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ANALYSIS OF HISTORICAL ARTILLERY EXPENDITURES (AHART) STUDY - CY 87

JUNE 1987

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This study is an effort at assembling and analyzing a comprehensive data base of historical data for 20th century field artillery expenditures. The data base contains 3600 records. It is clearly cross-referenced with an annotated bibliography. Included in the technical report is a list of over 70 Department of Defense and Department of Army activities, surveyed during the research, for interest in using and maintaining such data. Once assembled the data was analyzed for its content and for its usefulness for making comparisons of historical data with combat simulation. Variables were defined with which to conduct the comparisons. Regession analysis was performed using the study variables to determine their capability for explaining the variability of historical artillery expenditures. In addition to the data base, the bibliography, and the list of relevant activities, the study provides a case study in the use of historical data to enhance the analysis of combat simulations.

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ANALYSIS OF HISTORICAL ARTILLERY EXPENDITURES (AHART) STUDY - CY 87

June 1987

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CAA	**AN ANALYSIS OF HISTORICAL ARTILLERY EXPENDITURES (AHART) STUDY - CY 87**	**STUDY SUMMARY CAA-TP-87-6**

THE REASONS FOR PERFORMING THE STUDY were:

(1) To conduct research into the availability of historical field artillery ammunition expenditure data and to assemble the available data into a data base.

(2) To determine if the historical data can be used for meaningful comparisons with a wartime requirements combat simulation process.

THE STUDY AUDIENCES are: analysts responsible for the conduct of wartime requirements combat simulations; decisionmakers who desire to use historical data and information in the process of determining requirements for artillery ammunition; and historians interested in deriving historical information through application of quantitative methods.

THE PRINCIPAL FINDINGS of the work are:

(1) There exists a great amount of available historical data on field artillery ammunition expenditures. The AHART data base, assembled through this study, is now available for use, wider dissemination, and enhancement.

(2) The assembled historical data provides very useful comparisons with the results of the wartime requirements combat simulation process, WARRAMP, and with other combat simulations as well.

THE MAIN ASSUMPTIONS were as follows:

(1) Historical data found in primary sources were accepted as reliable unless accompanying documentation strongly indicated otherwise. The difficulties of assembling such data under wartime conditions is acknowledged.

(2) Historical data in secondary sources not verifiable through primary sources were accepted as reliable if taken from a reasonably well-based source (i.e., government analytical agencies, military historical offices, relevant Department of the Army (DA) Staff activities).

(3) Historical information can be quantified and meaningfully subjected to quantitative analysis.

(4) Factors affecting historical artillery ammunition expenditures apply to current and future artillery ammunition expenditures.

THE PRINCIPAL LIMITATIONS which affect the findings are: the study will be limited to conventional, nondevelopmental field artillery munitions; the majority of data is limited to US data, with some British and French data for WWI; the study variables were limited to those for which historical data is available and those considered applicable to comparison with the specific combat simulation used in the study; and the study is limited to exploratory analysis of the data.

THE SCOPE OF THE STUDY

(1) The study is a pilot effort in assembling, from a multitude of fragments, a single source of data on field artillery ammunition expenditures.

(2) Using BMDP statistical software, an analysis of the data is performed. For each study variable, an evaluation is made of the applicability of the available data for comparison with combat simulation.

(3) A combat simulation process used for determination of wartime ammunition requirements is used as a vehicle for comparison with the historical data. Employing the defined study variables, numerous comparisons are made. Regression analysis is performed to determine the ability of the chosen variables to explain the variability of the historical rates and to determine the order of importance of the variables for continued research.

THE STUDY OBJECTIVES were:

(1) Assemble in data base format a set of historical data points for conventional field artillery expenditures.

(2) Define a set of variables with which to examine historical data and determine the availability of relevant data for each variable.

(3) Determine the capability of the study variables to explain historical rates.

(4) Compare historical rates with the results of the combat simulation process.

(5) Determine priorities for further research/analysis.

THE STUDY EFFORT was an in-house project at the US Army Concepts Analysis Agency. The study was performed as an individual research fellowship.

COMMENTS AND QUESTIONS may be directed to the Director, US Army Concepts Analysis Agency, ATTN: CSCA-RQ, 8120 Woodmont Avenue, Bethesda, Maryland 20814-2797.

Tear-out copies of this synopsis are at back cover.

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CHAPTER 1

INTRODUCTION

1-1. PROBLEM/BACKGROUND

a. Being able to deter war or win if war occurs is essential to the security of any nation. Readiness to do so requires continuous update of that nation's concept of deterrence and continuous update of the conditions under which combat will be assumed to take place. Requiring commensurate update are the calculations concerning resources in ammunition required to support deterrence or the decision to go to war.

b. A major component of the process of revision and update of these ammunition requirements is the computer combat simulation. Current combat simulations depict the nation's forces as complex, large-scale systems with clearly defined operational and organizational levels, each with varying degrees of detail, and each with varying forms of relationships to one another. The accuracy with which these systems and their relationships are understood and simulated is critical to accurate, meaningful revision and update of ammunition requirements.

c. Under the pressure of constrained fiscal resources for national defense, computer combat simulation has come under increasing scrutiny. This process, which once enjoyed relatively unchallenged credibility, at least among formerly computer-illiterate executives and intermediate action officers, is now challenged in various ways for its fidelity in describing the "actual situation." It is being recognized that as a system of analysis, the combat simulation process has no feedback mechanism; no means of identifying unreasonable results or making adjustments for variations in the conditions under which it can be assumed to operate properly. In an attempt to provide a feedback or control mechanism, means are being sought to "validate" or at least place the combat simulations in a meaningful, explainable context. Among the many possible means of doing so is comparison of the results of combat simulation with actual historical experience.

1-2. PURPOSE OF THE STUDY. It is the purpose of this study to determine if sufficient historical data for field artillery ammunition expenditures is available to warrant assembly into a data base. If such a data base can be assembled AHART seeks to determine if the data base is useful for comparisons with the results of theater-level wartime requirements studies. It is intended that the data base be made available to the analytic community for use in other areas of research and study.

1-3. SCOPE/LIMITATIONS/TIMEFRAME

a. Scope

(1) This study is a pilot effort in assembling from a multitude of small fragments a single source of data on field artillery ammunition expenditures. A data base is constructed around the types

of data available in historical documents. Data base fields are defined to accommodate the available data and then to facilitate comparison with combat simulations. Data analysis is performed on the data base. Then, using the results of the analysis, comparisons are made with a combat simulation process. Not by any means a validation effort, this study seeks only to place the results of a combat simulation in some reasonably defined historical context. The information derived from the study offers a measure of feedback with which analysts and decisionmakers can interpret the results of the combat simulation.

(2) Initially a more ambitious plan was envisioned, aimed at using historical data to forecast artillery expenditures. However, the amount of data available was greater than expected and required additional time and effort to assemble and properly understand. The iterative nature of statistical analysis became very evident. As more was learned about the data, more work in data analysis was called for. This report provides the results of the first iteration, that of collection and data analysis. It is expected that these results will inspire continued research into and use of this data.

b. Limitations

(1) In consideration of the limited time available for this study, this work is limited first to artillery indirect fire weapons and then to data for conventional ammunition requirements. Limiting the study to indirect fire systems immediately eliminates the many direct fire systems for which there is great, if not greater, interest relative to historical data. The limitation to conventional ammunition not only differentiates this data from nuclear and chemical munitions data but also from the many developmental improved conventional and "smart/terminally-guided" munitions.

(2) As an observational study, the work is limited to the availability of data and to the subset of data that is collected. In comparison with designed experiments, the analytical resources are likewise limited.

(3) The preponderance of the data currently in the data base is US data. This is a matter of immediate availability and prioritization of the data collection effort but should not be interpreted as a limitation of the ultimate availability of such data or even a permanent limitation on the AHART data base. Data for allied forces is available with some additional effort. Studies done in Germany, Japan, Israel, and England are available as time and effort permit.

(4) The choice of variables with which to analyze the data is limited to those which relate most directly to the computer simulation used for comparison, WARRAMP, and for which historical data seemed at the outset of the study to be available. The choice of variables should certainly be expanded in future efforts.

(5) Finally, the study is limited to exploratory analysis of the data base. Distributions of observations for each defined study

variable are examined for acceptability for use in comparison with the combat simulation. The ability of the study variables to account for variability in the data is examined providing insight into the additional data collection and subsequent analysis.

c. **Timeframe.** Because of the shift in employment of artillery from a direct to an indirect fire system following the American Civil War, this study limits the timeframe for which data was collected to the 20th century.

1-4. KEY ASSUMPTIONS/CRITICAL TERMS

a. Assumptions

(1) It is assumed that the data included in the data base is reliable. Every effort is made to include the best data available; however, the very conditions under which combat data is recorded and preserved makes completeness and accuracy in reporting extremely difficult. Determining the reliability of data is an art in itself, one true historians seek to develop with experience. Through the use of primary sources and the use of secondary sources whose authors shared the same need for reliable data, an effort is made to increase as much as possible the reliability of this data base.

(2) For the purpose of exploratory analysis, it is assumed that the distribution of each of the variables is normal. It is also assumed that the relationships among the variables are linear. These assumptions are tested during the regression analysis. Means of grouped data are examined for these assumptions and various nonlinear transformations of the data are tested.

b. Critical Terms

(1) Throughout the remainder of the study, the terms "rate" and "RTD" are key to proper understanding of the study. For the purposes of this study, the term "rate" applies to combat simulations. The term "RTD," short for rounds per tube per day applies only to historical data.

(2) A "rate" is the total number of rounds fired by artillery tubes from start to finish of a combat simulation, divided by the number of days that the simulation represents, divided again by the number of tubes placed in the input files of that simulation. This produces the number of rounds fired "on average" by a single tube. This rate is further classified as belonging to one of two possible subsets. They are either operational rates or theater rates. The difference between the two lies in the composition of the tubes used in the denominator of the calculation. If only tubes which were engaged/fired in the simulation are used in the calculation, an "operational rate" is being defined. If the entire number of tubes available to the theater force are included or in some way represented in the calculations, a "theater rate" is defined.

(3) The term RTD has a parallel definition to the term rate but is strictly used in this study to denote historical data for rounds per tube per day fired by a single tube in a single day during actual combat operations. Instead of the duration of the combat operations represented by the simulation, RTD is defined by the number of days for which the historian/logistician has aggregated the data. This is often, but not always, the duration of the battle or the length of the reporting period. Rather than the number of the tubes placed in input files, it is the total number of tubes for which the data was recorded. The distinction between operational and theater subsets remains completely intact. If the number of tubes in the denominator of the historical calculation approximates the total number of tubes in a theater of operations, it is a "theater RTD." If not, an "operational RTD" is defined.

1-5. APPROACH/METHODOLOGY

a. The study is conducted in the following sequence:

(1) Conduct a thorough literature search using Defense Technical Information Center (DTIC) and Defense Logistics Studies Information Exchange (DLSIE) data bases.

(2) Conduct interviews and request data from Department of Defense and US Army analytical, historical, scientific, and technical communities.

(3) Develop a computerized historical data base which uses commonly available microcomputers and is transferrable to mainframe computers.

(4) Develop a series of analytic routines on both micro and mainframe computers specifically for use in analysis of this data. Use commonly available statistical software packages as much as possible.

(5) Define specific variables to be used for analysis of the data base.

(6) Conduct exploratory analysis of the data base to gain insight into the defined variables and to determine the interrelationships of the variables. The exploratory analysis provides an evaluation of their order of importance in explaining the variability in the data. Exploratory analysis will include statistical description of the data, linear regression on each of the variables, multiple linear regression of the variables, and transformations of the data to determine nonlinear properties.

(7) Produce location parameters for the dependent variable, RTD, and plot them together with WARRAMP results. Make some initial comparisons of the historical data with WARRAMP rates.

(8) Present findings that result from the analysis. Include suggestions for the next steps in the process.

b. The Combat Simulation Process

(1) As a vehicle for comparison, the combat simulation process WARRAMP will be used. The acronym represents the words wartime requirements for ammunition, materiel, and petroleum. As its name indicates, WARRAMP is designed to determine requirements not only for ammunition but for major end items of combat equipment and the petroleum stocks necessary to sustain the force. Comparisons made in AHART will concentrate strictly on indirect fire ammunition requirements.

(2) WARRAMP is not a single combat simulation. WARRAMP describes a system of analysis employing two primary combat simulations, a calibration routine to match the two and a series of pre- and post-processing routines. Among the results of this process are expenditure rates for artillery ammunition which are provided to decisionmakers to support budget requests to Congress. A description of WARRAMP relevant to this study is provided in Appendix G.

1-6. ESSENTIAL ELEMENTS OF ANALYSIS (EEA) AND ANSWERS

a. Do available historical documents provide sufficient data, in usable form, for analytical research of theater-level artillery expenditures? As evidenced in the bibliography, numerous analytical efforts have been conducted employing limited amounts of historical data. Due to the great effort required to assemble such data, no comprehensive effort has yet been published. AHART demonstrates that with the necessary effort sufficient usable historical data is available for a comprehensive quantitative analysis of theater-level artillery expenditures. The AHART data base will not yet support acceptable measures of confidence for estimates of theater-level artillery expenditures in the 20th century, but this shortcoming can be resolved with additional time for data collection directed to specific deficiencies identified in the study. In its present form, the AHART data base provides a significant amount of information useful in analysis of combat simulation. Many of the results included in this report can be used immediately by analysts and decisionmakers to make better use of combat simulations.

b. Do the sample of observations for each study variable in the AHART data base support comparisons with artillery expenditure rates resulting from theater-level combat simulations? AHART identifies artillery expenditure rates as a dependent variable and identifies eight independent variables. Criteria for comparison of each study variable with theater-level combat simulations are defined. The AHART data base included data on five of the variables that provided clear comparisons with theater-level rates. Two variables would require only limited directed data collection. The data for the remaining variable was completely inadequate and would require extensive research to acquire. Evaluation of the acceptability of each is found in Chapter 2.

c. **Do the relationships among the variables conform to the assumptions of linearity and normality?** Residual analysis of the results of multiple linear regression indicates a major departure from the normality assumption for the relationship of the variables to expenditure rates. A square root transformation of the data resulted in a much more normal distribution and will better facilitate analysis requiring adherence to assumptions of normality. Residual analysis also indicated a departure from the assumption of linearity which was likewise overcome best by use of a square root transformation.

d. **Do trends and other relationships derived from the historical data base confirm or contradict those found in the combat simulations?** The directions of the linear trends for artillery expenditure rates over each of the independent variables were all as experienced in past requirements studies. The slopes were generally less than expected. Overall the rates for each artillery weapon were much lower than expected. The same is true for the artillery weapons grouped as light, medium, and heavy. It was found that among the variables commonly used for analysis of combat simulations none were truly independent of the others. Regression analysis revealed that none of the variables, whether singularly or among the others in multiple correlation analysis, were very highly correlated with expenditure rates. All were significantly correlated but none very highly. Much work remains to be done in examining the cause and effect relationships in the data. The information available from analysis of the AHART data base extends far beyond that which has been included in this report.

e. **Do the variables chosen for the study explain the variability of the dependent variable sufficiently for use of this data in prediction or forecasting?** At this point no combination of variables used in the study produce an acceptable explanation of the variability of the data - the coefficient of determination, for the best results achieved, is less than .3. Refinement of the variables as well as additional data will be necessary to produce better results. The AHART data base can provide verification for use of rates in modeling or forecasting.

CHAPTER 2

DEFINITION OF DATA FIELDS/DATA DESCRIPTION

2-1. PURPOSE. The purpose of this chapter is to familiarize the reader with the contents of the data base, to define the field names and the study variables, and to provide a statistical description of the data contained in each. Suggested ways in which the reader can most efficiently master the contents of the data base are presented at the end of the chapter.

2-2. DATA BASE FORMAT

a. To facilitate distribution of the AHART data base and data entry, the DBASEIII Plus software was employed to build and store the data base. Records in the AHART data base are arranged (indexed) first by tube type, then chronologically within like tube types.

b. Documentation for use in accessing the AHART data base on DBASEIII is included in Appendix E.

c. The fields in the data base were chosen for their usefulness in recording data found in source material of varied formats. They are very much dictated by the form of the data available.

d. The variables were chosen for their applicability to the WARRAMP process and for their usefulness in comparing the historical data with the combat simulation methodology. They are by no means the only variables that can be defined for use in analysis of this data. An understanding of these variables and their limitations undoubtedly leads to defining other useful variables for which additional research into historical sources could prove fruitful.

e. The order of presentation of these fields and variables in this chapter is the order in which they appear in the data base in Appendix F. The definitions of selected variables are followed by a histogram of observations of that variable. For those variables which are grouped for purposes of analysis, a descriptive table is provided. Also, the x-axis of the histogram is labeled as the variable is grouped in the quantitative analysis. Analysis of the primary information to be gained from the statistical description of the data, accomplished through use of the BMDP statistical software routines, is provided in brief narrative form together with an evaluation of the acceptability of the sample data for use in comparison with WARRAMP results.

f. A printed version of the data base appears in its entirety as Appendix F.

2-3. THE DATA ENTRY FORM. To define precisely the data being collected, it is instructive to study the AHART data entry form used to enter data into the DBASEIII formatted data base. Figure 2-1 is a copy of the DBASEIII data entry form. Table 2-1 provides additional details of the AHART data fields that are otherwise embedded in the data entry form.

```
                    AHART DATA ENTRY FORM
                  CONCEPTS ANALYSIS AGENCY

BATTLE: XXXXXXXXXXXX        ARTYUNIT: XXXXXXXXXXXX

SOURCE: XXXXXXXXXXXXXXXXXXXX START DATE: 99/99/99     # OF DAYS: 999

BLUE UNIT: XXXXXXXXXXXX  UNIT SIZE XXXXXXXX        BLUE OPERATION: XXXXXXXXX

TYPE TUBE: XXXXXXXXXXX     # OF TUBES: 999999999999 TUBE CATLGORY: XXXXXXX

TYPE ROUND: XXXXXX     AVG RDS PER DAY: 99999999.9   TOTAL ROUNDS: 99999999999

COST PER RD($): 9999 AVG COST PER DAY: 9999999.99      TOTAL COST: 999999999.99
                                (X1000)                   (X1000)
WT.PER RD(LBS): 999.9 AVG WT. PER DAY: 9999999.99      TOTAL WT.: 999999999.99
                                (TONS)                    (TONS)
                        AVG RD/TUBE/DAY: 9999.9

NOTES: MEMO


RED UNIT: XXXXXXXXXXXX  RED UNIT SIZE XXXXXXXX   RED OPERATION: XXXXXXXXXX

TYPE TUBE: XXXXXXXXXXX  # OF TUBES: 9999999999

TYPE ROUND: XXXXXX     AVG RDS PER DAY: 9999999999 TOTAL ROUNDS: 999999999999

COST PER RD($): 9999  AVG COST PER DAY: 9999999.99   TOTAL COST: 9999999.99
                                (X1000)                   (X1000)
WT.PER RD(LBS): 999.9  AVG WT. PER DAY: 9999999.99    TOTAL WT.: 9999999.99
                                (TONS)                    (TONS)
                        AVG RD/TUBE/DAY: 9999.9

NOTES: MEMO
```

Figure 2-1. AHART DBASEIII Plus Data Entry Form

Table 2-1. AHART DBASEIII Plus Data Fields

Field name	Field type	Width	Dec	Field name	Field type	Width	Dec
1 SOURCE	Character	20		16 RDWTDAY	Numeric	10	2
2 BATTLE	Character	12		17 TOTALWT	Numeric	12	2
3 UNIT	Character	12		18 RDTUBEDAY	Numeric	6	1
4 SIZE	Character	8		19 ROUNDCOST	Numeric	4	0
5 DATE	Date	8		20 RDCOSTDAY	Numeric	10	2
6 ARTYUNIT	Character	12		21 TOTALCOST	Numeric	12	2
7 TUBETYPE	Character	11		22 NOTES	Memo	10	
8 TUBECAT	Character	7		23 REDUNIT	Character	12	
9 TUBEQUANT	Numeric	12	0	24 RSIZE	Character	8	
10 TYPERD	Character	6		25 REDOPN	Character	10	
11 RDPERDAY	Numeric	10	1	26 RTYPETUBE	Character	12	
12 ROUNDQUANT	Numeric	8	0	27 RTUBEQUANT	Numeric	10	0
13 DAYSQUANT	Numeric	3	0	28 RTYPERD	Character	6	
14 OPERATION	Character	9		29 RRDPERDAY	Numeric	10	0
15 ROUNDWT	Numeric	5	1	30 RRDQUANT	Numeric	12	0

Field names begin with a letter and may contain letters, digits, and underscores.

2-4. THE SELECTED DATA BASE. The AHART data base contains over 3,600 records. A large portion (2,520 records) contains operational rates of 1-day duration. These records are stripped from the data base prior to analysis. Most of these 1-day rates are accounted for in more aggregate monthly and yearly figures, and those not so accounted for clearly fall outside the definition of theater rates. Of the remaining 1,808 records, 213 contained no data for RTD, the dependent variable, and so were also eliminated prior to analysis. The remaining 787 records become the selected data base.

2-5. SOURCE FIELD

a. Description. The large number of documents and individual data sources required to build and analyze the data base necessitated a method of cataloging to manage them. The catalog then required coding to permit entry into the data base. Space provided in the source field permits entry of the source referenced by a code to the annotated bibliography (Appendix D). The codes are not intentionally cryptic and can be understood with minimal effort.

b. Construction of Source Codes. The data source codes are constructed in three parts. First appears the abbreviation for the organization or activity from which the document was received. The second part is an abbreviation for the war for which the data is recorded. An "S" in the second position denotes a study not directly associated with a particular war; ALL denotes data for three or more wars. Third is an arbitrary sequence number for that document distinguishing it from others of the same organization and war.

2-6. BATTLE IDENTIFICATION FIELD. Enough space has been provided to preclude coding or destructive abbreviation of the name of the battle. The term battle is used very broadly and is inclusive of every size operation from company to theater-level war. At times, no more specific reference will be given in an historical document than that the data came from, for example, WWII or the US offensive in Germany. When this occurs, as detailed as possible a reference is made to the theater in which the event occurred.

2-7. UNIT FIELD. The unit's number, its type, and its organizational size are recorded here. This field, together with the battle identification field, provides enough information to pinpoint a particular event in history. It is intended that sufficient information is recorded for further research into additional factors that may influence the specific event. Suffix letters, i.e., "th" or "nd", are not included. Standard abbreviations from Field Manual 101-5-1, Operational Terms and Symbols, are used to identify unit types and sizes.

2-8. SIZE FIELD AND VARIABLE SIZE

a. Description. Isolation of the size of the supported unit apart from unit number and type unit permits use of this data as a separate variable for analysis. The variable SIZE is defined to be the number of company sized maneuver units in a force being supported by artillery, as shown in Table 2-2. Regiments are relabeled for size as a brigade-size force which they more correctly are. With the exception of the battalion task force, no other level task force is separately identified. This is primarily a result of the lack of data with which to do so. If such detail is needed, many hours of research in the National Archives may reveal it.

Table 2-2. BMDP Codes and Limits for the Variable SIZE - Selected Data Base

Variable name	Minimum limit	Maximum limit	BMDP code/scale	Category name
Size	1.0	999.0	1.0	Company
			2.0	2 Companies
			3.0	Battalion
			4.0	Battalion task force
			6.0	2 Battalions
			9.0	Brigade
			18.0	2 Brigades
			27.0	Division
			54.0	2 Divisions
			81.0	Corps
			162.0	2 Corps
			243.0	1 Army
			486.0	2 Army
			729.0	Army group
			900.0	Theater

b. Analysis of the Variable SIZE

(1) All 787 points of the selected data base were clearly defined for size of the supported force. In the distribution of observations for size:

MEDIAN = 1 ARMY
MODE = THEATER

(2) As shown in Figure 2-2, data for theater-size forces composed 51 percent of the data base. Division-size forces (29 percent) and Army-size supported forces (10 percent) make up most of the remaining points, with corps-size supported forces making up 7 percent.

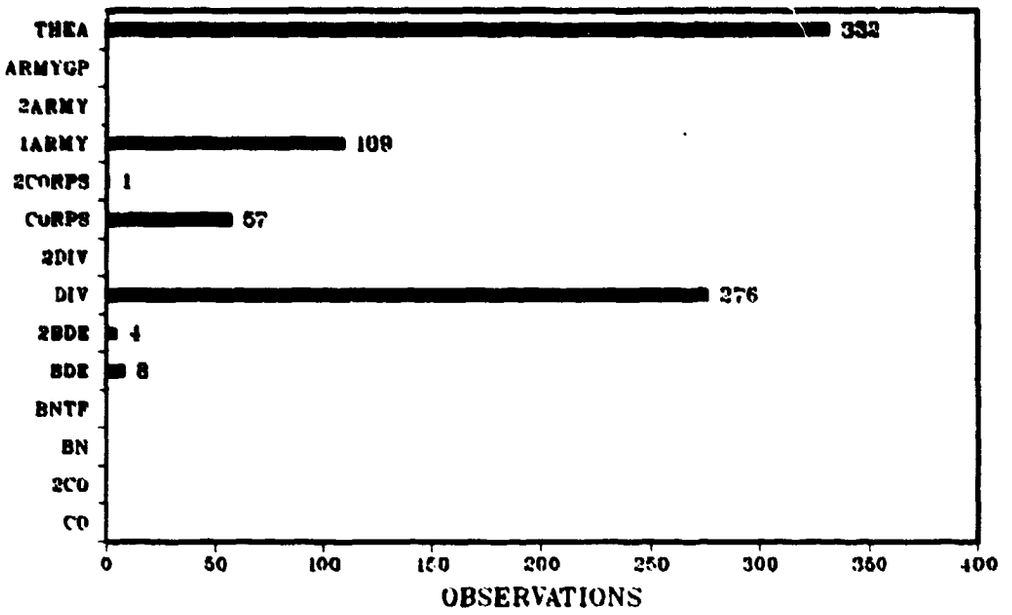


Figure 2-2. Histogram of Observations for SIZE - Selected Data Base

c. Acceptability of the Data for the Variable SIZE

(1) Given that the WARRAMP process is focused on theater-level results, this distribution of data points is very desirable. Since the WARRAMP theater model is also driven by a division-level model, the proportion of division-level historical data is especially pleasing. To conduct comparisons of the individual models in the WARRAMP process, these data points would have to be properly segregated. The theater force points in the data base are directly comparable with the final rates produced by WARRAMP.

(2) Included in the data base are monthly theater-size force data for every month in both the Vietnam War and the Korean War. Theater-level data for the Yom Kippur War of 1973 is available in classified form [WSEG-AI-1]. This distribution of data points is quite acceptable for analysis of the variable SIZE and comparison with the WARRAMP process.

2-9. DATE FIELD AND THE VARIABLE YEAR

a. Description. The DATE field in the data base provides the month, day, and year of the start of the battle. Month and day are of little value to this study. YEAR provides a means of determining in each case which war the record refers to. DBASEIII rules call for

month/day/year order. All three are two-digit numbers, the first digit being a zero when necessary. In DBASEIII the year is assumed to be the 20th century. There was no need to modify this structure for the AHART Study. The date can be reordered, separated, and used in almost any other form by the other software packages in the AHART data base management system by use of convenient translation routines inherent in each. Figure 2-3 displays the number of observations in the data base for each year/war. Chapter 3 of this report is completely dedicated to presentation of the historical data over time.

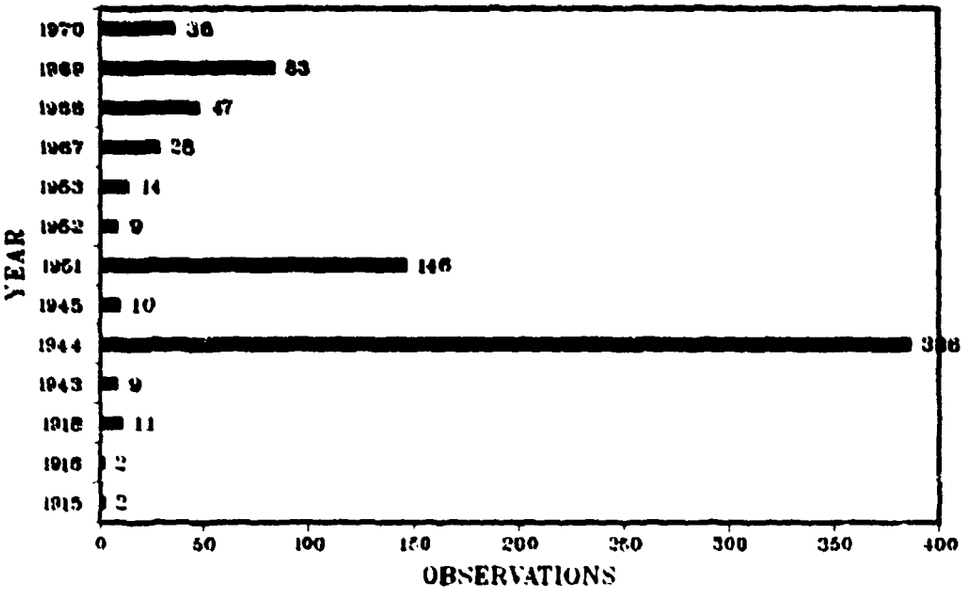


Figure 2-3. Histogram of the Variable YEAR - Selected Data Base

b. Analysis of YEAR

(1) Of the 787 points in the selected data base, all were clearly defined for year. The historical data collected to the present time for YEAR is reasonably well-distributed with the preponderance of records falling into WWII (51 percent) and Korea (22 percent). In the distribution of observations for the variable YEAR:

MEDIAN = 1944
MODE = 1944

(2) While ordnance personnel and logisticians have always attempted to keep records of their inventory, it was not until after WWI that records were maintained with the express purpose of analysis for future planning, and it was not until after the Korean War that data was maintained with the express purpose of quantitative analysis.

As a result, the quantity and quality of the points in the data base are largely a function of availability. Additionally, it is true of all wars that many records were destroyed due to movement, damage, or destruction of unit, depot, or headquarters records facilities, reducing the overall availability of data to a level below that needed to feel that a population statistic can be established for any war.

(3) More data, especially British and French data, is available for WWI expenditures; however, in the time allotted, efforts were concentrated on data for more recent wars.

(4) Histories of WWII are primarily anecdotal with only limited numerical data recorded outside unit histories and after-action reports. The volume of data from these histories and reports is large for division and corps-level events with limited data on army or theater-level numbers. This accounts for the large volume of WWII data at these levels.

(5) For Korea an effort was made by logisticians [CMH-K-1] at consolidating theater-level data, but the effort was incomplete, failing to include many relevant facts such as the number of tubes in theater or differentiating between various types of munitions. While there is less Korean War data than WWII data, the value of each Korean War record is greater to a study of theater-level rates. Larger proportions of the Korean data are directly comparable to theater-level rates.

(6) For Vietnam the data is in excruciating detail, greater detail than is needed in the AHART data base. The detail beyond that in the data base is lost on any comparison to the older data. Data on the 17 days of the Yom Kippur War is in sufficient detail to define all variables in the AHART data base (not included in this report due to its classification level).

c. Acceptability of the Data for YEAR

(1) Current planners will naturally (but not necessarily properly) place greater value on data that is most like current conditions. For the variable YEAR, that translates to data that is most recent.

(2) It is most unfortunate that to maintain the unclassified nature of the report, data from the Yom Kippur War cannot be included. Many place great value of the high tech nature of that war. On the other hand, recent thought is that the short duration of that war and the methods of collecting data (primarily interview with limited access to Israeli documents) reduces what may be presently over-valued data. Trevor Dupuy has stated in his book Elusive Victory that the results of this high tech war were not all that startling and that the quantitative data indicated rates not much different from intense periods of operation in WWII. Were it not classified, it would be desirable to have that data included in the AHART data to possibly support or refute COL Dupuy's statement.

(3) The acceptability of Vietnam data is often not as high even as some WWII data in that most consider Vietnam to be of a markedly different nature. The types of missions fired in Vietnam are considered to be other than conventional set-piece combat, more often being ambushes or harassing fires not directed against a conventional target. On the other hand, the data for the Tet offensive and several other battles could easily be accepted as conventional warfare. The effort to differentiate among them is beyond the scope of AHART for the moment. Some effort is made in this direction using operational intensity as a variable.

(4) Later work with this data can attempt various weighting schemes to give greater value to more recent data. Additional efforts at data collection can concentrate on data from other recent conflicts outside the US experience. Finally, releasing a classified version of this effort will permit use of the most valuable recent data.

2-10. TUBE TYPE (TUBETYPE) FIELD AND THE VARIABLE TUBETYPE

a. Description. Artillery weapons are identified here by their "caliber," in millimeters. This field is used to identify a separate variable in the analysis which is arranged in increasing order of caliber. When the commonly used caliber is in other dimensions, it is converted to millimeters, i.e., a 4.5-inch gun is listed as a 114mm gun. Figure 2-4 displays the distribution of observations present in the data base for each tube type.

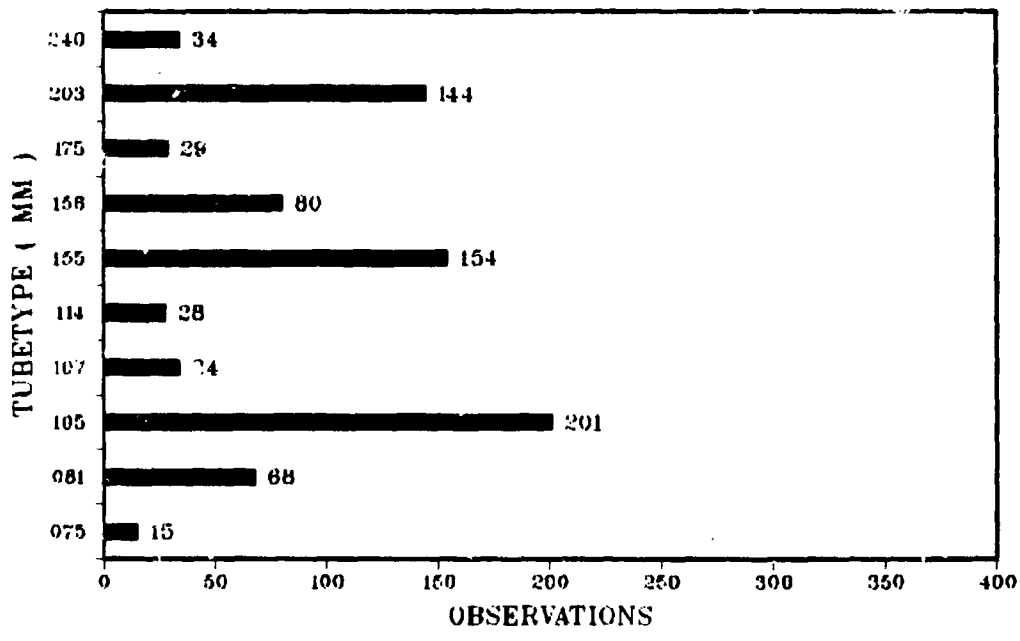


Figure 2-4. Histogram of the Variable TUBETYPE - Selected Data Base

b. Analysis of TUBETYPE

(1) All records for which no tube type is specified have been separated from the AHART data base to the selected data base. As a result, all of the 787 observations can be clearly identified for tube type. The major systems of interest to WARRAMP compose the majority of this data and are fairly evenly distributed--105mm (36 percent), 155mm (20 percent), and 203mm (18 percent).

(2) Records with no tube type specified (unspecified (UNSP)) have been separated from the selected data base to avoid confounding tube types. Through some earlier versions of this analysis, it was found that these samples for which no tube type is specified are aggregate data for several tube types. This is such a large number of samples and they are so commonly found in historical reports that these records are worthy of separate analysis. Such analysis would permit use of this large number of samples in the AHART analysis, or at least allow comparison of the separate analysis with the results of AHART.

(3) The distribution of observations across the increasing caliber of the tube is not to be interpreted as the distribution with which the population of tube types was employed in combat. The distribution of observations among tube types in the selected data base is only the distribution of the available data.

c. Acceptability of the Data for the Variable TUBETYPE

(1) The WARRAMP process accounts for each tube type separately and, therefore, produces a separate rate for each one. The current inventory of conventional artillery tubes in the US arsenal is primarily 105mm, 155mm, and 203mm. In the AHART data base these are likewise the weapons for which there is most data. The distribution among these three tube types is reasonably even.

(2) A fortunate occurrence in the view of the analyst is that in many of the events in this data base, data was available for all three tube types. In the historical data, most of these systems were found together on the same battlefield and so are often sampled under the same conditions, each having an influence on the expenditures of the other. This increases the value of the data beyond simply having a fortunate distribution of tube types.

2-11. TUBE CATEGORY (TUBECAT) FIELD AND THE VARIABLE TUBECAT

a. Description. The same artillery weapons are grouped into three categories--light, medium, and heavy. Table 2-3 presents the regrouped observations. Records containing data on artillery expenditures for which no tube type was specified were labeled as UNSP and placed in a separate file for analysis. UNSP was not used as a tube category.

(1) Light artillery includes all tube types up to and including 120mm.

Table 2-3. BMDP Codes and Limits for the Variable TUBECAT

Variable name	Minimum limit	Maximum limit	BMDP code/scale	Category name
TUBECAT	30	203	105	Light
			155	Medium
			203	Heavy

(2) Medium artillery includes 122mm to 155mm howitzer tubes, inclusive.

(3) Heavy artillery includes 155mm guns and all other tube types above 155mm.

b. Analysis of the Observations for the Variable TUBECAT. All 787 records remaining in the selected data base could be clearly identified according to one of the tube categories. As shown in Figure 2-5, the light category contains 44 percent of the records. Medium and heavy categories contained 20 percent and 36 percent of the selected data base, respectively. Including 155mm guns in the heavy category greatly increased the proportion of heavy samples in the data base but reduced the proportion of medium samples. The use of the 155mm gun for purposes of very long-range fires is clearly in line with the mission of heavy artillery despite the medium caliber.

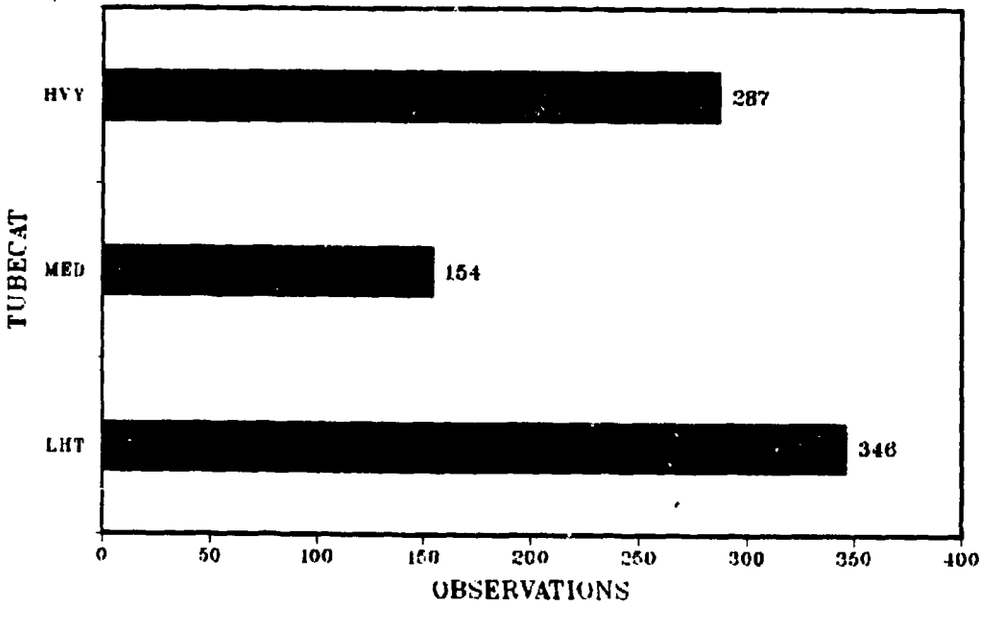


Figure 2-5. Histogram of the Variable TUBECAT - Selected Data Base

c. Acceptability of the Data for the Variable TUBECAT. Use of this field permits increased sample sizes and therefore increased confidence for analysis that does not require grouping by tube type. These categories are directly aligned with the major artillery weapons used in the WARRAMP process.

2-12. TUBE QUANTITY (TUBEQUANT) FIELD AND THE VARIABLE TUBEQTY

a. Description. This field provides the total number of tubes available to support the operation and is scaled as shown in Table 2-4. In operations below army level, the number available is assumed to be a measure of the number of tubes that actually fired or were poised to fire in support of the operation. At army or theater level, it is assumed that some tubes may for various reasons never reach the battle. At theater level, these numbers include tubes in maintenance or delivered to the theater but not necessarily to a unit in the field. This number then is a measure of the number of tubes that were in the entire army area of operations or within the entire theater during the operation.

Table 2-4. BMDP Codes and Limits for the Variable TUBEQTY

Variable name	Minimum limit	Maximum limit	BMDP code/scale	Category name	BMDP code/scale	Category name
TUBEQTY	1 0	2000.0	3 0	Platoon	72 0	4 Battalions
			6 0	Battery	78 0	13 Batteries
			12 0	2 Batteries	84 0	14 Batteries
			18.0	Battalion	90 0	5 Battalions
			24.0	4 Batteries	96 0	16 Batteries
			30.0	5 Batteries	114 0	17 Batteries
			36.0	2 Battalions	132 0	7 Battalions
			42.0	7 Batteries	150 0	8 Battalions
			48.0	8 Batteries	168 0	9 Battalions
			54 0	3 Battalions	186 0	10 Battalions
			60 0	10 Batteries	187 0	10Battalions +
			66 0	11 Batteries		

b. Rate versus RTD. The ability to properly interpret this variable is a major key to understanding historical RTD. It is the composition of tubes incorporated in the entry for TUBEQTY that distinguishes theater from operational rates. For operational RTD in the AHAR1 data base, the number of tubes available will be assumed to equal the number of tubes engaged in the battle. For theater RTD, the number of tubes in the entire army or theater area are assumed to be

included. This is occasionally difficult to discern from the historical documents, but most often it can be determined in some way. When a departure from this rule exists, the number is recorded in the data base and the distinction noted in the field provided by DBASE III. A tangential issue concerning the variable TUBEQTY is the use of the recorded number of tubes to define a de facto weighting of any particular event. Because the number of tubes is not equal, each record of TUBEQTY should not be assumed to have equal value. The RTD for a single tube in a single sample should not have the weight of a theater-level number of tubes in a given sample. This has not been done to this point in the AHART analysis.

c. Analysis of the Variable TUBEQTY

(1) Only 395 of the 787 observations in the selected data base included data on the number of tubes used to calculate the RTD. The distribution of these 395 observations varies greatly. As shown in Figure 2-6, tube quantities of six tubes or less make up 31 percent of the sample. Tube quantities below 87 compose 63 percent of the observations. The number 87 is a rough approximation of the number of tubes that would support a corps level operation--a crude line dividing operational samples from those usable for theater-level comparisons.

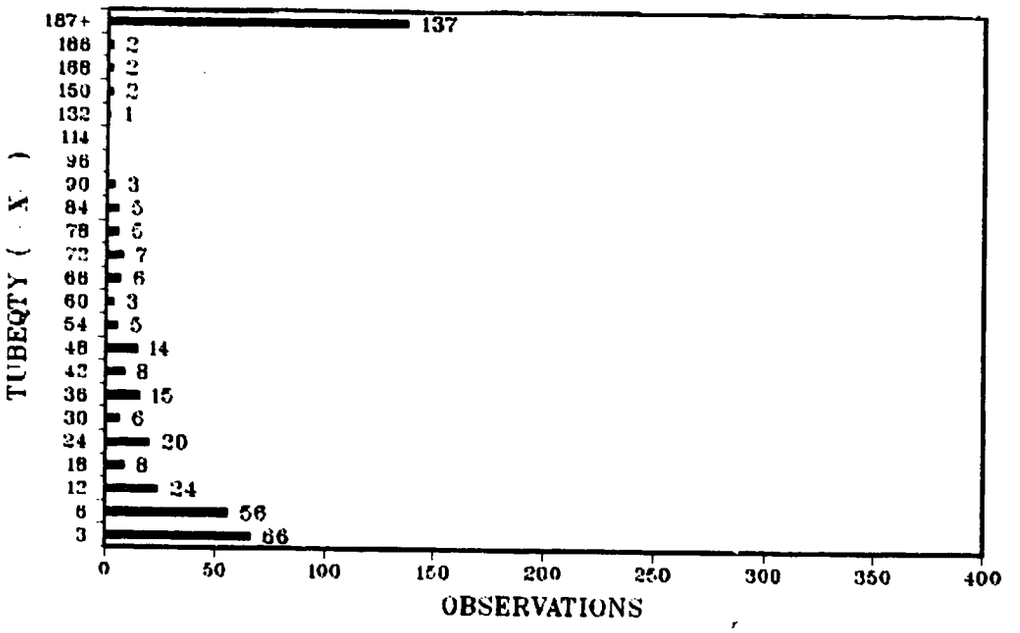


Figure 2-6. Histogram of the Variable TUBEQTY - Selected Data Base

(2) A large number of records in the selected data base does not include data on the number of tubes in the event, meaning that the data for RTD was given directly without providing the denominator value for the calculation.

d. Acceptability for the Observations for the Variable TUBEQTY

(1) The definition of theater rate *vis-a-vis* the operational rate explained in Chapter 1 is essential to understanding the variable TUBEQTY. The interpretation of the historical data explaining each observation for this variable is the major ingredient in classifying each data record as a theater or an operational rate. If, in the historical data, it is clear that all systems in an army area of operation or theater of operation were considered in computing the rounds per tube per day (RTD), then this number is directly comparable with the final results of the WARRAMP process. If it is clear that only those weapons which fired were considered, then that data is not directly comparable to final WARRAMP results but may instead be directly comparable to the division simulation, Combat Sample Generator (COSAGE) results. Fortunately, the field for SIZE of the supported unit can also be used for this purpose; in which case, over 50 percent of the records in the data base can be classified as theater rates.

(2) The definition of tube quantity in the data provided for historical battles requires very close scrutiny to ensure the proper distinction between theater and operational rates. To increase the acceptability of this data base for comparison with WARRAMP rates, a priority should be given to finding additional samples calculated on the basis of all the tubes in a theater of war.

2-13. TYPE ROUND (TYPERD) FIELD AND THE VARIABLE TYPERD

a. This field provides a place to differentiate among the types of munitions fired by a particular artillery tube type. Prior to WWI, metal and high explosives (HE) composed the major ingredients in munitions technology. Historical documents prior to WWII therefore seldom differentiate among types of rounds. Even in WWII and the Korean War data, the type round is very poorly documented.

b. Since the technological advances in munitions of the post-WWII period, it is believed that the type of round fired takes on great significance in determining rates of fire. In addition to the obvious influence of entirely new munitions such as improved conventional munitions (ICM), seek and destroy armor (SADARM,) and terminally guided weapons (TGW), the vast improvements in the traditional metal (fragmentation) and high explosive munitions are considered to be significant. Indeed, the pronounced effect of the newer high technology munitions and improved high explosive munitions, some believe, makes analysis of recent artillery expenditures as different from analysis of pre-Arab-Israeli War data as the analysis of Civil War data is from the analysis of WWI and WWII data.

c. No analysis is attempted on this variable in AHART. The lack of available data prevents any useful analysis in this study. It is a subject worthy of separate investigation. Because of its current importance, TYPERD is maintained in the data base. The variable TYPERD was maintained as a variable in the study because its removal was not worth the time and effort required.

d. No histogram of observations is provided here since all samples fall within two groups--HE and UNSP. When possible, data clearly identified as HE only was recorded as such. Otherwise, the field was labeled as unspecified and was assumed to include firing data for all types of munitions available to that artillery tube type. Some testing with scatter plots and some investigation support this assumption.

2-14. ROUNDS PER DAY (RDPERDAY) FIELD. This is the average rounds of the TYPERD, TUBETYPE, TUBECAT, etc., specified in the previous fields that are fired in 1 day by the number of tubes specified in the TUBEQTY field over the period specified in the DURATION field. This must not be confused with the total rounds fired in a day or with the rounds per tube per day. Occasionally, this is the only data provided. From it, rounds per tube per day may have to be computed separately.

2-15. TOTAL ROUNDS (ROUNDQUANT) FIELD. This is the total rounds fired for the whole period specified in the DURATION field for the number, type, and other conditions specified in all previous fields. Again, this may be the only data provided from which rounds per tube per day must be separately calculated.

2-16. DURATION (DAYSQUANT) FIELD AND THE VARIABLE DURATION

a. **Description.** The number of days over which the battle, campaign, war, etc., specified in the OPERATION field, took place becomes the denominator in the calculation of RTD. If a record is otherwise classified as a theater-level rate, this variable assists in further defining the number of days included in the theater rate (15-, 30-, 180-day rate, etc.). This number is closely related to the number of days of actual firing but it is not the same. On occasion, rates have been computed using only "firing days." This is not done in AHART. In AHART, rates were computed over the entire period of the operation whether or not artillery was used on any one particular day. The AHART data presented in Figure 2-7 includes all days of the operation as it is most consistent with the way theater rates are determined.

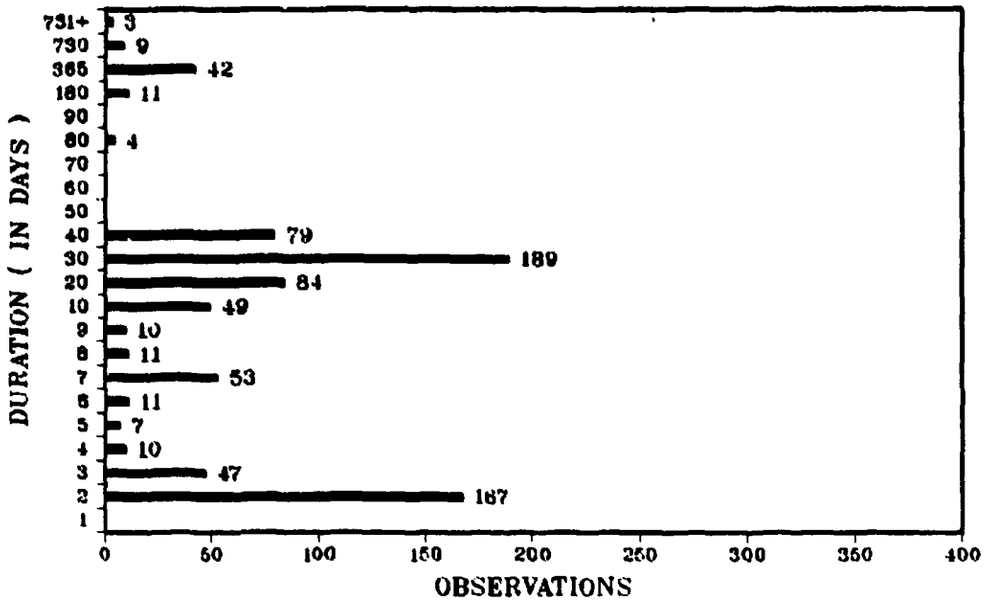


Figure 2-7. Histogram of the Variable DURATION - Selected Data Base

b. Analysis of Data for the Variable DURATION. Of the 787 records in the selected data base, only one has no recorded DURATION. Of the 786 records, 268 (34 percent) were for operations of 21 to 40 days (aggregated monthly expenditure rates); 295 (38 percent) were for operations of from 2 to 7 days. In the selected data base, records of 1-day duration were taken out. With only a few trivial exceptions, all records of this duration were duplicate data included elsewhere in more aggregate numbers. The study of the 1-day rates would be a worthwhile separate analysis and could illuminate day-to-day variability, but is only indirectly useful in understanding theater-level rates.

c. Acceptability of Observations for the Variable DURATION. Theater rates in WARRAMP are computed in increments of 15 or 30 days up to 180 days. Since only 65 (7 percent) of the records can be compared to 180-day rates, the data base would benefit from additional data of this kind for this comparison. The available data most readily lends itself to comparison with 30- or 45-day rates.

2-17. OPERATION FIELD AND THE VARIABLE OPN

a. Description. The operational types used in this study and displayed in Table 2-5 are those defined by Table 7-1, FM 101-10-1, Staff Officers' Field Manual Organizational, Technical, and Logistic Data. The operational types in the field manual are primarily oriented to division- and brigade-level planning, but the definitions are extended to other organizational levels without loss in meaning. The operation specified in the AHART data base is the predominant mission of the unit described in the UNIT field at the level specified in the SIZE field, i.e., battalion attack heavy, or division protracted medium, or army attack light. For campaigns and theater wars for which data on numerous operations were aggregated, the operation is labeled as unspecified (UNSP). The scale on which these operations are placed for the analysis is shown in Table 2-6.

Table 2-5. Levels of Operation

Level of operation	Percent of commitment		Intensity of combat	Commitment of higher headquarters reserves
	Maneuver	Fire support		
Heavy	60 +	100	All-out	Probable
Medium	30 +	50 +	Continuous	Not anticipated
Light	30-	50-	Sporadic	No

Table 2-6. BMDP Codes and Limits for the Variable OPN

Variable name	Minimum limit	Maximum limit	BMDP code/scale	Category name
OPN	1.0	10.0	1.0	Protracted - light (PROL)
			2.0	Attack - light (ATKL)
			3.0	Defense - light (DEFL)
			4.0	Protracted - med (PROM)
			5.0	Unspecified (UNSP)
			6.0	Attack - medium (ATKM)
			7.0	Defense - medium (DEFM)
			8.0	Protracted - heavy (PROH)
			9.0	Attack - heavy (ATKH)
			10.0	Defense - heavy (DEFH)

b. Analysis of Observations for the Variable OPN

(1) Figure 2-8 displays the distribution of observations of this variable. Only 413 (40 percent) of the 787 records in the selected data base can be clearly identified for a specific operation and operational intensity; 289 (70 percent) of the 413 observations are classified as heavy intensity operations. The attack operations (light, medium, and heavy) together make up 343 (83 percent) of the 413 observations. The remainder are, as previously explained, aggregate data for several types of operations.

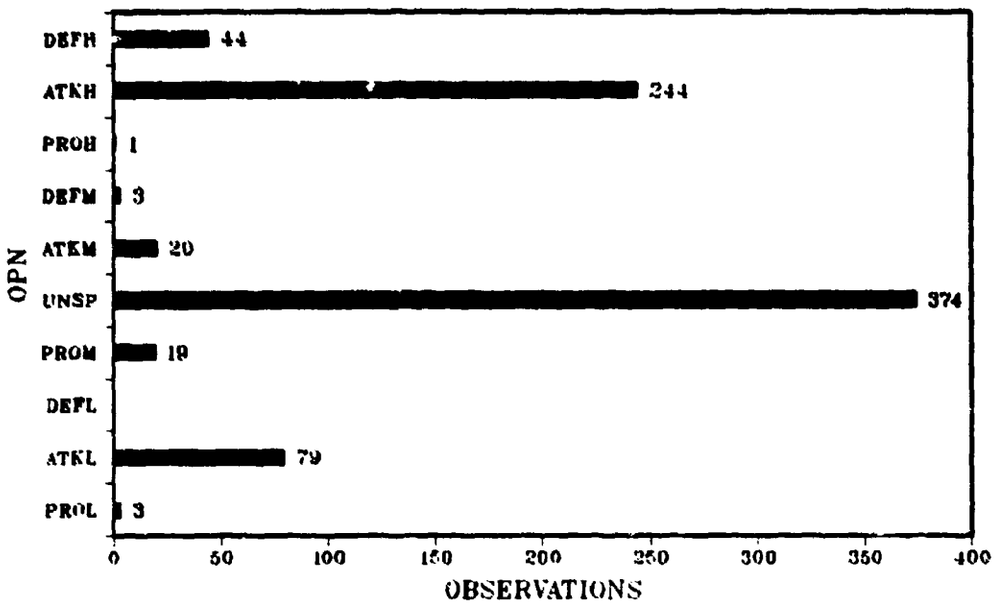


Figure 2-8. Histogram of the variable OPN - Selected Data Base

(2) The unspecified observations were initially taken out of any analysis of the variable OPN. This also eliminated a significant portion of the data base for the multiple linear regression analysis. After separate analysis provided in paragraph 4-3c, it was determined that these observations were clearly composite figures and fit closely the distribution for operations of "medium" intensity. As a result, they were again included in the selected data base and placed on the spectrum of operations where the separate analysis showed them as a group to be; that is between PROM and ATKM.

c. Acceptability of the Observations for OPN

(1) The rates produced by the WARRAMP process are aggregate rates for all types of operations and operational intensities. The unspecified records actually come closer than the other records to the definition of a theater rate. The distribution of observations for each specified operational type is heavily weighted to the attack and the heavy intensity operations.

(2) If it is assumed that the sample distribution of operations and intensities are representative of the distribution of all type operations, then the data would be sufficient. If the distribution is not representative (which it most likely is not), this data must be understood as representing primarily the heavy and the attack operations. Comparisons with theater rates would have to recognize this distributional effect.

2-18. ROUND WEIGHT (ROUNDWT) FIELD. The weight of a single round divided into the total weight of rounds in a battle (TOTAL WEIGHT) may be the only means of determining from the data available the total number of rounds to be included in the numerator of the rounds per tube per day calculation.

2-19. ROUND WEIGHT PER DAY (RDWTDAY) FIELD. As with the ROUNDS PER DAY field, this is the weight of the rounds fired each day, totaled then averaged over the entire duration of the battle. It is not necessary to calculate this field from others unless desired for reasons outside this study. The field is included to allow for entry of data which may not be provided in any other form.

2-20. TOTAL WEIGHT (TOTALWT) FIELD. This is the total weight of the type round, specified previously, fired over the entire duration of the battle. As with other fields, this data may have to be used in the absence of other data to separately calculate rounds per tube per day.

2-21. ROUND COST (ROUNDCOST) FIELD. The cost of a single round divided into the total cost of rounds in a battle (TOTAL COST) may be the only means of determining from the data available the rounds per tube per day. Knowing the dollar value at the time the cost was recorded is usually more difficult than finding the original data.

2-22. ROUND COST PER DAY (RDCOSTDAY) FIELD. As with the ROUNDS PER DAY field, this is the cost of the rounds fired each day, totaled then averaged over the entire duration of the battle. It is not necessary to calculate this field from others unless desired for reasons outside this study. The field is included to allow for entry of data which may not be provided in any other form.

2-23. TOTAL COST (TOTALCOST) FIELD. This is the total cost of all like rounds, specified by previous fields, fired over the entire duration of the battle. As with other fields, this data may have to be used in the absence of other data to separately calculate rounds per tube per day.

2-23. ROUND PER TUBE PER DAY (RDTUBEDAY) FIELD AND THE VARIABLE RTD

a. Description. By its definition, RTD is a variable that attempts to reduce numerous other data into a single understandable value. This term seeks to reduce total rounds fired by any given number of tubes over any number of days into what a single "average" tube fired in one "average" day of an operation. As such, it is used almost universally in the simulation community to measure artillery expenditures. Its popularity stems from its simplicity compared to dealing with what each tube fires on each day, especially if the number of tubes or the number of days in the comparison differs.

- For purposes of entry into the AHART data base, RTD is the TOTAL ROUNDS fired in a BATTLE divided by the DURATION of the battle, then divided by the TUBEQTY in the battle.

- For this study, RTD is the dependent variable and therefore the single most important number sought after in the historical documents. All other fields in the data base have the express purpose of qualifying the conditions under which the rounds per tube per day were actually fired.

- It must be remembered that while the term round per tube per day places all samples on a common standard, each observation is influenced also by the number of tubes in the sample. The common standard does not imply that each observation is of equal weight.

b. Analysis of Observations for the Variable Round per Tube per Day

(1) As explained in paragraph 2-4, once the records with 1-day DURATION and the records for which TUBETYPE is unspecified were eliminated from the data base (because they were included in more aggregate data and to prevent confounding, respectively), there remained 1,083 records. Of these, 296 were incomplete for the field RDTUBEDAY; therefore, only 787 of the 3,590 records in the AHART data base have been selected for analysis of this variable.

(2) The resulting distribution of RTD becomes a significant result of the study effort. The histogram of observations and relevant location parameters are included in Figure 2-9.

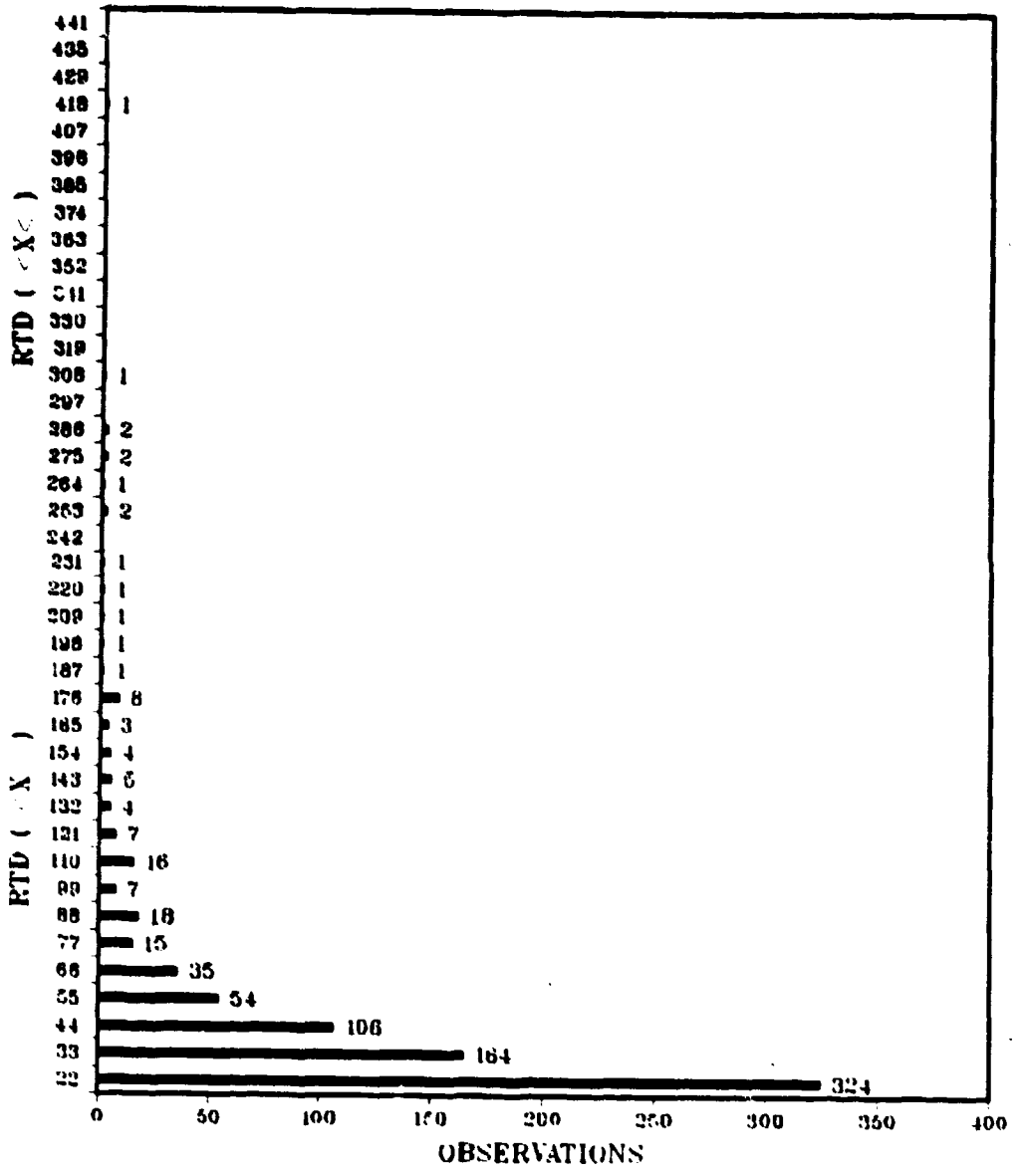


Figure 2-9. Histogram of Observations for the Variable RTD

c. Acceptability of the Data for RTD

(1) The acceptability of the data for this variable is completely dependent on the acceptability of the observations for the other variables. As described earlier, these 787 records include useful theater-level rates for Korea and Vietnam and useful operational rates for WWII, Korea, and Vietnam. Complete sets of data exist for artillery expenditures in the Yom Kippur War [WSEG-AI-1] but are not included in this analysis because of classification. Those records which are specified for OPN are predominantly heavy and attack type operations. Samples among tube types are well-distributed among the relevant types in the WARRAMP (US) arsenal.

(2) The AHART data base cannot yet be accepted as the definitive measure of historical RTD. At this point in the analysis, some useful information can be gained, some preconceptions evaluated but not conclusively proven or refuted. The analysis does, for the first time, make this amount of data available in a form that can be examined for the user's purpose. As such, it is a useful means of becoming well acquainted with the historical data on this subject and provides a start point, which previously did not exist, with which to do more complete work.

2-25. RED FIELD NAMES. With the exception of the BATTLE, DATE, and DURATION fields, which are not repeated, Red field names are the same as those for the Blue force. The field names are preceded with the letter "R."

2-26. RED (OPPOSING) FORCE

a. Non-US forces, not allied with the US, are normally labeled Red; however, the distinction is arbitrary and is primarily for the purpose of defining opposing forces in a particular battle. In any given simulation, any force could be assigned either color. The convention of assigning the color green to Third World countries in simulations is becoming generally accepted.

b. The Red fields are maintained in the data base under the assumption that sufficient data may at some time be available for both sides in any particular battle. Presently there is very little data for Red forces in the data base. In this version of the study, no comparisons are made among nationalities; therefore, the choice of describing a particular nation as Red or Blue is moot.

c. The Red fields of the data base are not included in Appendix F.

d. A relevant West German study (FRG-WWII-1) on Hitler's army is presently being completed that will add greatly to the opposing force data for WWII. Future improvements to the data base should certainly include Czarist Russian, Soviet, and Chinese data.

2-27. LEARNING TO USE THE DATA BASE

a. The AHART data base is available in printed form or on hard or floppy disk through DBASEIII Plus software. The best way to review the data base is on the microcomputer using the DBASEIII software in either the browse or the edit mode.

b. For the purpose of this study, it is most useful to arrange (index) the data base by type of tube, then order the records for each type of tube by date. However, through use of the DBASEIII software, the data base can be arranged in any order.

c. Understanding of the data base can most efficiently be achieved by studying the DBASEIII data entry format of Figure 2-1 printed above or shown or the microcomputer monitor and by using the definitions provided in this chapter.

d. Once familiarity with the data base has been achieved, a study of selected records will be more fruitful. The number of fields in each record (36) precludes printing of the entire record, even on long paper. The most useful fields to select for printing are those used as variables in the study.

e. Only those fields that are used in the analysis are printed in Appendix F. This results in loss of some, but not a significant amount of, information. So little opposing force data has been collected that none is printed here.

f. Appendix F includes Blue force data with the following fields:

SOURCE	TUBECAT
BATTLE	TUBEQUANT
UNIT	TYPERD
SIZE	DAYSQUANT
DATE	OPERATION
TUBETYPE	RDTUBEDAY

CHAPTER 3

DISTRIBUTION OF HISTORICAL ROUNDS PER TUBE PER DAY (RTD) OVER TIME

3-1. PURPOSE. The purpose of this chapter is to present graphic displays of the raw data for the dependent variable (RTD) grouped by selected tube types and tube categories. These plots of the raw data over time increase the reader's intuitive understanding of the data in terms of their volume, magnitude, and location.

3-2. DISTRIBUTION OF RTD OVER TIME FOR THE SELECTED DATA BASE

a. Figure 3-1 presents all 787 points of the raw data for the dependent variable (RTD) in the selected data base plotted over time. The data is clustered by year of major US wars. Many of the data points plot over each other and are therefore not separately identifiable. Events of RTD greater than 200 occurred in WWI, WWII, and Korea. Events greater than 300 RTD occurred only in WWI and WWII. (One-day rates greater than 500 RTD occurred in all wars, but among the points in the selected data base, those rates for duration of 2-plus days, none were greater than 415 RTD.)

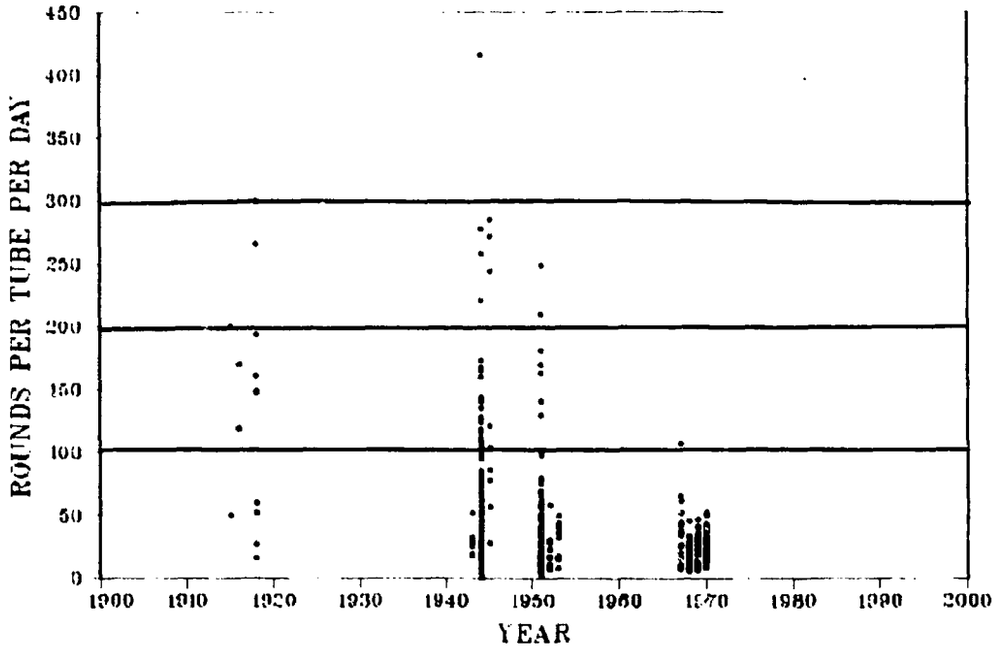


Figure 3-1. Distribution of RTD Over Time - All Tube Types

b. The variability of the data is greatest in WWI and WWII. Historians and logisticians of the WWI period express great surprise at the unprecedented extremes in the volume of fire, attributing it to advances in rapid fire artillery and the nature of the combat. The variability of the data then appears to decrease to a very noticeable near convergence in the Vietnam War.

3-3. RTD GROUPED BY TUBE CATEGORY. Figure 3-2 shows that light tubes account for much of the highest RTD in the data base. Light tubes also account for the extreme variability found among the tubes in the data base. The variability is reduced for medium tubes with a maximum RTD found historically to be less than 180 (Figure 3-3). The variability of the data for heavy tubes is reduced still further with only two events in this historical sample producing RTD greater than 90, and none more than 140 RTD (Figure 3-4). As defined for this study, heavy weapons did not exist prior to WWII. Several very large-caliber weapons such as large railroad guns, coastal defense cannons, naval guns, and siege artillery existed but are not included among field artillery weapons. The 155mm was in use during that time and played both the traditional medium support role and what was later separately identified as the heavy support role. The means of RTD by year and other location variables for RTD grouped by war are examined in Chapter 5.

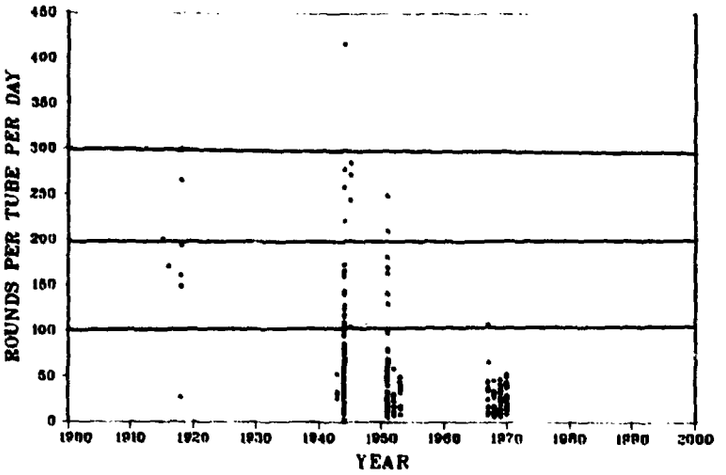


Figure 3-2. Distribution of RTD Over Time - Light Artillery

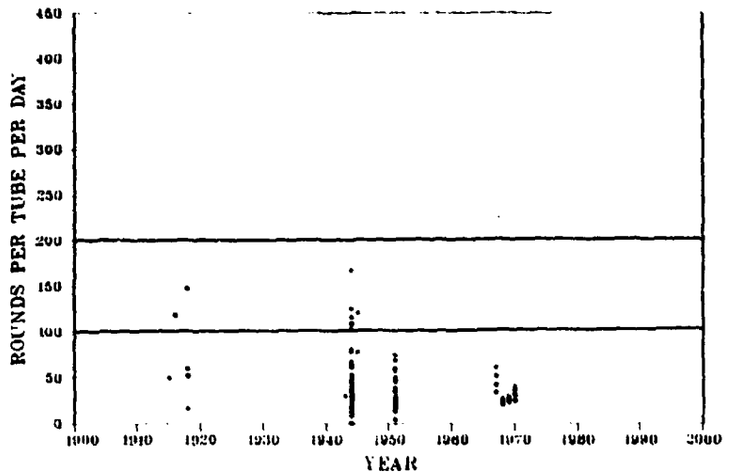


Figure 3-3. Distribution of RTD Over Time - Medium Artillery

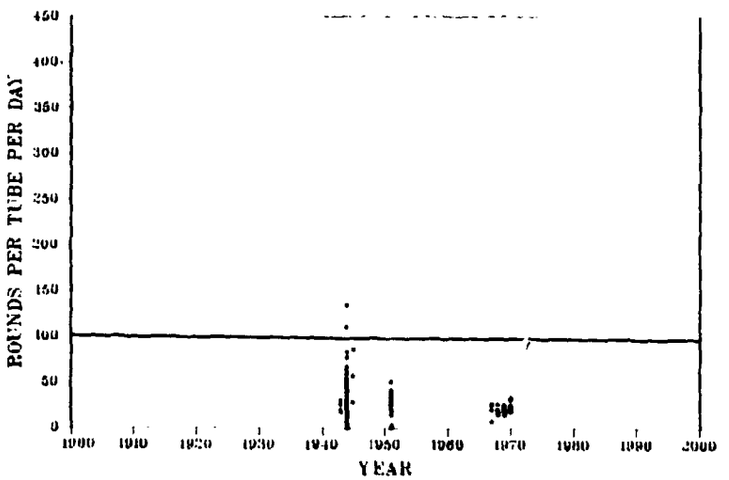


Figure 3-4. Distribution of RTD Over Time - Heavy Artillery

3-4. RTD GROUPED BY TUBE TYPE

a. Separated out as representative of each tube category, the 105mm, 155mm, and the 203mm artillery can be examined distinct from others of their category. As displayed in Figure 3-5, the 105mm is seen as the weapon having the single highest average RTD in the AHART selected data base, this occurring in WWII. Only one sample of the 105mm was found in WWI as it was a new weapon for that period, the 75mm being the primary direct support artillery of the war. The 105mm displays the extremes in variability in WWII and Korea but converges greatly in the Vietnam data. Excluded from the data are the 75mm, 81mm mortar, 107mm mortar, and the 114mm gun (4.5-in gun). The RTD for the other light systems fall within the 105mm experience, making the 105mm a satisfactory representative of all.

b. The plot of the 155mm (Figure 3-6) is identical to that of the medium tube category since this is the only tube type in the medium category for the AHART selected data base.

c. Excluded from the heavy category are the 155mm gun and 175mm and 240mm tubes. It would appear (Figure 3-7) that few points are eliminated, but it is, in fact, the number of points in common that causes the illusion. The 203mm tube type is an excellent representative of the category. As such, it appears to maintain a relatively constant usage across wars and has relatively low variability. It would seem that role of the 203mm tube has remained the same since its inception and that this role produces a relatively constant RTD over the period.

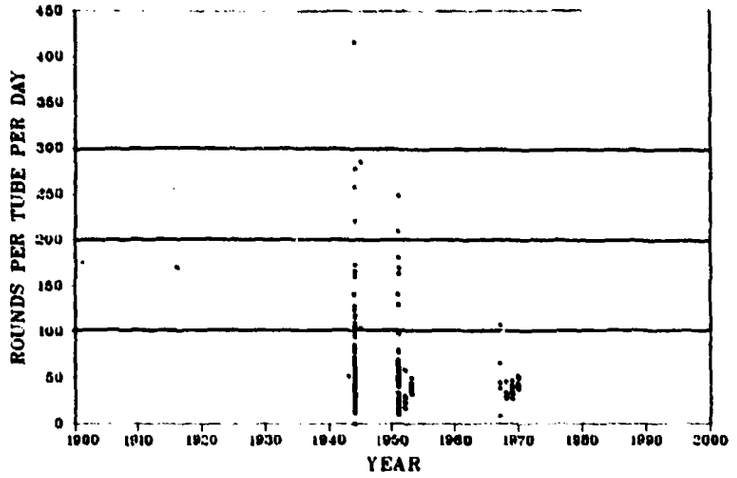


Figure 3-5. Distribution of RTD Over Time - 105mm

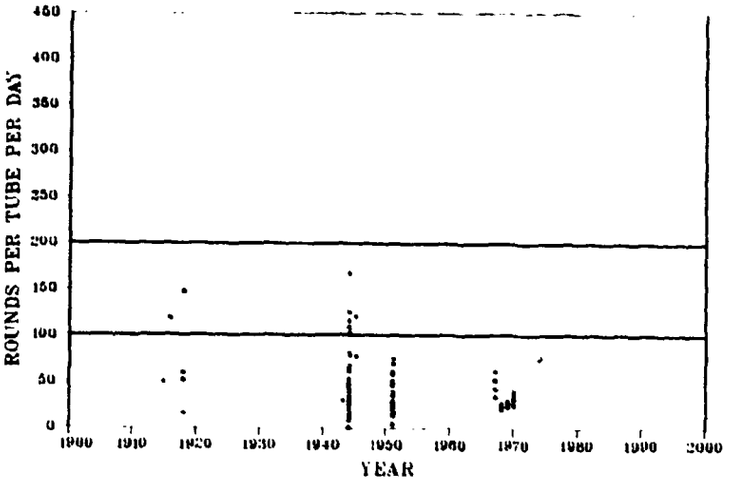


Figure 3-6. Distribution of RTD Over Time - 155mm

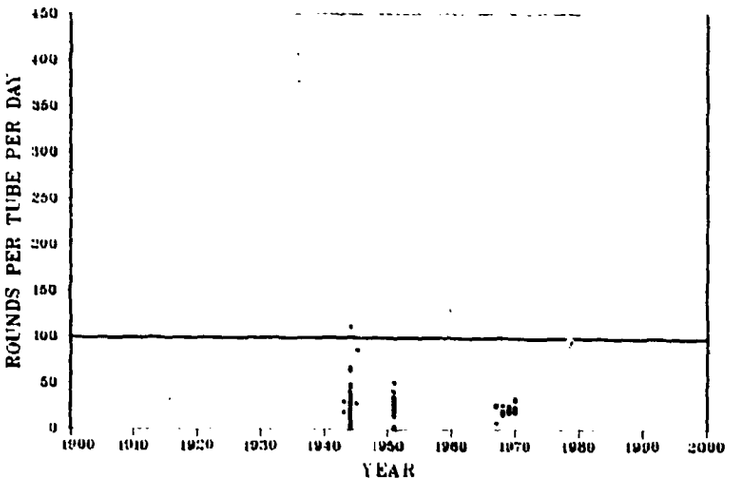


Figure 3-7. Distribution of RTD Over Time - 203mm

CHAPTER 4

EXPLORATORY ANALYSIS OF HISTORICAL RATES

4-1. PURPOSE. The purpose of this chapter is to present an analysis of the relationships among the chosen variables and their relative importance in explaining historical rates. This chapter also provides an analysis of the value of the AHART data base for use in prediction.

4-2. LINEAR TRENDS FOR RTD WITH CHANGES IN SINGLE INDEPENDENT VARIABLES

a. Linear Trend for RTD with Increasing Year

(1) Figure 4-1 repeats the presentation of all selected data points over time (Figure 3-1, Chapter 3), improving the capability to discern points that were plotted over one another. The negative slope of the regression line is as some might expect. It is suggested that as time progresses, and along with it technology, doctrine, target acquisition, etc., fewer rounds are being fired. As the nature of warfare has changed, the overall effect, according to this data, continues downward. (For an explanation of numerical and letter plotted symbols, see the BMDP Guide. Letters simply indicate increasing multiples of points plotted on the same point.)

(2) The synergistic effects of improved target acquisition, improved accuracy, increased dispersion, changed tactics, increased lethality, and improved cover all are somehow imbedded in this result. Each are subjects of closely related individual studies but are beyond the scope of this study to analyze.

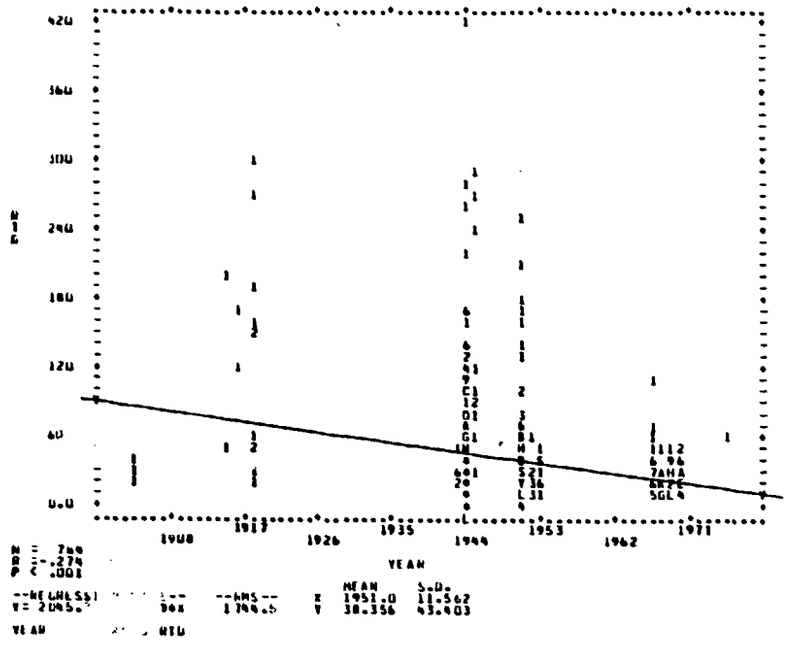


Figure 4-1. Linear Trend for RTD with Increasing Year

(3) There is no readily available means with which to judge the magnitude of the slope. It does not seem severe for a linear trend of a single variable.

(4) It is obvious from the correlation coefficient (R) in Figure 4-2 that the linear regression of this one variable is grossly inadequate to explain the variability of the data. From the appearance of the amount of dispersion in any one year, it is unlikely this or any one variable will explain much of variability. The general trend is nevertheless useful information.

b. Linear Trend for RTD with Increasing Caliber (TUBETYPE)

(1) Figure 4-2a suggests that as the caliber of the weapon increases the RTD decreases. This is as expected, consistent with the traditional role of each weapon system. The 75mm and 105mm tubes are historically the direct support tube types, those weapons which are called on first to support the maneuver units. Increased caliber tubes fire specialized missions and fire in support of the maneuver units only when the direct support weapons cannot handle the volume of fire required. In all but light infantry units, 155mm artillery has recently begun to assume the direct support role. This change, generally after the Korean War, will have an influence on the analysis of this data.

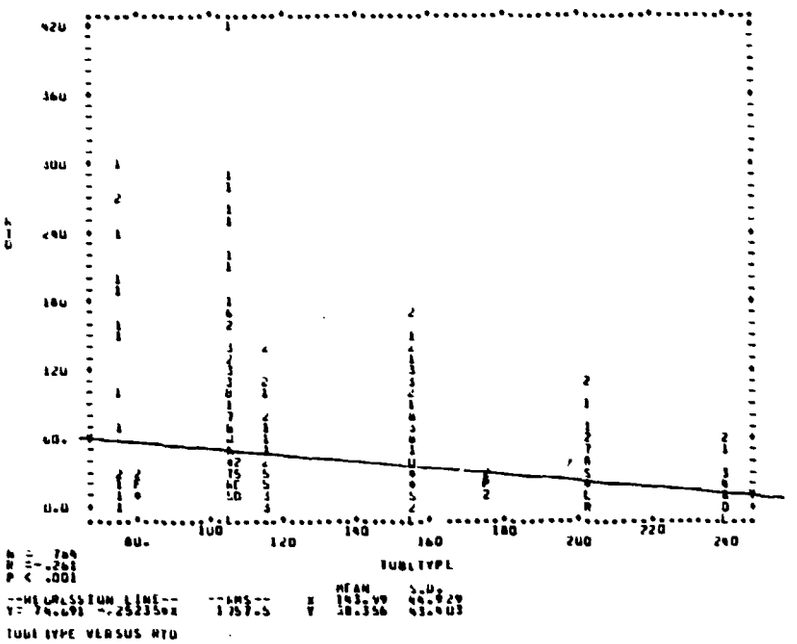


Figure 4-2a. Linear Trend for RTD with Increasing Caliber of Tube Type

(2) The maximum RTD of 420 should not be considered as an outlier. Numerous 1-day RTD (in the AHART data base; not included in the selected data base) are in excess of this number--as high as 827 RTD.

(3) Again the variability of the data is far beyond the ability of this single variable to explain.

(4) Figure 4-2b shows that, when grouped by tube category, the slope of the curve is only slightly less. Use of this different grouping arrangement to present more concise, readable charts and graphs is feasible with little loss or distortion of information.

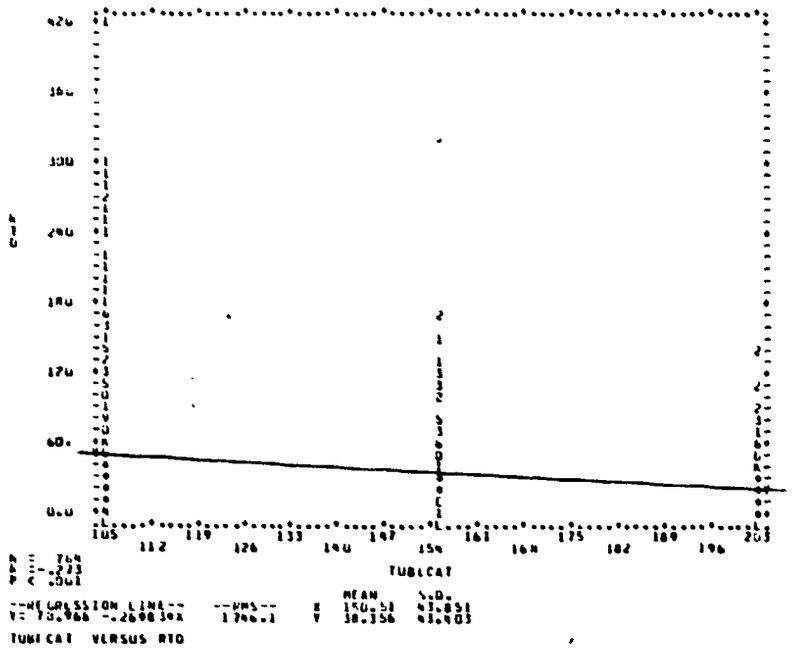


Figure 4-2b. Linear Trend for RTD with Increasing Tube Category

c. Linear Trend for RTD with Increasing Tube Quantity (TUBEQTY)

(1) Figure 4-3 suggests that as the number of tubes considered in an event increases, the RTD decreases. This seems consistent with what is found in the WARRAMP process. In the division-level model, a larger number of tubes must share the same number of generated missions. In computation of the theater rate, the same number of expenditures is divided by all tubes in the theater, many of wnich rarely fire. Therefore, as the number of tubes in the division-level model increases or as the number of tubes in a theater increases, it is expected that there would be a decrease in the number of rounds each tube would, on the average, fire.

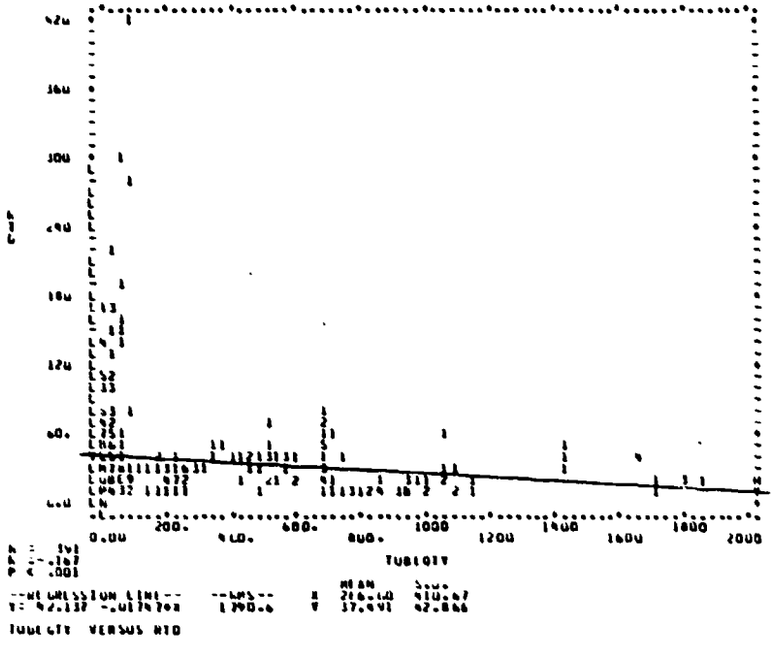


Figure 4-3. Linear Trend for RTD with Increasing Tube Quantity (TUBEQTY)

(2) The large variability is again very poorly explained by this trend alone.

(3) There is a mixing here of samples for operational RTD and theater RTD. The rapid decrease in RTD after a tube quantity of 87 weapons indicates the general dividing line between operational and theater RTD with respect to this variable. The figure is roughly equivalent to the tubes available to a corps-size operation. In future analysis, the data for the two types of rates should be maintained and analyzed separately.

d. Linear Trend for RTD with Increasing Intensity of the Operation (OPN)

(1) Figure 4-4 shows a positive trend for the change of RTD with increased operational intensity. This is as expected. More intense fighting would be expected to produce higher artillery expenditures. The magnitude of the slope, however, is not as great as expected. The RTD in light protracted combat would be expected to be much less than those of a heavy defense of a prepared position.

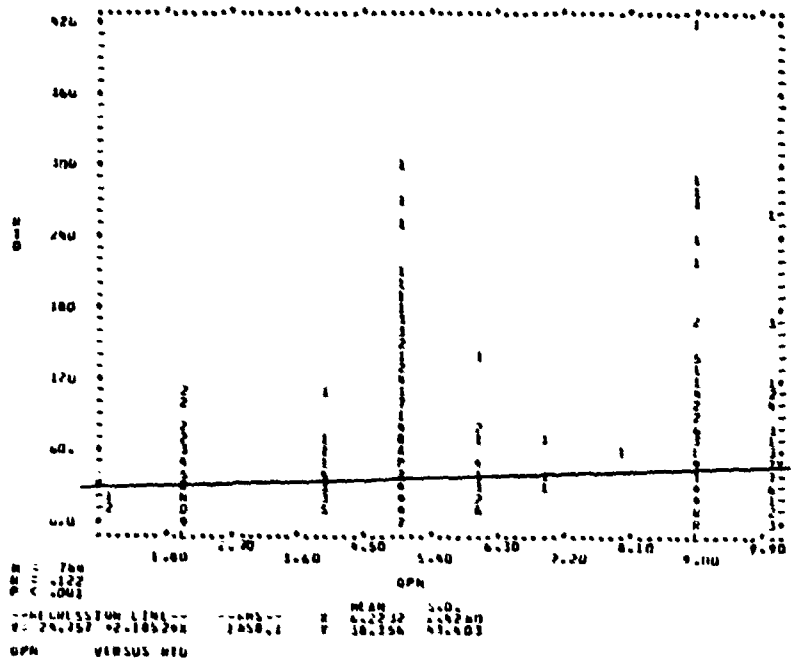


Figure 4-4. Linear Trend for RTD with Increasing Operational Intensity

(2) Several explanations are conceivable. If the expected magnitude of the slope were, in fact, true, the problem could be in the sampling. The AHART data base has a very poor distribution over the spectrum of operational intensities, most points being concentrated in the heavy intensity battles. It is possible, however, that this is a true result. Because of increased movement during more intense battles, or the use of increased harassing fires during lighter, more protracted battles, RTD in higher intensity battles may not be as different as might have been expected.

(3) Between attack operations and defensive operations of the same intensity, it is expected that defensive operations would have a greater RTD. This is the result found in historical data.

(4) The variable OPN is notably different from the other variables examined in that, if increasing scales for the independent variables are used, it is the only one with a positive influence on RTD.

e. Linear Trend for RTD with Increasing Duration of the Operation (DURATION)

(1) Figure 4-5 suggests that as the period of time over which the RTD is computed increases, the RTD decreases. The direction of the trend is as expected, but the slope is considerably less than expected. An increase in the number of days over which RTD is computed increases the likelihood that a number of those days were reduced firing or even nonfiring days. Seldom do units fire continuously for days on end. It has happened, but it is the exception. It would be expected, therefore, that a more rapid decrease in the slope would be closer to the actual events.

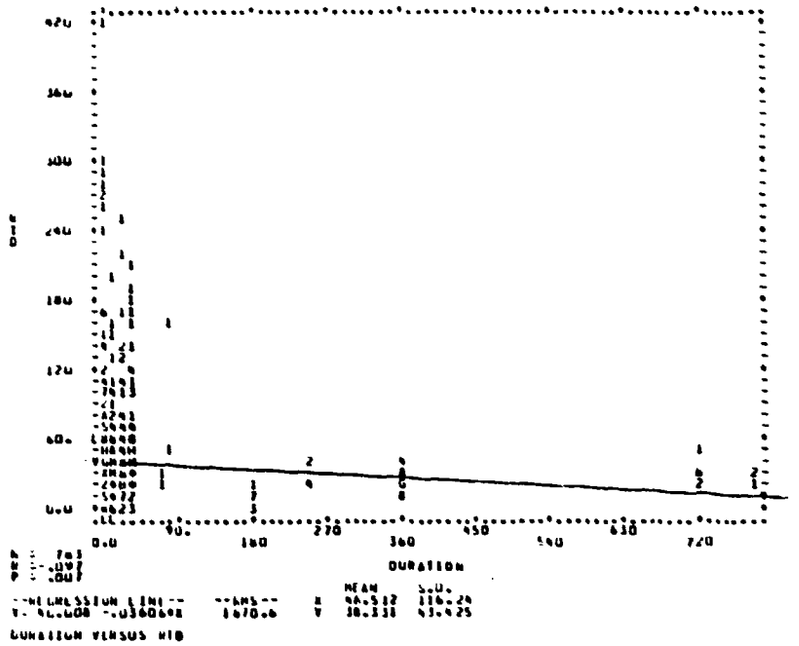


Figure 4-5. Linear Trend for RTD with Increasing Duration

(2) The sample itself may again account for the less than expected slope. The great majority of samples are under 40 days in duration. The magnitude of the slope is, by default, heavily influenced by a few number of points at the 180-day-plus end of the scale. Despite the elimination of the 1-day duration samples, the trend is mostly determined by samples of duration less than 10 days. (Note: those samples of 1-day duration were eliminated when forming the selected data base.)

(3) There is also a larger than desired correlation between DURATION and the variable SIZE (Table 4-1). That is, the larger forces are also those points for which data is aggregated over longer periods of time. Since larger forces also tend to have a greater number of tubes, the influence will be to reduce the RTD for increased durations. Some additional work will be required to isolate these effects.

(4) The less than expected means for RTD may be an additional explanation as to why the slope is lower than expected (Figure 4-5). The trend projected over a long x-axis will produce a reduced slope, with a small mean RTD of 38 on the corresponding y-axis.

(5) DURATION has the least correlation with RTD of the variables included in the analysis, indicating a possible opportunity to redefine or eliminate DURATION as a variable.

f. Linear Trend for RTD with Increasing Size of the Supported Force (SIZE)

(1) Among the variables chosen for this analysis, SIZE has the greatest correlation with RTD, if only by a small amount. The trend, as shown in Figure 4-6, suggests that as the size of the supported force increases, the RTD decreases. This is consistent with the WARRAMP process. As the size of the force increases, the proportion of subordinate units actually engaged in fighting decreases. The artillery supporting the engaged units experiences high single day rates, but the artillery supporting units not engaged do not.

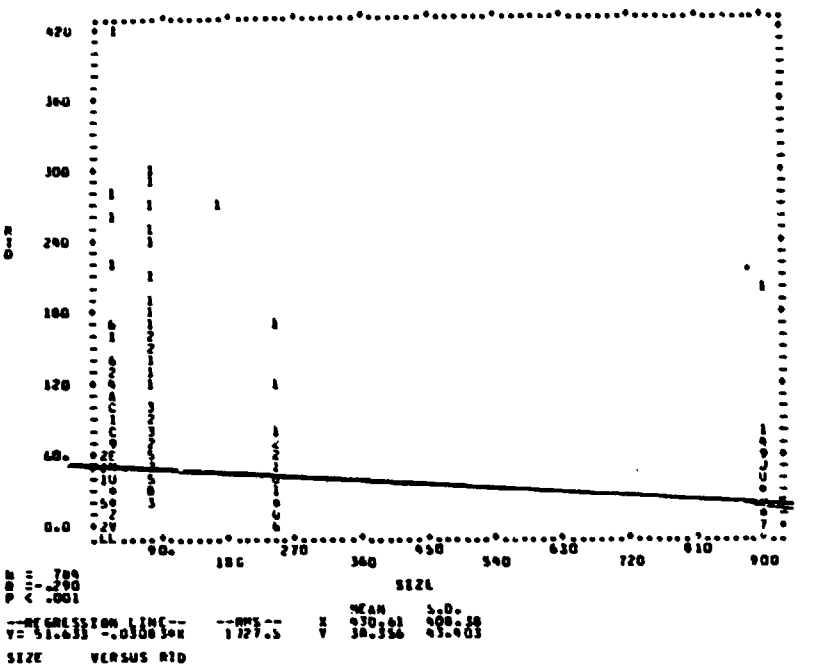


Figure 4-6. Linear Trend for RTD with Increasing Size of Supported Unit

(2) SIZE as a variable offers the most efficient way to isolate rates for which theater rates can be directly compared. Division and corps RTD fall primarily into the scope of operational rates. Army and theater RTD are directly comparable with the WARRAMP process rates.

(3) There were no samples included in the data base for units less than battalion task force size. Subordinate unit actions are of limited value for comparison with theater-level studies.

(4) It is suggested then from this data that WARRAMP rates, being theater rates, should almost always be lower than any of the operational rates to be found in historical data. When comparisons are made between historical and WARRAMP results, the WARRAMP results would be expected to be lower. This, however, is not the case, as Chapter 5 will show.

g. Correlation Among Individual Variables

(1) Within the AHART data base there are over 3,600 data points. Once samples of 1-day duration are eliminated, the selected data base retains 1,080 points. There are 213 records from the 1,080 for which no data for the dependent variable (RTD) was recorded. Upon elimination of these 213 records, there remained 787 records in the selected data base. Of the 787 records in the selected data base, some variables still had missing data and therefore could not be included in the calculations for the simple linear correlation coefficients involving that variable.

(2) Differences found between this matrix (Table 4-1) and the multiple linear correlation matrix (Table 4-2, shown later) are due to the difference in the number of records employed in the calculation and by the difference in the number of variables included in the calculations.

Table 4-1. Simple Correlation Matrix

Variable	YEAR	TUBETYPE	TUBEQTY	OPN	DURATION	SIZE
YEAR	1.0					
TUBETYPE	-.1181	1.0				
TUBEQTY	.2976	-.5914	1.0			
OPN	-.2816	.1223	-.1536	1.0		
DURATION	.1869	-.0281	.0778	-.0400	1.0	
SIZE	.6639	-.2495	.7103	-.2884	.2071	1.0
RTD	-.2741	-.2612	-.1674	.1222	-.0965	-.2901

(3) The matrix demonstrates the lack of true independence among most of the chosen variables. There is a very high correlation between the variable SIZE and both TUBEQTY and YEAR. For a sample size of 394 records (the lowest number of records used in any of the calculations), the correlation is statistically significant if the coefficient is greater than .09, which most are. Only the variable DURATION is relatively uncorrelated with the other variables.

(4) While none of the correlations are very strong, all of the chosen variables are correlated with the dependent variable. The correlation with DURATION is weakest.

4-3. LINEAR TRENDS FOR RTD WITH CHANGES IN TWO SELECTED INDEPENDENT VARIABLES

a. Linear Trend for RTD with Change in Year and Tube Category

(1) Observed as raw data, it appears possible that RTD for WWII is as great as for the data from WWI (Figure 4-1). Reduced to mean RTD for each war, the graphics display a dramatic drop in RTD from WWI to WWII (Figure 4-7). There are decidedly fewer observations for WWI, decreasing the confidence in these figures compared to WWII data; however, narrative accounts and contemporary analysis indicate that very high rates of fire for WWI were possibly the rule rather than the exception. Figure 4-7 demonstrates the change in the mean RTD for each war by tube category.

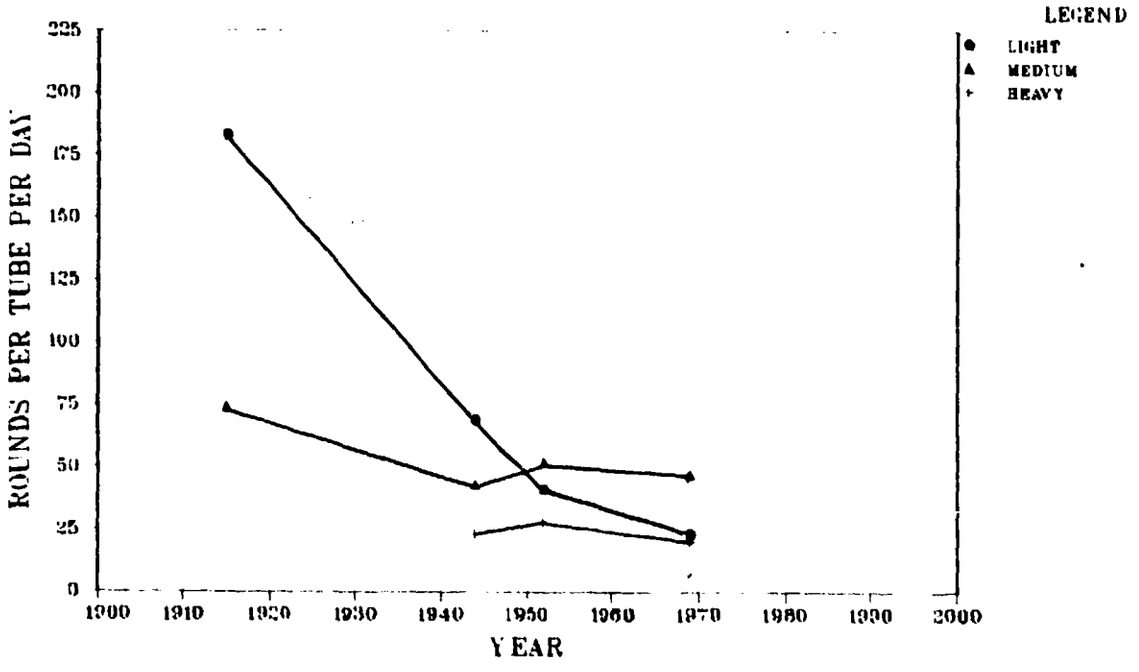


Figure 4-7. RTD for Year by Tube Category

(2) The change in RTD for medium tubes is not as dramatic but is significant.

(3) Following WWII the RTD for light weapons declined and became nearly identical to RTD for heavy tubes in Vietnam.

(4) It is the medium tubes that actually increase and diverge slightly from the others after Korea.

(5) In WWII and Korea, tube types maintained traditional roles, light tubes having less range and providing direct support fires, medium tubes having less range than heavy tubes and more often supporting the fires of the direct support artillery.

(6) Heavy tubes remained in specialized roles and fired long range less accurate missions less often.

(7) By the 1960s, 155mm tubes had achieved greater range capability and were nearly as mobile as light tubes, therefore assuming a greater share of the targets which even in the past would have been better served with greater shell weights.

b. Linear Trend for RTD with Changes in Operational Intensity and Tube Category (Figure 4-8)

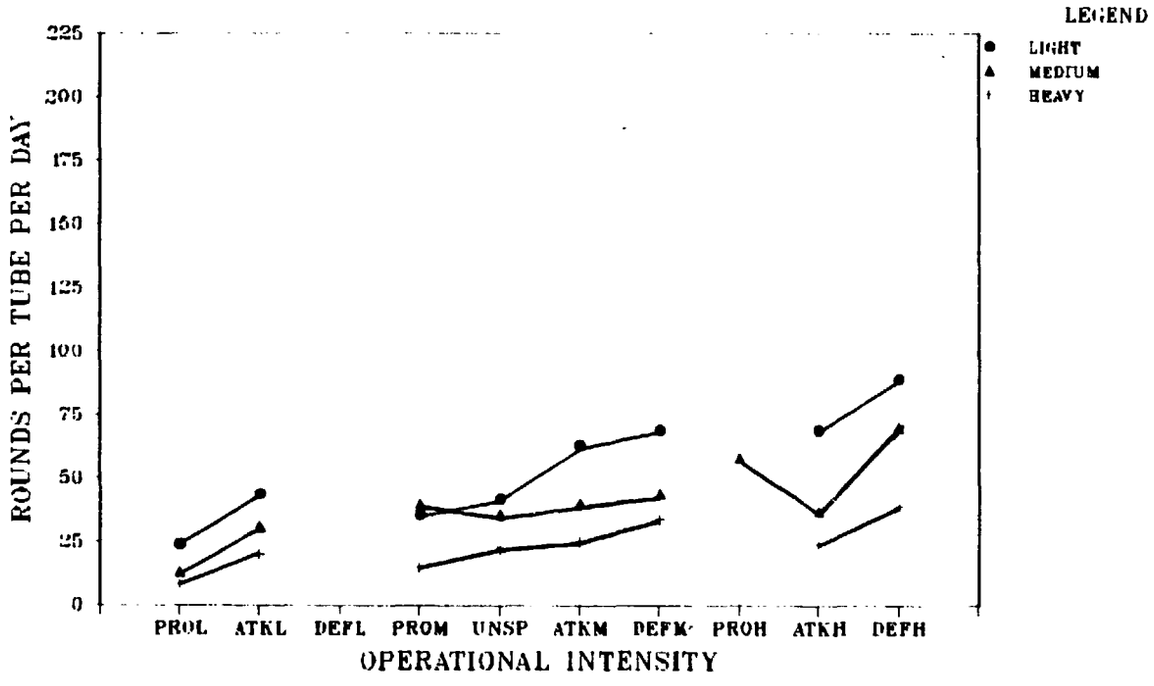


Figure 4-8. RTD For Operational Intensity By Tube Category

(1) With the notable exception of attack heavy (ATKH), RTD continually increases, even if not significantly, from the previous operation for like tube categories. This supports the order chosen for investigating this variable.

(2) As expected, attack rates are greater than protracted combat rates.

(3) Also as expected, expenditure rates are greater for defense operations than for either prolonged or attack operations. This is generally consistent with FM 101-10-1.

(4) From initial versions of this analysis it was found that the large number of unspecified (UNSP) operations in this data base fell generally between protracted medium (PROM) and attack medium (ATKM) and supports its location on the scale of operational intensities. This further supports the assumption that these UNSP operations were data consolidated over disparate types of operations. They are nearly central enough to be considered a measure of the central tendency of the sample.

(5) The decrease in RTD for ATKH, compared to operations both above and below it, is an interesting result in that it is consistent with what has been true in the division model of the WARRAMP process. A conceivable explanation is that the amount of movement required of the force in a deliberate intense attack is great enough to reduce the artillery's ability to support. A continued effort is warranted to acquire data on protracted operations for light and heavy tube types and to confirm this result.

(6) As shown in Chapter 2, the sample for this variable is heavily weighted to attack operations and particularly to heavy attack operations. This fact should not be lost in the aesthetically pleasing results of these graphics. Several of these points are based on sample sizes of less than five events.

c. Linear Trend for RTD with Changes in Duration and Tube Category

(1) Duration of battle can be divided into three general categories--first, battles, which are of the "come as you are" variety or are strictly of short length (less than 10 days long); campaigns which are longer, preconceived, and for which logistic preparations are made; and third, theater operations which are generally longer than 90 days and which may include numerous campaigns and individual battles.

(2) In Figure 4-9 it is the RTD for DURATION greater than 30 days that is most directly comparable to the WARRAMP process. This is so, not because duration of battles determines whether or not the expenditure is a theater-level RTD, but because this is the way historical data is generally found. Historical documents that provide the details needed in this analysis have often been consolidated into monthly, quarterly, semiannual, and annual periods. Seldom are theater-level expenditure data consolidated in less than the 30-day figures. For Korea, monthly theater data is available but lacks the theater tube quantity data needed for determination of RTD. This level of detail exists in sufficient detail only for Vietnam.

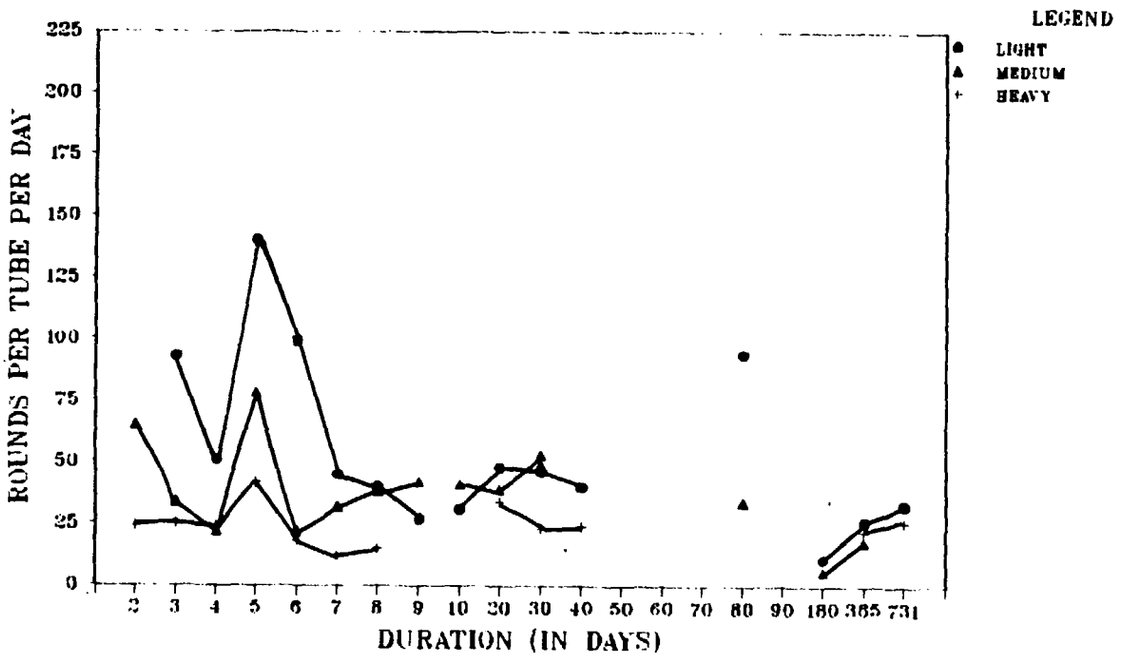


Figure 4-9. RTD For Duration By Tube Category

(3) In the WARRAMP process, theater rates are produced for any number of days, 1 to 180. But for the data in AHART, the three general categories described above roughly approximate each type rate and are therefore useful in the analysis. It may be worthwhile in a revised version of the data base to identify historical data points according to one of these three categories.

(4) With the notable exception of the 5-day RTD (for which there are only five observations), there is a decreasing trend from 2 to 10 days, leveling off for RTD of 20-, 30-, and 40-day duration. The 80-day RTD for light tubes (again with very few samples) leaps dramatically. RTD for light and medium tube categories with duration greater than 180 days is obviously less than their counterparts of less duration. Heavy tube RTD is generally constant.

4-4. MULTIPLE LINEAR REGRESSION ANALYSIS

a. Multiple Correlation Among the Variables

(1) Among the 787 points in the selected data base, 396 had values outside the acceptable limits (smaller or greater than limits defined for each variable). Only 391 complete records remain. It is with these records that the multiple regression analysis is done. It is unfortunate that the difficulty in finding even reasonable approximations for tube quantity eliminates nearly half of the records in the selected data base from this analysis. Future work would be well spent on ameliorating this problem.

(2) For this sample size, the correlation is significant if the absolute value of the correlation coefficient exceeds 0.09, which most do. As shown in Table 4-2, YEAR, TUBETYPE, OPN, and SIZE all have significant linear correlations with RTD. DURATION does not appear to be significantly correlated with RTD.

Table 4-2. Multiple Linear Correlation Matrix

Variable	YEAR	TUBETYPE	TUBEQTY	OPN	DURATION	SIZE
YEAR	1.0					
TUBETYPE	-.135	1.0				
TUBEQTY	.296	-.594	1.0			
OPN	- 136	106	-.158	1.0		
DURATION	216	-.113	.076	-.144	1 0	
SIZE	.748	- 439	.709	-.235	268	1.0
RTD	-.249	- 214	- 167	.169	- 036	- 231

(3) The variables are, however, also significantly correlated with each other. High correlations exist between SIZE and both YEAR and TUBEQTY. With the exception of the correlation between DURATION and both RTD and TUBEQTY, all variables are significantly related to one another. The lack of independence among the variables is a major feature of the data base. With continued analysis and increased study

into individual historical events, more independent variables may be developed.

(4) The variables chosen for this study were those for which historical data seemed accessible in the time allotted and were those which also seemed to be the most commonly used in previous analyses of the WARRAMP process. It would appear that several of the factors analysts most often look for in the analysis of WARRAMP results, i.e., operational intensity, size of the maneuver forces, duration of the battles, may be so dependent on each other that the analysis is at best intricate and possibly redundant. Continued work in the determination of truly independent variables and continued investigation into their relationship with selected dependent variables would seem to be needed. The difficulty experienced in explaining WARRAMP results may stem in part from the lack of independence in the variables commonly used to do so.

(5) None of the coefficients exceeds .80 and therefore suggests no multicolinearity. None of the variables is completely defined by another.

b. All-possible Subset Regression

(1) The order in which the variables appear in the single variable subsets is a first cut at the order of importance of each of the variables for explaining the variability of the data. In Table 4-3 the variables appear in an order slightly different from the order shown in the simple linear regression matrix. The discrepancy may be due to the difference in the number of records used in the analysis. (Only complete records are used in the all-possible subset regression.) Most notably, YEAR is transposed with SIZE, and TUBEQTY is transposed with OPN.

Table 4-3. Results - All-possible Subset Regression for Single Variables

R-square	Variable
.0623	YEAR
.0533	SIZE
.0457	TUBETYPE
.0286	OPN
.0280	TYPEQTY
.0013	DURATION

(2) Table 4-4 presents the best results for each number of variables included. "Best" is defined as the combination of variables having the highest multiple correlation coefficient for the number of variables included. The results of the regression for each variable are provided.

(3) The largest correlation coefficient was achieved with a combination of four variables, each contributing to the explanation of the variability as shown in Table 4-4.

Table 4-4. Coefficient Values from Best All-possible Subset Regression

Variable name	Standardized regression coefficient	T-stat	Contribution RSQ
Intercept	33.3	4.23	
YEAR	-0.185	-3.94	.0308
TUBETYPE	-0.474	-8.55	.1452
TUBEQTY	-0.373	-6.45	.0827
OPN	0.135	2.99	.0177

Squared multiple correlation	.2328
Numerator degrees of freedom	4
Denominator degrees of freedom	386

(4) The overall correlation coefficient, even for the best combination, demonstrates that no combination of variables offers a very useful explanation of all the variability in the RTD value. The best information to be gained from this number is that more work needs to be done, either in definition of variables or in data collection, or in both, before this data base can be used to make high-confidence predictions. The correlation coefficient is low, compared to scientific experiments, but is not unusual in sociological research work. No attempt at prediction should be made at this point.

(5) The relative rank of the variables in terms of their contribution to the correlation coefficient does offer a suggested priority for further investigation, but the historical data in the data base at the present time does not sufficiently explain enough of the variability of the data to allow prediction.

(6) Analysis of the normalized probability plot (Figure 4-10) for standardized residuals demonstrates some departure from the assumption of normality for plots for this combination of variables. Both tails decay very rapidly. Analysis of the residuals themselves (Figure 4-11) displays a modest, wedge-shaped plot indicating some degree of nonlinearity even in the multiple effects of the variables.

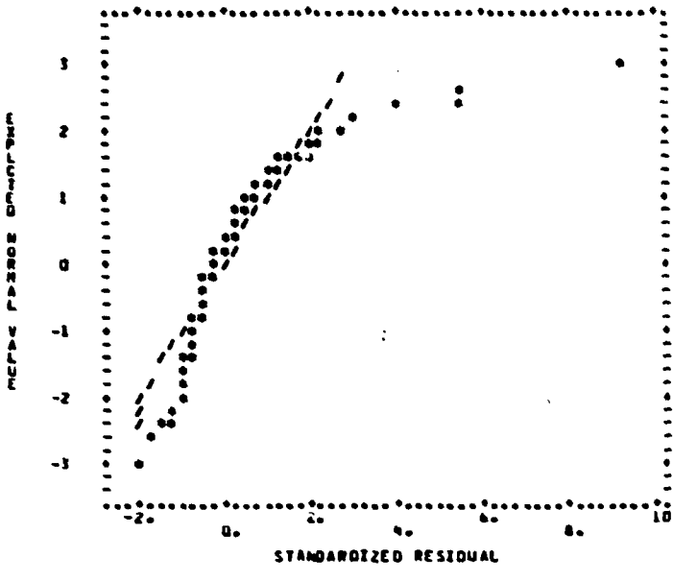


Figure 4-10. Normal Probability Plot for Standardized Residuals of the Best All-possible Subset Regression

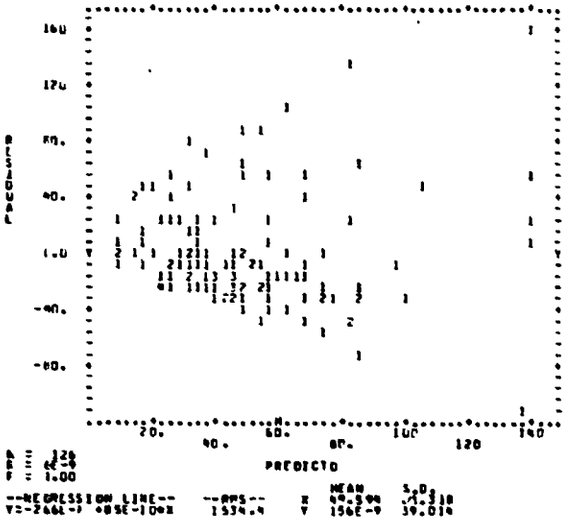


Figure 4-11. Residuals for Best All-possible Subset Regression

c. Stepwise Linear Multiple Regression

(1) Using forward-stepping techniques, four variables entered the regression that were not later eliminated. Table 4-5 shows the small changes to the correlation coefficient produced by each variable. The overall coefficient of determination, as in the all-possible subset regression, again demonstrates the inadequacy of the AHART data base for explaining the variability of the data and therefore its inadequacy for use in high-confidence prediction for individual cases.

(2) The resulting regression coefficients and their correlation are presented in Table 4-6. Except for OPN, all variables included have an effect of decreasing RTD. The correlations between TUBEQTY and the other variables are much greater than desirable.

Table 4-5. Summary Table - Stepwise Linear Multiple Regression

Step no	Variable entered	Multiple		Change in RSQ
		R	RSQ	
1	YEAR	.2496	.0623	.0623
2	TUBETYPE	.3531	.1247	.0624
3	TUBEQTY	.4638	.2151	.0904
4	OPN	.4825	.2328	.0177

Table 4-6. Coefficient Values from Stepwise Regression

Step	Y-INTCPT	YEAR	TUBETYPE	TUBEQTY	OPN	DURA-TION	SIZE
0	37 5	- 9232	- 1929	- 0175	2.7443	- 0663	- 0244
1	1836.9	- 9232*	- 2275	- 0107	2 2366	0334	- 0106
2	2214 8	-1 0491*	- 2275*	- 0405	2 6210	- 0072	- 0422
3	1538 1	- 7332*	- 4250*	- 0405*	2.1963	- 0338	- 0085
4	1429 0	- 6839*	- 4280*	- 0389*	, 2.1963*	- 0048	- 0029

NOTES:

1. Regression coefficients for variables in the equation are indicated by an asterisk.
2. The remaining coefficients are those which would be obtained if that variable were entered in the next step.

(3) The following plots (Figures 4-12 and 4-13) demonstrate the same results found in the all-possible subset regression; that is, some amount of departure from the linearity and/or normality assumption and a definite wedge-shaped plot of residuals indicating a change in the variability of the data with increasing magnitude of the dependent variable (RTD). Therefore, an investigation of some nonlinear relationships is indicated.

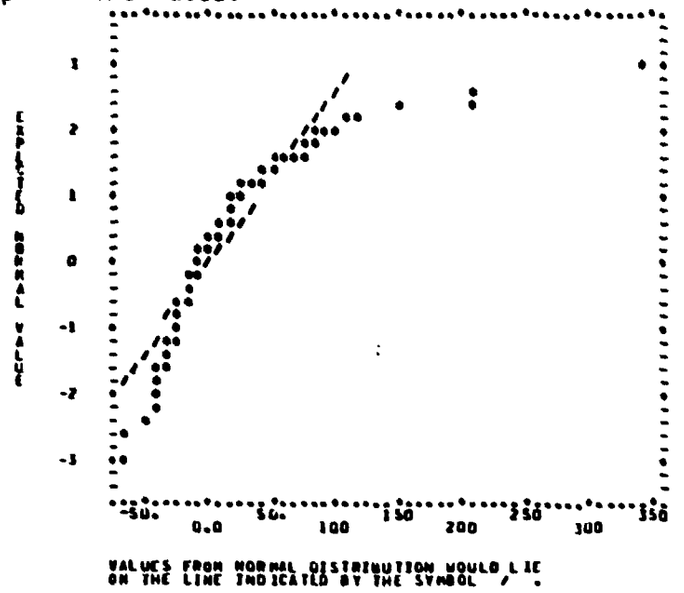


Figure 4-12. Normal Probability Plot for Standardized Residuals of the Stepwise Linear Multiple Regression

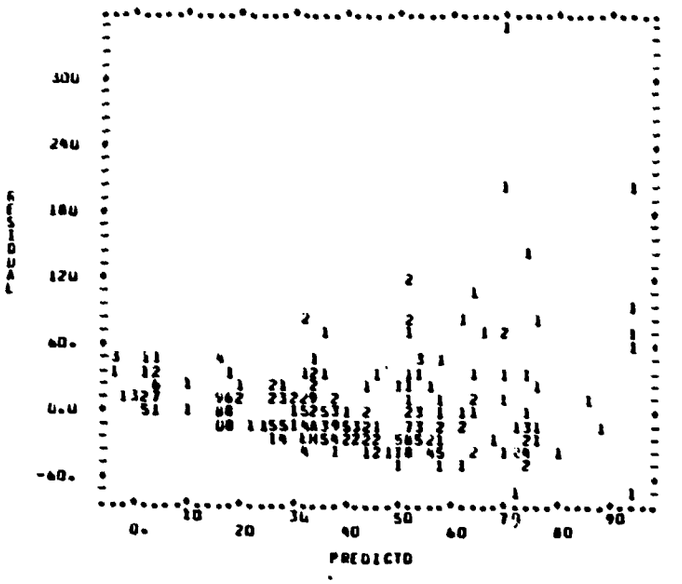


Figure 4-13. Residuals for Stepwise Linear Multiple Regression

d. Multiple Linear Regression on Nonlinear Transformations

(1) From the linear regression that was conducted, no combination of variables seemed adequate to explain the variability of the data. Several transforms of the data were attempted. Only one improved the overall correlation coefficients, then only slightly. Tables 4-7 and 4-8 present the results of a square root transformation of the data and application of the multiple linear regression techniques used on the transformed data.

Table 4-7. Summary Table - Stepwise Linear Multiple Regression, Square Root Transform

Step no	Variable entered	Multiple		Change in RSQ
		R	RSQ	
1	TUBETYPE	.3338	.1115	.1115
2	TUBEQTY	.4968	.2468	.1353
3	OPN	.5067	.2567	.0099

Table 4-8. Regression Coefficients from Stepwise Regression, Square Root Transformation

Step	Y-INTCPT	YEAR	TUBETYPE	TUBEQTY	OPN	DURA-TION	SIZE
0	1.3782*	-.0041	-.0031	-.0001	.0176	.0011	-.0001
1	1.8182*	-.0060	-.0031*	-.0005	.0237	.0004	-.0003
2	2.3054*	-.0023	-.0056*	-.0005*	.0167	.0004	-.0001
3	2.2057*	-.0020	-.0056*	-.0005*	.0167*	.0007	.0000

NOTES:

1. Regression coefficients for variables in the equation are indicated by an asterisk.
2. The remaining coefficients are those which would be obtained if that variable were entered in the next step.

(2) The residuals shown in Figures 4-14 and 4-15 demonstrate a superior adherence to assumptions of both normality and linearity. The regression coefficients, however, demonstrate that no significant improvement is made in the ability of these variables to explain the variability.

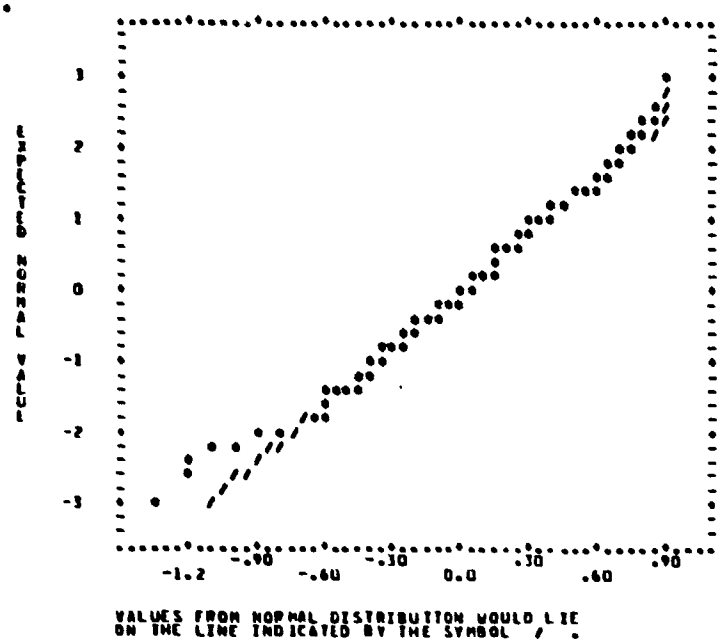


Figure 4-14. Normal Probability Plot for Standardized Residuals of the Stepwise Linear Multiple Regression, Square Root Transformation

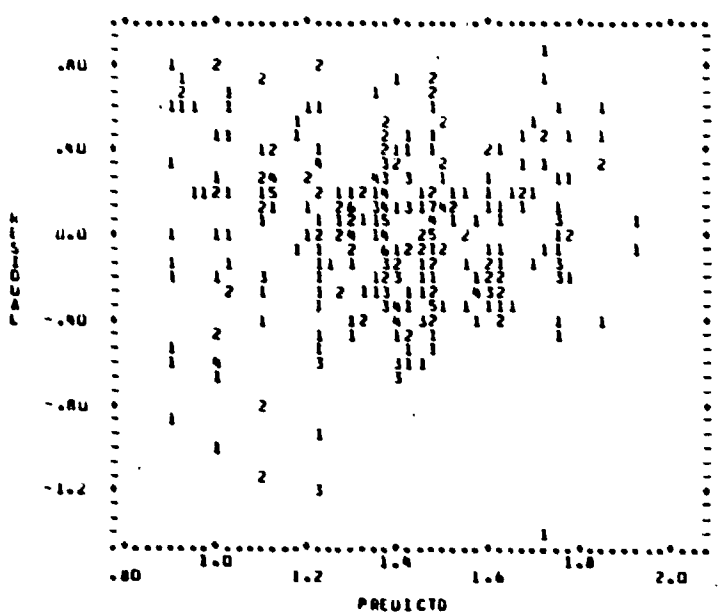


Figure 4-15. Residuals - Stepwise Linear Multiple Regression, Square Root Transformation

(3) The evidence becomes stronger that the variables included in the AHART data base, while useful in numerous other ways, are not yet ready for use in predicting RTD for individual events. It would appear that transformation of data to improve the usefulness of linear techniques in understanding the data provides no additional information and is not worthy of continued effort. Numerous other transformations, i.e., power, reciprocal, arcsine, were attempted with no better results; the need for improvement lies in the definition of the variables and the data itself.

CHAPTER 5

COMPARISON OF HISTORICAL RATES WITH WARRAMP RATES

5-1. PURPOSE

a. The purpose of this chapter is to present the results of comparisons made between selected WARRAMP rates and the RTD determined using historical data.

b. The definitions of rates and applicability of the data in this data base to comparisons with WARRAMP results are discussed in Chapters 1 and 2.

c. The WARRAMP results in this chapter are not identified with the specific requirements study from which they were taken and have been modified considerably to maintain the unclassified nature of the report without changing the nature of the comparison. Actual numbers are taken from among the Wartime Requirements Studies, FY 90 and FY 93 series, and can be obtained by authorized individuals or activities through the US Army Concepts Analysis Agency.

d. A follow-on study of this data conducted at CAA is planned in classified form.

5-2. ADDITIONAL CONSIDERATIONS AFFECTING COMPARISONS

a. Comparisons of this nature are subject to tremendous abuse. The presentation out of context and the occasional selective use of only favorable findings have created, in some circles, an attitude of mistrust and, in the extreme, a rejection of the use of historical data to compare with combat simulations. The list of additional considerations is presented here as a reminder to those who would misuse this data and to provide a broader perspective with which to judge the results of this study.

b. The very existence of the field of quantitative analysis attests to the belief that no single historical event is ever likely to match the precise conditions required for highly confident comparisons with a current or future situation. The procedures established to assemble data from many historical events, to draw conclusions, and to isolate comparable attributes are well established. But even these procedures can never duplicate a given situation with sufficient precision to overcome the objections of the cynic or the uninformed critic. For those, however, who respect the capabilities of such analysis and are able to accept its limitations as well as its strengths for what they are, no more and no less, a great deal of useful information is available.

c. Along these lines it is necessary to enumerate, without proceeding far into topics worthy of separate studies, the major attributes of the WARRAMP process which cannot be accounted for with the historical data in the AHART data base. Recall that only a limited

number of relevant factors affecting the WARRAMP process were chosen as variables in AHART. Additional historical data is available to examine additional variables, including some of the considerations listed below in Table 5-1.

Table 5-1. Considerations Affecting Comparisons

The WARRAMP process:
• Has an unconstrained supply of ammunition
• Has undegraded command, control, and communications (C^3)
• Has state-of-the-art target acquisition capabilities
• Has state-of-the-art weapon and munition technology
• Always simulates theater densities of weapons and equipment

(1) Constrained versus Unconstrained Ammunition. In the WARRAMP process, no constraint is imposed on the availability of rounds that can be fired. The stated purpose of the process is to determine how many rounds would be needed if the combatants had all the ammunition they could use. However, in historical events there are numerous physical constraints in production, transportation, and loss due to accident or enemy action. As a result of these physical constraints, commanders often impose artificial constraints by imposing ammunition rationing. On occasion, historical events can be classified as practically unconstrained (i.e., at least one side had all the ammunition it could use effectively), but the preponderance of historical events occurs under conditions of rationing.

(2) Undegraded versus Degraded Communications. The WARRAMP process does not model the effects of degraded command, control, and communications(C^3). There is no electronic jamming, no terrain interference or masking, and no loss of control due to destruction of headquarters units. Additionally, the processing of intelligence, once collected in WARRAMP, is in like manner undegraded. The intention of the WARRAMP process is to make no attempt to represent the variation of such effects, by default then assuming them to ultimately be of equal effect on both sides. This may be very objectionable to some, and may be at great variance from reality. The effects of undegraded communications and its effect on the use of intelligence is a major departure from historical experience.

(3) Improved Target Acquisition. A concentrated effort has been made over the last decade to improve the Army's target acquisition capabilities. Indeed, new technology has given commanders hope of reducing what has been one of their greatest weaknesses--the inability to acquire real-time intelligence and the resulting inability to target enemy maneuver and artillery units on a real-time basis. This new capability is reflected directly in current WARRAMP requirements studies. Real-time target acquisition and intelligence are expected to have significant effects on almost all factors influencing artillery expenditures. No historical data is available with which to measure or compare this influence. Even the recent Arab-Israeli Wars do not employ these systems sufficiently to permit comparisons with WARRAMP requirements studies for FY 93 and beyond.

(4) Improved Weapon and Munitions Technology. The range, accuracy, and reliability of artillery tubes have all improved markedly in this century. The most recent advances have never been tried outside test range conditions. In the arena of munition improvements, some analysts believe we have entered into a new age of artillery as different from 20th century historical experience as Napoleonic Wars and the American Civil War experience is from WWI and post-WWI historical experience. Artillery, formerly only an area fire weapon able to conduct precision firing on a specific target only with great effort and under very favorable conditions, can, with the development of laser guided and other terminally-guided munitions, attack specific targets with great accuracy as a matter of course. This effect is modeled in increasing detail in the WARRAMP process and has no historical experience.

(5) Theater Rate versus Historical RTD. As explained earlier, it is essential in any study of artillery expenditures to define clearly which type of rate is being observed and compared. Both operational and theater rates are available in historical data. Theater rates are by definition the lowest rates possible to compute since they use in the denominator all tubes available in a theater and not only those available to a specific area of operations.

(6) Current Level of the Analysis. Statistical analysis is an iterative process. This study is only the first step at data description and exploratory analysis. As the work progresses and other relevant variables are added or are taken away, the ability to account for the variation in historical data will improve. As it does so, the ability to compare WARRAMP and historical results will improve. Not that the rates will necessarily draw closer, but the confidence in the difference and the certainty with which we accept the information derived will increase.

5-3. COMPARISON OF WARRAMP RATES WITH HISTORICAL RTD

a. Reduced Scope of the Comparisons. At the outset of this study, it was intended that the comparisons of WARRAMP and historical data be a major result of the work. However, up to this point, the variables used in the analysis do not provide sufficient explanation of the variability to fit equations for RTD with any confidence in predictions

of individual events. As a result, the comparisons made in this chapter are mostly for illustrative purposes. These comparisons provide a start point but are of such low confidence levels that they can only be considered early iterations of what will, with continued analysis, be useful comparisons. An attempt to present any greater array of detailed comparisons at this point would be meaningless.

b. WARRAMP Rates versus Historical RTD. From Table 5-2 it can be seen that the most pronounced difference found in this comparison exists for 105mm/light tube types. The difference is greater at the 30-day rate than the 180-day rate. 155mm/medium rates compare more closely with AHART results, 203mm/heavy still closer. None, however, fall within the 95 percent confidence limits of a normal linear distribution.

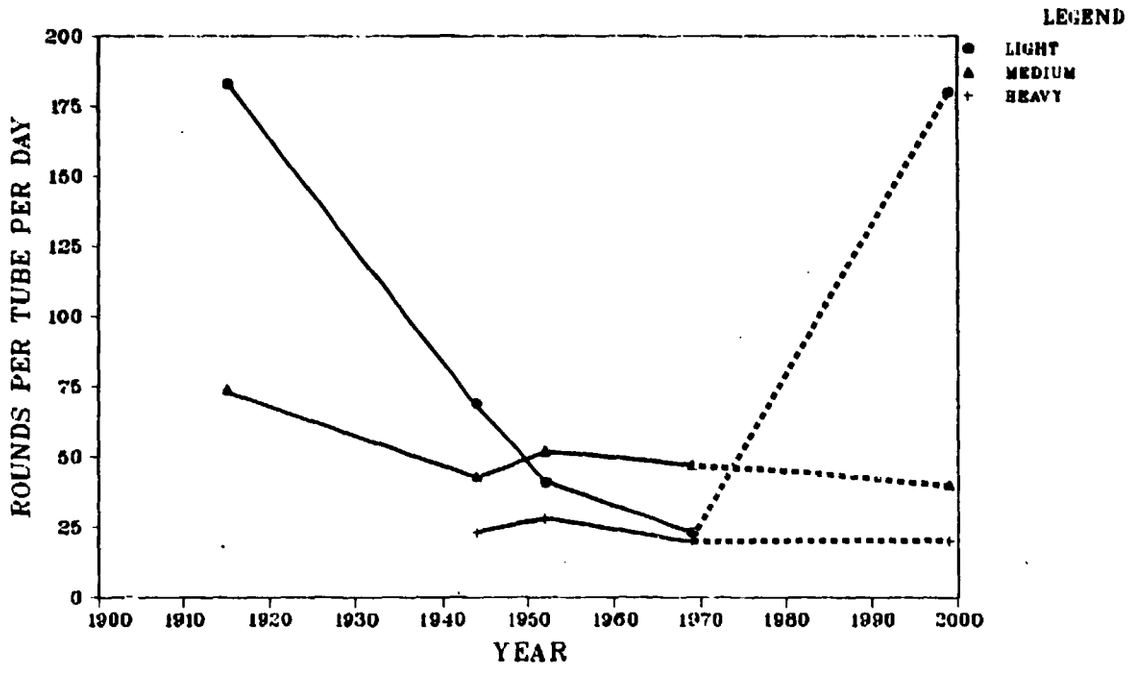
Table 5-2. WARRAMP Rates vs Historical RTD

TUBETYPE	Average RTD	95% Confidence interval	Standard deviation	WARRAMP rate	
				30-day	180-day
105mm	62.9	3.9	55.9	200	180
155mm	39.0	2.4	30.2	100	45
203mm	21.9	1.5	18.6	30	20
Light	5C.2	3.0	56.8		
Medium	39.0	2.4	30.2		
Heavy	23.7	1.2	20.1		
All	38.4	1.5	43.4		

- As a result of considerations in Table 5-1, WARRAMP rates should be expected to be less than average RTD.

c. WARRAMP Rates versus RTD Over YEAR by TUBECAT

(1) Data collected from the requirements studies are plotted in Figure 5-1 together with the historical data as a point of departure for further analysis. No attempt is made here to extend the distribution of historical RTD beyond their place in time. When confidence in the data increases, a worthwhile attempt to do so can be made.

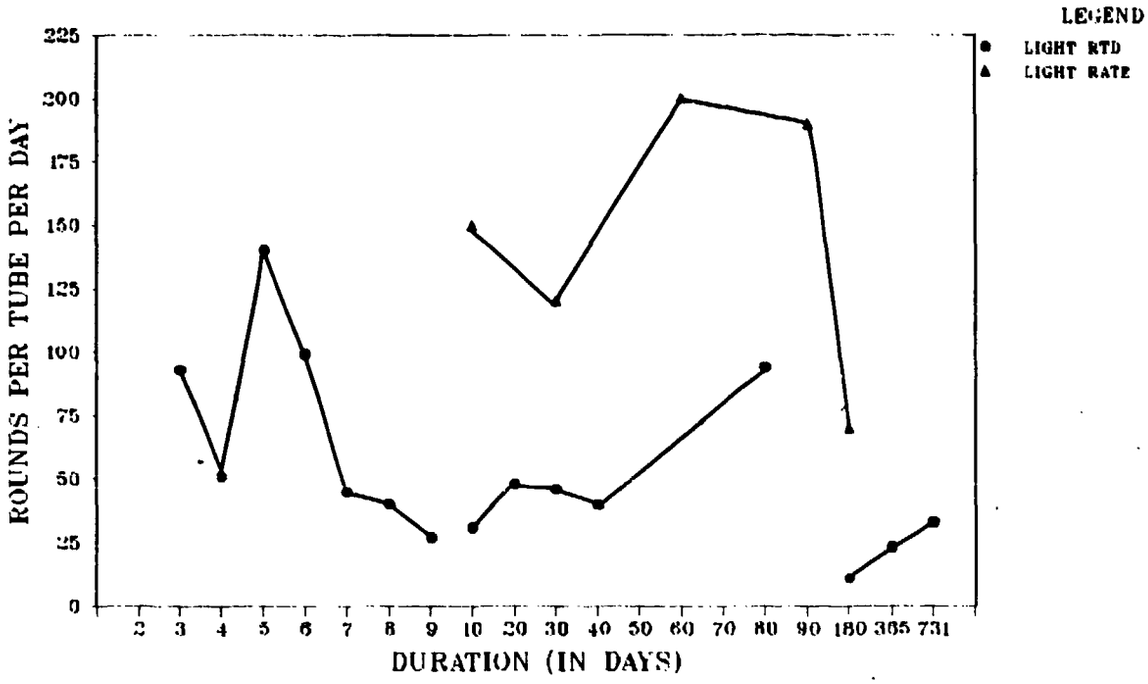


NOTE: Values plotted for 1999 are WARRAMP rates. Both continuous and broken lines are to aid observation only.

Figure 5-1. WARRAMP Rates vs RTD Over YEAR by TUBECAT

(2) Once again the 105mm/light tube types depart most dramatically from what was found in this historical data base. The light tube type historical curve would have to reverse itself dramatically for some reason to meet what WARRAMP predicts. The medium and heavy tube types do not seem to deviate greatly. It seems possible that such rates could actually occur.

d. WARRAMP Rates versus RTD for DURATION by TUBETYPE/TUBECAT. Figures 5-2, 5-3, and 5-4 provide additional comparisons for rates and RTD over various DURATIONs. Light tube types remain at great variance from historical data. Medium and heavy tube types seem much closer to historical experience throughout.



NOTE: Scale for DURATION changes; connecting lines are to aid observation only.

Figure 5-2. WARRAMP Rates vs RTD for DURATION by TUBECAT - Light Tubes

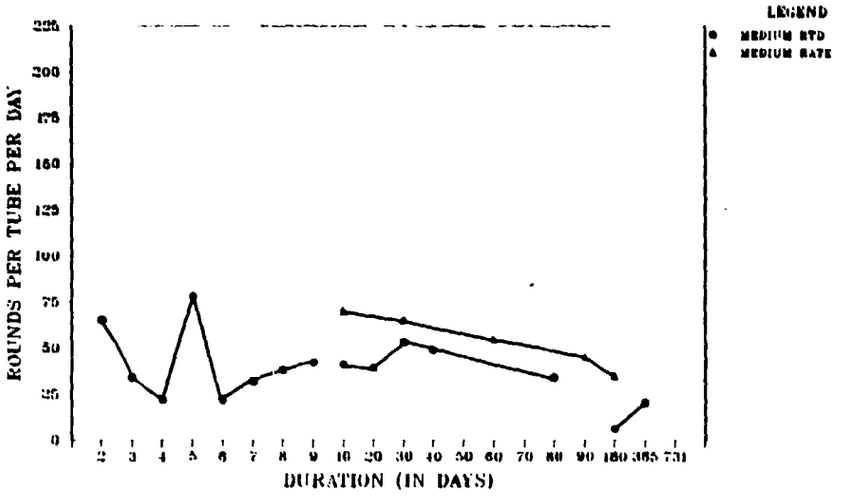


Figure 5-3. WARRAMP Rates vs RTD for DURATION BY TUBECAT - Medium Tubes

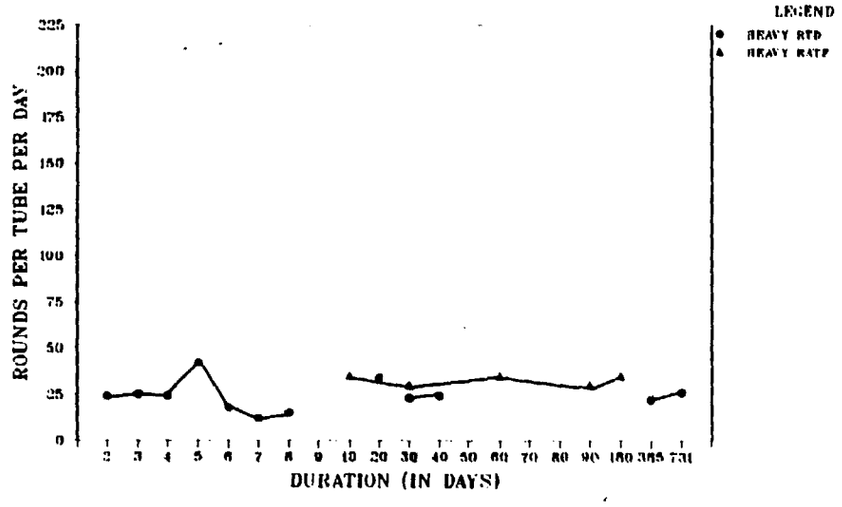


Figure 5-4. WARRAMP Rates vs RTD for DURATION by TUBECAT - Heavy Tubes

e. WARRAMP Rates versus RTD Over OPN by TUBECAT

(1) Final WARRAMP results intentionally are rates which are aggregate results of the spectrum of combat operations. To compare RTD with rates for individual operations within WARRAMP, it is necessary to extract the rates from the division-level simulation (COSAGE).

(2) The rates shown in Figures 5-5, 5-6, and 5-7 for the UNSP group are, as described in Chapter 4, those most comparable to theater rates. To provide additional information here, the WARRAMP theater rates and the historical UNSP RTD are also plotted. RTD are plotted and connected by like level of intensity (i.e., light, medium, heavy) to make observation easier.

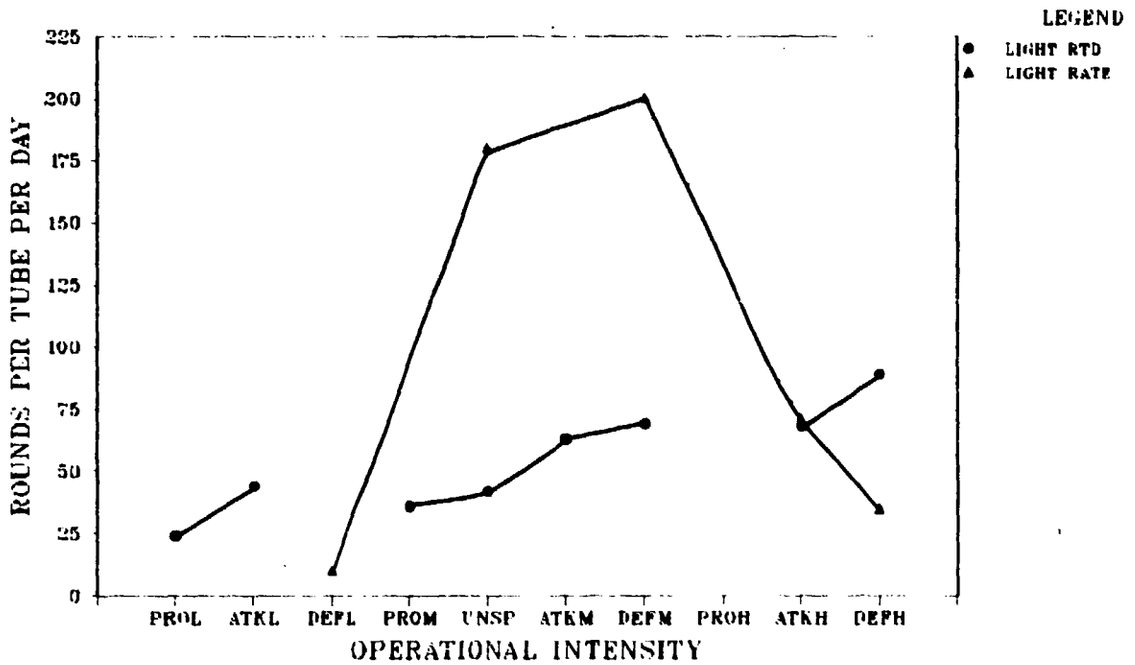


Figure 5-5. Division-level WARRAMP Rates vs RTD Over OPN by TUBECAT - Light Tubes.

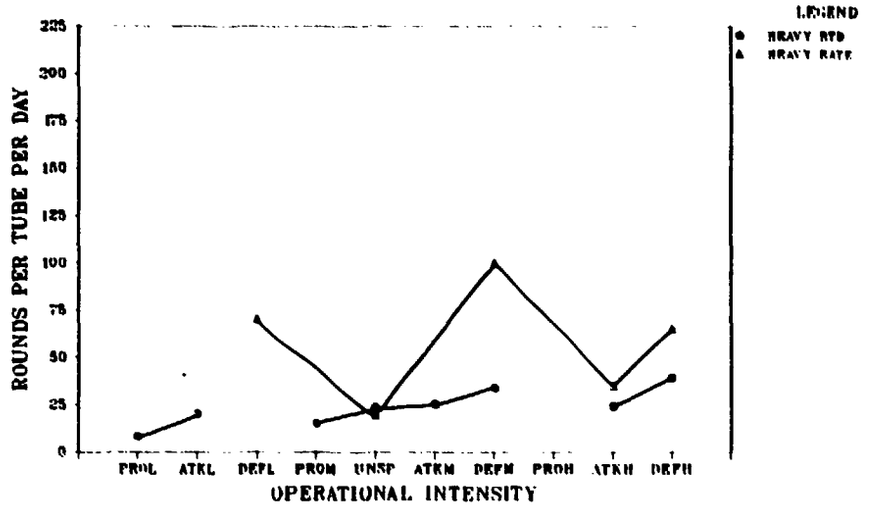


Figure 5-6. Division-level WARRAMP Rates vs RTD Over OPN by TUBECAT - Medium Tubes

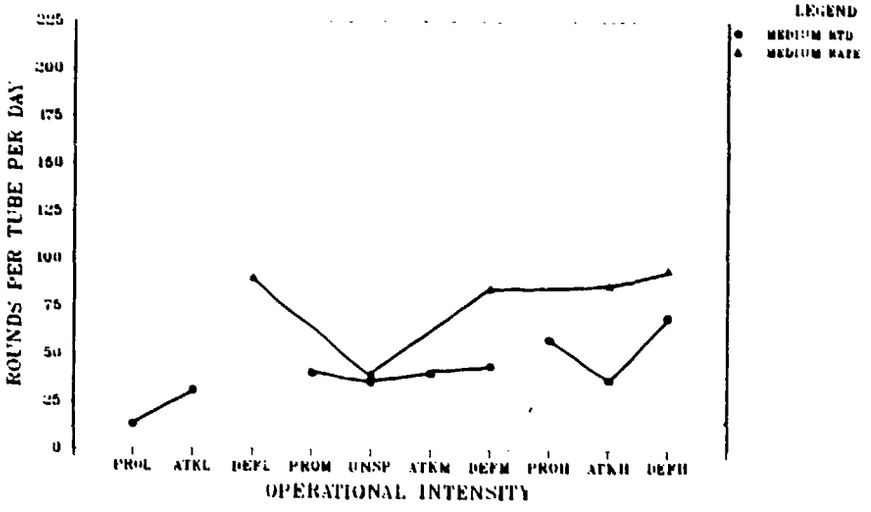


Figure 5-7. Division-level WARRAMP Rates vs RTD Over OPN by TUBECAT - Heavy Tubes

(3) The defense light operation (DEFL), for which there is no historical RTD in AHART, is an operation for which WARRAMP rates are developed. Assuming it is in correct alignment with the other postures, based on historical experience, WARRAMP rates appear quite different. None of the three tube categories follows the traditional roles. Medium and heavy tube types have higher rates than expected, light tube types actually have less than expected.

(4) For the defense medium (DEFM) posture, the WARRAMP rates for all three tube types seem very high. Light tubes regain their expected role, but heavy tube types fire more than the medium types, contrary to their expected roles. For the attack heavy (ATKH) posture, the WARRAMP rates seem only slightly higher than expected. Light tubes would normally be expected to fire more than medium. For the defense heavy (DEFH) posture, the light tubes are again out of order. WARRAMP rates for both medium and heavy tube types seem higher than expected.

(5) In the light and heavy tube types, WARRAMP rates are higher for defense than attack, as expected. Light tube types are the reverse, contrary to the historical data.

(6) Having been processed through the Attrition Calibration (ATCAL) Model and Concepts Evaluation Model (CEM), the WARRAMP theater rates shown in the UNSP group are much closer to historical experience and conform to traditional roles as well. The causes of these results are worthy topics for additional study.

APPENDIX A

STUDY CONTRIBUTORS

The AHART Study is a one-man, six programing staff month effort generously assisted by a number of other individuals.

Author. MAJ Francis L. Dougherty

GMU Faculty Advisor. Dr. Irwin Greenberg

CAA Supervisor. Mr. Philip Louer

CAA Fellowship Screening Board

COL Daniel D. Clark, Chairman
Mr. Gerry Cooper, Member
Mr. Daniel J. Shedlowski, Member

Chief, Math/Stat Team, CAA. Mr. Carl Bates

Included in Appendix C of the report is a very long list of those throughout the analytical, historical, and scientific communities who willingly provided research assistance, personal papers, and bibliographies as well as time to this study effort. Individual names are included, not solely for reference, but in recognition of their willing assistance.

Particularly generous assistance was provided by Dr. Robert Helmbold. Dr. Helmbold's willingness to share his perspective on the use of historical data in analysis of combat simulation and early research assistance were very encouraging and very instructive.

A special note of appreciation is made to COL William Owen and LTC John Bondanella for their assistance in defining the objectives of the study and demonstrating its place in the work of the Requirements Directorate, and to Mr. E. B. Vandiver III for his willingness to sponsor historical comparisons in the analysis of combat simulation.

One last expression of appreciation to Dr. Greenberg for his guidance, for his aid in solving problems in the methodology, and for his willingness to support my fledgling efforts in this field.

Errors of omission or commission made in this study are solely the responsibility of the author, all made despite the willing assistance and advice of those just named.

APPENDIX B

STUDY DIRECTIVE

This study is conducted under the auspices of the US Army Concepts Analysis Agency Fellowship Program for the twofold purpose of first providing research of value to the Agency that has never been accomplished and second, conducting research to be submitted as the final work toward a Master's Research Project of interest to the study director. The work is done in accordance with requirements for completion of a Master's in Systems Engineering at George Mason University.

Study proposals were submitted to both an Agency selection board and to Dr. Irwin Greenberg of the Department of Statistics and Operations Research at George Mason University. Upon selection for the fellowship, an Agency Review Board made up of the Agency's Director and Assistant Directors examined and approved the research objectives and methodology. Dr. Greenberg approved the proposal and accepted the study as a Master's Research Project.

APPENDIX C

DATA COLLECTION

C-1. PURPOSE. The purpose of this appendix is to highlight those resource activities surveyed during the data collection process. Use of this appendix will provide an appreciation for the nature of this work and the nature of the community that is involved in the process of applying scientific methods to historical data. Use of this appendix will aid in efficient retrieval of the AHART sources and permit greater in-depth study of the data used in this study. For anyone continuing in this work, the appendix provides a guide to what has been done and offers a place from which to continue.

C-2. INITIAL SOURCES

a. Defense Technical Information Center (DTIC). Accessed through the CAA Technical Library, this activity maintains a data base which includes a current list of all completed and ongoing technical studies. In addition to referencing related studies, this data base alerts others doing work in the same field to the fact that the AHART Study is in progress. Interested parties may wish to assist unsolicited.

b. Defense Logistics Studies Information Exchange (DLSIE). Accessed through the CAA Technical Library, this activity provides a source of technical data for various logistics systems, including ammunition distribution, and maintains catalogs of completed and ongoing studies in the logistics field.

c. DIALOG. "The Supermarket of Data Bases" provides access to statistical indices, Congressional and private information services, dissertation indices, etc.

d. NEXIS. This resource did provide access to newspaper, magazine, wire service, and current newsletters for relevant fields. In this study there is some limited use of periodicals.

e. Online Computer Library Center (OCLC). Provides access to bibliographic data bases of books from nearly any library in the US. Titles found in other sources are available to CAA through interlibrary loan.

f. Compendium of Key Field Activity Scientific and Technical Capabilities. This document is not an activity but provides organization charts for nearly every Department of the Army activity that is needed for studies of this nature. From the compendium it was possible to begin the series of inquires and interviews that lead to the greatest amount of data for AHART. These activities are grouped by function and are listed with relevant annotation in the next paragraph of this chapter.

C-3. SOURCES BY FUNCTIONALLY GROUPED COMMUNITIES

a. For purposes of this study, the list of contributing activities is divided into three functional groups. The first group includes staff, doctrinal, and analytic activities. The second includes major library staffs and various command historical offices. The third group identifies specialized scientific and technical activities that assisted with the study. Unless stated in the narrative, for a particular activity any future research should renew contact with these activities to determine whether they are currently in possession of additional usable historical data or relevant studies.

b. **Staff, Doctrinal, Analytical Community.** The first community into which these resource activities are grouped is the staff structure that supports the major Army headquarters, those who are responsible for near- and long-term planning, updating, and publication of doctrinal issues and those responsible for analytic studies. By definition, this is a large, diverse group. Table C-1 (following page) provides an overview of the activities included in this group. Included here are not only those who contributed valuable data or bibliographic material, but also those whose interest in the subject was clear but for the reasons stated were not in possession of relevant historical data. Information on those activities which should not be sought out further is as valuable as knowing those worthy of continued inquiry.

(1) Department of Defense (DOD)

(a) Office of the Secretary of Defense (OSD). Mr. Glenn Stockton provided access to the study Historical Data on Wartime Ammunition Usage [OUSD-ALL-1]. In a subordinate office to the OSD is Mr. Royce Kneece, whose interests lie in historical comparisons and who maintains institutional knowledge of such information. Mr. Sal Kohczy maintains this type of data for the OSD Sustainability Study [OSD-S-1].

(b) Joint and Combined Arms. Exemplary of so many other activities, this activity expressed great interest in the nature of the project as well as a need for the results. Work being done at this activity is focused on current projects. None require any maintenance of data useful to AHART. This condition could change. This activity and many like them should be contacted periodically for relevant data.

(c) Theater Operations and Planning. Sponsors of the OSD Sustainment Study. Among other actions, the study calls for comparison of the current combat simulations with historical data. This activity is interested in historical comparisons but is currently unable to commit the assets to produce an historical data base.

Table C-1. Data Collection Staff, Doctrinal, Analytical Community

DOD
- Office of the Secretary of Defense
- Joint and Combined Operations
- Theater Operations and Planning

DAS
- PA&E
- CAA

ODCSOPS
- Tech Office
- DAMO-FDL

ODCSLOG
- DAMO-SMA

ODCSRDA
- Combat Support Systems
- Munitions Division
- DOD Armaments/Munitions Requirements Comm.

Field Artillery Center
- Combat Developments
- Weapons Department
- Doctrine Division
- Concepts and Studies Division

Infantry Center
- FA Branch
- Maneuver Branch

Army Logistics Management Center
- Operations Analysis Directorate
- Literature Division

DIA
- Soviet Division

TRADOC HQ
- Combat Systems Branch
- Program Developments
- Estimates Division
- Firepower Directorate
- FA Branch

TRAC
- Ammo Planning Factors Div

CAC
- Combat Studies Institute
- Department of Sustainability
- FA Representative
- Joint and Combined Arms Operation

CGSC
- School of Advanced Military Studies

National Defense University
- Wargaming and Simulation Division

Research Analysis Corp (RAC)

Operations Research Office (ORO)

(2) Director of the Army Staff (DAS)

(a) US Army Concepts Analysis Agency (CAA). The primary sponsors of AHART are now willing to commit considerable manpower to historical research. Primarily responsible to the Director of the Army Staff for theater-level analysis, CAA recognizes the value of historical research for comparison with their many combat simulations. The Director, Mr. E. B. Vandiver, has done work in historical comparisons with combat simulations while Director of the ODCSOPS Tech Office. Mr. Phil Louer, Acting Deputy Director, CAA, supervises the AHART Study. Dr. Robert Helmbold is conducting a far more detailed analysis on a computer data base of historical information on 601 battles developed jointly by CAA and the Historical Evaluation and Research

Organization (HERO) office. All three have provided support, invaluable advice, and resources to conduct the AHART Study.

(b) **Program, Analysis, and Evaluation (PA&E).** Interested in use of historical research but not staffed to ever conduct their own studies. Mr. Don Whitfield is presently in search of data to explain past expenditure rates and days of supply computations. With the Combat Service Support Division of ODCSOPS (DAMO-FDL), this office has great impact on the development and acceptance of wartime requirements in ammunition.

(3) Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS)

(a) **Technical Office.** This office uses combat simulation results to support both requirements studies and operational planning studies. For this reason they maintain data that tracks the progress of the WARRAMP process. They recognize the value of historical comparisons and have done some limited data collection but have not ever had a sufficiently complete data base to maintain any records usable outside their office. Mr. John Riente assisted in a search of Tech Office safes and files for any remaining data with negative results.

(b) **Combat Service Support Division (DAMO-FDL).** This office is the focal point within ODCSOPS for research done in support of determining ammunition requirements. LTC John Bondanella, as the primary action officer for this work, provided invaluable assistance in understanding the process of determining requirements. As action officer he is often questioned concerning historical comparisons with combat simulation, and to the present time has had no usable source of information. He assisted with introductions to relevant activities and opened his files to the search for historical and WARRAMP data.

(4) Office of the Deputy Chief of Staff for Logistics (ODCSLOG) (Ammunition Logistics Office (DALO-SMA)). This office is the focal point within ODCSLOG for use of the Worldwide Ammunition Supply Report (WARS). This report provides data on the authorized production levels of ammunition and on comparative expenditures. Mr. Dean Turner maintains institutional knowledge of historical information.

(5) Office of the Deputy Chief of Staff for Research, Development, and Acquisition (ODCSRDA)

(a) **Combat Support Division.** Has not maintained historical data but seeks such data for applicable studies. At this time LTC Denny Morin has assumed control over Mr. Joe Byron's papers, including the paper Days of Supply - Ammunition [RDA-S-1]. This division is likely to have additional data in the future.

(b) **Munitions Division.** Mr. Joe Byron, while a member of this division, produced the paper Days of Supply - Ammunition [RDA-S-1] at the request of the Secretary of the Army, John Marsh. This division maintains close coordination with ODCSOPS (DAMO-FDL) to influence the wartime requirements process and to receive the results.

(c) DOD Armaments and Munitions Division. LTC Clinton Smith of the Requirements Committee maintains information on determination of wartime requirements produced by combat simulations. The effects of rationing on requirements have received some attention from this office.

(6) Defense Intelligence Agency (DIA). Able to provide analysis of non-US methods for determining ammunition requirements by country. Has access to studies done by foreign analytic activities comparable to AHART. Of primary interest is the use of historical analysis in the Soviet planning system.

(7) US Army Training and Doctrine Command Headquarters (TRADOC HQ)

(a) Combat Studies Branch. The office seeks to use such data but has never been able to achieve reasonable access to very useful data. Therefore, no attempt is made to maintain data beyond that included on slides for specific presentations.

(b) Program Development Office. Doctrinal input from the various Army schools and centers is required to be approved by Mr. Richard Ware before use in the WARRAMP process. Historical comparisons have been made in the past but primarily for direct fire weapon systems.

(c) Estimates Division. Uses almost exclusively data produced by combat simulation. Within the Theater Directorate, Mr. Tom Redman has used historical data received from Mr. Wolf Prow, whose avocation it is to research historical data on such requirements.

(d) Firepower Directorate. The Field Artillery Branch of this office makes limited use of historical artillery expenditure data but has no resources to assemble or maintain such numbers. Members of this office seek assistance from the TRADOC Headquarters Library when such data is required.

(8) Combined Arms Center (CAC), Fort Leavenworth, Kansas

(a) Combat Studies Institute. The Institute supports research for the commander of the Combined Arms Center. Studies unique to the Institute were more tactically oriented and not technically detailed enough in the area of ammunition expenditures to include operational or theater rates. Dr. Gawyrich has recently traveled extensively throughout the Middle East and has accumulated an extensive bibliography on the area. He provided portions of his bibliography that were relevant to artillery expenditures.

(b) Department of Joint and Combined Arms Operations. This organization includes a Committee for Theater and Operational Planning but is primarily interested in current and future operations. Little was done to maintain historical data for comparisons, at least in the area of ammunition expenditures.

(c) Department of Sustainability. This activity is responsible for assembly of FM 101-10-1 as its contents are collected from throughout the TRADOC community. No audit trail of historical data is maintained here.

(d) School of Advanced Military Studies. This school is the focal point for students of the Command and General Staff College who continue on to do research toward a Master's Degree in military history studies. The research covers a broad range of subjects, some of which relate to artillery expenditures. None of the work surveyed had any additional detail on artillery ammunition expenditures beyond what is locally available. As these studies begin and are completed, they are included in the DTIC database.

(e) Field Artillery Representative. This individual represents the Artillery Center for input to combat simulations at the Combined Arms Center but has not employed historical data of ammunition expenditures in the work.

(9) TRADOC Analysis Command (TRAC) - Ammunition Planning Factors Division. This division is attempting to complete a landmark study designed to standardize the definitions and methods used in determining wartime requirements. The effort has concentrated on simulation results. Recently, however, they have been required to assemble historical data for comparison. Once accepted, the study will have major impact on the way the Army determines wartime requirements of ammunition. Their interest in planning for future rates increases their desire for the most recent combat experience--Arab/Israeli Wars, Falklands, etc. LTC Garrison has provided their bibliography on combat expenditures and has been given a copy of the AHART data base.

(10) The Field Artillery Center and School (FAS)

(a) Combat Developments. The work done by this office is dependent almost solely on the results of combat simulation. Mr. Lonney Minton expressed great interest in receiving the data produced by AHART. He has relied on Lessons Learned documents from the Morris Sweat Library for historical comparisons with less than satisfactory results.

(b) Doctrine Division. This division is responsible for input of doctrinal rates and other decision criteria for conduct of fire with the artillery Tactical Fire Control (TACFIRE) System. The data used to determine input parameters is derived from operational testing and combat simulation. Mr. Al Beemer expressed interest in comparison with historical results, had personal experience with artillery in combat, but maintained no other historical data.

(c) Concepts and Studies Division. In this office Mr. Bill Bennent maintains institutional knowledge of data and resource material. There have been numerous requests for artillery expenditure data, but he has been unable to collect data in a form that is readily available. Mr. Bill believes this kind of data to be almost exclusively located in the archives in Washington, DC.

(d) The Field Artillery Journal. The recent vintage journals provided no data directly nor did the current staff feel expenditure data would be included in journal articles. No index existed with which to search for such data. Journal articles of the period prior to WWII, located through the Field Artillery Museum, included numerous such entries and even whole articles on German, French, and American expenditures in WWI.

(11) The Infantry Center

(a) Maneuver Branch. Mr. Wright completed an in-house study to compare the results of several studies used today to decide on rates for various army organizations. He compared FM 101-10-1 to Division 86 and other studies. No historical data was used, but this study offers readily available comparisons with combat simulations when the historical data is available.

(b) Field Artillery Branch. CPT Yaeger provided historical data assembled by this branch and used by the school commander to support briefings on the effects of artillery expenditures on fire support of maneuver units. CPT Yaeger had surveyed the other organizations of the school to locate historical data on artillery support of maneuver units with negative results.

(12) The Army Logistics Management Center (ALMC)

(a) Operations Analysis Directorate. Mr. Dorsey Kimbrall has done work to compare historical data with the combat simulation and logistics models employed by this office. His efforts, however, are primarily on near-term requirements. Because of difficulty of accessing relevant historical data, he has not maintained any amount of data in his office. Mr. Jim Fitzgerald provided information on the Logistics Data System Research Activity (LDSRA), the predecessor to the current Logistics Evaluation Agency (LEA). The records maintained by that organization need to be located.

(b) Literature Division. Mr. Dilday assembles the Logistics Center's input to revisions of FM 101-10-1. Since the 1976 revision, no new historical data has been used as input. At this time, no audit trail exists on the collection of the data used for that revision. Current input from the Log Center is generated by combat simulation.

(13) National Defense University Wargaming And Simulation Division. Colonel Alnwick maintains data on Soviet historical expenditures as well as current Soviet methods of determining requirements. Soviets in the past have depended heavily on historical data to determine planning figures for artillery expenditures.

(14) Research Analysis Corporation (RAC). This office was formed when Johns Hopkins University was forced to separate the Operations Research Office from the university. No longer in existence, this organization continues to have great influence on the use of historical data to study operational planning. A rather large collection of studies done on WWII and Korea provide information and data relevant to AHART. None, however, directly attempt to produce a large-scale data base for use in robust analysis. Analysis of limited amounts of historical data are the substance of their reports.

(15) Operations Research Office (ORO). As an office of Johns Hopkins University, this activity was a pioneer in the operations research field that developed after WWII. Not possessing present-day computer capabilities, the studies were limited in scope and data to that which was then available and tractable. A collection of their studies includes a sizable amount of data and information useful in the AHART analysis.

c. Historical and Library Community (Table C-2)

Table C-2. Data Collection - Historical and Library Community

Libraries	**Historical offices**
CAA Technical Library	Aberdeen Proving Ground
Army/Pentagon	Watervliet Arsenal
Armed Forces Staff College	Letterkenny Arsenal
National Defense University	Rock Island Arsenal
West Point	ALMC
Military History Institute	Field Artillery School
Center of Military History	TRADOC HQ
Morris Sweat, Ft Sill	CAC
ALMC	
Combined Arms, Ft Leavenworth	**Field Artillery Museum**
TRADOC Technical Library System	
	Field Artillery Journal
	Historical Evaluation and Research Organization
	Military History Magazine
	Combat Weapons Magazine

(1) Historical Offices

(a) Aberdeen Proving Ground. The office is subordinate to the historical office at Rock Island with primary responsibility for data on chemical munitions. This office would benefit those needing to specialize in the use of chemical munitions of WWI to present. Chemical weapons are outside the scope of the present AHART effort.

(b) Army Logistics Management Center (ALMC). Dr. Lynn L. Sims provided several personal papers on the subject of ammunition expenditures and information on others at the Log Center with interest in the subject. His work included historical expenditure data and narrative on the context in which the data was analyzed.

(c) Combined Arms Center (CAC). Dr. Dan Hughes assisted greatly by conducting a thorough search of the Combined Arms Library and providing information on others at the center who had interest in this data. His office had often been queried on the subject of ammunition expenditures but had never needed to assemble historical data beyond compiling limited bibliographies.

(d) Watervliet Arsenal. Research done by this office concentrates on product engineering efforts. The weapons laboratories at the arsenal have not shown a need for assembling data on ammunition expenditures.

(e) Letterkenny Arsenal. Mr. Jim Walker is working on research into the nature and the reliability of the data included in the Combat Operations Loss and Expenditure Data - Vietnam (COLEDV) [AMC-VN-COLEDV] reports. The results of his study will be useful later in supporting the validity of AHART data points.

(f) Rock Island Arsenal. Rock Island's position as coordinator of the industrial base required to produce the munitions generates great interest in the methods for determining ammunition requirements. Mr. Robert Bouilly, having received many requests from his command on the subject, has compiled a very useful bibliography on ammunition expenditures since WWII. Mr. Bouilly was exceptionally willing to assist and offer suggestions on other sources of data.

(g) The Field Artillery Center and School (FAS). With The Field Artillery Center's responsibility for advocacy on behalf of the artillery and its very successful history in combat, it would be expected that the Center would rely far more on historical experience in many areas of instruction and analysis. Dr. Dastrup, as Command Historian, has received numerous requests for such data. The effort to collect and maintain historical data, however, has proven quite difficult to them, and they feel that it has never provided very useful results. As a consequence, no amount of historical data has been maintained at Fort Sill. When such data is needed, reference is made to the files at the Center of Military History. The use of combat simulation continues at the Field Artillery Center with no readily available means of comparison with historical data.

(h) The Field Artillery Museum. Separate and distinct from either the office of the command historian and the Morris Sweat Library, the Museum holds collections of literature on unit histories and the general development of the Field Artillery. Included in this information provided by the curator, Mr. Lynden Couvillion, are Field Artillery Journal articles of the WWI period that contain data on German, British, French, and American artillery expenditure data.

(i) Historical Evaluation and Research Organization (HERO). This private organization is specifically in the business of collection and analysis of historical data. Led by Colonel (Ret.) Trevor Dupuy, HERO has amassed considerable amounts of information including sizable amounts of ammunition expenditure data. Much of what has been done by this activity has been the result of research for government contracts and is accessible through DTIC or the library system. A library of additional resource material is maintained in their offices.

(j) Military History Magazine. This organization, located in Leesburg, Virginia, offers a great deal of original research into historical data as well as access to a large group of interested individuals outside the formal military community. None the data used in AHART comes from this source, but contact with the magazine offers possibilities for future research.

(k) Combat Weapons Magazine. This private organization likewise offers possibilities for future research. In this case, the field of interest is specifically weapons-oriented as is AHART.

(2) Libraries

(a) Army/Pentagon. This library, by its location and mission, is capable of getting nearly any document in the military/civilian system. Reasonably accessible to CAA, it has documents onhand that the CAA Technical Library cannot maintain because of its size.

(b) CAA Technical Library. Through DTIC, DLSIE, and interlibrary loan, this library can and did provide most sources needed for AHART.

(c) Armed Forces Staff College. The College specializes in joint operations and national level geo-political studies. Ammunition expenditures even at theater level are considered technical and are not maintained. When such data is found or required, reference is given to the Center of Military History. There is a large collection of WWI information, but the library has never studied it for this kind of information.

(d) National Defense University. Collections which include data on technical subjects below the strategic level of military operations have been taken from this library and have become part of the collection at the Military History Institute.

(e) Training And Doctrine Command Headquarters Library. Mr. Jim Burns is director of all libraries in the TRADOC community. Because of the number of past requests for such data, his office has assembled descriptive indices and card files on the subject of ammunition expenditures. The collective TRADOC library system maintains files worth continued research beyond what has been accomplished to date. Mr. J. Romjue of this library provided numerous references included in the AHART bibliography. Ms. Fran Doyle of the TRADOC Headquarters Technical Library provided references in addition to those compiled by Mr. Romjue.

(f) **United States Military Academy.** This library is an extension of the National Archives and maintains several of their collections. Documents relating directly to ammunition expenditures are maintained in the National Archives sections in Washington.

(g) **Military History Institute (MHI).** With the Center of Military History and the National Archives, this activity is a storehouse of great amounts of relevant resource material. Research assistants are exceptionally willing and provide extensive bibliographic listings on artillery and ammunition expenditures. The collection there on WWI expenditures is worthy of research beyond what has been possible for AHART. In addition, MHI has access to studies done by the Army War College. MHI has become the collection point for works formerly spread among Army libraries.

(h) **Center of Military History (CMH).** This organization is by definition the primary source of data and the focal point for military related historical research in Washington, DC. Its resources go far beyond computer data base literature searches to material that is cataloged only on printed documents maintained on the premises. Ms. Hannah Zidlik maintains extensive bibliographies and is the author of much of the cataloging effort. No effort, however, seems to be ongoing to commit these catalogs to machine-readable form. CMH has complete access to the National Archives and the Suitland Record Repository and is of great assistance in gaining initial entry to these activities. Personnel at CMH assist in organizing any search to make most efficient use of the National Archives' extensive holdings.

(i) **Morris Sweat Library.** Maintained for the varied use of professional artillery officers, the library seeks to provide information concerning both past and present. Lessons-learned documents from each of the major wars provide limited amounts of historical data on artillery expenditures. Beyond these there is little else on this subject. Mr. Les Miller of the library staff conducted an extensive search of library assets with negative results.

(j) **Army Logistics Management Center Library.** Dr. Lynn Sims of the command historical office has, during his own efforts to collect ammunition expenditure data, conducted a thorough search of this library with little results. Information in this library was included in the papers on ammunition expenditures he provided for use in AHART.

(k) **Army Ordnance Center and School.** Formerly the ordnance activities included what is now the requirements determination process and encompassed all that has now become separately identified as the Field Artillery. Ordnance literature from these earlier periods is full of references to expenditure data and methods of determining the needs of the Army as it then existed. These periods were also prior to the widespread use of quantitative analysis; hence, the data is poorly organized and is often incomplete for use in current analysis.

(l) **Combined Arms Center.** Mrs. Mary Crow provided a detailed list of holdings, made up mostly of records from the National Archives, containing reports of operation and after action reports from units in WWII. Other references in their possession include data from the Arab-Israeli Wars and copies of the HERO Combat Data Subscription Service. Accessibility to most of the documents locally precluded travel to Fort Leavenworth for research.

(m) **TRADOC Technical Library System.** As a result of numerous requests for data, a reference file on artillery ammunition expenditures has been assembled, many of which are now included in the AHART bibliography. No historical data on artillery expenditures has been extracted or separately maintained.

d. **Scientific and Technical Community (Table C-3)**

Table C-3. Data Collection - Scientific and Technical Community

AMC HQ	**AMSAA**
Executive Dir Conventional Ammo	Ground Support Division
Requirements Division	Ground Warfare Division
Studies Management	Special Studies
Army Munitions Development Div	RAM Division
Management and Analysis Office	Technical Services
AMC COM	
Rock Island - Munitions Division	
Picatinny Arsenal	
PM Ammo Logistics	
Systems Planning Division	
Advanced Systems Concepts Ofc	
PM Medium Howitzer	
Combat Development Analysis Directorate	

(1) **Army Material Command Headquarters - Washington, DC**

(a) **Executive Director for Conventional Ammunition.** This office began operation in 1982 for the purpose of directing the production and distribution of ammunition. While it assumed duties for offices formerly at Rock Island Arsenal, it has collected no past records. Limited use is made of historical data. The interest of this office is primarily in ongoing operations. Mr. Samuel Deck of the Requirements Division of this office has worked with CMH and the Department of the Army Statistical Clearance Office to collect historical data when necessary.

(b) Office of Management and Analysis. Mr. John Lazaruk in the Studies Management Office was well aware of the studies being conducted throughout the Army Material Command including those beyond the headquarters. For several days he surveyed numerous relevant study directors to determine their use of historical data and assisted greatly the work done to gather information and data.

(c) Army Munitions Developments Division. This office is a user of the the WARRAMP process results and has done some comparison with historical data. They do not, however, conduct any research into historical data but depend on Rock Island for this information.

(2) Army Materiel Command - Picatinny Arsenal

(a) Advanced Systems Concepts Office. Mr. Fran Luzzi in this office has recently attempted to gather historical data for comparison with the WARRAMP numbers of which they are users. While he had great interest in AHART, they had not been successful in their attempts to gather such data.

(b) Project Manager's Office, 155mm Howitzers. Uses historical data to support requirements but does not assemble the data nor maintain data beyond the need to brief the current project.

(c) Project Manager's Office, Ammunition. Mr. Rusty Von Schwedler is conducting research into rates of fire in combat situations to support work being done on more efficient means of packaging munitions for transport. He has assembled a limited set of data and will be continuing his work in this area.

(d) Requirements Office. Mr. Larry Bechman of this office maintains the data used by the PM offices and for internal studies and was very interested in such data. References maintained by this office were available locally through library sources.

(3) Armament, Material, and Chemical Command - Rock Island Arsenal (Ammunition Division). Mr. Ed Jameson has the responsibility of understanding and influencing the determination of peacetime and wartime requirements for ammunition on behalf of the Rock Island community. He is a user of the WARRAMP process results and has used historical data to seek a "common sense" comparison. Rock Island Arsenal maintains extensive records on the production and distribution of ammunition. This is the start point for what eventually becomes the expenditures, losses, or stockpiles that are of interest to AHART. Currently, the Worldwide Ammunition Supply Report is designed to meet the requirement to account for this production and distribution.

(2) **Army Materiel Systems Analysis Activity (AMSAA)**

(a) Office of the Director. Mr. Keith Meyers, the current Director of AMSAA, was a member of the team which traveled to the Middle East in 1973 as part of the data collection and study effort there [WESG-AI-1].

(b) Ground Warfare Division. There have been limited comparisons made with results of testing and analysis done at AMSAA, but the historical data was assembled elsewhere and is not maintained in this office. Mr. Rick Scungio, while a chief of the division, made similar comparisons employing historical data to investigate the WARRAMP process and was aware of significant differences existing between them. No documents have been maintained to support this belief. Mr. John Kramar, the current chief of the division, has prepared an unpublished discussion paper on ammunition usage in WWII and Vietnam [AMSSA-WWII-VN-1]. Mr. Clark Thomas of this division has maintained close relations with CAA to review technical weapons characteristics prior to their use in the WARRAMP process.

(c) Combat Support Division. Mr. Pete Reid, the current chief of this division, was a member of the team that collected data for the Yom Kippur War [WESG-AI-1]. Mr. Tom Nolan of the Combat Simulation Branch in this division maintains the historical data that is used for comparisons with results of their simulations.

APPENDIX D

ANNOTATED BIBLIOGRAPHY

D-1. PREFACE

a. This bibliography is organized to facilitate reference to the AHART data base. As explained in paragraph 2-4a, Chapter 2, references to resource material required coding to be entered into the source field of the data base.

b. The reference code, in brackets, is organized in three parts. The first is an abbreviation for the activity from which the data was made available to this study. The second part is the war or wars for which the data is primarily applicable. The third is an arbitrarily assigned sequence number, within the given activity and war. Sequence numbers usually but do not always correspond with the alphabetical order of the titles.

D-2. HISTORICAL

[ACGC-AI-1] Role of the Field Artillery in the Yom Kippur War, Air Command and General Staff College, May 1977. Unlike so many other documents which attempt to focus on the high technology direct fire battle, this study focuses on the artillery in this advanced form of warfare. The effects of electronic warfare and some developmental munitions are presented. The study provides contrast with purely conventional nondevelopmental munitions data.

[AMC-S-1] Attrition of Ammunition Stockpile, George Schlenker, Army Weapons Command, Rock Island, IL, Weapons Research Office, May 1964 (AD371077). No expenditure data is included. This reference presents a unique aspect of the process of determining ammunition requirements--that of the negative effect of overstocking.

[AMC-VN-COLEDV] COLED-V Coordination Trip Report; Combat Operations Loss and Expenditure Data - Vietnam, US Army Combat Developments Command, Typescript, CDC, 9 Nov 66 (ARMY-CDC-COLED-V-CTR). This is as complete a study of artillery expenditures as exist any where. Taking advantage of modern communications and computer technology, data concerning artillery expenditures was processed directly from the battlefield within days of occurrence. Analysis includes, among many other detailed statistics, the RTD for every month of the war. As a true theater rate, it adds significantly to comparisons with the WARRAMP process.

[AMMC-S-1] Combat Service Support Mission Area Analysis, US Army Missile and Munitions Center and School, Redstone Arsenal, Alabama, January 1986. This document is the result of combat simulation modeling but is included in this bibliography because of its similarity to the purpose of the WARRAMP process and because of its uniquely high

rates. This study does for operational rates what WARRAMP does for theater rates.

[AMSAA-S-1] List of Division Interim Notes Published, Patricia E. Andrews, Technical Support Division, US Army Materiel Systems Analysis Activity, January 1987. This publication provides lists of resource material that can be located no other way. Included are numerous studies which enhance analysis in technical subjects.

[AMSAA-S-2] List of Publications, Patricia E. Andrews, Technical Support Division, US Army Materiel Systems Analysis Activity, January 1987. This publication provides lists of technical memorandums, technical reports, special publications, and miscellaneous publications applicable to this study. AMSAA's capability for technical analysis of systems is useful for historical comparison especially when developmental systems are included. This publication provides resource material that can be located no other way.

[ARMS-WWII-1] Medium Artillery in the Jungle--Direct Support, Fort Knox, Kentucky, US Army Armor School, May 1948 (ARMS-MM-K3).

[CAA-AI-3] An Analysis of Combat Attrition and Intensity of War (CATIWAR), US Army Concepts Analysis Agency, Bethesda, Maryland, April 1980. This report compares historical data from WWII, Korea, and the Arab/Israe'i Wars of 1967 and 1973 with combat simulations. Operational rates are included.

[CAA-S-1] Combat History Analysis Study Effort (CHASE) Progress Report For The Period August 1984 - June 1985, Dr. Robert L. Helmbold and Aqeel A. Khan, US Army Concepts Analysis Agency, August 1986. During this study the HERO data base containing extensive data on 601 battles was committed to a mainframe for use in computerized quantitative analysis. The data was then summarized, examined for trends and interrelationships, and used to test hypothesis. It does not include artillery expenditures, but the appropriate battles and techniques of analysis could be used for continued analysis of the AHART data.

[CAA-S-2] Lessons Learned Regarding Battle Data Bases, Intra-Agency Memorandum for the Director From Dr. Robert Helmbold, US Army Concepts Analysis Agency, January 1987. This 40+ page document provides insight into the inherent difficulties of building and analyzing combat data bases and offers solutions.

[CAA-S-3] Nonnuclear Ammunition Combat Rates Programing FY 75/79 (AMMO 75/79), Volumes I-V, US Army Concepts Analysis Agency, July 1973. These volumes constitute the results of the earliest programing studies done at CAA. This methodology is the predecessor to WARRAMP. The rates generated in this study can rightfully be compared to both the WARRAMP rates and theater-level historical rates. Such comparisons would display a progression of results of various rates studies as compared to historical data.

[CAA-S-4] Wartime Requirements, Programing FY 91, Southwest Asia (P91M), US Army Concepts Analysis Agency, December 1985.

[CAC-S-1] Division 86 Final Report, US Army Combined Arms Combat Developments Activity, Combined Arms Center, October 1981, ACN 36801. In the process of updating the force and making changes to organization and function, a study was done on the effects of these changes on the artillery ammunition expenditures. Operational rates were produced for the new division and are included in the report.

[CAC-WWII-1] Combat Operations Report, ETO, Ninth Army, M-R-1021.2 (Reel #2). Reel No 106, Item 489 - Ninth US Army Operations I - Brest-Crozon, September 1944. Chapter III - Operations of the 2nd Infantry Division at Brest. Expenditure of ammunition by type, p. 43-44. Ninth US Army Operations II: five-nation front. Flash 2 - Ninth US Army Operations III: Combat in Holland. Flash 3 - Ninth US Army Operations IV: Offensive in Holland in November 1944.

[CAC-WWII-2] Daily Ammunition Status Report, Assistant Chief of Staff, G-2, HQ, IV Corps, 12 Nov 51. N-17056.16. Ammunition expended 311800 Oct to 1C1800 Nov 51.

[CAC-WWII-3] G-4 Historical Report, 20 Oct - 26 Dec 44, X Corps, 1945. C-16006. Ordnance section Leyte-Samar Campaign, ammunition expenditures: artillery, p. 4.

[CAC-WWII-4] Historical Record, 62nd Armored Field Artillery Battalion, 1945. M-N-1065. Item 1388 - 62nd Armored Field Artillery Battalion historical record, 19 Nov 41 - Apr 45.

[CAC-WWII-5] History of Buna Campaign, New Guinea, Center of Military History. M-N-1034.2 (Reel #2). Item 993 - 205th FA Bn, History New Guinea Campaign 16 Feb - 4 Oct 43. Appendix X - ammunition expenditure Battery A, B, and C HE and smoke. Item 994, Appendix III - 205th FA Bn; last page of #994 shows daily expenditures of Battery A, B, and C, HE and smoke, 24 Jul - 11 Sep 43.

[CAC-WWII-6] History of Headquarters Sixth Army Group, ETO, Aug - Oct 44, Feb, May, Jun, Jul 45. R-11980.6. Effect of ammunition supply on operations of Sixth Army Group, World War II (15 Aug 44 - 7 May 45); consumption and requirements analysis. Ammunition expenditure chart D-day (15 Aug 44) to 7 May 45, p. 30-40.

[CAC-WWII-7] History of Headquarters Sixth Army Group, ETO, Nov 44 - Feb 45. R-11980.3. Chapter VI, Reduction of the Colmar Pocket. American Forces rounds expended 17 Jan - 9 Feb, p. 20.

[CAC-WWII-8] History of Operations, Italy - G-4 Operational Report, 88th Infantry Division, 1944. M-N-1029.7. Flash 3, Ordnance office, monthly operations report for April 1944. Ammunition expenditures for attached units during April 1944, Incl #3, Annex No 6, page 1; Annex No 5, page 2. Artillery ammunition expenditures during March 1944, Annex No 5, pages 1 and 2. Flash No 2 - historical report for month of Feb 44, p. 1.

[CAC-WWII-9] History of Operations, Italy - G-4 Operational Report, 88th Infantry Division, 1944. M-N-1029.8. Annex No 5, page 3 - artillery ammunition expenditures during May 44. Annex No 6 - ammunition expenditure of attached units during May 44. Flash No 1 - 88th Infantry Division, Jun 44, Annex 6 - Artillery ammunition expenditure during Jun 44, p. 2. Flash No 2 - 88th Infantry Division, Jul 44, Annex 5 - artillery ammunition expended during Jul 44, p. 2. Flash No 3 - Annex No 5 - artillery ammunition expended during Aug 44, 1 page.

[CAC-WWII-10] History of Operations, Italy - G-4 Operational Report, 88th Infantry Division, 1944. M-N-1029.9. Annex No 5, page 2, artillery ammunition expended during Sep 44. Flash No 1, artillery ammunition expended during Oct 44, Annex 5, page 2. Annex 5, page 1, artillery ammunition expended by attached units during Oct 44. Flash No 2, artillery ammunition expended during Nov 44, Annex No 6, page 1, artillery ammunition expenditure of attached units during Nov 44.

[CAC-WWII-11] History of Ordnance Section Headquarters 27 Jan 1943 - 15 Dec 1945, Sixth Army, 1946. R-12461. Tables, ordnance ammunition expenditures summary--Leyte Campaign--20 October through 25 December 1944 (67 days) and insert "Ammunition expenditure summary," Luzon operation period: 9 January - 30 June 1945 (173 days).

[CAC-WWII-12] Infantry and Artillery Ammunition Expenditure Report, 6 June - October 1944, 4th Infantry Div., 1945. Item #225, 13 pages, M-N-1067.70.

[CAC-WWII-13] G-4 Historical Report, 88th Infantry Division, December 1944. M-N-1029 (Reel #10). Annex 5, page 2, artillery ammunition expenditures during Dec 44. Annex 6, ammunition expenditure of the attached units during Dec 44. Annex No 6, pages 1 and 2, ammunition expenditures of attached units during Jan 45. Flash No 2, Annex No 6, pages 1 and 2, ammunition expenditures during Feb 45; ammunition expenditures of attached units during Feb 45.

[CAC-WWII-14] G-4 Historical Report, 88th Infantry Division, 1945. M-N-1029 (Reel #11). Annex No 1-1 pages 1 and 2, ammunition expenditures of attached units during Mar 45. Flash No 1, Annex 5, page 2, artillery ammunition expended during Apr 45; Annex 6, pages 1 and 2, ammunition expenditures of attached units during Apr 45. Flash No 2.
[CAC-WWII-15] G-4 Historical Report, 88th Infantry Division, 1945. M-N-1029 (Reel #12).

[CAC-WWII-16] Logistical Data - Jungle Warfare 1 Jan 45 to 31 Mar 45, Sixth Army, 10 May 45. N-3857. Artillery ammunition expenditure expressed in rounds per weapon per hour, and artillery units of fire (SWPA).

[CAC-WWII-17] Logistical data - jungle warfare, based on Sixth Army experiences. Services of Supply, SWPA. 1 Dec 43 - 30 Sep 44. N-3677. Field artillery ammunition expenditures average rate per gun per hour, 1 Dec 43 - 30 Sep 44.

[CAC-WWII-18] Ordnance Ammunition Report, 4th Infantry Division, 1944. M-N-1067.34. Item #2208, ordnance ammunition supply report - 4th Infantry Division. Feb 44 - 8 May 45. Item #2209, ordnance ammunition report - 4th Infantry Division, 6 June - 31 Oct 44.

[CAC-WWII-19] Report of Operations, European Campaign, 3d Infantry Division, June 1945. M-N-1020 (Reel 100), Jan 45 - Flash No 1, Item 1281, Incl #1 - ammunition expenditures for month, 2 pages. Apr 45 - for month, p. 176. 1-10 May 45 - for month (1-10 May 45), 1 page.

[CAC-WWII-20] Report of Operations in Tunisia 15 Mar - 10 Apr 43, II Corps, May 1943. N-2652-A. Report on operations conducted by II Corps in Tunisia. Statistical data corrected to include 2 May 1943. (Report; Army Ground Forces Board MTO - No A-492.)

Ammunition expenditure - 1 Aug - 31 Aug 44 - p. 44.
Ammunition expenditure - 1 Sep - 30 Sep 44 - p. 60.
Ammunition expenditure - 1 Jan - 31 Jan 45 - p. 49.
Ammunition expenditure - 1 Feb - 28 Feb 45 - p. 43.
Ammunition expenditure - 1 Mar - 31 Mar 45 - p. 61-62.
Ammunition expenditure - 1 Apr - 30 Apr 45 - p. 73-75.

[CAC-WWII-21] Report of Operations, Oct 44, XII Corps, 5 Nov 44. R-12002.1. Ammunition expenditures:

010600 to 020600 Oct 44, p. 165. 030600 to 040600 Oct 44, p. 177.
040600 to 050600 Oct 44, p. 182. 050600 to 060600 Oct 44, p. 187.
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220600 to 230600 Oct 44, p. 245.

[CAC-WWII-22] Report of Operations, 1 November 1944 - 30 November 1944, XII Corps, 5 Nov 44. N-12002.2. Ammunition expenditures:
310600 to 010600 Nov 44, p. 191. 010600 to 020600 Nov 44, p. 195.
020600 to 030600 Nov 44, p. 199. 030600 to 040600 Nov 44, p. 201.
040600 to 050600 Nov 44, p. 203. 050600 to 060600 Nov 44, p. 206.
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[CAC-WWII-23] Report of Operations, 1-31 Dec 44, XII Corps, 5 Jan 45. N-12002.3. Ammunition expenditures:
300600 to 010600 Dec 44, p. 240. 010600 to 020600 Dec 44, p. 245.
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[CAC-WWII-24] Report of Operations, 1 March 1945 - 31 March 1945, XII Corps, 15 Apr 45. R-12002.6. Ammunition expenditures:
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[CAC-WWII-25] Report of Operations, XII Corps Artillery, May 1945. R-12002.7. Ammunition expenditures:
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[CAC-WWII-26] Report of Operations, 1-18 November 1943, 3d Infantry Division, 7 Dec 43. N-11216.2. Inclosure No 1: Report. Ammunition expenditures, 1-18 November 1943, p. 16.

[CAC-WWII-27] Report of Operations, Italian Campaign, Mar 44, 3d Infantry Division, 17 Apr 44. N-11216.3.

[CAC-WWII-28] Report of Operations, June 1944, 3d Infantry Division, 22 Jul 44. N-11216.4. Ammunition expenditures for month of June 1944.

[CAC-WWII-29] Report of Operations, August 1944, 3d Infantry Division, 19 Sep 44. R-11216.5. Ammunition expenditures for August 1944, p. 29-30.

[CAC-WWII-30] Report of Operations, ETO, September 1944, 3d Infantry Division, 13 Oct 44. N-11216.6. Ammunition expenditures, p. 26-27.

[CAC-WWII-31] Report of Operations, October 1944, 3d Infantry Division, 8 Nov 44. R-11216.7. Ammunition expenditures for October 1944, p. 27-28.

[CAC-WWII-32] Report of Operations, November 1944, 3d Infantry Division, 23 Dec 44. R-11216.8. Total expenditures for the month of November 1944, p. 24-25.

[CAC-WWII-33] Report of Operations, December 1944, 3d Infantry Division, Dec 44. R-11216.69. Ammunition expenditures for December 1944, p. 27-28.

[CAC-WWII-34] Report of Operations, February 1945, 3d Infantry Division. R-11216.10. Expenditures for month of Feb 45, p. 27-28 by type. (Jan 45 is on microfilm - M-N-1021.1).

[CAC-WWII-35] Report of Operations March 1945, 3d Infantry Division, 7 May 45. R-11216.11. Expenditures for March 1945, p. 32-33. (Apr, May 45 is on microfilm, M-N-1020).

[CAC-WWII-36] Report of Operations, 14 June - 1 Jul 44, 9th Infantry Division, 14 Jul 44. R-11546. Ammunition expenditures, p. 19-20.

[CAC-WWII-37] Report of Operations, 1-31 July 1944, 9th Infantry Division. 1 Aug 44. R-11546. Ammunition expenditures, p. 19.

[CAC-WWII-38] Report of Operations, 1-31 August 1944, 9th Infantry Division, 1 Sep 44. R-11546. Ammunition expenditures, p. 24.

[CAC-WWII-39] Report of Operations, 1-30 September 1944, 9th Infantry Division, 1 Dec 44. R-11546. Ammunition expenditures, p. 32.

[CAC-WWII-40] Report of Operations, 1-31 October 1944, 9th Infantry Division, 1 Nov 44. R-11546. Ammunition expenditures, p. 30.

[CAC-WWII-41] Report of Operations, 1-30 November 1944, 9th Infantry Division, 1 Dec 44. R-11546. Ammunition expenditures, p. 13.

[CAC-WWII-42] Report of Operations, 1-31 December 1944, 9th Infantry Division, 5 Jan 45. R-11546. Ammunition expenditures, p. 18.

[CAC-WWII-43] Report of Operations, 1-31 January 1945, 9th Infantry Division, 5 Feb 45. R-11546. Ammunition expenditures, p. 17.

[CAC-WWII-44] Report of Operations, 1-28 February 1945, 9th Infantry Division, 5 Mar 45. R-11546. Ammunition expenditures--small arms, mortar, artillery (105 how and 155 how), p. 13.

[CAC-WWII-45] Report of Operations, 1-31 March 1945, 9th Infantry Division, 5 Apr 45. R-11546. Ammunition expenditures, p. 19-20.

[CAC-WWII-46] Report of Operations, 1-30 Apr 1945, 9th Infantry Division, 1945. R-11546. Ammunition expenditures, p. 17.

[CAC-WWII-47] "Report on the Employment of Artillery Units at Saipan." C.C.O.R.'s Bulletin CCOR/69, 10 Jan 45. N-7440.19. Ammunition expenditures per day by type.

[CAC-WWII-48] Report of Operations, World War II, 1st Armored Div. M-N-1068.14. Box 2195 - 27th Armored FA Bn. History 8 Nov 42 - Aug 45. Item 2394 - Battalion History of the 27th Armored FA Bn., First Armored Div, 8 Nov 42 - 9 May 43. Missions fired and rounds expended are reported by day throughout.

[CAC-WWII-49] Report of Operations, World War II, 1st Armored Division, 68th Armored FA Battalion History 15 Jan 44 - Aug 45 and ammunition expenditures 30 Nov - Dec 43. Box No 2196 and 2197. M-N-1068.15 and .16.

[CAC-WWII-50] Report of Operations, World War II, 1st Armored Division, 91st Armored FA Bn. Historical record, 31 Jan 43 - Aug 45 and report of combat operations - 16 May 43. M-N-1068.17.

[CAC-WWII-51] Ammo Joe's March from the Gothic Line to Victory, Sterling, E. A., Allied Forces Headquarters, 1943. N-5320.2. Ammunition expended by weapon. 241800A Sep 44 to 2518008 Apr 45.

[CAC-WWII-52] Summary of Operations ETO, 2d Infantry Division Artillery, Jul 44 - 7 May 45. War Department, 8 Jun 45. R-12485.

[CAC-WWII-53] After Action Report, ETO, Jul 44 - Mar 45, War Department, 1945. Ammunition expenditures for 11 months by 12th, 15th, 37th, and 38th FA Bn (105mm howitzer), p. 1.

[CAC-WWII-54] Unit Report of Action, June 1944 - April 1945, 1st Infantry Division Artillery. N-11239. Ammunition expenditures, 1-30 Apr 45, p. 5; 1- 31 Mar 45, p. 17-18; 1-28 Feb 45, p. 15; 1-31 Jan 45, p. 21-22; 1-31 Dec 44, p. 18-19; 1-30 Nov 44, p. 18; 1-31 Oct 44, p. 10; 1-30 Sep 44, p. 5-6; 1-31 Aug 44, p. 7; 1-31 Jul 44 - none (says "see separate battalion reports for breakdown to types of ammunition.") 1-30 Jun 44, p. 7.

[CAC-WWII-55] Unit Report of Action, 1-31 May 1945, 1st US Infantry Division Artillery, 21 June 1945. N-11239. Ammunition expended by battalion, not by types of ammunition.

[CGSC-K-1] Study Estimated Expenditures of Artillery Ammunition, Major Charles R. Fulbruge, QM Corps, CGSC, Ft. Leavenworth, Sep 54 (N-18104-A) Monthly Korean War theater-level expenditures-789 days of combat.

[CGSC-S-1] Variation of Artillery Ammunition Expenditures with Intelligence, Operations Research Organization, ORO-TP-46, Robert H. Hobbs, October 1961 (AD267747). This study was a designed experiment using experienced artillery officers to determine artillery expenditures given various levels of intelligence data. The difficulty of isolating the effects of intelligence through historical data was sufficiently great that this alternative solution was attempted. The experiment was only marginally successful requiring more effort than was expected. With increasing availability of reliable data bases, historical data may again be a reasonable alternative.

[CGSC-S-2] Estimated Expenditures of Artillery Ammunition, Command and General Staff College, 10 Sep 54. N-18104-A. Study to determine the validity of material contained in the tables of paragraphs 108 and 109 of FM 101-10, June 1953. Incl - trip report, COL A. S. Byunoski, methodology in the development of tables 108a, FM 101-10, Jul 53, 18 Jul 55.

[CGSC-WWII-1] Field Artillery Group in Support of the Corps and Field Army, 1942 - 1953, Major Russell A. Weatherby, CGSC, Ft. Leavenworth, KS, 1965. Unpublished M.A. thesis.

[CGSC-WWII-2] Role of Field Artillery in the Battle of Kasserine Pass, Major David W. Hazen, M.M.A.S. thesis, Command and General Staff College, Ft. Leavenworth, Kansas, 1973 (D766.82U3).

[CMH-K-1] Logistics in the Korean Theater, Center of Military History, Washington, DC. Provides theater total expenditures for every month of the war. The data is broken down by tube type, but no means of determining tube density in the theater is given. Data provided by the Fulbruge study [CGSC-K-1] make this data very useful.

[CMH-K-2] Combat Actions in Korea, Russell A. Gugeler, Office of the Chief of Military History, 1970 (DS918G832).

[CMH-S-1] Guide To Japanese Monographs and Japanese Studies on Manchuria, 1945 - 1960, Office of the Chief of Military History, 1960. This manuscript provides reference to an extensive list of primary sources for ammunition expenditures and logistics in this part of the world. The referenced literature is accessible at the Center of Military History.

[CMH-WWII-1] Ammunition Supply and Operations, European Campaign Appendix 2, UA25, U586 Study No. 100, General Board US Forces European Theater, ca, 1945 (D769A5 No. 100). This is a member of the well-known "Green Book" series. The data is highly aggregate and, given the complexity of assembling such data prior to the widespread use of computers, the data is suspect. The method of assembling the data is unknown. It may, however, be the best data that exists at that level of aggregation.

[CMH-WWII-2] US Army In WWII - European Theater of Operations - Logistical Support of the Armies, Vol. I-II, Roland G. Ruppenthal, Army Center for Military History, 1953. Dealing with logistics aspects of the war, there is both narrative and expenditure data found under the subject listing of ammunition. Comparisons are made between planned rates of fire and actual theater expenditure rates.

[CMH-WWII-3] US Army In WWII - The Ordnance Department: Procurement and Supply, Harry C. Thomson and Lida Mayo, Army Center for Military History, 1958. As with all books in the "Green Book" series, most of the volume is narrative but not quantifiable. This volume does provide theater-level data on stockage levels in Europe and comparable monthly expenditure data for 1944 and 1945.

[CMH-WWII-4] Last Offensive, The, Charles B. McDonald, Government Printing Office, Washington, DC, 1974. Presents the chronology together with artillery expenditures of the battle for Okinawa. Operational expenditures.

[CMH-WWII-5] Reports of the General Board, US Army European Theater, General Board, Mimeo, USFET, 1945-1946. 131 Reports, (D769A5 No. 100) Nos. 58-67.

[CMH-WWII-6] Reports of the Observer Boards, Pacific Ocean Areas, US Army Ground Forces Observer Board, Mimeo, 5 Jan 44 - 21 Jul 45, 11 volumes (D767U4.).

[CMH-WWII-7] Reports of the Observer Boards, Mediterranean Theater of Operations, US Army Ground Forces Observer Board, Mimeo, 22 Dec 42 - 13 Aug 45, 9 volumes (D766.8U4.). Nos. 100 and 126.

[CMH-WWII-8] Army Ground Forces Board Report A-107-1, NATO, 7 Jan 44. R-7038. 36th Div. Arty. 17 Nov to 19 Dec 43. Chart "Expenditure rounds per gun per day" (lights and medium). 2-11 Dec 43. Camino-Maggiore-Lunge-Rotunda-Difensa operation.

[CMH-WWII-9] Determination of Mobilization Reserve of Ammunition (U), Chief of Ordnance, 11 Feb 48. C-16722. Includes charts with data from monthly theater reports of ammunition expenditures and losses, World War II by months for various guns.

[CMH-WWII-10] Directives and Miscellaneous Information, CinCPOA, 1944. Vol I. N-11562-A. Table 24 - CinCPOA unit of fire ground weapons, effective 21 Mar 44. Unit of fire table used to determine actual rounds of ammunition for all ground weapons used in the Central Pacific area.

[CMH-VN-1] American Forces in Action, Vietnam Studies, Office of the Chief of Military History, Washington, DC.

[CNA-ALL-1] Validation of Combat Models Against Historical Data, Professional Paper No. 27, Leon Feldman and Susan Simon, Center for Naval Analysis, 1970. This work provides no expenditure data but does offer insight into the difficulties involved in using historical data for for analysis specifically of combat simulations.

[CNA-K-1] Study of Land/Air Tradeoffs (SLAT), Statistical Analysis of Korean War Data, Naval Warfare Analysis Group, Center for Naval Analysis, Study 64, Arlington ,VA, March 1970, 9 volumes. Historical analysis of Korea and comparison with wargame results in Vols I, VII, VIII, IX (240866/240874) (AD-869 481) (NWAG-Study-64-Vol-9); a very extensive study of related aspects of combat and attempts at rigorous analysis of historical data. Some expenditure data is included, but the greater value lies in the example of ways in which historical data can be used to arrive at a greater understanding of the complex nature of land and air warfare.

[CNA-S-1] Method for Estimating Ground Combat Attrition Coefficients, CNA Research Contribution No. 103, E.H. Kingsley, Nov 68 (231366). This study offers additional insight into variables with which to analyze several forms of combat data. No useful expenditure data is included.

[CORG-WWII-1] Frequency Analysis of WWII Ammunition Expenditure Levels And Combat Models, CORG, Technical Operations Inc., (AD 747). Included in this study is an assembled data base for daily operational expenditures for the II US Corps in Italy in 1943 and 1944. The results of the frequency analysis done in this study is remarkably close to the results of AHART.

[DA-ALL-1] Logistics Support Modelling, Department of the Army Pamphlet 750-21, Jan 1982. This document describes the data requirements, the simulation process, and prescribes the conditions under which simulations are useful. No expenditure data is included.

[DA-S-1] Review of Army Analysis, Volume 1 - Main Report, Department of the Army, April 1979. A basic review of Army analysis resources, organizations, and procedures. This work provides the framework in which AHART and many similar studies are done. It provides a clear definition of boundaries for what can be considered "the system;" the operational and organizational structure known as the US Army.

[DA-VN-1] Lessons Learned HQ 2nd Bn, 213th FA, Adjutant General's Office, Department of the Army, Washington, DC, Nov 68 (AD395896). Artillery operations in Vietnam. In addition to maintenance and tactical operations data, there is information relating target identification with expenditure for 105mm howitzers.

[DA-VN-2] Vietnam Studies - Field Artillery 1954-1973, Washington, DC, Department of the Army, Army Library (DS557.A6V661 No.20).
[DA-VN-3] Vietnam Studies - Logistics Support, LTG Joseph M. Heiser Jr., Washington, DC, Department of the Army, 1974 (DS554.52H4).

[DB-ALL-1] Dictionary of Battles, Thomas Y. Eggenberger, Crowell Co., NY, 1967 (D25E29D).

[DUSA-S-1] Loss Rates Comparison Study, Memorandum For Deputy Chief of Staff of the Army for Operations from the Deputy Under Secretary of the Army for Operations Research, March 1980. This three-page memorandum describes the need for an extensive data base of historical ammunition expenditures for comparison with computer simulations. It also suggests some of the variables that would be appropriate to such a study.

[FAS-AI-1] The October 1973 Middle East War, A Bibliography, US Army Field Artillery School, June 1976. Presents further relevant materials published on the war. It includes representative unclassified ordnance data.

[FAS-S-1] Fire Suppression Symposium Report, Combat Developments Directorate, The Field Artillery School, January 1980. This document provides no expenditure data. It does give insight into the difficulties of simulating some aspects of the artillery problem. The members of the symposium employ historical comparisons in their work.

[FAS-WWI-1] "Expenditure of Ammunition," The Field Artillery Journal, Volume VII, The United States Field Artillery Association, Volume VII,

1917. A timely pronouncement of the surprise with which the high expenditure rates of WWI were met. The article provides German Army expenditure data for the battle of the Somme, July 1917. These include the highest rates found in the AHART Study.

[[FAS-WWI-2] "Artillery Statistics From the World War," translation by Colonel Oliver L. Spaulding, The Field Artillery Journal, The Field Artillery Association, Washington, DC, September-October 1921. Includes theater expenditure rates for both French and German artillery for the war. It also provides operational rates for selected battles.

[FAS-WWI-3] "Ammunition Expenditure By The First Field Artillery Brigade A.E.F.," The Field Artillery Journal, The Field Artillery Association, Washington, DC, May-June 1930. Provides weapon densities and expenditure rates, by type tube, throughout the year 1918. Included in the narrative is the stated purpose of the data to point out "the problem of ammunition supply during active operations." These are operational rates. As stated in the paper, rounds lost in transit and damaged during operations are not included in the expenditure figures.

[FAS-WWI-4] "Organization, Armament, Ammunition Expenditures of the German Field Artillery During the World War," LTG Van Alfred Muther, The Field Artillery Journal, The Field Artillery Association, Washington, DC, July - August 1935. An attempt to provide insight into the enormous increase in artillery expenditures in WWI written by the Chief of the Field Artillery of the Royal Prussian War Ministry. The article includes both operational and theater rates data. Data is present for German, French, and Russian artillery. Operations resulting in capture of Bizerta and surrounding territory, northern Tunisia. II Corps. 23 Apr - 9 May 43. N-2652-B. Ammunition expenditures (rounds per gun) for Apr - May 43--105mm howitzer, 155mm howitzer, 155mm gun, 13th FA Bde attached to II Corps.

[FRG-S-1] Informationen Zum Munitionsverbrauch Von Landstrietkraften Seit 1939, Office for Studies And Research for the German Army, translation from the original, July 1986. This document contains detailed expenditure data for the German Army in combat since 1939. It is extremely valuable in offering the data needed to examine both sides of several WWII engagements. Included is the Germans' own analysis of the data. This effort parallels AHART in the use of historical data in operational planning.

[HERO-ALL-1] Search For Historical Records of High-Rate Artillery Fire in Combat Situations, HERO, March 1978. This work done for the US Army Human Engineering Laboratory set out with the express purpose of locating combat situations with the highest rates of fire in each given period of time. These rates then should be the highest rates that could be used to compare with combat simulations. Since they are operational rates, they should certainly be far above theater rates generated by the WARRAMP process. Data useful to identify numerous variables in addition to those in AHART is available in this study.

[HERO-ALL-2] Evolution of Weapons and Warfare, Trevor N. Dupuy, Bobbs-Merrill Co., Indianapolis, IN, 1980. This work provides much of the setting in which the AHART Study could rightfully be studied. Association of the major events in the historical development of weapons provides a useful perspective not found elsewhere.

[HERO-ALL-3] History, Numbers, and War, Vol 1 No. 2, HERO, 1977.

[HERO-AI-1] "Arab-Israeli Six Day War 1967", Combat Data Subscription Service, Vol 1 No. 2, Vol 2 No. 1, HERO, 1977.

[HERO-AI-2] Ramadan War 1973, The, T. N. Dupuy, Dupuy Associates, 1978.

[HERO-AI-3] Elusive Victory, Arab-Israeli Wars 1947-1973, T. N. Dupuy, HERO, Inc., 1984. This book resulted from extensive interviews and research. It provides numerous statistical charts and narrative description. T. N. Dupuy is in the business of historical analysis and attempts to produce quantitative analysis of the Six Day War of 1967. While there is reasonable detail on several subjects, artillery expenditures is not one of them. A personal visit to HERO offices did not turn up any additional data.

[HERO-K-1] Artillery Fire Near the Inje, May 1951, Report for the Human Engineering Laboratory, HERO, May 1977. Describes the chronology of events and accompanying artillery expenditures. Operational rates.

[HERO-WWII-K-CDSS] Combat Data Subscription Service, HERO, 1978. Very detailed expenditure data for Mediterranean and European theaters and for Korea. Almost entirely operational rates. Clearly associated with operational mission, weapon densities, and time periods.

[HERO-WWII-1] Opposed Rates of Advance of Large Forces (ORALFORE), Trevor N. Dupuy and Grace P. Hayes, HERO, Aug 72 (AD-902 830/9). This large volume in small print details the operational and environmental circumstances related to rates of advance for six operations of WWII. Included are weapon densities and expenditure data for these operations. Corps and division-level rates and analysis with which to compare subordinate models in the WARRAMP process are included.

[JDR-S-1] "Fast-Val: Summary Report on the Comparison Of Model with Combat Results," Lind, et al., Journal of Defence Research Series: Tactical Warfare, Vol 6B:3, Fall 74.

[LOGC-ALL-1] Ammunition Day of Supply, Lynn L. Sims, Historical Office, US Army Logistics Center, undated. This paper provides a concise summary of the information provided in Ammunition Day of Supply WWI-1960 [ORO-ALL-1].

[LOGC-K-1] Korean War Ammo Rates, Lynn L. Sims, Historical Office, The US Army Logistics Center, January 1985. This professional paper was written in response from many parts of the Logistics Center for historical data on artillery expenditures. It provides a concise description of the controversy over ammunition expenditures in Korea

and provides some expenditure data. Appended to this paper are the monthly expenditure figures for Korea taken from Logistics in the Korean Theater [CMH-K-1].

[LOGC-WWII-1] World War II Ammo Rates, Lynn L. Sims, Historical Office, The US Army Logistics Center, January 1985. This professional paper was written in response from many parts of the Logistics Center for historical data on artillery expenditures. The paper describes several factors that appear as a result of historical research to influence the expenditure of artillery ammunition. The paper also describes the system used during the war for determining rates and the difficulties in doing so. Appended to the paper is an extract from The US Army In WWII series that displays comparisons among rates determined by this system and the actual theater rates.

[LOGC-WWII-2] First Army Ammo Rates, World War II, Lynn L. Sims, Historical Office, US Army Logistics Center, January 1985. This work provides narrative description of the units operation closely associated with the ammunition expenditures for each phase of that operation. Operational rates for 105mm howitzer, 155mm gun, and 155mm howitzer are attached.

[MHI-ALL-1] Index of Course Materials 1919-1942 - Ammunition, US General, US Army War College, Carlisle, PA. This document is maintained by the Military History Institute and contains references to the methods of determining requirements and includes comparative expenditures.

[MHI-K-1] "Memoirs of BG George B. Barth, Commanding Officer, 24th and 25th Div Arty in Korea," US Army Military Research Collection, S.L.A. Marshall (item #406), Military History Institute, Carlisle Barracks, PA.

[MHI-K-2] Relationship of Casualties to Tactics and Ammunition Expenditures: 2nd US Infantry Division Korea, 1 Feb 1953 - 31 Mar 1953, Defense Department, 1954. 132 pages (UL504.3 R46. 1953, MHI).

[MHI-K-3] Study of the Underlying Causes of Deficiencies in the Ammunition Stockpile, MG Carroll H. Deitrick, et al., Chief of Ordnance, Aberdeen Proving Ground, MD, July 1959 (UF700U47 - MHI).

[MHI-S-1] An Analysis of the Army Conventional Ammunition Rate Studies, Benson F. Landrum, Carlisle Barracks, US Army War College, April 1982 (AD-A116 231/2). Student essay; this study concentrates on the combat simulation studies for ammunition requirements done by numerous activities within the Army. It describes the lack of coordination among them and recommends possible solutions. No historical data is used, but as a reference it provides insight into the simulation generated rates.

[MHI-S-2] Aspects of Ammunition Management in the US Army, LTC John E. Baker, Army War College student paper, Carlisle Barracks, PA, March 1969 (AWC-IS69).

[MHI-S-3] Better Direct Support Artillery - An Increasing Requirement, Larry A. Blakely, Carlisle Barracks, PA, US Army War College, 1966 (AWC-IR-CRS-7).

[MHI-VN-1] Artillery Considerations in Low Intensity Warfare, COL. Jesse B. Hollis, US Army War College, 1966 (AWS-IR-CRS-4).

[MHI-VN-2] Systems Analysis Of Close Fire Support Artillery For Ground Forces, Harold A. Dye, US Army War College, May 1965 AWC-IS-64/65.

MHI-WWI-1] Report of Ammunition Expended and Wasted, Chief of Ordnance, US Army Expeditionary Force, July 1919 (UF700U4).
[MHI-WWII-1] Artillery Fact Sheet, US Army Field Forces, 1945. (UA32A5).

MORS-S-1] Casualty Rates, Combat Intensity, Tempo of Battle, Military Operations Research Symposium, 1978.

[NA-VN-2] After Action Report - Operation Billings, 12-26 June 1967, Annex D, First Infantry Division, 26 July 1967. Operational rates for protracted combat operations.

[NA-VN-3] After Action Report - Operation Junction City, 22 Feb - 15 Apr 67, Annex D, First Infantry Division, 8 May 1967 (N17439.21/AD390548). Operational rates for protracted combat operations. Pages 1, 2, 15, Appendix D II-11, Appendix E, p. 9.

[NA-WWII-O] Action Against Enemy Report, ETO, February 1945. 11th Armored Division Artillery. N-12137 After action. Ammunition expended: 25-26 Feb, p. 419-425; 15-23 Feb, p. 290-300; 5-15 Feb, p. 108-117. 492d Armored FA Bn, Btry C. 174th FA Bn, and Btry D (-2d Plat). 575th AAA Bn Rounds expended: 22-23 Feb, p. 249; 21-22 Feb, p. 247; 20-21 Feb, p. 246; 19-20 Feb, p. 244; 17-18 Feb, p. 240; 16-17 Feb, p. 238; 15-16 Feb, p. 236; 18-19 Feb, p. 242.

[NA-WWII-1] Artillery Ammunition Expenditures as Related to Infantry Casualties, US Army XII Corps Headquarters, July 1945 (UF15&U62).

[NA-WWII-2] Report of Operations, 12th Army Group, Vol XI, page 87, UX151, n.12.A3 v.11.

[NA-WWII-3] Report of Operations, First US Army, 20 Oct 43 - 1 Aug 44, Annex 3-11.

[NA-WWII-5] After Action Report, ETO, XX Corps Artillery. R-12296. Ammunition expended 1 Aug 44 to 31 Dec 44, p. 102. Daily Army artillery reports 31 Oct 44, p. 132.

[NA-WWII-6] After Action Report, 1 August 1944 to 9 May 1945, Third Army, 15 May 1945. Vol. II, Part 9 - Artillery. N-11480-B.

[NA-WWII-7] After Action Report for September 1944, 62nd Armored Field Artillery Battalion. AGF, 16 October 1944. N-6765.

[NA-WWII-8] Ammo Joe at Anzio Jan 22 '44 - May 31, '44, Allied Forces Headquarters, 1944. N-5320.1. Expenditures by weapon.

[NA-WWII-9] Ammo Joe's Advance on Rome May 1, 1944 - July 31, 1944, Allied Forces Headquarters, 1944. N-5320.1. By weapon.

[NA-WWII-10] Analysis of Artillery Ammunition Expenditures in Fifth Army - 9 Sep - 17 Dec 43, Fifth Army HQ, Office of the Artillery Officer, 10 Jan 44. N-7039. By weapon.

[NA-WWII-11] Army Field Forces Observer Team No 8 to Far East Command, Report and Questionnaire, Army Field Forces. April - May 1953. Two volumes. N-17834.8-A & B. Tab K: Artillery, Inclosure 3 - Ammunition expenditures.

[NA-WWII-12] Artillery Information Service Memorandum No 1, First Army, December 1943. R-16558.1. Ammunition expenditures Northern Tunisia Apr 23 - May 8; Sicily Jul 10 - Aug 15, p. 16-17.

[NA-WWII-13] Artillery Information Service, First United States Army, July 1944. R-16558.15. Ammunition expenditures 6 June to 24 June, p. 71-76.

[NA-WWII-14] Artillery Information Service, First United States Army, July 1944. R-16558.15. Ammunition expenditures 24 Jun to 5 Aug, by weapon and day, p. 152-172.

[NA-WWII-15] Artillery Information Service, First United States Army, December 1944. R-16558.7. Paragraph 101. Ammunition expenditures p. 188-228, 6 Aug to 28 Oct.

[NA-WWII-16] Artillery Information Service, First United States Army, May 1945. N-16558.8. Paragraph 76. Ammunition expenditures, p. 219-329 (recapitulation - ammunition expenditures 6 June 1944 - 8 May 1945), p. 222. Also tables by weapon per day.

[ORO-ALL-1] Ammunition Day of Supply WWI-1960, Dorothy K. Clark, Operations Research Organization, ORO-TP-18, December 1960 (AD323064). A major work in the field of ammunition requirements studies. It provides an essential understanding of the need for predicting wartime requirements for ammunition. The study gives valuable insight into the changing definitions for ammunition rates as well as an historical perspective on the use of scientific methods of analysis to determine these rates.

[ORO-K-1] Effects of Counterbattery Fire, The, Thurton L. Page, Operations Research Organization, ORO-T-284, March 1955 (AD69456). This study provides an extremely detailed analysis of target acquisition and counterfire in the Korean War. It provides great insight into the role of artillery in the defense light operation. It does not provide sufficient detail of missions other than counter-battery fire to be of greater use to the AHART Study but would be

valuable in further research into the influence of target acquisition on artillery expenditures.

[ORO-K-2] US Army Battle Casualties In Korea, Fredent W. Cleaver, Operations Research Organization, ORO-T-71, October 1956. Among other details useful to indirect fire studies, the relative impact of artillery as a killer on the battlefield is presented. No direct expenditure data is given, only the resulting analysis on same. Some specific data on weapon density during portions of the war is included.

[ORO-K-3] Combat Zone Logistics In Korea, Operations Research Organization, ORO-T-15, November 1951. This document provides no artillery expenditure data but does include narrative description of the attempts to maintain data necessary to calculate consumption data and to produce near-term planning figures. It further provides detail on the ammunition resupply system and the major difficulties experienced there.

[ORO-K-4] Artillery Weight, Personnel, Firepower Trends, J. Duncan Love, Operations Research Organization, ORO-SP-115, October 1959. (AD394654L).

[ORO-S-1] Validity of Strategic Logistics Planning Factors, Owen Mattingly Operations Research Organization, ORO-T-280, Nov 54 (AD111765). This document includes no artillery expenditure data. It does compare operational planning figures with actual combat consumption of various classes of supply. The difficulties of such comparisons are applicable to the AHART Study.

[ORO-S-2] Combat Day of Supply - Ammunition, Andrew J. Eckles III, Operations Research Organization, ORO-SP-175, 1954 (AD394656L).

[ORO-WWI-1] Cost of Inflicting a Casualty - WWI, Operations Research Organization, June 1960.

[ORO-WWII-1] Artillery Usage WWII, Vol. 2, J. Duncan Love, Operations Research Organization, ORO-T-375, April 1959 (AD208021). This is a major source of expenditures in terms of weight and total rounds for WWII Europe. This data is provided for each participating US Army/Army Group. Unfortunately, data sufficient to calculate RTD is provided only for one of the four armies. The data for the other armies lack the average density of tubes present in a given period. Were this data found elsewhere, the value of this document would increase greatly. There is also analysis in terms of distribution of ranges fired, types of missions, times of activity, etc., useful in more detailed analysis of this data.

[ORO-WWII-2] Cost in Ammunition of Inflicting a Casualty, L. VanLoan Naisawald, Operations Research Organization, ORO-T-246, July 1953 (AD28927) 147957. Data for the Anzio campaign in Europe and for the invasion of Okinawa in the Pacific are presented in great detail. Monthly expenditure data for both direct and indirect fire weapons in terms of cost and weight are provided. US, British, and German data is

present to varying degrees. The density of artillery tubes is missing and must be determined elsewhere to make best use of this data.

[ORO-WWII-3] The Cost in Ammunition of Inflicting a Casualty, L. VanLoan Naisawald, Operations Research Office, Johns Hopkins University, December 1953. Technical Memorandum ORO-T-246, N-16454.229. Anzio and Okinawa. Tables - ammunition fired by US VI Corps, Anzio, gives type of ammunition and rounds for period 31 Jan - 29 Feb 44; 29 Feb - 31 Mar 44, and April 44. Table of US ammunition expenditures, XXIV and III Corps, Okinawa, given by type of ammunition and rounds.

[ORO-WWII-4] Causative Agents of Battle Casualties WWII, L. VanLoan Naisawald, Operations Research Organization, ORO-T-241, July 1954, (Nov 53) (AD25637). One of the few documents that provides comparable data for three theaters of operation--Mediterranean, Europe, and the Pacific. Data is oriented toward casualty analysis but provides some amount of expenditure data.

[ORO-WWII-5] Incidence of Predicted Artillery Fire, Dorothy K. Clark, Operations Research Organization, ORO-T-68, October 1950, (ATI92697).

[OUSA-ALL-1] Historical Data on Wartime Ammunition Usage and Attrition, John Bemis, Production Engineering Support Office (PESO), Office of the Under Secretary of Defense, April 1978. This document is the result of a short-term study effort on Army ammunition consumption. The data included is directly applicable to AHART. Operational rates from all major wars in this century are included. A small amount of theater-level data is present. The study includes some exploratory analysis of the data.

[OUSD-ALL-1] US Army Ammunition Firing Rates And Battlefield Equipment Attrition - A Historical Survey, John Bemis, Product Engineering Services Office, Office of the Under Secretary of the Army (R&E), April 1978. This document includes the data taken from numerous others listed herein. The work was an attempt on a limited basis to accomplished the same purpose as AHART.

[RAC-S-1] Casualty Predictions Conventional Weapons 1965-1970, Research Analysis Corporation, November 1964.

[RAC-VN-1] Survey of Casualties Republic of Vietnam Military Forces, 1962, Richard W. Parker Jr., Research Analysis Corporation, RAC-TP-167(FOV), August 1965 (AD366296). Another in the series of casualty analysis. This study, even more than others, is oriented to medical analysis and therefore provides no expenditure data. It does offer an the opportunity for analysis of the relative effects of artillery *vis-a-vis* direct fire weapons.

[RAC-WWII-K-1] Distribution of Casualties by Causative Agents, Jeffery A. Burt, Research Analysis Corporation, RAC-T-445, March 1965 (AD368202). In addition to addressing the distribution of causative agents, the study provides expenditure data and battle parameter variables similar to the AHART variables. Historical data was derived

directly from the National Archives and reviewed by the Center of Military History.

[RAC-WWII-2] Casualties and the Dynamics of Battle, R. J. Best, Research Analysis Corporation, RAC-TP-185, March 1966 (AD372260) 235587. Substantial documentation on various qualitative aspects of WWII combat but not sufficiently detailed for extensive quantitative analysis.

[RAND-VN-1] An Analysis of Firing Data From the 1st Marine Division, Helmbold, Rand, D-20519-PR, July 1970 - A follow-on study to a larger work. A very detailed analysis of the distribution of rounds by type and by time of day fired for a 1-month period in 1968. Some very useful expenditure data for operational rates is included.

[RAND-VN-2] Summary of Firing Data From the 3rd Marine Amphibious Force, Helmbold, Rand D-19573-PR, November 1969. Detailed target specification list for combined air ground operations for a 5-week period. Allows for a more detailed analysis of operational rates under specific circumstances.

[UK-ALL-1] Historical Data in the Assessment of Combat Degradation, Defence Operational Analysis Establishment, UK Ministry of Defence, October 1985. Expenditures for artillery data are given in terms of the number of rounds per square yard and not readily convertible to the defined rates in the AHART Study. The study does offer insight into the British use of historical data for analysis and operational planning. Some work is done on the effects of artillery preparation on given battles. This group has studied extensively over a hundred battles. Correspondence with them could prove beneficial for both sides.

[USAREUR-WWII-1] Guide to Foreign Military Studies 1945-1954, Historical Division, Headquarters US Army Europe, 1954. This manuscript provides extensive listing of otherwise unknown documents. Many of the documents reference the German, Russian, and Italian operations. Many include references to logistics and ammunition expenditures.

[USMA-ALL-1] West Point Atlas of American Wars, The, Vincent J. Esposito, Praeger Publishers, 1972 USMA-ALL-1. This atlas provides no expenditure data. It does provide a detailed description of all battles in which US forces were involved from 1900 to 1953. A chronology of battles is available for immediate reference.

[USMC-AI-1] Analysis of the Lessons Learned in the October 1973 Arab/Israeli War, Marine Corps Development and Education Command, Quantico, Virginia, January 1975 (unclassified title). Provides data updated from previous studies. Includes relevant logistics data.

[USMC-S-1] Class V Combat Planning Factors Study, Quantics Inc., Wayne, PA, June 1981 (ADC029438).

[USMC-VN-1] "Battle for Khe Sanh," LTC Walt, Reader's Digest, May 1970. Based on The Battle for Khe Sanh, CPT M. S. Shore II, USMC Historical Branch, G-3 Division, Headquarters USMC, 1969. This document provides data for one of the few large-scale battles that are comparable with more conventional wars.

[TOI-WWII-1] Activity Indicators for Estimation of Combat Consumption Requirements, Combat Operations Research Group Technical Operations, Inc., Ft Belvoir, Dec 65 (AD370493).

[VRI-AI-1] Summary of a Verification Study of Vector II with Arab-Israeli War, Vector Research Inc., (VRI-G-N-81-1), July 1985. A short paper offering some detail on the Golan Heights Campaign in the Arab-Israeli War. Summarizes an attempt at actually validating a combat simulation with historical data. No specific expenditure data is given.

[WSEG-AI-1] October 1973 Middle East War, The, Volumes I-III, (unclassified title) Weapons Systems Evaluation Group, January 1975. This is the unclassified title to the SECRET-NOFORN report. Included in Volume III are the theater rates for the 17 days of the war for all artillery tubes. Analysis of the classified data and its effect on the study results is included in a separate appendix to the study.

D-3. STATISTICAL

Beck, James V. and Kenneth J. Arnold, Parameter Estimation in Engineering and Science, John Wiley and Sons Inc., 1977.

Bhattacharyya, Gouri K. and Richard A. Johnson, Statistical Concepts and Methods, John Wiley and Sons, Inc., 1977.

Bloomfield, Peter, Fourier Analysis of Time Series: An Introduction, Wiley, Inc., 1976.

BMDP Statistical Software, Department of Biomathematics, University of California Press, Los Angeles, CA, 1983 release.

Box, George and Gwilyn Jenkins, Time Series Analysis: Forecasting and Control, Revised Edition, Holden-Day, Inc., 1976.

Carbone, Robert and Spyros Makriddakis, "Forecasting When Pattern Changes Occur Beyond The Historical Data," Management Science, March 1986.

Daniel, Cuthbert and Fred Wood, Fitting Equations To Data: Computer Analysis of Multifactor Data, Second Edition, Wiley, Inc., 1980.

Kleinbaum David G. and Lawrence L. Kupper, Applied Regression Analysis and Other Multivariable Methods, Duxbury Press, North Scituate, Massachusetts, 1978.

Makridakis, Spyros and Steven C. Wheelwright, Forecasting, Methods and Applications, John Wiley and Sons, 1978.

Mosteller, Fredrick and John Tukey, Data Analysis and Regression Analysis, Addison-Wesley Co., 1977.

Simpson, Alan, Understanding DBASEIII PLUS, Sybex Inc., 1986.

Tufte, Edward R., Visual Display of Quantitative Information, Graphics Press, Cheshire, CT, Third Printing, August 1984.

Wickelgren, Wayne A., How To Solve Problems: Elements of a Theory of Problems and Problem Solving, W. H. Freeman and Company, 1974.

APPENDIX E

DATA BASE MANAGEMENT SYSTEM AND DATA ANALYSIS PROGRAMS

E-1. PURPOSE. The purpose of this appendix is to describe the hardware, the software, the files, and the routines used to conduct this study. This documentation has the specific purpose of facilitating expansion of the data base and updating the analysis by US Army Concepts Analysis Agency personnel.

E-2. THE SYSTEM. The system used to manage AHART is designed around the hardware and software systems available at CAA and at George Mason University. While it was never necessary to use the university system, all BMDP routines and other software were available at both. The AHART data base management system and analysis routines would require changes in order to be used on the university mainframe, but the effort is minimal if needed. The components of the system are as follows:

Microcomputer	IBM PC AT	LEADING EDGE
Mainframe Computer	Sperry 1184	CYBER
Graphic Work Station	Superset	(not available at GMU)
Data Base Software	DBASEIII PLUS	
Spreadsheet/Graphics	LOTUS Version 2.1	
Graphics	QCHART	
PC-Mainframe Transfer	PIBTERM	
Statistical Software	BMDP	

E-3. DBASEIII PLUS

a. The AHART data base was input to and is presently stored on floppy and hard disk drives on an IBM personal computer AT employing the DBASEIII Plus software package. A data entry format is included in the AHART data base to augment the numerous browsing, indexing, and sorting capabilities of the software. The procedures for employing the ASSIST and DOT commands in DBASEIII Plus are left to the user referencing the appropriate microcomputer and DBASEIII documentation.

b. DBASEIII Plus was chosen for its ease of use for beginner level users, for its ease of transportability increasing the probable distribution of AHART, and for its transferability to ASCII and other forms of code. Use of a microcomputer software package freed the study from constraints of a single mainframe system.

c. The following file names must be selected upon entry into the DBASEIII Plus system:

Data base	AHART.DBF
Data entry format	AHART.FMT
Data entry screen	AHART.SCR
Data base text	AHART.TBK

d. The data entry screen appears in Chapter 2.

e. Selected fields of the AHART data base in hard copy appear in Appendix F.

E-4. LOTUS

a. To permit use of available graphics and to make optimum use of spreadsheet capabilities when appropriate, AHART was translated into LOTUS using the LOTUS TRANSLATOR program.

b. Prior to entering the LOTUS TRANSLATOR, the data base is indexed and reduced to only necessary fields.

(1) The data base can be and is indexed in several ways within DBASEIII. The file is indexed first by TUBETYPE, then by DATE; TUBEDATE.NDX was used whenever translated, transferred to other systems, or printed in hard copy for dissemination. The indexed files which could be used for this purpose are:

TUBEDATE.NDX	OPN.NDX
	DURATION.NDX
TUBETYPE.NDX	DATE.NDX

(2) To most efficiently produce a LOTUS worksheet for any particular analysis, only selected fields need to be transferred from the data base. Use of the COPY command on DBASEIII permitted such selection and transformation into the data base format (DBF) needed by the TRANSLATOR. An example follows:

```
COPY TO TUBEDATE.DBF FIELDS DATE, TUBETYPE, OPERATION, DAYSQUANT,
SIZE, RDTUBEDAY
```

c. After entering the TRANSLTOR program in LOTUS, the following commands are entered:

```
Translation From:  DBASEIII    To:  LOTUS Version 2.1

Source File:  AHART.DBF
```

d. The resulting LOTUS spreadsheet becomes:

```
Destination File:  AHART.WK1
```

E-5. MICRO TO MAINFRAME TRANSFER SOFTWARE - PIBTERM

a. To permit use of mainframe hardware, software, and storage capabilities, it was necessary to translate the AHART data base from DBASEIII to the Sperry 1184 computer system. The following instructions are unique to the Sperry but provide a guide for use on other systems.

b. A specially designed software package, PIBTERM, is available to users of the Sperry 1184. Other such translators should be available when such an interface is needed.

c. The data base in DBASEIII is first converted to ASCII format with the following command:

```
COPY TO COPY.TXT FIELDS DATE,TUBETYPE,TUBECAT,TUBEQTY,TYPERD,OPERATION
DAYSQUANT,SIZE,RDTUBEDAY TYPE SDF
```

d. The converted data base with the name COPY.TXT is placed on a low density floppy disk.

e. The disk is placed on an IBM PC XT which has been interfaced with the Sperry, and the following instructions and commands are executed:

Place the low density disk containing the PIBTERM program in the A: drive.

Then turn on both the control unit and the monitor. If the PC is already on, place the PIBTERM in the A: drive as before, then perform a warm boot by simultaneously hitting the CTRL, ALT, and DEL keys of the keyboard.

Hit the return key in response to questions about the date and the time.

At the prompt for the A: drive (>A:), type in the program name, PIBTERM, and hit RETURN.

The following will be displayed on the monitor:

```
PIBTERM Version 3.2.1  (November, 1985)  Ready.
Hit Alt-1 for command list.
Modem initialization: $$open caadem
```

Followed by a message that flashes on the monitor stating

```
Beginning Dumb Terminal Emulation.
```

Next, strike the RETURN key and proceed to sign on to the Sperry.

```
USERID/PASSWORD
USERID/ACCOUNT/QUALIFIER
```

After logging on, enter

```
@KERMIT COPT.TXT     ( when uploading )
@KERMIT              ( when downloading )
```

Note: When uploading, ensure the filename COPY.TXT is current on the Sperry

The following message is now displayed

Kermit 1100 2.2

To tell the computer where to locate/store the file COPY.TXT, simultaneously strike the ALT key and the F key. The following menu will appear:

A)ctive directory change
C)opy file
D)irectory display
E)rase file
F)ree space on drive
L)ogged drive change
V)iew a file
Q)uit

Select "L" then select "B" when the drive selection menu appears.

Place the disk with the file COPY.TXT into the B: drive.

A file can now be uploaded or downloaded.

UPLOADING

To upload the file, strike the ALT key and the S key simultaneously.

From the menu that appears select "d) Kermit".

From the menu that appears next select "a) Send a file".

A prompt appears; type in the name of PC file to be sent. When complete, strike RETURN.

A screen will appear accounting for bytes sent, packets sent, number of retries, and the number of bytes remaining to be sent.

When the transfer is complete another menu will appear; select the "QUIT" option.

Type in @EOF.

The option now exists to transfer more files or log off.

DOWNLOADING

To download the file, strike the ALT key and the R key simultaneously.

From the menu that appears select "d) Kermit".

From the menu that appears next select "a) Get text file".
A prompt appears; type in the name of Sperry file to be received.

When complete, strike RETURN.

(The file will be stored on the data diskette under a variation of the Sperry filename. The first eight characters of the filename are taken from the Sperry filename and the three characters of the file extension are taken from the Sperry file's element name.)

As the file transfer begins, a screen will appear accounting for bytes sent, packets sent, number of retries, and the number of bytes remaining to be sent.

When the transfer is complete, another menu will appear; select the "QUIT" option.

Type in @EOF

The option now exists to transfer more files or log off.

LOGOFF

To log off, type in the following commands:

```
@FREEM,TN
$$SOFF
ALT key and X key simultaneously
```

Answer "Y" to the query to log off or not

E-6. BMDP STATISTICAL SOFTWARE

a. **Conversion of AHART to BMDP-readable Code.** BMDP is designed to group, compare, and compute numbers. It will only accept two fields of four alpha characters each as record identifiers. After the record identifiers, which are not used in calculation, all entries must be numeric. It is therefore necessary to completely code any entries in the AHART data base for which calculations are desired. Those fields of type "character" must be coded into numerics.

(1) The actual conversion of AHART fields to BMDP-readable code (numerics) is accomplished after the file has been transferred via PIBTERM to the Sperry.

(2) To accomplish the task of conversion to numerics, each field was given a "scale," i.e., OPERATION was scaled from 1 to 10 according to the 10 operational intensities; SIZE was scaled from 1 to 900 according to the number of company-sized maneuver units being supported in a particular battle, etc. This scale has direct impact on the results of the analysis and should be examined closely for an accurate understanding of the data base. The effort required to code these fields for use in BMDP enhanced greatly the effort to quantify the data for analysis.

(3) The following is a Sperry "runstream" or macro specifically designed to convert the AHART data base to numeric scales usable to

BMDP:

```
@ED,UP K2AHART.CODER

@ED,UP K2AHART.COPIED/TUBEDATE,.CODED/TUBEDATE
LIM C
C /19/    19/9999
SEQ, [1,4] 1,1
LIM C 13 23
C /075GUN/075     /A
C /075HOW/075     /A
C /081MTR/081     /A
C /105GUN/105     /A
C /105HOW/105     /A
C /155GUN/156     /A
C /155HOW/155     /A
C /175GUN/175     /A
C /240HOW/240     /A
C /107MTR/107     /A
C /114GUN/114     /A
C /203GUN/203     /A
C /203HOW/203     /A
C /UNSP  /30      /A
C /LIGHT /31      /A
C /MEDIUM/32      /A
C /HEAVY /33      /A
LIM C 24 29       /A
LIM C 52 58
C /BADL/ATKL      /A
C /BAHD/ATKM      /A
C /BAPD/ATKH      /A
C /DL  /DEFL      /A
C /HD  /DEFM      /A
C /PD  /DEFH      /A
C /ATKL/02        /A
C /ATKM/05        /A
C /ATKH/08        /A
C /DEFL/03        /A
C /DEFM/06        /A
C /DEFH/09        /A
C /PROL/01        /A
C /PROM/04        /A
C /PROH/07        /A
C /UNSP/30        /A
LIM C 43 47
C /HE   /01       /A
C /SMK  /02       /A
C /ILLUM/03       /A
C /ICM  /04       /A
C /UNSP /30       /A
LIM C 61 67
C /2CORPS/11      /A
C /CORPS /10      /A
C /2BN   /05      /A
C /BNTF  /04      /A
C /BN    /03      /A
C /2BDE  /07      /A
C /BDE   /06      /A
C /2DIV  /09      /A
C /DIV   /08      /A
C /2CO   /02      /A
C /CO    /01      /A
C /1ARMY /12      /A
C /2ARMY /13      /A
C /ARMYGP/14      /A
C /THEA  /15      /A
C /LIGHT /105     /A
C /MEDIUM/155    /AC /HEAVY /203/A
C /UNSP  /30       /A
EXI
@BK2
```

b. The BMDP File

(1) After being coded into an acceptable format, the data base is ready for examination and analysis. The coded data base is first examined for data outside acceptable ranges and for missing data. Then the most basic location parameters are determined to ensure the data is even usable. The BMDP routine P1D shown in paragraph (4) below is used for these purposes with the AHART data base.

(2) In addition to simple data description, BMDP routine P1D includes the capability of conducting numerous filtering operations, transforms, and other computations on a set of data and storing it for future use. The capability of storing a BMDP file in the proper format for later use greatly simplifies the writing of other routines which employ the same data in the same form. This file is simply called the BMDP FILE.

(3) The Sperry filename of the BMDP file produced in this manner is K2P1DTTYPMIN. In Sperry this program creates only a distinct data file. There is no element name. Rerunning the program as written will overwrite the file.

(4) SIMPLE DATA DESCRIPTION and the BMDP FILE Program

```
@ED,R K2AHART.P1D-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP1D 120000
/PROBLEM    TITLE IS 'COPIED/TUBEDATE'.
/INPUT      VARIABLES ARE 12.
FORMAT IS   '(A4,F4,2F2,8X,F3,12X,F4,F2,3X,F4,F2,6X,F3,6X,F6.1)'.
/ VARIABLE  NAMES ARE RECNO, YEAR, MONTH, DAY, TUBETYPE, TUBECAT,
                      TUBEQTY, TYPERD, DURATION, OPN, SIZE, RTD.
            MAXIMUM ARE (2)1999, (3)12, (4)31, (5)240, (6)203, (7)2000,

                        (8)30, (9)9999, (10)10, (11)999, (12)9999.
            MINIMUM ARE (2)1900, (3)01, (4)01, (5)30, (6)30, (7)01,
                        (8)01,   (9)02, (10)01, (11)01, (12)01.
            GROUPING IS TUBETYPE.
            LABEL IS RECNO.
/SAVE       CODE IS FIRST.
            FILE IS 'K2P1DTTYPMIN'.
            NEW.
/GROUP      CODES(10) ARE 01,02,03,04,05,06,07,08,09,10.
            NAMES(10) ARE PROL,ATKL,DEFL,PROM,UNSP,ATKM,DEFM,
                          PROH,ATKH,DEFH.

            CUTPOINTS(9) ARE 1,2,3,4,5,6,7,8,9,10,20,30,40,50,60,
                             70,80,90,180,365,730.
            NAME(9) ARE '1','2','3','4','5','6','7','8','9','10',
                        '11TO20','21TO30','31TO40','41TO50','51TO60',
                        '61TO70','71TO80','81TO90',
                        '91TO180','181TO365','366TO730',
                        '731PLUS',
 CODES(5) ARE 075,081,105,107,114,155,156,175,203,240,030,031,032,033.
```

```
 NAMES(5) ARE '075', '081',
              '105',
              '107',    '114',
              '155', '156',
              '175',
              '203', '240',
              'UNSP',     'LIGHT',    'MEDIUM',    'HEAVY'.

          CUTPOINTS(7) ARE 3,6,12,18,24,30,36,42,48,54,60,66,
                           72,78,84,90,96,114,132,150,168,186.
          NAMES(7) ARE '30RLESS','4TO6','7TO12','13TO18','19TO24',
                       '25TO30','31TO36','37TO42','43TO48',
                       '49TO54','55TO60',61TO66',67TO72',
                       '73TO78','79TO84','85TO90','91TO96',
                       '97TO114','115TO132','133TO150',
                       151TO168','169TO186','187PLUS',
          CODES(8) ARE 01, 02 03, 04, 30.
          NAMES(8) ARE HE, SMK, ILLUM, ICM, UNSP.

 CODES(11) ARE 001,002,003,004,005,006,009,018,027,054,081,162,243,486,
               729,900,1000.
       NAMES(11) ARE CO,'2CO',BN,BNTF,'2BN',BDE,'2BDE',DIV,"2DIV',
                 CORPS,'2CORPS','1ARMY;'2ARMY',ARMYGP,THEA,UNSP.

         CODES(6) ARE 105,155,203,030.
         NAMES(6) ARE LIGHT, MEDIUM, HEAVY, UNSP.

CODES(2) ARE 1900,1904,1915,1916,1918,1943,1944,1945,1951,1952,1953,
             1967,1968,1969,1970,1976,1999.
NAMES(2) ARE '1900','1904','1915','1916','1918','1943','1944','1945',
             '1951','1952','1953','1967','1968','1969','1970','1976',
             '1999'.
/PRINT        DATA.
              MISSING.
              MAXIMUM.
              MINIMUM.
```

c. **BMDP Programs.** For those familiar with BMDP software, the following provides documentation of the BMDP programs used in the data description and the exploratory analysis. Only a single example of each type of program is included. Many variations to these programs were used to investigate other aspects of the data.

(1) Detailed Data Description Program

```
@ED,R K2AHART.P2D-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP2D
/PROBLEM TITLE IS 'AHART P2D'.
/INPUT   FILE IS 'K2P1DTTYPMIN'.
         CODE IS 'FIRST.
/PRINT ESTIMATES.
       STEM.
```

```
/END
```

(2) Histograms and Univariate Plots Program

```
@ED,R K2AHART.P5D-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP5D
/PROBLEM   TITLE IS 'AHART P5D-MINUS'.
/INPUT     CODE IS FIRST.
           FILE IS 'K2P1DTTYPMIN'.
/PLOT
/END
```

(3) Bivariate (Scatter) Plots Program

```
@ED,R K2AHART.LP6D-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP6D
/PROBLEM   TITLE IS 'AHART P6D-MINUS'.
/INPUT     CODE IS FIRST.
           FILE IS 'K2P1DTTYPMIN'.
/PLOT      YVAR ARE RTD.
      XVAR ARE YEAR,OPN,DURATION,TUBETYPE,TUBEQTY,TYPERD,SIZE,TRUECAT
              CROSS.
/END
```

(4) Description of Groups (Strata) with Histograms and Analysis of Variance Program

```
@ED.R K2AHART.P7D-MUNUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP7D 50000
/PROBLEM TITLE IS "AHART P7D'.
/INPUT   FILE IS 'K2P1DTTYPMIN'.
         CODE IS FIRST.
/VARIABLE GROUPING IS TUBETYPE.
/HISTOGRAM GROUPING IS TUBETYPE

/COMPARISON  ALPHA IS 5.
             BONFERRONI.
             TUKEY.
             SCHEFFE.

/PRINT CORRELATION.
             DATA.
             TTEST.
             PLOT

/END
```

(5) Multiple Linear Regression Program

```
@ED,R K2AHART.P1R-MINUS/GRP-TUBETYPE

@LIB$*MDP85.BMDP1R

/PROBLEM TITLE IS AHART P1R'.

/INPUT      FILE IS 'K2P1DTTYPMIN'.
            CODE IS FIRST.

/REGRESS DEPENDENT IS RTD.
           INDEPENDENTS ARE TUBETYPE,YEAR.
           TOLERANCE IS .05.

/PLOT      RESIDUALS.

/END       NORMAL.
```

(6) All Possible Subset Regression Program

```
@ED,R K2AHART.P9R-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP9R
/PROBLEM TITLE IS "AHART P9R'.

/INPUT    FILE IS 'K2P1DTTYPMIN'.
          CODE IS FIRST.

/REGRESS  DEPENDENT IS RTD.
          INDEPENDENTS ARE YEAR,TUBETYPE,TUBEQTY,OPN,DURATION,SIZE.
          TOLERANCE IS .05.

/PLOT     RESIDUALS.
          NORMAL.
          XVAR ARE YEAR,TUBETYPE,TUBEQTY,OPN,DURATION,SIZE.
          YVARS ARE RTD,RTD,RTD,RTD,RTD,RTD.
          STATISTICS.
          HISTOGRAM.

/PRINT DATA.
          CORR.
          COVA.
          RREG.
          CREG.
          RESI.

/END
```

(7) Stepcase Regression Program

```
@ED,R K2AHART.P2R-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP2R
/PROBLEM TITLE IS 'AHART P2R'.
/INPUT   FILE IS 'K2P1DTTYPMIN'.

         CODE IS FIRST.
/VARIABLE   USE = YEAR,TUBETYPE,TUBEQTY,OPN,DURATION,SIZE,RTD.
/REGRESS DEPENDENT IS RTD.
         TOLERANCE IS .05.
/PLOT    RESIDUALS.
         NORMAL.
/PRINT DATA.
       CORR.
       COVA.
       RREG.
/END
```

(8) Nonlinear Regression Data Transformed Square Root Program

```
@ED,R K2AHART.P1D-MINUS/GRP-TUBETYPE

@LIB$*BMDP85.BMDP1D 120000
/PROBLEM   TITLE IS 'COPIED/TUBEDATE'.
/INPUT     VARIABLES ARE 12. FORMAT IS
FORMAT IS '(A4,F4,2F2,8X,F3,12X,F4,F2,3X,F4,F2,6X,F3,6X,F6.1)'.
/ VARIABLE  NAMES ARE RECON,YEAR,MONTH,DAY,TUBETYPE,TUBECAT,
                      TUBEQTY,TYPERD,DURATION,OPN,SIZE,RTD.
            MAXIMUM ARE (2)1999, (3)12, (4)31, (5)240, (6)203, (7)2000
                        (8)30, (9)9999, (10)10, (11)999, (12)9999.
            MINIMUM ARE (2)1900, (3)01, (4)01, (5)30, (6)30, (7)01.
                        (8)01,   (9)02, (10)01, (11)01, (12)01.
            GROUPING IS TUBETYPE.
            LABEL IS RECNO.
/TRANSFORM
            RTD = SQRT(RTD).
/SAVE       CODE IS FIRST.
            FILE IS 'K2P1DSQRT'.
            NEW.
/GROUP      CODES(10) ARE 01,02,03,04,05,06,07,08,09,10.
            NAMES(10) ARE PROL,ATKL,DEFL,PROM,UNSP,ATKM,DEFM,
                          PROH,ATKH,DEFH.

            CUTPOINTS(9) ARE 1,2,3,4,5,6,7,8,9,10,20,30,40,50,60,
                             70,80,90,180,365,730.
            NAMES(9) ARE '1','2','3','4','5','6','7','8','9','10',
                         '11T020','21T030','31T040','41T050','51T060',
                         '61T070','71T080','81T090',
                         '91T0180','181T0365','366T0730',
                         '731PLUS'.

 CODES(5) ARE 075,081,105,107,114,155,156,175,203,240,030,031,032,033.
```

```
 NAMES(5) ARE '075', '081',
              '105',
              '107',    '114',
              '155', '156',
              '175',
              '203', '240',
              'UNSP',     'LIGHT',    'MEDIUM',    'HEAVY'.

          CUTPOINTS(7) ARE 3,6,12,18,24,30,36,42,48,54,60,66,

                           72,78,84,90,96,114,132,150,168,186.

          NAMES(7) ARE '30RLESS','4TO6','7TO12','13TO18','19TO24',
                       '25TO30','31TO36','37TO42','43TO48',
                       '73TO78','79TO84','85TO90','91TO96',
                       '97TO114','115TO132','133TO150',
                       151TO168','169TO186','187PLUS'.
       CODES(8) ARE 01, 02 03, 04, 30.
       NAMES(8) ARE HE, SMK, ILLUM, ICM, UNSP.

 CDES(11) ARE 001,002,003,004,005,006,009,018,027,054,081,162,243,486,
                729,900,1000.
       NAMES(11) ARE CO,'2CO',BN,BNTF,'2BN',BDE,'2BDE',DIV,"2DIV',
                 CORPS,'2CORPS','1ARMY;'2ARMY',ARMYGP,THEA,UNSP.

       CODES(6) ARE 105,155,203,030.
       NAMES(6) ARE LIGHT,MEDIUM, HEAVY,UNSP.
CODES(2) ARE 1900,1904,1915,1916,1918,1943,1944,1945,1951,1952,1953,
             1967,1968,1969,1970,1976,1999.
NAMES(2) ARE '1900','1904','1915','1916',1918','1943','1944','1945',
             '1951',1952','1953','1967','1968','1969','1970','1976',
             '1999'.
/PRING        DATA.
              MISSING.
              MAXIMUM.
              MINIMUM.
```

E-7. QCHART GRAPHICS

a. The following routines can be input directly onto the SUPERSET graphics terminal from the Sperry mainframe. Use of these routines will provide all graphics shown in this report. Modification of these routines will preclude the need to learn SUPERSET DISPLAY language. As long as the need for change is not extensive, updating of these graphics can be done entirely on the mainframe

b. The files themselves are too lengthy to include in the report. The relevant filenames are as follows:

```
K2AHART.SUPERSET/OBS          .SUPERSET/OBS-WARRAMP
       .SUPERSET/DURATION     .SUPERSET/DUR-WARRAMP
       .SPERSET/OPERATION     .SUPERSET/OPN-WARRAMP
       .SUPERSET/TWOVAR2      .SUPERSET/WAR-WARRAMP
                              .SUPERSET/YEAR
```

APPENDIX F

THE AHART DATA BASE

F-1. PURPOSE. This appendix is provided to supplement the use of floppy and hard disk storage of the data base on microcomputers. It is intended that this data base be disseminated as widely as possible. It is also intended that the present data base be only a start to a much greater and more useful data base of field artillery historical expenditure data.

F-2. THE DATA BASE STRUCTURE

a. Definitions, explanations, and analyses of each of the fields in the data base are included in Chapter 2 of the main report.

b. The data base as snown in this appendix has been indexed first by tube types (see TUBETYPE field). Within tube types, the data is ordered chronologically (see DATE field).

c. Record numbers are the order in which the data was entered into the data base and should not be used for location of records. Record location is most efficiently done by tube type, date, and by identification with the historical event.

d. The source field is referenced in Appendix D, Bibliography, for further research into the resource material.

(NOT USED)

Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2601 #					/ /			-1		-1		-1.0
52	HERO-WWI-CDSS	CANTIGNY	1STUS FA BDE	CORPS	04/25/18	075GUN	LIGHT	48	UNSP	74	UNSP	161.0
54	HERO-WWI-CDSS	COEUVRES	1STUS FA BDE	CORPS	07/18/18	075GUN	LIGHT	48	UNSP	7	UNSP	149.0
55	HERO-WWI-CDSS	BEAUMONT	1STUS FA BDE	CORPS	09/12/18	075GUN	LIGHT	48	UNSP	2	UNSP	300.0
57	HERO-WWI-CDSS	MEUSE-ARGONN	1STUS FA BDE	CORPS	10/06/18	075GUN	LIGHT	48	UNSP	37	UNSP	194.0
291	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	075GUN	LIGHT	-1	NE	720	ATEN	30.5
12	OBO-WWII-1	ANZIO	VI CORPS	CORPS	01/21/44	075GUN	LIGHT	-1	NE	30	ATEN	-1.0
9	OBO-WWII-1	ANZIO	VI CORPS	CORPS	02/29/44	075GUN	LIGHT	-1	NE	32	ATEN	-1.0
29	OBO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	075GUN	LIGHT	-1	NE	30	ATEN	-1.0
260	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	075GUN	LIGHT	-1	NE	180	UNSP	2.6
3123	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	075GUN	LIGHT	108	UNSP	1	UNSP	27.1
3146	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	075GUN	LIGHT	108	UNSP	1	UNSP	-1.0
3156	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	075GUN	LIGHT	54	UNSP	1	UNSP	-1.0
3160	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	075GUN	LIGHT	54	UNSP	1	UNSP	18.1
22	OBO-WWII-1	OKINAWA	XXIV CORPS	CORPS	05/01/45	075GUN	LIGHT	-1	NE	62	ATEN	-1.0
24	OBO-WWII-1	OKINAWA	III CORPS	CORPS	05/01/45	075GUN	LIGHT	-1	NE	62	ATEN	-1.0
507	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
508	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
509	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
510	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
511	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	075GUN	LIGHT	-1	UNSP	28	UNSP	-1.0
512	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
513	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
742	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
743	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
744	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
745	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
746	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
747	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
748	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
749	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
750	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
751	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	075GUN	LIGHT	-1	UNSP	28	UNSP	-1.0
752	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
753	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
754	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
755	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	075GUN	LIGHT	-1	UNSP	30	UNSP	-1.0
756	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
757	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	075GUN	LIGHT	-1	UNSP	31	UNSP	-1.0
2885	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	075GUN	LIGHT	-1	UNSP	31	UNSP	16.1
3599	FAS-WWI-7	CHAMPAGNE	FRENCH	THEA	09/22/15	075NOW	LIGHT	-1	UNSP	6	UNSP	200.0
56	HERO-WWI-CDSS	ANSAUVILLE	1STUS FA BDE	CORPS	01/23/18	075NOW	LIGHT	48	UNSP	72	UNSP	27.0
3598	FAS-WWI-7	MARNE	FRENCH	1ARMYGP	07/15/18	075NOW	LIGHT	-1	UNSP	3	UNSP	266.0
13	OBO-WWII-1	ANZIO	VI CORPS	CORPS	01/21/44	075NOW	LIGHT	-1	NE	30	ATEN	-1.0
8	OBO-WWII-1	ANZIO	VI CORPS	CORPS	02/29/44	075NOW	LIGHT	-1	NE	32	ATEN	-1.0
30	OBO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	075NOW	LIGHT	-1	NE	30	ATEN	-1.0
3545	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/13/44	075NOW	LIGHT	6	UNSP	2	ATEN	74.4
3557	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	075NOW	LIGHT	12	UNSP	2	ATEN	98.2
3581	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	075NOW	LIGHT	4	UNSP	2	ATEL	-1.0
3569	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	075NOW	LIGHT	8	UNSP	2	ATEN	-1.0
3592	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	075NOW	LIGHT	-1	UNSP	2	ATEL	-1.0
261	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	075NOW	LIGHT	-1	NE	180	UNSP	9.6
3136	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	075NOW	LIGHT	72	UNSP	1	UNSP	20.5
3145	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	075NOW	LIGHT	72	UNSP	1	UNSP	-1.0
3155	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	075NOW	LIGHT	72	UNSP	1	UNSP	-1.0

Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
3155	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	ARMY	02/23/45	075HOW	LIGHT	72	UNSP	1	UNSP	-1.0
3161	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/23/45	075HOW	LIGHT	72	UNSP	1	UNSP	96.9
3167	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/13/45	075HOW	LIGHT	142	UNSP	1	UNSP	62.3
3200	HERO-WWII-CDSS	PO VALLEY	II CORPS	CORPS	04/14/45	075HOW	LIGHT	-1	UNSP	3	ATKN	272.0
3205	HERO-WWII-CDSS	PO VALLEY	IV CORPS	CORPS	04/14/45	075HOW	LIGHT	-1	UNSP	5	ATKN	244.0
17	ORO-WWII-1	OKINAWA	XXIV&III	2CORPS	05/01/45	075HOW	LIGHT	-1	NE	83	ATKN	-1.0
514	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
515	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
516	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
517	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
518	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	075HOW	LIGHT	-1	UNSP	28	UNSP	-1.0
519	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
520	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
758	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
759	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
760	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
761	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
762	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
763	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
764	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
765	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
766	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
767	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	075HOW	LIGHT	-1	UNSP	28	UNSP	-1.0
768	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
769	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
770	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
771	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	075HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
772	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
773	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	075HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
289	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	081MTR	LIGHT	-1	NE	720	ATKN	25.6
10	ORO-WWII-1	ANZIO	VI CORPS	CORPS	02/29/44	081MTR	LIGHT	-1	NE	32	ATKN	-1.0
33	ORO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	081MTR	LIGHT	-1	NE	30	ATKN	-1.0
259	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	081MTR	LIGHT	-1	NE	180	UNSP	10.2
23	ORO-WWII-1	OKINAWA	XXIV CORPS	CORPS	05/01/45	081MTR	LIGHT	-1	NE	83	ATKN	-1.0
25	ORO-WWII-1	OKINAWA	III CORPS	CORPS	05/01/45	081MTR	LIGHT	-1	NE	83	ATKN	-1.0
472	CMH-K-1	KOREA	US ARMY	THEA	02/01/51	081MTR	LIGHT	918	UNSP	16	UNSP	5.8
473	CMH-K-1	KOREA	US ARMY	THEA	02/11/51	081MTR	LIGHT	918	UNSP	10	UNSP	11.1
474	CMH-K-1	KOREA	US ARMY	THEA	02/21/51	081MTR	LIGHT	951	UNSP	8	UNSP	9.8
475	CMH-K-1	KOREA	US ARMY	THEA	03/01/51	081MTR	LIGHT	951	UNSP	10	UNSP	9.3
476	CMH-K-1	KOREA	US ARMY	THEA	03/11/51	081MTR	LIGHT	951	UNSP	21	UNSP	9.9
477	CMH-K-1	KOREA	US ARMY	THEA	04/01/51	081MTR	LIGHT	951	UNSP	10	UNSP	5.2
478	CMH-K-1	KOREA	US ARMY	THEA	04/11/51	081MTR	LIGHT	951	UNSP	10	UNSP	8.3
479	CMH-K-1	KOREA	US ARMY	THEA	04/21/51	081MTR	LIGHT	857	UNSP	10	UNSP	8.9
480	CMH-K-1	KOREA	US ARMY	THEA	05/01/51	081MTR	LIGHT	857	UNSP	10	UNSP	22.1
481	CMH-K-1	KOREA	US ARMY	THEA	05/11/51	081MTR	LIGHT	857	UNSP	10	UNSP	12.0
482	CMH-K-1	KOREA	US ARMY	THEA	05/21/51	081MTR	LIGHT	988	UNSP	10	UNSP	10.6
483	CMH-K-1	KOREA	US ARMY	THEA	06/01/51	081MTR	LIGHT	988	UNSP	10	UNSP	11.7
484	CMH-K-1	KOREA	US ARMY	THEA	06/11/51	081MTR	LIGHT	939	UNSP	10	UNSP	15.0
485	CMH-K-1	KOREA	US ARMY	THEA	06/13/51	081MTR	LIGHT	939	UNSP	10	UNSP	9.7
486	CMH-K-1	KOREA	US ARMY	THEA	06/23/51	081MTR	LIGHT	939	UNSP	10	UNSP	11.2
487	CMH-K-1	KOREA	US ARMY	THEA	07/03/51	081MTR	LIGHT	943	UNSP	12	UNSP	8.3
488	CMH-K-1	KOREA	US ARMY	THEA	07/13/51	081MTR	LIGHT	943	UNSP	9	UNSP	5.3
489	CMH-K-1	KOREA	US ARMY	THEA	07/24/51	081MTR	LIGHT	943	UNSP	12	UNSP	6.5
490	CMH-K-1	KOREA	US ARMY	THEA	08/05/51	081MTR	LIGHT	943	UNSP	10	UNSP	6.3
491	CMH-K-1	KOREA	US ARMY	THEA	08/15/51	081MTR	LIGHT	943	UNSP	10	UNSP	15.7

Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	RDTUBEDAY
491	CMH-K-1	KOREA	US ARMY	THEA	08/15/51	081NTE	LIGHT	963	UNSP	10	UNSP	15.7
492	CMH-K-1	KOREA	US ARMY	THEA	08/25/51	081NTE	LIGHT	947	UNSP	10	UNSP	17.2
673	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
493	CMH-K-1	KOREA	US ARMY	THEA	10/06/51	081NTE	LIGHT	966	UNSP	9	UNSP	10.7
674	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
494	CMH-K-1	KOREA	US ARMY	THEA	11/16/51	081NTE	LIGHT	988	UNSP	10	UNSP	12.2
675	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
676	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
677	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	081NTE	LIGHT	-1	UNSP	29	UNSP	-1.0
678	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
679	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
680	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
681	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
495	CMH-K-1	KOREA	US ARMY	THEA	06/16/52	081NTE	LIGHT	1097	UNSP	11	UNSP	11.0
496	CMH-K-1	KOREA	US ARMY	THEA	06/25/52	081NTE	LIGHT	1097	UNSP	10	UNSP	7.7
682	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
683	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
684	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
497	CMH-K-1	KOREA	US ARMY	THEA	09/25/52	081NTE	LIGHT	1146	UNSP	10	UNSP	7.2
685	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
498	CMH-K-1	KOREA	US ARMY	THEA	10/05/52	081NTE	LIGHT	1146	UNSP	1	UNSP	19.9
499	CMH-K-1	KOREA	US ARMY	THEA	10/16/52	081NTE	LIGHT	1186	UNSP	10	UNSP	10.8
686	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
687	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
688	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
689	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	081NTE	LIGHT	-1	UNSP	28	UNSP	-1.0
690	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
691	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
692	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
500	CMH-K-1	KOREA	US ARMY	THEA	05/16/53	081NTE	LIGHT	1786	UNSP	10	UNSP	8.8
501	CMH-K-1	KOREA	US ARMY	THEA	05/26/53	081NTE	LIGHT	1786	UNSP	11	UNSP	15.8
693	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	081NTE	LIGHT	-1	UNSP	30	UNSP	-1.0
502	CMH-K-1	KOREA	US ARMY	THEA	06/05/53	081NTE	LIGHT	1850	UNSP	11	UNSP	15.0
503	CMH-K-1	KOREA	US ARMY	THEA	06/16/53	081NTE	LIGHT	1799	UNSP	10	UNSP	15.3
504	CMH-K-1	KOREA	US ARMY	THEA	06/26/53	081NTE	LIGHT	1799	UNSP	10	UNSP	15.9
694	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
505	CMH-K-1	KOREA	US ARMY	THEA	07/06/53	081NTE	LIGHT	1799	UNSP	10	UNSP	17.4
506	CMH-K-1	KOREA	US ARMY	THEA	07/15/53	081NTE	LIGHT	1503	UNSP	11	UNSP	16.6
695	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	081NTE	LIGHT	-1	UNSP	31	UNSP	-1.0
403	NA-VN-2	OP DALLAS	1US IN DIV	DIV	05/17/67	061NTE	LIGHT	-1	NE	9	PROM	10.0
399	NA-VN-2	OP BILLINGS	1US IN DIV	DIV	06/11/67	081NTE	LIGHT	-1	NE	16	PROM	22.7
418	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	081NTE	LIGHT	-1	UNSP	360	UNSP	7.2
629	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	081NTE	LIGHT	-1	UNSP	365	UNSP	7.2
647	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	081NTE	LIGHT	-1	UNSP	365	UNSP	-1.0
2871	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/68	081NTE	LIGHT	-1	UNSP	31	UNSP	6.3
2877	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	081NTE	LIGHT	-1	UNSP	31	UNSP	6.5
2883	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/68	081NTE	LIGHT	-1	UNSP	30	UNSP	5.5
424	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	081NTE	LIGHT	-1	UNSP	360	UNSP	6.5
630	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	081NTE	LIGHT	-1	UNSP	365	UNSP	6.5
648	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	081NTE	LIGHT	-1	UNSP	365	UNSP	-1.0
2889	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	081NTE	LIGHT	-1	UNSP	31	UNSP	5.6
2895	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	081NTE	LIGHT	-1	UNSP	30	UNSP	7.7
2901	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	081NTE	LIGHT	-1	UNSP	31	UNSP	5.7
2907	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	081NTE	LIGHT	-1	UNSP	31	UNSP	5.9
2913	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	081NTE	LIGHT	-1	UNSP	28	UNSP	7.4

Record	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEEQ	DAYSQUANT	OPERATION	ROUNDSDAY
2913	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	88INTE	LIGHT	-1	UNSP	28	UNSP	7.4
2919	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	88INTE	LIGHT	-1	UNSP	31	UNSP	7.3
2925	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	88INTE	LIGHT	-1	UNSP	31	UNSP	7.0
2930	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/69	88INTE	LIGHT	-1	UNSP	30	UNSP	6.3
436	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	88INTE	LIGHT	-1	UNSP	28	UNSP	6.2
590	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	88INTE	LIGHT	772	UNSP	30	UNSP	9.8
591	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	88INTE	LIGHT	841	UNSP	28	UNSP	10.8
592	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	88INTE	LIGHT	807	UNSP	30	UNSP	11.5
438	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	88INTE	LIGHT	-1	UNSP	268	UNSP	12.9
593	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	88INTE	LIGHT	785	UNSP	30	UNSP	9.7
631	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	88INTE	LIGHT	-1	UNSP	365	UNSP	12.5
649	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	88INTE	LIGHT	-1	UNSP	365	UNSP	-1.0
594	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	88INTE	LIGHT	836	UNSP	30	UNSP	10.9
595	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	88INTE	LIGHT	856	UNSP	30	UNSP	9.7
596	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	88INTE	LIGHT	868	UNSP	30	UNSP	9.8
597	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/70	88INTE	LIGHT	919	UNSP	28	UNSP	12.5
598	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	88INTE	LIGHT	741	UNSP	30	UNSP	12.9
599	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	88INTE	LIGHT	768	UNSP	28	UNSP	13.7
600	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	88INTE	LIGHT	683	UNSP	30	UNSP	10.4
601	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	88INTE	LIGHT	986	UNSP	30	UNSP	24.8
258	FM101-10-1 JUL 76	NONE	AR DIV	DIV	07/30/76	88INTE	LIGHT	-1	NE	1	PROG	27.0
7	SOBO-WWII-1	ANZIO	VI CORPS	CORPS	02/29/44	890MMOUNT	LIGHT	-1	NE	32	ATEN	-1.0
28	SOBO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	890MMOUNT	LIGHT	-1	NE	30	ATEN	-1.0
3596	FAS-WWI-1	SOMME	2GERARMY	1ARMY	07/01/16	105HOW	LIGHT	-1	UNSP	30	UNSP	170.0
3594	FAS-WWI-1	SOMME	2GERARMY	1ARMY	07/15/16	105HOW	LIGHT	-1	UNSP	1	UNSP	679.0
287	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	105HOW	LIGHT	-1	NE	720	ATEN	91.9
2367	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/01/44	105HOW	LIGHT	936	UNSP	30	ATEN	62.0
3335	HERO-WWII-CDSS	MONTECASSINO	36TH US DIV	DIV	01/20/44	105HOW	LIGHT	36	UNSP	11	UNSP	106.4
2368	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/21/44	105HOW	LIGHT	396	UNSP	22	ATEN	39.0
3341	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	01/23/44	105HOW	LIGHT	-1	UNSP	6	UNSP	128.2
3342	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	01/24/44	105HOW	LIGHT	-1	UNSP	7	UNSP	108.2
3340	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	01/25/44	105HOW	LIGHT	-1	UNSP	6	UNSP	98.1
14	OBO-WWII-1	ANZIO	VI CORPS	CORPS	01/31/44	105HOW	LIGHT	-1	NE	30	ATEN	-1.0
3337	HERO-WWII-CDSS	MONTECASSINO	36TH US DIV	DIV	02/01/44	105HOW	LIGHT	36	UNSP	31	UNSP	80.0
3345	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/01/44	105HOW	LIGHT	-1	UNSP	28	UNSP	97.6
3346	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/01/44	105HOW	LIGHT	-1	UNSP	29	UNSP	110.6
3347	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/01/44	105HOW	LIGHT	-1	UNSP	29	UNSP	110.0
3352	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	02/01/44	105HOW	LIGHT	-1	UNSP	29	UNSP	120.0
3353	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	02/01/44	105HOW	LIGHT	-1	UNSP	29	UNSP	72.4
3349	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/06/44	105HOW	LIGHT	18	UNSP	5	UNSP	173.1
268	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	02/10/44	105HOW	LIGHT	-1	NE	13	ATEN	42.0
2369	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	02/12/44	105HOW	LIGHT	511	UNSP	11	PROG	15.0
5	OBO-WWII-1	ANZIO	VI Corps	CORPS	02/29/44	105HOW	LIGHT	-1	NE	32	ATEN	-1.0
3355	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	03/01/44	105HOW	LIGHT	-1	UNSP	10	UNSP	96.2
3356	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	03/01/44	105HOW	LIGHT	-1	UNSP	10	UNSP	97.6
3357	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	03/01/44	105HOW	LIGHT	-1	UNSP	10	UNSP	85.2
3360	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	03/01/44	105HOW	LIGHT	-1	UNSP	11	UNSP	51.1
3361	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	03/01/44	105HOW	LIGHT	-1	UNSP	9	UNSP	107.6
31	OBO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	105HOW	LIGHT	-1	NE	30	ATEN	-1.0
60	HERO-WWII-CDSS	DIADEM	86US IN DIV	DIV	05/11/44	105HOW	LIGHT	36	UNSP	17	BAPD	321.0
61	HERO-WWII-CDSS	DIADEM	86US IN DIV	DIV	05/11/44	105HOW	LIGHT	36	UNSP	17	BAPD	109.4
72	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	105HOW	LIGHT	12	UNSP	17	BAND	66.0
83	HERO-WWII-CDSS	DIADEM	86US IN DIV	DIV	05/11/44	105HOW	LIGHT	36	UNSP	17	BADL	106.3
84	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	105HOW	LIGHT	36	UNSP	17	BADL	55.7
3534	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	105HOW	LIGHT	98	UNSP	2	ATEN	415.9

Record	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEEQP	DAYSQUANT	OPERATION	EFFECTDAY
2524	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/13/44	105HOW	LIGHT	90	UNSP	2	ATKN	615.9
2540	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	105HOW	LIGHT	90	UNSP	2	ATKN	277.7
2570	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	105HOW	LIGHT	88	UNSP	2	ATKL	80.9
2362	NERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	105HOW	LIGHT	48	UNSP	2	ATKL	10.3
2556	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	105HOW	LIGHT	66	UNSP	2	ATKN	101.2
2582	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	105HOW	LIGHT	72	UNSP	2	ATKL	21.0
262	CMN-WWII-1	WWII EVE	ALL	THEA	06/01/44	105HOW	LIGHT	-1	NE	180	UNSP	20.3
264	CMN-WWII-1	WWII EVE	ALL	THEA	06/01/44	105HOW	LIGHT	-1	NE	180	UNSP	12.1
273	CMN-WWII-2	WWII EVE	1US ARMY	1ARMY	06/06/44	105HOW	LIGHT	-1	NE	5	ATKN	62.0
345	CMN-WWII-2	GERMANY	12US ARMY GP	1ARMY	06/06/44	105HOW	LIGHT	-1	UNSP	180	ATKN	-1.0
277	CMN-WWII-2	WWII EVE	1US ARMY	1ARMY	06/08/44	105HOW	LIGHT	-1	NE	12	ATKN	61.0
295	CMN-WWII-2	WWII EVE	1US ARMY	1ARMY	06/11/44	105HOW	LIGHT	-1	NE	7	ATKN	63.0
299	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	06/18/44	105HOW	LIGHT	-1	NE	7	ATKN	25.0
302	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	06/25/44	105HOW	LIGHT	-1	NE	7	ATKN	29.0
308	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	105HOW	LIGHT	-1	NE	7	ATKN	55.0
316	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	105HOW	LIGHT	-1	NE	7	ATKN	80.0
324	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	105HOW	LIGHT	-1	NE	7	ATKN	26.0
331	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	105HOW	LIGHT	-1	NE	7	ATKN	20.0
339	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	105HOW	LIGHT	-1	NE	7	ATKN	28.0
2356	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/06/44	105HOW	LIGHT	432	UNSP	12	ATKN	61.0
2357	LOGC-WWII	WWII	1 US ARMY	1ARMY	08/10/44	105HOW	LIGHT	498	UNSP	16	ATKN	13.0
2358	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	09/56/44	105HOW	LIGHT	636	UNSP	13	ATKN	15.0
2359	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	09/17/44	105HOW	LIGHT	456	UNSP	13	ATKN	24.0
2360	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/02/44	105HOW	LIGHT	510	UNSP	13	ATKN	62.0
2361	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/15/44	105HOW	LIGHT	522	UNSP	13	ATKL	23.0
2362	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/29/44	105HOW	LIGHT	594	UNSP	14	PROL	26.0
105	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	105HOW	LIGHT	24	UNSP	4	BAPD	48.1
106	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	105HOW	LIGHT	5	UNSP	4	BAPD	30.6
2324	NERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	11/08/44	105HOW	LIGHT	-1	UNSP	2	ATKN	140.3
95	NERO-WWII-CDSS	GERMANY	4US AR DIV A	8DE	11/10/44	105HOW	LIGHT	9	UNSP	2	BAPD	0.3
103	NERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	105HOW	LIGHT	.8	UNSP	1	BAPD	21.6
3099	NNERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	105HOW	LIGHT	36	UNSP	3	ATKL	36.3
3373	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	105HOW	LIGHT	65	UNSP	3	ATKL	20.6
3291	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	105HOW	LIGHT	-1	UNSP	1	DEFN	13.3
176	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	105HOW	LIGHT	24	UNSP	4	BADL	68.5
2363	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	11/12/44	105HOW	LIGHT	576	UNSP	14	ATKN	64.9
113	NERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	105HOW	LIGHT	30	UNSP	3	BADL	23.3
121	NERO-WWII-CDSS	GERMANY	4US AR DIV A	8DE	11/14/44	105HOW	LIGHT	18	UNSP	2	BAPD	57.7
3108	NERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	105HOW	LIGHT	54	UNSP	1	ATKL	78.0
3384	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	105HOW	LIGHT	48	UNSP	1	ATKL	20.6
3115	NERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/15/44	105HOW	LIGHT	27	UNSP	2	ATKN	78.1
3395	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	105HOW	LIGHT	48	UNSP	2	ATKN	26.6
182	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	105HOW	LIGHT	24	UNSP	1	BADL	80.2
183	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	105HOW	LIGHT	36	UNSP	1	BADL	36.7
3406	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	105HOW	LIGHT	48	UNSP	1	ATKL	36.1
193	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	105HOW	LIGHT	24	UNSP	2	BAPD	61.9
3516	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	105HOW	LIGHT	36	UNSP	2	ATKN	21.8
201	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	105HOW	LIGHT	24	UNSP	2	BAPD	65.2
3505	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	105HOW	LIGHT	36	UNSP	2	ATKN	61.7
211	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	105HOW	LIGHT	24	UNSP	2	BAPD	20.5
3494	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	105HOW	LIGHT	36	UNSP	2	ATKN	27.8
3417	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	105HOW	LIGHT	48	UNSP	3	ATKL	67.4
3483	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	105HOW	LIGHT	36	UNSP	2	ATKN	66.3
127	NERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	105HOW	LIGHT	36	UNSP	1	BAPD	37.3
284	CMN-WWII-2	WWII EVE	1US ARMY	1ARMY	11/26/44	105HOW	LIGHT	-1	NE	14	ATKN	41.8

Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
263	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	11/26/44	105HOW	LIGHT	-1	NE	14	ATKN	41.0
2364	LOGC-WWI-2	WWII	1 US ARMY	1ARMY	11/26/44	105HOW	LIGHT	558	UNSP	14	ATKN	41.6
137	HERO WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	105HOW	LIGHT	54	UNSP	3	BADL	31.6
3472	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	105HOW	LIGHT	28	UNSP	8	ATKL	20.0
3428	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	105HOW	LIGHT	48	UNSP	2	ATKN	33.7
147	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	105HOW	LIGHT	54	UNSP	2	BAPD	63.7
221	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	105HOW	LIGHT	24	UNSP	1	BAPD	73.8
3430	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	105HOW	LIGHT	36	UNSP	1	ATKN	76.8
3481	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	105HOW	LIGHT	36	UNSP	1	ATKN	57.6
3450	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	105HOW	LIGHT	36	UNSP	2	ATKL	18.0
157	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	105HOW	LIGHT	27	UNSP	2	BAPD	42.4
429	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	105HOW	LIGHT	24	UNSP	1	BADL	45.6
2365	LOGC-WWII-2	WWI	1 US ARMY	1ARMY	12/10/44	105HOW	LIGHT	600	UNSP	6	ATKN	44.0
230	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	105HOW	LIGHT	6	UNSP	2	PD	165.2
270	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	12/16/44	105HOW	LIGHT	-1	NE	26	DEFN	66.0
2266	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	12/16/44	105HOW	LIGHT	504	UNSP	16	DEFN	69.0
3210	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	105HOW	LIGHT	12	UNSP	1	DEFN	65.1
3231	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	105HOW	LIGHT	15	UNSP	6	DEFN	57.5
3236	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	105HOW	LIGHT	-1	UNSP	2	DEFN	65.1
3269	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	105HOW	LIGHT	-1	UNSP	2	DEFN	64.7
3302	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	105HOW	LIGHT	-1	UNSP	2	DEFN	165.2
248	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	105HOW	LIGHT	6	UNSP	2	PD	60.3
3217	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	105HOW	LIGHT	12	UNSP	1	DEFN	165.6
3247	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	105HOW	LIGHT	-1	UNSP	2	DEFN	165.6
3288	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	105HOW	LIGHT	-1	UNSP	2	DEFN	257.6
3313	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	105HOW	LIGHT	-1	UNSP	2	DEFN	80.3
3258	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	105HOW	LIGHT	-1	UNSP	2	DEFN	102.4
3224	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	105HOW	LIGHT	24	UNSP	2	DEFN	102.4
3118	HERO-WWII-CDSS	BOER RIVER	XIII CORPS	CORPS	02/22/45	105HOW	LIGHT	204	UNSP	1	UNSP	67.2
3125	HERO-WWII-CDSS	BOER RIVER	XVI CORPS	CORPS	02/22/45	105HOW	LIGHT	144	UNSP	1	UNSP	18.4
3131	HERO-WWII-CDSS	BOER RIVER	XIX CORPS	CORPS	02/22/45	105HOW	LIGHT	222	UNSP	1	UNSP	94.8
3138	HERO-WWII-CDSS	BOER RIVER	9TH US ARMY	1ARMY	02/22/45	105HOW	LIGHT	570	UNSP	1	UNSP	-1.0
3148	HERO-WWII-CDSS	BOER RIVER	9TH US ARMY	1ARMY	02/23/45	105HOW	LIGHT	568	UNSP	1	UNSP	-1.0
3162	HERO-WWII-CDSS	BOER RIVER	XIII CORPS	CORPS	02/23/45	105HOW	LIGHT	204	UNSP	1	UNSP	90.0
3171	HERO-WWII-CDSS	BOER RIVER	XIX CORPS	CORPS	02/23/45	105HOW	LIGHT	222	UNSP	1	UNSP	139.2
3021	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/18/45	105HOW	LIGHT	150	UNSP	1	UNSP	8.6
3022	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/18/45	105HOW	LIGHT	256	UNSP	1	UNSP	3.0
3023	HERO-WWII-CDSS	RHINE CROSS	XIIUKCORPS	CORPS	03/18/45	105HOW	LIGHT	162	UNSP	1	UNSP	8.5
3001	HERO-WWII-CDSS	RHINE CROSS	73UKDIV	DIV	03/19/45	105HOW	LIGHT	12	UNSP	1	UNSP	15.7
3009	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/19/45	105HOW	LIGHT	12	UNSP	1	UNSP	9.0
3024	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/19/45	105HOW	LIGHT	138	UNSP	1	UNSP	28.0
3025	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/19/45	105HOW	LIGHT	27	UNSP	1	UNSP	3.4
3026	HERO-WWII-CDSS	RHINE CROSS	XIIUKCORPS	CORPS	03/19/45	105HOW	LIGHT	162	UNSP	1	UNSP	9.7
3002	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/20/45	105HOW	LIGHT	12	UNSP	1	UNSP	16.4
3010	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/20/45	105HOW	LIGHT	12	UNSP	1	UNSP	11.9
3027	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/20/45	105HOW	LIGHT	138	UNSP	1	UNSP	14.6
3028	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/20/45	105HOW	LIGHT	270	UNSP	1	UNSP	5.8
3029	HERO-WWII-CDSS	RHINE CROSS	XIIUKCORPS	CORPS	03/20/45	105HOW	LIGHT	162	UNSP	1	UNSP	11.7
2931	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/21/45	105HOW	LIGHT	12	UNSP	1	UNSP	1.2
2932	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/21/45	105HOW	LIGHT	12	UNSP	1	UNSP	3.0
2936	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/21/45	105HOW	LIGHT	12	UNSP	1	UNSP	3.5
2948	HERO WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/21/45	105HOW	LIGHT	12	UNSP	1	UNSP	3.4
3003	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/21/45	105HOW	LIGHT	12	UNSP	1	UNSP	13.6
3030	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/21/45	105HOW	LIGHT	138	UNSP	1	UNSP	13.2
3031	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/21/45	105HOW	LIGHT	267	UNSP	1	UNSP	6.1

Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
3031	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/21/45	105HOW	LIGHT	267	UNSP	1	UNSP	8.1
3032	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/21/45	105HOW	LIGHT	162	UNSP	1	UNSP	9.9
2949	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/22/45	105HOW	LIGHT	12	UNSP	1	UNSP	8.2
2976	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/22/45	105HOW	LIGHT	12	UNSP	1	UNSP	12.2
3004	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/22/45	105HOW	LIGHT	12	UNSP	1	UNSP	13.3
3011	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/22/45	105HOW	LIGHT	12	UNSP	1	UNSP	19.8
3019	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/22/45	105HOW	LIGHT	12	UNSP	1	UNSP	33.3
3033	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/22/45	105HOW	LIGHT	131	UNSP	1	UNSP	9.4
3034	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/22/45	105HOW	LIGHT	268	UNSP	1	UNSP	5.4
3035	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/22/45	105HOW	LIGHT	162	UNSP	1	UNSP	11.2
2939	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/23/45	105HOW	LIGHT	12	UNSP	1	UNSP	183.3
2958	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/23/45	105HOW	LIGHT	36	UNSP	1	UNSP	26.3
3005	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/23/45	105HOW	LIGHT	12	UNSP	1	UNSP	19.2
3012	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/23/45	105HOW	LIGHT	12	UNSP	1	UNSP	24.0
3036	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/23/45	105HOW	LIGHT	137	UNSP	1	UNSP	12.7
3037	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/23/45	105HOW	LIGHT	270	UNSP	1	UNSP	17.2
3038	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/23/45	105HOW	LIGHT	162	UNSP	1	UNSP	9.8
2933	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	316.7
2937	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	412.1
2940	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	137.8
2950	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	244.7
2959	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/24/45	105HOW	LIGHT	36	UNSP	1	UNSP	244.7
2977	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	269.3
2984	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	242.5
3006	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	440.8
3013	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	185.8
3020	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/24/45	105HOW	LIGHT	12	UNSP	1	UNSP	286.3
3039	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/24/45	105HOW	LIGHT	138	UNSP	1	UNSP	8.5
3040	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/24/45	105HOW	LIGHT	306	UNSP	1	UNSP	267.8
3041	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/24/45	105HOW	LIGHT	162	UNSP	1	UNSP	29.2
2934	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	137.9
2941	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	99.5
2951	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	19.6
2960	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/25/45	105HOW	LIGHT	36	UNSP	1	UNSP	184.7
2978	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	193.8
2985	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	82.5
3014	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/25/45	105HOW	LIGHT	12	UNSP	1	UNSP	71.8
3042	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/25/45	105HOW	LIGHT	138	UNSP	1	UNSP	30.7
3043	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/25/45	105HOW	LIGHT	306	UNSP	1	UNSP	47.3
3044	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/25/45	105HOW	LIGHT	156	UNSP	1	UNSP	11.5
2935	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/26/45	105HOW	LIGHT	12	UNSP	1	UNSP	86.6
2942	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/26/45	105HOW	LIGHT	12	UNSP	1	UNSP	65.1
2952	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/26/45	105HOW	LIGHT	12	UNSP	1	UNSP	42.8
2961	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/26/45	105HOW	LIGHT	36	UNSP	1	UNSP	76.7
2979	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/26/45	105HOW	LIGHT	12	UNSP	1	UNSP	19.8
3045	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/26/45	105HOW	LIGHT	138	UNSP	1	UNSP	27.8
3046	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/26/45	105HOW	LIGHT	306	UNSP	1	UNSP	66.8
3047	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/26/45	105HOW	LIGHT	162	UNSP	1	UNSP	10.8
2943	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/27/45	105HOW	LIGHT	12	UNSP	1	UNSP	72.7
2953	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/27/45	105HOW	LIGHT	12	UNSP	1	UNSP	54.3
2962	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/27/45	105HOW	LIGHT	36	UNSP	1	UNSP	72.3
2980	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/27/45	105HOW	LIGHT	12	UNSP	1	UNSP	21.9
3015	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/27/45	105HOW	LIGHT	12	UNSP	1	UNSP	26.9
3048	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/27/45	105HOW	LIGHT	159	UNSP	1	UNSP	17.7
3049	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/27/45	105HOW	LIGHT	246	UNSP	1	UNSP	47.2

Record	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
3049	HERO-WWII-CDSS	RHINE CROSS	XVIIICORPS	CORPS	03/27/45	105HOW	LIGHT	246	UNSP	1	UNSP	47.2
2936	HERO-WWII-CDSS	RHINE CROSS	30UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	125.1
2944	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	20.8
2954	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	142.8
2963	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/28/45	105HOW	LIGHT	36	UNSP	1	UNSP	96.6
2980	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	122.8
2987	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	153.5
3007	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	1.7
3016	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/28/45	105HOW	LIGHT	12	UNSP	1	UNSP	16.3
2945	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/29/45	105HOW	LIGHT	12	UNSP	1	UNSP	19.6
2955	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/29/45	105HOW	LIGHT	12	UNSP	1	UNSP	84.5
2964	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/29/45	105HOW	LIGHT	36	UNSP	1	UNSP	49.2
2981	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/29/45	105HOW	LIGHT	12	UNSP	1	UNSP	182.8
2988	HERO-WWII-CDSS	rhine cross	35UKDIV	DIV	03/29/45	105HOW	LIGHT	12	UNSP	1	UNSP	136.8
3008	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/29/45	105HOW	LIGHT	12	UNSP	1	UNSP	89.8
2946	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	89.8
2956	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	66.7
2957	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	76.0
2965	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/30/45	105HOW	LIGHT	36	UNSP	1	UNSP	87.9
2982	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	161.8
2989	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	128.2
3017	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/30/45	105HOW	LIGHT	12	UNSP	1	UNSP	2.7
2947	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/31/45	105HOW	LIGHT	12	UNSP	1	UNSP	48.8
2966	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/31/45	105HOW	LIGHT	36	UNSP	1	UNSP	63.8
2983	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/31/45	105HOW	LIGHT	12	UNSP	1	UNSP	215.5
2990	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/31/45	105HOW	LIGHT	12	UNSP	1	UNSP	92.7
3018	HERO-WWII-CDSS	RHINE CROSS	75UKDIV	DIV	03/31/45	105HOW	LIGHT	12	UNSP	1	UNSP	45.3
3201	HERO-WWII-CDSS	PO VALLEY	II CORPS	CORPS	04/14/45	105HOW	LIGHT	-1	UNSP	3	ATKN	285.0
3206	HERO-WWII-CDSS	PO VALLEY	IV CORPS	CORPS	04/14/45	105HOW	LIGHT	-1	UNSP	5	ATKN	186.0
18	ORO-WWII-1	OKINAWA	XXIV&III	2CORPS	05/01/45	105HOW	LIGHT	-1	NE	83	ATKN	-1.0
352	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	105HOW	LIGHT	-1	UNSP	789	UNSP	33.0
355	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	105HOW	LIGHT	-1	UNSP	36	UNSP	15.2
1947	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	15.2
356	CGSC-K-1	KOR a	US ARMY	THEA	02/01/51	105HOW	LIGHT	-1	UNSP	28	UNSP	26.5
437	CMH-K-1	KOR a	US ARMY	THEA	02/01/51	105HOW	LIGHT	678	UNSP	10	UNSP	21.1
1950	CGSC-K-1	KOREA	US ARMY	THEA	02/01/51	105HOW	LIGHT	-1	UNSP	28	UNSP	26.5
438	CMH-K-1	KOREA	US ARMY	THEA	02/11/51	105HOW	LIGHT	678	UNSP	10	UNSP	32.2
439	CMH-K-1	KOREA	US ARMY	THEA	02/21/51	105HOW	LIGHT	678	UNSP	8	UNSP	20.0
358	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	46.3
440	CMH-K-1	KOREA	US ARMY	THEA	03/01/51	105HOW	LIGHT	678	UNSP	10	UNSP	49.5
1953	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	46.3
441	CMH-K-1	KOREA	US ARMY	THEA	03/11/51	105HOW	LIGHT	678	UNSP	21	UNSP	21.4
362	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	25.0
442	CMH-K-1	KOREA	US ARMY	THEA	04/01/51	105HOW	LIGHT	687	UNSP	10	UNSP	27.2
1956	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	25.0
443	CMH-K-1	KOREA	US ARMY	THEA	04/11/51	105HOW	LIGHT	687	UNSP	10	UNSP	26.8
444	CMH-K-1	KOREA	US ARMY	THEA	04/21/51	105HOW	LIGHT	705	UNSP	10	UNSP	20.6
365	CGSC-K-1	KOREA	US ARMY	THEA	05/01/51	105HOW	LIGHT	-1	UNSP	30	ATKN	37.4
445	CMH-K-1	KOREA	US ARMY	THEA	05/01/51	105HOW	LIGHT	705	UNSP	10	UNSP	60.4
1959	CGSC-K-1	KOREA	US ARMY	THEA	05/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	57.4
446	CMH-K-1	KOREA	US ARMY	THEA	05/11/51	105HOW	LIGHT	705	UNSP	9	UNSP	18.2
447	CMH-K-1	KOREA	US ARMY	THEA	05/21/51	105HOW	LIGHT	693	UNSP	10	UNSP	68.2
368	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	105HOW	LIGHT	-1	UNSP	30	ATKN	58.6
448	CMH-K-1	KOREA	US ARMY	THEA	06/01/51	105HOW	LIGHT	693	UNSP	10	UNSP	46.5
1962	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	58.6

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	SDTUBEDAY
1962	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	50.6
449	CMH-K-1	KOREA	US ARMY	THEA	06/11/51	105HOW	LIGHT	693	UNSP	10	UNSP	66.8
450	CMH-K-1	KOREA	US ARMY	THEA	06/13/51	105HOW	LIGHT	693	UNSP	10	UNSP	66.8
451	CMH-K-1	KOREA	US ARMY	THEA	06/23/51	105HOW	LIGHT	693	UNSP	9	UNSP	51.2
371	CGSC-K-1	KOREA	US ARMY	THEA	07/01/51	105HOW	LIGHT	-1	UNSP	30	ATKM	46.4
1965	CGSC-K-1	KOREA	US ARMY	THEA	07/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	48.4
452	CMH-K-1	KOREA	US ARMY	THEA	07/03/51	105HOW	LIGHT	693	UNSP	12	UNSP	66.3
453	CMH-K-1	KOREA	US ARMY	THEA	07/15/51	105HOW	LIGHT	685	UNSP	9	UNSP	16.4
454	CMH-K-1	KOREA	US ARMY	THEA	07/24/51	105HOW	LIGHT	685	UNSP	12	UNSP	13.6
2036	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.6
2129	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.6
2160	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	2.2
2191	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	12.0
374	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	105HOW	LIGHT	-1	UNSP	30	ATKM	27.6
1966	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	27.6
2037	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	0.2
2130	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	75.5
2161	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	15.4
2192	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.1
2259	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	97.5
2268	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	140.7
2271	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	55.8
2274	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	99.8
2038	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	0.4
2131	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.0
2162	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.9
2193	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	8.1
2039	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.8
2132	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.2
2163	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	21.0
2194	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.3
2040	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	4.3
2133	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.7
2164	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.8
2195	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.3
455	CMH-K-1	KOREA	US ARMY	THEA	08/05/51	105HOW	LIGHT	685	UNSP	10	UNSP	-1.0
2041	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	24.5
2134	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	35.1
2165	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.2
2196	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.1
2042	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	1.1
2135	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.3
2166	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	16.6
2197	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	8.8
2043	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.8
2136	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	8.7
2167	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.1
2198	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	72.3
2044	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.8
2137	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.6
2168	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	7.7
2199	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	19.0
2045	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.9
2138	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	59.8
2169	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	65.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2199	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	65.8
2200	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.2
2046	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	14.6
2139	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	2.7
2170	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.2
2201	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.6
2047	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	5.6
2140	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	5.3
2171	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	5.2
2202	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	7.1
2048	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	16.9
2141	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.6
2172	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	20.6
2203	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	25.5
2049	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.2
2142	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	2.8
2173	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	4.6
2204	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.1
2050	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	15.7
2143	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.8
2174	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	1.6
2205	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.2
456	CMH-K-1	KOREA	US ARMY	THEA	08/15/51	105HOW	LIGHT	681	UNSP	10	UNSP	45.0
2051	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	14.4
2144	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.7
2175	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	7.3
2206	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	14.4
2052	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	66.9
2145	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	87.3
2176	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	10.1
2207	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	20.3
2053	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	108.7
2146	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	108.2
2177	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	72.5
2208	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	95.6
2054	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	355.1
2147	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	356.6
2178	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	33.8
2209	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	285.2
2055	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	335.1
2148	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	210.1
2179	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	32.5
2210	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	169.1
2056	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	246.0
2149	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	218.2
2180	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	312.1
2211	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	174.8
2057	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	144.7
2150	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	234.8
2181	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	135.7
2212	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	101.8
2058	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	108.8
2151	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	62.0
2182	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	193.8
2213	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	88.5

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEED	DAYSQUANT	OPERATION	RDTUBEDAY
2213	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	88.5
2059	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	74.9
2152	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	99.6
2183	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	56.1
2214	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	88.8
2060	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	69.2
2153	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	87.6
2184	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	103.5
2215	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	92.4
657	CMH-K-1	KOREA	US ARMY	THEA	08/25/51	105HOW	LIGHT	681	UNSP	10	UNSP	61.2
2061	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	298.2
2154	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	142.8
2185	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	103.1
2216	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	207.6
2062	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	206.5
2155	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	481.2
2186	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	68.5
2217	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	298.3
2063	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	543.7
2156	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	570.9
2187	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	79.1
2218	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	411.6
2064	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	120.4
2157	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	499.7
2188	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	61.8
2219	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	356.5
2065	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	68.6
2158	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	216.1
2189	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	52.1
2220	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	172.9
2066	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.8
2159	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	671.2
2190	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	182.6
2221	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	248.0
2656	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	45.8
2746	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	801.3
2776	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	155.6
2806	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	105HOW	LIGHT	18	UNSP	1	UNSP	341.5
377	CGSC-K-1	KOREA	US ARMY	THEA	09/01/51	105HOW	LIGHT	-1	UNSP	30	ATKN	50.0
1971	CGSC-K-1	KOREA	US ARMY	THEA	09/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	50.0
2260	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	79.7
2269	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	181.0
2272	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	209.8
2275	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	163.1
2657	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	51.3
2747	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	589.1
2777	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	251.8
2807	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	308.8
2658	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	87.2
2748	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	274.5
2778	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	214.2
2808	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	328.6
2659	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	67.7
2749	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	190.7
2779	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	91.3

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2779	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	91.3
2809	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	168.2
2660	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	160.0
2750	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	264.0
2780	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	145.9
2810	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	130.1
2661	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	62.2
2751	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	215.7
2781	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	263.1
2811	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	132.6
2662	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.6
2752	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	26.1
2782	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	99.8
2812	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	63.6
2663	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	16.8
2753	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	9.5
2783	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	25.9
2813	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.5
2664	HERO-WWII-K-CDSS	KOREA	X COR S	CORPS	09/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	59.1
2754	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	12.5
2784	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	47.0
2814	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	151.6
2665	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	239.3
2755	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	1.7
2785	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	20.2
2815	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	186.6
2666	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	282.5
2756	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	21.0
2786	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	12.3
2816	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	191.2
2667	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	111.7
2757	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	55.2
2787	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	187.4
2817	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	180.5
2668	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	71.8
2758	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	98.1
2788	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	358.3
2818	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	176.7
2669	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	75.5
2759	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	91.7
2789	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	288.0
2819	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	364.4
2670	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	111.8
2760	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	284.8
2790	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	421.1
2820	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	379.2
2671	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	237.6
2761	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	224.1
2791	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	617.5
2821	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	219.0
2672	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	187.6
2702	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	113.3
2792	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	285.4
2822	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	277.8
2673	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	284.2

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
2673	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	206.3
2763	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	75.7
2793	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	221.7
2823	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	103.8
2674	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	128.4
2764	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	131.1
2794	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	437.2
2824	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	131.9
2675	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	60.1
2765	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	134.8
2795	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	436.1
2825	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	182.3
2676	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	6.3
2766	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	143.1
2796	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	247.3
2826	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	136.8
267	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	15.6
276	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	80.3
2797	ERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	67.8
2827	ERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	76.5
2678	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	12.8
2768	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	287.2
27	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	256.8
282	RO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	105HOW	LIGHT	18	UNSP	1	UNSP	152.8
2679	O-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	15.2
2769	.RO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	190.2
2799	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	158.8
2829	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	105HOW	LIGHT	18	UNSP	1	UNSP	115.8
2680	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	15.2
2770	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	339.8
2800	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	118.3
2830	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	105HOW	LIGHT	18	UNSP	1	UNSP	93.8
2681	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	11.6
2771	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	148.3
2801	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	135.0
2831	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	105HOW	LIGHT	18	UNSP	1	UNSP	60.6
2682	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	21.8
2772	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	249.0
2802	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	105.7
2832	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	105HOW	LIGHT	18	UNSP	1	UNSP	96.4
2683	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	12.3
2773	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	204.8
2803	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	263.3
2833	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	105HOW	LIGHT	18	UNSP	1	UNSP	70.5
2684	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	24.7
2774	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	118.2
2804	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	158.0
2834	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	105HOW	LIGHT	18	UNSP	1	UNSP	30.1
2685	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	33.9
2775	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	147.6
2805	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	118.3
2835	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	105HOW	LIGHT	18	UNSP	1	UNSP	183.6
2582	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.7
2586	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	30.1
2596	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	189.2

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
2590	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	189.3
2612	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	105HOW	LIGHT	18	UNSP	1	UNSP	39.5
380	CGSC-K-1	KOREA	US ARMY	THEA	10/01/51	105HOW	LIGHT	-1	UNSP	30	ATEN	67.7
521	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	10/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	67.7
2261	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	105HOW	LIGHT	-1	UNSP	22	UNSP	65.5
2270	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	105HOW	LIGHT	-1	UNSP	22	UNSP	129.3
2273	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	105HOW	LIGHT	-1	UNSP	22	UNSP	248 7
2276	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	105HOW	LIGHT	-1	UNSP	22	UNSP	169.4
2503	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	16.2
2569	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	92.7
2591	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	170 5
2613	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	105HOW	LIGHT	18	UNSP	1	UNSP	65.9
2504	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	13.2
2570	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	62.1
2592	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	201.7
2614	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	105HOW	LIGHT	18	UNSP	1	UNSP	22.8
2505	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	18.2
2571	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	72.6
2593	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	206.2
2615	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	105HOW	LIGHT	18	UNSP	1	UNSP	24.3
458	CMH-K-1	KOREA	US ARMY	THEA	10/04/51	105HOW	LIGHT	684	UNSP	10	UNSP	77.6
2506	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	20.2
2572	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	80.7
2594	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	237.3
2616	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	105HOW	LIGHT	18	UNSP	1	UNSP	65.3
2507	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	157.1
2573	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	362.2
2595	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	528.7
2617	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	105HOW	LIGHT	18	UNSP	1	UNSP	184 8
2508	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	157.1
2574	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	282.5
2596	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	324.1
2618	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	105HOW	LIGHT	18	UNSP	1	UNSP	148.5
2509	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	113.6
2575	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	323.1
2597	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	420.2
2619	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	105HOW	LIGHT	18	UNSP	1	UNSP	296.3
2510	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	121.6
2576	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	200 9
2598	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	368.6
2620	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	105HOW	LIGHT	18	UNSP	1	UNSP	392 7
2511	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	198.2
2577	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	208 8
2599	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	283.1
2621	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	105HOW	LIGHT	18	UNSP	1	UNSP	394.8
2512	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	96.8
2578	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	129.4
2600	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	212 2
2622	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	105HOW	LIGHT	18	UNSP	1	UNSP	239.6
2513	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	131 6
2579	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	42 8
2601	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	544 5
2623	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	105HOW	LIGHT	18	UNSP	1	UNSP	217.2
2514	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	121 5
2580	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	63 6

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2580	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	62.6
2602	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	268.8
2624	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	105HOW	LIGHT	18	UNSP	1	UNSP	199.8
2515	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	58.1
2581	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	85.1
2603	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	166.8
2625	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	105HOW	LIGHT	18	UNSP	1	UNSP	225.3
2516	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	42.8
2582	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	137.8
2604	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	123.7
2626	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	105HOW	LIGHT	18	UNSP	1	UNSP	265.2
2517	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	-1.0
2583	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	85.7
2605	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	113.3
2627	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	105HOW	LIGHT	18	UNSP	1	UNSP	184.3
2518	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	-1.0
2584	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	147.8
2606	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	162.6
2628	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	105HOW	LIGHT	18	UNSP	1	UNSP	195.7
2519	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	-1.0
2585	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	85.4
2607	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	147.3
2629	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	105HOW	LIGHT	18	UNSP	1	UNSP	184.1
2520	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	16.2
2586	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	79.6
2608	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	198.7
2630	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	105HOW	LIGHT	18	UNSP	1	UNSP	47.9
2521	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	58.5
2587	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	122.2
2609	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	164.5
2631	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	105HOW	LIGHT	18	UNSP	1	UNSP	112.2
2522	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	34.2
2588	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	81.5
2610	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	76.5
2632	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	105HOW	LIGHT	18	UNSP	1	UNSP	22.7
2523	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	68.8
2589	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	77.5
2611	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	82.1
2633	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	105HOW	LIGHT	18	UNSP	1	UNSP	79.3
383	CGSC-K-1	KOREA	US ARMY	THEA	11/01/51	105HOW	LIGHT	-1	UNSP	30	ATKN	58.9
522	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	11/01/51	105HOW	LIGHT	-1	UNSP	30	UNSP	58.9
459	CMH-K-1	KOREA	US ARMY	THEA	11/16/51	105HOW	LIGHT	749	UNSP	10	UNSP	60.4
386	CGSC-K-1	KOREA	US ARMY	THEA	12/01/51	105HOW	LIGHT	-1	UNSP	30	ATKN	22.1
523	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	12/01/51	105HOW	LIGHT	-1	UNSP	31	UNSP	23.1
524	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
525	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	105HOW	LIGHT	-1	UNSP	28	UNSP	-1.0
526	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
527	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
774	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
775	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
460	CMH-K-1	KOREA	US ARMY	THEA	06/14/52	105HOW	LIGHT	1065	UNSP	11	UNSP	23.2
461	CMH-K-1	KOREA	US ARMY	THEA	06/25/52	105HOW	LIGHT	1065	UNSP	10	UNSP	17.8
776	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
777	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
778	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	RDTUBEDAY
778	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
462	CMH-K-1	KOREA	US ARMY	THEA	09/25/52	105HOW	LIGHT	1065	UNSP	10	UNSP	38.2
779	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
463	CMH-K-1	KOREA	US ARMY	THEA	10/05/52	105HOW	LIGHT	1065	UNSP	16	UNSP	58.6
464	CMH-K-1	KOREA	US ARMY	THEA	10/16/52	105HOW	LIGHT	1077	UNSP	10	UNSP	28.5
780	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
781	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
782	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
783	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	105HOW	LIGHT	-1	UNSP	28	UNSP	-1.0
784	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
785	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
786	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
465	CMH-K-1	KOREA	US ARMY	THEA	05/16/53	105HOW	LIGHT	1432	UNSP	10	UNSP	32.4
466	CMH-K-1	KOREA	US ARMY	THEA	05/26/53	105HOW	LIGHT	1432	UNSP	11	UNSP	42.8
787	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	105HOW	LIGHT	-1	UNSP	30	UNSP	-1.0
467	CMH-K-1	KOREA	US ARMY	THEA	06/05/53	105HOW	LIGHT	1648	UNSP	11	UNSP	41.5
468	CMH-K-1	KOREA	US ARMY	THEA	06/15/53	105HOW	LIGHT	1652	UNSP	11	UNSP	35.8
469	CMH-K-1	KOREA	US ARMY	THEA	06/26/53	105HOW	LIGHT	1652	UNSP	10	UNSP	39.1
788	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
470	CMH-K-1	KOREA	US ARMY	THEA	07/06/53	105HOW	LIGHT	1653	UNSP	10	UNSP	42.7
471	CMH-K-1	KOREA	US ARMY	THEA	07/15/53	105HOW	LIGHT	1419	UNSP	11	UNSP	49.5
789	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	105HOW	LIGHT	-1	UNSP	31	UNSP	-1.0
405	CMH-VN-1	PRE-TET	1US IN DIV	DIV	01/30/67	105HOW	LIGHT	-1	UNSP	180	UNSP	-1.0
406	CMH-VN-1	TET	1US IN DIV	DIV	02/01/67	105HOW	LIGHT	-1	UNSP	-1	PD	-1.0
389	NA-VN-1	OP JUNC CITY	1US IN DIV	DIV	02/22/67	105HOW	LIGHT	-1	NE	31	PROM	44.8
393	NA-VN-1	OP JUNC CITY	1US IN DIV	DIV	03/15/67	105HOW	LIGHT	-1	NE	31	PROM	107.8
401	NA-VN-2	OP DALLAS	1US IN DIV	DIV	05/17/67	105HOW	LIGHT	-1	NE	9	PROM	8.1
397	NA-VN-2	OP BILLINGS	1US IN DIV	DIV	06/11/67	105HOW	LIGHT	-1	NE	26	PROM	65.6
416	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	105HOW	LIGHT	-1	UNSP	360	UNSP	30.0
623	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	105HOW	LIGHT	-1	UNSP	365	UNSP	30.0
641	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	105HOW	LIGHT	-1	UNSP	365	UNSP	-1.0
2669	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/31/68	105HOW	LIGHT	-1	UNSP	31	UNSP	27.0
2675	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	105HOW	LIGHT	1	UNSP	3	UNSP	33.6
2681	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/68	105HOW	LIGHT	-1	UNSP	30	UNSP	31.8
622	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	105HOW	LIGHT	-1	UNSP	360	UNSP	33.7
624	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	105HOW	LIGHT	-1	UNSP	365	UNSP	33.7
642	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	105HOW	LIGHT	-1	UNSP	365	UNSP	-1.0
2687	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	105HOW	LIGHT	-1	UNSP	31	UNSP	28.8
2693	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	105HOW	LIGHT	-1	UNSP	30	UNSP	45.7
2699	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	105HOW	LIGHT	-1	UNSP	31	UNSP	31.1
2905	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	105HOW	LIGHT	-1	UNSP	31	UNSP	35.2
2911	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	105HOW	LIGHT	-1	UNSP	28	UNSP	38.1
2917	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	105HOW	LIGHT	-1	UNSP	31	UNSP	39.5
2923	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	105HOW	LIGHT	-1	UNSP	31	UNSP	31.9
2928	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/69	105HOW	LIGHT	-1	UNSP	30	UNSP	35.4
634	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	105HOW	LIGHT	-1	UNSP	30	UNSP	27.0
506	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	105HOW	LIGHT	570	UNSP	30	UNSP	33.9
507	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	105HOW	LIGHT	570	UNSP	30	UNSP	36.2
508	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	105HOW	LIGHT	514	UNSP	30	UNSP	40.5
438	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	105HOW	LIGHT	-1	UNSP	360	UNSP	41.8
509	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	105HOW	LIGHT	506	UNSP	30	UNSP	41.7
625	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	105HOW	LIGHT	-1	UNSP	365	UNSP	41.8
643	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	105HOW	LIGHT	-1	UNSP	365	UNSP	-1.0
570	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	105HOW	LIGHT	510	UNSP	30	UNSP	46.8
571	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	105HOW	LIGHT	474	UNSP	30	UNSP	33.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
571	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	105HOW	LIGHT	474	UNSP	30	UNSP	33.0
572	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	105HOW	LIGHT	492	UNSP	30	UNSP	40.2
573	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/70	105HOW	LIGHT	456	UNSP	30	UNSP	37.9
574	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	105HOW	LIGHT	444	UNSP	30	UNSP	41.2
575	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	105HOW	LIGHT	390	UNSP	30	UNSP	43.3
576	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	105HOW	LIGHT	276	UNSP	30	UNSP	50.2
577	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	105HOW	LIGHT	222	UNSP	30	UNSP	52.8
293	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	107MTR	LIGHT	-1	NE	730	ATKR	32.5
696	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
697	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
698	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
699	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
700	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	107MTR	LIGHT	-1	UNSP	29	UNSP	-1.0
701	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
702	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
703	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
704	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
705	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
706	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
707	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
708	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
709	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
710	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
711	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
712	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	107MTR	LIGHT	-1	UNSP	28	UNSP	-1.0
713	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
714	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
715	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
716	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	107MTR	LIGHT	-1	UNSP	30	UNSP	-1.0
717	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
718	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
411	CMH-VN-1	PRE-TET	1US IN DIV	DIV	01/30/67	107MTR	LIGHT	-1	UNSP	180	FD	-1.0
412	CMH-VN-1	TET	1US IN DIV	DIV	02/01/67	107MTR	LIGHT	-1	UNSP	30	FD	-1.0
391	HA-VN-1	OP JUNC CITY	1US IN DIV	DIV	02/22/67	107MTR	LIGHT	-1	NE	21	PROM	17.0
395	HA-VN-1	OP JUNC CITY	1US IN DIV	DIV	03/15/67	107MTR	LIGHT	-1	NE	21	PROM	26.0
404	HA-VN-2	OP DALLAS	1US IN DIV	DIV	05/17/67	107MTR	LIGHT	-1	NE	0	PROM	24.7
400	HA-VN-2	OP BILLINGS	1US IN DIV	DIV	06/11/67	107MTR	LIGHT	-1	NE	16	PROM	35.5
417	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	107MTR	LIGHT	-1	UNSP	360	UNSP	15.8
626	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	107MTR	LIGHT	-1	UNSP	365	UNSP	15.8
644	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	107MTR	LIGHT	-1	UNSP	365	UNSP	-1.0
2870	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/68	107MTR	LIGHT	-1	UNSP	31	UNSP	13.7
2876	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	107MTR	LIGHT	-1	UNSP	31	UNSP	11.1
2882	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/68	107MTR	LIGHT	-1	UNSP	30	UNSP	6.8
423	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	107MTR	LIGHT	-1	UNSP	360	UNSP	10.1
627	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	107MTR	LIGHT	-1	UNSP	365	UNSP	10.1
645	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	107MTR	LIGHT	-1	UNSP	365	UNSP	-1.0
2888	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	107MTR	LIGHT	-1	UNSP	31	UNSP	8.1
2894	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	107MTR	LIGHT	-1	UNSP	30	UNSP	7.8
2900	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	107MTR	LIGHT	-1	UNSP	31	UNSP	-1.0
2906	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	107MTR	LIGHT	-1	UNSP	31	UNSP	9.2
2912	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	107MTR	LIGHT	-1	UNSP	28	UNSP	10.7
2918	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	107MTR	LIGHT	-1	UNSP	31	UNSP	11.7
2924	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	107MTR	LIGHT	-1	UNSP	31	UNSP	12.4
2929	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/69	107MTR	LIGHT	-1	UNSP	30	UNSP	9.4
435	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	107MTR	LIGHT	-1	UNSP	30	UNSP	13.7

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEED	DAYSQUANT	OPERATION	EFFTUBEDAY
435	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	107MTR	LIGHT	-1	UNSP	30	UNSP	13.7
578	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	107MTR	LIGHT	237	UNSP	30	UNSP	19.2
579	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	107MTR	LIGHT	213	UNSP	30	UNSP	22.6
580	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	107MTR	LIGHT	209	UNSP	30	UNSP	26.0
429	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	107MTR	LIGHT	-1	UNSP	300	UNSP	23.2
581	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	107MTR	LIGHT	284	UNSP	30	UNSP	22.8
628	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	107MTR	LIGHT	-1	UNSP	305	UNSP	23.2
646	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	107MTR	LIGHT	-1	UNSP	305	UNSP	-1.0
582	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	107MTR	LIGHT	223	UNSP	30	UNSP	24.6
583	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	107MTR	LIGHT	221	UNSP	30	UNSP	21.9
584	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	107MTR	LIGHT	287	UNSP	30	UNSP	17.8
585	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/70	107MTR	LIGHT	224	UNSP	30	UNSP	21.3
586	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	107MTR	LIGHT	193	UNSP	30	UNSP	22.6
587	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	107MTR	LIGHT	206	UNSP	30	UNSP	28.7
588	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	107MTR	LIGHT	142	UNSP	30	UNSP	26.2
589	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	107MTR	LIGHT	127	UNSP	30	UNSP	25.9
63	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	114GUN	LIGHT	6	UNSP	17	BAPD	142.7
74	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	114GUN	LIGHT	6	UNSP	17	BAND	77.4
86	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	114GUN	LIGHT	6	UNSP	17	BAPL	106.2
3526	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	114GUN	LIGHT	6	UNSP	2	ATEN	142.7
3548	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	114GUN	LIGHT	6	UNSP	2	ATEN	106.2
3572	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	114GUN	LIGHT	6	UNSP	2	ATEL	95.0
3364	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	114GUN	LIGHT	4	UNSP	2	ATEL	21.3
3560	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	114GUN	LIGHT	6	UNSP	2	ATEN	85.0
3584	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	114GUN	LIGHT	7	UNSP	2	ATEL	28.4
262	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	114GUN	LIGHT	-1	NE	180	UNSP	13.3
246	CMH-WWII-2	GERMANY	12US ARMY GP	ARMYGP	06/06/44	114GUN	LIGHT	-1	UNSP	180	ATEN	-1.0
298	CMH WWII-2	WWII EUR	1US ARMY	1ARMY	06/11/44	114GUN	LIGHT	-1	NE	7	ATEN	13.0
301	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/18/44	114GUN	LIGHT	-1	NE	7	ATEN	27.0
306	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/25/44	114GUN	LIGHT	-1	NE	7	ATEN	24.0
312	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	114GUN	LIGHT	-1	NE	7	ATEN	29.0
320	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	114GUN	LIGHT	-1	NE	7	ATEN	33.0
328	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	114GUN	LIGHT	-1	NE	7	ATEN	9.0
335	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	114GUN	LIGHT	-1	NE	7	ATEN	20.0
343	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	114GUN	LIGHT	-1	NE	7	ATEN	15.0
3326	HERO WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	114GUN	LIGHT	-1	UNSP	2	ATEN	31.9
3374	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	114GUN	LIGHT	12	UNSP	2	ATEL	25.9
3292	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	114GUN	LIGHT	-1	UNSP	1	DEFN	-1.0
3385	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	114GUN	LIGHT	12	UNSP	1	ATEL	41.2
3396	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	114GUN	LIGHT	12	UNSP	2	ATEN	30.1
3407	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	114GUN	LIGHT	12	UNSP	1	ATEL	120.9
3517	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	114GUN	LIGHT	-1	UNSP	2	ATEN	-1.0
3506	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	114GUN	LIGHT	-1	UNSP	2	ATEN	-1.0
3495	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	114GUN	LIGHT	-1	UNSP	2	ATEN	-1.0
3418	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	114GUN	LIGHT	12	UNSP	2	ATEL	50.4
3484	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	114GUN	LIGHT	-1	UNSP	2	ATEN	-1.0
3473	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	114GUN	LIGHT	2	UNSP	8	ATEL	23.3
3429	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	114GUN	LIGHT	12	UNSP	2	ATEN	76.6
3440	HERO WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	114GUN	LIGHT	-1	UNSP	1	ATEN	-1.0
3462	HERO WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	114GUN	LIGHT	12	UNSP	1	ATEN	100.5
3451	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	114GUN	LIGHT	12	UNSP	2	ATEL	50.2
241	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	114GUN	LIGHT	2	UNSP	2	PD	2.2
3238	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	114GUN	LIGHT	-1	UNSP	2	DEFN	-1.0
3271	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	114GUN	LIGHT	-1	UNSP	2	DEFN	2.2
3304	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	114GUN	LIGHT	-1	UNSP	2	DEFN	2.2

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEEQD	DAYSQUANT	OPERATION	EQTUBEDAY
3306	NERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	114GUN	LIGHT	-1	UNSP	2	DEFN	2.9
3249	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	114GUN	LIGHT	-1	UNSP	2	DEFN	-1.0
3282	NERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	114GUN	LIGHT	-1	UNSP	2	DEFN	-1.0
3315	NERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	114GUN	LIGHT	-1	UNSP	2	DEFN	-1.9
3260	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	114GUN	LIGHT	-1	UNSP	3	DEFN	-1.0
3119	NERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/22/45	114GUN	LIGHT	12	UNSP	1	UNSP	93.0
3126	NERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/22/45	114GUN	LIGHT	24	UNSP	1	UNSP	37.2
3132	NERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/22/45	114GUN	LIGHT	12	UNSP	1	UNSP	90.2
3139	NERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	114GUN	LIGHT	48	UNSP	1	UNSP	-1.0
3149	NERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	114GUN	LIGHT	48	UNSP	1	UNSP	-1.0
3163	NERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	114GUN	LIGHT	12	UNSP	1	UNSP	28.4
3168	NERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/23/45	114GUN	LIGHT	24	UNSP	1	UNSP	32.8
3172	NERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	114GUN	LIGHT	12	UNSP	1	UNSP	78.6
2365	NERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	155GUN	HEAVY	6	UNSP	2	ATEL	23.8
2376	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/04	155GUN	HEAVY	5	UNSP	2	ATEL	26.2
2387	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/04	155GUN	HEAVY	5	UNSP	1	ATEL	36.6
2398	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/04	155GUN	HEAVY	5	UNSP	2	ATEN	42.2
2409	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/04	155GUN	HEAVY	5	UNSP	1	ATEL	45.8
288	TO1-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	155GUN	HEAVY	-1	NE	720	ATEN	23.6
2395	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/01/44	155GUN	HEAVY	59	UNSP	20	ATEN	30.8
2396	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/21/44	155GUN	HEAVY	47	UNSP	23	ATEN	34.0
16	ORO-WWII-1	ANZIO	VI CORPS	CORPS	01/31/44	155GUN	HEAVY	-1	NE	30	ATEN	-1.0
282	CMN-WWII-2	WWII EUR	1US ARMY	1ARMY	02/10/44	155GUN	HEAVY	-1	NE	13	ATEN	20.0
2397	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	02/12/44	155GUN	HEAVY	65	UNSP	11	PROM	13.0
11	ORO-WWII-1	ANZIO	VI CORPS	CORPS	02/29/44	155GUN	HEAVY	-1	NE	32	ATEN	-1.0
64	NERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155GUN	HEAVY	8	UNSP	17	SAPO	135.2
75	NERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155GUN	HEAVY	6	UNSP	17	SAND	21.9
87	NERO-WWI-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155GUN	HEAVY	6	UNSP	17	SADL	78.8
2537	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	155GUN	HEAVY	8	UNSP	2	ATEN	135.2
2549	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	155GUN	HEAVY	8	UNSP	2	ATEN	78.0
2573	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	155GUN	HEAVY	8	UNSP	2	ATEL	32.7
2561	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	155GUN	HEAVY	8	UNSP	2	ATEN	14.7
2585	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	155GUN	HEAVY	7	UNSP	2	ATEL	15.3
266	CMN-WWII-1	WWII EUR	ALL	THEA	06/01/44	155GUN	HEAVY	-1	NE	180	UNSP	12.3
276	CMN-WWII-2	WWII EUR	1US ARMY	1ARMY	06/06/44	155GUN	HEAVY	-1	NE	6	ATEN	10.0
268	CMN-WWII-2	GERMANY	12US ARMY GP	ARMYGP	06/06/44	155GUN	HEAVY	-1	UNSP	180	ATEN	-1.0
278	CMN-WWII-2	WWII EUR	1US ARMY	1ARMY	06/08/44	155GUN	HEAVY	-1	NE	12	ATEN	24.0
297	CMN-WWII-2	WWII EUR	1US ARMY	1ARMY	06/11/44	155GUN	HEAVY	-1	NE	7	ATEN	10.0
305	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	06/25/44	155GUN	HEAVY	-1	NE	7	ATEN	13.0
310	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	155GUN	HEAVY	-1	NE	7	ATEN	29.0
311	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	155GUN	HEAVY	-1	NE	7	ATEN	19.0
318	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	155GUN	HEAVY	-1	NE	7	ATEN	33.0
319	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	155GUN	HEAVY	-1	NE	7	ATEN	25.0
326	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	155GUN	HEAVY	-1	NE	7	ATEN	9.0
327	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	155GUN	HEAVY	-1	NE	7	ATEN	3.0
333	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	155GUN	HEAVY	-1	NE	7	ATEN	15.0
334	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	155GUN	HEAVY	-1	NE	7	ATEN	8.0
341	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	155GUN	HEAVY	-1	NE	7	ATEN	13.0
342	CMN-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	155GUN	HEAVY	-1	NE	7	ATEN	7.0
2384	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/06/44	155GUN	HEAVY	71	UNSP	12	ATEL	24.0
2385	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/18/44	155GUN	HEAVY	50	UNSP	17	ATEN	32.0
2386	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	09/04/44	155GUN	HEAVY	69	UNSP	13	ATEN	7.0
2387	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	09/17/44	155GUN	HEAVY	82	UNSP	15	ATEN	17.0
2388	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/02/44	155GUN	HEAVY	78	UNSP	13	ATEN	20.0
2389	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/15/44	155GUN	HEAVY	64	UNSP	14	ATEL	8.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
2388	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/15/44	155GUN	HEAVY	86	UNSP	14	ATKL	8.8
2396	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/29/44	155GUN	HEAVY	82	UNSP	14	PROL	8.8
168	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	155GUN	HEAVY	6	UNSP	4	BAPD	49.5
3327	MERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	155GUN	HEAVY	-1	UNSP	2	ATKN	59.6
86	MERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/10/44	155GUN	HEAVY	2	UNSP	2	BAPD	44.5
105	MERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	155GUN	HEAVY	2	UNSP	1	BAPD	30.5
3101	MERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	155GUN	HEAVY	5	UNSP	3	ATKL	26.8
3294	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	155GUN	HEAVY	-1	UNSP	1	DEFN	58.8
177	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	155GUN	HEAVY	5	UNSP	4	BADL	32.8
2391	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	11/12/44	155GUN	HEAVY	84	UNSP	14	ATKN	24.8
115	MERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	155GUN	HEAVY	2	UNSP	2	BADL	51.0
3110	MERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	155GUN	HEAVY	5	UNSP	1	ATKL	56.4
3117	MERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/15/44	155GUN	HEAVY	5	UNSP	3	ATKN	43.2
185	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	155CUN	HEAVY	5	UNSP	1	BADL	45.8
194	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	155GUN	HEAVY	5	UNSP	3	BAPD	38.8
3519	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	155GUN	HEAVY	5	UNSP	3	ATKN	38.8
203	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	155GUN	HEAVY	5	UNSP	2	BAPD	28.6
3508	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	155GUN	HEAVY	5	UNSP	3	ATKN	28.6
213	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	155GUN	HEAVY	5	UNSP	2	BAPD	15.0
2497	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	155GUN	HEAVY	5	UNSP	2	ATKN	15.0
3420	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	155GUN	HEAVY	5	UNSP	3	ATKL	35.2
3486	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	155GUN	HEAVY	5	UNSP	2	ATKN	48.2
129	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	155GUN	HEAVY	5	UNSP	1	BAPD	22.2
285	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	11/26/44	155GUN	HEAVY	-1	NE	14	ATKN	24.8
2392	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	11/26/44	155GUN	HEAVY	84	UNSP	14	ATKN	24.8
139	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	155GUN	HEAVY	5	UNSP	3	BADL	27.8
3475	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	155GUN	HEAVY	6	UNSP	8	ATKL	35.7
3431	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	155GUN	HEAVY	2	UNSP	3	ATKN	83.5
148	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	155GUN	HEAVY	4	UNSP	3	BAPD	35.2
223	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	155GUN	HEAVY	6	UNSP	1	BAPD	26.7
3442	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	155GUN	HEAVY	6	UNSP	1	ATKN	26.7
3464	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	155GUN	HEAVY	6	UNSP	1	ATKN	26.7
3453	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	155GUN	HEAVY	4	UNSP	2	ATKL	15.3
158	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	155GUN	HEAVY	2	UNSP	2	BAPD	13.3
231	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	155GUN	HEAVY	15	UNSP	1	BADL	18.0
2393	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	12/10/44	155GUN	HEAVY	77	UNSP	6	ATKN	27.8
243	MERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/13/44	155GUN	HEAVY	9	UNSP	3	PD	26.3
272	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	12/16/44	155GUN	HEAVY	-1	NE	26	DEFN	34.8
2394	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	12/16/44	155GUN	HEAVY	87	UNSP	16	DEFN	34.2
3212	MERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	155GUN	HEAVY	12	UNSP	1	DEFN	23.8
3239	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	155GUN	HEAVY	-1	UNSP	2	DEFN	33.8
3272	MERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	155GUN	HEAVY	-1	UNSP	2	DEFN	29.6
3305	MERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	155GUN	HEAVY	-1	UNSP	2	DEFN	26.3
251	MERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	155GUN	HEAVY	8	UNSP	3	PD	44.2
3219	MERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	155GUN	HEAVY	12	UNSP	1	DEFN	34.3
3250	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	155GUN	HEAVY	-1	UNSP	2	DEFN	34.3
3283	MERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	155GUN	HEAVY	-1	UNSP	2	DEFN	41.2
3316	MERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	155GUN	HEAVY	-1	UNSP	2	DEFN	44.2
3261	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	155GUN	HEAVY	-1	UNSP	2	DEFN	54.3
3226	MERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	155GUN	HEAVY	4	UNSP	2	DEFN	54.3
3121	MERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/22/45	155GUN	HEAVY	37	UNSP	1	UNSP	113.4
3128	MERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/22/45	155GUN	HEAVY	24	UNSP	1	UNSP	15.8
3134	MERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/22/45	155GUN	HEAVY	36	UNSP	1	UNSP	95.7
3141	MERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	155GUN	HEAVY	97	UNSP	1	UNSP	-1.0
3151	MERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	155GUN	HEAVY	97	UNSP	1	UNSP	-1.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
3151	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	155GUN	HEAVY	97	UNSP	1	UNSP	-1.0
3165	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	155GUN	HEAVY	37	UNSP	1	UNSP	109.6
3170	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/23/45	155GUN	HEAVY	24	UNSP	1	UNSP	26.4
3174	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	155GUN	HEAVY	36	UNSP	1	UNSP	148.0
3079	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/18/45	155GUN	HEAVY	30	UNSP	1	UNSP	4.4
3080	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/18/45	155GUN	HEAVY	36	UNSP	1	UNSP	1.6
3081	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/19/45	155GUN	HEAVY	36	UNSP	1	UNSP	7.3
3082	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/19/45	155GUN	HEAVY	36	UNSP	1	UNSP	1.6
3083	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/20/45	155GUN	HEAVY	36	UNSP	1	UNSP	5.7
3084	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/20/45	155GUN	HEAVY	36	UNSP	1	UNSP	1.7
3085	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/21/45	155GUN	HEAVY	36	UNSP	1	UNSP	4.5
3086	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/21/45	155GUN	HEAVY	36	UNSP	1	UNSP	1.8
3087	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/22/45	155GUN	HEAVY	36	UNSP	1	UNSP	9.1
3088	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/22/45	155GUN	HEAVY	36	UNSP	1	UNSP	2.9
3089	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/23/45	155GUN	HEAVY	36	UNSP	1	UNSP	6.4
3090	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/23/45	155GUN	HEAVY	36	UNSP	1	UNSP	14.6
3091	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/24/45	155GUN	HEAVY	36	UNSP	1	UNSP	61.9
3092	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/24/45	155GUN	HEAVY	48	UNSP	1	UNSP	296.3
3093	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/25/45	155GUN	HEAVY	36	UNSP	1	UNSP	12.6
3094	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/25/45	155GUN	HEAVY	48	UNSP	1	UNSP	61.0
3095	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/26/45	155GUN	HEAVY	36	UNSP	1	UNSP	32.9
3096	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/26/45	155GUN	HEAVY	36	UNSP	1	UNSP	64.0
3097	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/27/45	155GUN	HEAVY	33	UNSP	1	UNSP	19.7
3098	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/27/45	155GUN	HEAVY	12	UNSP	1	UNSP	50.2
3203	HERO-WWII-CDSS	PO VALLEY	II CORPS	CORPS	04/14/45	155GUN	HEAVY	-1	UNSP	2	ATKN	88.0
3208	HERO-WWII-CDSS	PO VALLEY	IV CORPS	CORPS	04/14/45	155GUN	HEAVY	-1	UNSP	5	ATKN	57.0
20	ORO-WWII-1	OKINAWA	XXIV&III	2CORPS	05/01/45	155GUN	HEAVY	-1	NE	82	ATKN	-1.0
2098	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	155GUN	HEAVY	4	UNSP	1	UNSP	4.0
2099	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	155GUN	HEAVY	4	UNSP	1	UNSP	54.5
2265	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	155GUN	HEAVY	-1	UNSP	31	UNSP	37.8
2100	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	155GUN	HEAVY	4	UNSP	1	UNSP	9.7
2101	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	155GUN	HEAVY	4	UNSP	1	UNSP	11.5
2102	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	155GUN	HEAVY	4	UNSP	1	UNSP	-1.0
2103	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	155GUN	HEAVY	4	UNSP	1	UNSP	6.5
2104	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	155GUN	HEAVY	4	UNSP	1	UNSP	10.5
2105	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	155GUN	HEAVY	4	UNSP	1	UNSP	9.2
2106	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	155GUN	HEAVY	4	UNSP	1	UNSP	10.0
2107	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	155GUN	HEAVY	4	UNSP	1	UNSP	3.5
2108	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	155GUN	HEAVY	4	UNSP	1	UNSP	1.2
2109	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	155GUN	HEAVY	4	UNSP	1	UNSP	5.5
2110	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	155GUN	HEAVY	4	UNSP	1	UNSP	16.2
2111	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	155GUN	HEAVY	4	UNSP	1	UNSP	4.7
2112	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	155GUN	HEAVY	4	UNSP	1	UNSP	30.5
2113	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	155GUN	HEAVY	4	UNSP	1	UNSP	3.5
2114	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	155GUN	HEAVY	4	UNSP	1	UNSP	2.5
2115	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	155GUN	HEAVY	4	UNSP	1	UNSP	56.0
2116	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	155GUN	HEAVY	6	UNSP	1	UNSP	118.5
2117	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	155GUN	HEAVY	4	UNSP	1	UNSP	113.5
2118	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	155GUN	HEAVY	4	UNSP	1	UNSP	68.5
2119	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	155GUN	HEAVY	4	UNSP	1	UNSP	103.5
2120	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	155GUN	HEAVY	4	UNSP	1	UNSP	88.5
2121	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	155GUN	HEAVY	4	UNSP	1	UNSP	79.0
2122	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	155GUN	HEAVY	4	UNSP	1	UNSP	108.5
2123	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	155GUN	HEAVY	4	UNSP	1	UNSP	34.5
2124	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	155GUN	HEAVY	4	UNSP	1	UNSP	48.5

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2124	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	155GUN	HEAVY	4	UNSP	1	UNSP	46.5
2125	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	155GUN	HEAVY	4	UNSP	1	UNSP	36.7
2126	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	155GUN	HEAVY	4	UNSP	1	UNSP	32.7
2127	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	155GUN	HEAVY	4	UNSP	1	UNSP	47.7
2128	CDSS FAKE 1977	KOREA	X CORPS	CORPS	08/30/51	155GUN	HEAVY	4	UNSP	1	UNSP	79.2
2716	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	155GUN	HEAVY	4	UNSP	1	UNSP	64.7
2266	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	155GUN	HEAVY	-1	UNSP	30	UNSP	36.3
2717	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	155GUN	HEAVY	4	UNSP	1	UNSP	58.5
2718	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	155GUN	HEAVY	4	UNSP	1	UNSP	49.5
2719	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	155GUN	HEAVY	4	UNSP	1	UNSP	49.5
2720	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	155GUN	HEAVY	4	UNSP	1	UNSP	65.2
2721	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	155GUN	HEAVY	4	UNSP	1	UNSP	75.2
2722	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	155GUN	HEAVY	4	UNSP	1	UNSP	33.5
2723	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	155GUN	HEAVY	4	UNSP	1	UNSP	3.5
2724	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	155GUN	HEAVY	4	UNSP	1	UNSP	19.5
2725	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	155GUN	HEAVY	4	UNSP	1	UNSP	42.2
2726	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	155GUN	HEAVY	4	UNSP	1	UNSP	52.2
2727	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	155GUN	HEAVY	4	UNSP	1	UNSP	45.0
2728	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	155GUN	HEAVY	4	UNSP	1	UNSP	18.0
2729	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	155GUN	HEAVY	4	UNSP	1	UNSP	32.7
2730	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	155GUN	HEAVY	4	UNSP	1	UNSP	7.0
2731	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	155GUN	HEAVY	4	UNSP	1	UNSP	22.0
2732	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	155GUN	HEAVY	4	UNSP	1	UNSP	54.7
2733	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	155GUN	HEAVY	4	UNSP	1	UNSP	44.7
2734	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	155GUN	HEAVY	4	UNSP	1	UNSP	40.5
2735	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	155GUN	HEAVY	4	UNSP	1	UNSP	48.0
2736	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	155GUN	HEAVY	4	UNSP	1	UNSP	19.0
2737	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	155GUN	HEAVY	4	UNSP	1	UNSP	17.7
2738	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	155GUN	HEAVY	4	UNSP	1	UNSP	36.7
2739	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	155GUN	HEAVY	4	UNSP	1	UNSP	31.2
2740	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	155GUN	HEAVY	4	UNSP	1	UNSP	66.7
2741	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	155GUN	HEAVY	4	UNSP	1	UNSP	40.5
2742	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	155GUN	HEAVY	4	UNSP	1	UNSP	19.2
2743	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	155GUN	HEAVY	4	UNSP	1	UNSP	21.7
2744	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	155GUN	HEAVY	4	UNSP	1	UNSP	16.5
2745	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	155GUN	HEAVY	4	UNSP	1	UNSP	20.5
2546	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	155GUN	HEAVY	4	UNSP	1	UNSP	12.5
535	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
2267	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	155GUN	HEAVY	-1	UNSP	22	UNSP	39.0
2547	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	155GUN	HEAVY	4	UNSP	1	UNSP	41.0
2548	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	155GUN	HEAVY	4	UNSP	1	UNSP	54.5
2549	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	155GUN	HEAVY	4	UNSP	1	UNSP	32.0
2550	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	155GUN	HEAVY	4	UNSP	1	UNSP	24.7
2551	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	155GUN	HEAVY	4	UNSP	1	UNSP	26.0
2552	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	155GUN	HEAVY	4	UNSP	1	UNSP	22.2
2553	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	155GUN	HEAVY	4	UNSP	1	UNSP	34.5
2554	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	155GUN	HEAVY	4	UNSP	1	UNSP	43.7
2555	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	155GUN	HEAVY	4	UNSP	1	UNSP	17.2
2556	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	155GUN	HEAVY	4	UNSP	1	UNSP	23.7
2557	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	155GUN	HEAVY	4	UNSP	1	UNSP	55.0
2558	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	155GUN	HEAVY	4	UNSP	1	UNSP	41.7
2559	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	155GUN	HEAVY	4	UNSP	1	UNSP	40.5
2560	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	155GUN	HEAVY	4	UNSP	1	UNSP	-1.0
2561	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	155GUN	HEAVY	4	UNSP	1	UNSP	77.5
2562	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	155GUN	HEAVY	4	UNSP	1	UNSP	80.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2562	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	155GUN	HEAVY	4	UNSP	1	UNSP	88.0
2563	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	155GUN	HEAVY	4	UNSP	1	UNSP	91.5
2564	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	155GUN	HEAVY	4	UNSP	1	UNSP	64.0
2565	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	155GUN	HEAVY	4	UNSP	1	UNSP	30.0
2566	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	155GUN	HEAVY	4	UNSP	1	UNSP	25.0
2567	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	155GUN	HEAVY	4	UNSP	1	UNSP	30.0
536	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
537	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
538	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
539	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	155GUN	HEAVY	-1	UNSP	28	UNSP	-1.0
540	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
541	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
806	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
807	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
808	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
809	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
810	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
811	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
812	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
813	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
814	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
815	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	155GUN	HEAVY	-1	UNSP	28	UNSP	-1.0
816	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
817	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
818	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
819	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	155GUN	HEAVY	-1	UNSP	30	UNSP	-1.0
820	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
821	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	155GUN	HEAVY	-1	UNSP	31	UNSP	-1.0
3600	FAS-WWI-7	CHAMPAGNE	FRENCH	THEA	09/22/15	155HOW	MEDIUM	-1	UNSP	6	UNSP	56.0
3597	FAS-WWI-1	SOMME	2GERARMY	1ARMY	07/01/16	155HOW	MEDIUM	-1	UNSP	30	UNSP	119.0
3595	FAS-WWI-1	SOMME	2GERARMY	1ARMY	07/15/16	155HOW	MEDIUM	-1	UNSP	1	UNSP	233.0
51	HERO-WWI-CDSS	ANSAUVILLE	1STUS FA BDE	CORPS	01/23/18	155HOW	MEDIUM	24	UNSP	72	UNSP	16.0
53	HERO-WWI-CDSS	CANTIGNY	1STUS FA BN	CORPS	04/25/18	155HOW	MEDIUM	24	UNSP	74	UNSP	52.0
59	HERO-WWI-CDSS	COEUVRES	1STUS FA BDE	CORPS	07/18/18	155HOW	MEDIUM	24	UNSP	7	UNSP	60.0
56	HERO-WWI-CDSS	BEAUMONT	1STUS FA BDE	CORPS	09/12/18	155HOW	MEDIUM	24	UNSP	2	UNSP	148.0
58	HERO-WWI-CDSS	MEUSE-ARGONN	1STUS FA BDE	CORPS	10/04/18	155HOW	MEDIUM	24	UNSP	37	UNSP	52.0
286	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	155HOW	MEDIUM	-1	ME	720	ATKN	30 1
2381	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/01/44	155HOW	MEDIUM	254	UNSP	20	ATKN	33.0
3336	HERO-WWII-CDSS	MONTECASSINO	34TH US DIV	DIV	01/20/44	155HOW	MEDIUM	12	UNSP	11	UNSP	67.6
2382	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	01/21/44	155HOW	MEDIUM	200	UNSP	22	ATKN	26 8
3339	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	01/24/44	155HOW	MEDIUM	-1	UNSP	7	UNSP	42.1
15	ORO-WWII-1	ANZIO	VI CORPS	CORPS	01/31/44	155HOW	MEDIUM	-1	ME	30	ATKN	-1.0
3338	HERO-WWII-CDSS	MONTECASSINO	34TH US DIV	DIV	02/01/44	155HOW	MEDIUM	12	UNSP	21	UNSP	48.4
3344	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/01/44	155HOW	MEDIUM	-1	UNSP	29	UNSP	30.9
3350	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	02/01/44	155HOW	MEDIUM	-1	UNSP	8	UNSP	30.4
281	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	02/10/44	155HOW	MEDIUM	-1	ME	13	ATKN	24.0
2383	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	02/12/44	155HOW	MEDIUM	250	UNSP	11	FROM	11.0
3351	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	02/12/44	155HOW	MEDIUM	-1	UNSP	17	UNSP	65.1
6	ORO-WWII-1	ANZIO	VI Corps	CORPS	02/29/44	155HOW	MEDIUM	-1	ME	32	ATKN	-1.0
3354	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	03/01/44	155HOW	MEDIUM	-1	UNSP	10	UNSP	33.1
3358	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	03/01/44	155HOW	MEDIUM	-1	UNSP	31	UNSP	40.6
3359	HERO-WWII-CDSS	ANZIO	45TH US DIV	DIV	03/01/44	155HOW	MEDIUM	-1	UNSP	10	UNSP	48.4
3	ORO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	155HOW	MEDIUM	-1	ME	30	ATKN	-1 0
62	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155HOW	MEDIUM	36	UNSP	17	BARD	125.8
73	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155HOW	MEDIUM	40	UNSP	17	BARD	46.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEID	DAYSQUANT	OPERATION	RDTUBEDAY
73	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155HOW	MEDIUM	40	UNSP	17	BAND	46.8
85	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	155HOW	MEDIUM	42	UNSP	17	BADL	109.8
3535	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	155HOW	MEDIUM	36	UNSP	2	ATKN	167.4
3547	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	155HOW	MEDIUM	30	UNSP	2	ATKN	167.5
3571	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	155HOW	MEDIUM	22	UNSP	2	ATKL	36.7
3363	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	155HOW	MEDIUM	20	UNSP	2	ATKL	33.9
3559	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	155HOW	MEDIUM	28	UNSP	2	ATKN	88.9
3583	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	155HOW	MEDIUM	20	UNSP	2	ATKL	23.3
265	CMH-WWII-1	WWII EUR	US ARMY	THEA	06/01/44	155HOW	MEDIUM	-1	NE	180	UNSP	13.4
274	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	06/06/44	155HOW	MEDIUM	-1	NE	6	ATKN	17.8
275	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	06/06/44	155HOW	MEDIUM	-1	NE	6	ATKN	17.8
347	CMH-WWII-3	GERMANY	12US ARMY GP	ARMYGP	06/06/44	155HOW	MEDIUM	-1	UNSP	180	ATKN	-1.8
278	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	06/08/44	155HOW	MEDIUM	-1	NE	12	ATKN	20.8
296	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	06/11/44	155HOW	MEDIUM	-1	NE	7	ATKN	37.8
300	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/18/44	155HOW	MEDIUM	-1	NE	7	ATKN	24.8
304	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/25/44	155HOW	MEDIUM	-1	NE	7	ATKN	18.8
309	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	155HOW	MEDIUM	-1	NE	7	ATKN	61.8
317	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	155HOW	MEDIUM	-1	NE	7	ATKN	53.8
325	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	155HOW	MEDIUM	-1	NE	7	ATKN	12.8
332	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	155HOW	MEDIUM	-1	NE	7	ATKN	18.8
340	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	155HOW	MEDIUM	-1	NE	7	ATKN	15.8
2370	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/06/44	155HOW	MEDIUM	239	UNSP	12	ATKL	20.8
2371	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/18/44	155HOW	MEDIUM	148	UNSP	17	ATKN	11.8
2372	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	08/04/44	155HOW	MEDIUM	159	UNSP	13	ATKN	8.8
2373	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	09/17/44	155HOW	MEDIUM	203	UNSP	15	ATKN	19.8
2374	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/02/44	155HOW	MEDIUM	222	UNSP	13	ATKN	24.8
2375	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/15/44	155HOW	MEDIUM	228	UNSP	14	ATKL	18.8
2376	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	10/29/44	155HOW	MEDIUM	213	UNSP	14	PROL	13.8
167	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	155HOW	MEDIUM	3	UNSP	4	BAPD	22.7
3325	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	155HOW	MEDIUM	-1	UNSP	2	ATKN	30.9
104	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	155HOW	MEDIUM	12	UNSP	1	BAPD	7.7
3100	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	155HOW	MEDIUM	12	UNSP	3	ATKL	37.1
3375	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	155HOW	MEDIUM	21	UNSP	3	ATKL	13.8
3292	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	155HOW	MEDIUM	-1	UNSP	1	DEFN	17.3
2377	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	11/12/44	155HOW	MEDIUM	258	UNSP	14	ATKN	21.8
114	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	155HOW	MEDIUM	12	UNSP	3	BADL	19.5
122	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/14/44	155HOW	MEDIUM	2	UNSP	2	BAPD	61.5
3109	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	155HOW	MEDIUM	12	UNSP	1	ATKL	81.8
3386	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	155HOW	MEDIUM	24	UNSP	1	ATKL	33.7
3116	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/15/44	155HOW	MEDIUM	6	UNSP	2	ATKN	24.2
3397	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	155HOW	MEDIUM	24	UNSP	2	ATKN	33.3
184	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	155HOW	MEDIUM	12	UNSP	1	BADL	21.3
3408	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	155HOW	MEDIUM	24	UNSP	1	ATKL	65.8
3518	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	155HOW	MEDIUM	24	UNSP	2	ATKN	39.1
202	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	155HOW	MEDIUM	6	UNSP	2	BAPD	14.2
3507	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	155HOW	MEDIUM	6	UNSP	2	ATKN	18.5
212	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	155HOW	MEDIUM	12	UNSP	2	BAPD	16.8
3496	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	155HOW	MEDIUM	12	UNSP	2	ATKN	-1.8
3419	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	155HOW	MEDIUM	24	UNSP	3	ATKL	30.8
3485	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	155HOW	MEDIUM	12	UNSP	2	ATKN	19.3
128	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	155HOW	MEDIUM	24	UNSP	1	BAPD	18.8
284	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	11/26/44	155HOW	MEDIUM	-1	NE	14	ATKN	24.8
2378	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	11/26/44	155HOW	MEDIUM	260	UNSP	14	ATKN	24.8
138	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	155HOW	MEDIUM	24	UNSP	3	BADL	11.5
3474	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	155HOW	MEDIUM	2	UNSP	8	ATKL	8.5

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
3474	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	155HOW	MEDIUM	2	UNSP	8	ATKL	0.5
3430	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	155HOW	MEDIUM	24	UNSP	9	ATKN	32.1
148	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	155HOW	MEDIUM	12	UNSP	2	BAPD	25.1
222	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	155HOW	MEDIUM	12	UNSP	1	BAPD	47.0
3441	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	155HOW	MEDIUM	12	UNSP	1	ATKN	59.6
3463	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	155HOW	MEDIUM	12	UNSP	1	ATKN	-1.0
3452	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	155HOW	MEDIUM	18	UNSP	2	ATKL	-1.0
230	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	155HOW	MEDIUM	12	UNSP	1	BADL	12.6
2378	LOGC-WWI-2	WWII	1 US ARMY	1ARMY	12/10/44	155HOW	MEDIUM	282	UNSP	6	ATKN	29.0
240	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	155HOW	MEDIUM	9	UNSP	2	FD	108.8
271	CMH-WWII-2	WWII EUR	1US ARMY	1ARMY	12/16/44	155HOW	MEDIUM	-1	MF	26	DEFN	44.0
2380	LOGC-WWII-2	WWII	1 US ARMY	1ARMY	12/16/44	155HOW	MEDIUM	231	UNSP	16	DEFN	46.0
3211	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	155HOW	MEDIUM	6	UNSP	1	DEFN	79.0
3232	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	155HOW	MEDIUM	12	UNSP	8	DEFN	27.6
3237	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	79.0
3270	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	40.1
3303	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	108.8
249	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	155HOW	MEDIUM	9	UNSP	2	FD	103.1
3218	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	155HOW	MEDIUM	12	UNSP	1	DEFN	79.7
3248	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	79.7
3281	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	116.4
3314	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	155HOW	MEDIUM	-1	UNSP	2	DEFN	103.1
3259	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	155HOW	MEDIUM	-1	UNSP	3	DEFN	14.3
3225	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	155HOW	MEDIUM	4	UNSP	2	DEFN	14.3
3120	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/22/45	155HOW	MEDIUM	91	UNSP	1	UNSP	71.4
3127	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/22/45	155HOW	MEDIUM	48	UNSP	1	UNSP	12.2
3133	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/22/45	155HOW	MEDIUM	106	UNSP	1	UNSP	65.2
3140	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	155HOW	MEDIUM	247	UNSP	1	UNSP	-1.0
3150	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	155HOW	MEDIUM	252	UNSP	1	UNSP	-1.0
3164	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	155HOW	MEDIUM	96	UNSP	1	UNSP	84.8
3169	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/23/45	155HOW	MEDIUM	48	UNSP	1	UNSP	52.2
3173	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	155HOW	MEDIUM	108	UNSP	1	UNSP	113.1
3050	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/18/45	155HOW	MEDIUM	84	UNSP	1	UNSP	8.8
3051	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/18/45	155HOW	MEDIUM	159	UNSP	1	UNSP	1.5
3052	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/18/45	155HOW	MEDIUM	36	UNSP	1	UNSP	3.9
3053	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/19/45	155HOW	MEDIUM	84	UNSP	1	UNSP	9.1
3054	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/19/45	155HOW	MEDIUM	156	UNSP	1	UNSP	3.3
3055	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/19/45	155HOW	MEDIUM	36	UNSP	1	UNSP	5.0
3056	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/20/45	155HOW	MEDIUM	84	UNSP	1	UNSP	7.3
3057	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/20/45	155HOW	MEDIUM	159	UNSP	1	UNSP	2.1
3058	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/20/45	155HOW	MEDIUM	37	UNSP	1	UNSP	8.9
2991	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/21/45	155HOW	MEDIUM	12	UNSP	1	UNSP	5.3
3059	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/21/45	155HOW	MEDIUM	84	UNSP	1	UNSP	5.2
3060	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/21/45	155HOW	MEDIUM	153	UNSP	1	UNSP	1.6
3061	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/21/45	155HOW	MEDIUM	36	UNSP	1	UNSP	6.6
3062	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/22/45	155HOW	MEDIUM	83	UNSP	1	UNSP	4.5
3063	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/22/45	155HOW	MEDIUM	161	UNSP	1	UNSP	1.1
3064	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/22/45	155HOW	MEDIUM	36	UNSP	1	UNSP	11.4
2967	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/23/45	155HOW	MEDIUM	12	UNSP	1	UNSP	8.1
2992	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/23/45	155HOW	MEDIUM	12	UNSP	1	UNSP	6.3
3065	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/23/45	155HOW	MEDIUM	84	UNSP	1	UNSP	7.7
3066	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/23/45	155HOW	MEDIUM	156	UNSP	1	UNSP	10.0
3067	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/23/45	155HOW	MEDIUM	37	UNSP	1	UNSP	14.3
2966	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/24/45	155HOW	MEDIUM	12	UNSP	1	UNSP	315.8
2993	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/24/45	155HOW	MEDIUM	12	UNSP	1	UNSP	268.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	BDTUBEDAY
2993	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/24/45	155HOW	MEDIUM	12	UNSP	1	UNSP	260.8
3068	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/24/45	155HOW	MEDIUM	84	UNSP	1	UNSP	61.0
3069	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/24/45	155HOW	MEDIUM	168	UNSP	1	UNSP	207.5
3070	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/24/45	155HOW	MEDIUM	36	UNSP	1	UNSP	34.6
2969	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/25/45	155HOW	MEDIUM	12	UNSP	1	UNSP	87.4
2994	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/25/45	155HOW	MEDIUM	12	UNSP	1	UNSP	8.5
3071	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/25/45	155HOW	MEDIUM	84	UNSP	1	UNSP	28.6
3072	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/25/45	155HOW	MEDIUM	168	UNSP	1	UNSP	27.1
3073	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/25/45	155HOW	MEDIUM	36	UNSP	1	UNSP	11.8
2970	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/26/45	155HOW	MEDIUM	12	UNSP	1	UNSP	27.7
2995	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/26/45	155HOW	MEDIUM	12	UNSP	1	UNSP	41.8
3074	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/26/45	155HOW	MEDIUM	84	UNSP	1	UNSP	36.4
3075	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/26/45	155HOW	MEDIUM	168	UNSP	1	UNSP	38.2
3076	HERO-WWII-CDSS	RHINE CROSS	XIXUKCORPS	CORPS	03/26/45	155HOW	MEDIUM	36	UNSP	1	UNSP	12.8
2971	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/27/45	155HOW	MEDIUM	12	UNSP	1	UNSP	52.8
2996	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/27/45	155HOW	MEDIUM	12	UNSP	1	UNSP	73.1
3077	HERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/27/45	155HOW	MEDIUM	84	UNSP	1	UNSP	12.1
3078	HERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/27/45	155HOW	MEDIUM	168	UNSP	1	UNSP	62.3
2972	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/28/45	155HOW	MEDIUM	12	UNSP	1	UNSP	59.4
2997	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/28/45	155HOW	MEDIUM	12	UNSP	1	UNSP	79.1
2973	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/29/45	155HOW	MEDIUM	12	UNSP	1	UNSP	40.2
2998	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/29/45	155HOW	MEDIUM	12	UNSP	1	UNSP	73.9
2974	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/30/45	155HOW	MEDIUM	12	UNSP	1	UNSP	66.7
2999	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/30/45	155HOW	MEDIUM	12	UNSP	1	UNSP	46.9
2975	HERO-WWII-CDSS	RHINE CROSS	79UKDIV	DIV	03/31/45	155HOW	MEDIUM	12	UNSP	1	UNSP	50.3
3000	HERO-WWII-CDSS	RHINE CROSS	35UKDIV	DIV	03/31/45	155HOW	MEDIUM	12	UNSP	1	UNSP	32.8
3202	HERO-WWII-CDSS	PO VALLEY	II CORPS	CORPS	04/14/45	155HOW	MEDIUM	-1	UNSP	3	ATKN	121.0
3207	HERO-WWII-CDSS	PO VALLEY	IV CORPS	CORPS	04/14/45	155HOW	MEDIUM	-1	UNSP	5	ATKN	78.0
19	OKO-WWII-1	OKINAWA	XXIV&III	2CORPS	05/01/45	155HOW	MEDIUM	-1	NE	63	ATKN	-1.0
353	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	155HOW	MEDIUM	-1	UNSP	789	UNSP	16.9
1948	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	4.3
1773	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.5
1802	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.6
1831	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.3
1860	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.3
1889	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.7
1918	HERO-WWII-K CDSS	KOREA	X CORPS	CORPS	01/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
357	CGSC-K-1	KOREA	US ARMY	THEA	02/01/51	155HOW	MEDIUM	-1	UNSP	28	UNSP	16.7
1951	CGSC-K-1	KOREA	US ARMY	THEA	02/01/51	155HOW	MEDIUM	-1	UNSP	28	UNSP	16.7
360	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	15.8
1954	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	15.0
363	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	23.9
1957	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	23.9
2280	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	61.3
2299	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	47.3
2318	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.1
2337	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	26.6
2281	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.8
2300	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.9
2319	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	3.7
2338	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	26.6
2282	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.8
2301	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.0
2320	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.6
2339	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	17.6

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
2339	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	17.6
2283	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.0
2302	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.5
2321	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.9
2340	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.6
2284	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.5
2303	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.1
2322	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.1
2341	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	27.1
2285	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	30.1
2304	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.2
2323	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	8.7
2342	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	1.1
2286	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	23.2
2305	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.8
2324	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	7.6
2343	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	-1.0
2287	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	30.3
2306	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	22.9
2325	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	12.5
2344	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.6
2288	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	37.3
2307	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.2
2326	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.2
2345	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	4.4
2289	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.3
2308	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	43.9
2327	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	-1.0
2346	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.3
2290	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.2
2309	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.1
2328	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	-1.0
2347	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	6.1
2291	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	44.8
2310	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	58.2
2329	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	1.4
2348	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	10.8
2292	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	86.9
2311	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	64.6
2330	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.9
2349	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	31.3
2293	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	36.5
2312	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.5
2331	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.1
2350	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	68.1
2294	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	55.4
2313	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	19.9
2332	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	47.4
2351	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.2
2295	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	-1.0
2314	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	53.3
2333	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	1.3
2352	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	74.7
2296	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.1
2315	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.9

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EDTUBEDAY
2315	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/27/51	155HOW	MEDIUM	16	UNSP	1	UNSP	16.9
2334	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	17.1
2353	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	39.7
2297	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	1.5
2316	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	26.0
2335	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.9
2354	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	1.3
2298	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	3.3
2317	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.5
2336	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	15.0
2355	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.5
822	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
853	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.1
884	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
915	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.0
946	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
977	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	04/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
366	CAC-K-1	KOREA	US ARMY	THEA	05/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKN	36.7
823	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.6
854	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.0
885	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.7
916	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.0
947	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
978	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1060	CGSC-K-1	KOREA	US ARMY	THEA	05/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	36.7
824	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.6
855	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	69.6
886	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.6
917	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.4
948	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
979	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
825	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.3
856	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.1
887	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.0
918	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.9
949	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
980	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
826	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
857	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.6
888	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.0
919	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.0
950	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
981	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
827	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.4
858	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.1
889	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.9
920	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
951	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
982	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
828	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.3
859	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.3
890	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.7
921	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.8
952	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
983	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
983	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
829	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.6
860	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.5
891	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.9
922	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.2
953	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
984	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
830	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	47.7
861	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.5
892	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.2
923	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	0.1
954	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
985	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
831	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.5
862	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.5
893	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.1
924	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.0
955	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
986	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
832	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	45.6
863	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	40.6
894	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.8
925	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.4
956	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
987	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
833	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.1
864	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.5
895	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.0
926	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.8
957	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.0
988	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
834	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	94.1
865	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.6
896	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.7
927	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.2
958	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	72.2
989	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
835	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.0
866	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.3
897	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	81.3
928	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.7
959	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	89.7
990	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
836	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	89.8
867	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.4
898	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	89.1
929	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.8
960	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	71.2
991	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
837	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.5
868	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.2
899	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	91.7
930	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.7
961	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.2
992	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
992	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
838	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	143.6
869	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82.2
900	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	147.2
931	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	70.7
962	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.0
993	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
839	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	110.5
870	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	129.5
901	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	88.1
932	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	184.2
963	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	63.5
994	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
840	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	132.2
871	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	75.3
902	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	148.3
933	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	131.2
964	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	100.7
995	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
841	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	161.8
872	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.5
903	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.9
934	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	159.2
965	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	101.1
996	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
842	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.5
873	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.2
904	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	98.9
935	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	118.1
966	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	127.2
997	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	75.8
843	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	106.1
874	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	76.6
905	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	77.6
936	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	148.6
967	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	74.0
998	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	160.2
844	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	67.4
875	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.2
906	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	67.9
937	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	52.9
968	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.8
999	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	99.7
845	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.2
876	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.0
907	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.0
938	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
969	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.7
1000	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.5
846	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.7
877	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.9
908	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.6
939	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.2
970	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	118.1
1001	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	BDTUBEDAY
1001	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2
867	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.1
878	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
909	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
940	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.6
971	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	179.0
1002	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.8
868	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.7
879	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.3
910	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.5
941	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.2
972	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.5
1003	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.1
869	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
880	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.9
911	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.2
942	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	222.0
973	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.0
1004	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.7
850	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.4
881	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.5
912	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.7
943	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.9
974	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.2
1005	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
851	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.9
882	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.0
913	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
944	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	73.2
975	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	119.5
1006	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
852	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.3
883	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.0
914	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.0
945	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.7
976	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	62.0
1007	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1008	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50.4
1038	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.6
1068	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.6
1098	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	97.2
1128	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	05/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	138.0
369	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKN	35.0
1009	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.2
1039	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.6
1069	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1099	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.0
1129	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	61.7
1963	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	35.0
1010	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.2
1040	HERO WWII-K-CDSS	KOREA	X CORPS	CORPS	06/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	67.3
1070	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.5
1100	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.5
1130	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.2
1011	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.5

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
1011	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.5
1041	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.1
1071	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1101	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1131	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.0
1012	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
1042	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
1072	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.7
1102	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.8
1132	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.8
1013	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.5
1043	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	80.5
1073	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.4
1103	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	61.2
1133	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.0
1014	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	40.2
1044	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.2
1074	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.2
1104	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	66.0
1134	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	100.8
1015	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	45.3
1045	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.0
1075	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	65.8
1105	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	132.2
1135	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.7
1016	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	75.5
1046	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	62.1
1076	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	93.1
1106	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	158.2
1136	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	67.3
1017	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.1
1047	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	103.8
1077	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	63.8
1107	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	102.9
1137	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.2
1018	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	54.2
1048	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.8
1078	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	103.6
1108	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	133.5
1138	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.7
1019	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.6
1049	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.8
1079	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	65.6
1109	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	51.5
1139	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	128.8
1020	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.0
1050	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	92.5
1080	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	73.8
1110	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.1
1140	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	70.5
1021	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.3
1051	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	72.4
1081	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	74.7
1111	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.6
1141	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.2

DO LAHART

Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	RETURNDAY
1141	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.2
1072	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.9
1052	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.8
1082	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.0
1112	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.4
1142	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.8
1023	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	121 4
1053	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.1
1083	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.3
1113	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	104.4
1143	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	70.5
1024	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.3
1054	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	92.3
1084	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.6
1114	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.5
1144	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.5
1025	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44 1
1055	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	73.8
1085	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	52.3
1115	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	180 8
1145	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.8
1026	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.5
1056	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	90 5
1086	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.6
1116	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.4
1146	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	62 7
1027	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.6
1057	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50 6
1087	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.9
1117	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	52.6
1147	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	88.2
1028	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1058	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	53.8
1088	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.6
1118	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.8
1148	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	92.2
1029	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1 0
1059	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	61 6
1089	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50 9
1119	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2
1149	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	110 7
1030	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1060	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35 5
1090	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.9
1120	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48 8
1150	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82 7
1031	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1061	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36 0
1091	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35 3
1121	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82 7
1151	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50.7
1032	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	0.0
1062	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37 0
1092	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	67 0
1122	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	84.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
1122	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	84.0
1152	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.0
1033	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1063	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.0
1093	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.0
1123	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	72.0
1153	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.5
1034	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1064	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.0
1094	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.0
1124	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	40.0
1154	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	73.2
1035	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.0
1065	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.5
1095	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.7
1125	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.0
1155	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.0
1036	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.0
1066	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.0
1096	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	34.1
1126	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	69.7
1156	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82.5
1037	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.2
1067	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	122.1
1097	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.2
1127	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	130.8
1157	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	66.0
1158	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	90.4
1189	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	109.1
1220	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	118.3
1251	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	06/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	73.0
372	CGSC-E-1	KOREA	US ARMY	THEA	07/01/51	155HOW	MEDIUM	-1	UNSP	30	ATEN	36.9
1159	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.6
1190	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	78.5
1221	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	63.5
1252	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	96.2
1966	CGSC-E-1	KOREA	US ARMY	THEA	07/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	26.9
1160	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	62.0
1191	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	134.5
1222	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.1
1253	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	91.6
1161	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.6
1192	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	76.0
1223	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	61.0
1254	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	136.3
1162	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.5
1193	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82.9
1224	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	47.0
1255	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	80.0
1163	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.2
1194	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.8
1225	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	93.1
1256	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	71.0
1164	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	45.3
1195	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	07/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.2

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERS	DAYSQUANT	OPERATION	RDTUBEDAY
1195	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.2
1226	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.8
1257	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	61.9
1165	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	80.6
1196	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	101.1
1227	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	80.7
1258	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	184.8
1166	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.8
1197	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.5
1228	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.7
1259	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	166.3
1167	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.8
1198	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1229	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.3
1260	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	93.2
1168	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.5
1199	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.1
1230	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
1261	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	88.8
1169	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.2
1200	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.5
1231	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.8
1262	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	107.3
1170	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.6
1201	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	52.8
1232	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
1263	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	135.5
1171	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.3
1202	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	69.7
1233	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.6
1264	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	129.5
1172	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.1
1203	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.5
1234	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	34.1
1265	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	105.6
1173	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.3
1204	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.8
1235	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.0
1266	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.0
1174	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.1
1205	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.0
1236	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	0.5
1267	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.1
1175	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.5
1206	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.7
1237	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1268	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.3
1176	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.7
1207	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.5
1238	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.3
1269	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	2.1
1177	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.0
1208	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.2
1239	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.4
1270	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEPD	DAYSQUANT	OPERATION	EDTUBEDAY
1270	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1178	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.5
1209	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.2
1240	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1271	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1179	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0
1210	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.0
1241	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.3
1272	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.6
1180	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.5
1211	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.5
1242	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.0
1273	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.6
1181	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.3
1212	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.1
1243	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.1
1274	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.6
1182	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.3
1213	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1244	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.0
1275	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.3
1183	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.7
1214	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.6
1245	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.3
1276	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.5
1184	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	184.8
1215	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.1
1246	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.2
1277	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.8
1185	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.7
1216	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.1
1247	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.4
1278	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.3
1186	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	96.3
1217	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	91.6
1248	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.2
1279	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.1
1187	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	82.8
1218	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	74.5
1249	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.1
1280	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.1
1188	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.1
1219	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.3
1250	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.5
1281	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.9
1974	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.3
2005	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	4.3
2222	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	4.1
375	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKM	18.0
1969	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	19.8
1975	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	7.6
2006	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	4.4
2223	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	7.0
2253	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	46.5
2256	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	28.4

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	ROTUBEDAY
2256	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	28.8
2277	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	60.5
1976	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	2.7
2007	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.7
2224	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	10.5
1977	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	5.6
2008	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	7.9
2225	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	12.6
1978	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	5.2
2009	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.2
2226	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	10.1
1979	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.3
2010	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.1
2227	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.7
1980	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	12.1
2011	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	5.3
2228	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.9
1981	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.2
2012	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	6.3
2229	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.2
1982	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	14.2
2013	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.8
2230	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.0
1983	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	5.7
2014	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.6
2231	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.8
1984	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	8.2
2015	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	8.2
2232	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	10.0
1985	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	155HOW	MEDIUM	18	SP	1	UNSP	17.6
2016	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	155HOW	MEDIUM	18	SP	1	UNSP	1.6
2233	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	6.6
1986	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	10.8
2017	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	42.0
2234	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	22.2
1987	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	17.4
2018	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.2
2235	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	22.1
1988	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.6
2019	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	15.4
2236	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	19.0
1989	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.8
2020	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	12.6
2237	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.7
1990	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	34.3
2021	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	3.2
2238	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	68.8
1991	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	80.7
2022	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.3
2239	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	164.1
199.	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	201.0
2023	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	85.3
2240	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	235.6
1993	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	112.8
2..4	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.5

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
2024	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.5
2241	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	156.5
994	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.6
25	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	33.6
42	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	138.2
995	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	55.6
026	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	83.5
2243	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	108.2
1996	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	71.8
2027	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.7
2244	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	34.1
1997	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.3
2028	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	29.5
2245	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	31.0
1998	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	36.0
2029	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.7
2246	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	49.2
1999	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	37.4
2030	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.9
2247	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	186.7
2000	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	100.6
2031	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.1
2248	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	169.9
2001	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	89.5
2032	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	119.3
2249	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	166.0
2002	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	131.4
2033	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.3
2250	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	183.1
2003	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	91.8
2034	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.1
2251	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	173.2
2004	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	141.5
2035	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	65.5
2252	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	157.6
2398	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	116.4
2428	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	55.8
2836	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/31/51	155HOW	MEDIUM	18	UNSP	1	UNSP	142.1
378	CGSC-K-1	KOREA	US ARMY	THEA	09/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKN	21.7
1972	CGSC-K-1	KOREA	US ARMY	THEA	09/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	21.7
2254	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	58.3
2257	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	46.8
2276	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	09/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	69.3
2399	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	89.7
2429	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	40.1
2837	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	122.0
2400	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	79.1
2430	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.5
2838	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	93.1
2401	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	76.9
2431	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	43.5
2839	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	73.8
2402	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	36.6
2432	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	40.8
2840	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	185.7

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEED	DAYSQUANT	OPERATION	EDTUBEDAY
2840	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	105.7
2403	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	72.7
2433	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	31.1
2841	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	67.5
2404	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	23.7
2434	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	3.7
2842	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	23.0
2405	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	8.8
2435	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	3.8
2843	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	6.3
2406	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.7
2436	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.2
2844	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	45.2
2407	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.8
2437	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	155HOW	MEIDUM	18	UNSP	1	UNSP	23.8
2845	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	50.8
2408	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	12.3
2438	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.8
2846	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.7
2409	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	26.2
2439	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	23.0
2847	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	9.1
2410	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	41.6
2440	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.6
2848	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	75.9
2411	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	30.2
2441	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	155HOW	MEIDUM	18	UNSP	1	UNSP	46.8
2849	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	95.5
2412	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.5
2442	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.3
2850	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	99.7
2413	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	61.6
2443	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	114.8
2851	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	91.1
2414	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	72.6
2444	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	42.8
2852	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	90.1
2415	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	155HOW	MEDIUM	18	UNSP	2	UNSP	46.1
2445	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	61.3
2853	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	29.3
2416	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.8
2446	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	101.9
2854	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	74.1
2417	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	43.5
2447	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	50.8
2855	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	92.0
2418	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.0
2448	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.8
2856	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	78.0
2419	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.8
2449	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.8
2857	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	98.1
2420	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.6
2450	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	27.3
2858	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	39.6

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEEQD	DAYSQUANT	OPERATION	EDTUBEDAY
2858	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/22/51	155HOW	MEDIUM	18	UNSP	1	UNSP	99.6
2421	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.6
2451	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	18.1
2859	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/23/51	155HOW	MEDIUM	18	UNSP	1	UNSP	39.9
2422	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	29.2
2452	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	20.2
2860	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/24/51	155HOW	MEDIUM	18	UNSP	1	UNSP	36.9
2423	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	46.8
2453	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	15.1
2861	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/25/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.1
2424	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	56.5
2454	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.5
2862	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/26/51	155HOW	MEDIUM	18	UNSP	1	UNSP	27.3
2425	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	101.1
2455	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	155HOW	MEDIUM	1	UNSP	1	UNSP	19.8
2863	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/27/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.1
2426	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	63.2
2456	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.0
2864	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/28/51	155HOW	MEDIUM	18	UNSP	1	UNSP	24.6
2427	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	47.6
2457	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	11.3
2865	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/29/51	155HOW	MEDIUM	18	UNSP	1	UNSP	16.6
2458	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	51.1
2460	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	20.8
2634	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	09/30/51	155HOW	MEDIUM	18	UNSP	1	UNSP	31.5
381	CGSC-K-1	KOREA	US ARMY	THEA	10/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKN	29.4
528	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	10/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	28.4
2255	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	155HOW	MEDIUM	-1	UNSP	22	UNSP	75.2
2258	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	10/01/51	155HOW	MEDIUM	-1	UNSP	22	UNSP	38.9
2279	HERO-WWII-K-CDSS	KOREA	XCGRPS	CORPS	10/01/51	155HOW	MEDIUM	-1	UNSP	22	UNSP	58.0
2459	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	69.9
2481	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	64.5
2635	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/01/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.0
2460	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	42.1
2482	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	42.1
2636	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/02/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.0
2461	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	48.3
2483	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	28.5
2637	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/03/51	155HOW	MEDIUM	18	UNSP	1	UNSP	21.2
2462	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32 5
2484	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	22.1
2638	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/04/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.9
2463	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	88.4
2485	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	20.8
2639	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/05/51	155HOW	MEDIUM	18	UNSP	1	UNSP	84 0
2464	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	78.8
2486	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	36.8
2640	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/06/51	155HOW	MEDIUM	18	UNSP	1	UNSP	95.5
2465	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	122.6
2487	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	58.1
2641	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/07/51	155HOW	MEDIUM	18	UNSP	1	UNSP	72.7
2466	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	143.0
2488	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	58.9
2642	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/08/51	155HOW	MEDIUM	18	UNSP	1	UNSP	96.7
2467	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	114.2

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	ROTUSEDAY
2467	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	114.2
2469	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	25.6
2643	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/09/51	155HOW	MEDIUM	18	UNSP	1	UNSP	194.1
2468	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	94.2
2490	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.2
2644	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/10/51	155HOW	MEDIUM	18	UNSP	1	UNSP	54.5
2469	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	132.3
2491	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	52.5
2645	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/11/51	155HOW	MEDIUM	18	UNSP	1	UNSP	96.6
2470	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	68.0
2492	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.1
2646	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/12/51	155HOW	MEDIUM	18	UNSP	1	UNSP	56.7
2471	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	78.4
2493	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	26.7
2647	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/13/51	155HOW	MEDIUM	18	UNSP	1	UNSP	75.9
2472	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	92.0
2494	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	50.7
2648	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/14/51	155HOW	MEDIUM	18	UNSP	1	UNSP	75.3
2473	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	75.3
2495	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	58.3
2649	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/15/51	155HOW	MEDIUM	18	UNSP	1	UNSP	57.1
2474	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	65.1
2496	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	43.3
2650	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/16/51	155HOW	MEDIUM	18	UNSP	1	UNSP	47.2
2475	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	99.6
2497	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	56.8
2651	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/17/51	155HOW	MEDIUM	18	UNSP	1	UNSP	62.5
2476	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	73.1
2498	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	29.8
2652	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/18/51	155HOW	MEDIUM	18	UNSP	1	UNSP	42.3
2477	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	50.3
2499	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	35.1
2653	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/19/51	155HOW	MEDIUM	18	UNSP	1	UNSP	38.3
2478	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	13.1
2500	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.3
2654	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/20/51	155HOW	MEDIUM	18	UNSP	1	UNSP	37.9
2479	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	37.7
2501	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	31.5
2655	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/21/51	155HOW	MEDIUM	18	UNSP	1	UNSP	32.5
1477	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	76.6
1507	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.6
1537	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	87.8
1567	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.2
1597	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	10/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.5
384	CGSC-K-1	KOREA	US ARMY	THEA	11/01/51	155HOW	MEDIUM	-1	UNSP	30	ATKH	25.0
529	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	11/01/51	155HOW	MEDIUM	-1	UNSP	30	UNSP	25.0
1478	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.4
1508	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.8
1538	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.3
1568	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.1
1598	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	89.7
1479	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.9
1509	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.5
1539	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.7
1569	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EOTUBEDAY
1569	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0
1599	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.2
1460	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.2
1510	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.6
1540	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.3
1570	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	40.6
1600	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.5
1481	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.8
1511	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.8
1541	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.6
1571	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.5
1601	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.5
1482	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.7
1512	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.1
1542	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.2
1572	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.9
1602	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.5
1483	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.2
1513	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.7
1543	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.6
1573	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0
1603	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1484	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	43.9
1514	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.6
1544	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.8
1574	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.1
1604	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	51.7
1485	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	47.9
1515	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.0
1545	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.2
1575	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.2
1605	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.7
1486	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.1
1516	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.7
1546	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2
1576	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.5
1606	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	47.5
1487	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.2
1517	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.8
1547	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	40.1
1577	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.4
1607	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	62.7
1488	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.2
1518	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	44.5
1548	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.0
1578	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.0
1608	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.0
1489	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.5
1519	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.7
1549	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.1
1579	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.7
1609	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
1490	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.1
1520	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.5
1550	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.9

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEED	DAYSQUANT	OPERATION	EDTUBEDAY
1550	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.9
1580	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.0
1610	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.0
1491	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.3
1521	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.0
1551	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	84.5
1581	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.5
1611	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.7
1492	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1522	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.6
1552	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.0
1582	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1612	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.7
1493	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.1
1523	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.7
1553	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	57.0
1583	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.0
1613	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.0
1494	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1524	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.0
1554	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	68.7
1584	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.3
1614	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	53.7
1495	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.3
1525	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.4
1555	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.6
1585	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.7
1615	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.2
1496	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.0
1526	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.1
1556	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	117.9
1586	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	1.3
1616	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.0
1497	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1527	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.0
1557	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.0
1587	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1617	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.2
1282	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.0
1313	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.8
1344	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.5
1375	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.2
1406	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.0
1437	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1468	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.1
1498	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.9
1528	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.2
1558	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	55.7
1588	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	11/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.5
387	CGSC-K-1	KOREA	US ARMY	THEA	12/01/51	155HOW	MEDIUM	-1	UNSP	30	ATEN	13.8
520	CMH-K-1 & CGSC-K-1	KOREA	US ARMY	THEA	12/01/51	155HOW	MEDIUM	-1	UNSP	31	UNSP	13.6
1282	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0
1314	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.5
1345	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.5
1376	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
1376	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.6
1407	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.8
1438	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1469	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.9
1499	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.1
1529	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.8
1559	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.5
1589	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/01/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.7
1284	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.6
1315	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.6
1346	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.2
1377	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.2
1408	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.7
1439	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1470	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.0
1500	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.0
1530	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.1
1560	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	57.2
1590	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/02/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	58.2
1285	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.1
1316	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.6
1347	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.1
1378	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	4.8
1409	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.8
1440	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1471	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.6
1501	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.6
1531	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.1
1561	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.8
1591	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/03/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.2
1286	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50.4
1317	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.2
1348	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1379	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.2
1410	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.2
1441	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1472	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.3
1502	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.6
1532	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.4
1562	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.8
1592	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/04/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.0
1287	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.2
1318	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.4
1349	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
1380	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.7
1411	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	34.0
1442	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1473	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.3
1503	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.3
1533	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1563	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.6
1593	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/05/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.8
1288	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7
1319	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.0
1350	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.4

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EFFTUBEDAY
1350	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.4
1381	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.2
1412	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
1443	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1474	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.0
1504	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.3
1534	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.8
1564	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.2
1594	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/06/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	50.5
1289	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.0
1320	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.0
1351	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.0
1382	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.4
1413	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.5
1444	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1475	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	42.0
1505	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.2
1535	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	51.7
1565	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.5
1595	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/07/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	56.7
1290	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	[illegible]OW	MEDIUM	-1	UNSP	1	UNSP	16.0
1321	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	[illegible]OW	MEDIUM	-1	UNSP	1	UNSP	17.3
1352	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.7
1383	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.9
1414	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.2
1445	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1476	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.5
1506	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	64.8
1536	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.0
1566	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.6
1596	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/08/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.0
1291	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.1
1322	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.1
1353	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	53.1
1384	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.8
1415	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1446	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/09/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.6
1292	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.4
1323	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1354	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.8
1385	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.5
1416	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1447	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/10/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.6
1293	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.1
1324	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.1
1355	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1386	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.1
1417	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.7
1448	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/11/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.9
1294	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.3
1325	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.2
1356	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.8
1387	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.5
1418	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.8
1449	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EDTUBEDAY
1440	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/12/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1295	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.2
1326	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.2
1357	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.5
1388	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.6
1419	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.5
1450	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/13/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1296	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.9
1327	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.9
1358	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.8
1389	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.6
1420	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.2
1451	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/14/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1297	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.6
1328	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.9
1359	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1390	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.4
1421	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1452	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/15/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1298	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.5
1329	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.7
1360	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.8
1391	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.3
1422	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1453	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/16/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1299	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.5
1330	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1361	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.1
1392	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.9
1423	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.8
1454	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/17/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1300	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.6
1331	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.8
1362	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	51.6
1393	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.8
1424	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.2
1455	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/18/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1301	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.7
1332	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.7
1363	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2
1394	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1425	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.5
1456	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/19/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1302	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.1
1333	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.3
1364	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.5
1395	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.3
1426	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1457	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/20/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.3
1303	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.6
1334	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.7
1365	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.4
1396	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1427	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1458	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.2

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
1458	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/21/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.2
1304	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.1
1335	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.5
1366	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1367	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1428	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1459	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/22/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.5
1305	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.0
1336	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.2
1367	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.0
1398	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1429	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1460	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/23/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.0
1306	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.0
1337	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.9
1368	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.2
1399	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.0
1430	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1461	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/24/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.5
1307	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.4
1338	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.5
1369	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1400	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.8
1431	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1462	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/25/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.9
1308	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.2
1339	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.8
1370	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1401	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1432	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1463	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/26/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.5
1309	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.3
1340	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.7
1371	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.0
1402	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.6
1433	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1464	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/27/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.9
1310	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1341	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.2
1372	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1403	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.2
1434	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1465	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/28/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.0
1311	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.3
1342	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1373	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.5
1404	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.0
1435	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1466	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/29/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.3
1312	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
1343	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.2
1374	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.6
1405	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.2
1436	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1467	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	ADJUSTDAY
1667	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/30/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.8
1618	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.6
1649	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.7
1680	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.6
1711	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.7
1742	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	12/31/51	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.8
531	CML-E-1	KOREA	US ARMY	THEA	01/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
1619	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.7
1650	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.9
1681	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.1
1712	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.8
1743	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.5
1620	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.5
1651	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.8
1682	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.3
1713	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.7
1744	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1621	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.7
1652	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1683	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1714	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.8
1745	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.1
1622	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	63.2
1653	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	76.8
1684	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	85.9
1715	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.1
1746	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	98.3
1623	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	49.7
1654	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	97.5
1685	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	53.2
1716	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	88.7
1747	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.9
1624	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	54.1
1655	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	76.0
1686	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	111.1
1717	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	84.2
1748	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	82.3
1625	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.8
1656	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.2
1687	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	83.7
1718	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	99.1
1749	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	102.6
1626	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.8
1657	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	38.5
1688	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.8
1719	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	0.0
1750	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.0
1720	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.8
1751	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.5
1618	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.7
1652	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.7
1690	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
17.1	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.1
1752	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.8
1c.9	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.7

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record	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TUPERD	DAYSQUANT	OPERATION	EDTUBEDAY
1629	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	23.7
1660	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	14.4
1691	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	18.6
1722	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155NOW	MEDIUM	-1	SP	1	UNSP	19.3
1753	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/11/52	155NOW	MEDIUM	-1	SP	1	UNSP	21.0
1630	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/12/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	20.7
1661	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/12/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	24.6
1692	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/12/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	18.4
1723	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/12/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	22.4
1754	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/12/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	23.6
1631	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/13/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	20.1
1662	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/13/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	16.6
1693	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/13/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	33.6
1724	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/13/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	24.7
1755	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/13/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	19.0
1632	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/14/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1663	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/14/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1694	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/14/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	30.4
1725	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/14/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	22.3
1756	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/14/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1633	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/15/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	21.4
1664	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/15/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	25.1
1695	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/15/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	24.0
1726	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/15/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	18.9
1757	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/15/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	32.8
1634	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/16/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	27.3
1665	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/16/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	20.3
1696	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/16/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1727	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/16/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1758	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/16/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	29.5
1635	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/17/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	16.3
1666	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/17/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1697	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/17/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	21.0
1728	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/17/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	24.0
1759	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/17/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	37.1
1636	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/18/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	18.9
1667	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/18/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	12.7
1698	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/18/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	30.3
1729	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/18/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	16.3
1760	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/18/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	13.8
1637	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/19/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	30.9
1668	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/19/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	18.6
1699	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/19/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1730	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/19/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	19.7
1761	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/19/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	19.8
1638	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/20/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	15.8
1669	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/20/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	13.7
1700	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/20/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	25.1
1731	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/20/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	16.5
1762	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/20/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	27.8
1639	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/21/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	9.3
1670	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/21/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1701	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/21/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	13.5
1732	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/21/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	21.6
1763	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	01/21/52	155NOW	MEDIUM	-1	UNSP	1	UNSP	9.7

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEEQ	DAYSQUANT	OPERATION	EDTUBEDAY
1759	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.7
1640	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.2
1671	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.2
1762	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.2
1733	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.6
1764	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.5
1641	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.8
1672	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.3
1703	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.8
1736	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.6
1765	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	47.7
1642	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.9
1673	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.6
1704	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1735	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
1766	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.5
1643	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.1
1674	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.3
1705	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.1
1736	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.1
1767	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.4
1644	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.6
1675	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.6
1706	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.1
1737	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.9
1768	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	46.1
1645	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
1676	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.8
1707	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.8
1738	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.5
1769	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.6
1646	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.6
1677	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1708	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.3
1739	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.3
1770	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.8
1647	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/29/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.0
1678	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/29/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.6
1709	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/29/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1740	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/29/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.8
1771	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/29/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.1
1637	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	31.9
1648	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.7
1658	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.6
1679	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	39.9
1689	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.9
1710	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	35.2
1741	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.4
1772	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	01/30/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	37.7
522	CMH-E-1	KOREA	US ARMY	THEA	02/01/52	155HOW	MEDIUM	-1	UNSP	28	UNSP	-1.0
1770	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.6
1803	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.0
1832	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	36.7
1861	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
1890	NERO-WWII-E-CD55	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAT
1698	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.0
1919	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/01/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1775	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.1
1804	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.3
1833	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.3
1862	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.7
1891	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	32.0
1920	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/02/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1776	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1805	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1834	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1863	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1892	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1921	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/03/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1777	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.7
1806	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.7
1835	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.0
1864	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1893	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.2
1922	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/04/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1778	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.9
1807	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.1
1836	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	30.7
1865	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	26.0
1894	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.0
1923	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/05/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1779	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.2
1808	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.8
1837	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.6
1866	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.8
1895	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.5
1924	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/06/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1780	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1809	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1838	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1867	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1896	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1925	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/07/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1781	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.3
1810	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.1
1839	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	7.6
1868	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.3
1897	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.8
1926	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/08/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1782	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	41.6
1811	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	48.7
1840	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	60.7
1869	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	79.3
1898	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	66.5
1927	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/09/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1783	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1812	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1841	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1870	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1996	MEBO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAT
1899	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1928	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/10/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1784	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	-1.0
1813	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	-1.0
1842	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	2.3
1871	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	-1.0
1900	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	-1.0
1929	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/11/52	155HOW	MEDIUM	-1	SP	1	UNSP	-1.0
1785	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	9.0
1814	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1843	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1872	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1901	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1930	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/12/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	3.8
1786	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1815	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1844	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1873	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1902	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1931	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/13/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	-1.0
1787	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.6
1816	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.5
1845	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.3
1874	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.7
1903	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.5
1932	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/14/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.5
1788	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.8
1817	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.1
1846	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.4
1875	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.6
1904	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.5
1933	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/15/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.1
1789	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.6
1818	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.0
1847	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.1
1876	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.6
1905	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.0
1934	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/16/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.8
1790	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1819	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.3
1848	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	33.3
1877	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.5
1906	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.6
1935	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/17/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.1
1791	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.0
1820	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.6
1849	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.8
1878	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.0
1907	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.0
1936	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/18/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.0
1792	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.8
1821	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.2
1850	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.4
1879	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.1
1908	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	EDTUBEDAY
1908	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.0
1937	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/19/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.5
1793	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.9
1822	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.6
1851	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.5
1880	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	5.5
1909	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.5
1938	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/20/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.6
1794	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.6
1823	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.5
1852	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.6
1881	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	10.6
1910	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.9
1939	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/21/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.0
1795	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	14.0
1824	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.2
1853	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.0
1882	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.2
1911	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.7
1940	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/22/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.1
1796	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.1
1825	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.9
1854	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.2
1883	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.5
1912	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.0
1941	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/23/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	11.6
1797	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	18.9
1826	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	15.1
1855	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	20.6
1884	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	8.9
1913	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.9
1942	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/24/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.8
1798	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.0
1827	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	12.7
1856	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.9
1885	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	16.7
1914	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	21.9
1943	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/25/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.3
1739	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.6
1828	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.1
1857	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	6.1
1886	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	28.2
1915	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	27.5
1944	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/26/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	13.3
1800	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.1
1829	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	23.2
1858	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.0
1887	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.8
1916	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.9
1945	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/27/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	19.7
1801	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	17.2
1830	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	22.2
1859	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	25.9
1888	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	24.6
1917	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.9

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EDTUBEDAY
1917	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.9
1946	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	02/28/52	155HOW	MEDIUM	-1	UNSP	1	UNSP	29.9
533	CMN-K-1	KOREA	US ARMY	THEA	03/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
534	CMN-K-1	KOREA	US ARMY	THEA	04/01/52	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
790	CMN-K-1	KOREA	US ARMY	THEA	05/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
791	CMN-K-1	KOREA	US ARMY	THEA	06/01/52	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
792	CMN-K-1	KOREA	US ARMY	THEA	07/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
793	CMN-K-1	KOREA	US ARMY	THEA	08/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
794	CMN-K-1	KOREA	US ARMY	THEA	09/01/52	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
795	CMN-K-1	KOREA	US ARMY	THEA	10/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
796	CMN-K-1	KOREA	US ARMY	THEA	11/01/52	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
797	CMN-K-1	KOREA	US ARMY	THEA	12/01/52	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
798	CMN-K-1	KOREA	US ARMY	THEA	01/01/53	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
799	CMN-K-1	KOREA	US ARMY	THEA	02/01/53	155HOW	MEDIUM	-1	UNSP	28	UNSP	-1.0
800	CMN-K-1	KOREA	US ARMY	THEA	03/01/53	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
801	CMN-K-1	KOREA	US ARMY	THEA	04/01/53	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
802	CMN-K-1	KOREA	US ARMY	THEA	05/01/53	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
803	CMN-K-1	KOREA	US ARMY	THEA	06/01/53	155HOW	MEDIUM	-1	UNSP	30	UNSP	-1.0
804	CMN-K-1	KOREA	US ARMY	THEA	07/01/53	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
805	CMN-K-1	KOREA	US ARMY	THEA	08/01/53	155HOW	MEDIUM	-1	UNSP	31	UNSP	-1.0
407	CMN-VN-1	PRE-TET	1US IN DIV	DIV	01/20/67	155HOW	MEDIUM	-1	UNSP	180	UNSP	-1.0
408	CMN-VN-1	TET	1US IN DIV	DIV	02/01/67	155HOW	MEDIUM	-1	UNSP	30	PD	-1.0
390	MA-VN-1	OP JUNC CITY	1US IN DIV	DIV	02/22/67	155HOW	MEDIUM	-1	NE	21	PROM	24.0
394	MA-VN-1	OP JUNC CITY	1US IN DIV	DIV	03/15/67	155HOW	MEDIUM	-1	NE	31	PROM	32.0
402	MA-VN-3	OP DALLAS	1US IN DIV	DIV	05/17/67	155HOW	MEDIUM	-1	NE	9	PROM	42.2
398	MA-VN-2	OP BILLINGS	1US IN DIV	DIV	06/11/67	155HOW	MEDIUM	-1	NE	16	PROM	61.6
413	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	155HOW	MEDIUM	-1	UNSP	368	UNSP	33.8
620	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	155HOW	MEDIUM	-1	UNSP	365	UNSP	33.8
638	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	155HOW	MEDIUM	-1	UNSP	365	UNSP	-1.0
2868	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/68	155HOW	MEDIUM	-1	UNSP	31	UNSP	23.9
2874	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	155HOW	MEDIUM	-1	UNSP	31	UNSP	25.4
2880	AMC-VN-COLDEV	VIETNAM	US ARMY	THEA	09/01/68	155HOW	MEDIUM	-1	UNSP	30	UNSP	24.8
421	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	155HOW	MEDIUM	-1	UNSP	368	UNSP	23.8
621	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	155HOW	MEDIUM	-1	UNSP	365	UNSP	23.8
639	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	155HOW	MEDIUM	-1	UNSP	365	UNSP	-1.0
2886	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	155HOW	MEDIUM	-1	UNSP	31	UNSP	20.1
2892	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	155HOW	MEDIUM	-1	UNSP	30	UNSP	21.4
2898	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	155HOW	MEDIUM	-1	UNSP	31	UNSP	27.1
2904	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	155HOW	MEDIUM	-1	UNSP	31	UNSP	25.1
2910	AMC-VN-COLEDV	VIETNAM	USA ARMY	THEA	02/01/69	155HOW	MEDIUM	-1	UNSP	28	UNSP	23.1
2916	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	155HOW	MEIDUN	-1	UNSP	31	UNSP	27.2
2922	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	155HOW	MEDIUN	-1	UNSP	31	UNSP	23.9
633	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	155HOW	MEDIUM	-1	UNSP	36	UNSP	23.9
554	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	155HOW	MEDIUM	293	UNSP	30	UNSP	27.3
555	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	155HOW	MEDIUM	296	UNSP	30	UNSP	28 5
556	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	155HOW	MEDIUM	306	UNSP	30	UNSP	26.2
627	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	155HOW	MEDIUM	-1	UNSP	366	UNSP	29.8
557	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	155HOW	MEDIUM	280	UNSP	30	UNSP	26.3
622	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	155HOW	MEDIUM	-1	UNSP	365	UNSP	29.5
640	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	155HOW	MEDIUM	-1	UNSP	365	UNSP	-1.0
558	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	155HOW	MEDIUM	264	UNSP	30	UNSP	29 6
559	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	155HOW	MEDIUM	257	UNSP	30	UNSP	27 4
560	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	155HOW	MEDIUM	260	UNSP	30	UNSP	25 6
561	AMC-VN COLEDV	VIETNAM	US ARMY	THEA	02/01/70	155HOW	MEDIUM	266	UNSP	30	UNSP	25.5
562	AMC-VN COLEDV	VIETNAM	US ARMY	THEA	03/01/70	155HOW	MEDIUM	229	UNSP	33	UNSP	30.8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	EDTUBEDAY
562	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	155HOW	MEDIUM	220	UNSP	30	UNSP	30.0
563	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	155HOW	MEDIUM	181	UNSP	30	UNSP	32.2
564	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	155HOW	MEDIUM	170	UNSP	30	UNSP	37.6
565	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	155HOW	MEDIUM	168	UNSP	30	UNSP	40.6
256	FM101-10-1 JUL 76	NONE	AR DIV	DIV	07/20/76	155HOW	MEDIUM	-1	NE	-1	FROM	58.0
415	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	175GUN	HEAVY	-1	UNSP	360	UNSP	19.9
617	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	175GUN	HEAVY	-1	UNSP	365	UNSP	19.9
835	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	175GUN	HEAVY	-1	UNSP	365	UNSP	-1.0
2867	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/68	175GUN	HEAVY	-1	UNSP	31	UNSP	19.0
2873	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	175GUN	HEAVY	-1	UNSP	31	UNSP	18.5
2879	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/68	175GUN	HEAVY	-1	UNSP	30	UNSP	18.6
428	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	175GUN	HEAVY	-1	UNSP	360	UNSP	18.0
618	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	175GUN	HEAVY	-1	UNSP	365	UNSP	18.0
836	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	175GUN	HEAVY	-1	UNSP	365	UNSP	-1.0
2891	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	175GUN	HEAVY	-1	UNSP	30	UNSP	15.0
2897	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	175GUN	HEAVY	-1	UNSP	31	UNSP	14.8
2903	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	175GUN	HEAVY	-1	UNSP	31	UNSP	20.3
2908	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	175GUN	HEAVY	-1	UNSP	28	UNSP	19.5
2915	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	175GUN	HEAVY	-1	UNSP	31	UNSP	21.2
2921	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	175GUN	HEAVY	-1	UNSP	31	UNSP	20.0
2927	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/69	175GUN	HEAVY	-1	UNSP	30	UNSP	19.8
432	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	175GUN	HEAVY	-1	UNSP	30	UNSP	19.0
542	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	175GUN	HEAVY	45	UNSP	30	UNSP	22.2
543	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	175GUN	HEAVY	37	UNSP	30	UNSP	26.8
544	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	175GUN	HEAVY	44	UNSP	30	UNSP	22.5
424	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	175GUN	HEAVY	-1	UNSP	360	UNSP	20.2
545	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	175GUN	HEAVY	37	UNSP	30	UNSP	18.3
619	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	175GUN	HEAVY	-1	UNSP	365	UNSP	20.2
837	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	175GUN	HEAVY	-1	UNSP	365	UNSP	-1.0
546	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	175GUN	HEAVY	42	UNSP	30	UNSP	18.0
547	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	175GUN	HEAVY	36	UNSP	30	UNSP	14.8
548	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	175GUN	HEAVY	43	UNSP	30	UNSP	19.3
549	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/70	175GUN	HEAVY	37	UNSP	30	UNSP	25.1
550	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	175GUN	HEAVY	46	UNSP	30	UNSP	18.6
551	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	175GUN	HEAVY	42	UNSP	30	UNSP	18.1
552	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	175GUN	HEAVY	42	UNSP	30	UNSP	28.1
553	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	175GUN	HEAVY	50	UNSP	30	UNSP	19.5
294	TOI-WWII-1	ITALY	XIUS CORPS	CORPS	01/01/43	203GUN	HEAVY	-1	NE	720	ATKN	19.1
66	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	203GUN	HEAVY	-1	UNSP	17	DAPD	17.6
77	HERO-WWII-CDSS	DIADEM	85US IN DIV	DIV	05/11/44	203GUN	HEAVY	-1	UNSP	17	DAND	13.0
86	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	203GUN	HEAVY	-1	UNSP	17	DADL	1.0
3539	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	203GUN	HEAVY	1	UNSP	2	ATKN	17.0
3551	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	203GUN	HEAVY	1	UNSP	2	ATKN	1.0
3575	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	203GUN	HEAVY	1	UNSP	2	ATKL	-1.0
3587	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	203GUN	HEAVY	1	UNSP	2	ATKL	8.0
3593	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	203GUN	HEAVY	1	UNSP	2	ATKN	13.0
3597	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	203GUN	HEAVY	1	UNSP	2	ATKL	8.5
268	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	203GUN	HEAVY	-1	NE	180	UNSP	4.8
349	CMH-WWII-3	GERMANY	12US ARMY GP	ARMYGP	06/06/44	203GUN	HEAVY	-1	UNSP	180	ATKN	-1.0
314	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	203GUN	HEAVY	-1	NE	7	ATKN	21.0
332	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	203GUN	HEAVY	-1	NE	7	ATKN	10.6
350	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	203GUN	HEAVY	-1	NE	7	ATKN	3.8
367	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	203GUN	HEAVY	-1	NE	7	ATKN	1.0
170	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/02/44	203GUN	HEAVY	-1	UNSP	4	DAPD	15.8
3329	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	203GUN	HEAVY	-1	UNSP	2	ATKN	37.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EDTUBEDAY
3329	NERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	11/08/44	203GUN	HEAVY	-1	UNSP	2	ATKN	37.0
98	NERO-WWII-CDSS	GERMANY	4US AR DIV A	3DE	11/10/44	203GUN	HEAVY	-1	UNSP	2	BAPD	2.0
107	NERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	203GUN	HEAVY	-1	UNSP	1	BAPD	1.0
3103	NERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	203GUN	HEAVY	1	UNSP	3	ATKL	2.0
3370	NERO-WWII-CDSS	SAAR	88TH US DIV	DIV	11/10/44	203GUN	HEAVY	1	UNSP	3	ATKL	1.0
3296	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	203GUN	HEAVY	-1	UNSP	1	DEFN	2.0
3389	NERO-WWII-CDSS	SAAR	88TH US DIV	DIV	11/14/44	203GUN	HEAVY	1	UNSP	1	ATKL	-1.0
3408	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	203GUN	HEAVY	1	UNSP	2	ATKN	4.0
3520	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	203GUN	HEAVY	1	UNSP	2	ATKN	4.0
187	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	203GUN	HEAVY	-1	UNSP	1	BADL	4.0
3411	NERO-WWII-CDSS	SAAR	88TH US DIV	DIV	11/18/44	203GUN	HEAVY	1	UNSP	1	ATKL	4.0
196	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	203GUN	HEAVY	-1	UNSP	2	BAPD	2.0
3521	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	203GUN	HEAVY	1	UNSP	2	ATKN	2.0
205	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	203GUN	HEAVY	-1	UNSP	2	BAPD	1.0
3518	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	203GUN	HEAVY	1	UNSP	2	ATKN	1.0
215	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	203GUN	HEAVY	-1	UNSP	2	BAPD	1.0
3499	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	203GUN	HEAVY	1	UNSP	2	ATKN	1.0
3422	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/23/44	203GUN	HEAVY	1	UNSP	3	ATKL	2.0
3408	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	203GUN	HEAVY	1	UNSP	2	ATKN	4.0
131	NERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	203GUN	HEAVY	-1	UNSP	1	BAPD	3.0
161	NERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	203GUN	HEAVY	-1	UNSP	2	BADL	4.0
3477	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	203GUN	HEAVY	1	UNSP	0	ATKL	5.0
3433	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	203GUN	HEAVY	1	UNSP	3	ATKN	5.0
151	NERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	203GUN	HEAVY	-1	UNSP	2	BAPD	7.0
3444	NERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	203GUN	HEAVY	1	UNSP	1	ATKN	-1.0
3466	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	203GUN	HEAVY	1	UNSP	1	ATKN	-1.0
3455	NERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	203GUN	HEAVY	1	UNSP	2	ATKL	7.0
160	NERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	203GUN	HEAVY	-1	UNSP	2	BAPD	4.0
223	NERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	203GUN	HEAVY	-1	UNSP	1	BADL	2.0
3241	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3274	NERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3307	NERO-WWII-CDSS	ITALY&NW EUR	90TH US DIV	DIV	12/16/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3252	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3285	NERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3318	NERO-WWII-CDSS	ITALY&NW EUR	90TH US DIV	DIV	12/18/44	203GUN	HEAVY	-1	UNSP	2	DEFN	-1.0
3263	NERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	203GUN	HEAVY	-1	UNSP	3	DEFN	-1.0
3143	NERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	203GUN	HEAVY	6	UNSP	1	UNSP	-1.0
3153	NERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	203GUN	HEAVY	6	UNSP	1	UNSP	-1.0
3138	NERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	203GUN	HEAVY	6	UNSP	1	UNSP	54.2
298	TOI-WWII-1	ITALY	XIVS CORPS	CORPS	01/01/43	203HOW	HEAVY	-1	HE	720	ATKN	30.5
65	NERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	203HOW	HEAVY	6	UNSP	17	BAPD	111.3
76	NERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	203HOW	HEAVY	6	UNSP	17	BAND	46.2
68	NERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	203HOW	HEAVY	6	UNSP	17	BADL	63.8
3538	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	203HOW	HEAVY	6	UNSP	2	ATKN	111.3
3550	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	203HOW	HEAVY	6	UNSP	2	ATKN	63.5
3574	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	203HOW	HEAVY	6	UNSP	2	ATKL	67.0
3366	NERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	203HOW	HEAVY	2	UNSP	2	ATKL	1.0
3562	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	203HOW	HEAVY	2	UNSP	2	ATKN	48.5
3586	NERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	203HOW	HEAVY	2	UNSP	2	ATKL	31.0
267	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	203HOW	HEAVY	-1	HE	180	UNSP	6.2
356	CMH-WWII-2	GERMANY	12US ARMY GP	ARMYGP	06/06/44	203HOW	HEAVY	-1	UNSP	180	ATKN	-1.0
302	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/18/44	203HOW	HEAVY	-1	HE	7	ATKN	12.0
307	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	06/25/44	203HOW	HEAVY	-1	HE	7	ATKN	6.0
313	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	203HOW	HEAVY	-1	HE	7	ATKN	15.0
321	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	203HOW	HEAVY	-1	HE	7	ATKN	20.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPESD	DAYSQUANT	OPERATION	EDTUBEDAY
221	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	203HOW	HEAVY	-1	NE	7	ATKN	20.0
320	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/16/44	203HOW	HEAVY	-1	NE	7	ATKN	3.0
336	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	203HOW	HEAVY	-1	NE	7	ATKN	6.0
344	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/30/44	203HOW	HEAVY	-1	NE	7	ATKN	6.0
169	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	203HOW	HEAVY	14	UNSP	4	BAPD	27.1
3220	MERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	203HOW	HEAVY	-1	UNSP	2	ATKN	40.0
97	MERO-WWII-CDSS	GERMANY	4US AR DIV A	8DE	11/10/44	203HOW	HEAVY	-1	UNSP	2	BAPL	24.0
104	MERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	203HOW	HEAVY	-1	UNSP	1	BAPD	20.0
3182	MERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	203HOW	HEAVY	2	UNSP	3	ATKL	28.5
3277	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	203HOW	HEAVY	2	UNSP	3	ATKL	17.5
3295	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	203HOW	HEAVY	-1	UNSP	1	DEFN	17.0
178	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	203HOW	HEAVY	11	UNSP	4	BADL	22.2
116	MERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/12/44	203HOW	HEAVY	-1	UNSP	3	BADL	20.0
123	MERO-WWII-CDSS	GERMANY	4US AR DIV A	8DE	11/14/44	203HOW	HEAVY	-1	UNSP	2	BAPD	16.0
3306	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	203HOW	HEAVY	2	UNSP	1	ATKL	-1.0
3309	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	203HOW	HEAVY	2	UNSP	2	ATKN	33.5
3327	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	203HOW	HEAVY	2	UNSP	2	ATKN	33.5
186	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	203HOW	HEAVY	16	UNSP	1	BADL	50.6
3418	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	203HOW	HEAVY	2	UNSP	1	ATKL	37.0
195	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	203HOW	HEAVY	13	UNSP	2	BAPD	19.6
3520	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	203HOW	HEAVY	1	UNSP	2	ATKN	16.0
204	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	203HOW	HEAVY	10	UNSP	3	BAPD	26.7
3589	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	203HOW	HEAVY	6	UNSP	2	ATKN	16.5
214	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	203HOW	HEAVY	5	UNSP	2	BAPD	7.2
3698	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	203HOW	HEAVY	6	UNSP	2	ATKN	9.0
3721	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	203HOW	HEAVY	2	UNSP	3	ATKL	22.0
3687	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	203HOW	HEAVY	14	UNSP	2	ATKN	13.4
138	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	203HOW	HEAVY	2	UNSP	1	BAPD	17.5
140	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	203HOW	HEAVY	6	UNSP	3	BADL	7.8
3676	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	203HOW	HEAVY	5	UNSP	8	ATKL	14.4
3732	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	203HOW	HEAVY	2	UNSP	3	ATKN	33.5
150	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	203HOW	HEAVY	8	UNSP	2	BAPD	11.8
3743	MERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	203HOW	HEAVY	12	UNSP	1	ATKN	37.4
3765	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	203HOW	HEAVY	-1	UNSP	1	ATKN	-5.8
3754	MERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	203HOW	HEAVY	2	UNSP	2	ATKL	17.0
156	MERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	203HOW	HEAVY	15	UNSP	2	BAPD	9.7
23.	MERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	203HOW	HEAVY	3	UNSP	1	BADL	16.7
242	MERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	203HOW	HEAVY	3	UNSP	2	FD	30.7
3240	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	203HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3273	MERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	203HOW	HEAVY	-1	UNSP	2	DEFN	30.7
3300	MERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	203HOW	HEAVY	-1	UNSP	2	DEFN	30.7
258	MERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	203HOW	HEAVY	3	UNSP	2	FD	45.7
3251	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	203HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3284	MERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	203HOW	HEAVY	-1	UNSP	2	DEFN	45.7
3317	MERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	203HOW	HEAVY	-1	UNSP	2	DEFN	45.7
3262	MERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	203HOW	HEAVY	-1	UNSP	3	DEFN	-1.0
3122	MERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/22/45	203HOW	HEAVY	12	UNSP	1	UNSP	30.6
3135	MERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/22/45	203HOW	HEAVY	23	UNSP	1	UNSP	51.9
3142	MERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	203HOW	HEAVY	25	UNSP	1	UNSP	-1.0
3152	MERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	203HOW	HEAVY	26	UNSP	1	UNSP	-1.0
3166	MERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	203HOW	HEAVY	12	UNSP	1	UNSP	31.3
3175	MERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	203HOW	HEAVY	24	UNSP	1	UNSP	90.5
3180	MERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/18/45	203HOW	HEAVY	9	UNSP	1	UNSP	7.5
3181	MERO-WWII-CDSS	RHINE CROSS	XVIUKCORPS	CORPS	03/18/45	203HOW	HEAVY	48	UNSP	1	UNSP	1.3
3182	MERO-WWII-CDSS	RHINE CROSS	XIIIUKCORPS	CORPS	03/19/45	203HOW	HEAVY	24	UNSP	1	UNSP	4.5

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	RDTUBEDAY
3182	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/19/45	203HOW	HEAVY	24	UNSP	1	UNSP	6.5
3183	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/19/45	203HOW	HEAVY	59	UNSP	1	UNSP	1.5
3184	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/20/45	203HOW	HEAVY	24	UNSP	1	UNSP	5.2
3185	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/20/45	203HOW	HEAVY	61	UNSP	1	UNSP	3.7
3186	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/21/45	203HOW	HEAVY	24	UNSP	1	UNSP	6.3
3187	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/21/45	203HOW	HEAVY	60	UNSP	1	UNSP	3.1
3188	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/22/45	203HOW	HEAVY	24	UNSP	1	UNSP	2.8
3189	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/22/45	203HOW	HEAVY	61	UNSP	1	UNSP	1.5
3190	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/23/45	203HOW	HEAVY	24	UNSP	1	UNSP	10.8
3191	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/23/45	203HOW	HEAVY	60	UNSP	1	UNSP	6.9
3192	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/24/45	203HOW	HEAVY	24	UNSP	1	UNSP	36.8
3193	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/24/45	203HOW	HEAVY	60	UNSP	1	UNSP	143.0
3194	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/25/45	203HOW	HEAVY	24	UNSP	1	UNSP	15.1
3195	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/25/45	203HOW	HEAVY	60	UNSP	1	UNSP	34.1
3196	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/26/45	203HOW	HEAVY	24	UNSP	1	UNSP	33.5
3197	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/26/45	203HOW	HEAVY	60	UNSP	1	UNSP	7.8
3198	HERO-WWII-CDSS	RHINE CROSS	XIIIUSCORPS	CORPS	03/27/45	203HOW	HEAVY	24	UNSP	1	UNSP	7.2
3199	HERO-WWII-CDSS	RHINE CROSS	XVIUSCORPS	CORPS	03/27/45	203HOW	HEAVY	30	UNSP	1	UNSP	26.6
3204	HERO-WWII-CDSS	PO VALLEY	II CORPS	CORPS	04/14/45	203HOW	HEAVY	-1	UNSP	2	ATEN	66.0
3209	HERO-WWII-CDSS	PO VALLEY	IV CORPS	CORPS	04/14/45	203HOW	HEAVY	-1	UNSP	5	ATEN	28.0
354	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	203HOW	HEAVY	-1	UNSP	780	UNSP	25.9
1949	CGSC-K-1	KOREA	US ARMY	THEA	01/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	1.3
358	CGSC-K-1	KOREA	US ARMY	THEA	02/01/51	203HOW	HEAVY	-1	UNSP	30	UNSP	3.8
1952	CGSC-K-1	KOREA	US ARMY	THEA	02/01/51	203HOW	HEAVY	-1	UNSP	28	UNSP	3.8
361	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	203HOW	HEAVY	-1	UNSP	30	UNSP	20.5
1955	CGSC-K-1	KOREA	US ARMY	THEA	03/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	20.5
364	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	203HOW	HEAVY	-1	UNSP	30	UNSP	15.3
1958	CGSC-K-1	KOREA	US ARMY	THEA	04/01/51	203HOW	HEAVY	-1	UNSP	30	UNSP	15.3
367	CGSC-K-1	KOREA	US ARMY	THEA	05/01/51	203HOW	HEAVY	-1	UNSP	30	ATEN	20.2
1961	CGSC-K-1	KOREA	US ARMY	THEA	05/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	20.2
370	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	203HOW	HEAVY	-1	UNSP	30	ATEN	30.6
1964	CGSC-K-1	KOREA	US ARMY	THEA	06/01/51	203HOW	HEAVY	-1	UNSP	30	UNSP	30.6
373	CGSC-K-1	KOREA	US ARMY	THEA	07/01/51	203HOW	HEAVY	-1	UNSP	30	ATEN	34 9
1967	CGSC-K-1	KOREA	US ARMY	THEA	07/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	34.9
2067	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	07/21/51	203HOW	HEAVY	12	UNSP	1	UNSP	23 7
376	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	203HOW	HEAVY	-1	UNSP	30	ATEN	51.1
1970	CGSC-K-1	KOREA	US ARMY	THEA	08/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	51.1
2068	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/01/51	203HOW	HEAVY	12	UNSP	1	UNSP	22.8
2262	HERO-WWII-K-CDSS	KOREA	XCORPS	CORPS	08/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	34 0
2069	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/02/51	203HOW	HEAVY	12	UNSP	1	UNSP	27.3
2070	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/03/51	203HOW	HEAVY	12	UNSP	1	UNSP	17.9
2071	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/04/51	203HOW	HEAVY	12	UNSP	1	UNSP	13.8
2072	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/05/51	203HOW	HEAVY	12	UNSP	1	UNSP	13.1
2073	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/06/51	203HOW	HEAVY	12	UNSP	1	UNSP	1.6
2074	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/07/51	203HOW	HEAVY	12	UNSP	1	UNSP	18.0
2075	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/08/51	203HOW	HEAVY	12	UNSP	1	UNSP	13 9
2076	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/09/51	203HOW	HEAVY	12	UNSP	1	UNSP	36.0
2077	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/10/51	203HOW	HEAVY	12	UNSP	1	UNSP	7.5
2078	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/11/51	203HOW	HEAVY	12	UNSP	1	UNSP	8.5
2079	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/12/51	203HOW	HEAVY	12	UNSP	1	UNSP	15.0
2080	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/13/51	203HOW	HEAVY	12	UNSP	1	UNSP	20 2
2081	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/14/51	203HOW	HEAVY	12	UNSP	1	UNSP	13.9
2082	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/15/51	203HOW	HEAVY	12	UNSP	1	UNSP	17.5
2083	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/16/51	203HOW	HEAVY	12	UNSP	1	UNSP	63.8
2084	HERO-WWII-K-CDSS	KOREA	X CORPS	CORPS	08/17/51	203HOW	HEAVY	12	UNSP	1	UNSP	91 8

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
2684	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/17/51	203HOW	HEAVY	12	UNSP	1	UNSP	91.0
2685	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/18/51	203HOW	HEAVY	12	UNSP	1	UNSP	171.5
2686	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/19/51	203HOW	HEAVY	12	UNSP	1	UNSP	79.5
2687	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/20/51	203HOW	HEAVY	12	UNSP	1	UNSP	49.9
2688	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/21/51	203HOW	HEAVY	12	UNSP	1	UNSP	25.5
2689	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/22/51	203HOW	HEAVY	12	UNSP	1	UNSP	14.8
2690	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/23/51	203HOW	HEAVY	12	UNSP	1	UNSP	27.0
2691	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/24/51	203HOW	HEAVY	12	UNSP	1	UNSP	78.6
2692	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/25/51	203HOW	HEAVY	12	UNSP	1	UNSP	48.2
2693	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/26/51	203HOW	HEAVY	12	UNSP	1	UNSP	67.4
2694	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/27/51	203HOW	HEAVY	12	UNSP	1	UNSP	31.3
2695	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/28/51	203HOW	HEAVY	12	UNSP	1	UNSP	10.8
2696	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/29/51	203HOW	HEAVY	12	UNSP	1	UNSP	42.2
2697	CDSS FAKE 1977	KOREA	X CORPS	CORPS	08/30/51	203HOW	HEAVY	12	UNSP	1	UNSP	20.5
2646	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	08/31/51	203HOW	HEAVY	12	UNSP	1	UNSP	77.3
379	CGSC-E-1	KOREA	US ARMY	THEA	09/01/51	203HOW	HEAVY	-1	UNSP	20	ATKN	20.8
1973	CGSC-E-1	KOREA	US ARMY	THEA	09/01/51	203HOW	HEAVY	-1	UNSP	20	UNSP	20.8
2263	HERO-WWII-E-CDSS	KOREA	XCORPS	CORPS	09/01/51	203HOW	HEAVY	-1	UNSP	20	UNSP	22.1
2687	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/01/51	203HOW	HEAVY	12	UNSP	1	UNSP	84.3
2688	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/02/51	203HOW	HEAVY	12	UNSP	1	UNSP	74.3
2689	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/03/51	203HOW	HEAVY	12	UNSP	1	UNSP	44.4
2690	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/04/51	203HOW	HEAVY	12	UNSP	1	UNSP	15.8
2691	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/05/51	203HOW	HEAVY	12	UNSP	1	UNSP	3.7
2692	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/06/51	203HOW	HEAVY	12	UNSP	1	UNSP	11.3
2693	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/07/51	203HOW	HEAVY	12	UNSP	1	UNSP	-1.0
2694	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/08/51	203HOW	HEAVY	12	UNSP	1	UNSP	21.7
2695	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/09/51	203HOW	HEAVY	12	UNSP	1	UNSP	69.2
2696	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/10/51	203HOW	HEAVY	12	UNSP	1	UNSP	35.1
2697	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/11/51	203HOW	HEAVY	12	UNSP	1	UNSP	19.0
2698	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/12/51	203HOW	HEAVY	12	UNSP	1	UNSP	25.4
2699	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/13/51	203HOW	HEAVY	12	UNSP	1	UNSP	61.2
2700	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/14/51	203HOW	HEAVY	12	UNSP	1	UNSP	31.7
2701	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/15/51	203HOW	HEAVY	12	UNSP	1	UNSP	53.6
2702	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/16/51	203HOW	HEAVY	12	UNSP	1	UNSP	26.9
2703	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/17/51	203HOW	HEAVY	12	UNSP	1	UNSP	12.6
2704	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/18/51	203HOW	HEAVY	12	UNSP	1	UNSP	37.8
2705	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/19/51	203HOW	HEAVY	12	UNSP	1	UNSP	23.8
2706	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/20/51	203HOW	HEAVY	12	UNSP	1	UNSP	37.5
2707	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/21/51	203HOW	HEAVY	12	UNSP	1	UNSP	29.9
2708	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/22/51	203HOW	HEAVY	12	UNSP	1	UNSP	31.7
2709	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/23/51	203HOW	HEAVY	12	UNSP	1	UNSP	48.7
2710	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/24/51	203HOW	HEAVY	12	UNSP	1	UNSP	29.4
2711	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/25/51	203HOW	HEAVY	12	UNSP	1	UNSP	24.4
2712	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/26/51	203HOW	HEAVY	12	UNSP	1	UNSP	26.4
2713	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/27/51	203HOW	HEAVY	12	UNSP	1	UNSP	19.6
2714	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/28/51	203HOW	HEAVY	12	UNSP	1	UNSP	8.2
2715	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/29/51	203HOW	HEAVY	12	UNSP	1	UNSP	18.1
2524	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	09/30/51	203HOW	HEAVY	12	UNSP	1	UNSP	32.9
362	CGSC-E-1	KOREA	US ARMY	THEA	10/01/51	203HOW	HEAVY	-1	UNSP	20	ATKN	41.7
650	CMH-E-1 & CGSC-E-1	KOREA	US ARMY	THEA	10/01/51	203HOW	HEAVY	-1	UNSP	31	UNSP	41.7
2264	HERO-WWII-E-CDSS	KOREA	XCORPS	CORPS	10/01/51	203HOW	HEAVY	-1	UNSP	22	UNSP	41.1
2525	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/01/51	203HOW	HEAVY	12	UNSP	1	UNSP	44.3
2526	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/02/51	203HOW	HEAVY	12	UNSP	1	UNSP	62.4
2527	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/03/51	203HOW	HEAVY	12	UNSP	1	UNSP	18.0
2528	HERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/04/51	203HOW	HEAVY	12	UNSP	1	UNSP	42.6

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEQD	DAYSQUANT	OPERATION	RDTUBEDAY
2526	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/04/51	203NOW	HEAVY	12	UNSP	1	UNSP	42.6
2529	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/05/51	203NOW	HEAVY	12	UNSP	1	UNSP	26.0
2530	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/06/51	203NOW	HEAVY	12	UNSP	1	UNSP	47.4
2531	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/07/51	203NOW	HEAVY	12	UNSP	1	UNSP	68.1
2532	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/08/51	203NOW	HEAVY	12	UNSP	1	UNSP	72 9
2533	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/09/51	203NOW	HEAVY	12	UNSP	1	UNSP	44.8
2534	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/10/51	203NOW	HEAVY	12	UNSP	1	UNSP	25.5
2535	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/11/51	203NOW	HEAVY	12	UNSP	1	UNSP	25.2
2536	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/12/51	203NOW	HEAVY	12	UNSP	1	UNSP	9.1
2537	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/13/51	203NOW	HEAVY	12	UNSP	1	UNSP	40.5
2538	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/14/51	203NOW	HEAVY	12	UNSP	1	UNSP	61.9
2539	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/15/51	203NOW	HEAVY	12	UNSP	1	UNSP	47.6
2540	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/16/51	203NOW	HEAVY	12	UNSP	1	UNSP	40.2
2541	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/17/51	203NOW	HEAVY	12	UNSP	1	UNSP	62.5
2542	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/18/51	203NOW	HEAVY	12	UNSP	1	UNSP	60.6
2543	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/19/51	203NOW	HEAVY	12	UNSP	1	UNSP	24.5
2544	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/20/51	203NOW	HEAVY	12	UNSP	1	UNSP	14.5
2545	NERO-WWII-E-CDSS	KOREA	X CORPS	CORPS	10/21/51	203NOW	HEAVY	12	UNSP	1	UNSP	42.8
385	CGSC-E-1	KOREA	US ARMY	THEA	11/01/51	203KOW	HEAVY	-1	UNSP	30	ATKN	30.6
631	CMH-E-1 & CGSC-E-1	KOREA	US ARMY	THEA	11/01/51	203NOW	HEAVY	-1	UNSP	31	UNSP	30.6
388	CGSC-E-1	KOREA	US ARMY	THEA	12/01/51	203NOW	HEAVY	-1	UNSP	30	ATKN	25.1
632	CMH-E-1 & CGSC-E-1	KOREA	US ARMY	THEA	12/01/51	203NOW	HEAVY	-1	UNSP	31	UNSP	25.1
653	CMH-E-1	KOREA	US ARMY	THEA	01/01/52	203KOW	HEAVY	-1	UNSP	31	UNSP	-1.0
654	CMH-E-1	KOREA	US ARMY	THEA	02/01/52	203KOW	HEAVY	-1	UNSP	29	UNSP	-1.0
655	CMH-E-1	KOREA	US ARMY	THEA	03/01/52	203KOW	HEAVY	-1	UNSP	31	UNSP	-1.0
656	CMH-E-1	KOREA	US ARMY	THEA	04/01/52	203KOW	HEAVY	-1	UNSP	30	UNSP	-1.0
657	CMH-E-1	KOREA	US ARMY	THEA	05/01/52	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
658	CMH-E-1	KOREA	US ARMY	THEA	06/01/52	203NOW	HEAVY	-1	UNSP	30	UNSP	-1.0
659	CMH-E-1	KOREA	US ARMY	THEA	07/01/52	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
660	CMH-E-1	KOREA	US ARMY	THEA	08/01/52	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
661	CMH-E-1	KOREA	US ARMY	THEA	09/01/52	203NOW	HEAVY	-1	UNSP	30	UNSP	-1.0
662	CMH-E-1	KOREA	US ARMY	THEA	10/01/52	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
663	CMH-E-1	KOREA	US ARMY	THEA	11/01/52	203NOW	HEAVY	-1	UNSP	30	UNSP	-1 0
664	CMH-E-1	KOREA	US ARMY	THEA	12/01/52	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
665	CMH-E-1	KOREA	US ARMY	THEA	01/01/53	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
666	CMH-E-1	KOREA	US ARMY	THEA	02/01/53	203NOW	HEAVY	-1	UNSP	28	UNSP	-1.0
667	CMH-E-1	KOREA	US ARMY	THEA	03/01/53	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
668	CMH-E-1	KOREA	US ARMY	THEA	04/01/53	203NOW	HEAVY	-1	UNSP	30	UNSP	-1.0
669	CMH-E-1	KOREA	US ARMY	THEA	05/01/53	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
670	CMH-E-1	KOREA	US ARMY	THEA	06/01/53	203NOW	HEAVY	-1	UNSP	30	UNSP	-1.0
671	CMH-E-1	KOREA	US ARMY	THEA	07/01/53	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
672	CMH-E-1	KOREA	US ARMY	THEA	08/01/53	203NOW	HEAVY	-1	UNSP	31	UNSP	-1.0
609	CMH-VH-1	PRE-TET	1US IN DIV	DIV	01/30/67	203KOW	HEAVY	-1	UNSP	180	PD	-1.0
610	CMH-VH-1	TET	1US IN DIV	DIV	02/01/67	203HOW	HEAVY	-1	UNSP	30	PD	-1.0
392	NA-VH-1	OP JUNC CITY	1US IN DIV	DIV	02/22/67	203HOW	HEAVY	-1	HE	21	PROH	7 6
396	NA-VH-1	OP JUNC CITY	1US IN DIV	DIV	03/15/67	203HOW	HEAVY	-1	HE	31	PROH	25.8
614	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	203NOW	HEAVY	-1	UNSP	360	UNSP	26.6
616	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	203NOW	HEAVY	-1	UNSP	365	UNSP	26.6
632	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/67	203NOW	HEAVY	-1	UNSP	365	UNSP	-1 0
2866	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	07/01/68	203NOW	HEAVY	-1	UNSP	31	UNSP	25.8
2872	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	08/01/68	203NOW	HEAVY	-1	UNSP	31	UNSP	17 9
2878	AMC-VH-COLDEV	VIETNAM	US ARMY	THEA	09/01/68	203NOW	HEAVY	-1	UNSP	30	UNSP	17.5
619	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	203NOW	HEAVY	-1	UNSP	366	UNSP	19.6
615	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	203NOW	HEAVY	-1	UNSP	365	UNSP	19.6
633	AMC-VH-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	203NOW	HEAVY	-1	UNSP	365	UNSP	-1.0

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
633	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	203NOW	HEAVY	-4	UNSP	365	UNSP	-1.0
2884	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/68	203NOW	HEAVY	-1	UNSP	31	UNSP	15.8
2890	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/68	203NOW	HEAVY	-1	UNSP	30	UNSP	18 1
2896	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/68	203NOW	HEAVY	-1	UNSP	31	UNSP	19.8
2902	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/69	203NOW	HEAVY	-1	UNSP	31	UNSP	18.1
2908	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/69	203NOW	HEAVY	-1	UNSP	28	UNSP	20.8
2914	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/69	203NOW	HEAVY	-1	UNSP	31	UNSP	23 6
2920	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/69	203NOW	HEAVY	-1	UNSP	31	UNSP	20.9
2926	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/69	203NOW	HEAVY	-1	UNSP	31	UNSP	19.8
431	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	203NOW	HEAVY	-1	UNSP	30	UNSP	25.8
602	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	07/01/69	203NOW	HEAVY	77	UNSP	30	UNSP	19.3
603	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	08/01/69	203NOW	HEAVY	72	UNSP	30	UNSP	24.3
604	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	09/01/69	203NOW	HEAVY	77	UNSP	30	UNSP	20.1
425	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	203NOW	HEAVY	-1	UNSP	366	UNSP	33.9
605	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	203NOW	HEAVY	65	UNSP	30	UNSP	23.2
616	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	203NOW	HEAVY	-1	UNSP	365	UNSP	23.5
634	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	10/01/69	203NOW	HEAVY	-1	UNSP	365	UNSP	-1.0
606	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	11/01/69	203NOW	HEAVY	73	UNSP	30	UNSP	23.6
607	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	12/01/69	203NOW	HEAVY	71	UNSP	30	UNSP	21.8
608	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	01/01/70	203NOW	HEAVY	69	UNSP	30	UNSP	18.4
609	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	02/01/70	203NOW	HEAVY	58	UNSP	30	UNSP	20 6
610	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	03/01/70	203NOW	HEAVY	64	UNSP	30	UNSP	20.7
611	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	04/01/70	203NOW	HEAVY	65	UNSP	30	UNSP	23 3
612	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	05/01/70	203NOW	HEAVY	68	UNSP	30	UNSP	23.8
613	AMC-VN-COLEDV	VIETNAM	US ARMY	THEA	06/01/70	203NOW	HEAVY	56	UNSP	30	UNSP	31.2
257	FM101-10-1 JUL 76	NONE	AB DIV	DIV	07/30/76	203NOW	HEAVY	-1	NE	1	FBON	30 0
26	ORO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	203NOWT	HEAVY	-1	NE	30	ATKN	-1.0
31	ORO-WWII-1	OKINAWA	XXIV&III	2CORPS	05/01/45	203NOWT	HEAVY	-1	NE	83	ATKN	-3.0
292	TOI-WWII-1	ITALY	XIVS CORPS	CORPS	01/01/43	240NOW	HEAVY	-1	NE	720	ATKN	15 0
27	ORO-WWII-1	ANZIO	VI CORPS	CORPS	04/01/44	240NOW	HEAVY	-1	NE	30	ATKN	-1.0
67	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	240NOW	HEAVY	3	UNSP	17	BAPD	61.7
78	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	240NOW	HEAVY	3	UNSP	17	BAND	36.6
90	HERO-WWI-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	240NOW	HEAVY	3	UNSP	17	BADL	31.7
3548	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	240NOW	HEAVY	3	UNSP	2	ATKN	61.5
3552	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	240NOW	HEAVY	3	UNSP	2	ATKN	31.7
3576	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	240NOW	HEAVY	2	UNSP	2	ATKL	30.8
3368	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	240NOW	HEAVY	3	UNSP	1	ATKL	0.3
3564	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	240NOW	HEAVY	3	UNSP	2	ATKN	19.8
3588	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	240NOW	HEAVY	2	UNSP	2	ATKL	17.8
269	CMH-WWII-1	WWII EUR	ALL	THEA	06/01/44	240NOW	HEAVY	-1	NE	180	UNSP	6.3
251	CMH WWII-3	GERMANY	12US ARMY GP	ARMYGP	06/06/44	240NOW	HEAVY	-1	UNSP	180	ATKN	-1.0
315	CMH-WWII-2	GERMANY	1US ARMY	1ARMY	07/02/44	240NOW	HEAVY	-1	NE	7	ATKN	10.0
323	CMH WWII-2	GERMANY	1US ARMY	1ARMY	07/09/44	240NOW	HEAVY	-1	NE	7	ATKN	-1.0
338	CMH WWII-2	GERMANY	1US ARMY	1ARMY	07/23/44	240NOW	HEAVY	-1	NE	7	ATKN	7.0
171	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	240NOW	HEAVY	2	UNSP	4	BAPD	1 0
3330	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	240NOW	HEAVY	-1	UNSP	2	ATKN	6.3
98	HERO-WWII-CDSS	GERMANY	4US AB DIV A	BDE	11/10/44	240NOW	HEAVY	-1	UNSP	3	BAPD	2.0
108	HERO-WWII-CDSS	GERMANY	4US AB DIV B	2BDE	11/10/44	240NOW	HEAVY	-1	UNSP	1	BAPD	1.0
3100	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	240NOW	HEAVY	1	UNSP	2	ATLL	2.0
3379	HERO WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	240NOW	HEAVY	1	UNSP	3	ATKL	1 0
3297	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	240NOW	HEAVY	-1	UNSP	1	DEFN	2.0
3390	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	240NOW	HEAVY	2	UNSP	1	ATKL	-1.0
2401	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	240NOW	HEAVY	1	UNSP	2	ATKN	6.0
3529	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	240NOW	HEAVY	1	UNSP	2	ATKN	6 0
146	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	240NOW	HEAVY	2	UNSP	1	BADL	15 5

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDLY
188	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	240HOW	HEAVY	2	UNSP	1	BADL	15.5
3412	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	240HOW	HEAVY	2	UNSP	1	ATKL	15.5
197	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	240HOW	HEAVY	2	UNSP	2	BAPD	2.5
3522	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	240HOW	HEAVY	2	UNSP	2	ATKN	2.5
206	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	240HOW	HEAVY	2	UNSP	2	BAPD	2.5
3511	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	240HOW	HEAVY	2	UNSP	2	ATKN	2.5
216	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	240HOW	HEAVY	2	UNSP	2	BAPD	2.5
3500	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	240HOW	HEAVY	2	UNSP	2	ATKN	2.5
3423	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	240HOW	HEAVY	2	UNSP	3	ATKL	7.5
3489	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	240HOW	HEAVY	2	UNSP	2	ATKN	10.0
132	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	240HOW	HEAVY	2	UNSP	1	BAPD	5.0
142	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	240HOW	HEAVY	2	UNSP	2	BADL	5.0
3470	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	240HOW	HEAVY	3	UNSP	3	ATKL	6.0
3434	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	240HOW	HEAVY	1	UNSP	3	ATKN	17.0
152	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	240HOW	HEAVY	4	UNSP	2	BAPD	9.5
224	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	240HOW	HEAVY	3	UNSP	1	BAPD	15.7
3465	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	240HOW	HEAVY	3	UNSP	1	ATKN	15.7
3467	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	240HOW	HEAVY	3	UNSP	1	ATKN	15.7
3456	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	240HOW	HEAVY	3	UNSP	2	ATKL	2.3
161	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	240HOW	HEAVY	3	UNSP	3	BAPD	3.3
234	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	240HOW	HEAVY	3	UNSP	1	BADL	2.0
3242	HERO-WWII-CDSS	ITALY&NW EUR	6TH US DIV	DIV	12/16/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3275	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3308	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3253	HERO-WWII-CDSS	ITALY&NW EUR	6TH US DIV	DIV	12/18/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3286	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3319	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	240HOW	HEAVY	-1	UNSP	2	DEFN	-1.0
3264	HERO-WWII-CDSS	ITALY&NW EUR	6TH US DIV	DIV	12/20/44	240HOW	HEAVY	-1	UNSP	3	DEFN	-1.0
3129	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/22/45	240HOW	HEAVY	-1	UNSP	1	UNSP	-1.0
3144	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/22/45	240HOW	HEAVY	18	UNSP	1	UNSP	-1.0
3154	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	240HOW	HEAVY	18	UNSP	1	UNSP	-1.0
3159	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	1ARMY	02/23/45	240HOW	HEAVY	18	UNSP	1	UNSP	36.6
719	CMH-K-1	KOREA	US ARMY	THEA	10/01/51	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
720	CMH-K-1	KOREA	US ARMY	THEA	11/01/51	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
721	CMH-K-1	KOREA	US ARMY	THEA	12/01/51	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
722	CMH-K-1	KOREA	US ARMY	THEA	01/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
723	CMH-K-1	KOREA	US ARMY	THEA	02/01/52	240HOW	HEAVY	-1	UNSP	29	UNSP	-1.0
724	CMH-K-1	KOREA	US ARMY	THEA	03/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
725	CMH-K-1	KOREA	US ARMY	THEA	04/01/52	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
726	CMH-K-1	KOREA	US ARMY	THEA	05/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
727	CMH-K-1	KOREA	US ARMY	THEA	06/01/52	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
728	CMH-K-1	KOREA	US ARMY	THEA	07/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
729	CMH-K-1	KOREA	US ARMY	THEA	08/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
730	CMH-K-1	KOREA	US ARMY	THEA	09/01/52	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
731	CMH-K-1	KOREA	US ARMY	THEA	10/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
732	CMH-K-1	KOREA	US ARMY	THEA	11/01/52	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
733	CMH-K-1	KOREA	US ARMY	THEA	12/01/52	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
734	CMH-K-1	KOREA	US ARMY	THEA	01/01/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
735	CMH-K-1	KOREA	US ARMY	THEA	02/01/53	240HOW	HEAVY	-1	UNSP	28	UNSP	-1.0
736	CMH-K-1	KOREA	US ARMY	THEA	03/01/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
737	CMH-K-1	KOREA	US ARMY	THEA	04/01/53	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
738	CMH-K-1	KOREA	US ARMY	THEA	05/01/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
739	CMH-K-1	KOREA	US ARMY	THEA	06/01/53	240HOW	HEAVY	-1	UNSP	30	UNSP	-1.0
740	CMH-K-1	KOREA	US ARMY	THEA	07/01/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
741	CMH-K-1	KOREA	US ARMY	THEA	08/01/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
741	CMH-E-1	KOREA	US ARMY	THEA	08/31/53	240HOW	HEAVY	-1	UNSP	31	UNSP	-1.0
70	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	HEAVY		16	UNSP	17	BAPD	105.1
81	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	HEAVY		16	UNSP	17	BAND	32.7
93	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	HEAVY		16	UNSP	17	BADL	99.2
3543	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	HEAVY	HEAVY	16	UNSP	2	ATKN	105.1
3555	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	HEAVY	HEAVY	16	UNSP	2	ATKN	99.2
3570	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	HEAVY	HEAVY	15	UNSP	2	ATKL	66.5
3371	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	HEAVY	HEAVY	12	UNSP	2	ATKL	12.8
3567	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	HEAVY	HEAVY	12	UNSP	2	ATKN	20.3
3591	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	HEAVY	HEAVY	12	UNSP	2	ATKL	17.5
174	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	HEAVY		23	UNSP	4	BAPD	20.1
3333	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	HEAVY	HEAVY	-1	UNSP	2	ATKN	42.4
101	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/10/44	HEAVY		5	UNSP	2	BAPD	23.6
111	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	HEAVY		5	UNSP	1	BAPD	16.6
3382	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	HEAVY	HEAVY	9	UNSP	3	ATKL	18.7
3300	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	HEAVY	HEAVY	-1	UNSP	1	DEFN	29.6
180	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	HEAVY		16	UNSP	4	BADL	25.5
119	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	HEAVY		3	UNSP	3	BADL	40.6
125	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/14/44	HEAVY		3	UNSP	2	BAPD	46.3
3113	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	HEAVY	HEAVY	5	UNSP	1	ATKL	56.6
3393	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	HEAVY	HEAVY	5	UNSP	1	ATKL	50.6
3404	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	HEAVY	HEAVY	9	UNSP	2	ATKN	32.6
3522	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	HEAVY	HEAVY	9	UNSP	2	ATKN	32.6
191	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	HEAVY		22	UNSP	1	BADL	44.2
3415	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	HEAVY	HEAVY	18	UNSP	1	ATKL	33.8
199	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	HEAVY		21	UNSP	2	BAPD	19.3
3525	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	HEAVY	HEAVY	9	UNSP	2	ATKN	20.9
209	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	HEAVY		18	UNSP	2	BAPD	23.1
3514	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	HEAVY	HEAVY	12	UNSP	2	ATKN	15.9
219	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	HEAVY		13	UNSP	2	BAPD	0.2
3503	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	HEAVY	HEAVY	12	UNSP	2	ATKN	9.9
3426	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	HEAVY	HEAVY	18	UNSP	3	ATKL	23.7
3492	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	HEAVY	HEAVY	22	UNSP	3	ATKN	20.6
135	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	HEAVY		18	UNSP	1	BAPD	15.9
145	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	HEAVY		14	UNSP	3	BADL	14.3
3481	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	HEAVY	HEAVY	15	UNSP	3	ATKL	20.6
3437	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	HEAVY	HEAVY	6	UNSP	3	ATKN	41.7
155	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	HEAVY		17	UNSP	2	BAPD	15.8
227	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	HEAVY		9	UNSP	1	BAPD	21.7
3448	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	HEAVY	HEAVY	21	UNSP	1	ATKN	30.7
3470	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	HEAVY	HEAVY	9	UNSP	1	ATKN	21.7
3459	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	HEAVY	HEAVY	18	UNSP	2	ATKL	18.9
163	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	HEAVY		22	UNSP	2	BAPD	6.2
237	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	HEAVY		22	UNSP	1	BADL	15.8
246	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	HEAVY		12	UNSP	2	PD	29.6
3215	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	HEAVY	HEAVY	12	UNSP	1	DEFN	23.6
3245	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	23.8
3278	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	33.0
3311	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	29.4
254	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	HEAVY		9	UNSP	2	PD	44.7
3222	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	HEAVY	HEAVY	12	UNSP	1	DEFN	34.3
3256	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	23.3
3289	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	42.9
3322	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	HEAVY	HEAVY	-1	UNSP	2	DEFN	44.7
3267	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	HEAVY	HEAVY	-1	UNSP	3	DEFN	54.3

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
3267	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	HEAVY	HEAVY	-1	UNSP	3	DEFN	56.3
3229	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	HEAVY	HEAVY	6	UNSP	2	DEFN	56.3
68	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	LIGHT		72	UNSP	17	BAPD	183.6
79	HERO-WWII-CDSS	DIADEM	38US IN DIV	DIV	05/11/44	LIGHT		12	UNSP	17	BAPD	46.8
91	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	LIGHT		72	UNSP	17	BADL	68.6
3541	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	LIGHT	LIGHT	96	UNSP	2	ATKN	208.8
3553	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	LIGHT	LIGHT	102	UNSP	2	ATKN	138 0
3577	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	LIGHT	LIGHT	66	UNSP	2	ATKL	61.8
3369	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	LIGHT	LIGHT	36	UNSP	2	ATKL	16.3
3565	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	LIGHT	LIGHT	66	UNSP	2	ATKN	57.7
3589	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	LIGHT	LIGHT	72	UNSP	2	ATKL	9.6
172	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	LIGHT		29	UNSP	4	BAPD	46.1
3331	HERO-WWII-CDSS	DIADEM	30TH US DIV	DIV	11/08/44	LIGHT	LIGHT	-1	UNSP	2	ATKN	73.7
100	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/10/44	LIGHT		9	UNSP	2	BAPD	0.3
109	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	LIGHT		18	UNSP	1	BAPD	21 7
3105	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	LIGHT	LIGHT	36	UNSP	2	ATKL	36.3
3380	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	LIGHT	LIGHT	45	UNSP	2	ATKL	28.8
3298	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	LIGHT	LIGHT	-1	UNSP	1	DEFN	42.3
179	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	LIGHT		24	UNSP	4	BADL	68.3
117	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	LIGHT		30	UNSP	3	BADL	23.3
124	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/14/44	LIGHT		16	UNSP	2	BAPD	57.8
3111	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	LIGHT	LIGHT	54	UNSP	5	ATKL	78.8
3391	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	LIGHT	LIGHT	48	UNSP	1	ATKL	20.6
3402	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	LIGHT	LIGHT	48	UNSP	2	ATKN	30.8
3530	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	LIGHT	LIGHT	27	UNSP	2	ATKN	76.1
189	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	LIGHT		30	UNSP	1	BADL	56.1
3413	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	LIGHT	LIGHT	48	UNSP	1	ATKL	30.1
198	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	LIGHT		24	UNSP	2	BAPD	41.9
3523	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	LIGHT	LIGHT	36	UNSP	2	ATKN	21.8
207	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	LIGHT		24	UNSP	2	BAPD	45.2
3512	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	LIGHT	LIGHT	36	UNSP	2	ATKN	61.7
217	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	LIGHT		24	UNSP	2	BAPD	20.9
3501	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	LIGHT	LIGHT	36	UNSP	2	ATKN	35.8
3424	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	LIGHT	LIGHT	48	UNSP	3	ATKL	47.4
3490	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	LIGHT	LIGHT	36	UNSP	2	ATKN	69.3
133	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	LIGHT		36	UNSP	1	BAPD	27.3
143	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	LIGHT		54	UNSP	3	BADL	31.6
3479	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	LIGHT	LIGHT	20	UNSP	8	ATKL	20.8
3435	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	LIGHT	LIGHT	48	UNSP	3	ATKN	23.7
153	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	LIGHT		54	UNSP	2	BAPD	63.7
225	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	LIGHT		24	UNSP	1	BAPD	73.6
3446	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	LIGHT	LIGHT	36	UNSP	1	ATKN	76.8
3469	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	LIGHT	LIGHT	36	UNSP	1	ATKN	57.6
3457	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	LIGHT	LIGHT	36	UNSP	2	ATKL	18.8
162	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	LIGHT		27	UNSP	2	BAPD	42.6
235	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	LIGHT		24	UNSP	1	BADL	45.6
244	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	LIGHT		6	UNSP	2	PD	185.2
3213	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	LIGHT	LIGHT	12	UNSP	1	DEFN	45.1
3243	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	LIGHT	LIGHT	15	UNSP	6	DEFN	57.5
3243	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	45.1
3276	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	84 7
3309	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	169.2
252	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	LIGHT		6	UNSP	2	PD	60 8
3220	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	LIGHT	LIGHT	12	UNSP	1	DEFN	169.8
3254	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	169.8

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
3254	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/10/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	165.0
3267	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/10/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	257.7
3320	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/10/44	LIGHT	LIGHT	-1	UNSP	2	DEFN	60.3
3265	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	LIGHT	LIGHT	-1	UNSP	3	DEFN	102.0
3227	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	LIGHT	LIGHT	20	UNSP	2	DEFN	162.0
69	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	MEDIUM		42	UNSP	17	BAPD	138.6
80	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	MEDIUM		40	UNSP	17	BAND	50 1
92	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	MEDIUM		40	UNSP	17	BADL	109.3
3542	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	MEDIUM	MEDIUM	42	UNSP	2	ATKN	168 0
3554	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	MEDIUM	MEDIUM	26	UNSP	2	ATKN	157.3
3578	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	MEDIUM	MEDIUM	28	UNSP	2	ATKL	49.4
3370	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	MEDIUM	MEDIUM	24	UNSP	2	ATKL	31.8
3566	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	MEDIUM	MEDIUM	36	UNSP	2	ATKN	79.4
3590	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	MEDIUM	MEDIUM	27	UNSP	2	ATKL	24.6
173	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	MEDIUM		3	UNSP	4	BAPD	22 7
3332	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	MEDIUM	MEDIUM	-1	UNSP	2	ATKN	21 1
110	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	MEDIUM		12	UNSP	1	BAPD	7.6
3106	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	MEDIUM	MEDIUM	12	UNSP	3	ATKL	37 1
3381	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	MEDIUM	MEDIUM	32	UNSP	3	ATKL	21.7
3299	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	MEDIUM	MEDIUM	-1	UNSP	1	DEFN	17.3
116	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	MEDIUM		12	UNSP	3	BADL	19.5
3112	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	MEDIUM	MEDIUM	12	UNSP	1	ATKL	81 0
3392	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	MEDIUM	MEDIUM	36	UNSP	1	ATKL	36.2
3403	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	MEDIUM	MEDIUM	36	UNSP	2	ATKN	34.2
3531	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	MEDIUM	MEDIUM	6	UNSP	2	ATKN	24.2
190	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	MEDIUM		12	UNSP	1	BADL	21.3
3414	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	MEDIUM	MEDIUM	36	UNSP	1	ATKL	72.3
3524	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	MEDIUM	MEDIUM	24	UNSP	2	ATKN	39.1
208	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	MEDIUM		6	UNSP	2	BAPD	14.2
3513	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	MEDIUM	MEDIUM	6	UNSP	2	ATKN	16.5
218	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	MEDIUM		12	UNSP	2	BAPD	16.8
3502	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	MEDIUM	MEDIUM	12	UNSP	2	ATKN	-1 0
3425	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	MEDIUM	MEDIUM	36	UNSP	3	ATKL	37.6
3491	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	MEDIUM	MEDIUM	12	UNSP	2	ATKN	19.8
134	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	MEDIUM		24	UNSP	1	BAPD	18.6
144	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	MEDIUM		24	UNSP	3	BADL	11.3
3460	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	MEDIUM	MEDIUM	4	UNSP	8	ATKL	12.8
3436	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	MEDIUM	MEDIUM	36	UNSP	3	ATKN	66.9
154	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	MEDIUM		12	UNSP	2	BAPD	15 1
226	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	MEDIUM		12	UNSP	5	BAPD	47.0
3447	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	MEDIUM	MEDIUM	12	UNSP	1	ATKN	50.6
3469	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	MEDIUM	MEDIUM	12	UNSP	1	ATKN	100.5
3458	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	MEDIUM	MEDIUM	12	UNSP	2	ATKL	59.3
236	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	MEDIUM		12	UNSP	1	BADL	12.6
245	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	MEDIUM		12	UNSP	2	PD	82.2
3214	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	MEDIUM	MEDIUM	6	UNSP	1	DEFN	79 0
3234	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	MEDIUM	MEDIUM	12	UNSP	6	DEFN	27.6
3244	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	79.0
3277	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	62.8
3310	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	82.2
253	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	MEDIUM		9	UNSP	2	PD	103 1
3221	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	MEDIUM	MEDIUM	12	UNSP	1	DEFN	79.7
3255	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	79.7
3288	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	116.4
3311	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	103.1

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Records	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPERD	DAYSQUANT	OPERATION	RDTUBEDAY
3321	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	MEDIUM	MEDIUM	-1	UNSP	2	DEFN	163.1
3266	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	MEDIUM	MEDIUM	-1	UNSP	3	DEFN	14.3
3228	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	MEDIUM	MEDIUM	4	UNSP	2	DEFN	14.3
34	BAC-WWII-E-1	SICILY	7TH ARMY	1ARMY	07/10/43	UNSP	UNSP	-1	UNSP	39	ATKN	-1.0
1	BAC-WWII-E-1	SALERNO	3INF DIV	DIV	09/19/43	UNSP	UNSP	-1	UNSP	60	ATKN	-1.0
2	BAC-WWII-E-1	ANZIO	3INF DIV	DIV	01/22/44	UNSP	UNSP	-1	UNSP	67	ATKN	-1.0
3343	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	01/25/44	UNSP	UNSP	-1	UNSP	6	UNSP	72.3
3348	HERO-WWII-CDSS	ANZIO	3RD US DIV	DIV	02/01/44	UNSP	UNSP	-1	UNSP	3	UNSP	127.8
3	BAC-WWII-E-1	BOUGAINVILLE	129INF REGT	BDE	03/09/44	UNSP	UNSP	-1	UNSP	16	DEFN	-1.0
4	BAC-WWII-E-1	GUSTAV LINE	88685 DIV	DIV	05/01/44	UNSP	UNSP	-1	UNSP	28	ATKN	-1.0
71	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	UNSP	UNSP	130	UNSP	17	BAPD	156.1
82	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	UNSP	UNSP	74	UNSP	17	BAHD	45.8
94	HERO-WWII-CDSS	DIADEM	88US IN DIV	DIV	05/11/44	UNSP	UNSP	126	UNSP	17	BADL	88.6
3544	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/12/44	UNSP	UNSP	134	UNSP	2	ATKN	185.7
3556	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/14/44	UNSP	UNSP	156	UNSP	2	ATKN	134.3
3580	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/16/44	UNSP	UNSP	100	UNSP	2	ATKL	44.2
3372	HERO-WWII-CDSS	DIADEM	88TH US DIV	DIV	05/20/44	UNSP	UNSP	72	UNSP	2	ATKL	21.6
3568	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/22/44	UNSP	UNSP	112	UNSP	2	ATKN	58.4
3592	HERO-WWII-CDSS	DIADEM	85TH US DIV	DIV	05/25/44	UNSP	UNSP	111	UNSP	2	ATKL	14.1
175	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/08/44	UNSP	UNSP	55	UNSP	4	BAPD	38.2
3334	HERO-WWII-CDSS	DIADEM	80TH US DIV	DIV	11/08/44	UNSP	UNSP	-1	UNSP	2	ATKN	55.6
102	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/10/44	UNSP	UNSP	14	UNSP	2	BAPD	8.5
112	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/10/44	UNSP	UNSP	35	UNSP	1	BAPD	14.1
3107	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/10/44	UNSP	UNSP	57	UNSP	3	ATKL	32.6
3383	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/10/44	UNSP	UNSP	87	UNSP	3	ATKL	20.8
3301	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	11/11/44	UNSP	UNSP	-1	UNSP	1	DEFN	38.1
181	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/12/44	UNSP	UNSP	48	UNSP	4	BADL	51.3
120	HERO-WWII-CDSS	GERMANY	4US AR DIV B	2BDE	11/13/44	UNSP	UNSP	45	UNSP	2	BADL	23.4
126	HERO-WWII-CDSS	GERMANY	4US AR DIV A	BDE	11/14/44	UNSP	UNSP	21	UNSP	2	BAPD	56.1
3114	HERO-WWII-CDSS	SAAR	6ARDIV	DIV	11/14/44	UNSP	UNSP	71	UNSP	1	ATKL	77.0
3394	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/14/44	UNSP	UNSP	89	UNSP	1	ATKL	28.9
3405	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/15/44	UNSP	UNSP	93	UNSP	2	ATKN	35.3
3533	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/15/44	UNSP	UNSP	42	UNSP	2	ATKN	80.6
192	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/18/44	UNSP	UNSP	94	UNSP	1	BADL	47.6
3416	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/18/44	UNSP	UNSP	94	UNSP	1	ATKL	59.9
200	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/19/44	UNSP	UNSP	45	UNSP	2	BAPD	31.4
3526	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/19/44	UNSP	UNSP	69	UNSP	2	ATKN	27.4
210	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/21/44	UNSP	UNSP	48	UNSP	2	BAPD	33.6
3515	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/21/44	UNSP	UNSP	54	UNSP	2	ATKN	46.5
220	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	11/23/44	UNSP	UNSP	48	UNSP	2	BAPD	10.6
3504	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/23/44	UNSP	UNSP	48	UNSP	2	ATKN	29.3
3427	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/25/44	UNSP	UNSP	96	UNSP	3	ATKL	41.8
3493	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/25/44	UNSP	UNSP	78	UNSP	2	ATKN	43.4
136	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/26/44	UNSP	UNSP	78	UNSP	1	BAPD	27.8
146	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	11/27/44	UNSP	UNSP	92	UNSP	3	BADL	23.7
3482	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	11/27/44	UNSP	UNSP	47	UNSP	8	ATKL	19.5
3436	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	11/28/44	UNSP	UNSP	90	UNSP	3	ATKN	39.5
156	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/01/44	UNSP	UNSP	83	UNSP	2	BAPD	48.2
228	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/04/44	UNSP	UNSP	45	UNSP	1	BAPD	56.1
3449	HERO-WWII-CDSS	SAAR	80TH US DIV	DIV	12/04/44	UNSP	UNSP	69	UNSP	1	ATKN	99.8
3471	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/04/44	UNSP	UNSP	57	UNSP	1	ATKN	73.6
3460	HERO-WWII-CDSS	SAAR	6TH AR DIV	DIV	12/05/44	UNSP	UNSP	58	UNSP	2	ATKL	25.1
164	HERO-WWII-CDSS	GERMANY	4US AR DIV	DIV	12/06/44	UNSP	UNSP	49	UNSP	2	BAPD	26.1
238	HERO-WWII-CDSS	SAAR	35US IN DIV	DIV	12/06/44	UNSP	UNSP	58	UNSP	1	BADL	27.1
247	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	UNSP	UNSP	30	UNSP	2	FD	77.7

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Record#	SOURCE	BATTLE	UNIT	SIZE	DATE	TUBETYPE	TUBECAT	TUBEQUANT	TYPEBD	DAYSQUANT	OPERATION	RDTUBEDAY
247	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/16/44	UNSP	UNSP	30	UNSP	2	PD	77.7
3216	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	UNSP	UNSP	38	UNSP	1	DEFN	63.3
3235	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/16/44	UNSP	UNSP	27	UNSP	6	DEFN	66.2
3246	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/16/44	UNSP	UNSP	-1	UNSP	2	DEFN	63.3
3279	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/16/44	UNSP	UNSP	-1	UNSP	2	DEFN	61.2
3312	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/16/44	UNSP	UNSP	-1	UNSP	2	DEFN	77.7
255	HERO-WWII-CDSS	ARDENNES	99US IN DIV	DIV	12/18/44	UNSP	UNSP	24	UNSP	2	PD	78.5
3223	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/18/44	UNSP	UNSP	38	UNSP	1	DEFN	93.3
3257	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/18/44	UNSP	UNSP	-1	UNSP	2	DEFN	93.3
3290	HERO-WWII-CDSS	ITALY&NW EUR	2D US DIV	DIV	12/18/44	UNSP	UNSP	-1	UNSP	2	DEFN	169.3
3323	HERO-WWII-CDSS	ITALY&NW EUR	99TH US DIV	DIV	12/18/44	UNSP	UNSP	-1	UNSP	2	DEFN	70.5
3268	HERO-WWII-CDSS	ITALY&NW EUR	4TH US DIV	DIV	12/20/44	UNSP	UNSP	-1	UNSP	3	DEFN	82.9
3230	HERO-WWII-CDSS	ARDENNES	4TH US DIV	DIV	12/22/44	UNSP	UNSP	28	UNSP	2	DEFN	82.9
3124	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/22/45	UNSP	UNSP	684	UNSP	1	UNSP	-1.0
3130	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/22/45	UNSP		264	UNSP	1	UNSP	-1.0
3137	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/22/45	UNSP		652	UNSP	1	UNSP	-1.0
3147	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	ARMY	02/22/45	UNSP	UNSP	1545	UNSP	1	UNSP	-1.0
3157	HERO-WWII-CDSS	ROER RIVER	9TH US ARMY	ARMY	02/23/45	UNSP	UNSP	1549	UNSP	1	UNSP	-1.0
3176	HERO-WWII-CDSS	ROER RIVER	XIII CORPS	CORPS	02/23/45	UNSP	UNSP	546	UNSP	1	UNSP	-1.0
3177	HERO-WWII-CDSS	ROER RIVER	XVI CORPS	CORPS	02/23/45	UNSP	UNSP	309	UNSP	1	UNSP	-1.0
3178	HERO-WWII-CDSS	ROER RIVER	XIX CORPS	CORPS	02/23/45	UNSP	UNSP	660	UNSP	1	UNSP	-1.0
3179	HERO-WWII-CDSS	ROER RIVER	US ARMY	ARMY	02/23/45	UNSP	UNSP	54	UNSP	1	UNSP	-1.0
35	RAC-WWII-K-1	KOREA	24INF REGT	ARMY	07/26/50	UNSP	UNSP	-1	UNSP	6	DEFL	-1.0
36	RAC-WWII-K-1	KOREA	25DIV TFKEAN	BN TF	08/07/50	UNSP	UNSP	-1	UNSP	6	ATKN	-1.0
38	RAC-WWII-K-1	KOREA	1CAV DIV	DIV	09/01/50	UNSP	UNSP	-1	UNSP	16	DEFN	-1.0
37	RAC-WWII-K-1	KOREA	7CAV REGT	BDE	09/02/50	UNSP	UNSP	-1	UNSP	6	ATKN	-1.0
39	RAC-WWII-K-1	KOREA	1CAV DIV	DIV	09/17/50	UNSP	UNSP	-1	UNSP	5	ATKN	-1.0
40	RAC-WWII-K-1	KOREA	2INF DIV	DIV	11/25/50	UNSP	UNSP	-1	UNSP	6	DL	-1.0
41	RAC-WWII-K-1	KOREA	25INF DIV	DIV	03/07/51	UNSP	UNSP	-1	UNSP	3	ATKN	-1.0
42	RAC-WWII-K-1	KOREA	24INF DIV	DIV	04/22/51	UNSP	UNSP	-1	UNSP	7	DEFL	-1.0
43	RAC-WWII-K-1	KOREA	2INF DIV	DIV	05/23/51	UNSP	UNSP	-1	UNSP	6	ATKN	-1.0
44	RAC-WWII-K-1	KOREA	38INF REGT	BDE	07/26/51	UNSP	UNSP	-1	UNSP	5	ATKN	-1.0
45	RAC-WWII-K-1	KOREA	9INF REGT	BDE	08/30/51	UNSP	UNSP	-1	UNSP	7	ATKN	-1.0
46	RAC-WWII-K-1	KOREA	23INF REGT	BDE	09/13/51	UNSP	UNSP	-1	UNSP	10	ATKN	-1.0
47	RAC-WWII-K-1	KOREA	19INF REGT	BDE	09/29/51	UNSP	UNSP	-1	UNSP	8	ATKN	-1.0
48	RAC-WWII-K-1	KOREA	3INF DIV	DIV	10/03/51	UNSP	UNSP	-1	NK	7	ATKN	-1.0
49	RAC-WWII-K-1	KOREA	2INF DIV	DIV	10/05/51	UNSP	UNSP	-1	UNSP	11	ATKN	-1.0

APPENDIX G

THE WARRAMP PROCESS

G-1. PURPOSE. The purpose of this appendix is to provide a description of the combat simulation process used to determine wartime requirement for ammunition. This is only a partial description but includes those aspects of the process that are relevant to this study.

G-2. THE WARRAMP PROCESS

a. As a vehicle for comparison with historical data the combat simulation process WARRAMP will be used. The acronym represents the "Wartime Requirements for Ammunition, Materiel, and Petroleum." As its name indicates, WARRAMP is designed to determine requirements not only for ammunition but for major end items of combat equipment and the petroleum stocks necessary to sustain the force. Comparisons made in AHART will concentrate strictly on indirect fire ammunition requirements.

b. WARRAMP is not a single combat simulation. WARRAMP actually describes a process employing two primary simulations, a calibration routine to match the two and a series of pre- and postprocessing routines. Figure G-1 presents a simplified view of the process.

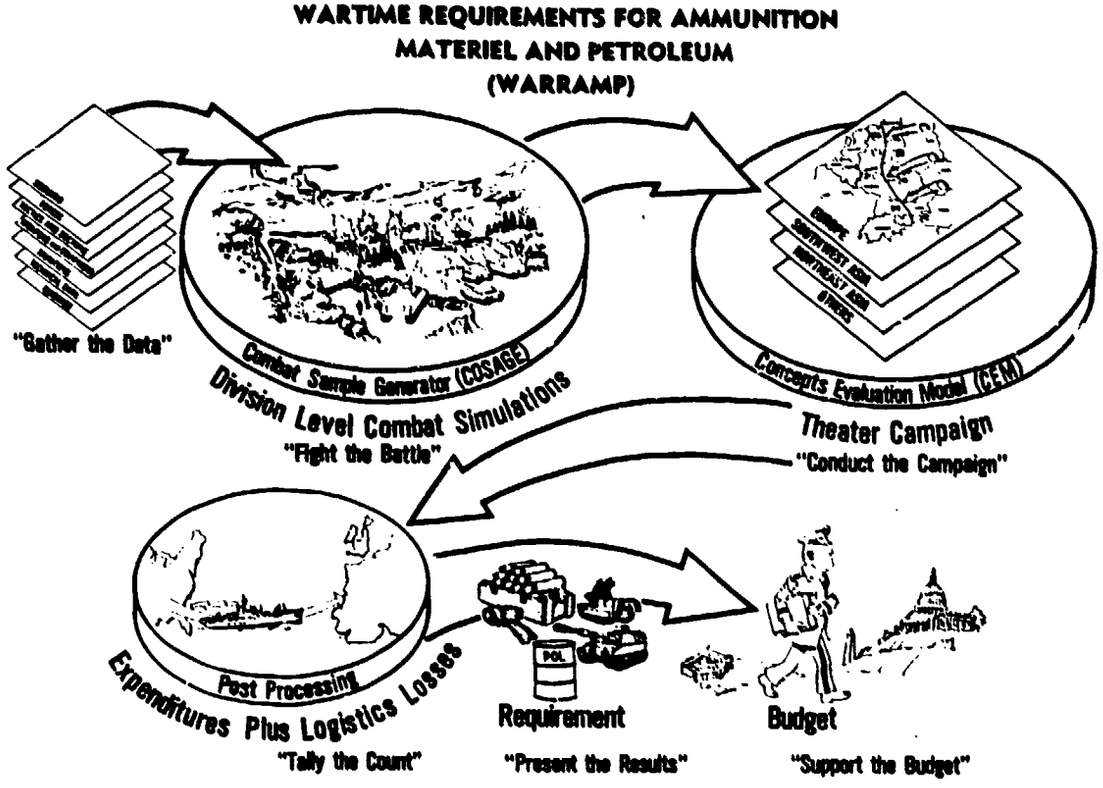

Figure G-1. The WARRAMP Process

c. WARRAMP is designed and used for the express purpose of providing updated quantitative analysis in support of changes made to the current means of deterrence and the current methods of combat. WARRAMP is part of a larger system of analysis known as the Program Objective Memorandum (POM) cycle. The "P-Studies" conducted by the US Army Concepts Analysis Agency and shown in the upper part of Figure G-2 produce, among other results, the "ammo rates" used by the POM. These figures are used to brief Congress and support the budget process.

d. Secondarily, the results of WARRAMP are input to a system of analysis known as the Total Army Analysis (TAA) shown in the lower part of Figure G-2. TAA is designed to determine requirements for administrative and logistic support units that back up the combat units covered in the POM. The "SRA studies" are the quantitative portion of the TAA process conducted at the US Army Concepts Analysis Agency.

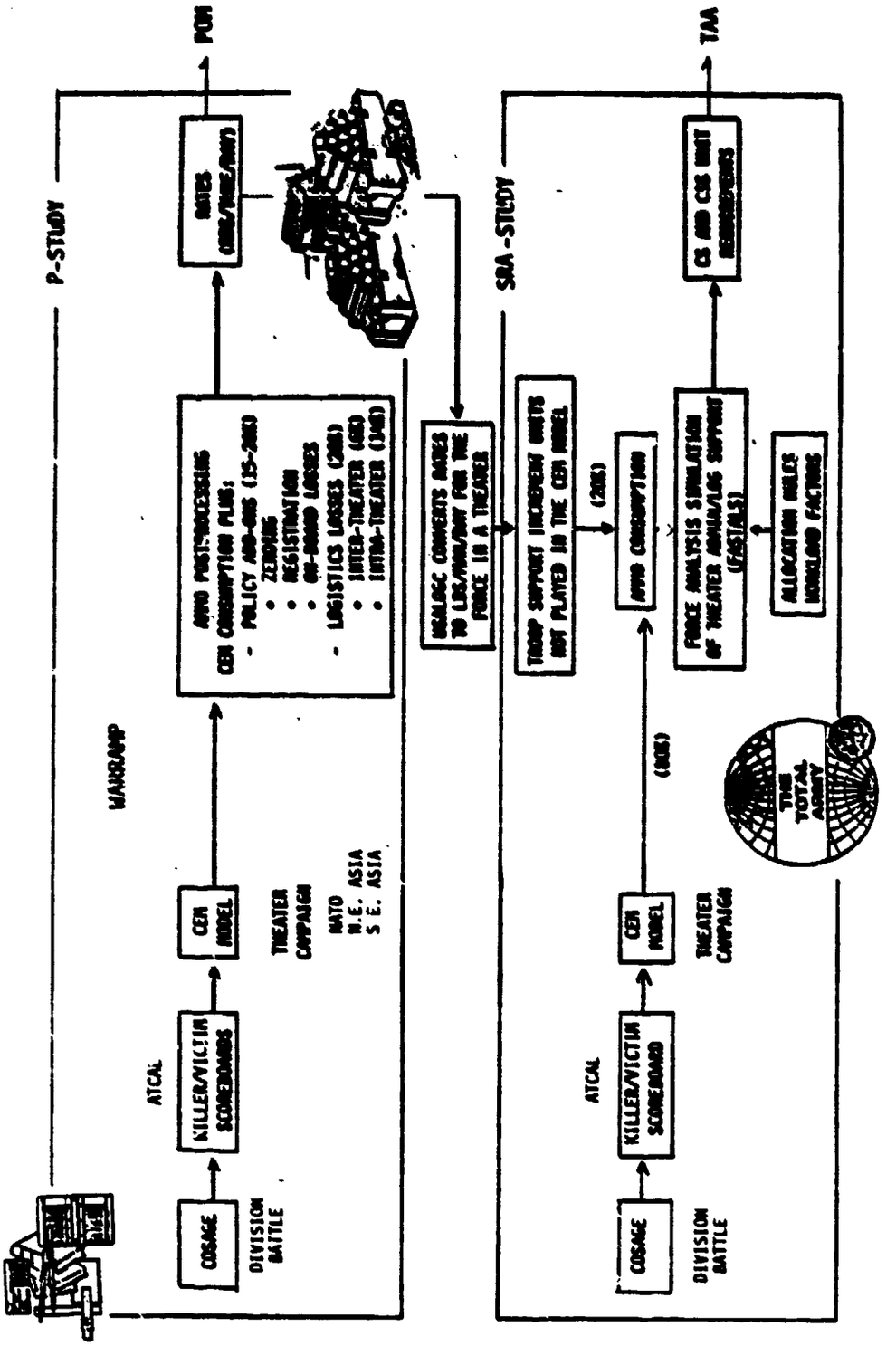

Figure G-2. The POM/TAA Process

e. The obvious importance of the WARRAMP process dictates that it be done properly and that its results be consistent with some measure of "reality." While it is impractical here to provide a complete explanation of the mechanics and relationships inherent in the process, the following are the primary characteristics of the process that are relevant to AHART.

- COSAGE - The Combat Sample Generator is a division-level, closed loop, stochastic combat simulation. As such, it seeks to simulate the probabilistic nature of division-level combat for a period of 24 hours using predetermined decision thresholds. Being closed looped, COSAGE eliminates the changes brought about by man-in-the-loop simulations. The simulation is run numerous times to produce steady-state results. A standard set of division combat operations is employed to produce ammunition rates representative of the spectrum of combat conditions.

- CEM - The Concepts Evaluation Model is the theater war simulation in WARRAMP. It is also closed looped but is deterministic in design. By employing the results of the COSAGE simulation it simulates the strategies and interactions that occur on the theater level of combat.

- ATCAL - The Attrition Calibration routine is the method of translating the results of the stochastic simulation into values usable to the deterministic CEM simulation. More than just calibrating attrition, it likewise calibrates the ammunition and other resources that are inherent in producing the attrition.

- APP - The Ammunition Postprocessor is a mathematical algorithm that provides analysts and decisionmakers with the capability of inputting factors not possible to include directly in the simulations. The APP combines the results of the simulations together with the analyst input to produce what is exported as WARRAMP results.

- Detailed technical characteristics of units and weapon systems expected to be present in the force in any given year are the primary input to the simulations. For this reason, understanding the change in expenditures over time becomes a useful endeavor. Trends in ammunition expenditures with changes in technical capabilities over time are of great interest. Historical data can provide insight into these trends.

- As the threat to national security changes, so does the force designed to meet the threat. These changes are included in WARRAMP. An historical perspective on the effects of the size and composition of a force on the expenditure rates provides useful information relevant to WARRAMP results.

- The WARRAMP process provides detailed output on each weapon system included in the simulation. The results of artillery ammunition expenditure studies are naturally produced by type of tube. Historical data readily differentiates among type artillery tubes, providing WARRAMP analysts with comparisons for the expenditures for tubes of different size and mission.

- WARRAMP attempts to produce results representative of the spectrum of combat operations. A historical perspective on the change in ammunition expenditures with a change in combat operation and operational intensity would be essential to analysts.

- WARRAMP produces expenditure rates for tubes for each day over a 180-day period. Published results are normally provided in 15-day increments. The effect of duration of the battle on expenditures found in history would provide useful information to analysts and decisionmakers.

f. This description of the WARRAMP process is by no means exhaustive but includes the major properties of WARRAMP that are relevant to AHART. In-depth information on this process is available in programer and user manuals referenced in the bibliography [CACI-S-1].

APPENDIX H

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GLOSSARY

1. ABBREVIATIONS, ACRONYMS, AND SHORT TERMS

AHART	Analysis of Historical Artillery Expenditures
ALMC	Army Logistics Management Center
AMSAA	Army Materiel Systems Analysis Activity
APP	Ammunition Postprocessor
ATCAL	Attrition Calibration
ATKH	attack heavy
ATKL	attack light
ATKM	attack medium
CAA	US Army Concepts Analysis Agency
CAC	Combined Arms Center
COSAGE	Combat Sample Generator
DAS	Director of the Army Staff
DEFH	defense heavy
DEFL	defense light
DEFM	defense medium
DIA	Defense Intelligence Agency
DLSIE	Defense Logistics Studies Information Exchange
DOD	Department of Defense
DTIC	Defense Technical Information Center
GMU	George Mason University
HE	high explosive
HERO	Historical Evaluation and Research Organization
ICM	improved conventional munitions
ODCSLOG	Office of the Deputy Chief of Staff for Logistics

ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans
ODCSRDA	Office of the Deputy Chief of Staff for Research, Development and Acquisition
POM	Program Objective Memoramdum
PROH	protracted heavy
PROL	protracted light
PROM	protracted medium
SADARM	seek and destroy armor
TRAC	TRADOC Analysis Center
TRADOC	US Army Training and Doctrine Command
TWG	terminally-guided munitions
UNSP	unspecified
WARRAMP	Wartime Requirements for Ammunition, Materiel, and Petroleum

2. DEFINITIONS

BATTLE
An AHART data base field name; this term is used broadly to define an engagement of any size from company to theater size force. When it is necessary to know the size of the battle, the size of the forces involved is given.

BMDP
Once an acronym for biomedical programs, the letters have come to stand alone as a trade name for a large assortment of statistical software commercially available to mainframe computer systems. The software reduces to four convenient steps calculations that would otherwise require extensive labor and time.

BNTF
An abbreviation for battalion task force used with the variable SIZE to describe a force of three maneuver companies, a headquarters, and support company. Unlike a standard battalion, this battalion has attached to it additional engineer, signal, and an artillery battery dedicated for sole support.

DAYSQUANT
An AHART field name for the number of 24-hour periods in an historical event.

DURATION
An AHART variable name used in the analysis to examine the relationship between the number of days in an historical event and the number of days involved.

OPERATION
An AHART data base field name; this term is defined by Table 7-1 of FM 101-10-1 and includes protracted, attack and defensive operations on three levels--light, medium, and heavy. Included in this study is a set of data for which no single operation can be defined, normally aggregated data from numerous types of operations. This data is assigned to the unspecified (UNSP) operation and included in the analysis. When it is necessary to know the size of the operation, the size of the forces involved is given.

operational rate
The rate computed in combat simulation when only those tubes that fired where included in the calculation.

operational RTD
The RTD computed from historical data when onlythose tubes that were actually in position to fire in support of that battle were included in the calculation.

OPN
An AHART variable name. This is the variable name used in the analysis of the data base field "operation."

rate
Rate is the term used in the analysis of combat simulations for the number of rounds fired "on average" by a single tube of artillery in a single 24-hour period. The calculation is performed by isolating the total number of rounds fired by all tubes of a specific tube type throughout the simulation, dividing that number by the number of 24-hour periods in the simulation and by the appropriate number of tubes. There are two kinds of rates, operational and theater.

RTD
RTD is the average rounds per tube per day actually fired in an historical battle. Its definition parallels the definition of a "rate" except that it defines actual expenditures, not expenditures from combat simulation. The calculation is performed by isolating from historical records the total number of rounds fired by all tubes of a specific artillery tube type throughout the duration of the battle or throughout the period for which data is being gathered, dividing that number by the density of those tubes in that battle or present during the period and then dividing again by the number of 24-hour periods in the historical data. There are two kinds of RTD, operational and theater.

theater rate
The rate computed in a combat simulation when all tubes in a theater of operations are included in the input files of the simulation and are then used in the calculation of rates.

theater RTD
The RTD is computed from historical data when all tubes in a large (six corps or greater) force are accounted for by logisticians or historians and included in the calculation of RTD. If an actual theater of operation such as Korea or the Middle East did not involve six corps on one side supported by artillery, the RTD was considered a theater RTD if it included in the calculation all tubes present for that force in the theater.

size
An AHART field name. The same name in upper case letters is used as a variable name in the analysis.

SIZE
An AHART variable name for the size of the maneuver force supported by the artillery in a given data base record.

TUBECAT
An AHART data base field name. The same name is used in the analysis as a variable name. All tubes are placed in one of three categories--light, medium, or heavy. Light tubes include all indirect artillery weapons up to and including 120mm. The medium category includes 122mm to 155mm howitzers. The heavy category includes 155mm guns and above.

TUBEQUANT
The AHART data base field name for the rounds per tube per day recorded in an historical event.

TUBEQTY
The variable name used in the analysis of the relationship between the number of tubes present and the artillery expenditures in an historical event.

tube type
A type tube is defined by its "caliber" in millimeters. The 8-inch tube is a 203mm tube type. The conversion of all other means of measurement to millimeters facilitates the scaling of tube types for analysis.

TUBETYPE
An AHART data base field name. The same name is used in the analysis as a variable name.

UNIT
An AHART data base field name used to specify the unit headquarters of the force present in the historical event. This is the level at which the artillery expenditure rate was computed.

CAA	**AN ANALYSIS OF HISTORICAL ARTILLERY EXPENDITURES (AHART) STUDY - CY 87**	**STUDY SUMMARY CAA-TP-87-6**

THE REASONS FOR PERFORMING THE STUDY were:

(1) To conduct research into the availability of historical field artillery ammunition expenditure data and to assemble the available data into a data base.

(2) To determine if the historical data can be used for meaningful comparisons with a wartime requirements combat simulation process.

THE STUDY AUDIENCES are: analysts responsible for the conduct of wartime requirements combat simulations; decisionmakers who desire to use historical data and information in the process of determining requirements for artillery ammunition; and historians interested in deriving historical information through application of quantitative methods.

THE PRINCIPAL FINDINGS of the work are:

(1) There exists a great amount of available historical data on field artillery ammunition expenditures. The AHART data base, assembled through this study, is now available for use, wider dissemination, and enhancement.

(2) The assembled historical data provides very useful comparisons with the results of the wartime requirements combat simulation process, WARSAMP, and with other combat simulations as well.

THE MAIN ASSUMPTIONS were as follows:

(1) Historical data found in primary sources were accepted as reliable unless accompanying documentation strongly indicated otherwise. The difficulties of assembling such data under wartime conditions is acknowledged.

(2) Historical data in secondary sources not verifiable through primary sources were accepted as reliable if taken from a reasonably well-based source (i.e., government analytical agencies, military historical offices, relevant Department of the Army (DA) Staff activities).

(3) Historical information can be quantified and meaningfully subjected to quantitative analysis.

(4) Factors affecting historical artillery ammunition expenditures apply to current and future artillery ammunition expenditures.

THE PRINCIPAL LIMITATIONS which affect the findings are: the study will be limited to conventional, nondevelopmental field artillery munitions; the majority of data is limited to US data, with some British and French data for WWI; the study variables were limited to those for which historical data is available and those considered applicable to comparison with the specific combat simulation used in the study; and the study is limited to exploratory analysis of the data.

THE SCOPE OF THE STUDY

(1) The study is a pilot effort in assembling, from a multitude of fragments, a single source of data on field artillery ammunition expenditures.

(2) Using BMDP statistical software, an analysis of the data is performed. For each study variable, an evaluation is made of the applicability of the available data for comparison with combat simulation.

(3) A combat simulation process used for determination of wartime ammunition requirements is used as a vehicle for comparison with the historical data. Employing the defined study variables, numerous comparisons are made. Regression analysis is performed to determine the ability of the chosen variables to explain the variability of the historical rates and to determine the order of importance of the variables for continued research.

THE STUDY OBJECTIVES were:

(1) Assemble in data base format a set of historical data points for conventional field artillery expenditures.

(2) Define a set of variables with which to examine historical data and determine the availability of relevant data for each variable.

(3) Determine the capability of the study variables to explain historical rates.

(4) Compare historical rates with the results of the combat simulation process.

(5) Determine priorities for further research/analysis.

THE STUDY EFFORT was an in-house project at the US Army Concepts Analysis Agency. The study was performed as an individual research fellowship.

COMMENTS AND QUESTIONS may be directed to the Director, US Army Concepts Analysis Agency, ATTN: CSCA-RQ, 8120 Woodmont Avenue, Bethesda, Maryland 20814-2797.

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