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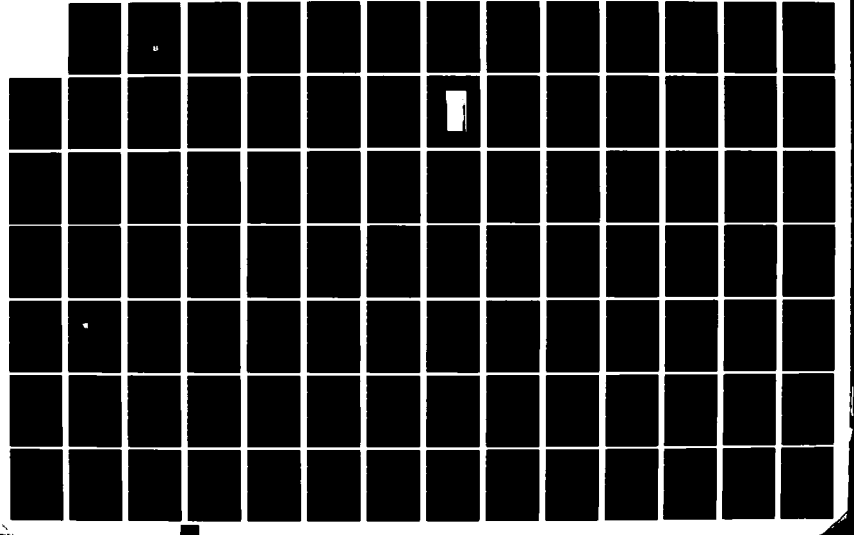

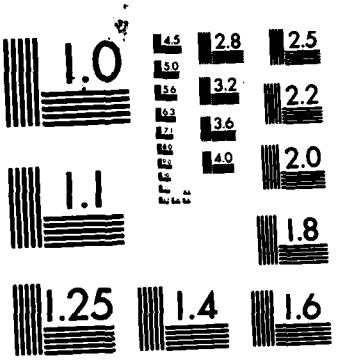

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CEDA USER'S MANUAL

By
J. R. CALABRO
M. M. POZZO

JANUARY 1983

Prepared for
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The Air Force is involved in research in the area of human performance and training; specifically, the interaction of human factors with the effectiveness of C^2 systems. A software system which is a Capability for Evaluating Decision Aids (CEDA) was developed using the ESD CONCAP capability at MITRE. CEDA will be used by the Human Resources Laboratory for testing human performance on a tactical operations problem as the amount of information and form of presentation are varied.

This document contains the specific instructions for operating CEDA.

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SECTION 1

INTRODUCTION

1.1 CEDA PROJECT 4960

The Human Resources Laboratory (HRL) at Wright Patterson Air Force Base is conducting in-house research on how human factors affect operation of C^2 systems. This work is being done to complement a larger effort by the Air Force in the area of human performance and training. MITRE has been tasked, under Project 4960, to develop a Capability for Evaluating Decision Aids (CEDA) which will provide an experimental capability to analyze user performance as a result of automated tactical decision aids. This software capability can be used to evaluate new concepts for command and control systems and to refine the human interface to automated decision aids.

To develop such a system, the decision aids and overall capabilities of the Tactical Operations Planner (TOP) Phase 2 system were used as a model. Stimulus control features, data recording for protocol analysis, collection of user response times, and the "pulsing" of peripheral devices for additional dependent measurements are incorporated into CEDA to enable rather detailed C^2 system evaluations to be made.

1.2 GENERAL

As previously stated, CEDA will assist researchers in determining how the availability and design of automated decision aids affect C^2 decision making. It was designed to be flexible, permitting expansion and modification in both the number and form of decision aids presented and in the data base used to drive the software.

The CEDA software was developed to provide an experimental capability for analysis of user performance as a result of automated presentation of information. CEDA is controlled by user commands. The initial system supports a two-terminal configuration called a work station. Each station consists of a graphics terminal and a video terminal.

The graphics terminal displays geographic maps from the data base and provides a means by which the user can alter the display to get the desired view of the map.

The video terminal accepts user commands through its keyboard and displays tabular information from the data base. It also displays tabular menus which either accept user commands for more specific types of tabular

information, allows the user to manipulate the information in the data base or permits the user to alter the amount and type of information displayed on the geographic map located on the graphic display.

In addition, data recording can be enabled for a session. The information recorded (user commands, user responses and user response times, system responses) can be used to analyze the performance of the user.

Peripheral devices which measure brain waves or eye movement may also be driven by CEDA for additional dependent measurement of user actions. As with the data recording, this feature need not be invoked to permit CEDA to function properly. Details of these two capabilities are further described in Section 3. Other experimental control features have been added to CEDA. These features are intended to permit precise recording of user actions and provide a framework for comparing session results. These are also discussed in more detail in Section 3.

1.3 CONTENTS

As a user's manual, this document contains a brief overview of the system software, data base, and CEDA capabilities (Section 2, "CEDA Overview"), detailed operating instructions (Section 3, "Operating Instructions") and a "typical session" example (Section 4, "Sample CEDA Session"). Appendices A and B contain the Menus and Tables respectively. A functional flow diagram for each user aid available is presented in Appendix C. System Event and User Response Codes are in Appendices D and E, and Sample Session Data is in Appendix F. A Glossary has been included at the end of the manual for terms, acronyms and abbreviations used throughout this manual which may not be well-known to the user.

For a general description of the software design and data base currently used for CEDA, refer to the "CEDA High-Level Software System Design" document[1].

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[1] J. Calabro, M. Pozzo, "CEDA High-Level Software System Design," ESD-TR-82-419, Electronic Systems Division, AFSC, Hanscom AFB, MA 01731. (In process)

SECTION 2

CEDA OVERVIEW

2.1 INTRODUCTION

This section presents a brief discussion of the software and data base development and an overview of CEDA functions, tabular features, graphics and decision aids. Section 3, "Operating Instructions", provides more detailed instructions for operating CEDA. As stated, a more thorough discussion of the CEDA software design itself and data base can be found in the "CEDA High-Level Software System Design" document referred to in Section 1.

2.2 SOFTWARE DEVELOPMENT OVERVIEW

2.2.1 Application

The decision aids and data base available in the initial CEDA system were modeled after the TOP Phase 2 system. However, since the purpose of CEDA is not tactical planning, per se, the system was redesigned and expanded to encompass the human factors features discussed in Section 1. The main purposes of this system are twofold: to create a system which allows a variety of tactical command and control concepts to be tested and evaluated, to gather data on how automated aids affect tactical operations.

2.2.2 System Description

The system designed consists of six functional modules and an overall system executive. The main purpose for doing this is to allow ease of maintenance and the addition of future enhancements. This structure affords a great deal of flexibility in that each module may be expanded or altered completely and installed in place of the old one with no effect on the other modules. In addition, this provides a more efficient use of memory since a module need only be brought into memory as it is needed. A brief description of the modules and system executive, which are coded entirely in Fortran IV-Plus, follows.

System Executive - initiates and concludes the session for each user.

User Function Module - controls the handling of a function key invocation and brings the necessary module(s) into memory.

Menu Module - displays all menus and processes the user input to the menu.

Table Module - displays all tables (no user input).

Data Base Module - handles all requests from the other modules to access information from any of the disk-resident data base files.

Graphics Module - performs all operations to display or alter the display on the graphics terminal.

Decision Aid Module - performs weaponeering for weapon choice allocation and airbase choice allocation. Also creates the resulting mission and handles the Air Tasking Order Function.

It should be noted that each module consists of one or more packages, again for ease of modification. For example, the Data Base Module contains a translate package for interpreting the request (known as a DML - data manipulation language - statement) and an I/O package for accessing the files. In this way, a different request language can be used and only the translate package need be replaced, or a new set of files may be supplied and only the I/O package need be replaced.

2.2.3 Data Base

The CEDA (tactical and weaponeering) data base was taken from that used in the TOP system. The tactical data base was originally developed by Air Force Intelligence personnel and weaponeering information was based on results generated by the Automatic Weaponeering Optimization Program (AWOP).

Access to the Data Base is not through direct user interaction; therefore, details of this module are not included in this document. Information can be found, however, in the "CEDA High-Level Software System Design" document as follows:

- Section 3.4 - Data Base Executive Module description including details of the two packages contained in this module as well as supporting routines.
- Section 4.2 - Data Base Files description, includes characteristics of each file as well as creation method and a general description.
- Appendix E - Data Dictionary and Record Layouts, gives the actual record format for each disk-resident file that supports CEDA.

2.3 CEDA CAPABILITIES

2.3.1 User Functions

Listed below are the currently available user functions in key order (see Section 3, "Operating Instructions") and a brief description of what they do.

1. Graphic Options

Allows the user to change the appearance of the graphic display, either by changing the color of elements, or by removing or adding elements to the display.

2. Data Base Search

Allows the user to obtain tabular data such as ordnance load codes, identified targets, friendly airbases, planned missions, etc.

3. Identify

Gives brief information on an element (target or airbase) indicated by the cursor on the graphics screen. Note: Only identified targets are added to the Identified List.

4. Full Page Descriptor

Gives more complete information on an object (target or airbase) which was specified by the user through cursor input, without adding it to the Identified List.

5. Grid

Superimposes a grid on the geographic map to distinguish individual areas for zoom.

6. Zoom 1

Smallest graphics magnification: displays map at magnification used as session start up (all four quadrants).

7. Zoom 2

Zooms a quarter of the map to full screen size

8. Zoom 3

Zooms a sixteenth of the map to full screen size.

9. Airbase Prioritization

Allows the user to set the rules whereby the computer orders and displays the bases capable of supporting a given mission.

10. Interactive Allocator

The actual decision phase of CEDA: provides computer-assessed information during the mission planning process using the information collected from the other CEDA functions (visual aids as well as tabular data). The result of this process is the allocation of aircraft/weapon combinations against specific targets. A maximum of 16 planned missions is possible at one time.

11. Air Tasking Order

Generates an Air Tasking Order, visual as well as hardcopy, from missions currently confirmed.

12. Start/Stop

Initiates and concludes session.

2.3.2 Tabular Displays

As previously stated, CEDA includes two separate visual components: graphics display containing geographic maps with symbols marking the location of targets and airbases and other foreground information to define the current tactical scenario, and tabular display containing tabular information arrayed either in static tables or menus requesting user input.

The current CEDA system uses a DEC VT100 video terminal, which consists of a monitor and detachable keyboard, to present the tabular displays. There are twenty four lines for display on the VT100 terminal. The first twenty-three are used for presentation of tabular displays (called the workspace). Only the last line, the monitor, is reserved for machine error or CEDA generated error messages. The keyboard consists of the standard typewriter keys, special function keys, and a keypad. Figure 2-1 shows the VT100 keyboard layout.

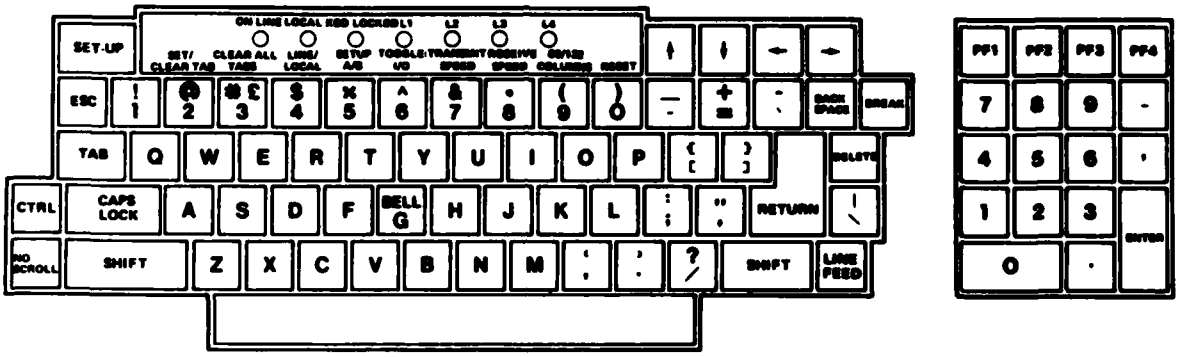


Figure 2-1. VT100 Keyboard

The tabular displays themselves are divided into two categories: menus and tables. Menus accept and act on user input. They offer a series of options from among which the user indicates his choice by typing entries in the appropriate blanks. Through the medium of menus, a user may effect such operations as changing the appearance of the graphics display, requesting data, setting criteria to be used in the allocation process, and actually allocating airbases and weapons against targets. Most menus are accessed directly from function keys. In addition, while the user is within a menu, he may at any time before entering his final response, cancel the menu entirely and exit from the current function.

Tables on the other hand, are to present information only, like the Identified Targets Summary, which gives the identification numbers, BE numbers, names, priorities, types, and other characteristics of all the identified targets. Many tables are accessed from menus, especially the Data Base Search Menu, but some can be obtained directly from function keys. For example, the Identify and Full Page Functions will directly produce tables.

There are twenty-eight menus and tables in the current version of CEDA listed below:

Menus	Tables
Graphic Options Menu	Target Description
Data Base Search Menu	Identified Target Summary
Allocation Menu	Friendly Airbase Description
Interactive Allocation-Weapons Decision	Friendly Airbase Summary
Interactive Allocation-Airbase Decision	Mission Schedule
Interactive Allocation-Mission Decision	Enemy Order of Battle-Ground
Planned Missions	Enemy Order of Battle-Air
Airbase Prioritization Menu	Enemy Order of Battle-Elect
	Enemy Order of Battle-SAM/AAA
	Fighter Schedule
	Alert Aircraft
	Command and Control Centers
	Target Types
	Ordnance Load Codes
	Aircraft Characteristics
	Identify-Targets
	Identify-Friendly Airbases
	Air Tasking Order
	Continue Session

For the actual format of menus and tables, see Appendices A and B.

2.3.3 Graphics Displays

The CEDA geographically based visual aids are displayed either on a Tektronix 4027 color graphics terminal or a Ramtek 9400 graphics monitor. The Tektronix 4027 color graphics terminal consists of a graphics display monitor and detachable keyboard. The keyboard has the standard typewriter keys, function keys, and a cursor/numeric pad. The graphics cursor is invoked through the use of the cursor/numeric pad. Figure 2-2 shows the Tektronix 4027 keyboard layout. The Ramtek 9400 does not include a keyboard. Cursor control is invoked through the use of a track ball.

The background for all of the displays is a map and nautical miles scale for the tactical operations area. At the beginning of a user session, this map (showing political boundaries, as well as cities of population above 1,000,000) will appear on the graphics screen. On the map are colored symbols marking the location of the various elements of foreground information. Each kind of element is represented by a unique symbol. See Figure 2-3 for a list of symbols representing the foreground information.

A user may modify the geographic display in a number of ways:

1. When a user identifies any target, using the Identify Function, a white identification number appears to its right on the graphics screen.

2. The Zoom 2 Function zooms a user-selected area which represents a quarter of the map to full screen size. At the invocation of Zoom 2, cities with population over 500,000 will appear on the map.

3. The Zoom 3 Function zooms a user-selected area which represents a sixteenth of the map to full screen size. Now all cities with population above 250,000 will appear.

4. The Zoom 1 Function returns the map to the scale it had at the beginning of the session.

5. The Graphic Options Menu allows the user to change the color of sets of symbols or delete (or add) symbols from the map.

2.3.4 Decision Aids

Several decision aids are provided to help the user in the mission planning phase. Once the user has determined which targets to allocate against (using the other features of CEDA) the weapons choice decision aid comes into play.

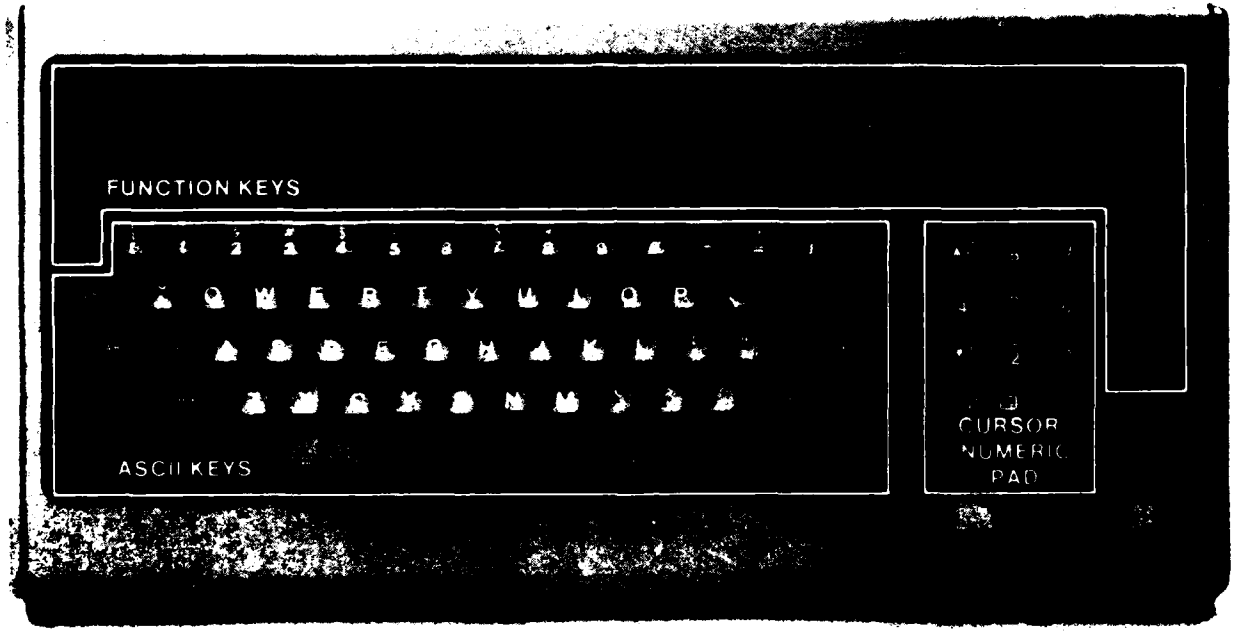


Figure 2-2. Tektronix 4027 Keyboard

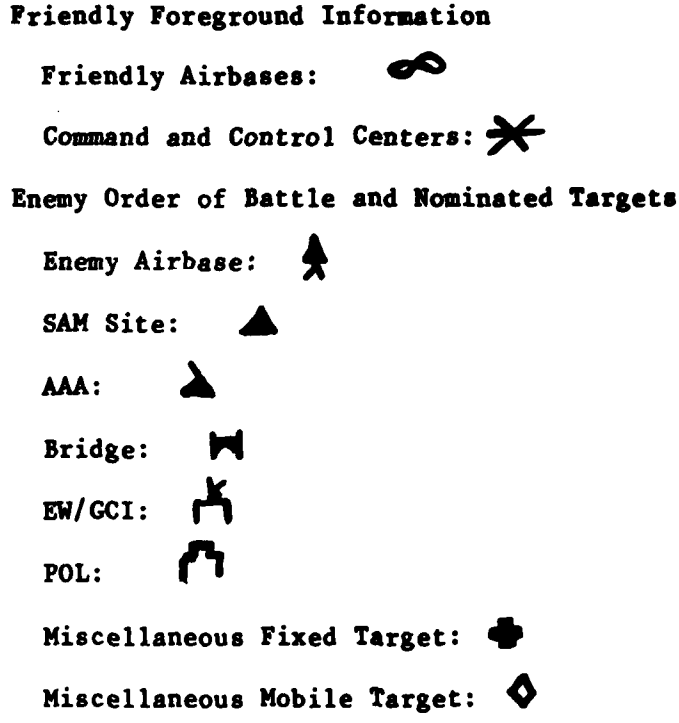


Figure 2-3. Foreground Symbols

Given the specific target and selection criteria for aircraft, ordnance and airbase, weaponeering is performed by the weapons choice decision aid which supplies the user with up to six weapon/aircraft combinations for inspection and selection.

Once the user has made a weapon/aircraft choice, the airbase choice decision aid takes over. This aid provides the user with up to three possible bases that can supply the weapon/aircraft combination requested. The user is prompted however, if no weapon or base can supply the mission. In this case or in the case that the user is not satisfied with the choices, the user has the option to choose a different weapon/aircraft combination.

When an airbase has been selected, the make-mission decision aid builds the mission and presents it to the user. At this point, the user can accept the mission or go back to any of the other decision aids. Rejection of a target can occur at any point.

The remaining decision aid, Air Tasking Order, prints all confirmed missions on the line printer and the VT100 terminal and changes their state within the data base to fragged.

2.3.5 Data Collection

One of the key experimental features of CEDA is the data collection and recording capability, which will permit an analyst to correlate system stimuli with user response. Throughout each user session, data is collected on the following:

- system events - system stimuli (e.g., graphics display, menu)
- user responses - action taken by user after system event
- user response times - time between system event and user response
- menu entries - user entries within each menu

This data is recorded on a disk file under the user's last name (up to eight characters). The first record in the user's file is the login record and it has the following form:

Col.	Data
1-5	'LOGIN'
7-14	user's name
16-19	user's rank
31-36	session date (mmddyy)
46-53	session time (hh:mm:ss)

All remaining records are either system event records or menu entry records. System event refers to any computer driven stimulus presented

to the user (e.g., graphics display, menu display). Each system event is recorded as a system event record. If the event is the display of menu, subsequent records (menu entries) are added to identify user entries made in the menu.

The format for each system event record is as follows:

Col.	Data
1-5	'EVENT'
7-10	system event code
12-21	user response time
23-26	user response code
28-37	if menu, time to complete menu entries otherwise, 0.0 is recorded

As stated above, if the system event is a menu, a list of user entries is also recorded where lower case letters represent user inputs and upper case letters represent unaltered menu values.

Appendix D contains a list of all possible System Event Codes and their definitions. Appendix E contains a list of all possible User Response Codes and their definitions. See Appendix F for a typical session file.

2.3.6 Peripheral Devices

In addition to stimulus/response data recording, CEDA will also drive peripheral devices (e.g. occulometer, electroencephalograph) which can be used to measure eye movement, brain waves, etc. Each system event will initiate the following sequence of pulses:

Generation of system event - pulse channel 1 (on)
Presentation of system event for:

graphics display	- pulse channel 2 (on-off)
menu display	- pulse channel 3 (on-off)
table display	- pulse channel 4 (on-off)
user response	- pulse channel 1 (off)

The pulses are internally generated in the PDP11 minicomputer and are transmitted to the peripheral devices via a DEC DRS-11A 48-bit output module. The generation of these pulses is initiated by a CEDA software routine (see High-level Software Design).

SECTION 3

OPERATING INSTRUCTIONS

3.1 INTRODUCTION

This section is designed specifically for the operator of CEDA, that is, the mission planner. It is a detailed description of all aspects of user interaction with CEDA. It also discusses how a session is set up and defined and how to set up or eliminate any of the data recording or peripheral devices.

Section 3.2 defines actions necessary to initialize CEDA before the actual execution. Section 3.3 then explains the login procedure step by step: what is visible at the terminals initially, requested entries, and how the computer will respond to the entries. Once logged in, all actions for gathering information or for actually planning missions will be through invocation of the various function keys.

Section 3.4 is on the use of each function. For reference, it is divided by function key. For each key there is a general description of what it allows a user to do, followed by a fairly detailed walk-through of its invocation. Menus, tables, and changes in the graphics display are described, as well as the steps a user must take to use the keys and fill in the menus. This section lists features common to several or all CEDA functions.

3.2 SESSION INITIALIZATION

The disk-resident file INPUT.DAT allows certain session characteristics to be set prior to run-time. It is an unformatted data file which can be "edited" (EDT, EDI, etc.) to change session aids or scenarios.

The layout of INPUT.DAT is list-directed (see FORTRAN Language Manual) format as follows:

Line	Data
1	Data recording units (0 = system clock units 1 = system clock units/1000)

2 Number of keys available for session (0 to 17)
Number of user stations for this session (1)

3 Terminal numbers for each pair (graphics and video) of terminals in the user stations
Note: All tasks must be recompiled when terminals (TT numbers) are changed. INSTALL.CMD must also be changed appropriately.

4 Key availability for each key on VT100 key pad. They are ordered from top to bottom, left to right. (0 = not available, 1 to 17 = function code corresponds to F# below)

For example the following INPUT.DAT defines a one station configuration with TT6 for graphics and TT5 for video, data recording units defined by the system clock, and 17 function keys available as defined.

```
0
17,1
6,5
1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17
```

Notes: Since the current version of CEDA only has 12 functions defined, functions 13-17 default to function 12 (Start/Stop). Also function keys can be reorganized through the use of INPUT.DAT.
In order to assure correct user input, the caps unlock key must be set on the VT100 terminal.

To initiate CEDA, the user should logon to the system as privileged and enter the following sequence of commands at the VT100 terminal console:

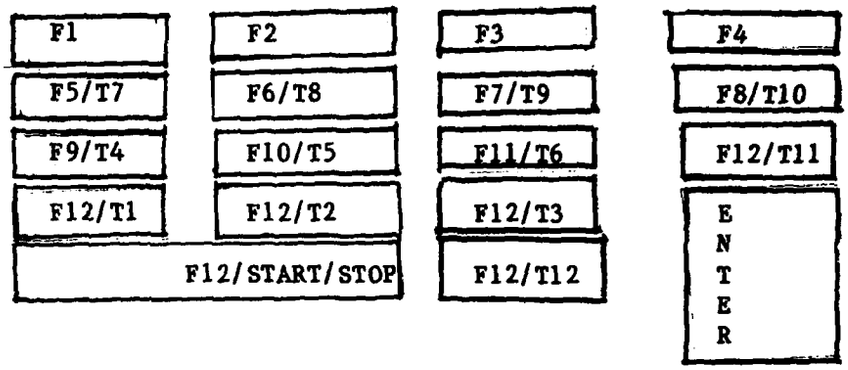
```
> @INSTALL
> When prompt appears: @DBFILE
> When prompt appears: @ MISSION
> When prompt appears:  cntl Z
> RUN SEXEC
```

Once the user has "stopped" the session, he should enter the next command to clean up the system and purge system files:

```
@END
```

The VT100 function key definitions initially delivered with the system are shown in Figure 3-1. (Refer to the file INPUT.DAT). Definitions for the functions are as follows:

F1 - Graphic Options
F2 - Data Base Search
F3 - Identify
F4 - Full Page Descriptor
F5 - Grid
F6 - Zoom 1
F7 - Zoom 2
F8 - Zoom 3
F9 - Airbase Prioritization
F10 - Interactive Allocator
F11 - Air Tasking Order
F12 - Start/Stop



where:

F# - indicates the function key as set by INPUT.DAT.
START/STOP - is used to start and stop the session.
T# - indicates the paging for tables.
ENTER - indicates that the user is finished with the current table (tables).

Figure 3-1. Default Function Key Layout

3.3 LOGIN SESSION STARTUP

At the beginning of a CEDA session, the graphics screen will be blank and there will be a form on the VT100 workspace with the following message:

BEGIN SESSION BY PRESSING START/STOP BUTTON.

Press START/STOP button. The button is marked START/STOP and is located to the right of the keyboard. If correctly pressed, a new message will appear on the form requesting the user to fill in his name and rank.

Enter name and rank. Shortly after a map will appear on the graphics screen and the system will be ready for commands.

If the START/STOP button is not pressed when requested, the system will respond:

LOGIN ERROR, PRESS START/STOP BUTTON TO BEGIN.

There are three chances to select the START/STOP button before the system will stop, at which time it must be reinitialized.

3.4 FUNCTION KEYS

CEDA uses function keys as its primary method of entering commands. These include obtaining information to help the user plan missions, allocate weapons against targets, confirm missions, and obtain frag orders of confirmed missions. Below, are descriptions of what each function will allow a user to do and the specific instructions on how to use them.

Note: To turn on the graphics cursor for the Identify and Full Page Functions, the button located on the Tektronix 4027 key pad which is marked with the cross hair cursor must be pressed. The arrows which appear on the keypad are then used to move the cursor to the desired position. If the Ramtek monitor is used, the track ball must be rotated until the desired position is reached.

There are several human factors features common to some or all of the CEDA functions described below. They are listed here as a general introduction to this aspect of CEDA.

Screen	- The graphics screen and the video screen will go blank while a new image (map, menu, or table) is being drawn. Once completed, the screen will be turned on again.
Titles	- Menu titles blink when ready to accept user input. A static menu title indicates that the user is locked out, input has been received, and the system is busy processing. Table titles are always static.
Menu Entry	- TAB key moves the cursor forward from one field to the next for user input. BACKSPACE key moves the cursor backward to the previous field to permit user editing of input. RETURN key indicates the user has completed the menu and wishes to enter his input as it exists on the form.
Menu Errors	- If the user enters invalid data into a menu, an error message will appear at the bottom of the video screen.
Table Paging	- For static tables consisting of multiples pages, the user must access different pages through the use of paging keys on the VT100 keypad as described in Section 3.2.
Table Scrolling	- For dynamic tables consisting of multiple pages, the user must use the T1 key to scroll forward and the T2 key to scroll backward.
Geographic Areas	- The user is restricted in the zoom functions to zoom in or out to predefined, non-overlapping areas. These areas are indicated by use of the grid function.

Note that for all of the following functions which are driven by some type of menu input, the user has the option of cancelling the function at any time before hitting the RETURN key. To cancel menu input and the current function, the user must simply press the START/STOP key on the VT100 keypad rather than the RETURN key.

1. Graphics Options Menu

Description:

This menu (see Figure A-1) will allow the user to change the color of targets or airbases on the graphics display terminal or display or remove targets, airbases, SAM rings or allocation pairing lines for missions already planned.

Simple walk-through:

- Press Function Key #1 to display the Graphics Option Menu. The menu will appear in the workspace with blinking title and the cursor positioned at the first "Y" under the (Y/N) column.

- You can then type an "n" to remove the item from the graphics display or a "y" to display it. "Y" is the default. The tab key will move the cursor to the COLOR column where you may type in any of the following colors:

wht -	White	blu -	Blue	pur -	Purple
red -	Red	yel -	Yellow	blk -	Black
grn -	Green	tur -	Turquoise		

- You can then continue to tab through, making as many alterations as possible. Note that SAM RINGS and ALLOCATION PAIRING LINES do not have a color but are always displayed in red. When you have made all your changes hit RETURN key.

- The title will stop blinking to indicate the system is processing your request and shortly you will see the changes on the graphics display.

- You may return to the Graphics Option Menu as many times as you like. Each time the initial menu will reflect the changes you made the previous time.

2. Data Base Search Menu

Description:

This menu (see Figure A-2) allows the user to obtain one of two types of information. He may either call up reference tables that give brief data on the members of specified groups of elements, or he may choose from two categories for more complete descriptions of individual members.

The menu presents the categories Friendly Airbases, and Mission Schedule in a column to the left. To the right is a column of available reference tables. The user may only indicate one choice by typing a "y" in the appropriate place: either one category or one item under the reference tables heading. The default for every choice on the Data Base Search Menu is "n".

* * * * * * * * * * * * * * * * *

Simple walk-through:

. When you have pressed Function Key #2, the Data Base Search Menu will appear on your workspace with title blinking and cursor positioned in the first blank under the CATEGORY heading.

. If you want detailed information on any particular element within a category (FRIENDLY AIRBASES, for example) or a reference table (ENEMY ORDER OF BATTLE, for example) push TAB key until the cursor reaches the blank opposite the desired title and type "y" and then press RETURN key.

. After you have pressed RETURN key, the title of the Data Base Search Menu will stop blinking to indicate the system is responding and the menu will be replaced by the desired description.

. If you want more than one category, or table, or some combination of them, you must return to the Data Base Search Menu by pressing Function Key #2 each time.

3. Identify

Description:

The Identify Function will give terse data on any single target or friendly airbase on the graphics screen. It should be noted that the user identifies a target, adding it to the Identified List, in order to allocate against it.

* * * * * * * * * * * * * * * * *

Simple walk-through:

. Move the graphics cursor until it covers the target or airbase that interests you.

. Press Function Key #3.

. A brief table (see Figures B-16 and B-17) will appear in the workspace identifying the item. If it is a target, a white numeral will simultaneously show up to its right on the graphics screen, making it a member of the Identified List.

. If you wish to unidentify a target, repeat the above operation; the target's number will be erased; however; the rest of the identified targets will not be renumbered to account for the space.

. You may identify up to 99 targets and as many bases as you like.

4. Full Page Descriptor

Description:

Operating the same way as the Identify Function, the Full Page Descriptor gives more complete information on the object of interest.

* * * * * * * * * * * * * * * * * *

Simple walk-through:

. Move the graphics cursor to cover the item you wish described.

. Press Function Key #4. You will get a detailed description on the workspace (see Figures B-1 and B-3) of the item you chose. The Full Page Descriptor does not add items to the Identified List.

5. Grid

Description:

The grid is a user visual aid. It superimposes a grid onto the graphics screen to define the individual zoom areas.

* * * * * * * * * * * * * * * *

Simple walk-through:

. Push Function Key #5.

6. Zoom 1

Description:

The purpose of zoom 1 is to return the map to its original scale after it has been zoomed in.

* * * * * * * * * * * * * * * * *

Simple walk-through:

. Push Function Key #6.

7. Zoom 2

Description:

Zoom 2 zooms the map in by a factor of 2. It will center the quadrant of your choice on the screen and zoom it to full screen size.

* * * * * * * * * * * * * * * * *

Simple walk-through:

. Place the graphics cursor in the desired quadrant. It might be helpful to invoke the grid function first so you can clearly see the quadrant boundaries, but it is not necessary to do so.

. Push Function Key #7.

8. Zoom 3

Description:

This zooms the map in by a factor of 4.

* * * * * * * * * * * * * * * * * *

Simple Walk-through:

. Place the graphics cursor inside the desired area. Again, the grid may be useful.

. Press Function Key #8.

Note: The invocation of any of the zoom functions will erase the grid.

9. Airbase Prioritization

Description:

There are about one hundred combinations of weapons and airbases that could theoretically be allocated against a given target. But only the first six weapons and first three airbase possibilities actually show up on the workspace. This menu (see Figure A-8) allows the user to set the rules by which the system orders the airbase possibilities.

* * * * * * * * * * * * * * * * * *

Simple walk-through:

. Press Function Key #9 to obtain the Airbase Prioritization Menu. The menu will appear in the workspace with a blinking title and the cursor positioned in the first blank.

. Indicate your ranking of criteria by typing a numeral between 0 and 9 (0 is for no ranking, 1 is the highest priority) in the blank next to each criterion. The default rules are currently set as 1, 0, 0, 0, 0, 0, 0, 0, 0, respectively (ranked by closest only) and may be used without invoking this function unless a different prioritization scheme is desired. The user ranking however only remains in effect until the end of the next allocation process. At this point they revert to the default values.

. Tab to subsequent choices and back tab to modify earlier ones until you are satisfied.

. Then press RETURN key. The title of the menu will stop blinking to indicate that the computer is processing your input.

10. Interactive Allocator

Description:

All of the other functions and visual aids in CEDA support the Interactive Allocator. It is at this stage where, based on information gained in the previous sections, the user actually makes a choice of targets to attack and a combination of weapons and airbases to allocate against these targets.

When Function Key #10 is pressed, a menu (see Figure A-3) will appear on the workspace. At the top, under SELECTION CRITERIA FOR TARGETS the user must either specify by number in the Identification List the targets he wishes to attack or type "all" to attack all identified targets.

Under SELECTION CRITERIA FOR RESOURCES the user has the option of typing in the aircraft and ordnance types(s) and friendly airbases to be considered. He may also choose a range of time for time-over-target and either the number of aircraft or probability of damage desired.

Pressing the RETURN key when finished will call a second menu (see Figure A-4) to the workspace. At the top is displayed the identification of one of the targets chosen. This menu allows the user to choose one specific weapon/aircraft combination from among those recommended for allocation against that target. He also has the option to reject the mission entirely at this point. The graphics display also indicates the target being considered by changing its color to white during the allocation process for this target. Once the process is completed, its original color is restored.

If the weapon/aircraft combination chosen is available, then a third menu (see Figure A-5) will come up. At the top of the menu the identification of the target will be displayed, followed by the possible weapon/aircraft combinations, with the user's choice marked. Next the system offers a number of airbases which would be able to supply the weapon/aircraft combination chosen. From these, the user may select one or go back to the Weapon Decision Menu (Figure A-4) and reselect a different weapon/aircraft combination or reject the target altogether.

Finally, if the target is not rejected, a proposed mission will appear (see Figure A-6) and the user may accept the mission, or, if unsatisfied with the probability of damage, or the position of the base with respect to its proposed target, or anything else, may instead reselect another weapon/aircraft combination or base, or reject the mission and target entirely.

The Weapon Decision Menu (Figure A-4) will be redisplayed, with the identification number of the next target requested. The whole procedure will repeat until all of the targets indicated on the original interactive allocation menu are exhausted.

At the end of the allocation process, a Planned Missions Menu (see Figure A-7) will appear on the workspace. Listed will be all of the missions accepted during the allocation process as well as any other planned missions (proposed and confirmed, but not fragged). Here the user may either confirm or reject these missions and may also choose to have the allocation pairing lines removed or displayed on the graphics display terminal. As stated, a maximum of 16 planned missions is possible at any one time.

* * * * * * * * * * * * * * * * *

Simple walk-through:

. The Allocation Menu is the first one to appear when you push Function Key #9. The menu will appear with a blinking title and the cursor positioned in the first blank. Indicate the targets against which you would like to fly missions by typing in their Identification List numbers: the white numerals that appear to their right on the graphics screen. You can type "all" to allocate against all identified targets.

If you would like to specify resources, advance the cursor by using the TAB key and enter up to four aircraft types (f111e, a7d, etc.), no more than one ordnance type (mark82, rocpod, etc.), up to five friendly air-bases (edvv, edab, etc), the time-over-target range (0100, 1400, etc.), and the number of aircraft or probability of damage. For "TOTZ" if the lower limit is omitted, 0100 is assumed and if the upper limit is omitted 2400 is assumed.

. Press RETURN key when you are satisfied. The title of the menu will stop blinking to signify that the computer is acting on your input.

. When ready, the Weapon Decision Menu will appear with a blinking title and a list of possible weapon/aircraft combinations. The threats within the target area are also displayed at the bottom of the video terminal. If no weapons can satisfy the selection criteria a message, "NO WEAPON CAN SATISFY PD" will appear at the bottom. The graphics display will show the current target in white.

. For this target, choose whichever weapon/aircraft combinations you prefer by typing a "y" in the select column.

. When you are satisfied, press RETURN key. The title will stop blinking.

. The Airbase Decision Menu will appear with a list of possible airbases which can satisfy the weapons chosen. If no airbase can supply the combination you ordered, you will receive an error message that reads: "NO AIRBASE CAN SATISFY WEAPON CHOICE AND SELECTION CRITERIA". In that case, reselect. It may be that there are insufficient amounts of all of the listed weapons. When this happens, you must reject the target and begin again with less stringent selection criteria.

. If your choice of weapons can be supplied by one or more airbases, then the Interactive Allocation/Airbase Decision Menu will be displayed with the information already on the workspace. All of the bases listed will be able to satisfy your mission request.

. Choose one by typing a "y" opposite it in the SELECT column.

. A suggested mission will then appear. If none of the possible missions satisfy you, then type a "y" into "reject mission and target" at the bottom, in which case you will begin selecting weapons for a second target, or reselect weapons or base for this target, by backtabbing to the appropriate spaces. You must delete your previous choices.

. You also have the option to reselect either the weapon or base at this time.

. If and when you are satisfied with a mission, type "y" in the ACCEPT MISSION space. A new target will be displayed in white on the graphics screen, and you will make weapons and base selections for this target. The process will continue until all of the targets you marked on the original Allocation Menu have either been allocated or rejected.

. At that point, the Planned Missions Menu will come up with blinking title. All of the missions that you have affirmed in this and earlier phases of the Allocation process will appear. For each mission you have the choice to finally confirm or reject, and to remove or display its allocation pairing lines.

. Type "c" for confirm or "r" for reject in the first column opposite each mission and "d" for display or "r" for remove in the second column.

11. Air Tasking Order

Description:

The purpose of the Air Tasking Order is to send all confirmed missions to wing command, thereby changing their status from a planned mission to a scheduled mission (fragged). These missions will simultaneously be printed by the line printer and typed on the video screen (see Figure B-18). By generating an ATO, the user reduces the number of planned missions (maximum of 16).

* * * * * * * * * * * * * * * * * * *

Simple walk-through:

Once you have completed the Planned Mission Menu and pressed RETURN key, push Function Key #11.

12. Start/Stop

Description:

The CEDA session will be initiated and ended by pressing the START/STOP key.

* * * * * * * * * * * * * * * * * * *

Simple walk-through:

. When you are ready to begin, press START/STOP.

. After you have received your last Air Tasking Order, end the session by pressing START/STOP.

SECTION 4

SAMPLE CEDA SESSION

4.1 INTRODUCTION

This section begins with a discussion of the CEDA problem: what the user is trying to achieve, and how he can best marshall the capability of CEDA to that end. There is also a run-through of a typical session. This will by no means investigate all of the possibilities or complexities of the system, but rather will give the reader a chance to see how each of the functions look as they are used in conjunction with each other and when actual missions are being considered.

4.2 THE TACTICAL SCENARIO

As the user of CEDA, you are trying to plan tomorrow's missions through automated aids as opposed to manual means. Given the scenario for the session (location and definition of the conflict) and the goal (e.g., seek allocations that would quickly achieve air supremacy), the types of missions to be planned that would best accomplish this goal must first be determined.

Once you have decided on your approach, your task is to plan missions by allocating weapon/aircraft combinations from specific airbases against all of the selected targets.

Before actually going into the allocation phase of CEDA it is best to learn as much as possible about the theatre presented to you. There are many tools supplied with CEDA that allow you to do this. The graphics tools, such as the Graphic Options Menu, Grid and Zoom Functions allow you to alter the graphics information displayed on the graphic terminal. In this way, you can narrow the amount of information appearing on the graphics display to focus on specific targets by changing their color, or enlarge a particular area of the map for closer inspection.

There are many tables of information available to you through the Data Base Search Menu that give general information about the friendly airbases, command and control centers, ordnance load codes, aircraft specifications, target types, etc.

In addition, brief or detailed information about a particular target or airbase is available via the Identify and Full-Page Descriptor Functions.

Once you have determined exactly which targets to allocate against and the friendly airbases and their available unit (or squadron) configuration you are ready to begin allocation.

The following section describes a simple typical session which will show the general procedure you should employ when using CEDA.

4.3 THE CEDA SESSION

Scenario: Tactical planning in the early stages of a conflict in central European area (current map).

Goal: To seek allocations (plan missions) that would quickly achieve air supremacy.

Method: Strike enemy airbases and early warning/ground control intercept cites. (EW/GCI).

Step 1 Startup System

The scenario and the goal are presented to the user. Since all of the function keys will be available to the user for this session, INPUT.DAT need not be altered. (See section 3.2) After logging on as privileged type the following commands:

```
> @INSTALL
> When prompt appears:  @DBFILE
> When prompt appears:  @MISION
> When prompt appears:  control Z
> RUN SEXEC
```

The user will deduce the approach (method) to accomplish the goal presented by the person running the session and press the "START/STOP" key in response to the message currently present in the workspace. He will respond with name and rank to the next two questions (See Section 3.3, "LOGIN SESSION STARTUP"). The map will be displayed and CEDA is ready for use.

Step 2 Invoke Graphic Options Menu to Get Better View of Potential Targets

To better view the potential targets, user invokes Key #1, Graphic Options Menu. To better see the targets, he either assigns enemy order of

battle/electronic a unique color or assigns all other options "blk" (background) and only targets and friendly bases colors.

Step 3 Invoke Identify Function to Determine Which Targets Are Airbases And EW's

Since the user is only interested in airbases and targets of type EW, he must determine which of the targets on the screen they are. To do this, he must use the Identify Function for each enemy order of battle/electronic target. If it is not an EW or an airbase he can unidentify it by re-identifying it (pressing the Identify Key again). When he has completed this for each target, the ones he is interested in will have a number on the lower right side of the target on the display screen.

Step 4 Invoke Full-Page Descriptor Function to Find Out More Information about Targets

The user can find out more information about each identified target by using Key #5, the Full-Page Descriptor Key. He can use this to further narrow his choice of targets. (Any undesired targets are simply unidentified by pressing the Identify Key on a previously identified target).

Step 5 Invoke Data Base Search Function

The user now depresses Function Key #2 to invoke the Data Base Search Menu. He then types a "y" in the ELECTRONIC ORDER OF BATTLE category to see that he has, in fact, identified all the desired targets. He then reinvokes the DBS Menu and types a "y" in the IDENTIFIED TARGETS category to recheck his selections. He reinvokes the DBS Menu and types a "y" in the FRIENDLY AIRBASES category to retrieve information on all twelve bases.

Step 6 Invoke Allocation Function/Target Choice

Now that the user has determined several targets to propose strikes against, he invokes the Allocation Function (Function Key #9). He then specifies his

selection criteria for targets by typing the ID #'s in the appropriate spot. He chooses not to make any resource selection.

Step 7 Invoke Weapon and Airbase Decision

At this point, the Weapon Decision Table is presented. The user selects a weapon/aircraft combination and waits for airbase information. Next a set of airbases that can supply that weapon/aircraft combination is presented. The user makes his selection. He now has the choice of accepting the mission, rejecting the mission, or reselecting the weapon or base. Assume he has decided to accept the mission.

Step 8 Confirm and Display the Missions

After he has invoked steps 6 and 7 for all the desired targets, he will be presented with a table of planned missions. He can then confirm or reject, display or remove all or selected planned missions. He also has the option of doing nothing thereby postponing the decision until later. Assume he confirms.

Step 9 Create the Air Tasking Order

At this point he depresses the ATO Key to send the Air Tasking Order to wing commands (hard copy) and has completed the allocation/mission generation process for the selected targets.

At this point, the user may wish to allocate weapons against other sets of targets. To do so, the above steps could be repeated until all targets have missions assigned to them. This example sets up a possible sequence of actions that a user might take, however, each situation presents its own specific problems and CEDA functions should be invoked in a way that the user finds to be the most natural, straightforward manner. Once the user has solved the problem presented to his satisfaction, the session is ending by pressing the START/STOP Key.

APPENDIX A

MENUS

GRAPHIC OPTIONS MENU

SELECT:	(Y/N)	COLOR
ENEMY ORDER OF BATTLE		
GROUND	Y	YEL
AIR	Y	YEL
ELECTRONIC	Y	YEL
SAM/AAA	Y	YEL
NOMINATED TARGETS	Y	RED
IDENTIFIED TARGETS	Y	WHT
FRIENDLY AIRBASES	Y	AQU
COMMAND AND CONTROL	Y	GRN
SAM RINGS	N	
ALLOCATION PAIRING LINES	N	

Figure A-1. Graphic Options Menu (MN01)

DATA BASE SEARCH MENU

SELECT ONE ONLY

CATEGORY	SELECT (Y/N)
FRIENDLY AIRBASES	N
MISSION SCHEDULE	N

REFERENCE TABLES	SELECT (Y/N)
ENEMY ORDER OF BATTLE	
GROUND	N
AIR	N
ELECTRONIC	N
SAM/AAA	N
IDENTIFIED TARGETS	N
FIGHTER SCHEDULE	N
ALERT AIRCRAFT	N
COMMAND AND CONTROL	N
TARGET TYPE	N
ORDNANCE LOAD CODES	N
AIRCRAFT SPECIFICATIONS	N

Figure A-2. Data Base Search Menu (MN02)

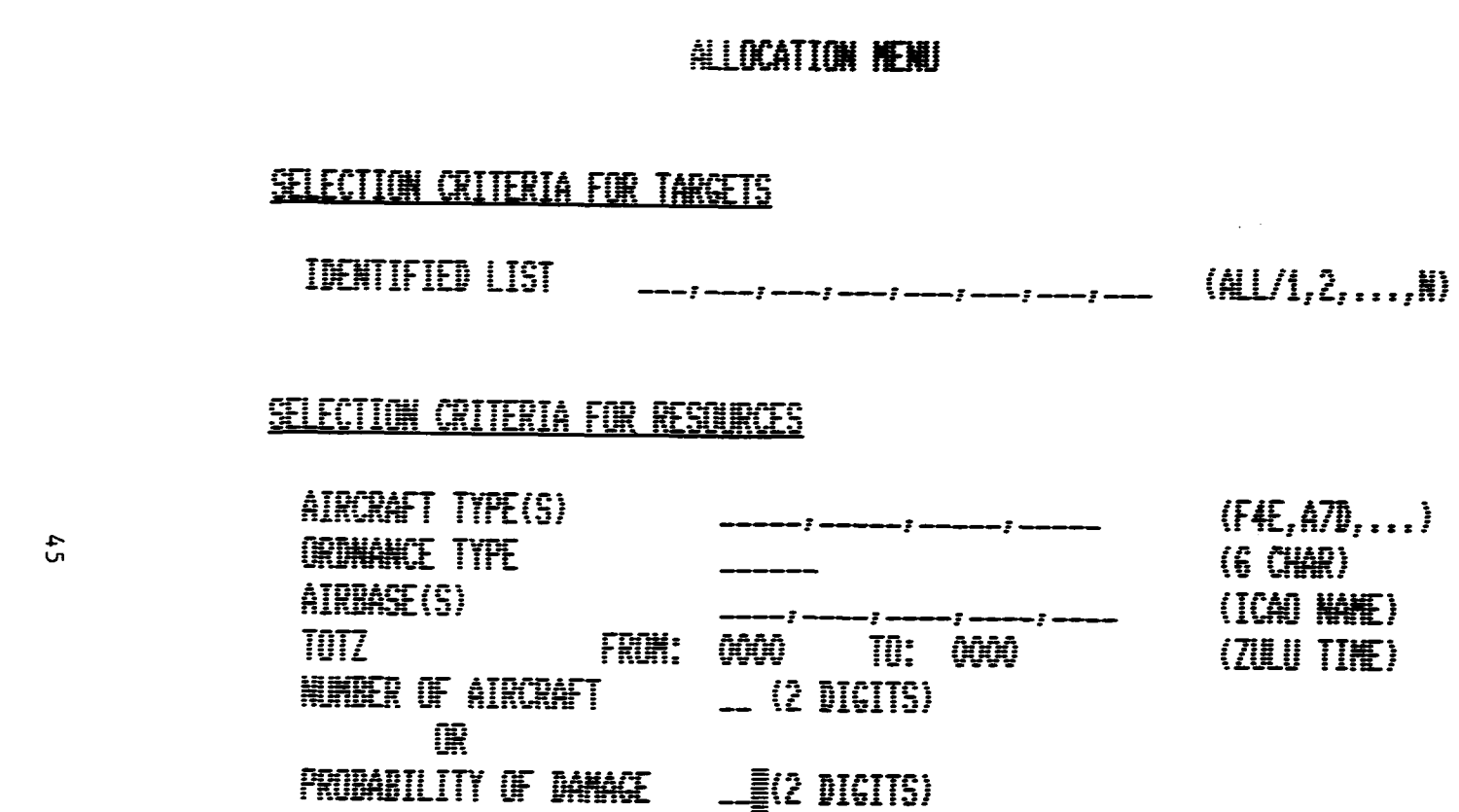


Figure A-3. Allocation Menu (MN07)

INTERACTIVE ALLOCATION/WEAPON DECISION

ID	BE #	TARGET NAME	PRI	TYPE	ASM	HSMM	TOTZ	CEIL	LAT/LONG

WEAPON DECISION: FOR THE ABOVE TARGET, CHOOSE ONE OF THE RECOMMENDED WEAPONS.

MN-TYPE	SQL	MN-ORD	DA(DEG)	INT(SEC)	ALT(FT)	KTAS	PD	RECM	SELECT
								-	-
								-	-
								-	-
								-	-
								-	-
								-	-

REJECT TARGET: _

Figure A-4. Interactive Allocation/Weapon Decision (MN08)

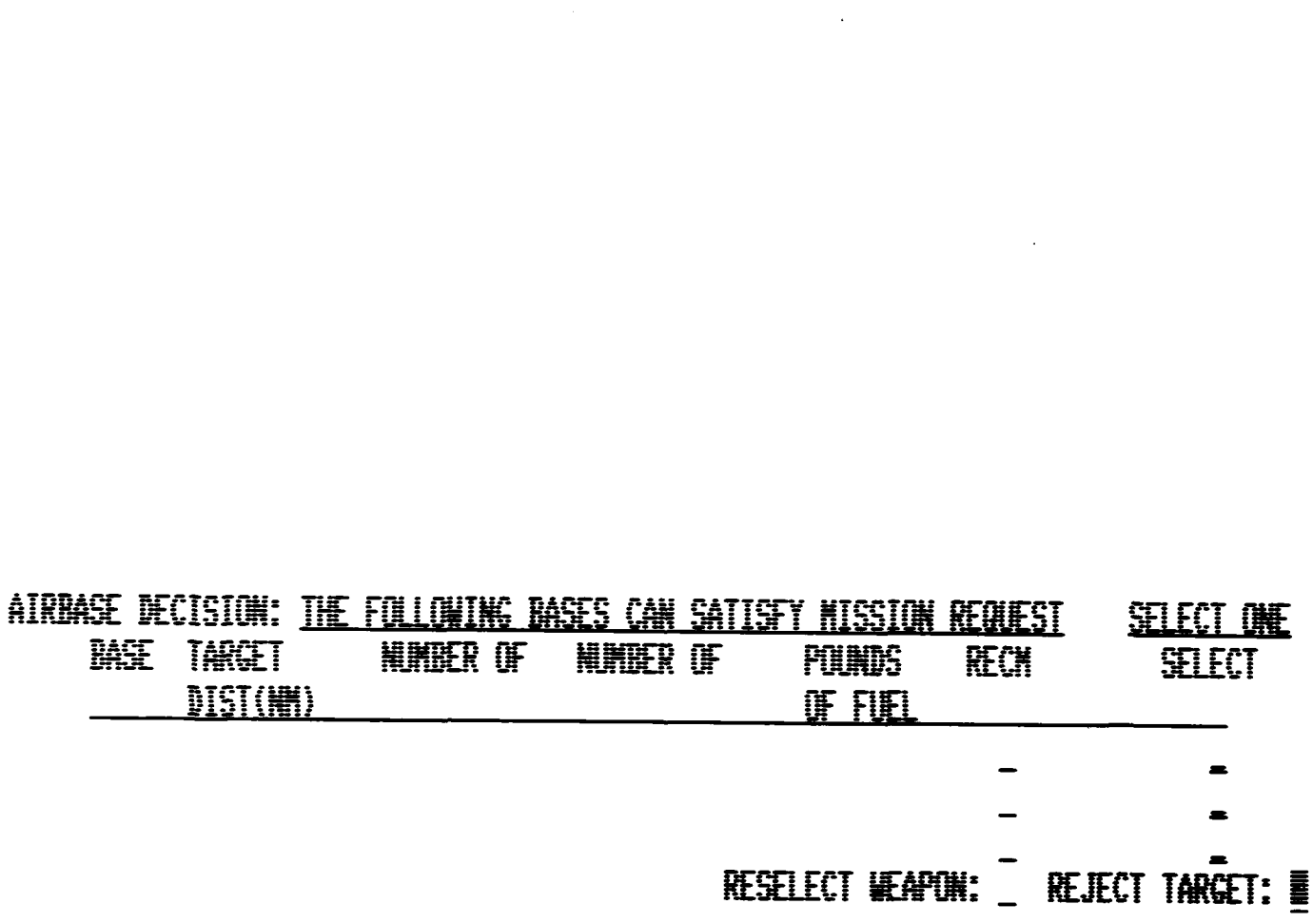


Figure A-5. Interactive Allocation/Airbase Decision (MN09)

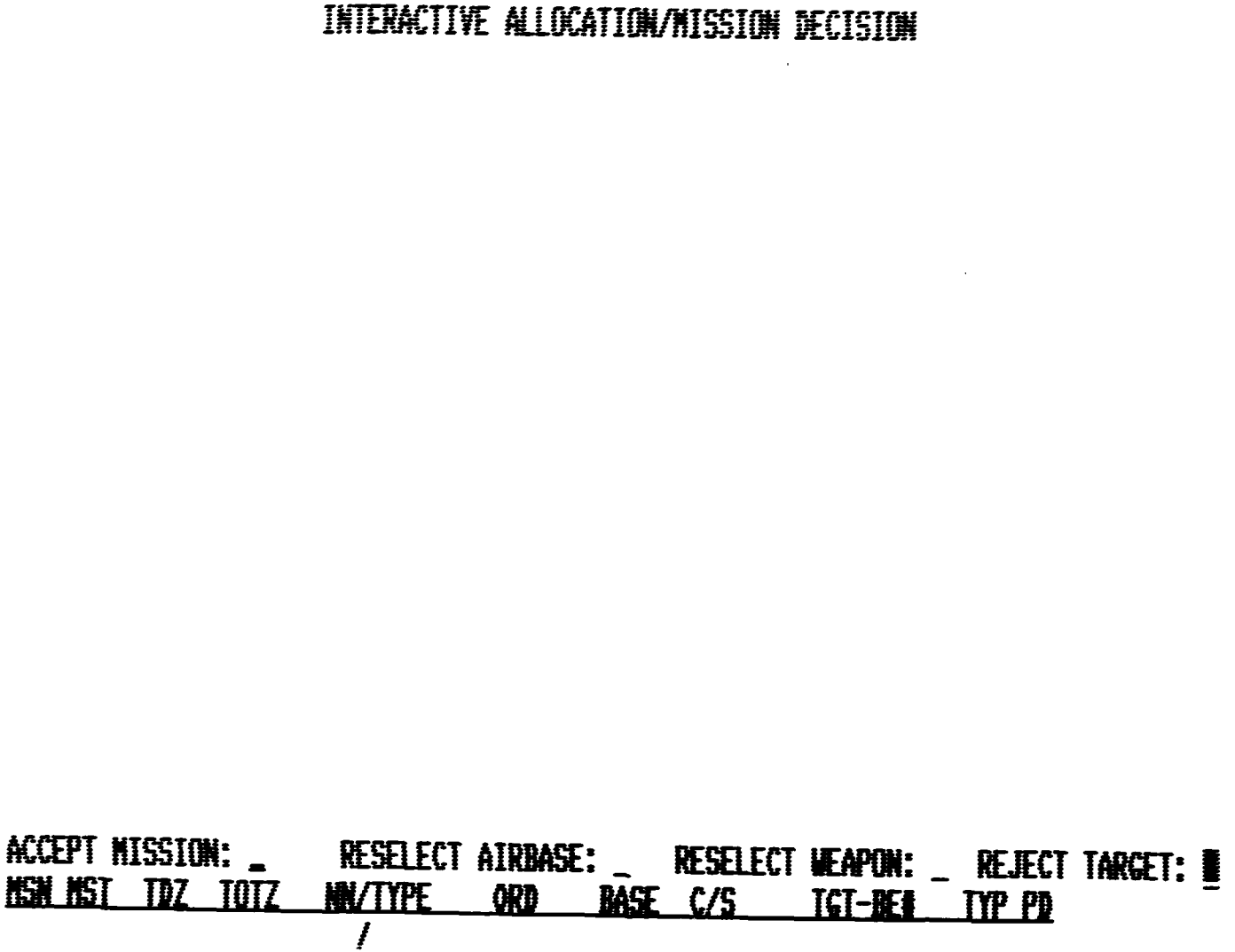


Figure A-6. Interactive Allocation/Mission Decision (MN9B)

PLANNED MISSIONS

TO DISPLAY OR REMOVE MISSIONS (ENTER D OR R)
TO CONFIRM OR REJECT MISSIONS (ENTER C OR R)

MSN	MST	TDZ	TOTZ	NN/TYPE	ORD	BASE	C/S	TGT-BE	TYP	PD	RF	STE	D/R	C/R
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										
				/										

Figure A-7. Planned Missions (MN10)

AIRBASE PRIORITIZATION CRITERIA

WHEN MORE THAN ONE AIRBASE CAN SATISFY A RESOURCE REQUEST, AIRBASE WILL BE CHOSEN BY THE FOLLOWING CRITERIA.

RANK ORDER BY ENTERING NUMBERS FROM 1 TO 9.

DISTANCE FROM TARGET
- CLOSEST _
- FURTHEST _

QUANTITY OF RESOURCE (MAXIMUM)
- AIRCRAFT _
- ORDNANCE _

SUPPORT CAPABILITY
- EW _
- HW _
- MIGCAP _

AIRBASE CONDITIONS
- WEATHER (HIGHEST CEILING) _
- ACTIVITY (MINIMUM PLANNED MISSIONS) _

Figure A-8. Airbase Prioritization (MN11)

APPENDIX B

TABLES

TARGET DESCRIPTION

NAME
BE NUMBER
PRIORITY
LATEST REPORT: DAY HOUR
TYPE
LOCATION UTM LAT/LONG /
ID NUMBER

INTELLIGENCE RECOMMENDATIONS

NM/TYPE	ORD	DA (DEG)	INTV (SEC)	ALT (FT)	PD
2 KC135	MARK82	0	10	5000	40

MISSIONS ASSIGNED

MSNM	MSN TOZ	TOTZ	NM-TYPE	ORD	BASE	CALL SIGN	TGT BE#	TGT TYPE	PD	RF

REMARKS:

Figure B-1. Target Description (TB01)

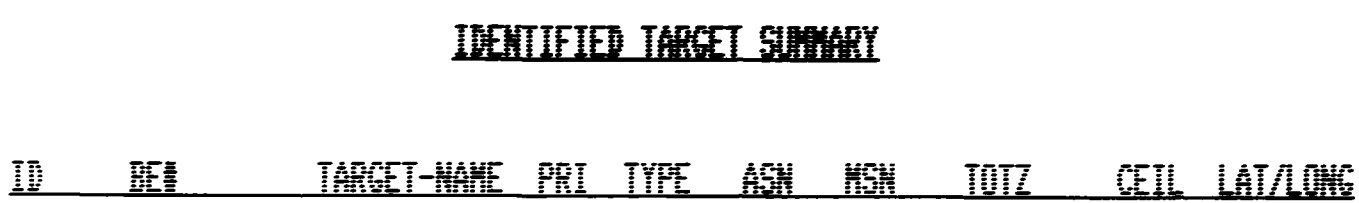


Figure B-2. Identified Target Summary (TB03)

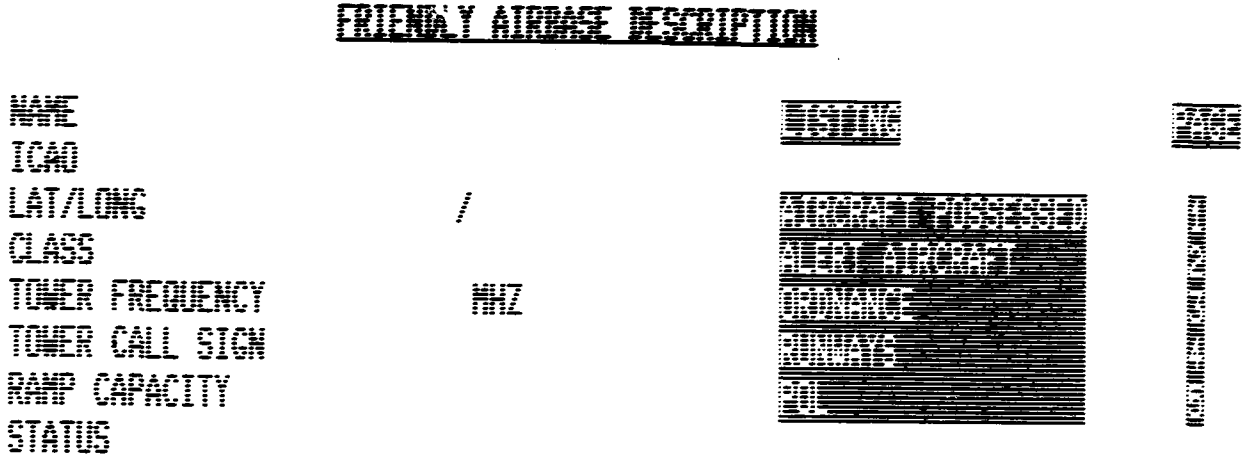


Figure B-3a. Friendly Airbase Description (TB04)

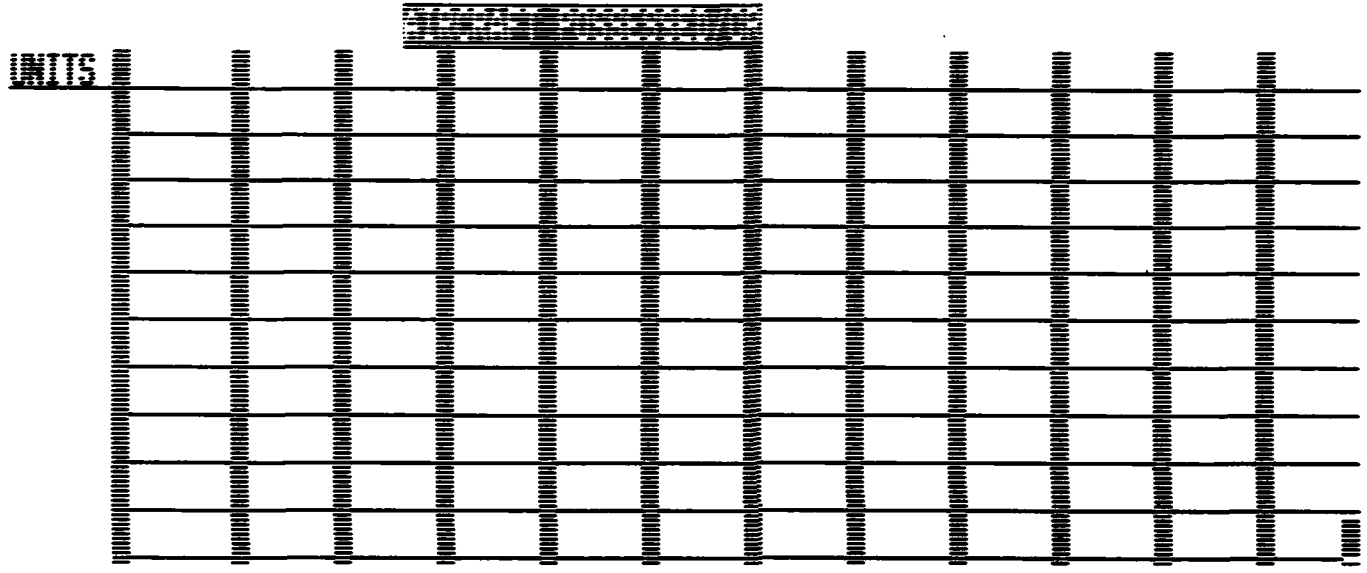


Figure B-3b. Friendly Airbase Description (Aircraft Possessed)

MSNW	MSN	C/A	MW/TYPE	ORD	ICAO	C/S	ORBIT PT	READ	FR/TO
1120	CAS	A	2/A-10	MARK-82	EBMD	PATSY	5255/1141	0	0800/0900
1121	CAS	A	2/A-10	MARK-70	EDAS	POUCH	5104/1107	0	0400/0500
1040	DCA	C	2/F4D	AIM-7E	ELLX	SILLY	5117/1226	15	1400/1700
1000	CAS	A	4/F4E	M-117	EBLG	GLASS	5040/1110	0	1100/1200

Figure B-3c. Friendly Airbase Description (Alert Aircraft)

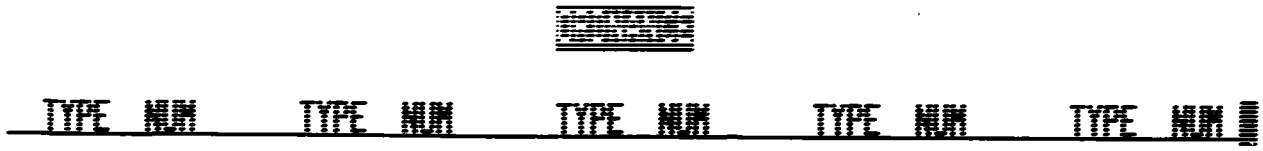


Figure B-3d. Friendly Airbase Description (Ordnance)

NUMBER LENGTH WIDTH CONDITION SURFACE ORIENTATION STA

Figure B-3e. Friendly Airbase Description (Runways)

TYPE	WEIGHT	CAPACITY	RESUPPLY RATE	RESUPPLY WEIGHT

Figure B-3f. Friendly Airbase Description (Petroleum, Oil and Lubricants)

FRIENDLY AIRBASE SUMMARY

EGWZ

FRIENDLY AIRBASES - OPERATIONALLY READY AIRCRAFT

UNIT	F111F	E3A	C130	KC135
ARROW	25			
FENCE	25			
MILER		2		
PACER			5	
SPITE				10
STARK				10

FRIENDLY AIRBASES - ORDNANCE

MARK82	MARK20
M117	SUU20
CBU52	20MM

Figure B-4a. Friendly Airbase Summary (TB05) (Page 1)

FRIENDLY AIRBASE SUMMARY PAGE 2 OF 12

EDAB

[redacted]

UNIT	F4D	RF4C	F15	C130	F5E
LABEL	15				
LETUP		20			
LUNCH			13		
PAPER	15				
RATER		12			
SPEND				4	
STAMP	15				
SUPER	15				
ZEBRA					10

[redacted]

AIM9R	BLU1	M117	MC1	LAU3
SUU-23	CBU24	MARK83	SUU42	BLU3
GASTANK	MARK82	ECMPOD	AGM45	AGM78[redacted]

Figure B-4b. Friendly Airbase Summary (TB05) (Page 2)

FRIENDLY AIRBASE SUMMARY PAGE 3 OF 12

EDWI

[redacted]

UNIT	F4C	C130	RF4C	F15
GRAND	15			
FLUSH	15			
WEARD		2		
HOMER	15			
KODAK			20	
MAYOR	15			
SMASH				15
SNAIL	15			
TOTAL				15

[redacted]

AIM9D	BLU1	M117	MC1	LAU3
SUU23	CBU24	MARK83	SUU42	BLU3
CASTANK	MARK82	ECMPOD	AGM45	AGM78

Figure B-4c. Friendly Airbase Summary (TB05) (Page 3)

FRIENDLY AIRBASES SUMMARY PAGE 4 OF 12

EQUN

[redacted]

UNIT	F111F	E3A	KC135	C130
BLAND	25			
NOISE		1		
PLACE			15	
SPORT				5

[redacted]

MARK82	CBU52	20MM
M117	MARK20	
MARK84	SUU20	

Figure B-4d. Friendly Airbase Summary (TB05) (Page 4)

EDAR

[redacted]

UNIT	F4C	F4D	C135	F15	KC135
BLED	20				
LASER		25			
LINER	20				
LONER			5		
PATCH		25			
PUNCH				16	
SLEP				16	
SPARK					10

[redacted]

AIM9B	BLU1	MK17	MK1	LAU3
SUU23	CBU24	MARK83	SUU42	BLU3
CASTANK	MARK82	ECMPOD	AGM45	AGM7[redacted]

Figure B-4e. Friendly Airbase Summary (TB05) (Page 5)

FRIENDLY AIRBASE SUMMARY PAGE 6 OF 12

EDAS

[redacted]

UNIT	A10	C130
POUCH	15	
SPLIT	15	
TRUCK		2

[redacted]

CASTAWK	CRU24	MARK03
LAU3	MARK02	MARK04
ABLU1	M117	

Figure B-4f. Friendly Airbase Summary (TB05) (Page 6)

FRIENDLY AIRBASES SUMMARY PAGE 7 OF 12

EDAD

[redacted]

UNIT	FAC	C130	F15	RF4C	F5E	KC135
CHAIN	15					
CHAIR		4				
FLITE			12			
JUDGE	15					
MUDDY				10		
PARRY			13			
PENNY	15					
SPLSH					10	
XEROX						10
TIMER	15					

[redacted]

SWD23	CBU24	MARK83	SUU42	BLU3
CASTANK	MARK82	EOMP0D	AGM45	AGM78
BLU1	M117	MC1	LAU3	AIM7E

Figure B-4g. Friendly Airbase Summary (TB05) (Page 7)

FRIENDLY AIRBASES SUMMARY PAGE 8 OF 12

EDAW

[redacted]

UNIT	A10	C130
LOSER	15	
RACER		10
SPLAT	15	

[redacted]

CASTANK	CBU24	MARK83
LAU3	MARK82	MARK84
BLU1	M117	20MM

Figure B-4h. Friendly Airbase Summary (TB05) (Page 8)

EBMD

[redacted]

UNIT	KC135	A10	F111E
JUGUM	10		
PATSY		2	
SHELF			25

[redacted]

MARK82	CBU52	20MM
M117	MARK20	
MARK84	SUU20	

Figure B-4i. Friendly Airbase Summary(TB05) (Page 9)

EDW

FRIENDLY AIRBASES - OPERATIONALLY READY AIRCRAFT

UNIT	C130	A10	E3A
CLAWS	4		
COURT		16	
HOUSE			2

FRIENDLY AIRBASES - DAMAGED

MARK82	CBU52	20MM
M117	MARK20	
MARK84	SUU20	

EBLG

FRIENDLY AIRBASES - OPERATIONALLY READY AIRCRAFT

UNIT	F4D	F5E	RF4C
CLUCK	13		
BLAST		10	
PLATE			20
SUGER	12		

FRIENDLY AIRBASES - COMMANDS

AIM9B	BLU1	M117
SUU23	CBU24	MARK81
CASTANK	MARK82	ECMPOD

Figure B-4k. Friendly Airbase Summary (TB05) (Page 11)

FRIENDLY AIRBASE SUMMARY PAGE 12 OF 12

ELLX

[redacted]

UNIT	F4D	KC135	F15	F5E
DANCE	15			
PAINT		20		
SATIN			13	
SILLY	15			
YANKY				15

[redacted]

ATH9B	SWU42	BLU3
SWU23	AGM45	AGM78
MC-1	LAU3	

Figure B-41. Friendly Airbase Summary (TB05) (Page 12)

MISSION SCHEDULE

MSN#	MSN	TOZ	TOTZ	MW/TYPE	ORD	BASE	CALL SIGN	TGT-BE#	TYPE	PD	RE-FUEL#

Figure B-5. Mission Schedule (TB06)

ENEMY ORDER OF BATTLE
GROUND ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
WITTENBERGE8	TRK	5255/1141	32UPD63413	137 0605
MAGDEBURG-6	TRK	5211/1111	32UPC44500	137 0430
ORANIENBAUM1	TRK	5158/1205	32UTT95595	137 0430
ORANIENBAUM9	TRK	5133/1152	32UPB75571	137 0505
ALTENBURG-1	TRK	5057/1153	32UPB79167	137 0155
WERNIGERODE1	TNK	5153/1042	32UNC98506	137 0615
HALBERSTADT4	TNK	5158/1112	32UPC46901	137 0615
HALLE-1	TNK	5127/1151	32UPB75103	137 0615
EISENACH	TNK	5058/1025	32UNB88507	137 0615
SAALFELD-1	TNK	5038/1105	32UPA45761	137 0605
LUDWIGSLUST	POL	5313/1118	32UPD45862	137 0505
EISENHUTTENS	POL	5209/1432	32UNT53407	137 0155
BLANKENHAIN	POL	5049/1136	32UPA67413	137 0615
HALKEN	POL	5120/1130	32UPB60698	137 0605
DORSEL	POL	5203/1207	32UTT98993	137 0605
KOTH	POL	5145/1350	32UUT95761	137 0605
KOCHEL	POL	5200/1250	32UUT20373	137 0605
WEISENBACK	POL	5159/1230	32UUT12955	137 0605

Figure B-6a. Enemy Order of Battle-Ground (TB07) (Page 1)

GROUND ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
ERFURT	MIL	5104/1107	32UPB45131	137 0430
SAALFELD	MIL	5040/1139	32UPA69863	137 0430
HALLE-OST	MIL	5127/1208	33UTS96299	137 0430
HALLE-WEST	MIL	5128/1153	32UPB76459	137 0505
HALLE-EAST	MIL	5128/1201	33UTS91462	137 0155
GERA	MIL	5055/1208	33UTS93130	137 0615
FURSTENWALDE	MIL	5227/1403	33UVT33805	137 0605
BRANDENBURG	MIL	5219/1234	33UUT18165	137 0430
BRANDENBERG	MIL	5225/1231	33UUT16362	137 0505
NEUSTRELITZ	MIL	5323/1310	33UUU73165	137 0155
BRANDENBERG	MIL	5225/1231	33UUT16362	137 0615
LEIPZIG	MIL	5117/1226	33UUS08439	137 0605
LEIPZIG	IND	5128/1220	33UUS04711	137 0430
EISENHUTTENS	IND	5210/1432	33UVT53418	137 0430
DESSAU	IND	5150/1213	33UUT00788	137 0505
COTTBUS	IND	5143/1415	33UVS40904	137 0155
WALBERSTADT	IND	5156/1101	32UPC39340	137 0615
DRESDEN	IND	5105/1345	33UUS91348	137 0605
KARLMARXSTAD	IND	5048/1252	33UUR24038	137 0430

Figure B-6b. Enemy Order of Battle-Ground (TB07) (Page 2)

ENEMY ORDER OF BATTLE PAGE 3 OF 3

GROUND ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
WISMAR-SVD	BRI	5350/1127	32UPE50575	137 0430
MAGDEBURG	BRI	5213/1143	32UPC66338	137 0430
KYRITZ	BRI	5254/1227	32UWU14850	137 0430
POTSDAM-NW	BRI	5225/1252	32UUT30696	137 0430
DEMMIN	BRI	5354/1302	32UUV68782	137 0430
WISMAR-WEST	BRI	5351/1106	32UPE36615	137 0505
SCHONEBECK	BRI	5157/1127	32UPC57328	137 0155
NEURUPPIN	BRI	5256/1250	32UUU30523	137 0615
WITTENBURG	BRI	5152/1239	32UUT18911	137 0605
DESSAU	BRI	5152/1215	32UUT02262	137 0430
GOTHAETHAGDC	ART	5050/1050	32UPA06387	137 0505
ORANIENBAUMA	ART	5150/1227	32UUT10504	137 0155
HALBERSTADTB	ART	5148/1230	32UUT12504	137 0615
ORANIENBAUMD	ART	5112/1055	32UPB08487	137 0605
GROSCHWITZ	ART	5040/1110	32UPA49253	137 0430

Figure B-6c. Enemy Order of Battle-Ground (TB07) (Page 3)

ENEMY ORDER OF BATTLE
AIR ORDER OF BATTLE

NAME	TYPE	LAT/LONG	NUM/TYPE	ROLE	DATE/HR
RATHENOW	ROC	5222/1205			137 0615
ALLSTEDT-1	ROC	5132/1050			137 0605
ALLSTEDT-6	ROC	5122/1048			137 0430
PLAUEN-1	ROC	5039/1147			137 0505
PLAUEN-7	ROC	5028/1223			137 0155
MERSEBURG	FLD	5121/1158			137 0505
DAHGARTEN	FLD	5416/1227			137 0155
NITROW	FLD	5317/1246			137 0615
BRANDENBURG	FLD	5227/1227			137 0605
PEENEMUNDE	FLD	5409/1347			137 0430
FINOW	FLD	5249/1342			137 0430
DRESDEN	FLD	5106/1347			137 0430
MARXWALDE	FLD	5247/1416			137 0430

Figure B-7. Enemy Order of Battle-Air (TB08)

ENEMY ORDER OF BATTLE

ELECTRONIC ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
BRANDENBURG	RAD	5223/1234	33UUT18328	137/0430
LEIPZIG	RAD	5114/1228	33UUS09713	137/0430
STENDAL	RAD	5236/1136	32UPD60713	137/0430
MAGDEBURG	RAD	5218/1134	32UPC59998	137/0430
ALLSTEDT	RAD	5126/1115	32UPB50024	137/0430
STENDAL	EW	5238/1148	32UPD68808	137/0430
SUHL-S	EW	5031/1042	32UPA01117	137/0430
FINOW	EW	5247/1343	33UUU93345	137/0430
BRANDENBURG	EW	5228/1225	33UUT12394	137/0430
SCHWERIN	EW	5345/1100	32UPE38136	137/0430
LUDWIGSLUSTS	EW	5313/1131	32UPD54559	137/0430
BALLENSTED	EW	5139/1102	32UPB40555	137/0430

Figure B-8. Enemy Order of Battle-Electronic (TB09)

ENEMY ORDER OF BATTLE

SAM/AAA ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
ZOSSEN	SAM	5211/1340	33UUT90423	137/0430
PARCHIM-A	SAM	5323/1148	32UPE65546	137/0430
STENDAL-A	SAM	5235/1140	32UPD63474	137/0430
MAHLWINKEL-A	SAM	5225/1154	32UPC73399	137/0430
COCHSTED-A	SAM	5154/1125	32UPC56045	137/0430
KOTHEN-B	SAM	5144/1149	32UPC73066	137/0430
MERSEBURG-A	SAM	5127/1155	32UPB77893	137/0430
ALLSTEDT-B	SAM	5120/1131	32UPB61397	137/0430
MERSEBURG-F	SAM	5116/1155	32UPB78317	137/0430
MIROW-A	SAM	5321/1237	33UUU24360	137/0430
BRANDENBURGB	SAM	5231/1237	33UUT20700	137/0430
BRANDENBURGF	SAM	5223/1238	33UUT21060	137/0430
JUTERBOG-A	SAM	5158/1252	33UUT28156	137/0430
FINOW-A	SAM	5254/1340	33UUU91480	137/0430
GUSTROW-A	AAA	5345/1214	33UUV10073	137/0155
WITTSTOCK-A	AAA	5319/1220	33UUU12922	137/0155
NEUSTRELITZA	AAA	5325/1305	33UUV69888	137/0155
WITTENBERGEA	AAA	5258/1202	33UTU98083	137/0155
KYRITZ-A	AAA	5253/1220	33UUU10061	137/0155

Figure B-9a. Enemy Order of Battle SAM/AAA (TB10) (Page 1)

ENEMY ORDER OF BATTLE

SAM/AAA ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
ALLSTEDT-A	SAM	5128/1118	32UPB52051	137 0505
ZOLLSCHEN-A	SAM	5114/1210	33UTS97123	137 0155
LEIPZIG-D	SAM	5116/1232	33UUS12592	137 0155
ERFURT-A	SAM	5107/1108	32UPB45737	137 0155
ERFURT-B	SAM	5104/1110	32UPB47234	137 0155
ALTENBURG-A	SAM	5058/1221	33UUS02464	137 0615
SAALFELD-A	SAM	5041/1140	32UPA70537	137 0605
PLAUEN-A	SAM	5027/1219	33UTR99744	137 0430
GOTHAETHAGDC	SAM	5050/1050	32UPA06387	137 0505
DRANIENBAUMA	SAM	5150/1227	33UUT10504	137 0155
HALBERSTADTB	SAM	5148/1230	33UUT12504	137 0615
DRANIENBAUMD	SAM	5112/1055	32UPB08487	137 0605
GROSCHWITZ	SAM	5040/1110	32UPA49253	137 0430
WISHAR-SVD	SAM	5350/1127	32UPE50575	137 0430
MAGDEBURG	SAM	5213/1143	32UPC55338	137 0430
KYRITZ	SAM	5254/1127	33UUU14850	137 0430
POTSDAM-NW	SAM	5225/1252	33UUT30696	137 0430
DEMMIN	SAM	5354/1302	33UUV68782	137 0430
WITTENBERGEB	AAA	5255/1141	32UPD63413	137 0605

Figure B-9b. Fnemy Order of Battle-SAM/AAA (TB10) (Page 2)

ENEMY ORDER OF BATTLE

SAM/AAA ORDER OF BATTLE

NAME	TYPE	LAT/LONG	UTM	DATE/HR
STENDAL-A	AAA	5237/1133	32UPD58635	137/0155
RATHENOW-A	AAA	5233/1216	33UUU06473	137/0155
MAHLWINKEL-A	AAA	5230/1140	32UPC63658	137/0155
BRANDENBURGA	AAA	5225/1237	33UUT20457	137/0155
BERGBEIMAGDA	AAA	5220/1132	32UPC58560	137/0155
ALTENGRABOWA	AAA	5212/1228	33UUT13772	137/0155
STASSFURT-A	AAA	5157/1144	32UPC69109	137/0615
ORANIENBAUMA	AAA	5149/1214	33UUT01438	137/0605
LEIPZIG-A	AAA	5131/1219	33UUB04141	137/0430
ALLSTEDT-A	AAA	5128/1118	32UPB52051	137/0505
ZOLLSCHEN-A	AAA	5114/1210	33UTS97123	137/0155
LEIPZIG-D	AAA	5116/1232	33UUB12592	137/0155
ERFURT-A	AAA	5107/1108	32UPB45737	137/0155
ERFURT-B	AAA	5104/1110	32UPB47234	137/0155
ALTENBURG-A	AAA	5058/1221	33UUB02464	137/0615
SAALFELD-A	AAA	5041/1140	32UPA70537	137/0605
PLAUEN-A	AAA	5027/1219	33UTR99744	137/0430

Figure B-9c. Enemy Order of Battle-SAM/AAA (TB10) (Page 3)

FIGHTER SCHEDULE

FRAG NO. F001 EFF PERIOD [redacted] 137
[redacted] 1115 [redacted] 1500

BASE/UNIT	MM/TYPE	RATE NORM	RATE SURG	SURGE Y/N	SORTIES	OCA	DCA	INT	TAA	CAS
EDVV										
COURT	15/A10	2.0	2.2	N	30	0	0	0	0	2
EGWZ										
ARROW	25/F111E	2.0	2.2	N	50	4	0	0	0	0
EDAD										
FLITE	12/F15	2.0	2.2	N	24	0	2	0	0	0
EDVV										
CLAWS	4/C130	2.0	2.2	N	8	0	0	0	0	[redacted]

Figure B-10. Fighter Schedule (TB11)

ALERT AIRCRAFT

MSN#	MSN	C/A	NAV/TYPE	ORD	ICAO	C/S	ORBIT PT	READ	FR/TO
1120	CAS	A	2/A-10	MARK-82	EBWB	PATSY	5255/1141	0	0800/0900
1121	CAS	A	2/A-10	MARK-70	EDAS	POUCH	5104/1107	0	0400/0500
1040	DCA	C	2/F4D	AIM-7E	ELLA	SILLY	5117/1226	15	1400/1700
1000	CAS	A	4/F4E	M-117	EBLG	GLASS	5040/1110	0	1100/1200

Figure B-11. Alert Aircraft (TB12)

COMMAND AND CONTROL

NAME	TYPE	C/S	LOCATION	LAT/LONG	UTM
JOC		DANCE	MARGATE	5132/0118	31UCS46687
COM17AF		BRASS	BEAUVECHAIN	5035/0447	31UDR96442
516TACCS	TACC	PAST	HUBERT	5002/0530	31UER31522
17TCS	CRC	GOLD	JEHONVILLE	4955/0515	31UED23871

Figure B-12. Command and Control Centers (TB13)

TARGET TYPE

TARGET	DESCRIPTION
AAA	ANTI-AIR-ARTILLERY
ART	ARTILLERY
BRI	BRIDGE
EW	EARLY WARNING
IND	INDUSTRIAL SITE
MIL	MISC. MILITARY SITE
POL	PETROLEUM,OIL,LUBRICANT DEPOT
RAD	RADAR
ROC	ROCKET
SAM	SURFACE-TO-AIR MISSILE SITE
TNK	TANK COLUMN
TRK	TRUCK COLUMN

Figure B-13 Generic Target Types (TB14)

ORDNANCE LOAD CODES

SQL #	ORDNANCE
A01	4 MARK 84 (2000# GP)
A02	24 MARK 82 (500# HD)
A03	12 MARK 82 (500# HD)
A04	24 MARK 82 (500# GP)
A05	12 MARK 82 (500# GP)
A06	12 M-117 (750# GP)
A07	12 MARK 82 (500# GP) AND 8 M-117 (750# GP)
A08	12 MARK 82 (500# GP) AND 2 MARK 84 (2000# GP)
A09	12 MARK 82 (500# HD) AND 2 MARK 84 (2000# GP)
A10	12 MARK 82 (500# GP) AND 12 MARK 82 (500# HD) AND 8 M-117 (750# GP)
A11	12 CBU 52/1
A12	12 MARK 20 (ROCKEYE)
A13	1 SUU20 (BDU-33, OR MK-106)
A14	12 MARK 82 (500# GP) AND 12 MARK 82 (500# HD) AND 6 MARK 83 (1000# GP)
B01	1 ECMPOD AND 1 ROCKET POD AND 2 AIM-7E
B02	6 CBU-24 AND 5 M-117 (750# GP) AND 2 AIM-7E
B03	3 BLU-1 (NAPALM) AND 6 M-117 (750# GP) AND 1 ECMPOD AND 4 AIM-7E
B04	6 M-117 (750# GP) AND 1 ECMPOD AND 5 MG-1 AND 2 AIM-7E
B05	11 M-117 (750# GP) AND 1 ECMPOD AND 2 AIM-7E

Figure B-14a. Ordnance Load Codes (TB15) (Page 1)

ORDNANCE LOAD CODES

SQL #	ORDNANCE
B06	5 M-117 (750# GP) AND 6 MARK 83 (1000# GP) AND 1 ECMPOD AND 2 AIM-7E
B07	5 CBU-24 AND 1 ECMPOD AND 2 AGM-45 AND 2 AIM-7E
B08	6 CBU-24 AND 1 ECMPOD AND 5 MC-1 AND 2 AIM-7E
B09	4 BLU-1 (NAPALM) AND 6 MARK-82 AND 4 AIM-7E
B10	3 BLU-1 (NAPALM) AND 3 ROCKET PODS AND 4 AIM-7E
B11	3 BLU-1 (NAPALM) AND 6 MARK-82 (500# GP) AND 4 AIM-7E
B12	4 BLU-1 (NAPALM) AND 3 ROCKET PODS AND 4 AIM-7E
B13	1 ECMPOD AND 2 AGM-45 AND 3 ROCKET PODS AND 2 AIM 7E
B14	6 MARK 82 (500# HD) AND 3 ROCKET PODS AND 4 AIM-7E
B15	6 MARK 82 (500# HD) AND 4 AIM-7E
B16	7 BLU-1 (NAPALM) AND 4 AIM-7E
B17	12 MARK 82 (500# GP) AND 2 AIM-7E
B18	4 BLU-1 (NAPALM AND 4 AIM-7E
B19	6 MARK 82 (500# GP) AND 6 ROCKET PODS AND 4 AIM-7E
B20	1 ECMPOD AND 2 AIM-7E
B21	6 MARK 82 (500# HD) AND 6 ROCKET PODS AND 4 AIM-7E
B22	9 BLU-31B (LAND MINE) AND 1 ECMPOD AND 2 AIM-7E
B23	5 CBU-24 AND 1 ECMBOD AND 4 AIM-9B AND 2 AIM-7E
B24	4 AIM-7E AND 4 AIM-9B
B25	6 MARK 82 (500# GP) AND 5 M-117 (750# GP) AND 1 ECMPOD AND 2 AIM-7E

Figure B-14b. Ordnance Load Codes (TB15) (Page 2)

ORDNANCE LOAD CODES

SQL #	ORDNANCE
B26	5 CBU-24 AND 6 MARK 82 (500# GP) AND 1 ECMPOD AND 2 AIM-7E
B27	6 M-117 (750# GP) AND 2 AIM-7E
B28	6 CBU-24 AND 1 ECMPOD
B29	2 ROCKET PODS
B30	1 SUU-42
B31	2 SUU-42
B32	1 ECMPOD AND 2 AGM-45 AND 1 SUU-23 CANNON AND 2 AIM-7E
B33	1 ECMPOD AND 1 AGM-78 AND 1 SUU-23 CANNON AND 2 AIM-7E
C01	4 300 GALLON TANK
C02	2 BLU-1 (NAPALM) AND 12 MARK 82 (500# GP)
C03	2 300 GALLON TANK AND 12 MRK 82 (500# HD)
C04	12 MARK 82 (500# HD)
C05	6 MARK 84 (2000# GP)
C06	2 300 GALLON TANK AND 10 M-117 (750# GP)
C07	2 300 GALLON TANK AND 2 CBU-24 AND 12 MARK 82 (500#GP)
C08	4 CBU-24 AND 2 MARK 84 (2000# GP)
C09	2 300 GALLON TANK AND 4 MARK 84 (2000# GP)
C10	2 300 GALLON TANK AND 2 BLU-1 (NAPALM)
C11	6 MARK 83 (1000# GP)

Figure B-14c. Ordnance Load Codes (TB15) (Page 3)

ORDNANCE LOAD CODES

SQL #	ORDNANCE
C12	2 CBU-24 AND 20 MARK 82 (500# GP)
C13	4 BLU-24
C14	2 300 GALLON TANK AND 2 BLU-1 (NAPALM)
C15	4 BLU-1 (NAPALM)
C16	14 M-117 (750# GP)
C17	2 300 GALLON TANK AND 4 MARK 84 (2000# GP)
C18	20 MARK 82 (500# HD)
C19	2 300 GALLON TANK AND 2 BLU-1 (NAPALM) AND 12 MARK 82 (500#GP)
C20	2 BLU-1 (NAPALM) AND 8 MARK 82 (500# HD)
C21	24 MARK 82 (500# GP)
C22	2 300 GALLON TANK AND 4 BLU-1 (NAPALM)
D01	4 AIM-9B AND 4 AIM-7E AND 940 ROUNDS OF 20MM CANNON
D02	2 AIM-9B AND 2 AIM-7E AND 560 ROUNDS OF 20MM CANNON
E01	1 ECMPOD AND 2 AGM-45 AND 1 SUU-23 CANNON AND 2 AIM-7E
E02	1 ECMPOD AND 1 AGM-78 AND 1 SUU-23 CANNON AND 2 AIM-7E

Figure B-14d. Ordnance Load Codes (TB15) (Page 4)

AIRCRAFT CHARACTERISTICS PAGE 1 OF 5

AC/TYPE	ORDNANCE	COMBAT RADII NM. HI/LOW/HI	MIN. COMBAT SPEED - KTAS
F-111	A01	820	540
	A02	710	540
	A03	760	540
	A04	710	540
	A05	760	540
	A06	740	540
	A07	710	540
	A08	750	540
	A09	750	540
	A10	710	540
	A11	760	540
	A12	800	540
	A13	700	540
	A14	710	540
F-4C,D	B01	450	480
	B02	260	480
	B03	260	480
	B04	300	480

Figure B-15a. Aircraft Characteristics (TB16) (Page 1)

AC/TYPE	ORDNANCE	COMBAT RADII NM. HI/LOW/HI	MIN. COMBAT SPEED - KTAS
F-4C,D (CONT.)	B04	250	480
	B05	250	480
	B06	350	480
	B07	300	480
	B08	260	480
	B09	400	480
	B10	260	480
	B11	340	480
	B12	380	480
	B13	270	480
	B14	250	480
	B15	340	480
	B16	200	480
	B17	280	480
	B18	290	480
	B19	460	480
	B20	240	480
	B21	300	480
	B22	320	480

Figure B-15b. Aircraft Characteristics (TB16) (Page 2)

AIRCRAFT CHARACTERISTICS PAGE 3 OF 5

AC/TYPE	ORDNANCE	COMBAT RADII NM. HI/LOW/HI	MIN. COMBAT SPEED - KTAS
F-4C,D (CONT.)	B23	320	480
	B24	350	480
	B25	230	480
	B26	250	480
	B27	260	480
	B28	310	480
	B29	400	480
	B30	400	480
	B31	400	480
	B32	380	480
	B33	380	480
A-7,10	C01	400	450
	C02	244	450
	C03	313	450
	C04	244	450
	C05	222	450
	C06	300	450
	C07	313	450

Figure B-15c. Aircraft Characteristics (TB16) (Page 3)

AIRCRAFT CHARACTERISTICS PAGE 4 OF 5

AC/TYPE	ORDNANCE	COMBAT RADII NM. HI/LOW/HI	MIN. COMBAT SPEED - KTAS
A-7,10 (CONT.)	C08	279	
	C09	300	450
	C10	330	450
	C11	288	450
	C12	180	450
	C13	270	450
	C14	300	450
	C15	290	450
	C16	180	450
	C17	310	450
	C18	180	450
	C19	280	450
	C20	244	450
	C21	150	450
	C22	300	450
F-5E,F-15	D01	1000	450
	D02	1000	450

Figure B-15d. Aircraft Characteristics (TB16) (Page 4)

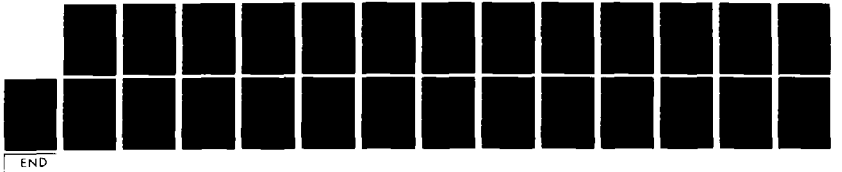
AIRCRAFT CHARACTERISTICS PAGE 5 OF 5

AC/TYPE	ORDNANCE	COMBAT RADII NM. HI/LOW/HI	MIN. COMBAT SPEED - KTAS
F-4G	E01	380	450
	E02	380	450

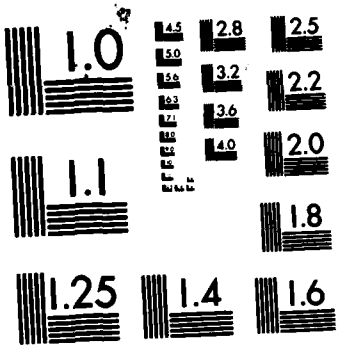
Figure B-15e. Aircraft Characteristics (TB16) (Page 5)

Figure B-16. Identify Line - Targets (TB17)

AD-A125 183 CEDA USER'S MANUAL(U) MITRE CORP BEDFORD MA 2/2
J R CALABRO ET AL. JAN 83 MTR-8658 ESD-TR-82-418
F19628-82-C-0001
UNCLASSIFIED . F/G 9/2 NL



END
FILMED
DTIC



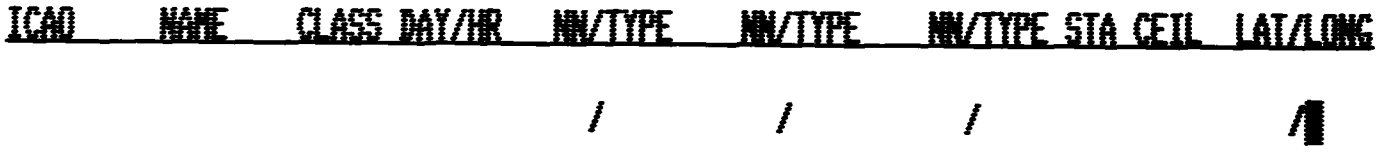


Figure B-17. Identify Line-Friendly Airbases (TB18)

AIR TASKING ORDER

MSN#	MSN	TOT	TOT/Z	NO/TYPE	ORD	BASE	CALL SIGN	TGT-DES	TYPE	PD	RE-FUEL

Figure B-18. Air Tasking Order (TB20)

"CONTINUE SESSION"

Figure B-19. Continue Session (TB21)

APPENDIX C

FUNCTION FLOW

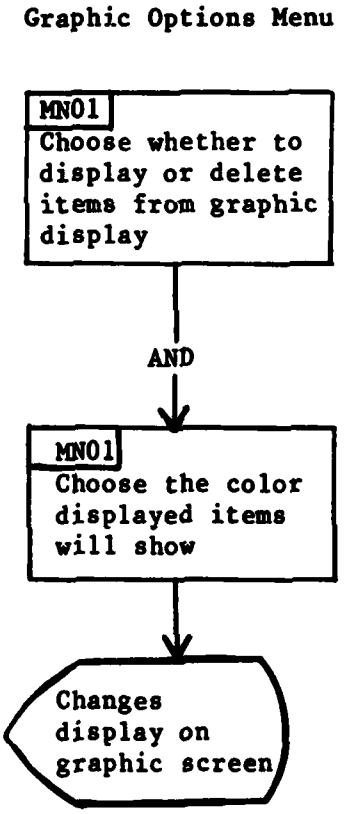


Figure C-1. Function Key #1 - Graphic Options Menu

Data Base Search Menu

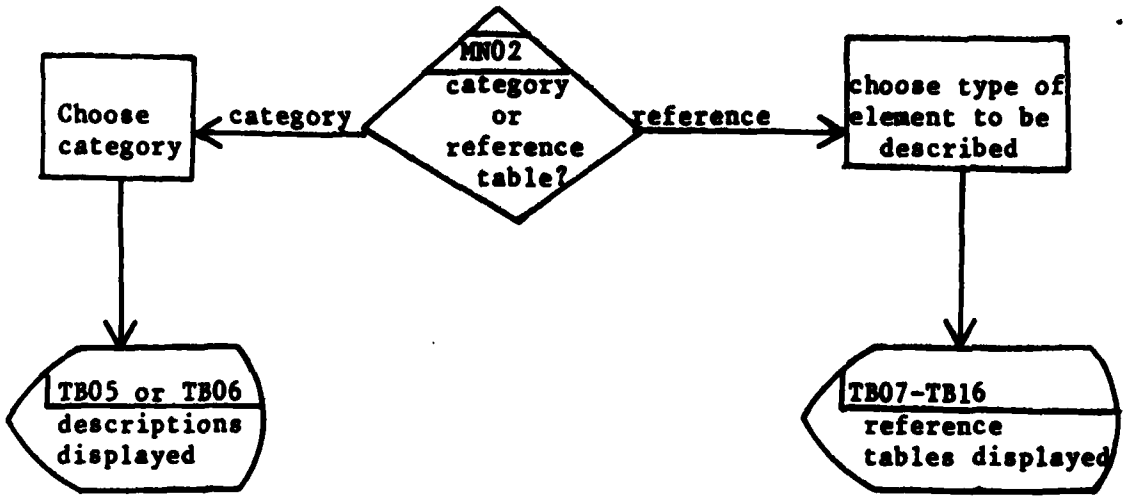


Figure C-2. Function Key #2 - Data Base Search Menu

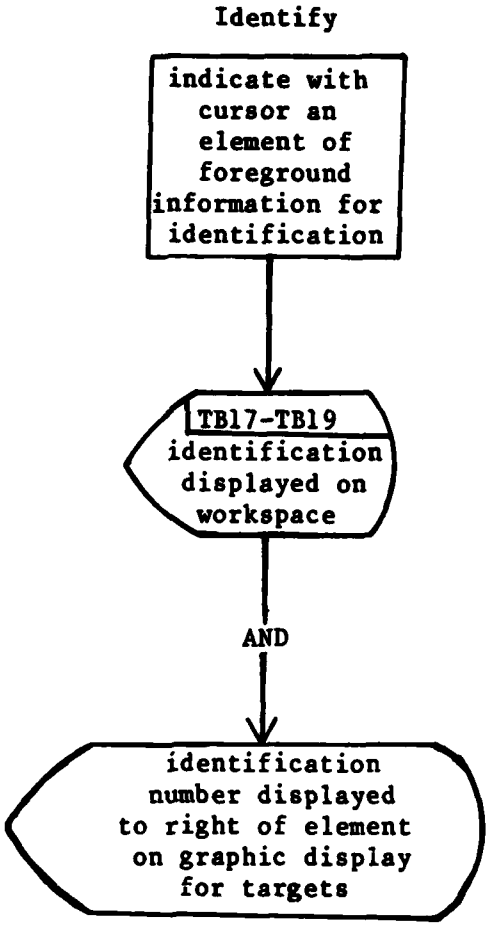


Figure C-3. Function Key #3 - Identify

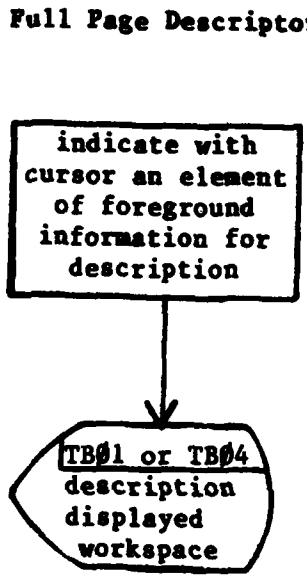


Figure C-4. Function Key #4 - Full Page Descriptor

Grid

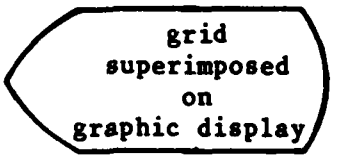


Figure C-5. Function Key #5 - Grid

Zoom 1

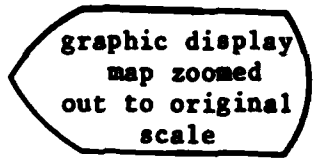


Figure C-6. Function Key #6 - Zoom 1

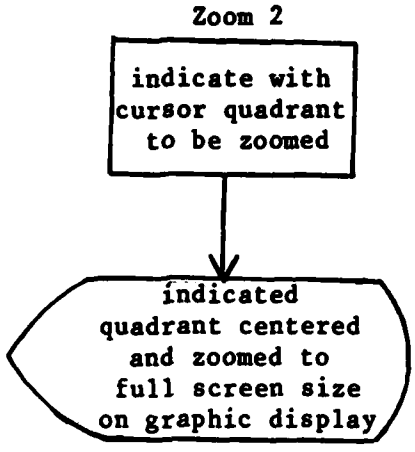


Figure C-7. Function Key #7 - Zoom 2

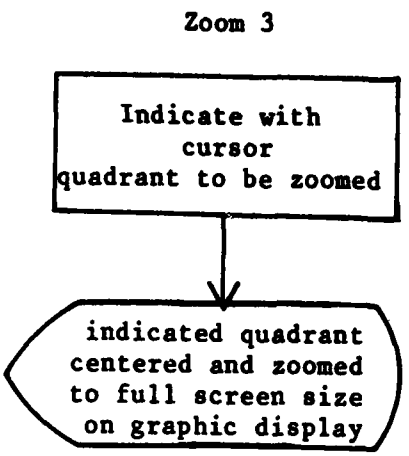


Figure C-8. Function Key #8 - Zoom 3

Airbase Prioritization

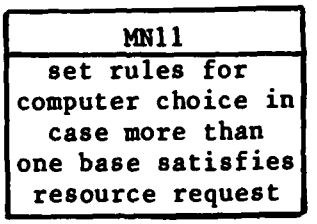


Figure C-9. Function Key #9 - Airbase Prioritization Menu

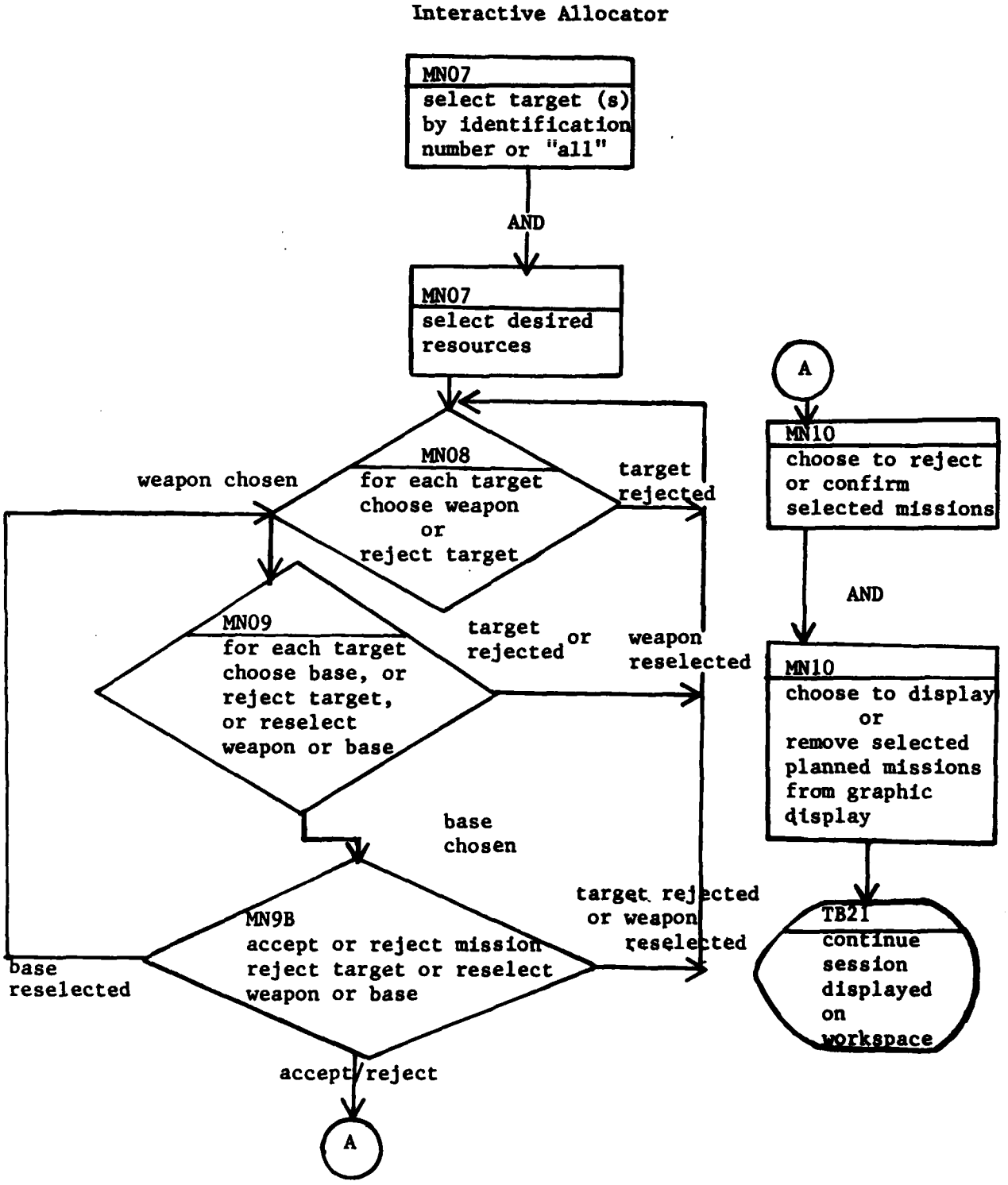


Figure C-10. Function Key #10 - Interactive Allocation Menu

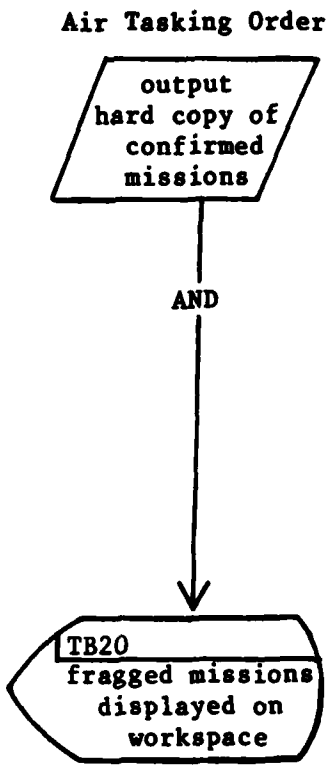


Figure C-11. Function Key #11 - Air Tasking Order

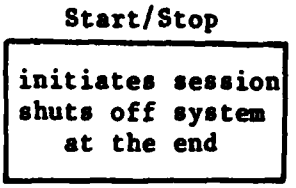


Figure C-12. Function Key #12. Start/Stop

APPENDIX D

SYSTEM EVENT CODES

Possible values for system events are:

Menus:
- 'MN01' - Graphic Options Menu
- 'MN02' - Data Base Search Menu
- 'MN07' - Weapons Allocation Menu
- 'MN08' - Interactive Allocation/Weapon Decision Menu
- 'MN09' - Interactive Allocation/Airbase Decision Menu
- 'MN9B' - Interactive Allocation/Mission Decision Menu
- 'MN10' - Planned Missions Menu
- 'MN11' - Airbase Prioritization Menu

Tables:
- 'TB01' - Target Description
- 'TB03' - Identified Targets Summary
- 'TB04' - Friendly Airbase Description
- 'TB05' - Friendly Airbases
- 'TB06' - Mission Schedule
- 'TB07' - Ground Order of Battle
- 'TB08' - Air Order of Battle
- 'TB09' - Enemy Order of Battle/Electronic
- 'TB10' - Enemy Order of Battle/Threat
- 'TB11' - Fighter Schedule
- 'TB12' - Alert Aircraft
- 'TB13' - Command and Control Elements
- 'TB14' - Target Type
- 'TB15' - Ordnance Load Codes
- 'TB16' - Aircraft Characteristics
- 'TB17' - Identify Line/Targets
- 'TB18' - Identify Line/Friendly Airbase
- 'TB20' - Air Tasking Order
- 'TB21' - Continue Session

Graphics:
- 'AR01' - Geographic Area #1 - total area
- 'AR02' - Geographic Area #2 - first quadrant
- 'AR03' - Geographic Area #3 - second quadrant
- 'AR04' - Geographic Area #4 - third quadrant
- 'AR05' - Geographic Area #5 - fourth quadrant
- 'AR06' - Geographic Area #6 - first quadrant of Area #2
- 'AR07' - Geographic Area #7 - second quadrant of Area #2
- 'AR08' - Geographic Area #8 - third quadrant of Area 2
- 'AR09' - Geographic Area #9 - fourth quadrant of Area #2
- 'AR10' - Geographic Area #10 - first quadrant of Area #3
- 'AR11' - Geographic Area #11 - second quadrant of Area #3
- 'AR12' - Geographic Area #12 - third quadrant of Area #3
- 'AR13' - Geographic Area #13 - fourth quadrant of Area #3
- 'AR14' - Geographic Area #14 - first quadrant of Area #4
- 'AR15' - Geographic Area #15 - second quadrant of Area #4
- 'AR16' - Geographic Area #16 - third quadrant of Area #4

'AR17' - Geographic Area #17 - fourth quadrant of Area #4
'AR18' - Geographic Area #18 - first quadrant of Area #5
'AR19' - Geographic Area #19 - second quadrant of Area #5
'AR20' - Geographic Area #20 - third quadrant of Area #5
'AR21' - Geographic Area #21 - fourth quadrant of Area #5

APPENDIX E

USER RESPONSE CODES

Possible values for user response are:

'F01'	-	Function Key #1
'F02'	-	Function Key #2
'F03'	-	Function Key #3
'F04'	-	Function Key #4
'F05'	-	Function Key #5
'F06'	-	Function Key #6
'F07'	-	Function Key #7
'F08'	-	Function Key #8
'F09'	-	Function Key #9
'F10'	-	Function Key #10
'F11'	-	Function Key #11
'F12'	-	Function Key #12
'F13'	-	Function key #13
'ENTR'	-	Menu entry

The function keys are set prior to session initiation. Refer to the CEDA User's Manual for information on how they are set for the initial system.

APPENDIX F

SAMPLE SESSION DATA

```
LOGIN SMITH     PFC                  22682          08:51:38
EVENT AR01   0.363E+02 F 05   0.000E+00
EVENT AR01   0.972E+01 F 08   0.000E+00
EVENT AR09   0.269E+02 F 03   0.000E+00
EVENT TB17   0.405E+01 F 03   0.000E+00
EVENT TB17   0.117E+01 F 03   0.000E+00
EVENT TB17   0.262E+02 F 02   0.000E+00
EVENT MN02   0.332E-01 ENTR   0.945E+01
 yNNNNNNNNNNNN
EVENT TB05   0.560E+02 F 04   0.000E+00
EVENT TB01   0.471E+02 F 06   0.000E+00
EVENT AR01   0.130E+02 F 04   0.000E+00
EVENT TB04   0.394E+02 F 04   0.000E+00
EVENT TB04   0.587E+02 F 16   0.000E+00
```

GLOSSARY

Terms

Foreground Information:	Any Target, airbase, or city displayed on the map.
Allocation Pairing Lines:	Line drawn from the friendly airbase that will fly the mission to the target. This is not a flight path.
Confirmed Mission:	A mission that has been explicitly confirmed via Planned Missions menu but not yet sent to wing from the ATO function.
Fragged Mission:	A confirmed mission that has been sent to wing command via ATO function. Also called a scheduled mission.
Menu:	A tabular display accepting user input.
Monitor:	The twenty-fourth line of the VT100 screen on which machine error messages are displayed.
Planned Mission:	The union of all proposed and confirmed missions.
Proposed Mission:	A mission that has been accepted during the last phase of allocation but has not yet been confirmed.
Table:	A tabular display printing information only.
Workspace:	The first 23 lines of VT100 screen on which tabular displays are presented.

Acronyms & Abbreviations

AAA:	anti-aircraft artillery
A/C:	aircraft
ASN:	assignment indicator
ATO:	air tasking order
AWOP:	Automated Weaponeering Optimization Program
BE:	basic encyclopedia
CAS:	close air support
C/S:	call sign
EOB:	enemy order of battle
EW:	electronic warfare
EW/GCI:	early warning/ground control interrupt cite
G/A:	ground or air alert
ICAO:	International Civil Aeronautics Organization - unique airbase code
KTAS:	knots true air speed
MSN:	mission (type if alone)
NN/TYPE:	number of that type of aircraft
OCA:	offensive counter air
ORD:	ordnance
PD:	probability of damage
POL:	petroleum, oil and lubricants
PRI:	priority
SAM:	surface-to-air missiles

SCL:	standard configuration load
STA:	status
TDZ:	time of departure (zulu)
TGT:	target
TOTZ:	time over target (zulu)
UTM:	universal transverse mercator - geographic coordinates
WW:	wild weasel