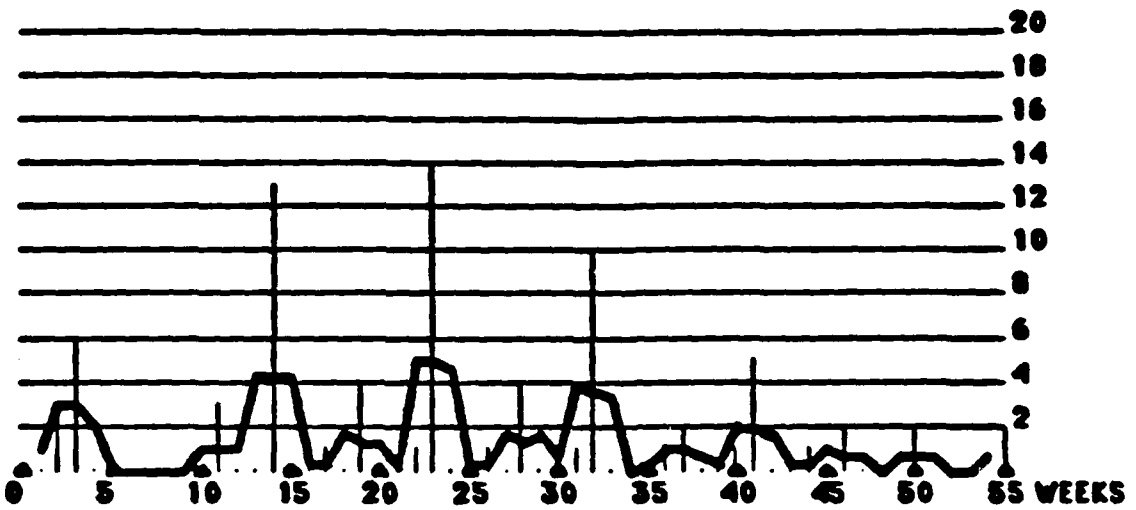
EXTERNAL AIRCRAFT



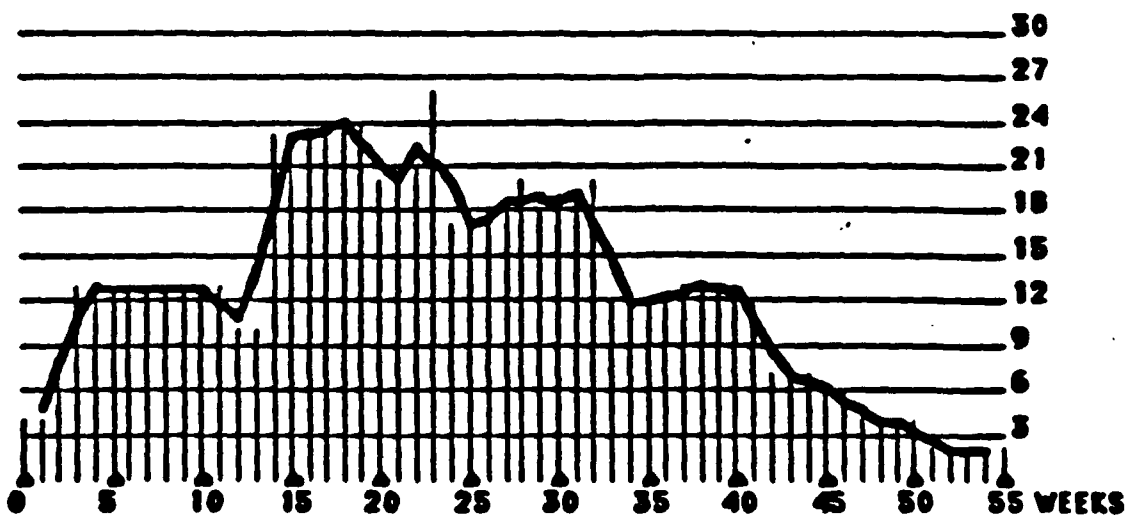
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE

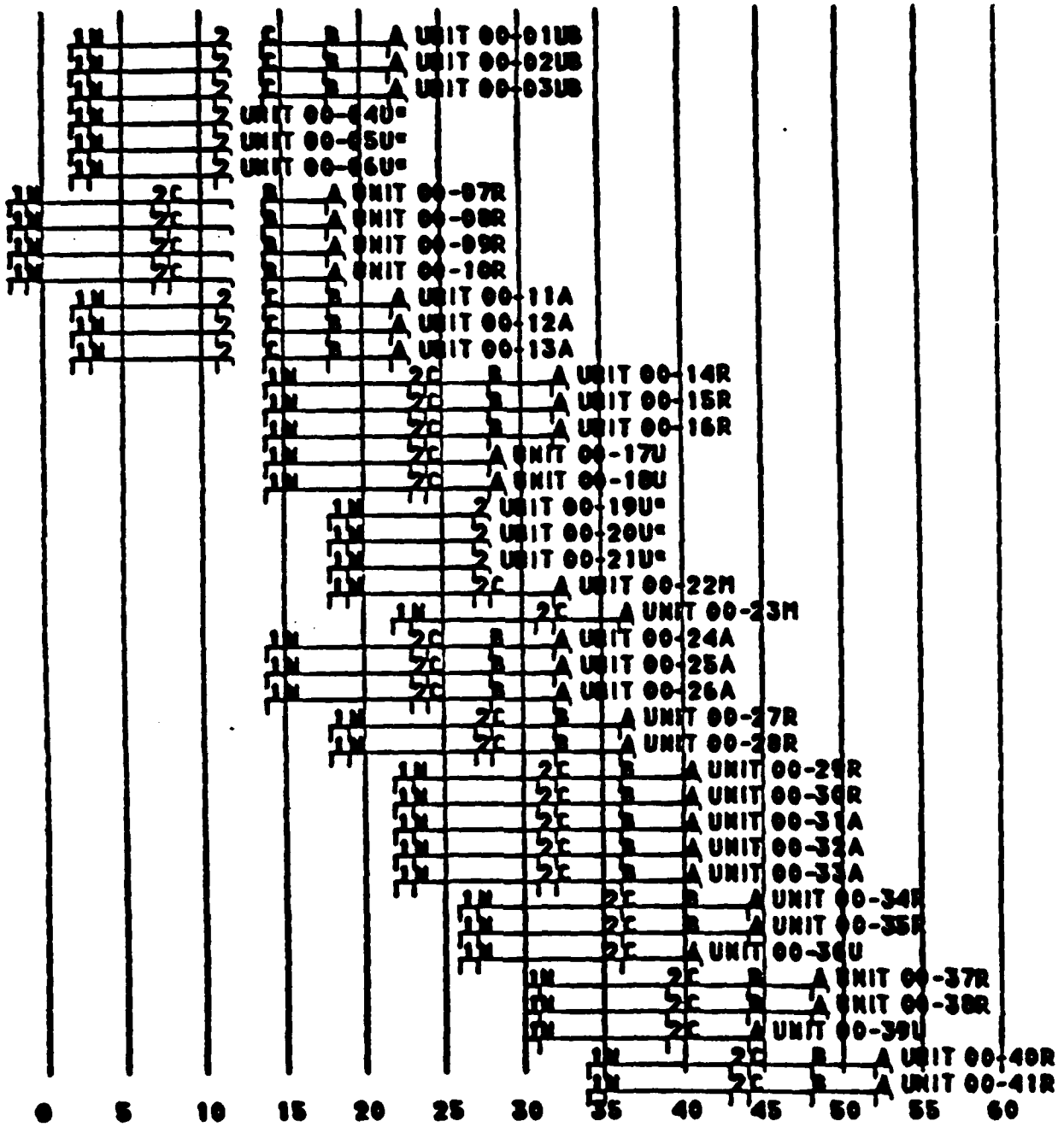


DOWNTIME



TRAINING ALTERNATIVE 3

TRAINING SCHEDULE

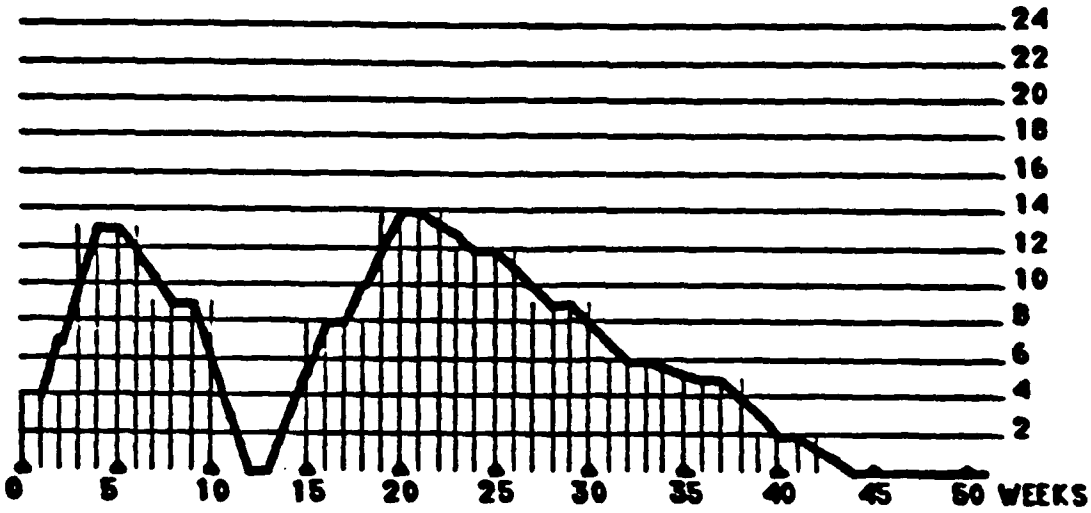


UNIT TRAINING TIMES

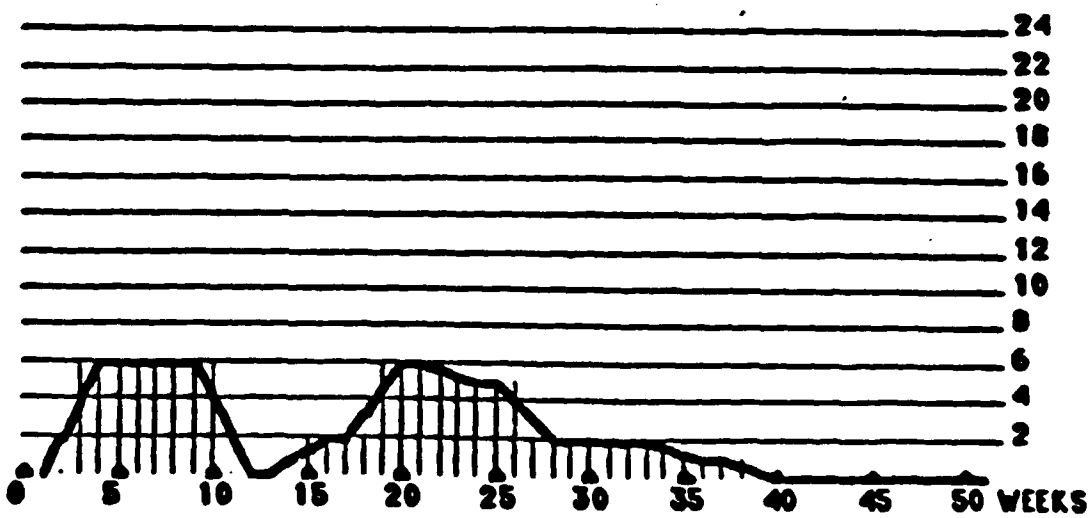
Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	23	21
UNIT 00-02UB	2	23	21
UNIT 00-03UB	2	23	21
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-2	19	21
UNIT 00-08R	-2	19	21
UNIT 00-09R	-2	19	21
UNIT 00-10R	-2	19	21
UNIT 00-11A	2	23	21
UNIT 00-12A	2	23	21
UNIT 00-13A	2	23	21
UNIT 00-14R	14	33	19
UNIT 00-15R	14	33	19
UNIT 00-16R	14	33	19
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	18	28	10
UNIT 00-20U*	18	28	10
UNIT 00-21U*	18	28	10
UNIT 00-22M	18	33	15
UNIT 00-23M	22	37	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	18	37	19
UNIT 00-28R	18	37	19
UNIT 00-29R	22	41	19
UNIT 00-30R	22	41	19
UNIT 00-31A	22	41	19
UNIT 00-32A	22	41	19
UNIT 00-33A	22	41	19
UNIT 00-34R	26	45	19
UNIT 00-35R	26	45	19
UNIT 00-36U	26	41	15
UNIT 00-37R	30	49	19
UNIT 00-38R	30	49	19
UNIT 00-39U	30	45	15
UNIT 00-40R	34	53	19
UNIT 00-41R	34	53	19

Average unit training time is 17.6 weeks.
Time required for 50% of the units to complete training is 32.2 weeks.

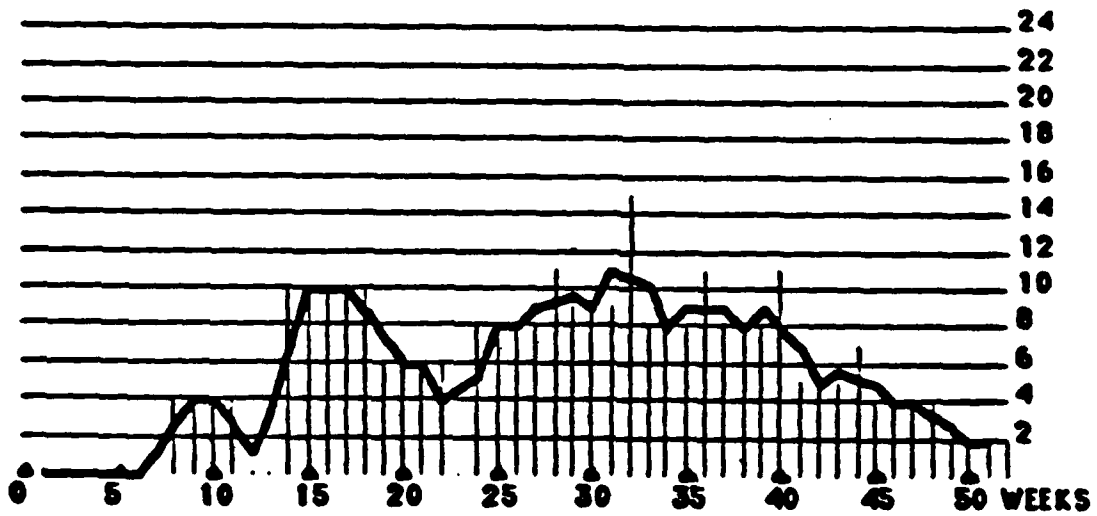
AERIAL GUNNERY RANGE



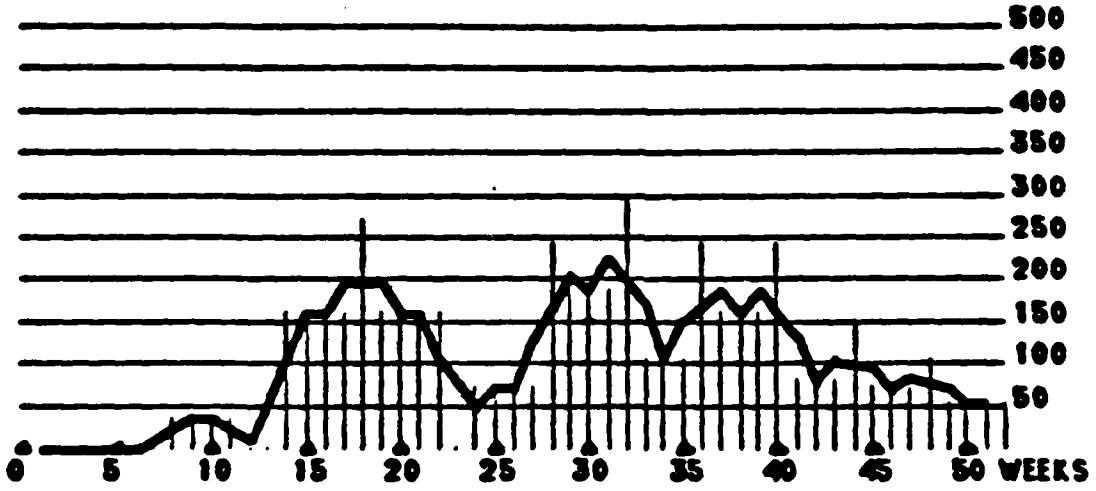
DOOR GUNNERY RANGE



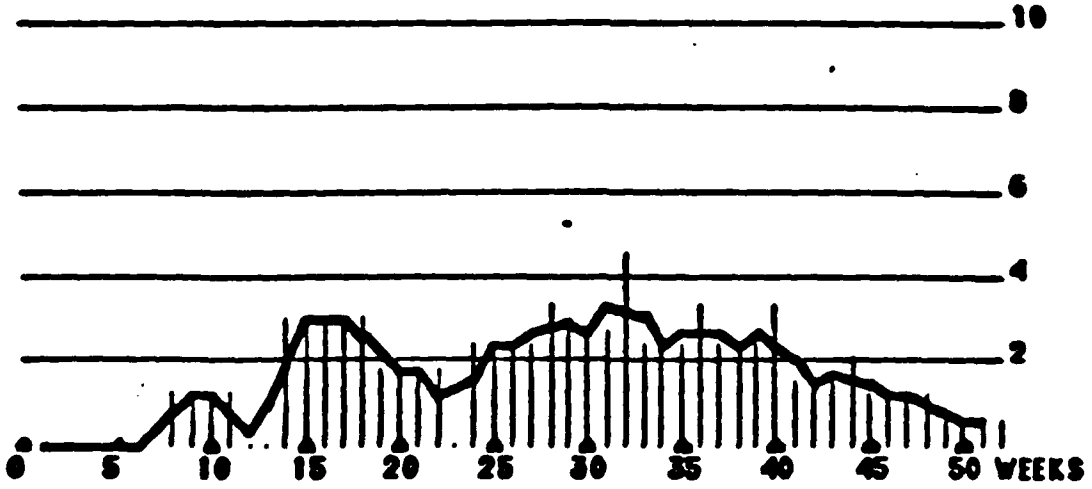
MANEUVER AREA



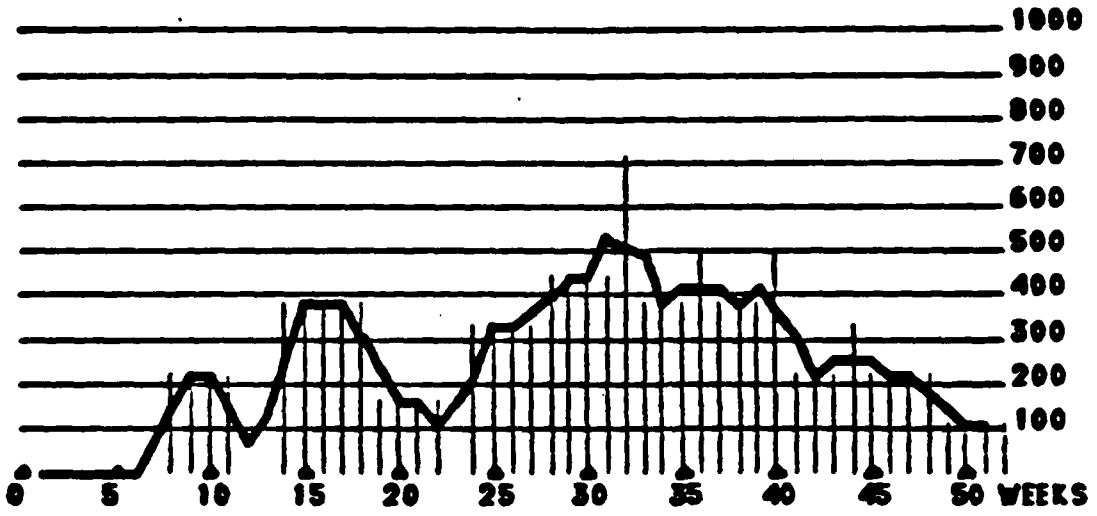
OPFOR



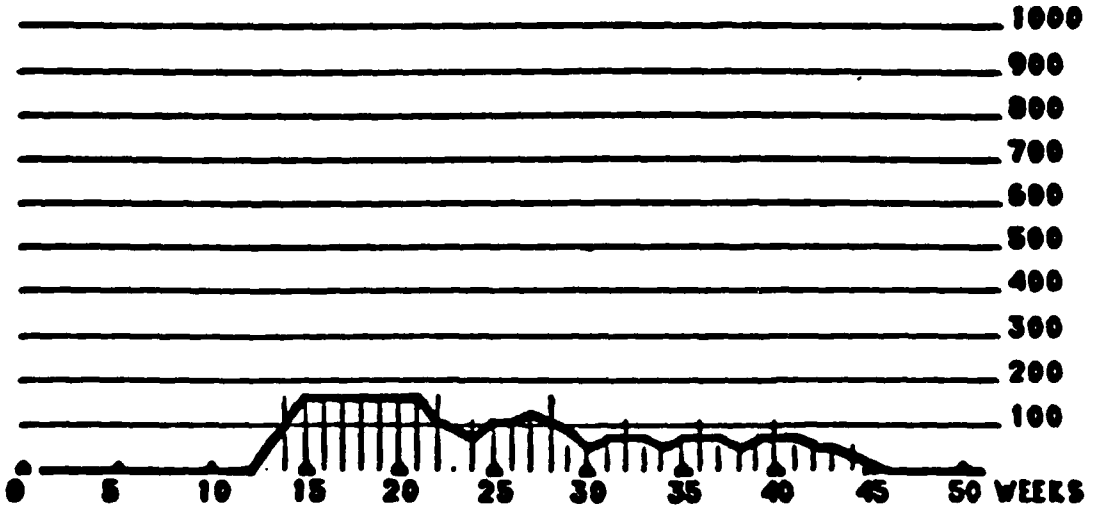
TEAM TRAINER



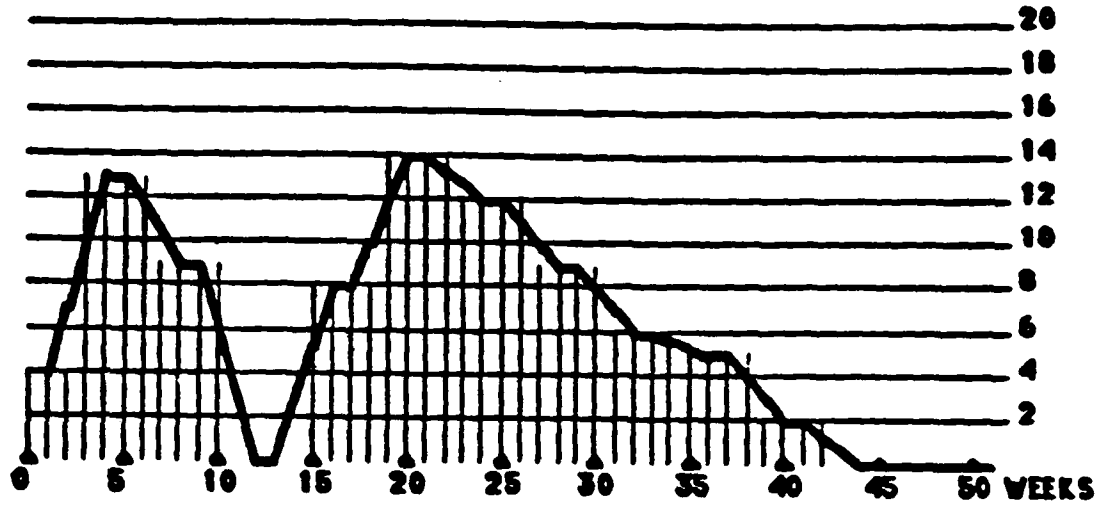
SCAT FLYING HOURS



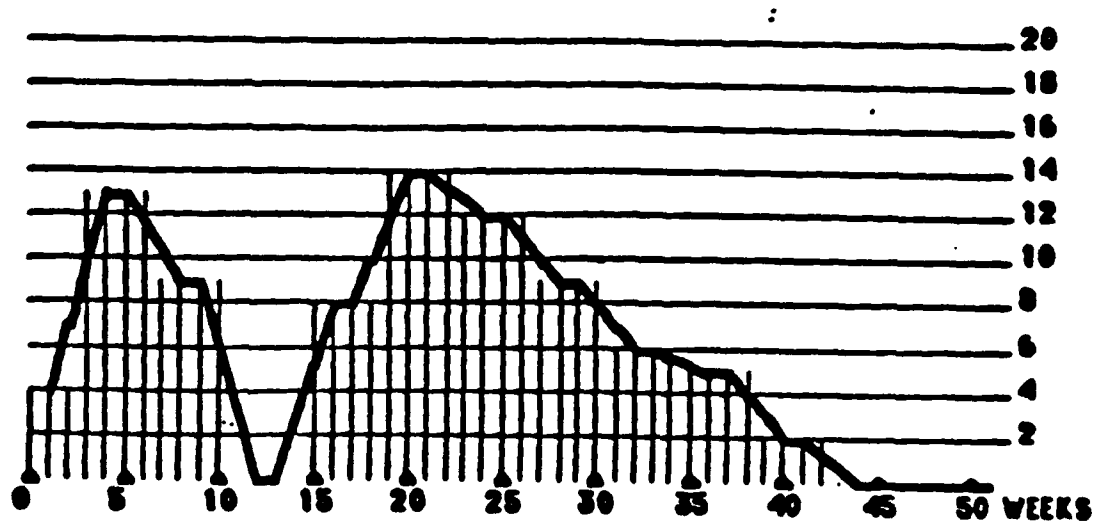
UTILITY FLYING HOURS



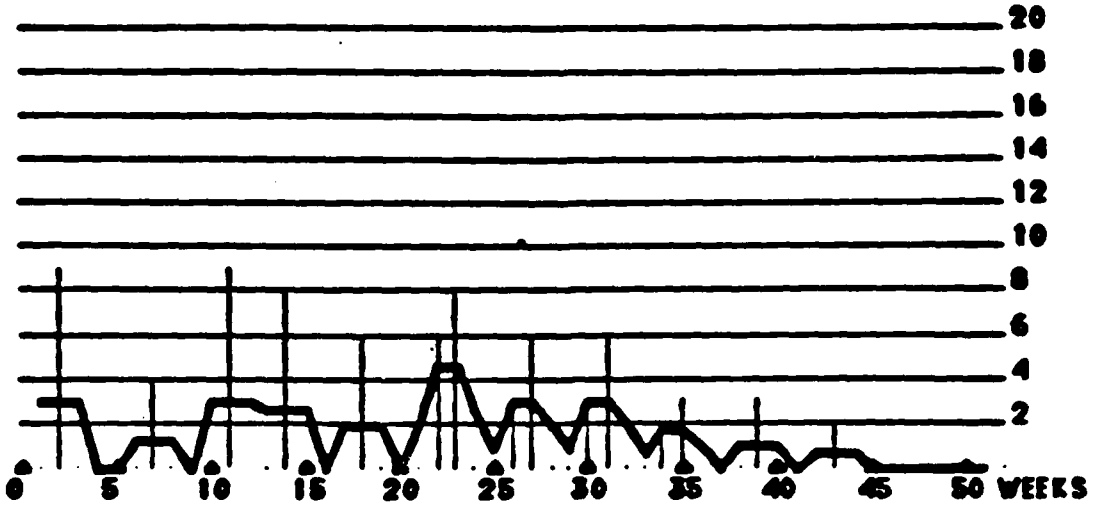
EXTERNAL AIRCRAFT



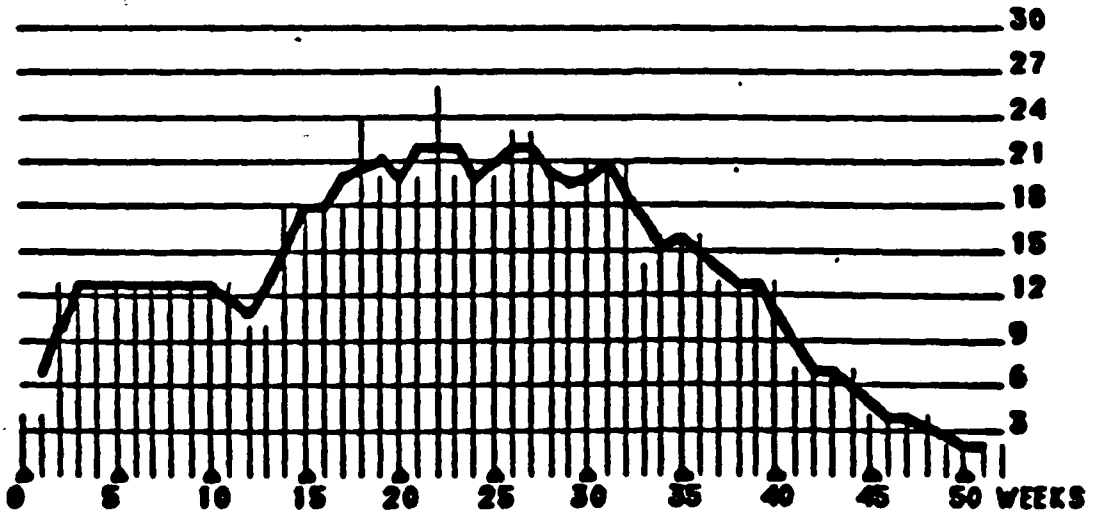
EXTERNAL TOE EQUIPMENT



ADMINISTRATIVE



DOWNTIME



Appendix C

Alternative 1 Training Schedules

Appendix C contains training schedules for the selected Alternative 1 for each year[1] of LHX fielding. Included with each training schedule are tables of unit training times and resource loading summaries.

For the purposes of this analysis, a unit is a company-sized organization. It is important to note that although all LHX unit training can be catalogued into one of the five phases, there are some units that do not undergo training in each of these phases. For example, most of LHX utility units do not perform battalion level training. Also there are two TDA (Table of Distribution and Allowances) units scheduled to receive LHX utility aircraft and these organizations only perform individual NET. These exceptions are identified with an asterisk.

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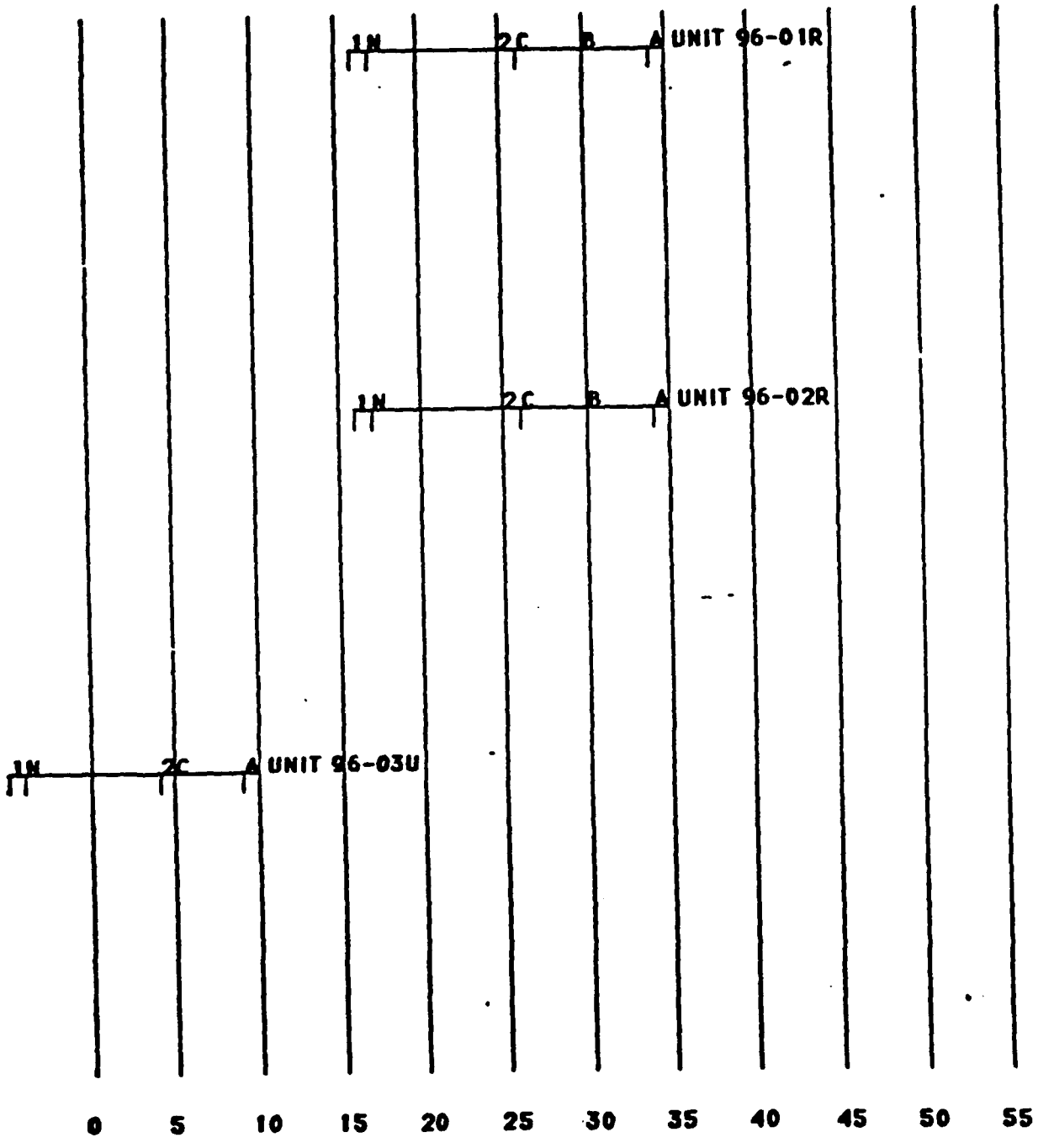
[1]For active Army units only; ending in FY 2002. There is one training schedule for ARNG units which begins in FY 2002 and continues through January 2005.

RESOURCES REQUIRED FOR FY 1995

Resource	Maximum	Total
MANEUVER AREA	0	0
CLASS/BRIEF RMS	2	8
AIR/STAGE FIELDS	1	4
GARRISON FAC	1	4
AERIAL GUN RG	1	4
DOOR GUN RANGE	1	4
ARTY GUN RANGE	1	4
OPFOR	0	0
FRIENDLY FORCES	0	0
EVALUATORS	0	0
INT SCAT TNG SYST	0	0
INT UTIL TNG SYST	1	4
MILES/AGES	0	0
DUMMY HELLFIRE	0	0
DUMMY STINGER	1	4
ATGM SYSTEM	0	0
TEAM TRAINER	0	0
ASET I	0	0
RCMAT	0	0
FLYING HRS SCAT	0	0
FLYING HRS UTIL	0	0
EXTERNAL ACFT	1	4
EXTERNAL TOE EQ	1	4
MAINTENANCE	1	4
SUPPLY CLASS IX	1	4
SUPPLY CLASS V	1	4
SUPPLY CLASS VII	1	4
ADMIN	1	1
DOWNTIME	1	5

* Resources consumed in 1995 are due to a hypothetical NET start in that year.

TRAINING SCHEDULE FOR FY 1996



UNIT TRAINING TIMES FOR FY 1996

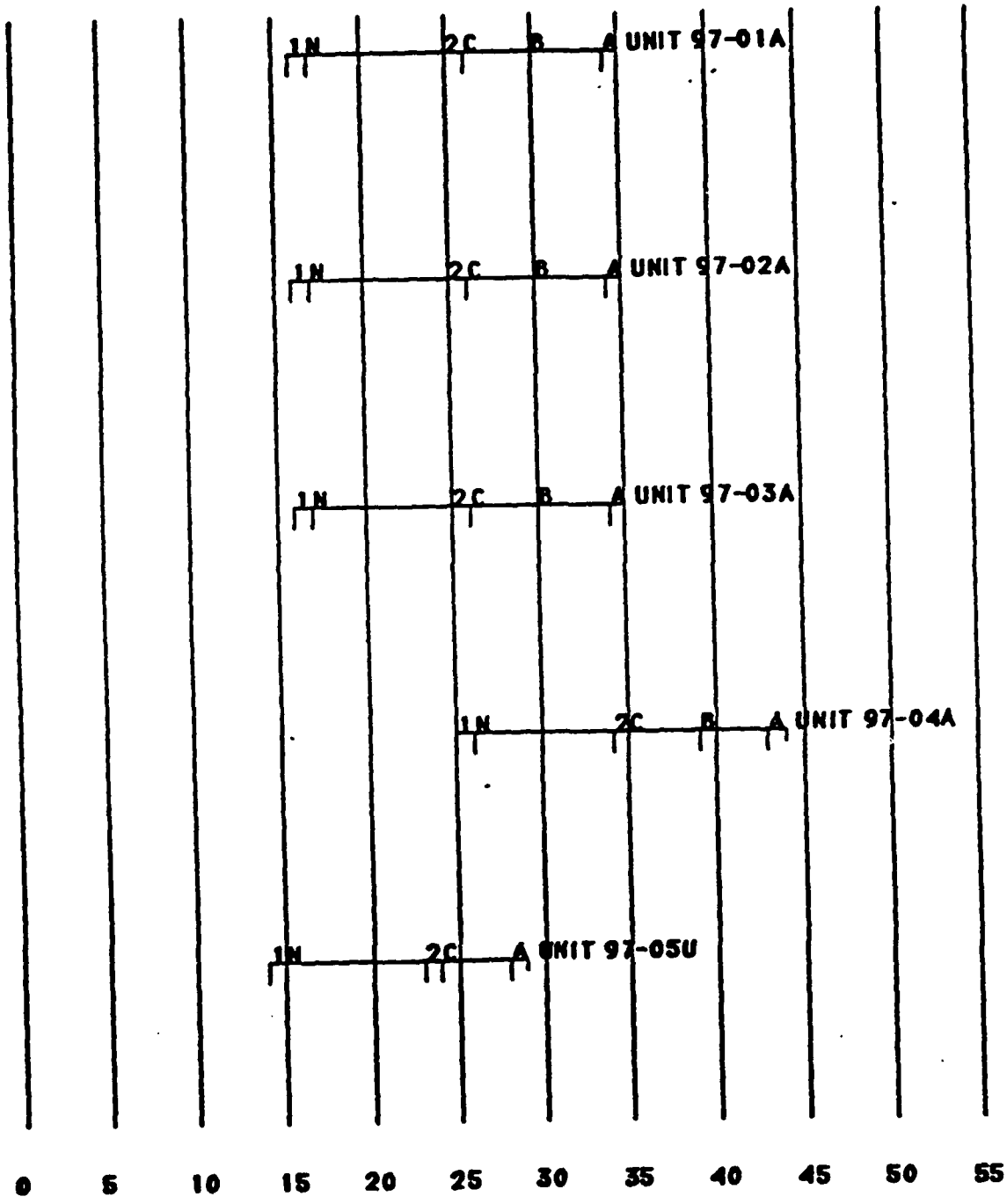
Unit	Week Start	Week End	Duration In Weeks
UNIT 96-01R	16	35	19
UNIT 96-02R	16	35	19
UNIT 96-03U	-5	10	15

Average unit training time is 17.7 weeks.
Time required for 50% of the units to complete training is 26.7 weeks.

RESOURCES REQUIRED FOR FY 1996

Resource	Maximum	Total
MANEUVER AREA	2	23
CLASS/BRIEF RMS	4	78
AIR/STAGE FIELDS	2	43
GARRISON FAC	2	20
AERIAL GUN RG	2	20
DOOR GUN RANGE	1	4
ARTY GUN RANGE	1	5
OPFOR	54	405
FRIENDLY FORCES	54	405
EVALUATORS	2	3
INT SCAT TNG SYST	6	50
INT UTIL TNG SYST	1	9
MILES/AGES	18	135
DUMMY HELLFIRE	2	16
DUMMY STINGER	2	20
ATGM SYSTEM	.6	5.4
TEAM TRAINER	.6	6.9
ASET I	0	0
RCMAT	1	5
FLYING HRS SCAT	110	990
FLYING HRS UTIL	55	275
EXTERNAL ACFT	2	20
EXTERNAL TOE EQ	2	20
MAINTENANCE	2	20
SUPPLY CLASS IX	2	20
SUPPLY CLASS V	2	20
SUPPLY CLASS VII	2	20
ADMIN	2	5
DOWNTIME	2	48

TRAINING SCHEDULE FOR FY 1997



UNIT TRAINING TIMES FOR FY 1997

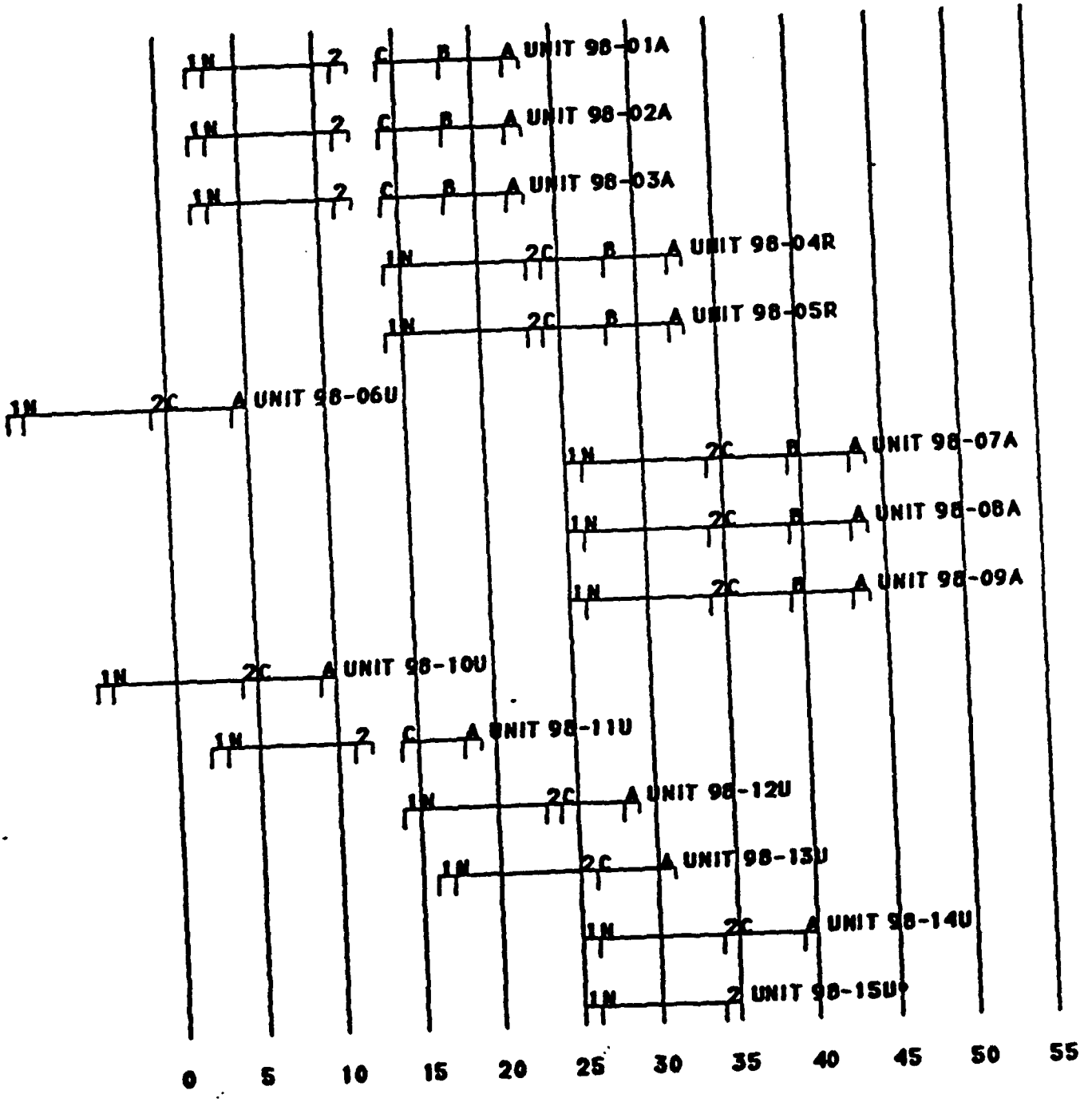
Unit	Week Start	Week End	Duration In Weeks
UNIT 97-01A	16	35	19
UNIT 97-02A	16	35	19
UNIT 97-03A	16	35	19
UNIT 97-04A	25	44	19
UNIT 97-05U	14	29	15

Average unit training time is 18.2 weeks.
Time required for 50% of the units to complete training is 35.6 weeks.

RESOURCES REQUIRED FOR FY 1997

Resource	Maximum	Total
MANEUVER AREA	4	41
CLASS/BRIEF RMS	10	178
AIR/STAGE FIELDS	5	93
GARRISON FAC	4	52
AERIAL GUN RG	4	52
DOOR GUN RANGE	2	20
ARTY GUN RANGE	2	21
OPFOR	81	747
FRIENDLY FORCES	81	747
EVALUATORS	3	5
INT SCAT TNG SYST	10	100
INT UTIL TNG SYST	2	25
MILES/AGES	27	249
DUMMY HELLFIRE	3	32
DUMMY STINGER	4	52
ATGM SYSTEM	.9	10.8
TEAM TRAINER	1.2	12.3
ASET I	0	0
RCMAT	1	5
FLYING HRS SCAT	165	1980
FLYING HRS UTIL	55	275
EXTERNAL ACFT	4	52
EXTERNAL TOE EQ	4	52
MAINTENANCE	4	52
SUPPLY CLASS IX	4	52
SUPPLY CLASS V	4	52
SUPPLY CLASS VII	4	52
ADMIN	4	13
DOWNTIME	5	101

TRAINING SCHEDULE FOR FY 1998



UNIT TRAINING TIMES FOR FY 1998

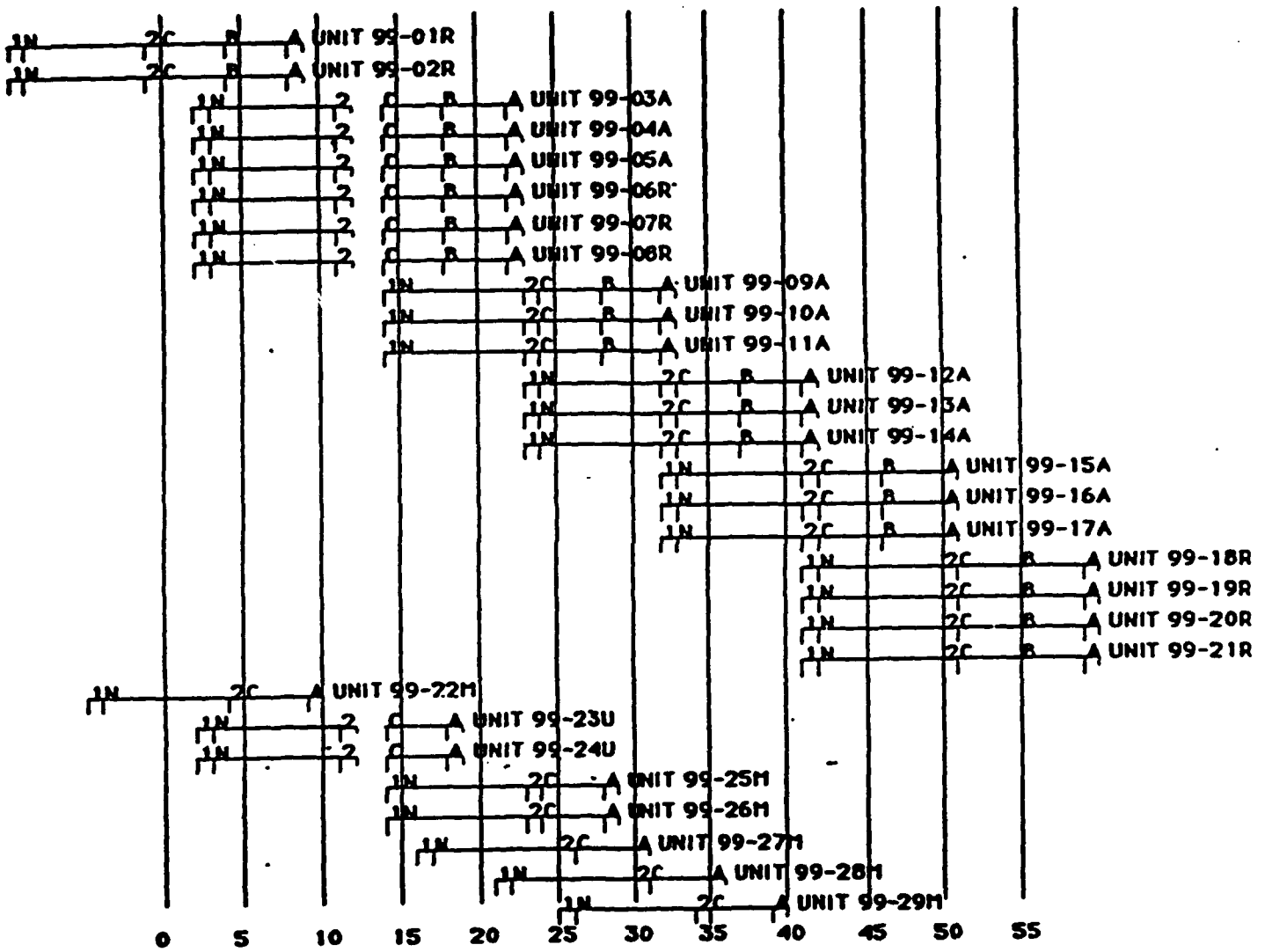
Unit	Week Start	Week End	Duration In weeks
UNIT 98-01A	2	23	21
UNIT 98-02A	2	23	21
UNIT 98-03A	2	23	21
UNIT 98-04R	14	33	19
UNIT 98-05R	14	33	19
UNIT 98-06U	-10	5	15
UNIT 98-07A	25	44	19
UNIT 98-08A	25	44	19
UNIT 98-09A	25	44	19
UNIT 98-10U	-5	10	15
UNIT 98-11U	2	19	17
UNIT 98-12U	14	29	15
UNIT 98-13U	16	31	15
UNIT 98-14U	25	40	15
UNIT 98-15U*	25	35	10

Average unit training time is 17.3 weeks.
Time required for 50% of the units to complete training is 29.1 weeks.

RESOURCES REQUIRED FOR FY 1998

Resource	Maximum	Total
MANEUVER AREA	4	102
CLASS/BRIEF RMS	16	412
AIR/STAGE FIELDS	9	230
GARRISON FAC	5	128
AERIAL GUN RG	5	128
DOOR GUN RANGE	2	48
ARTY GUN RANGE	3	54
OPFOR	108	1746
FRIENDLY FORCES	108	1746
EVALUATORS	3	14
INT SCAT TNG SYST	11	216
INT UTIL TNG SYST	4	78
MILES/AGES	36	582
DUMMY HELLFIRE	3	80
DUMMY STINGER	5	128
ATGM SYSTEM	.9	21.6
TEAM TRAINER	1.2	30.6
ASET I	0	0
RCMAT	2	30
FLYING HRS SCAT	165	3960
FLYING HRS UTIL	110	1650
EXTERNAL ACFT	5	128
EXTERNAL TOE EQ	5	128
MAINTENANCE	5	128
SUPPLY CLASS IX	5	128
SUPPLY CLASS V	5	128
SUPPLY CLASS VII	5	128
ADMIN	6	32
DOWNTIME	9	260

TRAINING SCHEDULE FOR FY 1999



UNIT TRAINING TIMES FOR FY 1999

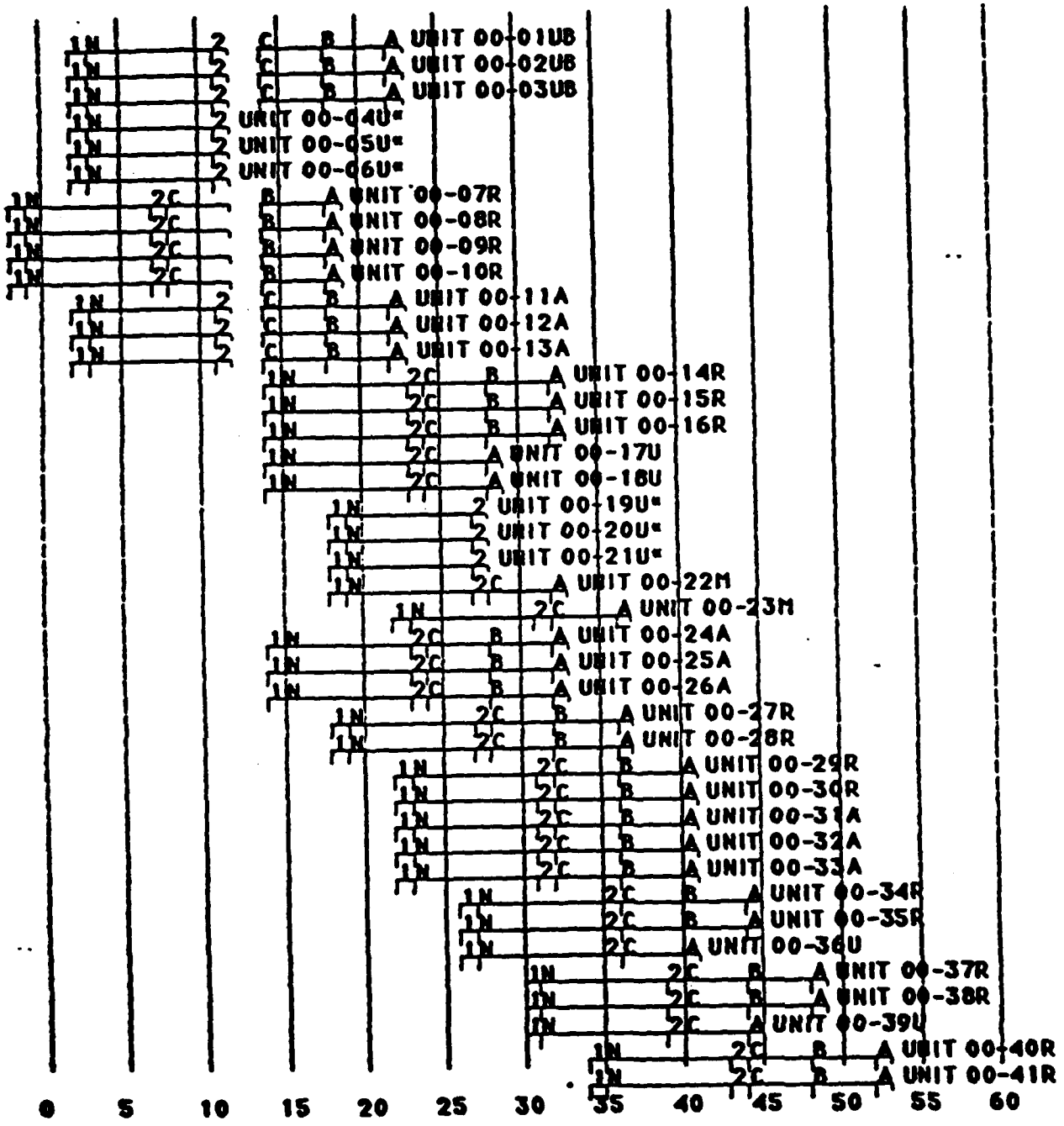
Unit	Week Start	Week End	Duration In Weeks
UNIT 99-01R	-10	9	19
UNIT 99-02R	-10	9	19
UNIT 99-03A	2	23	21
UNIT 99-04A	2	23	21
UNIT 99-05A	2	23	21
UNIT 99-06R	2	23	21
UNIT 99-07R	2	23	21
UNIT 99-08R	2	23	21
UNIT 99-09A	14	33	19
UNIT 99-10A	14	33	19
UNIT 99-11A	14	33	19
UNIT 99-12A	23	42	19
UNIT 99-13A	23	42	19
UNIT 99-14A	23	42	19
UNIT 99-15A	32	51	19
UNIT 99-16A	32	51	19
UNIT 99-17A	32	51	19
UNIT 99-18R	41	60	19
UNIT 99-19R	41	60	19
UNIT 99-20R	41	60	19
UNIT 99-21R	41	60	19
UNIT 99-22M	-5	10	15
UNIT 99-23U	2	19	17
UNIT 99-24U	2	19	17
UNIT 99-25M	14	29	15
UNIT 99-26M	14	29	15
UNIT 99-27M	16	31	15
UNIT 99-28M	21	36	15
UNIT 99-29M	25	40	15

Average unit training time is 18.4 weeks.
Time required for 50% of the units to complete training is 34 weeks.

RESOURCES REQUIRED FOR FY 1999

Resource	Maximum	Total
MANEUVER AREA	8	197
CLASS/BRIEF RMS	28	762
AIR/STAGE FIELDS	14	413
GARRISON FAC	9	216
AERIAL GUN RG	9	216
DOOR GUN RANGE	4	60
ARTY GUN RANGE	5	68
OPFOR	216	3447
FRIENDLY FORCES	216	3447
EVALUATORS	6	25
INT SCAT TNG SYST	21	449
INT UTIL TNG SYST	5	100
MILES/AGES	72	1149
DUMMY HELLFIRE	6	156
DUMMY STINGER	9	216
ATGM SYSTEM	1.8	47.1
TEAM TRAINER	2.4	59.1
ASET I	0	0
RCMAT	3	40
FLYING HRS SCAT	330	8635
FLYING HRS UTIL	165	2200
EXTERNAL ACFT	9	216
EXTERNAL TOE PQ	9	216
MAINTENANCE	9	216
SUPPLY CLASS IX	9	216
SUPPLY CLASS V	9	216
SUPPLY CLASS VII	9	216
ADMIN	8	57
DOWNTIME	14	480

TRAINING SCHEDULE FOR FY 2000



UNIT TRAINING TIMES FOR FY 2000

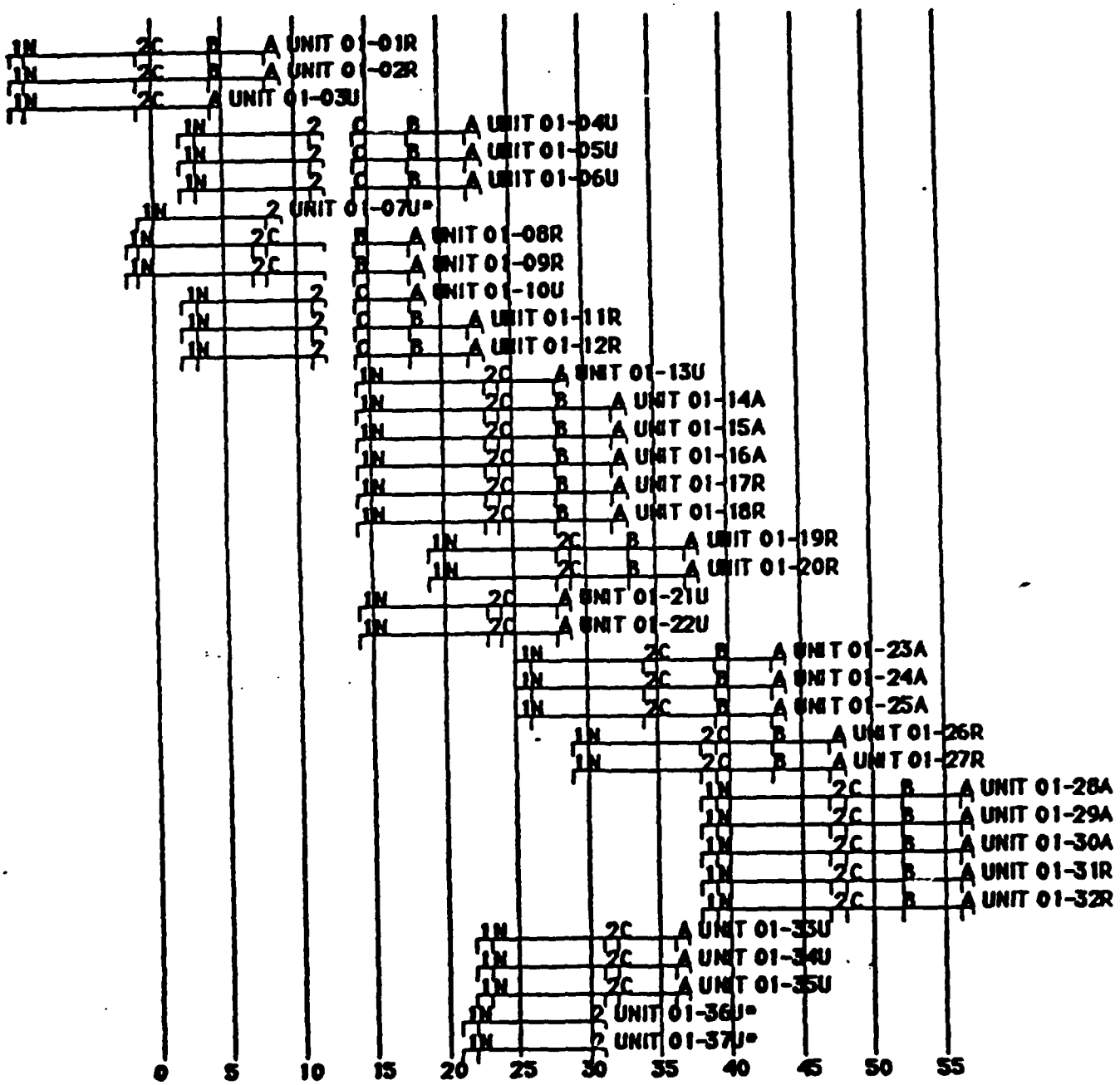
Unit	Week Start	Week End	Duration In Weeks
UNIT 00-01UB	2	23	21
UNIT 00-02UB	2	23	21
UNIT 00-03UB	2	23	21
UNIT 00-04U*	2	12	10
UNIT 00-05U*	2	12	10
UNIT 00-06U*	2	12	10
UNIT 00-07R	-2	19	21
UNIT 00-08R	-2	19	21
UNIT 00-09R	-2	19	21
UNIT 00-10R	-2	19	21
UNIT 00-11A	2	23	21
UNIT 00-12A	2	23	21
UNIT 00-13A	2	23	21
UNIT 00-14R	14	33	19
UNIT 00-15R	14	33	19
UNIT 00-16R	14	33	19
UNIT 00-17U	14	29	15
UNIT 00-18U	14	29	15
UNIT 00-19U*	18	28	10
UNIT 00-20U*	18	28	10
UNIT 00-21U*	18	28	10
UNIT 00-22M	18	33	15
UNIT 00-23M	22	37	15
UNIT 00-24A	14	33	19
UNIT 00-25A	14	33	19
UNIT 00-26A	14	33	19
UNIT 00-27R	18	37	19
UNIT 00-28R	18	37	19
UNIT 00-29R	22	41	19
UNIT 00-30R	22	41	19
UNIT 00-31A	22	41	19
UNIT 00-32A	22	41	19
UNIT 00-33A	22	41	19
UNIT 00-34R	26	45	19
UNIT 00-35R	26	45	19
UNIT 00-36U	26	41	15
UNIT 00-37R	30	49	19
UNIT 00-38R	30	49	19
UNIT 00-39U	30	45	15
UNIT 00-40R	34	53	19
UNIT 00-41R	34	53	19

Average unit training time is 17.6 weeks.
Time required for 50% of the units to complete training is 32.2 weeks.

RESOURCES REQUIRED FOR FY 2000

Resource	Maximum	Total
MANEUVER AREA	15	323
CLASS/BRIEF RMS	40	1274
AIR/STAGE FIELDS	21	673
GARRISON FAC	14	350
AERIAL GUN RG	14	350
DOOR GUN RANGE	6	128
ARTY GUN RANGE	9	149
OPFOR	297	5985
FRIENDLY FORCES	297	5985
EVALUATORS	7	39
INT SCAT TNG SYST	27	728
INT UTIL TNG SYST	9	185
MILES/AGES	99	1995
DUMMY HELLFIRE	8	222
DUMMY STINGER	14	350
ATGM SYSTEM	3.9	79.8
TEAM TRAINER	4.5	96.9
ASET I	0	0
RCMAT	3	57
FLYING HRS SCAT	715	14630
FLYING HRS UTIL	165	3135
EXTERNAL ACFT	14	350
EXTERNAL TOE EQ	14	350
MAINTENANCE	14	350
SUPPLY CLASS IX	14	350
SUPPLY CLASS V	14	350
SUPPLY CLASS VII	14	350
ADMIN	9	87
DOWNTIME	26	766

TRAINING SCHEDULE FOR FY 2001



UNIT TRAINING TIMES FOR FY 2001

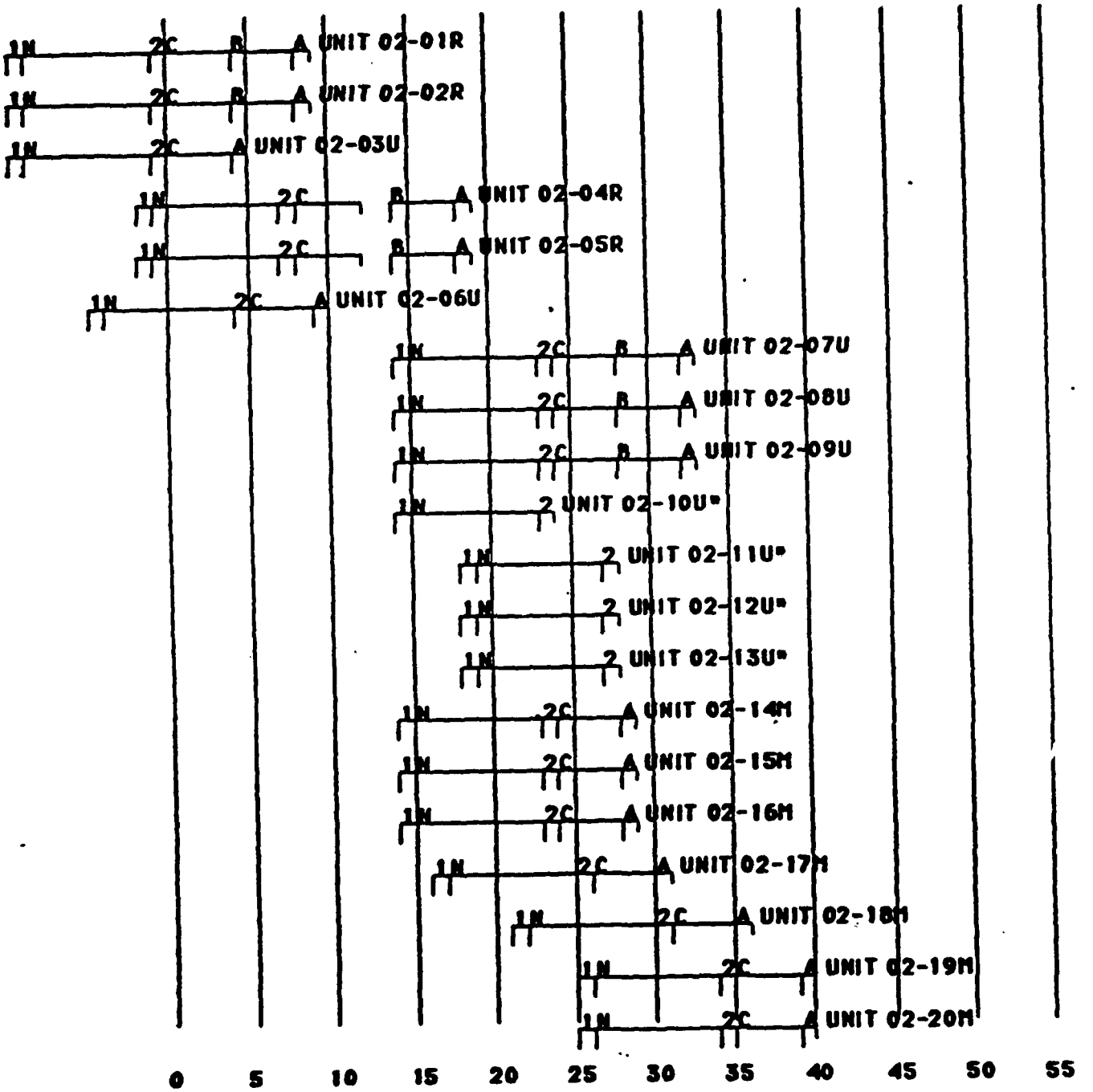
Unit	Week Start	Week End	Duration In Weeks
UNIT 01-01R	-10	9	19
UNIT 01-02R	-10	9	19
UNIT 01-03U	-10	5	15
UNIT 01-04U	2	23	21
UNIT 01-05U	2	23	21
UNIT 01-06U	2	23	21
UNIT 01-07U*	-1	9	10
UNIT 01-08R	-2	19	21
UNIT 01-09R	-2	19	21
UNIT 01-10U	2	19	17
UNIT 01-11R	2	23	21
UNIT 01-12R	2	23	21
UNIT 01-13U	14	29	15
UNIT 01-14A	14	33	19
UNIT 01-15A	14	33	19
UNIT 01-16A	14	33	19
UNIT 01-17R	14	33	19
UNIT 01-18R	14	33	19
UNIT 01-19R	19	38	19
UNIT 01-20R	19	38	19
UNIT 01-21U	14	29	15
UNIT 01-22U	14	29	15
UNIT 01-23A	25	44	19
UNIT 01-24A	25	44	19
UNIT 01-25A	25	44	19
UNIT 01-26R	29	48	19
UNIT 01-27R	29	48	19
UNIT 01-28A	38	57	19
UNIT 01-29A	38	57	19
UNIT 01-30A	38	57	19
UNIT 01-31R	38	57	19
UNIT 01-32R	38	57	19
UNIT 01-33U	22	37	15
UNIT 01-34U	22	37	15
UNIT 01-35U	22	37	15
UNIT 01-36U*	21	31	10
UNIT 01-37U*	21	31	10

Average unit training time is 17.8 weeks.
Time required for 50% of the units to complete training is 32.9 weeks.

RESOURCES REQUIRED FOR FY 2001

Resource	Maximum	Total
MANEUVER AREA	10	249
CLASS/BRIEF RMS	34	1010
AIR/STAGE FIELDS	18	549
GARRISON FAC	12	300
AERIAL GUN RG	12	300
DOOR GUN RANGE	5	116
ARTY GUN RANGE	8	139
OPFOR	216	4275
FRIENDLY FORCES	216	4275
EVALUATORS	5	29
INT SCAT TNG SYST	22	510
INT UTIL TNG SYST	8	183
MILES/AGES	72	1425
DUMMY HELLFIRE	7	184
DUMMY STINGER	12	300
ATGM SYSTEM	2.1	54.6
TEAM TRAINER	3	74.7
ASET I	0	0
RCMAT	4	67
FLYING HRS SCAT	385	10010
FLYING HRS UTIL	220	3685
EXTERNAL ACFT	12	300
EXTERNAL TOE EQ	12	300
MAINTENANCE	12	300
SUPPLY CLASS IX	12	300
SUPPLY CLASS V	12	300
SUPPLY CLASS VII	12	300
ADMIN	8	74
DOWNTIME	20	620

TRAINING SCHEDULE FOR ACTIVE UNITS FOR FY 2002



UNIT TRAINING TIMES FOR ACTIVE UNITS FOR FY 2002

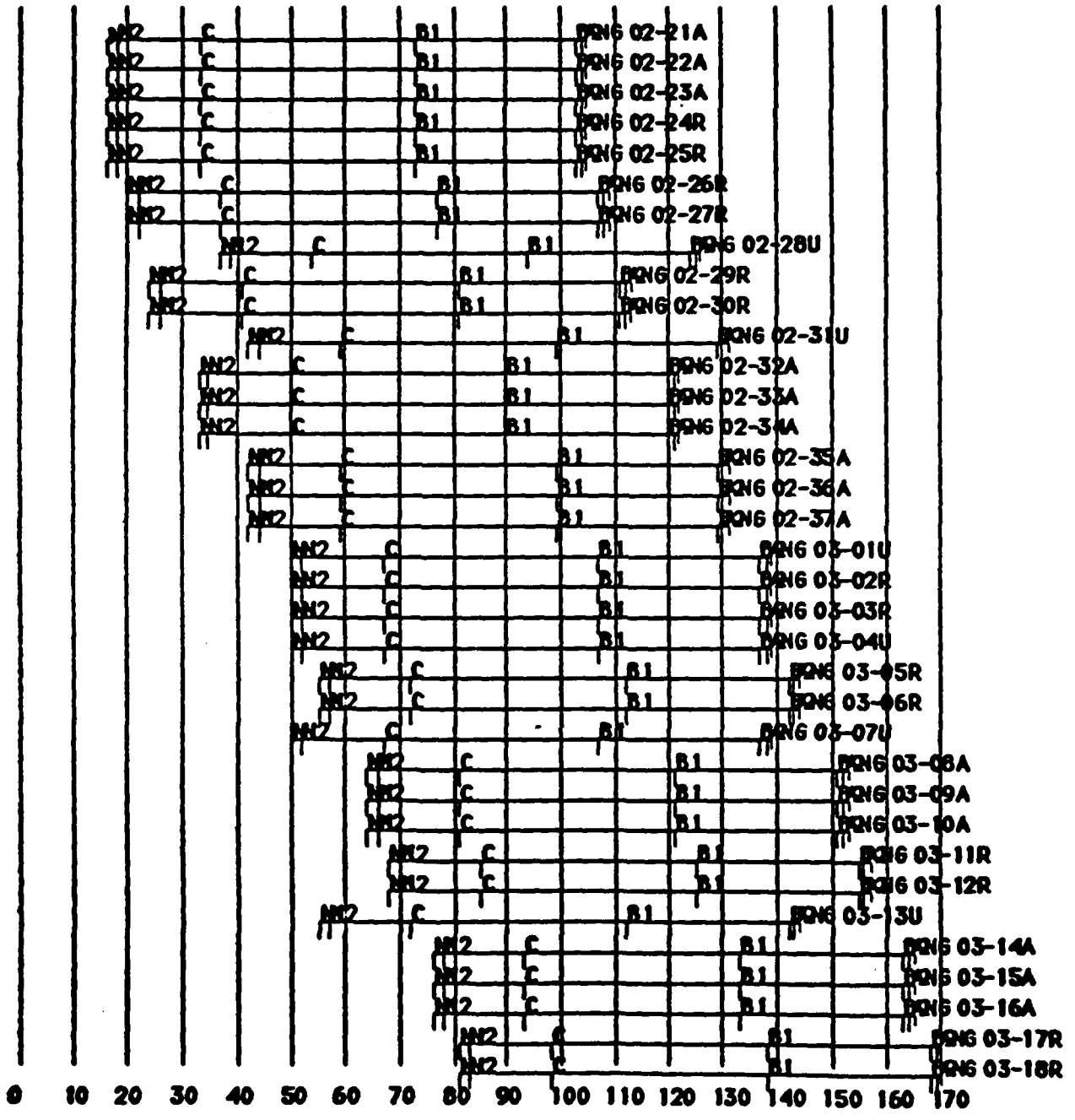
Unit	Week Start	Week End	Duration In Weeks
UNIT 02-01R	-10	9	19
UNIT 02-02R	-10	9	19
UNIT 02-03U	-10	5	15
UNIT 02-04R	-2	19	21
UNIT 02-05R	-2	19	21
UNIT 02-06U	-5	10	15
UNIT 02-07U	14	33	19
UNIT 02-08U	14	33	19
UNIT 02-09U	14	33	19
UNIT 02-10U*	14	24	10
UNIT 02-11U*	18	28	10
UNIT 02-12U*	18	28	10
UNIT 02-13U*	18	28	10
UNIT 02-14M	14	29	15
UNIT 02-15M	14	29	15
UNIT 02-16M	14	29	15
UNIT 02-17M	16	31	15
UNIT 02-18M	21	36	15
UNIT 02-19M	25	40	15
UNIT 02-20M	25	40	15

Average unit training time is 15.6 weeks.
Time required for 50% of the units to complete training is 25.6 weeks.

RESOURCES REQUIRED FOR ACTIVE UNITS FOR FY 2002

Resource	Maximum	Total
MANEUVER AREA	8	133
CLASS/BRIEF RMS	24	430
AIR/STAGE FIELDS	13	263
GARRISON FAC	12	130
AERIAL GUN RG	12	130
DOOR GUN RANGE	12	116
ARTY GUN RANGE	12	140
OPFOR	216	2439
FRIENDLY FORCES	216	2439
EVALUATORS	6	21
INT SCAT TNG SYST	19	147
INT UTIL TNG SYST	13	188
MILES/AGES	72	813
DUMMY HELLFIRE	2	14
DUMMY STINGER	12	130
ATGM SYSTEM	2.1	18.3
TEAM TRAINER	2.4	39.9
ASET I	0	0
RCMAT	7	72
FLYING HRS SCAT	385	3355
FLYING HRS UTIL	385	3960
EXTERNAL ACFT	12	130
EXTERNAL TOE EQ	12	130
MAINTENANCE	12	130
SUPPLY CLASS IX	12	130
SUPPLY CLASS V	12	130
SUPPLY CLASS VII	12	130
ADMIN	7	31
DOWNTIME	13	298

TRAINING SCHEDULE FOR ARNG UNITS BEGINNING IN FY 2002



UNIT TRAINING TIMES FOR ARNG UNITS BEGINNING IN FY 2002

Unit	Week Start	Week End	Duration In Weeks
NG 02-21A	16	105	89
NG 02-22A	16	105	89
NG 02-23A	16	105	89
NG 02-24R	16	105	89
NG 02-25R	16	105	89
NG 02-26R	20	109	89
NG 02-27R	20	109	89
NG 02-28U	37	126	89
NG 02-29R	24	113	89
NG 02-30R	24	113	89
NG 02-31U	42	131	89
NG 02-32A	33	122	89
NG 02-33A	33	122	89
NG 02-34A	33	122	89
NG 02-35A	42	131	89
NG 02-36A	42	131	89
NG 02-37A	42	131	89
NG 03-01U	50	139	89
NG 03-02R	50	139	89
NG 03-03R	50	139	89
NG 03-04U	50	139	89
NG 03-05R	55	144	89
NG 03-06R	55	144	89
NG 03-07U	50	139	89
NG 03-08A	64	153	89
NG 03-09A	64	153	89
NG 03-10A	64	153	89
NG 03-11R	68	157	89
NG 03-12R	68	157	89
NG 03-13U	55	144	89
NG 03-14A	76	165	89
NG 03-15A	76	165	89
NG 03-16A	76	165	89
NG 03-17R	81	170	89
NG 03-18R	81	170	89

Average unit training time is 89 weeks.
Time required for 50% of the units to complete training is 134.9 weeks.