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TASK-ORIENTED, NATURALLY ELICITED SPEECH (TONE) DATABASE FOR THE FORCE REQUIREMENTS EXPERT SYSTEM, HAWAII (FRESH)

by

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The Naval Ocean Systems Center (NOSC) has designed an unclassified database called Task-Oriented, Naturally Elicited Speech (TONE) which simulates the characteristics of FRESH on a smaller scale. This study assisted NOSC in developing a voice-recognition, man-machine interface that could be used with TONE and upgraded at a later date for FRESH. The study identified more than 600 words that are associated with command and control and provided NOSC with the three most common forms of syntax used by the participants.

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Task-Oriented, Naturally Elicited Speech (TONE) Database for the Force Requirements Expert System, Hawaii (FRESH)

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ABSTRACT

The Defense Advanced Research Projects Agency (DARPA) Strategic Computing has a goal of developing a large-vocabulary, speaker-independent voice-recognition system for battle management and fleet readiness assessment. One of the primary testbeds for the recognition system will be the commmand and control operation of the classified database for the Force Requirements Expert System, Hawaii (FRESH).

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LIST OF ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
ARPA	Advanced Research Projects Agency
ART	Article
BTG	btg, Incorporated
CASREP	Casualty Report
CROVL	Combat Readiness Overall
C^2	Command and Control
CINC	Commander-in-Chief
CINCPACFLT	Commander-in-Chief Pacific Fleet
DARPA	Defense Advanced Research Projects Agency
DET	Determiner
DOD	Department of Defense
ETR	Estimated Time to Repair
FRESH	Force Requirements Expert System Hawaii
IBM	International Business Machines
JCS	Joint Chiefs of Staff
LADDER	Language Access to Distributed Data with Error Recovery
LIFER	Language Interface Facility with Ellipses and Recursion
NLP	Natural Language Program
NOSC	Naval Ocean Systems Center
NP	Noun Phrase
NPS	Naval Postgraduate School
OPS	Operations
OPORDS	Operation Orders
OPTEMPO	Operations Tempo
PERSTEMPO	Personnel Tempo
PFCC	Pacific Fleet Command Center
PP	Prepositional Phrase
S	Sentence
SOA	Source of Availability

SPAWARSYSCOM	Space and Naval Warfare Systems Command
SRS	Speech Recognition Systems
SUS	Speech Understanding Systems
TI	Texas Instruments
TONE	Task-Oriented, Naturally Elicited Speech
VP	Verb Phrase

I. INTRODUCTION

A. BACKGROUND

The Force Requirements Expert System, Hawaii (FRESH) has been developed to assist the Commander-in-Chief of the U. S. Naval Pacific Fleet in making decisions on command and control (C^2) issues. FRESH requires good user interfaces. Voice recognition is being considered for one of those interfaces.

The Defense Advanced Research Projects Agency (DARPA) Strategic Computing program has a goal of developing a large-vocabulary, speaker-independent voice recognition system by the mid-1990s. One of the primary testbeds for the recognition system will be in command and control operations involved in battle management and fleet readiness assessment such as FRESH.

A language model for the battle management task domain has been developed. An essential part of the development of the recognition system is to evaluate the accuracy of the language model. The Naval Ocean Systems Center (NOSC) has developed a system called Task-Oriented Naturally Elicited Speech (TONE) as a prototype to test this model. The purpose of this study is to assist NOSC in deciding on the vocabulary of command and control terms that should be used for TONE.

B. COMMAND AND CONTROL

As defined by the Joint Chiefs of Staff (JCS), command and control

> ...is the exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures which are employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. [Ref. 1:p. 74]

Command and control is a process used by a commander to achieve a goal through the best utilization of resources. Computers play a vital role in making this happen. According to Simon, "Human minds with computers to aid them are our principal productive resource." [Ref. 2:p. 29]

C. EXPERT SYSTEMS AND NATURAL LANGUAGE PROGRAMS

1. Expert Systems

The commander is responsible for ensuring the best utilization of available resources. This is an increasingly difficult task as the strategies binding employment of more sophisticated weapons increase with technological advances.

> ...The volume of information that staffs must process has increased many fold since World War II and the time allowed for decision making has decreased many fold. As a result the requirements on the "brain capacity" of commanders and staffs have increased vastly. To meet these requirements by simply expanding the administrative apparatus is fundamentally impossible. The only escape from this incompatible situation lies in the extensive application of automation, primarily computers. [A] "man-machine" system is more perfect than "man" alone or "machine" alone. Information technology does not simply help the commander and his staff, but also stimulates the development of collective military creativity, in which the largest group of people, including those separated by great distances, can participate. [Ref. 3:p. 3]

A type of human-machine interface used increasingly to assist C^2 commanders in fulfilling their responsibilities includes some variety of computer expert system. An outgrowth of research on artificial intelligence, the expert system embodies

> ...knowledge of a particular application area combined with an inference capability, which enable[s] the program to reach a level of decision making performance comparable to (or even exceeding) that of top human experts. [Ref. 4:p. 138]

Expert systems thus assist the C^2 commander in making better decisions, possibly better than could be made by the commander alone. As noted by Moser and Christoph,

> Very complex problems can also overwhelm decision makers, who tend to give up in their efforts to cope with all the aspects of the problem and concentrate on just a few variables which may lead to simplistic decisions. The danger can be largely eliminated by the use of expert systems which consider all the relevant variables and

conduct an exhaustive analysis of the situation before recommending a course of action. [Ref. 5:p. 18]

2. Natural Language Programs

Natural language is a collection of words. As stated by Tennant,

> The prime characteristic of natural languages is that they can be used to express nearly all concepts that occur to the people who speak and understand them. Artificial languages are those that have been designed to be highly expressive over a limited range of ideas. [Ref. 6:p. 1]

Natural language computer programs are developed through natural language processing (NLP). NLP is "the process by which a system is able to accept, decipher, and understand human language communication." [Ref. 7:p .2]

Initial attempts at NLP were limited to key-word scanning techniques. Recurring linguistic patterns were the basis for obtaining a successful match of questions to answers. Domain-dependent heuristics limited the responses. Parsing is NLP's technique for syntactic analysis. This requires the identification of a language's grammar constructs.

One example of a system developed using the NLP technique is Language Interface Facility with Ellipsis and Recursion (LIFER). LIFER enabled the construction of a natural language interface to databases. One of the LIFER applications is called LADDER, Language Access to Distributed Data with Error Recovery. [Ref. 6:p. 187]

LADDER was a forerunner, in concept, to FRESH. The program answered questions regarding an unclassified command and control database. However, LADDER was not an expert system as FRESH is.

An overview of the LADDER program can be seen in Figure 1.1. Typical LADDER queries would be:

What is the length of the Constellation?

What is the displacement of the Nautilus?

What is the class of the Kennedy?

The LADDER template would see the above questions as:

WHAT IS THE <ATTRIBUTE> OF THE <SHIP>

The category of <ATTRIBUTE> in the database contains descriptors of length, displacement, and class. The category of <SHIP> contains ship names. If more than one <ATTRIBUTE> is requested at one time (such as length, home port, and hull number), LADDER considers these as <ATTRIB>s.

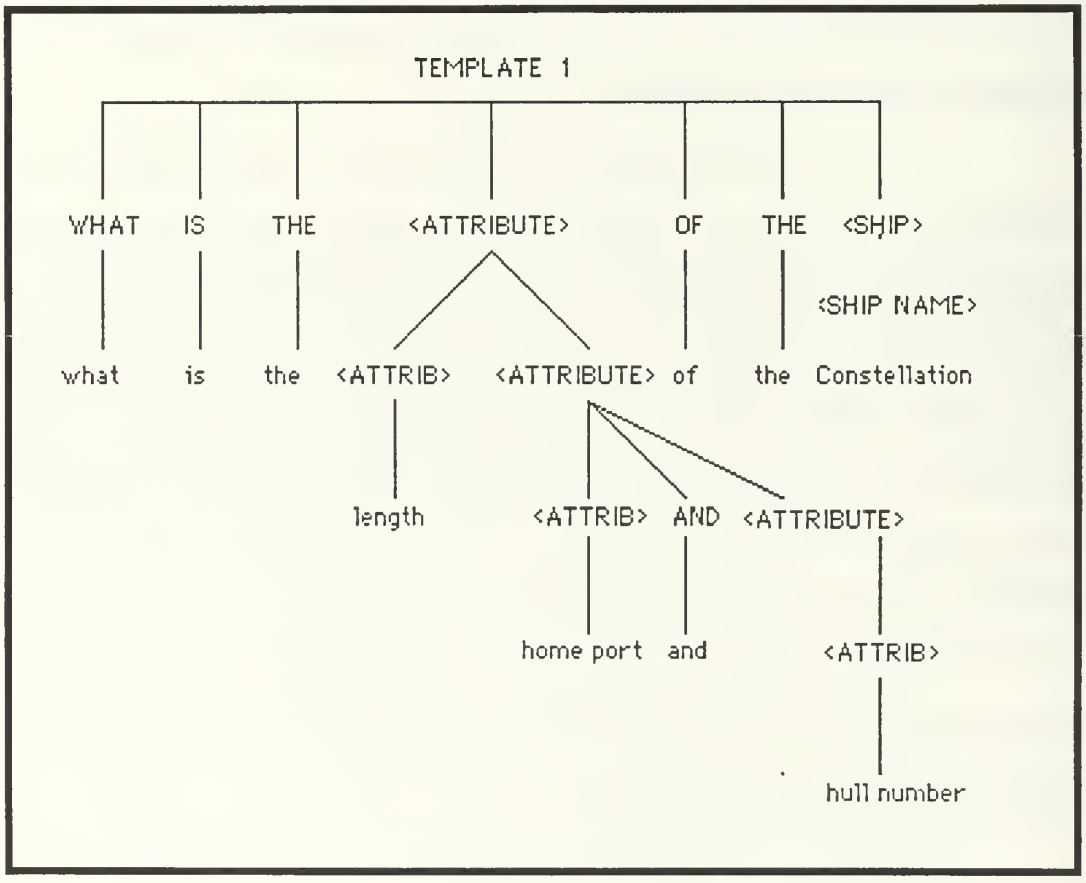


Figure 1.1
Semantic Parse Tree for LADDER [Ref.6:p. 190]

Natural language programs of today have more interest "with the subtle nuances of language and with finding a large number of specific rules which take more of the

special cases into account." [Ref. 6:p. 19] The difficulty of capturing these special cases is magnified in an expert system such as FRESH.

D. VOICE RECOGNITION SYSTEMS

Speech understanding is the parent field of study for speech recognition by computer systems. Speech understanding systems (SUS) are designed to determine a speaker's intended message despite the grammar or form. Speech recognition systems (SRS)

> ...try to solve the more practical problems of analyzing the acoustic waveform and applying pattern recognition techniques in order to differentiate between utterances. [Ref. 8:pp. 18–19]

Computer speech technology had its birth in the 1950s and 1960s. Large companies such as Bell Telephone Laboratories, International Business Machines, Philco-Ford, and RCA researched computer recognition of spoken digits following the introduction of the spectrograph. In the early 1970s, Threshold Technology, Inc., and Scope Electronics, Inc., released the first commercially available speech recognition system.

From 1971 through 1976 the Advanced Research Projects Agency (ARPA, later renamed DARPA) funded a $15 million research project on speech recognition. The project was known as the ARPA Speech Understanding Research (SUR) project. The algorithms produced by this research led to a variety of commercially available speech recognizers in the early 1980s.

There are four categories of computer speech recognition systems. Each catagory has advantages and disadvantages. Trade-offs are shown in Table 1.1.

1. **Speaker Dependent**. The algorithm for this system requires that a speaker's voice be retained in memory. Thus, a speaker-dependent system makes the distinction between individuals' voices and dialects. These systems must be "trained" with each user's voice patterns; that is, these patterns must be stored in the computer's memory.

2. **Speaker Independent.** The algorithm used in this system does not make a distinction between different voices and dialects. It does not require that the machine be trained by individual users.

3. **Discrete/Isolated Speech.** This kind of system requires placement of discrete, single-command sound patterns in memory. The patterns are isolated words or utterances. A pause between words by the speaker is required for the recognizer to work. The pause is a signal to the recognizer to search memory for what was spoken.

4. **Connected Speech.** These systems recognize command phrases even if these phrases are imbedded in a longer utterance that also contain non-commands. Pauses between commands are not required. This makes the use of connected-speech machines more natural for human speech.

TABLE 1.1

SPEECH RECOGNITION TRADE-OFFS [Ref. 9:p. 12]

	ISOLATED	CONNECTED
SPEAKER DEPENDENT	*simple to implement *low hardware cost *restricted to isolated utterances *high recognition rate	*increased training *short phrases to natural language *based on syntax
SPEAKER INDEPENDENT	*limited application *small vocabulary *variable recognition rate	*most natural; powerful *response could be slow * recognition rates highly variable

Speech comes naturally to most human beings. This makes speech a reasonable man-machine interface. Humans can speak an average of 150 to 200 words per minute. Speech is therefore faster than keyboard entry. Although speech has may advantages it also has some disadvantages. A list of advantages and disadvantages of speech for C^2 applications is given in Table 1.2.

TABLE 1.2

ADVANTAGES AND DISADVANTAGES OF SPEECH INPUT/OUTPUT FOR COMMAND AND CONTROL [Ref. 9:p. 36]

ADVANTAGES

Engineering

1. Can be faster than other modes of communication.
2. Can be more accurate than other modes of communication.
3. Compatible with existing communications systems.
4. Can reduce manpower requirements.

Psychological

1. Most natural form of human communications.
2. Best for group or team problem solving.
3. Universal (or nearly so) among humans.
4. Can reduce visual information overload.
5. Increase in value when also involved in cognitive-type processes.

Physiological

1. Requires less effort and gross motor activity than other modes.
2. Frees hands and eyes.
3. Permits multimodal operation.
4. Is feasible in reduced lighting.
5. Permits operator mobility.
6. Contains information about physical and emotional state of speaker.

DISADVANTAGES

Engineering

1. Interference from competing acoustic signals.
2. Environmental conditions can alter speech signal.
3. Requires use of microphone, a tool with which many users may not be familiar.

Psychological

1. Loss of privacy.
2. Psychologically induced changes in speech characteristics.

Physiological

1. Increased mental loading.
2. Fatigue from prolonged speaking.
3. Temporary physical ailments (e.g., colds, etc.) may alter speech characteristics.

Speech recognition technology has many applications, as shown in Appendix A. As stated by Poock, this list "is only a representative example of existing and or potential applications of speech recognition technology." [Ref. 11:p. 3]

E. FORCE REQUIREMENTS EXPERT SYSTEM

The Force Requirements Expert System is a DOD expert system intended for CINCPACFLT. Development is supported by DARPA and Space and Naval Warfare Systems Command (SPAWARSYSCOM). The system was developed using rapid prototyping methods by Texas Instruments Corporation (TI) and btg, Incorporated (BTG). FRESH is designed to assist in the scheduling and monitoring of battle force units at the Commander-in-Chief (CINC) level and is installed in the CINCPACFLT Pacific Fleet Command Center (PFCC), Pearl Harbor, Hawaii.

The system prototype is currently used for three primary functions:

1. To recognize whether a force deficiency exists and alert the user.
2. To recommend actions to correct a force deficiency when requested by the user.
3. To develop fuel utilization figures for proposed redirection of units as required by those recommendations.

Briefly, FRESH monitors incoming automated reports of an individual unit's combat readiness overall rating (CROVL) and alerts the command center when the unit's C-rating has fallen below specified levels that might affect fleet performance. FRESH then proposes alternate unit tasking and replacement. This is an extremely complex operation requiring expert judgment. [Ref. 12:pp. 3–4]

FRESH presently does not have a good man-machine interface. A natural language voice recognition system is being considered to serve as one of the interfaces.

F. TASK-ORIENTED NATURALLY ELICITED SPEECH SYSTEM

The FRESH database contains actual U. S. Navy battle force unit data, and is classified at the TOP SECRET level. Due to FRESH'S classification level, NOSC Speech Technology Group (Code 441) has been tasked with collecting a speech database consisting of spontaneous, task-oriented speech in scenarios that approximate an actual command and control operational situation. The system built by NOSC that mimics FRESH is named Task-Oriented Naturally Elicited Speech.

The database, TONE, will be used to evaluate two important aspects of the advanced voice recognition system under development:

1. The battle management task-domain language model.
2. The differences between read and spontaneous task-oriented speech.

In order to collect task-oriented speech that simulates the real operation of FRESH, an unclassified ORACLE database has been developed that is similar to the actual FRESH classified database. The controlling program is written in the C programming language and currently operates on a SUN computer workstation. The TONE database is unclassified and is shown in Appendix B.

In order to develop the desired natural language voice recognition system, the set of words to be recognized by that system must be determined. Until now, no such collection of terms, unique to the C^2 environment, has been naturally elicited.

G. RESULTS OF LITERATURE SEARCH

A search of applicable literature shows that early in the study of natural language queries for computers, researchers realized the difficulty of being able to program computers to understand conversational English.

In 1976, Petrick defined the problems of natural language communication with computers as follows:

1. The most difficult aspects of a problem are formulating it precisely, analyzing it, and planning the method of solution in detail. Actual code production is relatively straightforward and easy.

2. Natural language is inherently too loose, vague, and ambiguous to serve as a computer language. For this reason its use would lead to processing inefficiency and possible error due to misunderstanding of intended meaning.

3. Allowing the use of unrestricted natural language is technically unfeasible and likely to remain so in the foreseeable future. Consequently, subsets of natural languages must be used for communicating with computers. These subsets would be harder to learn and use than traditional formal computer languages because of interference with natural language usage habits.

4. Providing a large enough subset of a natural language to be useful is an exceedingly difficult intellectual activity, requiring not only a far greater command of linguisticts than is likely to be available for many years, but also requiring capabilities for representing an enormous quantity of information about the world and for efficiently drawing deductive and inductive conclusion from that information. [Ref. 13:p. 314]

In 1983, Ogden and Brooks defined the problem of natural languages used in querying a computer.

> The largest problem users have is in understanding the hidden constraints of the language. Because the limitations of these systems are not made explicit to the users, they often stray over the language's boundaries into unallowed sentences. The languages are not "habitable."..Therefore, users need experience and training in the language to be able to effectively use them. [Ref. 14:p. 162]

In 1985, Rich published a report stating:

> Natural languages, such as English and Japanese, have evolved as vehicles through which people can communicate a wide variety of kinds of information in an equally wide variety of settings. These languages have been designed to support communication from one person to another, but as soon as we begin to think of computers as problem-solving assistants to people we must also start thinking about a language in which communication about that problem solving will occur. Natural languages appear to be good candidiates for this role. Two observations argue for them here. The first, and probably the strongest, is that people already know these languages, so the learning effort that must occur before a new system can be exploited successfully ought to be smaller than if a new, artificial language were used. The second relevant observation is that natural languages are powerful devices that can describe things. Thus by using such languages we may minimimze the risk that we will find ourselves with a powerful computer system and a weak language that inhibits our use of that system. [Ref. 15:p. 1]

Rich states that whenever a user is introduced to a new system, he/she must learn the functioning of that system independent of the languages used. Rich further states that

"unless the interface is particularly arcane," learning the interface of a language at the same time as the functioning is not a great deal of extra work. Rich suggests that natural language interfaces be *sublanguages*. The user would not learn the interface language itself but would become familiar with the "boundaries that sit within a language."

This type of boundary setting approach had been successful in many studies. In the Ogden and Brooks study, subjects were instructed to increase their use of syntactic patterns when using a natural query language, thereby keeping within the boundaries. Small and Weldon found "a structured language was superior to a version of English." [Ref. 16:p. 263] Zoltan-Ford performed a study that "examined the possibility that users will model or can be shaped to the vocabulary and phrase structure of a program's output." [Ref. 17:p. 768]

> The results indicate that recognition rates of natural-language processors will increase if users are provided with a consistently worded program output to model and then are shaped with nonthreatening error messages that reiterate those vocabulary and/or phrases that the processor can understand. [Ref. 17:p. 768]

The current literature suggests that natural language can be used as an interface in addition to keyboard entry and the use of a mouse. The aspects of keyword spotting for voice recognizers and training for the user in the boundaries of the language must be blended before success can be achieved.

H. STUDY GOAL

The goal of this study is to assist NOSC in developing a natural language voice recognition man-machine interface for the TONE system. This was done by collecting spontaneous, task-oriented speech similar to that found in a command and control environment.

I. STUDY OBJECTIVES

The objectives of this study are as follows:

1. To collect words most commonly used by C^2 officers in querying the mock command and control database, TONE.
2. To identify patterns that exist in the use of those words, to assist programmers in potential syntax development.
3. To obtain value judgments from surface warfare officers as to the command and control realism of the current TONE model being used by NOSC.

J. STUDY SCOPE

The study is limited to the collection of words that may be appropriate for command and control operations. The set of words has been collected via simulation of the use of the TONE system in a laboratory setting, using specific scenarios provided by NOSC (as described in the Study Design section). The vocabulary obtained is being provided to NOSC for use in developing the TONE system.

II. THEORIES APPLICABLE TO THE STUDY

A. COMPUTATIONAL LINGUISTICS

1. Introduction

Computational linguistics is a field of study that combines the use of computers and linguistics to capture the power of natural language. A detailed study of this subject would include grammatical theories and many parsing algorithms.

> The field of computerized language processing encompasses a wide range of goals and methodologies, ranging from such theoretical objectives as the modeling of human linguistic behavior...and human language acquisition...to such applicational goals as machine translation,...natural language systems for man-machine communication,...and speech recognition. [Ref. 18:p. 89]

> ...By understanding language processes in procedural terms, we can give computer systems the ability to generate and interpret natural language. This would make it possible for computers to perform linguistic tasks (such as translation), process textual data (books, journals, newspapers), and make it much easier for people to access computer-stored data. A well-developed ability to handle language would have a profound impact on how computers are used. [Ref. 19:p. 1]

The intent of this chapter is to give the reader an overview of computational linguistics in order to gain an appreciation for the complexity of natural language programming. A foundation also is provided for understanding the syntax recommendations that will follow.

2. Speech Composition

Human beings make sound through the use of lips, tongue, teeth, and palate. The sounds are called *phonemes*. As defined by Random House, phonemes are "...any of a small set of basic units of sound different for each language, by which utterances are represented." [Ref. 20:p. 998]

The English language is considered to have five types of articulated speech sounds:

1. **Plosives**, sounds created by stopping the passage of air. An example is the letter "t" in the word "top."

2. **Fricatives**, caused by forming a narrow passage through which air may pass. The diphthong "th" in the word "their" is an example.

3. **Laterals**, sounds formed when the tongue touches the roof of the mouth. An example is the "l" in "launch."

4. **Trills**, caused by the rapid vibration of one of the articulators (lips, tongue, etc.). The letter "r" is a trill sound in some languages.

5. **Vowels**, those sounds made when unobstructed air passes over the vocal cords. [Ref. 20:p.13]

The grouping of these phonemes results in human natural language. Most spoken languages require between 20 and 60 phonemes [Ref. 21:p. 128]. Table 2.1 contains the 46 phonemes typically associated with the English language.

TABLE 2.1

ENGLISH PHONEMES [Ref. 9:p. 12]

beat	bit	bait	bet	bat	Bob	but	better	bought
boat	book	boot	about	roses	bird	down	buy	boy
you	wit	rent	let	met	net	sing	pet	ten
kit	bet	debt	get	hat	fat	thing	sat	shut
vat	that	zoo	azure	church	judge	which	battle	bottom
button								

Analysis of the phonemes required for a word viewed in isolation is not sufficient because word sounds change depending upon the location within a string of words. A language's phonological rules govern the phonemes associated with a specific word depending upon the other sounds immediately preceding and following the word. [Ref. 9:p. 6]

These sounds represent the basics of words. In the next section we discuss how words are combined to form sentences.

3. Natural Language Understanding

Before developing a natural language program for computer use, the items listed below must be known.

1. The structure of the language.
2. What the words are.
3. How to combine the words into sentences.
4. What words mean.
5. How these word meanings contribute to sentence meaning. [Ref. 22:p. 6]

These five kinds of knowledge also can be defined as follows:

1. **Phonetic and phonological knowledge** concerns how words are realized as sounds.
2. **Morphological knowledge** concerns how words are constructed out of more basic meaning units called *morphemes*. For example, the word friendly can be constructed from a root form, friend, and the suffix -ly.
3. **Syntactic knowledge** concerns how words can be put together to form sentences that look correct in the language. This form of knowledge identifies how one word relates to another (for example, whether one word modifies another or is unrelated).
4. **Semantic knowledge** concerns what words mean and how these meanings combine in sentences to form sentence meanings.
5. **Pragmatic knowledge** concerns how sentences are used in different contexts and how context affects the interpretation of the sentence.

g. **World knowledge** includes general knowledge about the structure of the world that language users must have in order, for example, to maintain a conversation, and must include what each language user must know about the other user's beliefs and goals. [Ref. 22:p. 6]

4. Syntax, Semantics, and Pragmatics

One of the items focused on in this study of the TONE database is syntax. It is important for the reader to be able to distinguish syntax from semantics and pragmatics.

Hearing words alone does not constitute understanding. As noted, it is important to understand what words are used, their placement in the sentence, and their

meanings. The sentences below demonstrate the need for correct syntax, semantics, and pragmatics.

a. Green frogs have noses.

Based on the definitions discussed, the sentence above is correct in all three aspects of syntax, semantics, and pragmatics. The differences between pragmatic, semantic, and sytactic errors are illustrated in the following sentences. [Ref. 22:p. 7]

b. Green frogs have large noses.

Sentence b. displays correct syntax and semantics but is pragmatically in error.

c. Green ideas have large noses.

Sentence c. is syntactically correct but fails semantically and pragmatically.

d. Large have green ideas nose.

Although the most of the same words appear in sentences b. through d., sentence d. displays errors in syntax, semantics, and pragmatics.

5. Parsing

Three levels of linguistic analysis are shown in Figure 2.1. The first of these processes, acoustic-phonetic, is responsible for taking the sounds (presumably represented as a plot of how much energy is coming in at various sound frequencies) and translating the input into words. The second takes these words and establishes the syntactic form of the utterance, while the third tries to tease out the meaning from the syntactically analyzed utterance. [Ref. 18:p. 169]

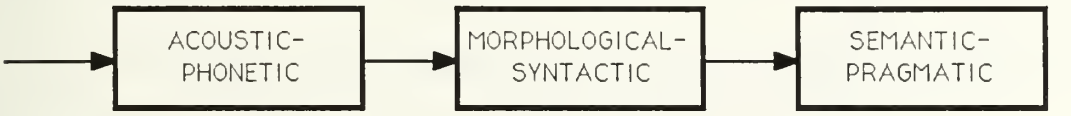


Figure 2.1

Three Levels of Linguistic Parsing [Ref. 18:p. 170]

a. Acoustic-Phonetic Level

Difficulty arises in this phase when words are spoken and heard by a receiver but there is a loss in the interpretation. An example of this can be seen when pre-school children recite the alphabet; they often believe that the letter after "L" and before "P" is called "ammenno" as opposed to "M," "N," "O."

> ...Consider the story of a young woman who visited New York for the first time. Later she asked a relative what a "nominal egg" was. In response to the puzzled look on the relative's face, she said that everything in New York cost "a nominal egg." The phrase, of course, was "an arm and a leg." [Ref. 18:p. 171]

b. Morphological-Syntactic Level

Syntax is the combining of words to communicate a meaning. Combinations can convey correct or incorrect meanings as depicted below.

I saw the Golden Gate Bridge flying into San Francisco.

(Is the bridge flying?)

I ate dinner with a friend. I ate dinner with a fork.

Can companies litter the environment

(Is this a statement or a question?) [Ref. 18:p. 171]

c. Semantic-Pragmatic Level

> This level combines semantics and pragmatics. Here, too, ambiguity is rampant. One problem at this level is to determine the referents of pronouns. Normally this is easy. About 90 percent of the time, a pronoun in English refers to the last-mentioned object of the appropriate type (masculine, feminine, neuter). But the other 10 percent can be difficult indeed. [Ref. 18:p. 171]

Jack went to the store. He found the milk in aisle three. He paid for it and left. [Ref. 18:p. 171]

What is unclear here is whether Jack purchased the aisle, the milk, or the store.

Parsing is a syntactical analysis of a sentence. To parse a sentence, the rules of the language must be followed. *Competence* is the use of abstract rules expressing knowledge of a language. *Performance* is how the rules are actually used.

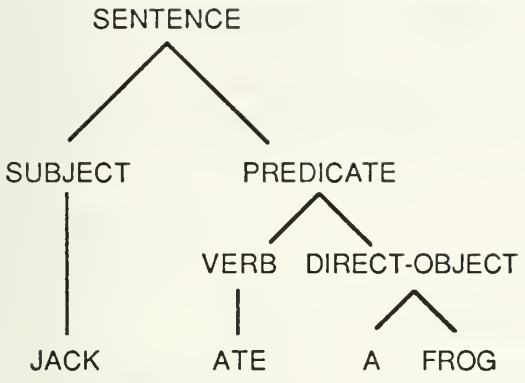
Basic parsing begins with the diagramming of a sentence. During the diagramming process, distinction is made between the subject and predicate. The predicate is furthur broken down to a verb and a direct object. The major forms or classes of speech are identified: nouns, proper nouns, pronouns, verbs, adjectives, adverbs, prepositions, and articles. Figure 2.2 show the tree notations for:

1. A diagrammed sentence.
2. A diagrammed sentence using syntactic catagories.
3. A parse tree.

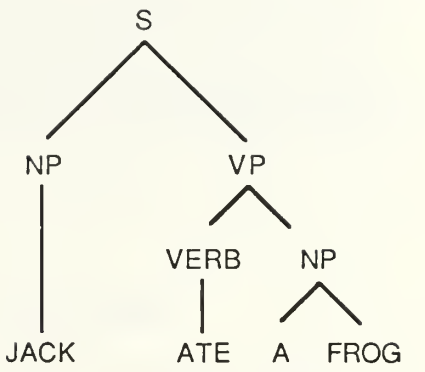
The diagramed sentence in Figure 2.2 (a) uses a notation that is used widely in both linguistics and artificial intelligence (AI). The terms *subject* and *predicate* in Figure 2.2 (a) are replaced in (b) by NP and VP. These letters signify *noun phrase* and *verb phrase*. The NP and VP indicate the structure of the subject and predicate as opposed to the role each plays in the sentence. Note that the NP of "a frog" in Figure 2.2 (b) is constructed as a *determiner* (DET) in (c). A *determiner* is the article "a" related to a noun, "frog." A *determiner* can also be written as ART for article.

The rules for parsing the sentence above are as follows:

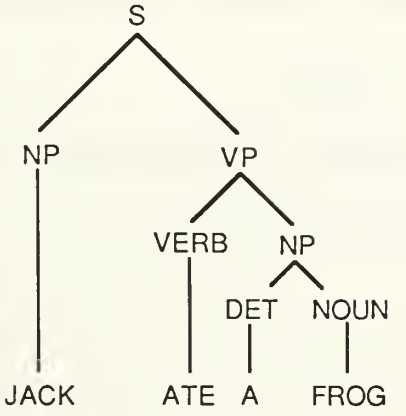
1. An S may consist of an NP followed by a VP.
2. A VP may consist of a VERB followed by an NP.
3. An NP may consist of a NAME, or may consist of an ART followed by a NOUN. [Ref. 22:p. 42]



(a) **Diagrammed Sentence**



(b) **Syntactic Categories**



(c) **Parse Tree**

Figure 2.2

Tree Notations [Ref. 18:pp. 176-177]

A quick reference guide is provided in Table 2.2. The designation PP stands for *prepositional phrase*.

Grammars consisting entirely of rules of the form "<symbol> <- <symbol>1... <symbol>n," for n >= 1, are called **context free grammars** (CFGs). CFGs are a very important class of grammars for two reasons. The formalism is powerful enough to be able to describe most of the structure in natural languages, and yet it is restricted enough so that efficient parsers can be built to analyze sentences. Symbols that cannot be further decomposed in a grammar, such as NOUN, ART, and VERB

in the preceding example are called **terminal symbols**. The other symbols, such as NP, VP, and S, are called **nonterminal symbols.** The terminal symbols are actually word categories, and a structure called the **lexicon** maintains a list of all words that fall in each category. Of course, many words will be listed under multiple categories. For example, *can* would be listed under VERB and NOUN. [Ref. 22:p. 42]

TABLE 2.2

GRAMMAR PARSING RULES [Ref. 22:p. 55]

1. S <- NP VP	5. VP <- VERB
2. NP <- ART NOUN	6. VP <- VERB NP
3. NP <- NAME	7. VP <- VERB NP PP
4. PP <- PREP NP	8. VP <- VERB PP

d. Top-Down Parsing

Top-down parsing is a simple and common technique. Top-down parsing begins with the symbol S, for the entire sentence. The sentence then is decomposed into NP VP. As shown in Figure 2.2 (c), the NP could be categorized as NAME to stand for the proper noun "Jack." The VP is broken down into VERB and NP as seen in Figure 2.2 (c). The VERB stands for the word "ate." The NP stands for the noun phrase, "a frog." The NP then can be broken down to an ART NOUN or DET NOUN.

A top-down parse for the Figure 2.2 (c) would be seen as:

S → NP VP

→ Jack VP

→ Jack VERB NP

→ Jack ate NP

→ Jack ate ART NOUN

→ Jack ate a NOUN

→ Jack ate a frog

e. Bottom-Up Parsing

A bottom-up parse is also possible. It is the reverse of top-down parsing, as illustrated using Figure 2.2 (c).

→ NP ate a frog

→ NP VERB a frog

→ NP VERB ART frog

→ NP VERB ART NOUN

→ NP VERB NP

→ NP VP

→ S

6. Keyword Spotting

The research of Ogden and Brooks led to a different method of looking at sentence formation. A pattern could be determined after breaking down the sentence structure. According to Bemis, the following pattern developed.

> ...Ogden and Brooks (1983) examined restricted syntax on syntactical constructions subjects used to form questions with typed input. They found that subjects' sentences consisted of a command phrase, missing element phrase, and a qualifying phrase.
>
> LIST THE NAME OF THE HISTORY MAJORS
>
> C M Q
>
> WHAT IS SUSAN SMITH'S ID
>
> C Q M
>
> WHAT ARE THE FACULTY SALARIES IN MATH
>
> C Q M Q
>
> The command phrase (C) contained an imperative verb such as "list" or a pronoun and verb such as "what are." The missing element (M) was the material to be retrieved. The qualifying phrase (Q) presented additional information about the material to be retrieved (the missing element). [Ref. 23:p.1]

Studies done by NOSC have shown a similar pattern of development. Nunn and Leeds studied

> ...the application of voice recognition in limited domain command and control tasks requiring the access of database information, and secondly, an approach to the speech recognition problem based on keyword-spotting concepts that can potentially meet speech recognition requirements in command and control operations. [Ref. 24:p. 2]

Nunn and Leeds used a similar analysis procedure.

Subjects' vocabularies were broken into the following categories:

C = Command or query (classified as non-keywords)

Q = Keyword Qualifier

D = Keyword Data from the table

S = Keyword shipnames or the word "ships"

All other words were considered non-keywords and were ignored for this analysis.

The acceptable queries fell into five general syntactic types:

QUERY TYPE		EXAMPLE
(1)	CSQ	What ships are in CENTPAC? C S Q
(2)	CSQD	What ships in the battlegroup have helos? C S Q D
(3)	CQS	What's the location of Wichita? C Q S
(4)	CQSQ	How far is Kiska from Callahan? C Q S Q
(5)	CQDS	Is there a CASREP on the SLQ-32 on Wichita? C Q D S

[Ref. 24:p. 12]

The sentence structure patterns and notation used in the Ogden/Brooks and Nunn/Leeds research has been adopted to establish the format for the analysis of keyword spotting by participants in this study.

B. ARTIFICIAL INTELLIGENCE

1. Overview

As defined by Random House, epistemology is "a branch of philosophy that investigates the origin, nature, methods, and limits of human knowledge." [Ref. 25:p. 445]

> Artificial intelligence (AI) is the part of computer science concerned with designing intelligent computer systems, that is, systems that exhibit the characteristics we associate with intelligence in human behavior—understanding language, learning, reasoning, solving problems, and so on. [Ref. 26:p. 3]

> Since AI research methodology involves the design of programs that exhibit intelligent behavior, AI researchers have often taken a rather pragmatic approach to the subject of knowledge, focusing on improving the behavior of their programs. In AI, a representation of knowledge is a combination of data structures and interpretive procedures that, if used in the right way in a program, will lead to "knowledgeable" behavior. Work on knowledge representation in AI has involved the design of several classes of data structures for storing information in computer programs, as well as the development of procedures that allow "intelligent" manipulation of these data structures to make inferences. [Ref. 26:p. 143]

2. Knowledge

Four types of knowledge are represented in a an AI system:

1. Objects: knowledge in terms of facts about objects in the world, represented through classes or categories or descriptions.

2. Events: what is known about actions and events in the world. In addition to encoding the events, a representation formalism may need to indicate the time course of a sequence of events and their cause-and-effect relations.

3. Performance: knowledge about how to do things; the performance of a skill of cognitive behavior.

4. Meta-knowledge: knowledge about what is known, the extent of one's knowledge of a particular subject. [Ref. 26:p. 144]

The goal of an AI system is to incorporate the four categories of knowledge above, and through knowledge acquisition, retrieval, and reasoning, provide an answer or solution to a problem. This process models that of the human being.

Human knowledge acquisition involves comparing an item with something one already knows on order to classify it. Retrieval of knowledge is done through a grouping of similar items linked together.

There are five levels of reasoning in AI:

1. Formal reasoning involves the syntactic manipulation of data structures to deduce new ones following of data structures to deduce new ones following prespecified rules of inference.

2. Procedural reasoning uses simulation to answer questions and solve problems.

3. Reasoning by analogy seems to be a very natural mode of thought for humans but one which is, so far, difficult to accomplish in AI programs.

4. Generalization and abstraction are also natural reasoning processes for humans that are difficult to pin down well enough to implement in a program.

5. Meta-level reasoning involves using "knowledge about what you know," in particular about the extent of your knowledge and about the importance of certain facts. [Ref. 26:p. 146]

For an expert system such as FRESH, Lind has identified 11 major categories of expert knowledge that may be included.

1. Relationships among various kinds of data and activities.

2. Judgments about the relative validity and importance of data sources.

3. Inferences and deductions from minimal, incomplete, or error-full data.

4. Bases for assumptions and educated guesses.

5. Priority judgments about the importance and order of performing various activities.

6. Recognition of promising approaches to problems.

7. Shortcuts—ways to reduce computations and steps.

8. Possible trade-offs, and the results of trade-offs.

9. Approximations and rules of thumb that work.

10. Unexpected or counterintuitive outcomes.

11. Ways of knowing when you are on the right track. [Ref. 27:p. 548]

It is important to note that the knowledge described above is interrelated. "When acquiring new knowledge, the system must be concerned with how that knowledge will be retrieved and used later in reasoning." [Ref. 26:p. 147] A second point to note is that "efficacy is the primary consideration in designing a knowledge-based AI system." [Ref. 26:p. 147]

3. AI Related to FRESH AND TONE

Artificial intelligence is a broad catagory. Its components include decision support systems, expert systems, and language models. The FRESH system is an expert system that uses AI techniques to arrive at answers for questions asked by the C^2 officer. The TONE database was developed in conjunction with the decision-support tree model that is shown in Figure 2.3.

The voice recognition system established for TONE will use AI techniques for parsing input to the system to ensure that the rules of grammar are met. Much like Figure 2.3, the voice recognition system will be rule based in making its decisions to accept a recognized word or to reject a word that is not in the vocabulary. The researcher anticipates that the words obtained in this study will be programmed into the TONE voice recognition system.

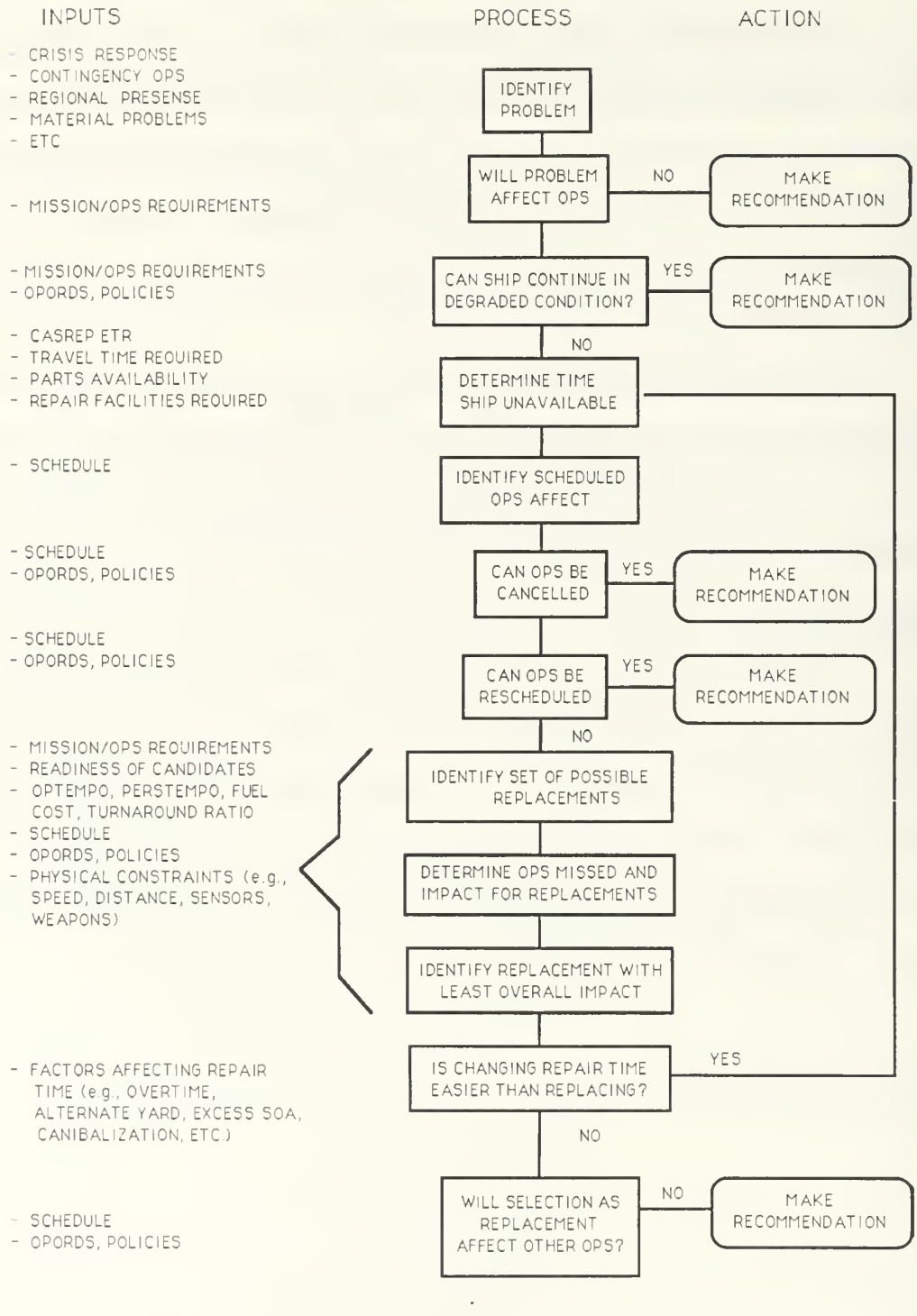


Figure 2.3

TONE Decision Tree Model [Ref. 27]

III. STUDY DESIGN AND RESULTS

A. PARTICIPANTS

A total of 27 participants engaged in the study. Each participant was a volunteer and was given no monetary or other incentives. Of the participants, 24 were male, of whom 20 were Naval officer students at the Naval Postgraduate School and 4 were Naval officer staff at the school. Three participants were female, all Naval officer students. All participants fell into one of three catagories of qualifications: Surface Warfare qualified, Naval Aviator, or Submarine qualified.

The participants were given no training prior to the study. They were instructed by the researcher to treat the first scenario as a practice scenario. This allowed participants the opportunity to become familiar with the types of questions that could be asked and the information available to them in the database.

B. EQUIPMENT

The study was conducted at the Naval Postgraduate School Man-Machine Laboratory. Equipment and equipment layout for the study are detailed in Figure 3.1.

A Maico Model MA-24B Dual Channel Research and Diagnostic Audiometer and headsets were used for communication between the researcher and participant. By depressing a "talk-over" switch, the researcher could speak to the participant. The researcher could hear the participant through the use of a microphone placed at the base of the screen in the booth. A Sanyo Voice Activated System Mini Cassette Recorder was connected to the Maico Model MA-24B to capture the words spoken by the participant and those of the researcher in providing the answers from the TONE database. A Beseler Century VUGRAPH model overhead projector machine was used to display each scenario.

C. STUDY PROCEDURE

Each participant read the scenario instructions (Appendix C). Each selected a slip of paper from a small plastic bag, on which were numbers (1 through 4) depicting the order in which the scenarios (Appendix D) were to be presented. The participant was then seated in a soundproof booth measuring 6' x 6' x 8'. A VUGRAPH transparency providing details about the numbered scenario listed first on the slip of paper was shown on the screen to the participant's right, and the participant was given the opportunity to read the scenario.

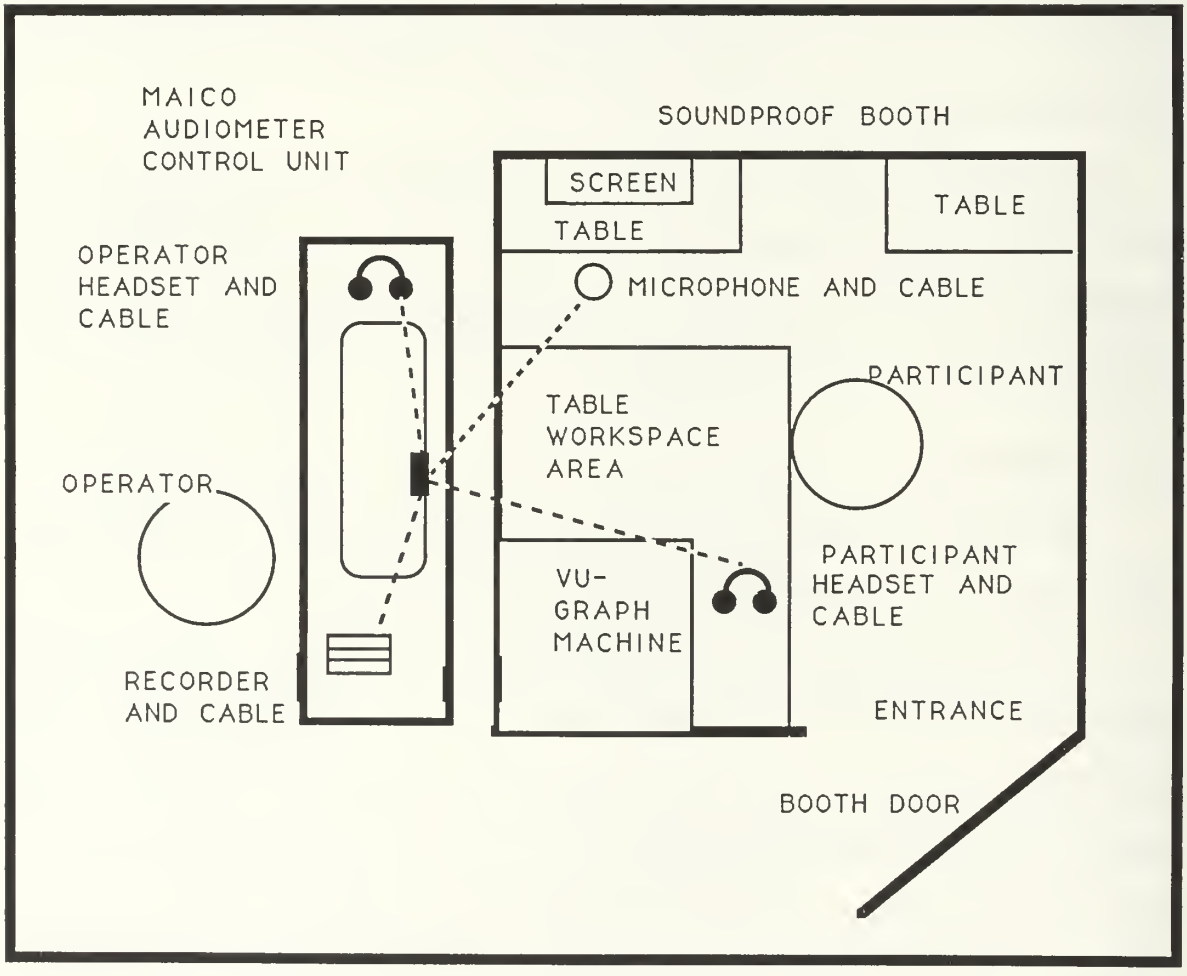


Figure 3.1

C^2 Study Equipment Layout

The participant was instructed that his/her voice would be recorded through the use of a microphone at the base of the screen and a tape recorder outside the booth at the operator station. Each participant was given a pad of paper, a pencil, and a world map (Appendix E) to use for calculations during the scenarios.

The researcher reviewed the scenario instructions with the participant and answered questions. It was emphasized that the focus of this study was on collecting words used to arrive at a decision in a command and control environment; the quality, caliber, and correctness of the participant's decision was not the focus of the study. The researcher made a basic assumption that the participants would use Naval acronyms and terms while solving the problems presented in the scenario.

The participant put on a set of headphones and notified the researcher when he/she was ready to begin. At that point the researcher turned on the tape recorder.

During each scenario presentation, the participant asked questions regarding the scenario. Answers were provided verbally by the researcher from the TONE database (Appendix B) to the participant via his/her headphones.

When the participant arrived at a decision, he/she stated that decision and the scenario was concluded. The next scenario, corresponding to the second number on the slip of paper, then was shown to the participant via the VUGRAPH system. This procedure was followed until the participant had completed all four scenarios.

D. SURVEY OF PARTICIPANTS

Following the scenarios, a survey (Appendix F) was completed by each participant. The survey has four sections, as described below.

1. Questions 2 through 6B and 7 were placed in the survey at the request of NOSC. The linguists associated with NOSC are pursuing research relating the format which an individual uses to phrases questions or statements to (1) educational experiences, (2) life experiences, and (3) geographic location for the first ten years of his/her life.

2. Questions 8 through 13 tested the comfort of the participant while in a soundproof booth and the attitude towards the use of voice recognition used in C^2. The set of response alternatives included those frequently recommended by the Army Research Institute [Ref. 29:p. VIII-B 13].

3. Questions 14 and 14A allowed participants to judge the caliber of the scenarios and provide feedback.

4. Question 15 and the Additional Comments section requested feedback from the participant on features they would like to have added to a real C^2 expert system and also allowed participants to give comments, in general, on any part of the study.

5. Questions 1, 6C and D, 10, and 10A also were used to help match voice recordings to participants.

E. DATA COLLECTION TECHNIQUES

Individual transcripts were made of all words used by each participant from the recordings (Appendix G). A software package called "Word Tools" was used to count the number of words used by the participant and the frequency of each word.

Due to mechanical failure the transcripts of participants 8 and 13 were lost. One scenario was also lost from participant 12.

F. GENERAL OBSERVATIONS AND DISCUSSION

The following observations are based on words and statements made by participants and recorded during scenarios. Participants often engaged in casual conversation between scenarios and prior to completing the survey. Some of the general comments are reflected in these observations.

1. Participants who had formal training in the formation of computer databases often attempted to identify a keyword. This led to statements with a keyword followed by two attributes. Questions would then be centered around that keyword and its possible attributes. This produced statements from the participant that were void of verbs.

2. Most Naval Flight Officers (designator 1320) maintained "radio brevity" as much as possible, that is, they kept questions and comments brief. Naval Flight Officers are taught radio brevity. This training carried through when the headphones and microphone were being used. Words particular to the aviation community were often used. These words include:

a. "pos" for position

b. "geo" for geographic

c. "RTB" for return to base

3. Participants who were unfamiliar with the west coast Naval fleet often referred to ships by type and hull number, disregarding the name. The majority of the participants had sailed on ships assigned to the U. S. west coast fleet. These officers could associate a ship's characteristics and capabilities with the ship's name. Those officers that had been assigned sea duty with the east coast fleet could not identify characterisitics and capabilities through just a ship name. When requesting amplifying information, the east coast officer would request the hull number and type of ship. Neither the hull number nor ship type, alone, was significant; they had to be paired.

4. The participant from the submarine community often reverted to commands commonly associated with that community. The submarine community begins many of its commands with the word "report." The participant who was submarine qualified said that once he found himself in the mode of beginning every request with the word "report," it was difficult not to say "very well" upon receiving the answer requested.

5. Most participants were frustrated by having to ask questions that required only one database access at a time. By limiting questions to one database access, more questions were asked by the participants. This also allowed more words to be collected. Participants were patient with this factor while attempting to make a realistic decision to solve the problem given in the scenario. Most questions that participants first attempted to ask required more than one database access.

G. SPECIFIC RESULTS

Specific results from this study help answer the following questions:

1. What words are most likely to be said by an officer querying the TONE system?

2. Can a standard C^2 syntax be determined?

3. How realistic are the scenarios and TONE model being used by NOSC?

1. Words

The words most commonly used are found in Appendix H. The words are listed in descending order. Words that begin with capital letters are proper nouns or were used at the start of a sentence. Words that are contractions will be displayed as follows:

1. I've—two words, I and ve
2. they're—two words, they and re
3. we'll—two words, we and ll
4. don't—one word, don

The Word Use Frequency Count charts (Appendix G) for each participant were used to determine those words appearing in Appendix H. The words in Appendix H are in decreasing order by column; in otherwords, the words appearing at the beginning are those used by the majority of the participants.

The words were obtained by compiling all columns of each participant's chart. This method allowed comparison of words used by many participants. The method attempted to delete any one participant's use of any one particular word continuously.

For example, Participant 1 frequently used the word "request," whereas Participant 16 used "report" often. The number of times these two participants used each of those words did not influence Appendix H. The appendix simply shows that the words were used by participants.

Appendix I provides five charts:

A. The quantity of words used by participants in the first versus the last scenario.
B. The quantity of articles per sentence or question in the first versus the last scenario.
C. The quantity of prepositions per sentence or question in the first versus the last scenario.
D. The quantity of sentences and questions used by participants in all scenarios.
E. The average number of sentences or questions per scenario with the minimum criteria applied.

In calculating (A), the number of words, and (E), the average number of sentences or questions per scenario, a criterion of a one sentence or question minimum was used for each participant. Participants 8, 12, 13, and 27 did not meet the minimum criteria

for (A). Participants 4, 8, 10, 12, 13 and 27 were not considered in the calculation of (E) as they did not meet the minimum criteria.

A comparison of the total number of words used between the first and last scenarios (A) shows that 61 percent of the participants used fewer words overall in the last scenario. Fifty-two percent of the participants used fewer unique words in the last scenario.

A comparison of the total number of articles per sentence or question in the first versus last scenario (B) shows that approximately 73 percent of the participants decreased the number of articles used in the last scenario.

A comparison of the total number of prepositions per sentence or question in the first versus last scenario (C) shows that 74 percent of the participants decreased the number of prepositions used in the last scenario.

A comparison of the total number of sentences and questions used in the first and last scenario (D) shows that 59 percent of the participants used fewer sentences and questions in the last scenario.

Chart (E) shows the average number of sentences and questions used in each scenario by the participants. The average number of sentences/questions used in the four scenarios ranges from 10.1 to 13.28 per scenario. Although it was not the focus of this study, no statistically significant difference in the level of scenario difficulty could be identified by the number of sentences/questions asked. (A t-statistic test yielded a p-value of greater than .10 for a one-tailed test where s = 1.43, n = 3, x(bar) = 11.73, and mu = 13.28.)

There are two reasons for the participants' decrease in words and sentences:

1. Participants realized that many words were not necessary in a request to obtain information from the database. An example of this would be:

a. What type of ship is the Worden?

b. Worden ship type.

2. Participants remembered certain pieces of information from previous scenarios. This learning that took place negated the need to ask the same question for each scenario. Although each scenario was independent of the others, the information in the database remained the same.

Thirty-nine percent of the participants used more words in the final than in the first scenario. Forty percent of the participants required more sentences/questions to arrive at a decision. The reason for this is that as participants progressed through each scenario, they realized there were more items to be considered before making a decision.

2. Syntax

Scenarios 1 through 4 were used for a study of participants' syntax. In Scenario 1, 13 participants out of 25 requested information on CASREPs. In Scenario 2, 15 participants out of 25 requested information on SPEED. In Scenario 3, 18 out of 25 participants requested information on the location of McClusky. In Scenario 4, 23 participants requested information on helicopter/LAMPS capabilities.

The goal was to determine how varied the questions were from different subjects asking for the same information. From this, representative syntax styles could be depicted.

The sentences listed in Appendix J are those used by participants requesting the information. Following the methods used by Nunn and Leeds [Ref. 24:p. 11], appearing below each sentence in Appendix J is the vocabulary type.

The totals for each scenario are given in Tables 3.1 through 3.4 for each type of query. For the syntax study, only those queries that the majority of participants used are discussed.

TABLE 3.1

TOTAL QUERIES MADE FOR SCENARIO 1

# of Participants	Type of Query	Percentage
4	CQS	30.7
2	CDQ	15.3
2	CQ	15.3
1	CQQ	7.6
1	CQQD	7.6
1	CQDDQDS	7.6
1	QS	7.6
1	QSQ	7.6

TABLE 3.2

TOTAL QUERIES MADE FOR SCENARIO 2

# of Participants	Type of Query	Percentage
7	CQS	46.6
5	CSQ	33.3
1	CQ	6.6
1	QS	6.6
1	SQQ	6.6

TABLE 3.3

TOTAL QUERIES MADE FOR SCENARIO 3

# of Participants	Type of Query	Percentage
4	CQS	22.2
3	CSQ	17.0
2	CS	11.1
2	QS	11.1
1	CSDD	5.5
1	Q	5.5
1	QDS	5.5
1	QSS	5.5
1	S	5.5
1	SQ	5.5

TABLE 3.4

TOTAL QUERIES MADE FOR SCENARIO 4

# of Participants	Type of Query	Percentage
8	CQS	34.80
6	CSQ	26.08
2	QS	4.34
1	CQD	4.34
1	CDQ	4.34
1	CQ	4.34
1	DS	4.34
1	SD	4.34
1	SQ	4.34
1	SQQ	4.34

An overview of the scenario results shows the five syntax types most commonly used during the participants' queries. Table 3.5 shows that 23 queries used the CQS form, 14 queries used the CSQ form, four queries were in the QS form, and two each used CDQ and CS forms.

TABLE 3.5

TOTAL QUERY TOTALS

Query Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	TOTAL
CQS	4	7	4	8	23
CSQ		5	3	6	14
CDQ	2				2
CS			2		2
QS			2	2	4

Sixty-eight sentences were considered in the syntax discussion. Table 3.6 provides the percentages of each by query type:

TABLE 3.6

QUERY TYPE BY PERCENTAGE

Query Type	Percentage
CQS	33.8
CSQ	20.6
CDQ	3.0
CS	3.0
QS	5.9

The results show that 66.3 percent of the queries from the participants fell into one of the five types detailed above.

3. Scenarios

In general, the scenarios (Appendix D) presented participants with realistic command and control problems. As shown in Appendix F, 15 participants out of 27 stated that the scenarios reflected reality. Seven participants stated that they believed the scenarios did not reflect real command and control scenarios. The remaining five participants stated that they had not participated in command and control and could not comment on the reality, or the participants made no comment.

The months displayed on each scenario were altered by the researcher to reflect months that were current to the timeframe in which the study took place. Each of these changes required altering certain months in the database also.

Scenario 1 presented participants with the impossible situation of having CG-18 Worden depart Pearl Harbor and three days later participate in an exercise in the Sea of Japan. This transit can not be made in three days. Most participants ignored this aspect of the scenario in their effort to solve the problem of the CASREP.

Scenario 2 positioned CG-29 Jouett and DDG-996 Chandler in the Sea of Okhotsk. Of the 27 participants, only three officers (two Commanders and one Lieutenant Commander) knew where the Sea of Okhotsk is located (north of Japan). A great deal of time was used by participants in an effort to locate that sea. Approximately five participants immediately asked where the sea was located when presented the scenario.

Scenario 3 has the FFG-41 McClusky in tattletail of a MINSK task group. There is no information on the location of the MINSK or its ship complement. This frustrated some participants.

Scenario 4 has CV-64 Constellation and FF-1086 Brewton with a mission of spacecraft recovery at a specific location in the Central Pacific. The database location for both of these ships is given as Pearl Harbor. This led many participants to feel that both

ships were in port. If true, spare parts could be obtained from local squadrons, thereby negating the problem of a CASREP on the helo. For this scenario, participants were told that the ship location information was the last one entered in the database and could be considered "old." Participants were told to assume both ships had departed Pearl Harbor.

IV. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

A. STUDY CONCLUSIONS

The following conclusions can be made as a result of this study:

1. The study was successful in obtaining more than 600 words used by Naval officers during simulation of four C^2 scenarios.

2. The format used in the study was viewed by the majority of the participants as comfortable.

3. The syntax found in this study parallels that of the Nunn and Leeds initial C^2 study.

4. The majority of participants found the scenarios to be reflective of "real" C^2 situations.

5. The majority of participants used fewer words (including articles and prepositions) and questions during the last scenario than during the first. The use of fewer words and sentences by the majority of participants gives credibility to the idea of keyword spotting. Those participants using fewer words and sentences developed their own sublanguage. No judgement was made on the quality of the decisions when participants used fewer words.

B. RECOMMENDATIONS

The following are recommendations for changing the content of the current scenarios and the TONE database. Comments for future studies also are provided.

1. Scenarios

1. Scenario 1 should be altered to allow a greater transit time for the ship or put the ship at sea near the Sea of Japan.

2. Scenario 2 should give the location of the Sea of Okhotsk purely as a time saver.

3. Scenario 3 should give the latitude and longitude of the MINSK task group along with the ship complement.

4. Scenario 4 should state that both ships have departed Pearl Harbor but have yet to submit a weather message indicating a current location for placement in the database.

2. Additions to the Database

The following additions to the TONE database should be made:

1. Oilers for refueling purposes.
2. Weather information for consideration in electronic surveillance and mission continuations/cancellations.
3. Spare parts availability for the many CASREPs presented.
4. Specific information on CASREPs allowing for more detailed descriptions of the problems.
5. Names of mission commanders, to give a perspective of the authority of the C^2 officer to order the swapping of ships and missions.
6. Aircraft carriers with both aircraft and flight decks instead of landing decks only.
7. Mission duration and time on station.
8. USS Jouettt's CROVL changed to C-2.

3. Recommendations for Further Study

Additional studies and projects related to the TONE database should include the following:

1. The NOSC TONE database should be installed at the Naval Postgraduate School (NPS) and the study repeated several times.
   a. A number of follow-on theses could be implemented in the fields of computer systems management, computer science, and voice recognition. This would assist the students at NPS in obtaining a thesis topic as well as providing assistance to NOSC.
   b. A captive audience is available. At any one time, NPS has on average 400 Naval officers with the designator of 1110 (Surface Warfare).
   c. This audience is a significant resource for testing many of the NOSC projects, with the reciprocating factor that NPS students are allowed to learn and experiment.
2. The NOSC TONE database should be installed at NPS and a voice recognizer used in the study. This would test the vocabulary of the recognizer and the reaction of the participants to the recognizer's success or failure.

3. A larger group of words should be collected for programming into a recognizer. These words could be used in command and control situations at the task group commander level and the CINC level.

4. The database should be enlarged to incorporate those items recommended above.

APPENDIX A

SPEECH RECOGNITION TECHNOLOGY APPLICATIONS [Ref. 11:p. 3]

Quality Control on Assembly Line
Traceability of Parts
Inventory Control
Production Line Routing
Sorting Packages and Boxes
Sorting Luggage, Suite Cases
Agricultural Surveys-Quality Control
Micro-Electronic Process Control
Automated Training Stations
Systems Control Aids for Handicapped
Control of Toys-Games
Control of Machinery
Automated Briefings
Aircraft Control
Helicopter Control
Spacecraft Control
Query Retrievals
Running Computer Networks
Running Displays and Graphics
Command and Control of Weapon Systems
Portable Electronic Maintenance Aids
Management of Telephone Dialing, Calls
Stockbrokers
Airline Agents
Hospital Record Keeping
Hospital Operating Rooms
Home Applicance Control
Data Entry into Paperwork Forms of all Types

SPEECH RECOGNITION TECHNOLOGY APPLICATIONS (CONT.)

Schools-Education and Training
Air Traffic Control
Robot Control
Disabled Control of Wheel Chairs, Body Limbs
Teach People How to Speak
Work within Boats and Dolphins

APPENDIX B

TONE DATABASE

SHIPNAME	CASREP DESCR	CASREP DATE	CASREP ETR
BREWTON	LAMPS HELICOPTER	291100 Z APR 88	111000 Z MAY 88
BUCHANAN	NONE	NONE	NONE
CALLAGHAN	NONE	NONE	NONE
CHANDLER	MAIN PROPULSION SYSTEM	222100 Z MAR 88	052100 Z APR 88
CONSTELLATION	NONE	NONE	NONE
COPELAND	NONE	NONE	NONE
FLETCHER	AN-URC-85 RADIO SET	150600 Z NOV 87	260940 Z NOV 87
FOX	NONE	NONE	NONE
HALSEY	NONE	NONE	NONE
HORNE	NONE	NONE	NONE
JOUETT	GUN FIRE CONTROL SYSTEM	201930 Z MAY 88	150830 Z APR 88
KNIKAID	NONE	NONE	NONE
KIRK	NONE	NONE	NONE
LEAHY	NONE	NONE	NONE
MCCLUSKY	SPS-55 SURF SEARCH RADAR	061440 Z APR 88	101440 Z MAY 88
MERRIL	NONE	NONE	NONE
MIDWAY	NONE	NONE	NONE
MISSOURI	NONE	NONE	NONE
OBRIEN	AN-URC-85 RADIO SET	150920 Z APR 88	021600 Z MAY 88
REEVES	GUN FIRE CONTROL SYSTEM	141440 Z AUG 87	221440 Z AUG 87
STERETT	NONE	NONE	NONE
THACH	NTDS	021100 Z JUL 88	070600 Z JUL 88
TOWERS	MAIN ENGINE	281440 Z JAN 88	161440 Z FEB 88
VINCENNES	NONE	201700 Z MAR 88	281700 Z MAR 88
WORDEN	SPS-49 AIR SEARCH RADAR	291440 Z APR 88	231440 Z MAY 88

TONE DATABASE

SHIPNAME	PER	SUP	EQP	TNG	AAW	ASU	ASW	AMW	MOB	CCC	ELW	CROVL
BREWTON	C-1	C-1	C-3	C-2	M-2	M-2	M-1	M-2	M-3	M-1	M-1	C-3
BUCHANAN	C-2	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-2
CALLAGHAN	C-1	C-2	C-1	C-1	M-1	M-1	M-2	M-1	M-1	M-1	M-1	C-2
CHANDLER	C-1	C-1	C-3	C-1	M-1	M-1	M-1	M-2	M-3	M-1	M-1	C-3
CONSTELLATI	C-2	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-2
COPELAND	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
FLETCHER	C-1	C-1	C-2	C-1	M-1	M-1	M-1	M-1	M-1	M-2	M-1	C-2
FOX	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
HALSEY	C-1	C-2	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
HORNE	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
JOUETT	C-1	C-1	C-2	C-1	M-2	M-2	M-2	M-1	M-1	M-1	M-1	C-1
KNIKAID	C-2	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-2
KIRK	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-2	C-2
LEAHY	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
MCCLUSKY	C-1	C-1	C-3	C-1	M-1	M-1	M-3	M-1	M-1	M-1	M-3	C-3
MERRIL	C-1	C-1	C-1	C-2	M-1	M-1	M-1	M-1	M-1	M-1	M-2	C-2
MIDWAY	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-2	M-1	M-1	C-2
MISSOURI	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
OBRIEN	C-1	C-1	C-2	C-1	M-1	M-1	M-1	M-1	M-1	M-2	M-2	C-2
REEVES	C-1	C-2	C-3	C-1	M-2	M-3	M-3	M-2	M-1	M-2	M-2	C-3
STERETT	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-1	M-1	C-1
THACH	C-1	C-1	C-1	C-1	M-1	M-1	M-1	M-1	M-1	M-2	M-1	C-2
TOWERS	C-1	C-1	C-3	C-1	M-1	M-1	M-1	M-2	M-3	M-1	M-1	C-3
VINCENNES	C-1	C-1	C-3	C-1	M-3	M-3	M-1	M-1	M-1	M-1	M-1	C-3
WORDEN	C-1	C-1	C-3	C-1	M-1	M-3	M-1	M-1	M-1	M-1	M-3	C-3

TONE DATABASE

SHIPNAME	HULL	TYPE	CLASS	HOMEPORT	MAXSPD	FUEL PC
BREWTON	1086	F F	KNOX	PEARL HARBOR	27	90
BUCHANAN	14	D D G	CHARLES F. ADAMS	SAN DIEGO	31.5	85
CALLAGHAN	994	D D G	KIDD	SAN DIEGO	30	90
CHANDLER	996	D D G	KIDD	SAN DIEGO	30	80
CONSTELLATION	64	C V	KITTY HAWK	SAN DIEGO	30	85
COPELAND	25	F F G	OLIVER HAZARD PERRY	SAN DIEGO	28	80
FLETCHER	992	D D	SPRUANCE	SAN DIEGO	30	80
FOX	33	C G	JOSEPHUS DANIELS	SAN DIEGO	33	40
HALSEY	23	C G	LEAHY	SAN DIEGO	30	60
HORNE	30	C G	JOSEPHUS DANIELS	SAN DIEGO	33	30
JOUETT	29	C G	JOSEPHUS DANIELS	SAN DIEGO	33	85
KNIKAID	965	D D	SPRUANCE	SAN DIEGO	30	80
KIRK	1087	F F	KNOX	YOKOSUKA	27	70
LEAHY	16	C G	LEAHY	SAN DIEGO	32	50
MCCLUSKY	41	F F G	OLIVER HAZARD PERRY	SAN DIEGO	28	85
MERRIL	976	D D	SPRUANCE	SAN DIEGO	30	70
MIDWAY	41	C V	MIDWAY	YOKOSUKA	32	100
MISSOURI	63	B B	IOWA	LONG BEACH	33	100
OBRIEN	975	D D	SPRUANCE	SAN DIEGO	20	100
REEVES	24	C G	LEAHY	YOKOSUKA	32	80
STERETT	31	C G	JOSEPHUS DANIELS	SUBIC BAY	33	85
THACH	43	F F G	OLIVER HAZARD PERRY	SAN DIEGO	28	85
TOWERS	9	D D G	CHARLES F. ADAMS	YOKOSUKA	31.5	70
VINCENNES	49	C G	TICONDEROGA	SAN DIEGO	30	95
WORDEN	18	C G	LEAHY	PEARL HARBOR	32	80

TONE DATABASE

SHIPNAME	LOCATION	GEO AREA	EMP DESCRIPTION
BREWTON	21N 157W	PEARL HARBOR	SPACECRAFT RECOVERY
BUCHANAN	35N 139E	YOKOSUKA	IN PORT
CALLAGHAN	48N 168W	ALEUTIAN ISLANDS	COLD WEATHER OPS
CHANDLER	36N 126W	SOUTHERN CALIF	SEA OF OKHOTSK TRANSIT
CONSTELLATI	21N 157W	PEARL HARBOR	SPACECRAFT RECOVERY
COPELAND	20N 138E	WESTERN PACIFIC	PATROL
FLETCHER	37N 122W	SAN FRANCISCO	IN PORT
FOX	38N 174W	CENTRAL PACIFIC	ENROUTE SAN DIEGO
HALSEY	20N 168E	WESTERN PACIFIC	ENROUTE IO
HORNE	16S 160W	COOK ISLANDS	SURVEY OPS
JOUETT	33N 118W	SAN DIEGO	SEA OF OKHOTSK TRANSIT
KNIKAID	24N 162E	CENTRAL PACIFIC	ENROUTE TAIWAN
KIRK	10N 130E	WESTERN PACIFIC	STORM EVASION
LEAHY	00N 090W	GALAPAGOS ISLAND	SURVEY OPS
MCCLUSKY	15N 096E	INDIAN OCEAN	SURVEILLANCE OPS
MERRIL	08N 168E	CENTRAL PACIFIC	PATROL
MIDWAY	35N 139E	YOKOSUKA	IN PORT/REPLENISH
MISSOURI	33N 118W	SAN DIEGO	IN PORT/REPLENISH
OBRIEN	33N 118W	SAN DIEGO	IN PORT/REPLENISH
REEVES	08N 168E	CENTRAL PACIFIC	PATROL
STERETT	16N 120E	SUBIC BAY	IN PORT
THACH	12N 114E	INDONESIA	SURVEY OPS
TOWERS	00N 072E	INDIAN OCEAN	GOOD WILL VISIT
VINCENNES	32N 126E	SEA OF JAPAN	READINESS EXERCISE
WORDEN	36N 156E	WESTERN PACIFIC	SEA OF JAPAN TRANSIT

TONE DATABASE

SHIPNAME	SONAR	RADAR	HELOS
BREWTON	SQS-35 IVDS SONAR	SPS-40 AIR SEARCH RADAR	SH2-2F LAMPS I
BREWTON	SQS-26CX SONAR	SPS-10 SURF SEARCH RADAR	
BREWTON	SQR-18 SONAR	SPS-58 RADAR	
BUCHANAN	SQQ-23B PAIR	SPS-37 AIR SEARCH RADAR	VERTREP ONLY
BUCHANAN	SQQ-23B PAIR	SPS-10F SURF SEARCH RADAR	
CALLAGHAN	SQQ-53C SONAR	SPS-55 SURF SEARCH RADAR	SH-60B LAMPS III
CALLAGHAN	SQQ-53C SONAR	SPS-48C 3-D SEARCH RADAR	
CHANDLER	SQQ-53C SONAR	SPS-55 SURF SEARCH RADAR	SH-60B LAMPS III
CHANDLER	SQQ-53C SONAR	SPS-48C 3-D SEARCH RADAR	
CONSTELLATION	NONE	SPS-10B SURF SEARCH RADAR	LANDING DECK O
CONSTELLATION	NONE	SPS-48C 3-D SEARCH RADAR	
CONSTELLATION	NONE	SPS-49 AIR SEARCH RADAR	
COPELAND	SQS-56 SONAR	SPS-55 SURF SEARCH RADAR	SH-60B LAMPS III
COPELAND	SQR-19 SONAR	SPS-49 AIR SEARCH RADAR	
FLETCHER	SQQ-53 SONAR	SPS-40B AIR SEARCH RADAR	SH-60B LAMPS III
FOX	SQS-26BX SONAR	SPS-10F SURF SEARCH RADAR	SH2-2F LAMPS I
FOX	SQS-26BX SONAR	SPS-40 AIR SEARCH RADAR	
FOX	SQS-26BX SONAR	SPS-48C 3-D SEARCH RADAR	
HALSEY	SQQ-23B PAIR	SPS-48C 3-D SEARCH RADAR	VERTREP ONLY
HALSEY	SQQ-23B PAIR	SPS-49 AIR SEARCH RADAR	
HALSEY	SQQ-23B PAIR	SPS-10D SURF SEARCH RADAR	
HORNE	SQS-26BX SONAR	SPS-10F SURF SEARCH RADAR	SH2-2F LAMPS I
HORNE	SQS-26BX SONAR	SPS-49 AIR SEARCH RADAR	
HORNE	SQS-26BX SONAR	SPS-48C 3-D SEARCH RADAR	
JOUETT	SQS-26BX SONAR	SPS-10F SURF SEARCH RADAR	SH2-2F LAMPS I
JOUETT	SQS-26BX SONAR	SPS-48C 3-D SEARCH RADAR	
JOUETT	SQS-26BX SONAR	SPS-49 AIR SEARCH RADAR	
KINKAID	SQQ-53 SONAR	SPS-40B AIR SEARCH RADAR	SH-60B LAMPS III
KNIKAID	SQQ-53 SONAR	SPS-55 SURF SEARCH RADAR	
KIRK	SQS-35 IVDS SONAR	SPS-10 SURF SEARCH RADAR	SH2-2F LAMPS I
KIRK	SQR-18 SONAR	SPS-58 RADAR	

TONE DATABASE

SHIPNAME	SONAR	RADAR	HELOS
KIRK	SQS-26CX SONAR	SPS-40 AIR SEARCH RADAR	
LEAHY	SQQ-23B PAIR	SPS-48C 3-D SEARCH RADAR	VERTREP ONLY
LEAHY	SQQ-23B PAIR	SPS-49 AIR SEARCH RADAR	
LEAHY	SQQ-23B PAIR	SPS-10D SURF SEARCH RADAR	
MCCLUSKY	SQS-56 SONAR	SPS-55 SURF SEARCH RADAR	SH-60B LAMPS III
MCCLUSKY	SQR-19 SONAR	SPS-49 AIR SEARCH RADAR	
MERRILL	SQQ-53 SONAR	SPS-40B AIR SEARCH RADAR	SH-60B LAMPS III
MERRILL	SQQ-53 SONAR	SPS-55 SURF SEARCH RADAR	
MIDWAY	SQQ-23B PAIR	SPS-10F SURF SEARCH RADAR	LANDING DECK ONLY
MIDWAY	SQQ-23B PAIR	SPS-65 RADAR	
MIDWAY	SQQ-23B PAIR	SPS-49 AIR SEARCH RADAR	
MISSOURI	NONE	SPG-6 SURFACE SEARCH	LANDING DECK ONLY
MISSOURI	NONE	SPS-6 AIR SEARCH RADAR	
MISSOURI	NONE	SPS-8A HEIGHT-FINDING RADAR	
OBRIEN	SQQ-53 SONAR	SPS-55 SURF SEARCH RADAR	SH-60B LAMPS III
OBRIEN	SQQ-53 SONAR	SPS-40B AIR SEARCH RADAR	
REEVES	SQQ-23B PAIR	SPS-48C 3-D SEARCH RADAR	VERTREP ONLY
REEVES	SQQ-23B PAIR	SPS-49 AIR SEARCH RADAR	
REEVES	SQQ-23B PAIR	SPS-10D SURF SEARCH RADAR	
STERETT	SQS 26BX SONAR	SPS-10F SURF SEARCH RADAR	SH2-2F LAMPS I
STERETT	SQS 26BX SONAR	SPS-40 AIR SEARCH RADAR	
STERETT	SQS 26BX SONAR	SPS-48C 3-D SEARCH RADAR	
THACH	SQR-19 SONAR	SPS-49 AIR SEARCH RADAR	SH-60B LAMPS III
THACH	SQS-56 SONAR	SPS-55 SURF SEARCH RADAR	
TOWERS	SQQ-23A PAIR	SPS-37 AIR SEARCH RADAR	VERTREP ONLY
TOWERS	SQQ-23A PAIR	SPS-10F SURF SEARCH RADAR	
VINCENNES	SQQ-53A SONAR	SPS-49 AIR SEARCH RADAR	SH-60B LAMPS III
VINCENNES	SQQ-53A SONAR	SPY-1A RADAR	
WORDEN	SQQ-23B PAIR	SPS-48C 3-D SEARCH RADAR	VERTREP ONLY
WORDEN	SQQ-23B PAIR	SPS-49 AIR SEARCH RADAR	
WORDEN	SQQ-23B PAIR	SPS-10D SURF SEARCH RADAR	

APPENDIX C

INSTRUCTIONS TO PARTICIPANTS

You will be participating in a study where, through voice query, you will simulate accessing information from a Command and Control database used in CINCPACFLT readiness. The speech data and survey will be collected and given to the Naval Ocean Systems Center (NOSC) for research in natural language understanding for the Force Requirements Expert System (FRESH) located at the Fleet Command Center Battle Management Program (FCCBMP) at CINCPACFLT.

INSTRUCTIONS

You will be presented a series of four (4) short Command and Control scenarios. In each, a PACFLT mission or exercise will be described. A casualty scenario involving one or more ships will then be presented. This casualty may or may not affect operations.

Your goal is to determine the effect of the casualty on the mission and take appropriate action to enable the mission to be completed on time. Appropriate actions are one of the following:

1. REPAIR the casualty
2. CONTINUE the mission in degraded condition
3. REPLACE the ship with the correct available ship that will minimize the impact of the casualty

To make these decisions, you will need information from the simulated PACFLT database called TONE (Task-Oriented Naturally Elicited Speech). The general categories of information available for units assigned to PACFLT are described on the next page and are available through TONE'S database.

DATABASE INFORMATION FOR UNITS ASSIGNED TO PACFLT

SHIP TYPE, CLASS, HULL NUMBER, LOCATION (GEOGRAPHIC AREA, AND HOMEPORT

MAXIMUM SUSTAINED SPEED

WEAPONS

Guns, Missiles, ASW Weapons

CAPABILITIES

Helicopter, Radar, Sonar

CURRENT EMPLOYMENT DESCRIPTION

PERCENTAGE FUEL REMAINING

LOCATION to all SHIPS and PORTS in PACFLT

PRIMARY MISSION AREA (M-RATING)

OVERALL COMBAT READINESS RATING (CROVL)

CASREP DATES, DESCRIPTION, AND ETR

RESOURCE AREA C-RATING

NOTES ABOUT THE DATABASE

This database is UNCLASSIFIED and represents only a small portion of the FRESH capabilities. If you request information that IS NOT IN THE DATABASE you will be instructed that the INFORMATION IS NOT AVAILABLE. The database is not capable of answering "WHAT IF" and "YES" or "NO" questions. You must rephrase your question. If a question is asked that requires more than just a database retrieval, you will be instructed that the question CANNOT BE ANSWERED.

ASK AS MANY QUESTIONS AS YOU WISH. WHEN YOU HAVE OBTAINED ENOUGH INFORMATION FROM THE DATABASE TO MAKE A DECISION, SIMPLY STATE THE SOLUTION YOU HAVE ARRIVED AT.

IMPORTANT POINTS TO REMEMBER ABOUT YOUR SPEECH

Because you will be simulating voice recognition queries to a computer, please remember the following:

1. SPEAK IN A NORMAL VOICE AT A NATURAL SPEED

2. YOUR QUESTION CAN ONLY BE UNDERSTOOD IF IT IS SPOKEN WITHOUT EXTRANEOUS NON-SPEECH SOUNDS. IF YOU COUGH, STUTTER, RE-START, ETC., YOU MAY BE ASKED TO REPEAT THE QUESTION.

APPENDIX D

SCENARIOS USED IN STUDY

SCENARIO #1

150700 Z MAR 88 DEPARTURE REPORT

CG-18 WORDEN WILL DEPART PEARL HARBOR AT 150830 Z MAR 88 TO PARTICIPATE IN A SEA OF JAPAN TRANSIT IN THREE DAYS. THE SEA OF JAPAN TRANSIT REQUIRES THE FOLLOWING CAPABILITIES:

SPS-10 SURFACE SEARCH RADAR

SPS-48 3D AIR SEARCH RADAR

SQS-23 SONAR

CG-18 WORDEN PRIMARY MISSION AREAS:

AAW, ASW, ASU, MOB, CCC, ELW

UNITREP 001 AS OF 161440 Z MAR 88

CG-18 WORDEN REPORTS SPS-48 AIR SEARCH RADAR INOPERATIVE

> C-3 CASREP REPORTED ON EQP RESOURCE

> M-3 REPORTED ON AAW

SCENARIO #2

221630 Z MAR 88 DEPARTURE REPORT

CG-29 JOUETT AND DDG-996 CHANDLER HAVE BEEN SELECTED TO TRANSIT THE SEA OF OKHOTSK TO DEMONSTRATE THE RIGHT OF FREE PASSAGE IN INTERNATIONAL WATERS CONTIGUOUS TO THE SOVIET UNION. BECAUSE OF THE SENSITIVITY OF THE MISSION, THE FOLLOWING CAPABILITIES ARE REQUIRED:

JOUETT	CHANDLER
SQS-26 SONAR	SQS-53 SONAR
SQL-32 V(3)	LAMPS HELOS
SM-2 (ER)	SLQ-32 V(2)
SPS-48 3D RADAR	SM-2 (MR)
SPS-10 SURFACE RADAR	TACTAS (TOWED ARRAY)
	SPS-48 3D RADAR
	SPS-10 SURFACE RADAR

222100 Z MAR 88 CASREP REPORT

DDG-996 CHANDLER HAS DEVELOPED A PROPULSION PROBLEM WHICH IS ESTIMATED TO TAKE TWO WEEKS TO REPAIR.

> M-3 REPORTED ON MOB

SCENARIO #3

051440 Z APR 88 DEPARTURE REPORT

FFG-41 MCCLUSKY HAS BEEN ASSIGNED TATTLETALE SURVEILLANCE OF THE MINSK TG DURING ITS OPERATIONS IN THE SOUTH CHINA SEA. THE TG IS EXPECTED TO DEPART THE AREA 120800 Z APR 88. THE PRIMARY OBJECTIVE OF THE SURVEILLANCE IS INTELLIGENCE COLLECTION ON THE MINSK USE OF ELECTRONIC SENSORS AND COMMUNICATIONS DURING TG OPERATIONS. REQUIRED CAPABILITIES ARE:

SPS-55 SURFACE SEARCH RADAR

LAMPS MK III HELICOPTER

UNITREP 003 AS OF 061020 Z APR 88

FF-41 MCCLUSKY REPORTS SURFACE SEARCH RADAR UNRELIABLE

> CREQP: C-3

> M-3 REPORTED ON ELW

SCENARIO #4

281205 Z APR 88 DEPARTURE REPORT

CV-64 CONSTELLATION WITH FF-1086 BREWTON WILL PARTICIPATE IN SPACE CRAFT RECOVERY MISSION. SPACE CRAFT WILL SPLASH DOWN AT 32N 144W AT 041500 Z MAY IN THE CENTRAL PACIFIC. THE FOLLOWING CAPABILITIES WILL BE NEEDED:

LAMPS HELICOPTER

SPS-10 SURFACE SEARCH RADAR

SPS-40 AIR SEARCH RADAR

291100 Z APR 88 CASREP REPORT

FF-1086 BREWTON REPORTS LAMPS HELICOPTER MAIN ROTOR DAMAGED

> C-3 REPORTED ON EQP

THE WORLD 1:135,000,000

THE WORLD

EDITION 1 - DMATC

REFER TO THIS MAP AS:
THE WORLD 1:135,000,000

SERIES 1107

ARCTIC OCEAN
GREENLAND
GREENLAND SEA
NORWEGIAN SEA
BARENTS SEA
KARA SEA
LAPTEV SEA
NOVOSIBIRSKIYE OSTROVA
UNION OF SOVIET SOCIALIST REPUBLICS
USSR
UNITED STATES (ALASKA)
BERING SEA
CANADA
HUDSON BAY
UNITED STATES
MEXICO
GULF OF MEXICO
CARIBBEAN SEA
PACIFIC OCEAN
ATLANTIC OCEAN
VENEZUELA
COLOMBIA
PERU
BRAZIL
BOLIVIA
ARGENTINA
NORTH SEA
BAY OF BISCAY
FRANCE
SPAIN
POLAND
BLACK SEA
TURKEY
IRAQ
IRAN
MOROCCO
ALGERIA
LIBYA
MAURITANIA
MALI
NIGER
CHAD
SUDAN
NIGERIA
ETHIOPIA
SAUDI ARABIA
ARABIAN SEA
INDIA
PAKISTAN
AFGHANISTAN
MONGOLIA
CHINA
SEA OF OKHOTSK
SEA OF JAPAN
JAPAN
SOUTH CHINA SEA
PHILIPPINES
MALAYSIA
INDONESIA
AUSTRALIA
NEW ZEALAND
ANGOLA
SOUTH AFRICA
INDIAN OCEAN

UNION OF SOVIET SOCIALIST REPUBLICS
FINLAND
SWEDEN
NORWAY
ARCTIC OCEAN
GREENLAND
CANADA

PACIFIC OCEAN
Amundsen
Marie Byrd Land
Victoria Land
Ross Sea
Weddell Sea
Queen Maud Land
ANTARCTICA
ATLANTIC OCEAN

1:135,000,000

IMAGERY UPDATED 2005

APPENDIX F

SURVEY AND SURVEY RESULTS

1. NAME _____

2. AGE (YRS) _____

3. YEARS IN THE NAVY _____

4. RANK _____

5. EDUCATION (SELECT APROPRIATE BOXES)

   [ ] 3 TO 4 YEARS COLLEGE UNDERGRADUATE

   [ ] 5 TO 6 YEARS COLLEGE UNDERGRADUATE

   [ ] 1 TO 2 YEARS GRADUATE SCHOOL

   [ ] 3 TO 4 YEARS GRADUATE SCHOOL

   [ ] EDUCATION EXCEEDS MASTERS LEVEL

6. HAVE YOU BEEN PREVIOUSLY INVOLVED IN ASSESSING FLEET READINESS?

   [ ] YES [ ] NO

6A. IF YES, FOR WHAT PERIOD OF TIME (IN YEARS)? _____

6B. IF YES, TO WHAT EXTENT?

   [ ] MERELY EXPOSED

   [ ] MINIMALLY INVOLVED

   [ ] INVOLVED IN READINESS INQUIRIES

   [ ] INVOLVED IN MAKING DECISIONS

6C. IF YES, WHAT WAS/WERE YOUR BILLET TITLE(S)? _____

_____ _____

6D. PLEASE LIST THE TITLES OF THE LAST THREE (3) BILLETS THAT YOU HELD (SUCH AS TACTICAL ACTION OFFICER, ADMIN OFFICER, MISSIO COMMANDER VQ-4) PRIOR TO BECOMING A STUDENT AT NPS. [IF YOU ARE NOT A STUDENT AT NPS, PLEASE LIST YOUR CURRENT AND PREVIOUS TWO BILLETS HELD]:

_____ _____

7. PLEASE WRITE THE NAME(S) OF THE CITY(IES) AND STATE(S) IN WHICH YOU SPENT THE FIRST TEN YEARS OF YOUR LIFE.

CITY _____ CITY _____

STATE _____ STATE _____

8. DID YOU FIND SPEAKING WITH A MICROPHONE PRESENT TO BE:

[ ] VERY COMFORTABLE

[ ] COMFORTABLE

[ ] BORDERLINE

[ ] UNCOMFORTABLE

[ ] VERY UNCOMFORTABLE

9. DID YOU FIND THE USE OF THE HEADPHONES TO BE:

[ ] VERY ACCEPTABLE

[ ] ACCEPTABLE

[ ] BORDERLINE

[ ] UNACCEPTABLE

[ ] VERY UNACCEPTABLE

10. HAVE YOU EVER USED VOICE RECOGNITION WITH COMPUTERS?

[ ] YES [ ] NO

10A. IF YES, WHAT WAS THE USE? _____

11. HOW COMFORTABLE DO YOU THINK YOU WOULD BE USING A VOICE RECOGNITION INTERFACE IN A REAL COMMAND AND CONTROL SCENARIO?

[ ] VERY COMFORTABLE

[ ] COMFORTABLE

[ ] BORDERLINE

[ ] UNCOMFORTABLE

[ ] VERY UNCOMFORTABLE

12. HOW EFFECTIVE WOULD VISUAL FEEDBACK HAVE BEEN IN ANSWERING YOUR QUESTIONS POSED TO THE COMPUTER, SUCH THAT, WHEN YOU ASKED A QUESTION, THE QUESTION AND THE ANSWER WOULD APPEAR ON THE SCREEN?

[ ] VERY EFFECTIVE

[ ] EFFECTIVE

[ ] BORDERLINE

[ ] UNEFFECTIVE

[ ] VERY UNEFFECTIVE

13. HOW DID YOU FEEL BY THE TIME YOU GOT TO THE LAST SCENARIO?

[ ] VERY COMFORTABLE

[ ] COMFORTABLE

[ ] BORDERLINE

[ ] UNCOMFORTABLE

[ ] VERY UNCOMFORTABLE

[ ] OTHER _____

14. DID THIS EXPERIMENT ADEQUATELY SIMULATE IN CONTENT AND/OR STYLE THE QUESTIONS PRESENTLY USED IN ACTUAL FLEET READINESS ASSESSMENT?

[ ] YES [ ] NO

14A. WHY OR WHY NOT? _____

_____

_____

_____

_____

15. WHAT ARE THE ADDITIONAL FEATURES YOU WOULD LIKE TO SEE MADE AVAILABLE? _____

_____

_____

_____

ANY COMMENTS THAT YOU WISH TO MAKE MAY BE PLACED IN THE SPACE BELOW. _____

_____

_____

_____

_____

_____

SURVEY RESULTS: ORDER, OVERALL TIME, AND DATE

PART.	SCENARIO ORDER	SCENARIO START TIME	SCENARIO FINISH TIME	OVERALL MINUTES	DATE
1	1432	915	953	38	10-May
2	4213	1023	1112	49	10-May
3	3241	1115	1155	40	10-May
4	4123	1217	1256	39	10-May
5	3412	1307	1334	27	10-May
6	4312	1405	1442	37	10-May
7	2134	903	935	32	11-May
8	4321	1226	1258	32	11-May
9	2431	1431	1502	31	11-May
10	1234	907	953	46	12-May
11	3142	1005	1047	42	12-May
12	3421	1107	1215	68	12-May
13	3124	1308	1345	37	12-May
14	4231	1406	1528	82	12-May
15	2314	1532	1652	80	12-May
16	4132	1225	1319	54	13-May
17	1342	1533	1605	32	13-May
18	1243	911	953	42	14-May
19	3214	1005	1105	60	14-May
20	2413	1304	1355	51	23-May
21	2143	905	940	35	24-May
22	1324	1208	1315	67	25-May
23	2341	1400	1434	34	25-May
24	1423	905	950	45	26-May
25	4321	955	1026	31	26-May
26	3124	1305	1335	30	26-May
27	3421	1400	1455	55	27-May

SURVEY RESULTS: AGE, YRS IN NAVY, RANK, AND EDUCATION

		QUESTION #2	QUESTION #3	QUESTION #4	QUESTION #5
PART.	DESIG.	AGE	YRS IN NAVY	RANK	EDUCATION
1	1320	34	12	LCDR	4 UNDERGRADUATE
2	1320	37	14	LT	1 TO 2 GRADUATE
3	1320	33	11	LCDR	1 TO 2 GRADUATE
4	1110	34	10	LT	1 TO 2 GRADUATE
5	1110	28	7	LT	4 UNDER/1 TO 2 GRAD
6	1110	26	5	LT	4 UNDER/1 TO 2 GRAD
7	1110	25	4	LT	1 TO 2 GRADUATE
8	1110	40	18	LCDR	1 TO 2 GRADUATE
9	1110	30	7	LT	4 UNDER/1 TO 2 GRAD
10	1110	39	14	LCDR	1 TO 2 GRADUATE
11	1110	29	8	LT	1 TO 2 GRADUATE
12	1100	26	5	LT	1 TO 2 GRADUATE
13	1110	31	11	LTJG	4 UNDERGRADUATE
14	1110	37	16	CDR	1 TO 2 GRADUATE
15	1110	36	16	LTJG	4 UNDER/1 TO 2 GRAD
16	3100	36	10	LT	4 UNDER/1 TO 2 GRAD
17	1110	41	20	LCDR	6 UNDER/1 TO 2 GRAD
18	1110	31	6	LT	1 TO 2 GRADUATE
19	1110	29	6	LT	4 UNDER/1 TO 2 GRAD
20	1110	32	8	LT	6 UNDER/3 TO 4 GRAD
21	1320	29	7	LT	4 UNDER/1 TO 2 GRAD
22	1110	32	11	LCDR	4 UNDER/1 TO 2 GRAD
23	1310	41	22	CDR	4 UNDER/1 TO 2 GRAD
24	1110	27	5	LT	4 UNDER/1 TO 2 GRAD
25	1320	33	33	LCDR	4 UNDER/1 TO 2 GRAD
26	1110	34	12	LCDR	4 UNDERGRADUATE
27	1110	44	22	CDR	1 TO 2 GRADUATE

SURVEY RESULTS: ASSESS READINESS, PERIOD OF TIME, AND EXTENT

	QUESTION #6	QUESTION #6A	QUESTION #6B
PART.	ASSESS READINESS	PERIOD OF TIME	TO WHAT EXTENT
1	YES	6 YEARS	MAKING DECISIONS
2	NO		
3	NO		
4	YES	3 YEARS	MAKING DECISIONS
5	NO		
6	NO		
7	NO		
8	NO		
9	NO		
10	NO		
11	NO		
12	YES	1 YEAR	MAKING DECISIONS
13	NO		
14	YES	1 YEAR	MAKING DECISIONS
15	NO		
16	NO		
17	NO		
18	NO		
19	NO		
20	YES	2 YEARS	READINESS INQUIRE
21	NO		
22	YES	2 YEARS	MAKING DECISIONS
23	YES	6 YEARS	MAKING DECISIONS
24	NO		
25	NO		
26	NO		
27	NO		

SURVEY RESULTS: BILLET TITLES

	QUESTION #6C
PART.	BILLET TITLES
1	E-2 NAVAL FLIGHT OFFICER/COMBAT INFO CTR OFFICER
2	
3	
4	REPLENISHMENT AT SEA OFFICER/MISSILE OFFICER
5	
6	
7	
8	
9	
10	
11	
12	OPERATIONS OFFICER/NAVIGATOR/CIC OFFICER
13	
14	OPERATIONS OFFICER (CGN)
15	
16	
17	
18	
19	
20	N 5 TACTICAL PHIBRON
21	
22	MATERIAL OFFICER CDS 9 ASWC & ASUWC
23	ASSIST AIR OFFICER [LPH]/AV SQDRN DEPT HD
24	
25	
26	
27	

SURVEY RESULTS: THREE PREVIOUS BILLETS HELD

	QUESTION #6D
PART.	THREE PREVIOUS BILLETS HELD
1	ASST. OPS (VAW) / E-2C MISSION COMMANDER / NFO EVALUATOR
2	MISSION COMMANDER (VQ) / CMS CUSTODIAN / AVIONICS BRANCH OFFICER
3	NROTC INSTRUCTOR / NUC WEAPONS TRAINING OFFICER (VS) / A/C DIV OFF
4	MISSILE OFFICER {TAO}(CG) / REPLENISHMENT AT SEA OFFICER (AE) / ADMIN OFFICER
5	FIRE CONTROL OFFICER / MPA LPH / BOILERS OFFICER LPH
6	GUNNERY OFFICER / A/E &R OFFICER / MAIN PROPULSION ASSIST.
7	CIC OFFICER [NTDS] (FFG) / ORDINANCE OFFICER {TAO QUALIFIED} (FFG)
8	TACTICAL ACTION OFFICER (FF) / WEAPONS OFFICER / 1ST LT (LPD)
9	CIC OFFICER (FF) / NAVIGATOR (FF) / PROPULSION OFFICER (CV)
10	COMBAT SYSTEMS OFFICER (CGN) / TAO (DD) / SENIOR GUNNERY INSTRUCTOR
11	TAO / GUNNERY OFFICER (DD) / MPA / NAV (LST)
12	NAVIGATOR / OPERATIONS OFFICER / DAMAGE CONTROL ASSISTANT
13	COMMUNICATIONS OFFICER / ELECTRICAL OFFICER
14	ELECTRICAL OFFICER (CVN) / OPERATIONS OFFICER (CGN) / REACTOR OFFICER (CVN)
15	AUX OFFICER / COMMO / SWOS STUDENT
16	ASST. CURRIC. OFFICER / RESALE OIC / SUBCOL SUPPLY OFFICER
17	TACTICAL ACTION OFFICER [NTDS] / OPS OFFICER (DH) / WEAPONS OFFICER (DH)
18	CIC OFFICER / ELECTRICAL OFFICER / ORDINANCE OFFICER
19	ANTI-AIR WARFARE OFFICER / CIC OFFICER / FLAG LIEUTENANT
20	STAFF COMM OFFICER / STAFF WATCH OFFICER / COMM. OFF. AFLOAT
21	AV ASSIST. MAINT. OFFICER / QA OFFICER / PERSONNEL OFFICER
22	MATERIAL OFFICER / CHIEF ENGINEER [DDG] / NMPC STAFF PLACEMENT OFFICER
23	SECURITY MANAGER / SPECIAL OPS CVW-8 STAFF / ADMIN OFFICER [HS]
24	ELECTRONIC MAT. OFFICER / GUNNERY OFFICER / COMMUNICATIONS OFFICER
25	ASSIST AIR OPS / A-6 PROGRAM MGMT / A-6 AIR CREW SCHEDULES OFFICER
26	CHIEF ENGINEER [DDG] & [FFG] / ENLISTED PROGRAMS [NRD]
27	C.O. OF ENL. PERS / COMM. PLANS / ACOS FOR COMM. [PHIBGRU]

SURVEY RESULTS: HOMETOWN - CITY AND STATE

	QUESTION #7
PART.	CITY (IES) AND STATE (S)
1	LAKE WALES, FLORIDA/TALLAHASSEE,FLORIDA
2	SALT LAKE CITY, UTAH/AFTON, WYOMING
3	DENVER, COLORADO/ATALANTA, GEORGIA
4	BELLEVILLE, NEW JERSEY
5	BALTIMORE, MARYLAND
6	SARATOGA SPRINGS, NEW YORK
7	RIDGEFIELD, CONNECTICUT
8	HAVERHILL, MASSACHUSETTS/CROYDEN, ENGLAND
9	SANTA FE, TEXAS
10	JAMESBURG, NEW JERSEY
11	PITTSBURG, PENNSYLVANIA/CHICAGO, ILLINOIS
12	REISTERSTOWN, MARYLAND
13	DETROIT, MICHIGAN
14	CALIFORNIA/SOUTHERN TAIWAN/NORFOLK, VIRGINA
15	LOS ANGELES, CALIFORNIA
16	NEW HAVEN & EAST HAVEN, CONNECTICUT
17	PLAINVIEW, TEXAS
18	SUPERIOR & VALENTINE, NEBRASKA
19	WYCKOFF, NJ/CHARLOTTE, NC/GREENVILLE, SC
20	CHICAGO, ILLINOIS
21	RALEIGH, NORTH CAROLINA/SILVER SPRING, MD
22	WEST WARWICK, RHODE ISLAND
23	AUSTIN, TX/BITBURG, GERMANY
24	LATROBE, PENNSYLVANIA
25	AURORA, ILLINOIS
26	NATCNEZ, MISSISSIPPI/NEW ORLEANS, LOUISIANA
27	CHARLESTON. SOUTH CAROLINA

SURVEY RESULTS: COMFORT WITH MICROPHONE AND HEADPHONE

PART.	QUESTION #8 MICROPHONE	QUESTION #9 HEADPHONE
1	COMFORTABLE	ACCEPTABLE
2	COMFORTABLE	VERY ACCEPTABLE
3	VERY COMFORTABLE	ACCEPTABLE
4	COMFORTABLE	ACCEPTABLE
5	VERY COMFORTABLE	VERY ACCEPTABLE
6	VERY COMFORTABLE	ACCEPTABLE
7	COMFORTABLE	VERY ACCEPTABLE
8	VERY COMFORTABLE	BORDERLINE
9	VERY COMFORTABLE	ACCEPTABLE
10	COMFORTABLE	ACCEPTABLE
11	VERY COMFORTABLE	ACCEPTABLE
12	VERY COMFORTABLE	ACCEPTABLE
13	COMFORTABLE	ACCEPTABLE
14	COMFORTABLE	BORDERLINE
15	COMFORTABLE	ACCEPTABLE
16	VERY COMFORTABLE	VERY ACCEPTABLE
17	VERY COMFORTABLE	VERY ACCEPTABLE
18	VERY COMFORTABLE	VERY COMFORTABLE
19	COMFORTABLE	ACCEPTABLE
20	VERY COMFORTABLE	ACCEPTABLE
21	COMFORTABLE	ACCEPTABLE
22	COMFORTABLE	ACCEPTABLE
23	COMFORTABLE	ACCEPTABLE
24	COMFORTABLE	ACCEPTABLE
25	COMFORTABLE	ACCEPTABLE
26	COMFORTABLE	ACCEPTABLE
27	COMFORTABLE	ACCEPTABLE

SURVEY RESULTS: PREVIOUS VOICE RECOGNITION EXPERIENCE

	QUESTION #10	QUESTION #10A
PART.	VOICE RECOG.	USE OF VOICE RECOGNITION
1	YES	ASSISTING WITH THESIS RESEARCH
2	YES	MAN-MACHINE INTERFACE CLASS AT NPS
3	YES	MAN-MACHINE INTERFACE CLASS AT NPS
4	YES	AS INPUT TO DECISION SUPPORT SYSTEMS
5	NO	
6	YES	MAN-MACHINE INTERFACE CLASS AT NPS
7	NO	
8	NO	
9	YES	MAN-MACHINE INTERFACE CLASS AT NPS
10	NO	
11	NO	
12	NO	
13	NO	
14	NO	
15	NO	
16	NO	
17	NO	
18	NO	
19	YES	MAN-MACHINE INTERFACE CLASS AT NPS
20	YES	COMPUTER ENTRY & RUNNING SIMULATIONS
21	YES	MAN-MACHINE INTERFACE CLASS AT NPS
22	NO	
23	NO	
24	YES	INTRODUCTION TO THEM AT NPS AT NPS
25	YES	GRADUATE SCHOOL DATA COLLECTION
26	NO	
27	NO	

SURVEY RESULTS: COMFORT OF VOICE RECOGNITION AS INTERFACE AND EFFECTIVENESS OF VISUAL FEEDBACK

	QUESTION #11	QUESTION #12
PART.	USE AS INTERFACE	VISUAL FEEDBACK
1	VERY COMFORTABLE	VERY EFFECTIVE
2	COMFORTABLE	VERY EFFECTIVE
3	COMFORTABLE	VERY EFFECTIVE
4	VERY COMFORTABLE	VERY EFFECTIVE
5	COMFORTABLE	EFFECTIVE
6	UNCOMFORTABLE	VERY EFFECTIVE
7	VERY COMFORTABLE	VERY EFFECTIVE
8	VERY COMFORTABLE	VERY EFFECTIVE
9	VERY COMFORTABLE	VERY EFFECTIVE
10	BORDERLINE	VERY EFFECTIVE
11	VERY COMFORTABLE	EFFECTIVE
12	VERY COMFORTABLE	UNEFFECTIVE (UNNECESSARY)
13	BORDERLINE	VERY EFFECTIVE
14	UNCOMFORTABLE	VERY EFFECTIVE
15	COMFORTABLE	VERY EFFECTIVE
16	COMFORTABLE	VERY EFFECTIVE
17	COMFORTABLE	VERY EFFECTIVE
18	COMFORTABLE	VERY EFFECTIVE
19	BORDERLINE	EFFECTIVE
20	COMFORTABLE	VERY EFFECTIVE
21	COMFORTABLE	BORDERLINE
22	COMFORTABLE	VERY EFFECTIVE
23	VERY COMFORTABLE	VERY EFFECTIVE
24	COMFORTABLE	VERY EFFECTIVE
25	VERY COMFORTABLE	VERY EFFECTIVE
26	BORDERLINE	VERY EFFECTIVE
27	BORDERLINE	VERY EFFECTIVE

SURVEY RESULTS: FEELINGS AT LAST SCENARIO

	QUESTION #13
PART.	FEELINGS AT LAST SCENARIO
1	VERY COMFORTABLE
2	COMFORTABLE
3	VERY COMFORTABLE
4	COMFORTABLE
5	COMFORTABLE
6	BORDERLINE
7	VERY COMFORTABLE
8	FRUSTRATED (LACKED INFO)
9	VERY COMFORTABLE
10	COMFORTABLE
11	COMFORTABLE
12	COMFORTABLE
13	COMFORTABLE
14	FRUSTRATED (AWARE OF LIMITATIONS)
15	COMFORTABLE
16	VERY COMFORTABLE
17	VERY COMFORTABLE
18	COMFORTABLE
19	OTHER (USED NOTES MORE THAN DB)
20	VERY COMFORTABLE
21	COMFORTABLE
22	COMFORTABLE
23	VERY COMFORTABLE
24	COMFORTABLE
25	VERY COMFORTABLE
26	BORDERLINE
27	COMFORTABLE

SURVEY RESULTS: ADEQUATE SIMULATION

	Q	QUESTION # 14A
P	#14	ADEQUATELY SIMULATED WHY OR WHY NOT
1	YES	
2	NA	
3	DK	
4	YES	NEED MORE CASREP DATA / ASKING ONE QUESTION AT A TIME SLOWS THINKING
5	NO	RESPONSES NOT FLEXIBLE ENOUGH / NORMALLY ASK YES AND NO QUESTIONS
6	YES	REPLACING OR OPERATING A SHIP BELOW STANDARDS IS TYPICAL
7	YES	REPLACEMENT SHIP DOESN'T REQUIRE EXACT MATCH CAPABILITY-GOOD!
8	NO	ADEQUATE INFORMATION NOT AVAILABLE FOR DECISION MAKING
9	NO	ETR ON CG OF 2 MONTHS IS UNREALISTIC / SHIP IN C-1 OVERALL IS UNUSUAL
10	NO	NOT ENOUGH DATA AVAIL / NEED MORE CASREP INFORMATION
11	YES	
12	YES	C2 OFFICER NEEDS MORE DETAILED AND SPECIFIC ANSWERS
13	NO	DATABASE NOT LARGE ENOUGH / ADD SQUADRON INFO / SCENARIOS UNREALISTIC
14	NO	QUESTIONS ARE 2 PARTS "WHERE'S NEAREST LAMPS CAPABLE SHIP WITH OPERATIONAL HELO?'
15	YES	
16	NA	NEVER INVOLVED IN FLEET READINESS
17	YES	VERY REALISTIC / CV'S CARRY HELOS AND HAVE LANDING DECKS
18	NO	TOO MUCH VITAL INFORMATION WAS LACKING
19	YES	STUFF BREAKS ON THE WAY TO DO JOBS ALL THE TIME-MURPHY'S LAW!
20	YES	INFO AVAIL TO TACTICAL AND OPS COMMANDERS WAS GOOD / MISSION STATEMENTS ADEQUATE
21	NA	NEVER WORKED WITH ASSESSMENT OF FLEET READINESS
22	YES	AS SCENARIOS PROGRESSED I GOT MORE COMFORTABLE ABOUT ASKING RIGHT QUESTIONS
23		I HAVE LIMITED EXPERIENCE AT THE LEVEL PRESENTED ON WHICH TO COMPARE
24	YES	COULD USE MORE INFO ON CASREPS
25	YES	NOT HAVING A BACKGROUND IN THIS, I THOUGH IT WAS FAIRLY REPRESENTATIVE
26	YES	YES, BUT LIMITED DATABASE MAKES QUERIES DIFFICULT, INFO INCOMPLETE
27	YES	ALTHOUGH EXPERIMENT WAS BASIC IT DEALT WITH THE TYPE OF DATA ELEMENTS USED IN FLT OPS

SURVEY RESULTS: ADDITIONAL FEATURES

P	QUESTION #15 ADDITIONAL FEATURES
1	SCREEN LISTING OF REPLIES, STEAMING TIMES, ALL UNITS WITHIN A PARTICULAR AREA
2	MORE INFO ABOUT MISSION IMPORTANCE/TYPE, SHIP EQUIP. REPAIR REQUIREMENTS
3	VISUAL GRAPHICS
4	VISUAL DISPLAY OF ANSWERS
5	USE CLASSIFIED DATABASE FOR MORE FRUITFUL ANSWERS
6	HAVE YES/NO ANSWERS, MORE CASREP INFO, GRAPHICS OF SHIP LOCATIONS
7	CRT PRESENTATION OF ANSWERS, ABILITY TO ASK 2 PART QUESTIONS
8	BETTER DATABASE, MULTIPLE LOGIC QUESTIONS, VISUAL FEEDBACK
9	NONE
10	GEOGRAPHIC LOCATIONS FOR SHIPS, MORE DETAILS ON CASUALTY
11	ENTER UP-TO-DATE CASREP DATA INTO DATABASE
12	EXPAND SCENARIOS WITH REAL LIFE SPECIFICS FOR ACCURATE DECISIONS
13	LARGER, MORE COMPLETE DATABASE, MORE REALISTIC SCENARIOS
14	VIS. DISPL. SHIP LOCALE, ASK 2 PART QUEST., RANGE BASED ON FUEL, TIME IN/OUT OF PORT & OF COMM
15	GIVE HULL #'S WITH SHIP NAMES, MORE INFO TO DB-PURPOSE & PRIORITY, PARTS REQ. FOR REPAIR
16	FULLER DESCRIPTIONS OF PRESENT EMPLOYMENT, ASK 2 PART QUESTIONS
17	HELOS ON CARRIERS, SPARE PARTS ON SHIPS
18	MORE AIR ASSETTS, PARTS AVAILABILITY, MISSION INFO (PRIORITY), VISUAL SHIP LOCATIONS
19	SOVIET DATA, ALL U.S. CAPABILITIES PRESENT, SORT CAPABILITES AND DISTANCE MINIMIZER
20	VISUAL FEEDBACK OF QUESTIONS & ANSWERS, BACKUP KEYBOARD ENTRY
21	FORMATTED WORKSHEET FOR TAKING NOTES, MORE TIME CRITICAL STYLED SCENARIOS
22	VISUAL AIDES, ADD OILERS
23	MORE GRAPHIC INFO AS BASELEINE, SCREEN DISPLAYS, OPERATIONAL PRIORITIES
24	VISUAL DISPLAY OF ANSWERS
25	STILL HAVE MANUAL BACKUP METHOD
26	DB EXPANSION TO HANDLE YES & NO RESPONSES
27	COORDINATE WITH A VISUAL DISPLAY

SURVEY RESULTS: ADDITIONAL COMMENTS

P	ADDITIONAL COMMENTS
1	
2	
3	
4	
5	
6	QUICK REFRESHER OF C RATINGS WOULD HELP, GIVE FUEL % WHEN GIVING SHIP NAME OR HULL #
7	
8	
9	LOTS OF FUN!
10	NO
11	ENTER UP-TO-DATE CASREP DATA
12	LIMITS OF DB QUESTIONS MAKES ACCURATE DECISION DIFFICULT
13	
14	NEED MORE DATA
15	
16	
17	
18	
19	MORE POSITIVE RESULTS OBTAINED FROM SUBJECTS WHO UNDERSTAND DB's.
20	ENJOYED THE OPPORTUNITY, GOOD THINKING PROBLEMS
21	
22	
23	
24	
25	
26	
27	GOOD LUCK

APPENDIX G

Scenario 1 PARTICIPANT #1.1432

Request available replacements within two days sailing time Sea of Japan that have SPS ten, SPS forty-eight, SQS twenty-three.

Available PAC fleet ships with SPS ten, SPS forty-eight, SQS twenty-three.

Request available PAC fleet ships with SQS twenty-three.

Request location of Reeves. Request steaming for Reeves to Sea of Japan. Request, ah, status of Reeves. Request, a ah, request any CASREPS on Reeves.

Request, ah, request location of Towers.

Request, ah, radar suit of Reeves.

OK, my decision to detach Reeves from patrol duties and order Reeves into the ah Sea of Japan to handle the transit crossing and Warden to re, ah, turn to port for repairs.

Scenario 4 PARTICIPANT #1.1432

Request ah, time to repair for, ah, LAMPS helo onboard Brewton. I didn't copy, say again, ah, the time to repair on that CASREP.

Request, ah, units in PAC fleet with LAMPS capability. Request any outstanding CASREPS on PAC fleet, ah, LAMPS, ah, capable ships.

Request position of Callahan. Request position of Copeland. Request position of Horne. Request position of Kinkaid. Request location of Kirk.

Request, ah, CASREPS on Copeland.

Ah, request radar suite on Constellation. Ah, request radar suite of Copeland.

Ah, request position of McClusky. Request position of Merrill.

Request radar suite of Merrill.

Request position of O'Brien. Request position of Sterett. Request position of Thach. Request position of Vincennes.

OK, ah, conclusion is to order Merrill to, ah, rendezvous with the Constellation at ah 32N 144W. Ah, detach Brewton. Brewton to proceed to home port.

Scenario 3 PARTICIPANT #1.1432

Estimated, ah, time of repair on, ah, surface search radar or SPS fifty-five. Impact of M three on ELW.

Request, ah, request PAC fleet units with LAMPS mark three. Ask for repeat on PAC fleet units with LAMPS mark three.

What's the location of McClusky?

Request PAC fleet units with SPS fifty-five.

Request location of Thach. Request location of Callahan. Request location of Copeland. Request location, ah, of Chandler. Request location of Fletcher. Request location of Kinkaid. Request location of O'Brien. Request location of Vincennes. Request location of Merrill.

Request, ah, outstanding CASREPS on ah LAMPS mark three units, concerning LAMPS mark three units. Request CASREPS on Copeland.

Request, ah, steaming speed for Copeland. Request speed for Vincennes.

OK, orders are for Copeland to proceed to Sea of Japan to rendezvous with ah McClusky and McClusky will be relieved upon arrival of ah, Copeland.

Scenario 2 PARTICIPANT #1.1432

Request PAC fleet DDGs.

Request, ah, position of Callahan.

OK, orders are for Callahan to replace Chandler on the mission.

PARTICIPANT #1: WORD USE FREQUENCY COUNT

Request	40	forty	2	surface	1
of	35	steaming	2	will	1
ah	26	order	2	capability	1
to	15	Brien	2	What	1
location	13	orders	2	suit	1
on	11	eight	2	concerning	1
position	11	port	2	CASREP	1
with	8	detach	2	THACH	1
fleet	8	outstanding	2	repeat	1
for	8	that	2	conclusion	1
three	8	speed	2	replace	1
Copeland	8	Chandler	2	upon	1
PAC	8	available	2	Thach	1
LAMPS	7	Constellation	2	repairs	1
Reeves	7	Kinkaid	2	Kirk	1
the	6	Sterett	1	patrol	1
SPS	6	turn	1	mission	1
request	6	a	1	days	1
units	6	Available	1	my	1
radar	6	again	1	have	1
CASREPS	5	relieved	1	or	1
Ah	4	say	1	helo	1
McClusky	4	sailing	1	search	1
OK	4	decision	1	re	1
Japan	4	copy	1	capable	1
mark	4	transit	1	I	1
time	4	arrival	1	is	1
Merrill	4	duties	1	home	1
Sea	4	onboard	1	replacements	1
Callahan	4	be	1	in	1
Brewton	3	Ask	1	Horne	1
SQS	3	Fletcher	1	two	1
twenty	3	ELW	1	at	1
repair	3	handle	1		
and	3	from	1		
ships	3	crossing	1		
Vincennes	3	into	1		
suite	3	Warden	1		
proceed	2	status	1		
ten	2	within	1		
fifty	2	didn	1		
any	2	Towers	1		
rendezvous	2	Impact	1		
are	2	Estimated	1		
five	2	DDGs	1		

Scenario 4 PARTICIPANT #2.4213

All right, ah, what is the current time?

Does the, ah, Constellation, ah, currently handle or have any LAMPS helos onboard?

From the CASREP report on the ah Brewton, the ah main rotor damage, ah, do,does the Brewton have the equipment, ah, or the spare parts in order to repair the main rotor? Can you tell me if they have the personnel on board to make that, ah, repair?

Does the Brewton only have one, ah, LAMPS helicopter or do they have more than that?

Do you want an assessment right now?

*Yes, ah, I'd like to ah, ah, proceed ah on schedule with the assumption that, ah, we will be able to repair their LAMPS helicopter, ah, main rotor, ah, in time to, ah, to effect, ah, the mission as directed.

Scenario 2 PARTICIPANT #2.4213

What is the, ah, departure, ah, port of both ships please?

What is the, ah, the expected arrival date at, ah, the Sea of Okhotsk?

Ah, do you have a transit speed for these, ah, vessels? Can you tell me if, ah, if they've, ah, if the Jouett is a gas turbine ah vehicle and, ah same for Chandler?

Can you give a, ah, a listing of, ah, of Kidd, ah, class destroyers, ah, in the, ah, Pacific Basin, particularly Honolulu, Yokosuka, P.I., along the West Coast of the US?

OK, can you give me ah a listing of all Kidd class, ah, destroyers currently based in Honolulu, Pearl Harbor? Give me a listing of all Kidd class destroyers in Pearl Harbor. Ah, can I get a listing, ah, can I ask for a database listing of all Kidd Class destroyers currently in the Pacific Basin? And please give a current location for the Callahan, please.

And ah, can you give me a synopsis on its current mission and on its ah, on its current mission first?

Can I get a ah, status on its ah, ah, readiness mechanical, ah, maintenance readiness factor?

Does the ah Callahan have an SQS fifty-three sonar? Does the ah, Callahan ah, have a LAMPS helo on board and ah, in operational condition? Ah, does Callahan have an SLQ thirty-two version two on board? Does Callahan have TACTAS Towed Array ah on

board? Ah, how 'bout an SM two MR? Does Callahan have an SM two, SM two MR on board? Does the ah Callahan have an SPS forty-eight three dimensional radar on board? List ah all ah, radars that the ah, Callahan currently has ah, on board.

I'd like you to ah, search your database and ah, see if you can match up any ships in the ah Pacific Basin that currently have SQS fifty-three sonar, LAMPS helicopter, SLQ 32 V2 SM-2 MR, a TACTAS towed array, SPS 48 3D radar, SPS 10 surface radar.

Give me all amplifying information on the propulsion problems in the Chandler, please.

Make a recommendation ah, just based on what I have here is that the ah, I don't see any time-critical nature of the mission being indicated here so I'm going to recommend we delay the mission and ah, repair the ah, the Chandler.

Scenario 1 PARTICIPANT #2.4213

Have we received any amplifying reports other than the ah, UNITREP ah, zero zero one on the, ah, Worden?

Do ah, we have ah, an SPS 48 Ah air search ah radar repair capability at ah Yokosuka, Japan?

Is it possible for the computer to tell me what the purpose of this transit is?

And ah, can you give me the ah, operation speed of the ah, Worden please?

Is the Worden ah, estimating the, is the Worden planning on using its own ah, personnel for the repair of the search radar at this time? Ah, who is going to ah effect the search radar repair for the Worden?

Can you tell me if they have a spare search radar on board?

Ah, you don't have any listing of what's in their spares inventory?

Ah, can you give me a listing of all ships north, north of ah, twenty degrees north and ah, no make that ah, twelve degrees north between one hundred eighty degrees and one hundred and twenty degrees east. Give me a listing of all ships by name that are north of, what'd I say, twelve degrees north, one eighty degrees east and one twenty degrees east.

Just give me a listing of all ships at this time. All ships in the east pack.

I'd like a listing of all ships currently operating in east pack along with their location and their primary mission. West of one hundred n' eighty degree east, east of one hundred twenty degrees east, north of the equator. Western Pacific.

Ah, can you also on this give me ah what the Copeland is please? Can you tell me length of deployment? Length of current deployment.

What type of ship is the Halsey, please? And, ah, fuel remaining.

Ah, are there any others? Ah can you continue with the ah, the listing of ships?

Ah, tell me, is the ah, does the, ah, can you give me a listing of the equipment that the ah, radars, sonars that the ah, Halsey has on board please? List all equipment, all ah, all radars and sonar equipment that the Halsey has on board please. Ah, repeat again the, ah, the air search radar for Halsey please.

How many more ships do you have operational in WESTPAC?

Ah, type of ship for Kirk, please. OK, can you give me a, ah, a ah, fuel remaining on Kirk please. And, ah, can you give me a listing of ah, radars and sonars on board the Kirk please.

Do we have ah any other ships in WESTPAC? Please list all other, there's no other ships in WESTPAC?

OK ah recommendation is that ah, the ah, ah, the Worden, ah, continue on to Yokusha and ah stop there until repairs are completed, reevaluate the need of the mission on a delayed basis, if the ah, mission is still warranted ah, to continue the mission after the ah, repair.

Scenario 3 PARTICIPANT #2.4213

And ah, does the ah, can you tell me ah the helicopter capability of the Kirk also please? Can you ah give me a listing of the ah, Kirk's ah, helicopter capability?

And ah, give me a ah, position report on the McClusky please. And ah, can you give me an estimate time of repair for the ah McClusky radar please?

OK I'm going to recommend that ah, ah, the McClusky continue the mission in a degraded condition as long as weather or visibility remains above five miles and ah, there is no harassment by ah, by the TC during this a this period. Ah, if those ah, items should be encountered then I'd like to break off the mission and bring the McClusky in for repair.

PARTICIPANT #2: WORD USE FREQUENCY COUNT

ah	112	LAMPS	5	no	3	recommendation	2
the	81	helicopter	5	going	3	along	2
of	33	we	5	Give	3	more	2
a	28	current	5	Chandler	3	than	2
on	26	Kirk	5	class	3	transit	2
you	23	its	5	Basin	3	ship	2
me	22	Halsey	5	by	3	be	2
have	19	Kidd	5	Harbor	2	vehicle	2
in	17	McClusky	5	spare	2	TC	1
please	16	they	5	report	2	planning	1
and	15	do	5	West	2	array	1
Ah	15	at	5	fifty	2	helos	1
give	14	OK	5	speed	2	during	1
to	14	continue	4	don	2	operating	1
can	14	SPS	4	also	2	same	1
listing	14	like	4	get	2	ask	1
is	14	radars	4	readiness	2	propulsion	1
I	13	other	4	type	2	bring	1
all	13	equipment	4	remaining	2	off	1
that	13	or	4	right	2	US	1
for	11	destroyers	4	effect	2	warranted	1
mission	11	there	4	SLQ	2	how	1
ships	11	their	4	here	2	your	1
board	11	does	4	Is	2	Array	1
repair	10	SM	4	see	2	critical	1
radar	9	hundred	4	zero	2	gas	1
one	8	Pacific	4	sonars	2	stop	1
degrees	8	twenty	4	condition	2	Japan	1
an	8	Brewton	3	amplifying	2	computer	1
And	8	eighty	3	personnel	2	harassment	1
east	8	sonar	3	make	2	estimate	1
if	8	rotor	3	SQS	2	first	1
Callahan	8	MR	3	air	2	length	1
Can	7	three	3	operational	2	say	1
tell	7	What	3	All	2	vessels	1
Does	7	has	3	pack	2	will	1
any	7	Do	3	fuel	2	version	1
north	7	WESTPAC	3	deployment	2	now	1
this	6	are	3	location	2	Coast	1
Worden	6	capability	3	database	2	eight	1
time	6	main	3	based	2	match	1
what	6	with	3	twelve	2	break	1
search	6	as	3	Honolulu	2	port	1
currently	6	recommend	2	TACTAS	2	own	1
two	5	List	2	Pearl	2	Make	1

PARTICIPANT #2: WORD USE FREQUENCY COUNT (CONT.)

Length	1	miles	1	dimensional	1
want	1	mechanical	1	helo	1
arrival	1	ve	1	factor	1
who	1	proceed	1	purpose	1
Yes	1	name	1	Just	1
onboard	1	so	1	order	1
Class	1	directed	1	both	1
nature	1	need	1	degree	1
Yokosuka	1	items	1	information	1
Have	1	up	1	Yokosuka	1
remains	1	From	1	CASREP	1
only	1	schedule	1	reevaluate	1
just	1	expected	1	visibility	1
then	1	departure	1	five	1
delay	1	degraded	1	repeat	1
after	1	repairs	1	bout	1
Western	1	possible	1	indicated	1
completed	1	Towed	1		
long	1	others	1		
Sea	1	able	1		
list	1	position	1		
basis	1	handle	1		
Please	1	reports	1		
How	1	assumption	1		
damage	1	still	1		
estimating	1	should	1		
problems	1	those	1		
period	1	inventory	1		
again	1	received	1		
parts	1	turbine	1		
status	1	Copeland	1		
UNITREP	1	date	1		
being	1	spares	1		
encountered	1	towed	1		
above	1	thirty	1		
assessment	1	synopsis	1		
it	1	between	1		
Constellation	1	equator	1		
operation	1	surface	1		
forty	1	until	1		
primary	1	these	1		
many	1	delayed	1		
particularly	1	using	1		
Jouett	1	weather	1		
Okhotsk	1	maintenance	1		

Scenario 3 PARTICIPANT #3.3241

What are the radar capabilities of the McClusky? What are the ah, surface the radar capabilities of the LAMPS mark three helicopter aboard McClusky? What are the helicopter capabilities of the McClusky? What are the helicopter capabilities of the McClusky? How many mark how many LAMPS mark three are deployed presently aboard McClusky?

What are the radar capabilities of the LAMPS mark three?

What is the status of the SPS fifty-five on McClusky?

What is the closest ship to McClusky at this time?

What is the range and bearing to Towers?

And the geo position of McClusky.

What is the top speed of Towers? What is the fuel status of Towers?

What is the lat n' long of the Minsk battle group?

How about the center of the South China Sea?

Present pos McClusky is ah, not in lat n' long but ah, geographical.

What is the geographical position not lat long but area did you say, Indian Ocean.

What is the ASW capability of ah McClusky? What is the percentage fuel remaining on McClusky? What is the overall combat readiness rating of McClusky?

OK I think I have ah, an idea what I want to do. I'd say we're going to continue the mission in a degraded condition.

Scenario 2 PARTICIPANT #3.3241

Sea of Okhotsk actually what is the position not the present position?

Give me present position of Jouett and Chandler.

Give me location of closest DDG nine nine six class ship to Chandler. List DDG nine nine six presently available.

Present position of Buchanan. Present position of Callahan. Towers, present position.

Sonar capability of ah, Chandler, I'm sorry ah, Callahan. Actually the CASREP status of it.

Number of helos aboard ah presently aboard Callahan and type. Type sonar aboard Callahan. Radar capabilities ah of ah Callahan. Towed array, sonar capabilities for ah Callahan, TACTAS type.

CASREP status on Jouett.

OK, I have a decision. Replace the ship with the Chandler.

Scenario 4 PARTICIPANT #3.3241

Number of helos aboard Brewton at this time.

Radar capabilities for Constellation. Radar capabilities of Brewton.

Present pos of Constellation and Brewton.

Top speed of Brewton and Constellation.

Fuel status of both ships.

OK. Repair the casualty, press on.

Scenario 1 PARTICIPANT #2.4213

CASREP on Worden. Radar capabilities of Worden. Sonar capability of Worden.

List ah, cruisers available in Western Pacific.

Closest cruiser to Sea of Japan. Any ships presently in the Sea of Japan.

Type of ship Buchanan. Radar capabilities of ah Buchanan.

Geographic posit Fox. CASREP status on Fox.

Geographic location Halsey. CASREP Halsey.

Fox primary mission areas. Type of ship Fox. Hull number Fox. Radar capabilities Fox. Sonar capability Fox.

OK. Replace the ship.

PARTICIPANT #3: WORD USE FREQUENCY COUNT

the	35	pos	2	about	1	Minsk	1
of	34	six	2	China	1	Repair	1
What	15	Geographic	2	Western	1	Top	1
ah	13	How	2	do	1	range	1
capabilities	12	many	2	TACTAS	1	both	1
McClusky	12	say	2	continue	1	we	1
is	12	a	2	Ocean	1	Fuel	1
position	8	at	2	you	1	Okhotsk	1
Fox	7	me	2	how	1	array	1
are	6	fuel	2	And	1	five	1
ship	6	Replace	2	Towed	1	re	1
aboard	6	Give	2	casualty	1	deployed	1
status	6	for	2	ASW	1		
Radar	6	sonar	2	combat	1		
I	6	DDG	2	Closest	1		
on	6	but	2	with	1		
to	6	time	2	number	1		
Callahan	6	helos	2	cruiser	1		
and	5	closest	2	posit	1		
CASREP	4	type	2	South	1		
capability	4	this	2	area	1		
OK	4	location	2	sorry	1		
Brewton	4	Jouett	2	press	1		
Towers	4	mission	2	did	1		
Chandler	4	List	2	bearing	1		
Sea	4	ships	2	idea	1		
nine	4	have	2	center	1		
mark	4	geographical	2	areas	1		
in	4	Japan	2	percentage	1		
Present	4	speed	2	want	1		
presently	4	Number	2	geo	1		
Worden	3	available	2	think	1		
lat	3	what	2	remaining	1		
long	3	it	1	surface	1		
not	3	SPS	1	cruisers	1		
LAMPS	3	class	1	battle	1		
Constellation	3	overall	1	readiness	1		
Buchanan	3	Indian	1	condition	1		
radar	3	Actually	1	actually	1		
present	3	decision	1	fifty	1		
three	3	primary	1	rating	1		
helicopter	3	Any	1	Hull	1		
Sonar	3	going	1	Pacific	1		
Type	3	top	1	degraded	1		
Halsey	2	an	1	group	1		

Can the helicopters on the Constellation replace the LAMPS helicopter in this mission? What are the helicopter assets on the Constellation that are comparable that or that are able to complete this mission in, in lieu of the LAMPS? What are the helicopter assets available aboard the Constellation? Is there a LAMPS helicopter available? I can't ask that 'cause that's yes or no. What are the helicopter assets available in Hawaii or ah stateside that are available and can fly out to the Constellation that could, what are the ships in the local area that have LAMPS on them within 250 nautical miles of our current location?

What is the next available ship in Pearl Harbor that can replace the Brewton? Is there a ship in Pearl Harbor that is ready for sea that cancel my last request. Is there another LAMPS helicopter ah, in Hawaii that can replace the helicopter on the Brewton?

What is the estimate time to repair the rotor blade on the helicopter? What is the critical factor in the repair? Can I have an aside comment? What good is the database? Is there another ship in Pearl Harbor that has a LAMPS helicopter on it? List the ships in list the ships in Pearl Harbor. Of those ships, list the ones that have helicopter capabilities.

List the ships in the Pacific, list the ships in the Pacific between Midway Island and the west coast.

Of those ships, list ah, the ones with helicopter capabilities.

List helicopter capabilities of Kirk. Current location of the Kirk.

List helicopter capabilities of the Copeland. Current location of the Copeland.

Helicopter capabilities of the Merrill. Current location of the Merrill.

Who's the ah current operational commander of the Merrill. What is the urgency of this mission?

What's the helicopter capabilities of the Chandler? Current location of the Chandler.

The choice is ah, send the Chandler ah, divert it from its current mission, have it replace the Brewton and have it rendezvous ah at the splashdown recovery one day prior to, or shall we say at zero three fifteen hundred May.

*Now I have three choices ah, repair, continue, or replace. Continue. I was on that ship. You can steam around all the time without your forty-eight. Yes, it degrades it. You don't have any three-D air search but you have four five control radars that can give you the third dimension and you still have the forty-nine, ah, the forty-nine air search radar

which is two D so you can get your three coordinates. I was missile officer on one of these ships for two years so.*

Scenario 2 PARTICIPANT #4.4123

Database, what is the current location of the Jouett? Can you give me those coordinates again?

What is the location of the Chandler?

Are there, list Spruance class destroyers in San Diego. Do it backwards. Give me the ships in San Diego.

What is the ah, list status of the O'Brien. What is their current mission? O'Brien. What's it's, what's the O'Brien's fuel state? What impact will assigning the O'Brien ha, in place of the Chandler, have?

I choose to replace the Chandler with the O'Brien.

Scenario 3 PARTICIPANT #4.4123

What's the estimate time to repair the casualty on the fifty-five radar?

What is the helicopter capacity of McClusky or capabilities?

What, list all ships in Indian Ocean and Western Pacific.

Location of the Towers.

What's the hull number of the Copeland?

I've made my decision. Replace the McClusky with the Copeland.

PARTICIPANT #4: WORD USE FREQUENCY COUNT

the	70	time	3	has	1	Yes	1	still	1
of	20	Can	3	any	1	Continue	1	request	1
in	18	forty	3	get	1	local	1	their	1
What	18	Pacific	3	radars	1	Who	1	dimension	1
that	16	Merrill	3	don	1	fifteen	1	factor	1
helicopter	15	those	3	Location	1	rendezvous	1	commander	1
is	13	assets	3	fifty	1	operational	1	shall	1
ah	10	all	2	Midway	1	Replace	1	degrades	1
have	10	air	2	coast	1	Towers	1	from	1
ships	10	for	2	but	1	divert	1	send	1
on	9	Of	2	impact	1	Give	1	between	1
it	8	your	2	comment	1	cause	1	The	1
capabilities	7	one	2	fly	1	Spruance	1	control	1
list	7	Hawaii	2	Do	1	made	1	within	1
can	7	nine	2	Island	1	complete	1	urgency	1
are	7	You	2	could	1	them	1	Helicopter	1
I	7	estimate	2	sea	1	no	1	area	1
location	7	was	2	west	1	officer	1	place	1
Chandler	6	coordinates	2	last	1	Jouett	1	destroyers	1
LAMPS	6	McClusky	2	helicopters	1	comparable	1	Now	1
or	6	radar	2	missile	1	miles	1	ready	1
to	6	at	2	stateside	1	Indian	1	we	1
replace	6	two	2	its	1	blade	1	lieu	1
Brien	5	me	2	continue	1	choose	1		
and	5	another	2	Are	1	casualty	1		
you	5	give	2	will	1	choices	1		
current	5	five	2	database	1	state	1		
mission	5	search	2	say	1	able	1		
there	5	my	2	assigning	1	years	1		
available	5	so	2	ve	1	steam	1		
Constellation	4	Diego	2	aboard	1	number	1		
Is	4	Kirk	2	decision	1	May	1		
Pearl	4	ones	2	aside	1	hull	1		
ship	4	San	2	again	1	prior	1		
repair	4	recovery	1	our	1	which	1		
List	4	Ocean	1	out	1	without	1		
three	4	four	1	eight	1	status	1		
Copeland	4	fuel	1	capacity	1	around	1		
Current	4	day	1	yes	1	backwards	1		
Harbor	4	splashdown	1	an	1	next	1		
with	3	good	1	ha	1	choice	1		
Brewton	3	hundred	1	cancel	1	third	1		
a	3	zero	1	class	1	rotor	1		
what	3	critical	1	Database	1	nautical	1		
this	3	ask	1	Western	1	these	1		

Scenario 3 PARTICIPANT #5.3412

Does the McClusky's mark ninety-two fire control system work?

What are the CASREPS currently outstanding for the McClusky?

How long will McClusky be out to sea ah, conducting surveillance ops, or can I ask that?

I've reach my decision and I would continue my mission in a degraded state.

Scenario 4 PARTICIPANT #5.3412

Does the aircraft carrier have any outstanding CASREPS on her H three helicopters? How, how many CASREPS does the Constellation have?

What are the capabilities of ah the USS Constellation as far as ah helicopters are concerned? How many does she carry? Do you have any figures on the amount of ah, on the total number helicopters the Constellation carries?

So I've made my decision. I think we're going to keep steaming.

Scenario 1 PARTICIPANT #5.3412

What are the capabilities, what are the other radars of the ah, Worden?

Current mission rating for ah, ASUW for the Worden. What is the current ASW mobility rating?

Are there any other CASREPS outstanding for any of the Worden's ah, ah, radars, ah. Let me rephrase that. What are the other CASREPS the Worden has?

All right, I've made my decision, ah, she'll stay at sea.

Scenario 2 PARTICIPANT #5.3412

What is the max speed available for the Chandler right now?

What's the location of the other units in the area?

What other American ships are in the area of the Chandler and the Jouett? Could you repeat the names of those ships again? Is that allowable? Repeat names of ships.

What are the other CASREPS on the Chandler?

All right, I've ah, they're going to stay at sea.

PARTICIPANT #5: WORD USE FREQUENCY COUNT

the	79	mission	2	carries	1
ah	11	All	2	carrier	1
What	9	rating	2	would	1
are	8	can	1	American	1
of	8	units	1	repeat	1
I	7	current	1	again	1
CASREPS	6	Could	1	total	1
other	6	figures	1	degraded	1
for	5	Do	1	control	1
any	4	max	1	Repeat	1
Worden	4	how	1	USS	1
on	4	amount	1	Are	1
ve	4	Is	1	we	1
my	4	concerned	1	mark	1
sea	3	will	1	a	1
decision	3	continue	1	ninety	1
helicopters	3	allowable	1	or	1
McClusky	3	her	1	Jouett	1
in	3	So	1	ASUW	1
that	3	conducting	1	Let	1
Chandler	3	work	1	location	1
How	3	now	1	long	1
Constellation	3	ops	1	ll	1
to	3	has	1	ASW	1
right	3	ask	1	carry	1
ships	3	currently	1	reach	1
outstanding	3	out	1	they	1
have	3	far	1	me	1
made	2	be	1	two	1
does	2	surveillance	1	system	1
she	2	fire	1	what	1
radars	2	state	1		
area	2	aircraft	1		
going	2	number	1		
names	2	those	1		
and	2	available	1		
stay	2	three	1		
Does	2	speed	1		
as	2	steaming	1		
at	2	Current	1		
you	2	rephrase	1		
is	2	think	1		
re	2	keep	1		
capabilities	2	mobility	1		
many	2	there	1		

Scenario 4 PARTICIPANT #6.4312

OK. My first question would be ah, what ships in Pearl Harbor are available to replace Brewton? OK, give me a list of ships available in Pearl Harbor.

OK, can I have a list of ships in San Diego. Ah, list the ships in San Diego.

Can I have the capabilities of the O'Brien? List O'Brien's capabilities helos first. O'Brien's radar.

Give me Constellation's radar.

Give me a list of ah, O'Brien's outstanding CASREPS. Give me ah O'Brien's ah percentage of fuel remaining. What is O'Brien's maximum sustained speed? Can I have ah, ah give me O'Brien's ah M rating. Could I have O'Brien's flight deck rating?

At this point ah, my decision would be to ah, notify the O'Brien to get underway, within twenty-four hours to, to be on station with Constellation ah for the aircraft ah, spacecraft recovery mission.

Scenario 3 PARTICIPANT #6.4312

List ah, other ships available in the location of the South China Sea. What shoulds would be available in the Philippines?

Ah, give me ah Sterett hull number and ship class. Give me Sterett's helo capabilities. Give me, ah Sterett's radar characteristics.

Give me, ah, listing of the ships home ported in Japan, Yokosuka Japan.

Give me McClusky's current CASREP status. Could I have the status of, ah, or wait one on that. Could I have McClusky's radar characteristics. Please give me McClusky's radar characteristics.

Ah, based on all that information at this time I recommend leaving McClusky on station as tattletale.

Scenario 1 PARTICIPANT #6.4312

List ships in Pearl Harbor.

Give me, ah Worden's ship class.

At this point I've made my decision. Decision is to ah, leave Brewton in Pearl Harbor for repair of ah, air search radar and ah, get the Reeves underway in three days from Yokuska to to participate the Sea of Japan transit.

Scenario 2 PARTICIPANT #6.4312

Give me the current CASREP status on the Chandler.

All right, give me Tower's ah sonar, ah, capabilities.

At this point based on what I know of the Yokuska already, I would ah, leave the Chandler for repair and replace her with the Towers and the Kirk from Yoko.

PARTICIPANT #6: WORD USE FREQUENCY COUNT

ah	23	current	2	aircraft	1
the	18	class	2	Yoko	1
me	14	what	2	sonar	1
of	11	from	2	number	1
I	10	based	2	notify	1
in	10	underway	2	participate	1
Brien	9	is	2	home	1
Give	9	ship	2	three	1
to	8	that	2	speed	1
ships	7	my	2	percentage	1
have	6	Diego	2	outstanding	1
radar	6	replace	2	other	1
on	6	Chandler	2	spacecraft	1
give	5	as	1	four	1
list	4	Decision	1	already	1
capabilities	4	rating	2	maximum	1
Pearl	4	repair	2	right	1
this	4	San	2	tattletale	1
be	4	Sea	2	hull	1
available	4	Constellation	2	leaving	1
Harbor	4	CASREP	2	know	1
would	4	What	2	China	1
McClusky	4	recommend	1	shoulds	1
and	4	her	1	CASREPS	1
characteristics	3	helos	1	within	1
OK	3	remaining	1	hours	1
Ah	3	Philippines	1	Kirk	1
Could	3	twenty	1	sustained	1
status	3	are	1	mission	1
List	3	one	1	deck	1
for	3	helo	1	Towers	1
At	3	air	1	Reeves	1
Japan	3	My	1	ve	1
point	3	listing	1	or	1
a	3	all	1	South	1
Sterett	3	transit	1	search	1
Yokosuka	3	question	1	location	1
get	2	flight	1	wait	1
Brewton	2	made	1	Tower	1
leave	2	can	1	time	1
first	2	recovery	1	ported	1
Can	2	information	1	days	1
with	2	All	1	Please	1
decision	2	fuel	1	Worden	1
station	2	at	1		

Scenario 2 PARTICIPANT #7.2134

What speed can Chandler make?

Do we know what ships are within ah two days transit time? What ships are within two days transit time of my position or Chandler's position?

What ships are available to take Chandler's mission? What Kidd class ships are available to assume Chandler's obligation?

What obligation does Callahan have within the next three weeks? Where is Callahan's employment ah, scheduled for?

What is Callahan's present position?

What home port is this scenario? I think I have enough information to make a decision.

Ah, let ah Callahan take Chandler's employment obligation.

Scenario 1 PARTICIPANT #7.2134

What Leahy class ships are in Pearl Harbor? What Leahy class ships are in the database? OK what, ah, what Leahy class ships are in Pearl Harbor? What ships are in Pearl Harbor?

What class ship is Brewton?

What ships are in the Pearl Harbor operating areas? What ships are in the Central Pacific?

What is Fox's employment schedule for the next, ah, three weeks?

OK. I've made a decision. Ah, let Fox assume Worden's obligation.

Scenario 3 PARTICIPANT #7.2134

What is McClusky's home port?

What other FFG seven class are in San Diego, port San Diego? What FFGs seven class are on the West Coast?

What is Copeland's position? Ah what is Thach's present position?

Ah, what Spruance class are in the database?

What is Merrill's present position? Ah what is Merrill's employment schedule for the next three weeks?

OK, I've made a decision. Ah have Merrill assume McClusky's tasking.

Scenario 4 PARTICIPANT #7.2134

What LAMPS helos are in the database? OK what ah what LAMPS mark ones are in the ah, West Coast database? OK, ah, what ships in the database have LAMPS mark one?

Ah what is Fox's current position? What is Fox's current mission?

OK ah I've made a decision.

PARTICIPANT #7: WORD USE FREQUENCY COUNT

What	21	schedule	2	of	1
are	15	Coast	2	Kidd	1
is	12	mission	2		
ships	11	home	2		
in	11	mark	2		
the	11	time	2		
what	10	seven	2		
ah	9	Diego	2		
class	8	West	2		
position	7	San	2		
Ah	7	take	2		
OK	6	available	2		
Chandler	5	scheduled	1		
I	5	operating	1		
database	5	one	1		
Harbor	4	does	1		
decision	4	information	1		
Pearl	4	FFG	1		
have	4	FFGs	1		
obligation	4	tasking	1		
a	4	Central	1		
employment	4	scenario	1		
Callahan	4	Where	1		
Fox	4	Copeland	1		
LAMPS	3	know	1		
for	3	ones	1		
Leahy	3	enough	1		
ve	3	ship	1		
next	3	speed	1		
three	3	other	1		
made	3	think	1		
to	3	this	1		
port	3	areas	1		
present	3	Worden	1		
weeks	3	Thach	1		
within	3	Pacific	1		
assume	3	can	1		
Merrill	3	Brewton	1		
McClusky	2	my	1		
transit	2	we	1		
days	2	helos	1		
current	2	or	1		
two	2	on	1		
let	2	Spruance	1		
make	2	Do	1		

Scenario 2 PARTICIPANT #9.2431

How many engines does the Chandler have? How many shafts does she have operational now? Ship's location. Chandler.

Any other ships the same type in the same op area in SOCAL? Give me the location of all ships of same class.

Ah, give me the ship types. Current, give me the hull numbers of all the ships in her class. Give me all DDGs.

Where's the Buchanan? Give me the location of the Callahan and location of Towers.

Ah max speed of the Chandler. Overall combat readiness rating on the Chandler.

What's the CROVL for the Buchanan? And the CROVL for the, ah, Callahan?

Max speed of the Buchanan?

OK solution. I'd replace the ah Chandler with the Buchanan and send the Chandler into port.

Scenario 4 PARTICIPANT #9.2431

LAMPS capability on the carrier. Is there a LAMPS on the carrier? How many LAMPS on the carrier, on the Constellation?

ETR for the Brewton's LAMPS repair.

Describe frigates, or give me the frigates, names of frigates. Location of Brewton.

Ah location of the Constellation.

Ah, LAMPS capability on the Brewton. OK replace the ah Brewton with the ah, ah correction, forget it.

Give me the location of the ah Kirk. Ah, give me the location of the Copeland. Location McClusky. Location of Thach.

Nearest replacement for the helo.

Distance from Brewton to Barbers Point. Are they in port or at sea? Brewton.

My solution would be to replace the helicopter since you're in port. Fly a new one over.

Scenario 3 PARTICIPANT #9.2431

ETR on McClusky surface search radar.

Ah give me names of FFs.

Location of the Copeland. Location of the ah McClusky.

Cape, helicopter capability of the Copeland.

Location of Thach. And helicopter capability Thach.

Critical, ah, or overall combat readiness rating on the Copeland.

CROVL on the Thach.

OK. I would, ah, have McClusky repair their casualty and dispatch the Copeland to take their tasking on the Minsk battle group.

Scenario 1 PARTICIPANT #9.2431

Ah, ETR on the SPS forty-eight radar on the Worden.

Give me names of cruiser, CGs.

Location of Fox. Say again location Fox. Current employment description Fox.

Ah location Halsey. Employment description Halsey.

Location of Horne. Employment description Horne.

Location of Jouett. Location of Leahy. Location of Reeves.

Employment description Reeves.

Location of Sterett. Employment description Sterett.

And location of Vincennes. Employment description on the Vincennes.

What is the critical overall readiness on the Sterett?

CROVL on the Reeves. CROVL on the Vincennes.

OK, I'd keep Worden in port and detach, ah, Sterett from Subic Bay to take their commitment at Sea of Japan.

PARTICIPANT #9: WORD USE FREQUENCY COUNT

the	50	their	3	her	1	Kirk	1
of	27	frigates	3	Any	1	group	1
on	16	ETR	3	engines	1	Minsk	1
Location	12	Halsey	2	Are	1	Describe	1
ah	10	overall	2	be	1	helo	1
me	10	take	2	types	1	Overall	1
location	10	Constellation	2	again	1	op	1
Ah	8	from	2	critical	1	Jouett	1
Chandler	6	a	2	Sea	1	Say	1
Brewton	6	radar	2	Japan	1	DDGs	1
description	6	at	2	Bay	1	search	1
in	6	Horne	2	operational	1	forty	1
LAMPS	5	with	2	you	1	re	1
CROVL	5	would	2	Towers	1	keep	1
give	5	solution	2	casualty	1	it	1
Give	5	Worden	2	Distance	1		
Employment	5	does	2	cruiser	1		
Copeland	5	rating	2	tasking	1		
port	4	repair	2	Subic	1		
and	4	What	2	they	1		
capability	4	class	2	over	1		
OK	4	speed	2	Where	1		
for	4	Callahan	2	CGs	1		
Buchanan	4	combat	2	forget	1		
McClusky	4	Current	2	replacement	1		
Sterett	4	employment	1	Nearest	1		
to	4	into	1	other	1		
Thach	4	type	1	detach	1		
ships	3	Leahy	1	SOCAL	1		
helicopter	3	Max	1	surface	1		
Vincennes	3	hull	1	area	1		
all	3	Cape	1	Point	1		
How	3	max	1	Barbers	1		
same	3	sea	1	there	1		
Fox	3	Is	1	since	1		
many	3	new	1	dispatch	1		
names	3	one	1	FFs	1		
And	3	she	1	commitment	1		
I	3	Fly	1	Ship	1		
or	3	My	1	battle	1		
Reeves	3	now	1	shafts	1		
readiness	3	Critical	1	ship	1		
have	3	is	1	numbers	1		
replace	3	SPS	1	correction	1		
carrier	3	send	1	eight	1		

Scenario 1 PARTICIPANT #10.1234

What, what ship with ah forty-eight radar capability is available to replace Worden? What ship is able to replace Worden?

What ships are in Pearl Harbor?

What is the estimated time of repair for Worden's casualty? Is the part that Worden needs to repair the casualty available? What part does the Worden need to repair its casualty?

What Worden's estimated of repair, ah, estimated time of arrival at the Sea of Japan?

What's ah, what is Worden's max speed available? What is Worden's economical transit speed?

Are there other outstanding CASREPS on Worden? What are the other outstanding CASREPS on Worden?

I'd like to let the Worden go, or allow here to transit.

Scenario 2 PARTICIPANT #10.1234

What is the propulsion plant casualty on Chandler?

What is Chandler's max speed?

I'd like to see what other ships are available to replace Chandler.

Where, where is Chandler now? Where is ah, Jouett now?

How many ships with TACTAS are located in Southern California? What ah, what ships are in Southern California?

What ships are within five hundred miles of Chandler?

What is Kinkaid's current employment description? What is ah, Merrill's current employment description? What is ah, Fletcher's current employment description?

What ship are ah within ah, five hundred miles of Pearl Harbor?

What's the current employment description of Kirk?

OK, ah, I think I've made a decision here and that's to replace Chandler with Kirk.

I, I really don't have any questions about this particular casualty. Ah, because I know McClusky has capability ah, fact her surface search radar is unreliable ah really shouldn't affect the mission that much because she has ah track while scan weapons radar that can serve the same purpose so I, so I, this one is to continue the mission.

Scenario 4 PARTICIPANT #10.1234

Where is Brewton now?

Are there other LAMPS, what other LAMPS helicopters are available in Pearl Harbor? I'd like to know what helicopters are available.

Is Brewton capable of LAMPS mark three? Are there SH three helicopters on Constellation?

How many SH three helicopters are on Constellation?

Where is Constellation?

What is the estimate time of repair of Brewton's helicopter?

What other helicopters are in Hawaii?:

What ships are in Pearl Harbor?

What, ah, ships are in Central Pacific? What helicopters are in Central Pacific?

OK, what are ah helo capabilities of Kinkaid? What is the employment employment description of Kinkaid?

What is the ah, helo capability of Merrill? What is the employment, da, current employment description of Merrill?

OK. I've made a decision. The decision is to ah, replace the Brewton with ah Merrill and have ah, Merrill and Constellation perform this mission.

PARTICIPANT #10: WORD USE FREQUENCY COUNT

What	26	there	3	mark	1	affect	1
is	21	speed	3	TACTAS	1	search	1
ah	19	three	3	go	1	forty	1
the	17	part	2	capable	1	weapons	1
are	15	many	2	about	1	need	1
of	14	transit	2	particular	1		
to	12	because	2	able	1		
Worden	11	really	2	Fletcher	1		
I	11	within	2	Kinkaid	1		
employment	8	five	2	while	1		
in	8	miles	2	where	1		
what	7	ve	2	any	1		
ships	7	so	2	helicopter	1		
Chandler	6	Central	2	track	1		
description	6	How	2	don	1		
helicopters	6	here	2	Sea	1		
other	6	Is	2	Hawaii	1		
available	6	California	2	her	1		
Merrill	5	Kirk	2	same	1		
on	5	Pacific	2	serve	1		
replace	5	max	2	can	1		
repair	5	a	2	unreliable	1		
current	5	helo	2	fact	1		
casualty	5	CASREPS	2	think	1		
with	4	SH	2	surface	1		
Brewton	4	made	2	Ah	1		
Constellation	4	Southern	2	does	1		
that	4	have	2	shouldn	1		
Pearl	4	outstanding	2	purpose	1		
Where	4	know	2	eight	1		
Harbor	4	Kinkaid	2	plant	1		
capability	3	has	2	much	1		
and	3	hundred	2	for	1		
like	3	perform	1	propulsion	1		
OK	3	The	1	let	1		
now	3	Japan	1	questions	1		
decision	3	capabilities	1	scan	1		
this	3	needs	1	see	1		
time	3	arrival	1	one	1		
LAMPS	3	McClusky	1	its	1		
ship	3	da	1	continue	1		
radar	3	located	1	or	1		
Are	3	allow	1	economical	1		
mission	3	estimate	1	she	1		
estimated	3	at	1	Jouett	1		

What is the ETR of the radar?

Is there another FFG in the task group? OK, how many ships are in the task group?

How soon can I get a ship to replace McClusky?

What, what are the ah, ship types that I have available?

Can you tell me what is the closest FFG to me right now, or McClusky?

Does McClusky have a back-up search ah surface search radar? OK, where is McClusky?

Ah, how many FFs are available? OK, how 'bout FFGs? How many? Where are the two FFs? OK how 'bout the location of the two FFGs.

What is Copeland's home port?

OK, when did they deploy? What date did they deploy? How 'bout when they're due to return?

Ah how 'bout the loca, how many DDGs are there in the locations of those two? OK, what are the locations of those four ships?

Of the FFs, the DDGs, and the FFGs, which one is closest to the McClusky now? Is the Towers closer than the Kirk to the McClusky? Ah, between the Towers and the Kirk, which is the closer of the two to the McClusky?

Where is the Towers? Where is the Kirk? Where's the McClusky? OK, of the Kirk and the Towers, which is the closest to McClusky?

Can you tell me how long it will take the Kirk to get to where McClusky is? What is the max speed of the Kirk?

OK, I have my answer. My recommendation is to replace the McClusky with the Kirk soonest.

Scenario 1 PARTICIPANT #11.3142

OK what is ETR on the CASREP?

What is this transit about? I mean are, are they doing an exercise or they going by themselves?

How many other air search radars does the Worden have besides the SPS 48?

What are the other CGs in Pearl Harbor at this time? What other CGs are there?

List location of the Fox. List location of the Halsey. Location of the Horne. Location of Jouett. Location of Leahy. Location of Reeves. Location of Sterett. Location of Vincennes. Location of Worden.

OK I have my decision. OK continue the mission in degraded condition and rendezvous with Vincennes in the Sea of Japan and transit the Sea of Japan in company with Vincennes.

Scenario 4 PARTICIPANT #11.3142

What other FFs are there? Do you have ah, what other DDG nine sixty-three classes are there? Spruance classes?

Where is the Kinkaid?

Ah location of the Merrill. Ah location of the O'Brien.

OK, I have my decision. I would replace the Brewton with Kinkaid.

Scenario 2 PARTICIPANT #11.3142

When is this transit supposed to take place?

What is the maximum speed of the Chandler?

OK I have my decision. Continue the mission in this so-called degraded condition. Where is the Jouett? Where's the Chandler? OK I'd go ahead and screw the Callahan and send them in their place of Chandler even though Jouett has even left San Diego yet.

PARTICIPANT #11: WORD USE FREQUENCY COUNT

the	55	Is	2	four	1	Copeland	1
of	22	now	2	company	1	Merrill	1
is	18	a	2	Of	1	three	1
OK	14	even	2	due	1	time	1
are	12	radar	2	one	1	recommendation	1
McClusky	11	DDGs	2	continue	1	surface	1
to	11	get	2	loca	1	Continue	1
What	10	Can	2	My	1	When	1
in	9	or	2	going	1	San	1
I	9	Japan	2	supposed	1	between	1
have	8	closer	2	nine	1	their	1
and	7	did	2	home	1	screw	1
Location	7	take	2	Fox	1	besides	1
how	7	deploy	2	types	1	right	1
Kirk	7	FFG	2	yet	1	CASREP	1
Where	7	Sea	2	an	1	port	1
they	5	place	2	Sterett	1	soon	1
what	5	mission	2	Does	1	will	1
Ah	5	group	2	about	1	can	1
many	5	degraded	2	at	1	though	1
location	5	classes	2	Pearl	1	Brien	1
there	5	Worden	2	left	1	exercise	1
other	5	List	2	by	1	up	1
Towers	4	when	2	Horne	1	air	1
this	4	condition	2	go	1	long	1
with	4	ETR	2	soonest	1	so	1
How	4	ships	2	called	1	does	1
two	4	CGs	2	ahead	1	Reeves	1
bout	4	speed	2	mean	1	has	1
my	4	available	2	rendezvous	1	themselves	1
FFs	4	those	2	would	1	on	1
Vincennes	3	ship	2	answer	1	doing	1
Chandler	3	tell	2	return	1	re	1
closest	3	where	2	Harbor	1	radars	1
FFGs	3	Kinkaid	2	Halsey	1		
decision	3	task	2	Diego	1		
transit	3	than	1	that	1		
ah	3	Brewton	1	DDG	1		
me	3	maximum	1	back	1		
you	3	Leahy	1	them	1		
search	3	Do	1	send	1		
Jouett	3	max	1	Callahan	1		
replace	3	Spruance	1	another	1		
which	3	it	1	sixty	1		
locations	2	SPS	1	date	1		

Scenario 3 PARTICIPANT #12.3421

What is specifically wrong with the McClusky's SPS-55 surface search radar? Was that the initial CASREP that was filed? Have there been any follow-on CASREPS? Is the McClusky's SPS-10 radar operating efficiently? Is the McClusky's SPS-10 operating? Give me all the McClusky's radar.

What other ships in the area is the McClusky in contact with?

Where is the McClusky located? What other ships are in that specific area?

What ship class is the Towers?

Is the McClusky able to link with the Towers on NTDS?

Is the McClusky's helo operable? What are the helo capabilities of the McClusky?

Is the McClusky's LAMPS three, have any CASREPS been submitted on the LAMPS three? Are there any outstanding CASREPS on the McClusky specifically with her helo? OK, what are the outstanding CASREPS on the McClusky?

Has, ah, the LAMPS been sent out for forward surveillance?

What is the estimated time on the fifty-five?

What ah, level of CASREP did they submit for this fifty-five as far what, um, as mission degradation? What number did they give it?

How 'bout the, is there information for the nearest port that the McClusky can pull into for repair for or for speeding up the repair of the radar?

Do you have um, alternative ways of, um, speeding up the priority of ah this part?

Have any other communications been sent from the McClusky that we can use?

As far as a solution goes, I'd assign, I'd have McClusky stick with the Towers and ah, continue her operation.

Scenario 4 PARTICIPANT #12.3421

What are the capabilities of CV-sixty-four? What is the current location of CV sixty-four?

What is the location of the Brewton FF ten eighty-six? On the Brewton's CASREP report, what is the estimated ah time of repair?

What is the maximum speed available for CV sixty-four? What is the maximum speed available for FF ten eighty-six?

What is the what are the capabilities of the ten eighty-six?

What other ships are currently in Pearl Harbor?

What are the helo capabilities of the Fox? What is the helo capability of the Kinkaid? What is the helo capability of the Merrill? What is the helo capability of the Reeves?

What is the hull number of the Reeves?

What outstanding CASREPS are on the Fox? Are there any out, what are the outstanding CASREPS on the Kinkaid? What are the CASREPS on, let's combine the Merrill and the Reeves.

What are specific coordinates locate geographic locationwise for the Fox? What is the geographic location of the Kinkaid? What is the geographic location of the Merrill? What is the geo, geographic location of the Reeves?

What is the max speed available on the Kinkaid? What is the current ah employment description of the Kinkaid? What is ah, what is reason of her going to Taiwan, what is the purpose?

OK, based on that, I'd then, I would go ahead and substitute the Kinkaid for the ah Brewton.

Scenario 2 PARTICIPANT #12.3421

What is the specific propulsion problem with the Chandler?

What is the current location of CG twenty-nine? What is the geographic location of DDG nine ninety-six?

What are the coordinates for, you can tell I'm an east coast sailor, the Sea of Okhotsk? Are there, what, what other ships are in or near the Sea of Ohkutsh?

What is the current employment description of the Callahan? What are the outstanding CASREPS on the Callahan? What is the hull number of the Callahan?

What is the latest annual date to get to the Sea of Ohkutsh? In other words, has there been a constraint set saying you must be here by this certain date?

What are the outstanding CASREPS on CG twenty-nine? What is the estimated time to repair that CASREP?

I would delay the mission until we could get both ships up and then send them out to demonstrate the right of free passage.

What is the estimated time repair on CG's eighteen's air serach radar? [The remainder of this scenario was lost due to mechanical failure.]

PARTICIPANT #12: WORD USE FREQUENCY COUNT

the	91	Merrill	3	coordinates	2	How	1	ahead	1
What	40	Sea	3	or	2	part	1	report	1
is	32	ten	3	we	2	currently	1	follow	1
of	29	LAMPS	3	mission	2	Was	1	saying	1
are	15	out	3	date	2	into	1	wrong	1
McClusky	15	Fox	3	a	2	be	1	efficiently	1
on	14	nine	3	search	2	problem	1	goes	1
for	11	have	3	three	2	use	1	located	1
what	9	four	3	ship	1	ways	1	surface	1
CASREPS	9	as	3	here	1	an	1	CG's	1
ah	8	you	3	them	1	alternative	1	annual	1
that	7	Okhotsk	3	geo	1	constraint	1	operable	1
helo	7	um	3	has	1	link	1	mechanical	1
location	7	number	3	passage	1	Pearl	1	purpose	1
to	7	SPS	3	delay	1	port	1	right	1
I	6	up	3	air	1	go	1	eighteen's	1
with	6	Are	3	lost	1	by	1	near	1
there	6	sixty	3	all	1	level	1	Has	1
other	6	eighty	3	tell	1	pull	1	initial	1
outstanding	6	speed	3	due	1	me	1	NTDS	1
Kinkaid	6	available	3	forward	1	based	1	Taiwan	1
been	5	Callahan	3	information	1	degradation	1	class	1
any	5	they	2	both	1	substitute	1	submit	1
Is	5	would	2	coast	1	east	1	assign	1
radar	5	five	2	propulsion	1	Give	1	certain	1
in	5	employment	2	As	1	demonstrate	1	sailor	1
repair	5	sent	2	locate	1	it	1	solution	1
geographic	5	far	2	Do	1	operation	1	must	1
ships	5	then	2	let	1	until	1	from	1
time	4	twenty	2	ninety	1	scenario	1	reason	1
this	4	get	2	max	1	surveillance	1	latest	1
and	4	FF	2	In	1	Harbor	1		
six	4	did	2	could	1	free	1		
current	4	OK	2	The	1	communications	1		
capabilities	4	fifty	2	send	1	stick	1		
Reeves	4	specifically	2	continue	1	nearest	1		
estimated	4	description	2	On	1	able	1		
CASREP	4	CG	2	words	1	DDG	1		
Towers	3	speeding	2	Chandler	1	combine	1		
can	3	was	2	contact	1	failure	1		
capability	3	hull	2	set	1	bout	1		
CV	3	Have	2	filed	1	locationwise	1		
her	3	maximum	2	going	1	give	1		
Brewton	3	operating	2	submitted	1	Where	1		
specific	3	area	2	remainder	1	priority	1		

Scenario 4 PARTICIPANT #14.4231

How many operational LAMPS are in Pearl Harbor?

What ships are in Pearl Harbor?

What is ah, Kinkaid's current mission? When does Kinkaid need to be in Taiwan?

What is the method of recovering the spacecraft?

When is Brewton scheduled to leave port for this mission?

What's the status of, ah, the LAMPS helo on Fox?

What's the CASREP status for Callahan?

What's the current mission of Fox? What's the current mission of Callahan?

I've made my decision. Have Fox rendezvous with the Constellation and participate in the shuttle recovery, or the spacecraft recovery.

Scenario 2 PARTICIPANT #14.4231

What's the scheduled date for the transit of the Sea of Okhotsk?

What is ah, what is Chandler's maximum sustained speed? What is the current available speed of the Chandler?

Where is the Chandler?

What mission must Chandler perform after the transit of the sea?

List all the CASREPS on the Chandler. List Jouett's CASREPS.

List the other Kidd class DDGs.

Where is the Callahan? List CASREPS on the Callahan. What is Callahan's current mission?

Where's the Kidd? Where is the Kidd?

What is the Callahan's next mission?

OK I've decided. We'll send the Jouett. Have the Jouett rendezvous with the Callahan and have the Callahan and Jouett conduct the freedom of navigation exercise.

Where is the McClusky? Where's the Minsk, where is the Minsk task group? Where must, what is the rendezvous point for the Minsk task group and McClusky?

What's the estimated time of repair for the surface search radar?

List the LAMPS mark three capable ships.

List the ships equipped with a SPS fifty-five surface search radar.

Where is the Callahan? Where is the Chandler? Where is the Copeland? Where is the Kinkaid? Where is the McClusky? Where is the, ah, Merrill? Where is the O'Brien? Where is the Thach? What is the location of the Thach again?

What's the CASREP status on the Thach? What's the current mission of the Thach? What's the CASREP status, never mind.

What's the CASREP status of the Copeland? What's the mission of the Copeland? How long will the surveillance operations last?

What's the estimated time of repair for the CASREP, the NTDS CASREP on Thach?

What equipment is required for survey ops?

OK, I've made my decision. Assign Thach to perform the surveillance operations and have McClusky relieve Thach, ah, for survey ops.

Scenario 1 PARTICIPANT #14.4231

What's the current location of the Worden?

List the other ships in the same class as the Worden.

List the CASREP status of the Halsey. The CASREP status of Leahy. What's the CASREP status of Reeves?

What's the location of the Halsey? What's the location of the Leahy? What's the location of the Reeves?

What's the estimated time of repair for Worden's forty-eight radar? What's the ETR of Reeve's gunfire control system?

What is Halsey's current mission? What is Halsey's maximum sustained speed? How much fuel does Halsey have on board? How far can Halsey go on sixty percent fuel? When is Halsey scheduled to refuel next?

What other ships are participating in the Sea of Japan transit? What is the status of Worden's SPS forty radar?

List the other ships, list all ships with a SPS forty-eight radar.

What's the CASREP status on Callahan? CASREP status on Chandler. CASREP status on Fox. CASREP status on Horne. CASREP status on Jouett. CASREP status on Reeves. CASREP status on Sterett.

Where's the Callahan? Where's the Fox? Where's the Halsey? Where's the Horne? Where's the Sterett?

What's the mission of the Sterett? How long has Sterett been in port? List the oilers.

List the refueling ships.

When does Halsey have to be in the Indian Ocean?

OK, I've decided. Send Halsey to conduct the transit of the Sea of Japan.

PARTICIPANT #14: WORD USE FREQUENCY COUNT

the	96	time	3	navigation	1	participating	1
What	35	Reeves	3	Brien	1	mind	1
of	29	OK	3	been	1	Indian	1
is	28	repair	3	We	1	same	1
Where	20	CASREPS	3	method	1	list	1
status	16	Sea	3	shuttle	1	Merrill	1
CASREP	16	Kidd	3	Ocean	1	control	1
on	14	Minsk	3	leave	1	Reeve	1
mission	11	are	3	sea	1	Taiwan	1
List	11	rendezvous	3	equipment	1	refuel	1
Callahan	11	surveillance	2	percent	1	never	1
Halsey	10	ops	2	as	1	required	1
for	9	decision	2	system	1	much	1
in	8	recovery	2	recovering	1	send	1
ships	8	search	2	go	1	The	1
current	8	operations	2	Brewton	1	oilers	1
Chandler	7	Harbor	2	fifty	1	after	1
Thach	7	made	2	equipped	1	refueling	1
to	6	spacecraft	2	has	1	gunfire	1
How	5	be	2	capable	1	this	1
Fox	5	survey	2	far	1	relieve	1
and	5	surface	2	ll	1	board	1
radar	5	decided	2	exercise	1	or	1
ah	5	Have	2	sixty	1	NTDS	1
Jouett	5	fuel	2	date	1	will	1
location	5	a	2	ETR	1	freedom	1
with	5	maximum	2	Okhotskt	1		
When	4	Leahy	2	where	1		
Sterett	4	Pearl	2	helo	1		
other	4	Horne	2	can	1		
ve	4	long	2	participate	1		
I	4	next	2	DDGs	1		
McClusky	4	conduct	2	five	1		
have	4	sustained	2	available	1		
transit	4	group	2	three	1		
Worden	4	my	2	Assign	1		
scheduled	3	perform	2	point	1		
forty	3	Japan	2	operational	1		
LAMPS	3	all	2	again	1		
Kinkaid	3	task	2	need	1		
does	3	what	2	mark	1		
Copeland	3	class	2	last	1		
speed	3	port	2	many	1		
SPS	3	must	2	Constellation	1		
estimated	3	eight	2	Send	1		

Are there any other DDGs within two hundred miles of the Chandler? How far away is the closest DDG to the Chandler?

What other DDGs are listed in the database?

Where is DDG Buchanan located? Where is the Chandler located? Where is the Towers located?

Can you further define Chandler propulsion problem? No. Please define, further define Chandler's propulsion problem. What is Chandler's available speed?

Is the ah Buchanan ah ready to deploy? Is the Buchanan available to get underway in the next twenty-four hours? How soon can the Buchanan be underway?

What is the location of the Chandler?

When are the Jouett and Chandler ah, scheduled to ah, deploy to for their transit to the Sea of Okhotsk?

Where is the Jouett located?

What other ships are gonna, to transit with the Jouett and the Chandler when they get underway? Name any other ah, SOCAL ships that are going to commence transit in the Pacific Ocean near the time that Chandler and Jouett are scheduled to transit. Name in other ships in SOCAL due to transit around the time that Callahan and Buchanan are going to transit. Name other ship that are transitting at the, within twenty-four hours of Chandler and Jouett.

Give location of Callahan.

When are Jouett and Chandler due to commence their mission?

I say, ah, Chandler will, ah, take the two weeks ah, repair, get herself repaired and will depart when ready with Jouett as scheduled.

Scenario 3 PARTICIPANT #15.2314

What is the ETR for repair of the radar on McClusky?

Where is McClusky located?

What other surface search radar capabilities does the McClusky have?

Name other ships located in Indian Ocean.

What radars does the Towers have? Name helo capabilities for the Towers.

Give ETR on McClusky surface search radar repair.

Continue mission in degraded condition.

Scenario 1 PARTICIPANT #15.2314

Name the ships transitting with Worden. Name the purpose of the Sea of Japan Transit.

Give Worden's, ah, SPS forty-eight ETR.

Name other ships in the Western Pacific. Give hull numbers for ships in Western Pacific.

What is Halsey's hull number. Name Copeland's hull number.

What is Halsey's current employment? What is Halsey's location?

Can Worden's radar be fixed underway? Ah, yes, please state if Worden required for, name parts required to fix Worden's SPS forty-eight radar.

Are there any other ships in the Sea of Japan? Name all other ships in the Sea of Japan.

State Vincennes hull number. State Vincennes employment schedule.

OK, our decision is to ah, let the Vincennes replace the Worden in its ah, scheduled employment.

Scenario 4 PARTICIPANT #15.2314

What is ETR on Brewton's helo?

Name number of LAMPS helos onboard Constellation.

Give ships in Eastern Pacific. Name ships in SOCAL op area. Name ships in Central Pacific.

What is Kinkaid's hull number? What is Kinkaid's employment schedule?

What is Merrill's hull number? State Reeves' hull number.

What is Merrill's employment description? Where is Merrill located? What is Merrill's CROVL? What is Merrill's maximum sustained speed?

Give Kinkaid's location. What is Kinkaid's max sustained speed? What is Kinkaid's CROVL?

State Merrill's helo capabilities. State Kinkaid's helo capabilities.

My decision is to deploy both the Kinkaid and the Merrill to rendezvous with Constellation and Brewton. Ah, once rendezvous, then Brewton will, I don't know that, that's off. I want to ah, rendezvous Kinkaid and Merrill with the Constellation and Brewton.

PARTICIPANT #15: WORD USE FREQUENCY COUNT

the	38	get	3	hours	2	depart	1
is	24	repair	3	transitting	2	Continue	1
What	19	speed	3	when	2	area	1
to	17	Towers	3	four	2	want	1
in	15	Constellation	3	eight	2	soon	1
Chandler	13	on	3	twenty	2	can	1
Name	13	Vincennes	3	their	2	around	1
ah	12	rendezvous	3	there	2	all	1
ships	12	Halsey	3	commence	2	far	1
and	11	I	3	off	1	near	1
of	11	deploy	3	fixed	1	hundred	1
other	11	How	2	once	1	purpose	1
Merrill	8	CROVL	2	our	1	condition	1
are	8	Ah	2	gonna	1	radars	1
Kinkaid	8	sustained	2	repaired	1	don	1
hull	7	SPS	2	onboard	1	replace	1
located	7	schedule	2	LAMPS	1	parts	1
Jouett	7	DDG	2	My	1	Okhotsk	1
number	7	decision	2	yes	1	current	1
that	6	going	2	say	1	OK	1
Worden	6	be	2	as	1	degraded	1
transit	6	required	2	at	1	closest	1
Give	6	DDGs	2	database	1	herself	1
Where	6	Western	2	if	1	fix	1
employment	5	two	2	name	1	helos	1
with	5	Can	2	Please	1	Transit	1
for	5	Ocean	2	its	1	please	1
Buchanan	5	Is	2	No	1	Reeves	1
radar	5	further	2	listed	1	op	1
Pacific	5	within	2	you	1	miles	1
State	5	problem	2	away	1	description	1
scheduled	4	Callahan	2	both	1	numbers	1
underway	4	forty	2	take	1	let	1
capabilities	4	search	2	state	1	max	1
Brewton	4	does	2	know	1		
location	4	Are	2	next	1		
helo	4	propulsion	2	Indian	1		
ETR	4	available	2	maximum	1		
Sea	4	ready	2	then	1		
McClusky	4	have	2	Central	1		
will	3	mission	2	ship	1		
Japan	3	time	2	Eastern	1		
define	3	due	2	Copeland	1		
any	3	surface	2	they	1		
SOCAL	3	When	2	weeks	1		

Scenario 4 PARTICIPANT #16.4132

Does the Brewton have the ability to replace the main rotor? Please ah, report whether ah, the Brewton has main rotor replacement on board.

Does ah the Brewton only, how many helicopters, LAMPS helicopters, does the Brewton carry? Does the ah Constellation, ah how many LAMPS helicopters does the Constellation have on board?

Please report any other ships with LAMPS helicopter capability within five hundred mile radius. Ships with LAMPS capability. Of the ships listed, how many are within at the present time of the, I guess, or at the CASREP time, how many are within a five hundred mile radius of the Constellation's position?

Report present position of Constellation. Ah, what was the time of that position?

What's, is Constellation's orders as to being in the recovery area? At what time does the Constellation have to be in the recovery, recovery area?

Report ah, distance from ah, Pearl Harbor to spacecraft recovery point. Report, ah, of the ships with LAMPS capability that were just listed, report those within ah five hundred miles of the spacecraft recovery position which is thirty-two north, one forty-four west.

Ships located in Southern California. Ships located in San Diego.

Report LAMPS capability of Missouri.

Report ah, report combat readiness rating of the Chandler, Jouett, and O'Brien.

Ah, report, ah, report reason for C three ah readiness rating for Chandler. Is, ah, identify equipment failure.

Report ah, maximum sustained speed of Jouett.

I want to order the Jouett to take position with the Constellation for spacecraft recovery.

Scenario 1 PARTICIPANT #16.4132

Report, ah, reason for SPS forty-eight CASREP. Report length of time until ah SPS forty-eight radar can be, ah, repaired.

Report, report, other ships ah that have ah SPS ten, SPS forty-eight, and SQS twenty-three that are also located at Pearl Harbor.

Ships at Pearl Harbor.

Report, ah, Brewton capa, ah, report ah, Brewton capability in surface search radar, air search radar and sonar. Report, ah, overall combat readiness rating for Brewton. Report reason for C three rating. Name C three equipment. Report ship type for Brewton.

Report maximum sustained speed of Worden. And ah, report maximum sustained speed for Brewton.

Request, ah, request reason for Worden's transit, Sea of Japan transit.

Report current employment description of the Brewton.

The next is just an order to have Brewton replace Worden on the Sea of Japan transit.

Scenario 3 PARTICIPANT #16.4132

Report present location of McClusky.

Report, ah, estimated time of repair for ah, C three surface search radar.

Report McClusky ah time of departure from port.

Report areas of ah, ship board, of ship place. I want to find ship that are located at Japan, ah Philippines, or similarly, Indian Ocean.

Report, ah, overall combat readiness rating of the Sterett. Report current employment description of the Sterett. Report percentage fuel remaining on Sterett. Report, ah, surface search radar capabilities of Sterett.

Report LAMPS capabilities of Vincennes and Towers.

Report current employment description Vincennes. Report, ah, location of Vincennes. Report, ah, surface search radar types on board Vincennes.

Report ships in WESTPAC area.

Report overall combat readiness rating of Copeland, Halsey, and Kirk.

Report ship type of Copeland and Halsey. Report LAMPS capability of Copeland and Halsey.

And, ah, LAMPS capability of Copeland? Report, ah, surface search radar types on board Copeland. Report current employment description of Copeland. Report ah maximum sustained speed of Copeland.

Order Copeland to replace McClusky on, ah, tattletale surveillance mission.

Report, ah, present location of Jouett.

Report, ah, ships in San Diego that are DDG class. Report ship type DDG. Report ships with ship type DDG.

Report location of Buchanan, Callahan, and Towers.

Report, ah, report LAMPS capability of ah, Buchanan and Callahan.

Report, ah, radar capabilities of Callahan. Report sonar capabilities of Callahan. Report towed array capability of Chandler. Report ah, current ah employment description of Callahan. Report ah, overall combat readiness rating of Callahan. Report reason for C two rating. Illuminate C two supply CASREP. Report percentage fuel remain for Callahan. Report maximum sustained speed for Callahan.

Send Chandler in to get fix and replace with Callahan.

PARTICIPANT #16: WORD USE FREQUENCY COUNT

Report	48	SPS	4	And	2	length	1	class	1
ah	46	located	4	listed	2	surveillance	1	port	1
of	38	present	4	types	2	identify	1	miles	1
the	26	many	4	fuel	2	request	1		
for	13	within	4	other	2	towed	1		
Brewton	11	Vincennes	4	from	2	thirty	1		
LAMPS	10	location	4	mile	2	until	1		
and	10	Jouett	4	Sea	2	Request	1		
to	10	Chandler	4	San	2	failure	1		
report	10	capabilities	4	order	2	also	1		
capability	9	forty	4	Diego	2	helicopter	1		
Callahan	9	overall	4	just	2	those	1		
in	8	Ships	4	or	2	which	1		
rating	8	eight	3	what	2	find	1		
radar	8	Worden	3	were	1	Illuminate	1		
Copeland	8	Harbor	3	Brien	1	distance	1		
ships	7	Halsey	3	capa	1	SQS	1		
Constellation	7	transit	3	was	1	north	1		
on	7	McClusky	3	Missouri	1	replacement	1		
ship	7	DDG	3	ten	1	departure	1		
time	7	area	3	one	1	point	1		
search	6	helicopters	3	repaired	1	a	1		
recovery	6	does	3	Ocean	1	four	1		
with	6	five	3	WESTPAC	1	being	1		
that	6	I	3	Is	1	Indian	1		
readiness	6	Does	3	Of	1	take	1		
maximum	5	Pearl	3	At	1	orders	1		
surface	5	two	3	an	1	What	1		
reason	5	hundred	3	similarly	1	next	1		
are	5	spacecraft	3	guess	1	The	1		
employment	5	Japan	3	fix	1	Southern	1		
at	5	is	3	array	1	tattletale	1		
speed	5	CASREP	3	as	1	ability	1		
three	5	Towers	2	supply	1	Order	1		
have	5	want	2	get	1	Send	1		
current	5	radius	2	any	1	estimated	1		
board	5	rotor	2	remaining	1	repair	1		
description	5	Buchanan	2	Philippines	1	only	1		
sustained	5	be	2	has	1	carry	1		
position	5	sonar	2	whether	1	Kirk	1		
combat	5	equipment	2	twenty	1	areas	1		
how	4	Ah	2	air	1	mission	1		
Sterett	4	percentage	2	west	1	remain	1		
replace	4	main	2	can	1	place	1		
type	4	Please	2	Name	1	California	1		

Scenario 1 PARTICIPANT #17.1342

Does the system, is the system still operative? Which stage of the forty-eight air search is down?

May I have the CASREP description? Will you please read the CASREP description? Read the CASREP description.

Name the parts required. Read the statement reported on the UNITREP.

I believe I can still continue the mission.

Scenario 3 PARTICIPANT #17.1342

Read the database ah, as to the problem.

What does CREOP C three stand for?

You can continue the mission.

Scenario 4 PARTICIPANT #17.1342

Name the number of SH three helicopters she has on board.

Name the ETA of the ah of the CASREP for Brewton.

Name the aircraft that are on board Constellation.

Name the FFs in port in Yokosuka, Japan.

Name the FFs home ported in Yokosuka. Name the FFs.

Name the model of Kirk's helicopter. Name the location of Kirk. Name Kirk's CASREP to her LAMPS.

What is Kirk's current mission?

What is the direction of the storm?

Name the location of Constellation.

Name helicopter assets available in Yokosuka. What ships are in Yokosuka?

Name helo assets on Midway.

Name Kirk's best speed.

I need to direct Kirk north to that ah the position thirty-two north, one forty-four west.

Scenario 2 PARTICIPANT #17.1342

Read me the description ah, on the M three CASREP for Chandler. What is her maximum speed available?

Name the other four nine nine five class. Name the other three nine nine five class DDGs. Name their hull numbers.

Name the location of Callahan. Name the position of Chandler. What is Callahan's mission? Who is Callahan's immediate commander?

Name the location of Buchanan. What is Buchanan's mission? What are Buchanan's CASREPS?

What are Callahan's CASREPS?

Name the location of Tower.

How many hours before ah, Buchanan can ah, get underway from Yokosuka?

When does Callahan finish her mission cold weather ops?

My decision is to replace Chandler with Buchanan.

PARTICIPANT #17: WORD USE FREQUENCY COUNT

the	35	helicopter	2	hull	1
Name	21	as	1	Will	1
of	12	Does	1	How	1
is	9	read	1	immediate	1
What	9	eight	1	ships	1
ah	6	You	1	When	1
mission	6	home	1	direct	1
Kirk	6	west	1	their	1
CASREP	6	with	1	commander	1
Yokosuka	5	air	1	required	1
Buchanan	5	Japan	1	replace	1
in	5	reported	1	many	1
location	5	has	1	parts	1
on	5	get	1	hours	1
to	5	down	1	Tower	1
Callahan	5	Midway	1	weather	1
nine	4	Brewton	1	thirty	1
are	4	SH	1	best	1
description	4	CREOP	1	model	1
I	4	need	1	before	1
Read	4	finish	1	please	1
three	4	one	1	operative	1
Chandler	3	port	1	DDGs	1
can	3	she	1	underway	1
her	3	numbers	1	search	1
for	3	database	1	Who	1
FFs	3	My	1	ported	1
does	2	ops	1	helicopters	1
assets	2	decision	1	storm	1
position	2	LAMPS	1	you	1
Constellation	2	have	1	UNITREP	1
four	2	current	1	cold	1
class	2	helo	1	me	1
board	2	aircraft	1	two	1
continue	2	problem	1	believe	1
system	2	stand	1		
forty	2	number	1		
that	2	ETA	1		
five	2	maximum	1		
CASREPS	2	stage	1		
still	2	from	1		
other	2	direction	1		
north	2	Which	1		
speed	2	May	1		
available	2	statement	1		

What, ah, what's the nature of the CASREP?

Do we have the locations of other Leahy class cruisers in the West, Western Pacific? Location of ah all ah Leahy class cruisers in the Western Pacific. How many Leahy class cruisers in the Western Pacific?

Can I have their names and locations? Names and locations of those four cruisers.

Name of the cruiser at ah twenty north, one sixty-eight east.

Location of the second, ah, Leahy class cruiser.

Name of, ah, third ah Leahy class cruiser in Western Pacific.

Ah, location third location of fourth, ah, cruiser, Leahy class cruiser in Western Pacific.

Name of the fourth cruiser. Name of the third cruiser.

Current employment description of Halsey. Ah, who's Halsey working for? Halsey's, ah, Halsey's current status. Ah, what's her ah mission area rating in, in, ah let's see, in AAW, in ASUW? Ah, what are the rest of Halsey's ah mission ratings?

Location of, ah, oilers, any oilers in Western Pacific.

Percentage of Halsey's fuel remaining.

Swap Halsey and Worden.

Scenario 2 PARTICIPANT #18.1243

Location of Jouett and Chandler.

What's the criticality of this mission?

Location of any other Kidd class ah, destroyers in the Western Pacific. Number of ah Kidd class destroyers in the Western Pacific.

Ah, location of Callahan. Current employment of Callahan. Is there any further specifics on Chandler's propulsion problem? Nature of Chandler's propulsion problem.

Location of CGs. Names of them first.

Location of Vincennes. Current employment of Vincennes. Duration of readiness exercise.

Have Chandler and Jouett wait, turn them back to San Diego to fix propulsion problems.

Scenario 4 PARTICIPANT #18.1243

Type helicopters available on Constellation.

Location of frigates in Pacific, central Pacific. Frigates in the Pacific. Frigates in the database.

Location of Copeland, Kirk, McClusky, and Thach. Current location of Brewton.

Ships in Pearl Harbor. Ah ships in San Diego. Ships in Long Beach.

Spruance class destroyers in the Pacific. Ah locations first. Name ah, Spruance class destroyers.

Ah, location of Fletcher. Location of Kinkaid. Location of Merrill. Location of O'Brien.

Solution is to substitute Kinkaid for Brewton.

Scenario 3 PARTICIPANT #18.1243

Names of Perry class frigates in the database.

Locations of McClusky and Thach.

Current employment of Thach. Ah, the combat readiness of Thach. How about, ah, give me the M ratings of Thach.

Ah, Spruance class destroyers in the database.

Ah, location of Callahan. Ah, location of Vincennes.

Can I have the CASREP status on Thach. Ah, CASREP status on Thach. Ah, ETR.

I'd just substitute Thach.

PARTICIPANT #18: WORD USE FREQUENCY COUNT

of	40	substitute	3	Pearl	1	combat	1
the	22	first	3	me	1	CGs	1
in	21	Diego	3	area	1	all	1
ah	17	How	3	Harbor	1	is	1
Ah	14	McClusky	3	Duration	1	ETR	1
class	12	Kidd	3	Fletcher	1		
Location	12	Frigates	3	Type	1		
Pacific	12	them	3	back	1		
Western	8	problem	3	AAW	1		
Thach	8	Jouett	3	wait	1		
and	7	oilers	3	give	1		
location	7	ratings	3	working	1		
cruiser	7	frigates	3	those	1		
Leahy	6	What	2	Copeland	1		
Halsey	6	other	2	available	1		
destroyers	5	Kinkaid	2	Number	1		
Name	5	just	1	Swap	1		
Current	5	Beach	1	West	1		
locations	4	description	1	criticality	1		
employment	4	fix	1	north	1		
cruisers	4	Solution	1	fuel	1		
Chandler	4	Do	1	this	1		
on	4	let	1	ships	1		
what	3	further	1	rest	1		
Vincennes	3	Is	1	there	1		
any	3	see	1	Worden	1		
have	3	one	1	eight	1		
propulsion	3	turn	1	their	1		
readiness	3	current	1	many	1		
Ships	3	Nature	1	Perry	1		
database	3	her	1	Long	1		
status	3	about	1	rating	1		
Names	3	Merrill	1	specifics	1		
Spruance	3	names	1	sixty	1		
to	3	who	1	central	1		
mission	3	remaining	1	Brien	1		
CASREP	3	nature	1	Kirk	1		
third	3	helicopters	1	problems	1		
Callahan	3	Have	1	second	1		
I	3	east	1	four	1		
Can	3	at	1	Constellation	1		
for	3	Locations	1	Halsey's	1		
Brewton	3	Percentage	1	we	1		
San	3	twenty	1	ASUW	1		
fourth	3	are	1	exercise	1		

Scenario 3 PARTICIPANT #19.3214

Current employment FFG class ship. Location FFG class ships. FFGs in the database.

Location of Copeland. Location Thach.

Ships in database with LAMPS mark three helicopter and SPS fifty-five surface search radar.

I would like ah other ships with location South China Sea.

Ships in database with LAMPS mark three helicopters.

Ships in the database with ah SPS fifty-five surface search radar.

Location of McClusky in latitude and longitude. Location Callahan. Geo, or location of Copeland. Location Chandler. Location Kinkaid. Location Merrill. Location O'Brien. Ah location Thach. Ah location Minsk. Location South China Sea center.

OK the decision is Thach.

Scenario 2 PARTICIPANT #19.3214

Ships in the database with location Bering Sea. Bering Sea with location Western Pacific.

Ships in the database with LAMPS helos.

Copeland sonar. Callahan sonar.

Callahan ESM. Callahan radar. Callahan TACTAS.

All right, send the Callahan to replace Chandler.

Scenario 1 PARTICIPANT #19.3214

Copeland air search radar. Halsey air search radar. Kirk air search radar. Worden air search radar. Callahan air search radar.

Ships with location Pearl Harbor.

Brewton air search radar.

Ah, ships in the database with air search radar SPS forty-eight.

Callahan surface search radar. Callahan sonar.

I going to send the Callahan on this one.

Scenario 4 PARTICIPANT #19.3214

Ships in the database with SPS forty air search radar.

Brewton location. Fletcher location. Kinkaid location. Kirk location. Merrill location. O'Brien location. And Sterett location.

Ah, Brewton helicopter. Fletcher helicopter. Kinkaid helicopter. Kirk helicopter. Merrill helicopter. O'Brien helicopter.

OK, we'll go with O'Brien.

PARTICIPANT #19: WORD USE FREQUENCY COUNT

location	14	Halsey	1
radar	12	Harbor	1
search	11	Current	1
with	11	ESM	1
Location	10	helicopters	1
Callahan	10	would	1
in	9	And	1
the	9	All	1
database	8	FFGs	1
air	8	Geo	1
Ships	7	like	1
helicopter	7	center	1
Ah	4	other	1
Brien	4	longitude	1
Sea	4	Sterett	1
Copeland	4	latitude	1
SPS	4	ship	1
LAMPS	3	employment	1
of	3	right	1
Brewton	3	this	1
Kirk	3	replace	1
Thach	3	Worden	1
Merrill	3	Pacific	1
ships	3	eight	1
surface	3	Minsk	1
Kinkaid	3	helos	1
sonar	3	we	1
ah	2	or	1
Fletcher	2	on	1
FFG	2	one	1
forty	2	going	1
OK	2	is	1
fifty	2	ll	1
and	2	decision	1
to	2	McClusky	1
class	2	go	1
Bering	2	TACTAS	1
send	2	Pearl	1
Chandler	2	Western	1
China	2		
three	2		
mark	2		
I	2		
five	2		
South	2		

Scenario 2 PARTICIPANT #20.2413

The Chandler's CASREP, does it have a maximum speed available? I want the mobility CASREP on the Chandler.

I need the location of the Chandler.

On the, I need the mission, like an employment statement for the exercise.

I need the location of the Jouett currently.

On the Chandler's CASREP, is the, I need the date to repair, the ETR.

On the mission statement I need the date the exercise is to occur.

Given the circumstances, the exercise would have to be postponed.

Scenario 4 PARTICIPANT #20.2413

ETRs, ah, LAMPS helo.

On the Constellation I need the air group composition.

Give me the current location of the Brewton. Brewton's narrative statement on the rotor damage.

I need a ship that will be in the recovery location the fourth of May.

I need the names of ships that have LAMPS helicopter capabilities. Out of the LAMPS capable ships I need the ones that have an SPS forty air search radar.

I need the location of the Kinkaid. Location of the Kirk. Location of the Merrill. Location of the O'Brien. Location of the Sterett. Could I have specific location of the Fox? Specific location on the Kinkaid. Specific location on the Merrill.

At this point I want to go and replace the Brewton with the Kinkaid.

Scenario 1 PARTICIPANT #20.2413

I need the specifics on the M three AAW CASREP.

Tell me what radars they have.

Tell me the specifics on the C three CASREP equipment resource.

Tell me the ETR of the CASREP.

Could you tell me the, ah, C over, the combat readiness overall rating, read, tell it to me.

What other, ah, primary mission areas is degraded on the Worden? Tell me what the UNITREP states about that. Read me the, ah, narrative on the ASU M three rating.

Read me the other CASREPS the Worden has currently.

I'd like the names of the other ships in the Sea of Japan.

Give me the employment statement on the Vincennes, please. I need the, ah, data, the ah, finish date, for the readiness exercise on the Vincennes. I need the UNITREP status of the Vincennes.

At this point I would choose to continue the mission in a degraded condition.

Scenario 3 PARTICIPANT #20.2413

I need the list of radars available on the McClusky.

Could I have the narrative on the M three from electronic warfare?

I need the current location of the McClusky. A specific location.

I need the other ships that will be located in the south, that are located in the South China Sea.

I need the ETR on the McClusky's radar.

I need, ah, the ships that are located about the vicinity of sixteen north, ah, one fourteen east.

Could I have ship that's in Subic Bay currently? Could I have the name of the ship that's in Indonesia?

Could I have the mission statement from the Sterett? Employment statement. I need the date of departure from in port of the Sterett.

I need the employment statement of the Thach. Could I have the ship type of the Thach? I need the UNITREP status from the Thach.

I need the UNITREP status from the Sterett. I need the, ah, capabilities of the Sterett helicopters specifically.

At this point I would make a decision to go and, ah, replace the McClusky with the Sterett.

PARTICIPANT #20: WORD USE FREQUENCY COUNT

the	96	status	3	resource	1	fourteen	1
I	34	is	3	Given	1	repair	1
of	25	Thach	3	Brien	1	CASREPS	1
need	23	radars	2	one	1	helo	1
on	13	are	2	continue	1	primary	1
have	11	for	2	recovery	1	postponed	1
ah	10	air	2	fourth	1	Constellation	1
me	10	with	2	Employment	1	read	1
location	10	and	2	sixteen	1	Kirk	1
that	9	current	2	decision	1	maximum	1
in	8	specific	2	port	1	group	1
Could	7	will	2	Indonesia	1	rotor	1
to	7	available	2	areas	1	data	1
statement	7	capabilities	2	over	1	please	1
Sterett	6	replace	2	does	1	south	1
CASREP	6	Worden	2	they	1	Jouett	1
from	5	what	2	helicopters	1	combat	1
mission	5	names	2	ETRs	1	search	1
ships	5	want	2	east	1	forty	1
a	4	an	2	equipment	1	South	1
date	4	Specific	2	Out	1	overall	1
UNITREP	4	tell	2	occur	1	Fox	1
Tell	4	readiness	2	vacinity	1	May	1
ship	4	radar	2	ones	1	list	1
other	4	go	2	make	1	you	1
three	4	Merrill	2	choose	1		
McClusky	4	Sea	2	electronic	1		
On	4	rating	2	warfare	1		
exercise	4	about	2	composition	1		
Location	4	like	2	AAW	1		
narrative	3	Give	2	finish	1		
would	3	it	2	Subic	1		
Brewton	3	Read	2	helicopter	1		
Kinkaid	3	degraded	2	Bay	1		
At	3	specifics	2	departure	1		
LAMPS	3	China	1	speed	1		
this	3	The	1	north	1		
currently	3	SPS	1	A	1		
point	3	Chandler's	1	name	1		
be	3	has	1	mobility	1		
employment	3	type	1	What	1		
located	3	specifically	1	states	1		
Vincennes	3	capable	1	ASU	1		
Chandler	3	Japan	1	circumstances	1		
ETR	3	damage	1	condition	1		

Jouett ship type.

Chandler, ah, maximum sustained speed. Understand M three on mobility, ah, update maximum sustained speed.

Ah, position of Chandler. Position of Jouett.

Ah, request alternate, ah, CG type ship in or actually, ah, request alternate, ah, DDG's in San Diego.

Buchanan, ah, status of Buchanan for, ah, for primary mission M rating. Give me, ah, Buchanan M rating. Ah, employment, current employment. Last at sea period.

Ah, Callahan M rating. Tower, ah, Tower M rating.

Replace, replace Chandler for CASREP M three mobility, ah, bring them in port replace the Buchanan and, ah, continue mission.

Scenario 1 PARTICIPANT #21.2143

Current employment description.

Other type CGs in transit with Worden.

Give me CGs in WESTPAC. Go with Sea of Japan.

Ship type Vincennes.

Replace, ah, Worden mission with Vincennes, ah, tell Worden RTB.

Scenario 4 PARTICIPANT #21.2143

Request current employment description Constellation. I need to know, what if, they have an embarked air wing with them.

Connie has an SPS ten and air search can be done by an E two, so I'd say continue the mission.

Scenario 3 PARTICIPANT #21.2143

Request current employment description of, ah, McClusky. Location.

South China Sea, FFGs local. I'd like to have WESTPAC FFG list.

Current position Minsk. Ah, current position Copeland. Current position, ah, Thach.

Replace, ah, McClusky with Thach, standby, standby.

Ah, request current M rating Thach. Status rating of Copeland. See I would ask current status of Copeland M rating. And, ah, Copeland current employment description.

How about, ah, DDGs in, ha, WESTPAC? Western Pacific. Ship type Halsey. Kirk ship type.

Capabilities Kirk. Helicopter and radar. And, ah, radar capability.

And position of Kirk.

Replace, ah, replace McClusky with, ah, Copeland.

PARTICIPANT #21: WORD USE FREQUENCY COUNT

ah	21	Jouett	2	Position	1
of	8	to	2	actually	1
current	7	sustained	2	FFGs	1
rating	7	I'd	2	like	1
in	6	Ship	2	Status	1
employment	6	speed	2	Pacific	1
type	6	I	2	primary	1
with	6	three	2	period	1
Ah	6	alternate	2	Capabilities	1
Copeland	5	have	2	Minsk	1
position	5	Halsey	1	Helicopter	1
description	4	bring	1	Constellation	1
Replace	4	has	1	DDG's	1
mission	4	ask	1	Last	1
Buchanan	4	Location	1	so	1
Current	3	capability	1	or	1
and	3	embarked	1	on	1
for	3	Japan	1	How	1
Worden	3	CG	1	search	1
WESTPAC	3	can	1	list	1
request	3	Go	1	about	1
ship	3	sea	1	See	1
McClusky	3	wing	1	San	1
Chandler	3	port	1	know	1
an	3	say	1	by	1
Kirk	3	transit	1	local	1
Thach	3	what	1	two	1
replace	3	South	1	if	1
And	3	FFG	1	Western	1
standby	2	Understand	1	at	1
air	2	Connie	1	China	1
mobility	2	update	1	ha	1
continue	2	RTB	1		
the	2	Callahan	1		
them	2	done	1		
Vincennes	2	DDGs	1		
Tower	2	SPS	1		
radar	2	would	1		
me	2	Other	1		
CGs	2	need	1		
Sea	2	CASREP	1		
Request	2	tell	1		
Give	2	be	1		
status	2	they	1		
maximum	2	Diego	1		

Scenario 1 PARTICIPANT #22.1324

Where is the Worden? What's wrong with the radar? Does it have on it? What is the ETR? Are there any ships in company with the Worden? What are the other air search capabilities on board the Worden? What will the eventual, ah, destination either before she enters the Sea of Japan or after she enters the Sea of Japan?

The decision is to, ah, is to have the ship stop in, ah, Yoko, Yokosuka, ah, to use the, ah, capabilities that can be offered in Yokosuka to repair the ship before she goes into the Sea of Japan.

Scenario 3 PARTICIPANT #22.1324

What are the ships in company with McClusky? Where is the McClusky? What is the, what are the ships in company with McClusky? What are the other surface search capabilities the the McClusky has? What are the other radar related CASREPs aboard the McClusky? What is the, ah, ETR of the, ah, McClusky's SPS fifty-five radar? What does the CASREP base reflect, ah, as far as the status of, ah, McClusky's LAMPS mark three helicopter? Based upon her last UNITREP what is the mission rating, what is the M rating on her, ah, onner, her ASW, on her ASW mission? What does the CASREP base reflect for the, ah, for casualties aboard the USS Towers? What's her max available speed? What's the ETR on the Tower's main engine casualty? What is the, ah, ASUW rating, what is the M rating for ASUW aboard the Towers?

What are the casualties associated with the, ah, McClusky's LAMPS mark three helicopter?

As far as the UNITREP data is concerned, what is the latest percentage of fuel on board the Towers?

What is the, ah, what is the M rating for ASW aboard the, ah, McClusky? What are the nature of the ASW casualties aboard the McClusky? Which casualties does she have, ah, which is, ah, ah, putting her down in M three?

The decision is to continue the mission in a degraded condition because of the other capabilities that she still has will suffice.

Scenario 2 PARTICIPANT #22.1324

What is the max speed available for the Chandler?

Where are the ships right now?

What is the nature of the propulsion plant problem on the Chandler?

What are the DD nine sixty-three class ships available in Yokosuka? Start me off with DDs.

What are the location of the Fletcher, Kinkaid, and O'Brien? Kinkaid, what is the geographic area of Kinkaid? How 'bout the O'Brien?

What are the, what are the Towed Array capabilities, TACTAS capabilities of the Fletcher, Kinkaid or O'Brien?

What are the FFG seven class ships available in the area? What are the locations of Copeland, McClusky, and Thach?

What is the mission of Copeland?

What is the location of the McClusky? What is the, ah, location of Thach?

What are the primary mission area ratings for the Copeland? What is the status of, ah, of the, ah, Copeland's LAMPS mark three helo?

List assets aboard the Copeland.

What are the assets aboard the Kinkaid? List the mission area ratings for the, ah, Copeland, ah, for the Kinkaid. What is the location of the Kinkaid?

What is the intend, ah, tract for the, ah, for the Jouett and the, ah, Chandler, towards, to the Sea of O? Does it give you any wait points?

What are the respective fuel states of the Jouett and Chandler? What is the, the ETA for the Jouett and Chandler to the Sea of O?

What was the employment description for the Kinkaid?

I'd like to, ah, return the Chandler to port, ah, to repair her propulsion casualty. I'd like to maintain the Jouett on track to the Sea of O. What I'd like to do is dispatch the Kinkaid to, ah, meet up with the Jouett along the track on route to the Sea of O.

Scenario 4 PARTICIPANT #22.1324

What's the location of the Constellation and the Brewton?

What are the other FF ten class ships in Pearl Harbor? What' re the other ships in the area, location?

What is the mission rating associated with, ah, the helicopters on board the SS Constellation? What are the helicopters embarked aboard the Constellation?

What are the locations of the, ah, other helicopters in the local area?

What is the ETR of the, ah, the helicopter rotor?

What does the database show for the M rating of the air wing, ah, associated with the Constellation?

What are the other ships located in Central Pacific?

Where are the Kinkaid and the Merrill? And, what is the location of the Merrill?

What is the, ah, status of the, ah, of the helicopter, of the helicopters aboard the Kinkaid and Merrill? What are the helicopter capabilities of the Kinkaid and Merrill?

What's the mission of the Kinkaid? What's the, ah, mission for the, ah, Merrill?

What's the fuel state of the Merrill? What's the fuel state of the Kinkaid?

What are the oilers in CENPAC?

What are the significant, ah, air search or propulsion, ah, ah, CASREPs for the Kinkaid? What are the respective,ah, propulsion or air search radar, ah, CASREPs for the Merrill?

List the location of the USS Fox. And the other cruiser the, ah, Reeves.

What's the mission of the Fox? What's the fuel state on the Fox?

The decision is to have Merrill proceed at, ah, at, ah, on trail shaft operations to the area and join the Constellation on route.

PARTICIPANT #22: WORD USE FREQUENCY COUNT

ah	22	Give	2	CASREP	1
of	8	Jouett	2	Position	1
current	7	to	2	actually	1
rating	7	sustained	2	DDGs	1
in	6	three	2	SPS	1
employment	6	Ship	2	would	1
type	6	have	2	Pacific	1
Ah	6	speed	2	need	1
with	6	Halsey	1	period	1
Copeland	5	capability	1	FFGs	1
position	5	Japan	1	Minsk	1
description	4	bring	1	Helicopter	1
Replace	4	has	1	like	1
mission	4	be	1	Status	1
Buchanan	4	port	1	Last	1
and	3	ask	1	so	1
Current	3	Location	1	or	1
Worden	3	CG	1	on	1
for	3	embarked	1	primary	1
ship	3	can	1	search	1
Chandler	3	China	1	Capabilities	1
WESTPAC	3	wing	1	Constellation	1
McClusky	3	what	1	How	1
request	3	Go	1	list	1
an	3	sea	1	about	1
And	3	they	1	by	1
Kirk	3	tell	1	local	1
Thach	3	say	1	two	1
I	3	ten	1	if	1
replace	3	transit	1	Western	1
air	2	Diego	1	at	1
standby	2	CG's	1	See	1
mobility	2	FFG	1	San	1
Request	2	South	1		
continue	2	DDG	1		
them	2	CGs	1		
Vincennes	2	I'd	1		
the	2	Understand	1		
Sea	2	Callahan	1		
radar	2	Connie	1		
me	2	update	1		
Tower	2	RTB	1		
status	2	Other	1		
maximum	2	done	1		
alternate	2	know	1		

Scenario 2 PARTICIPANT #23.2341

Location of Chandler presently.

Request locating data for DDG class ships in the San Diego area.

Location of Buchanan and Callahan. The current employment description of the, ah, Callahan. Require the same for Buchanan.

Request the primary mission, ah, area M rating for Buchanan. And the M rating for the Callahan.

CASREP data on Buchanan. Fuel status of the Buchanan.

At this point we'd task Buchanan, ah, to fill in for Chandler for the, ah, ah, freedom of passage.

Scenario 3 PARTICIPANT #23.2341

Location on the McClusky. Request location of Naval units in the vicinity of McClusky.

Location of Towers.

Request status of the McClusky's LAMPS mark three.

Based upon current information we continue to assigned McClusky to its tattletale role with Towers detaching, ah, to rendezvous with the McClusky and, ah, distance and time is unfigurable on our little chart right here.

Scenario 4 PARTICIPANT #23.2341

Location on, ah, FF ten Brewton. Location of Constellation. Request locating data for ships in Pearl Harbor. Location of Naval units in the vicinity area of thirty-two north, one forty-four west in the splash down area. Locating data for vessels in Yokosuka.

Capabilities of Buchanan specifically if it has LAMPS embarked.

Locating data for vessels in the Subic Bay.

Request capabilities of LAMPS on Sterett. I'll need primary mission M rating for Sterett. Current employment. CASREP data on Sterett anything outstanding. And Sterett's fuel on board.

My decision will be to, ah, detach Sterett to rendezvous with Constellation and conduct mission as required.

Scenario 1 PARTICIPANT #23.2341

I need location data on Worden. Request, ah, data on ships in company with Worden.

Request location of units in Yokosuka, Japan.

Will request CASREP data then, ah, on ETR on the radar.

Location of units in Sea of Japan.

Capabilities of the Vincennes. If you'll give me a hull number. And if I can have the M rating of the, ah, Vincennes. CASREP data on the Vincennes.

*We'll leave the Vincennes in the Sea of Japan, ah, and, ah, bring Worden in and it will go in company to do the transit ops.

PARTICIPANT #23: WORD USE FREQUENCY COUNT

the	158	search	4	Thach	2	Array	1	which	1
What	56	radar	4	will	2	Kinkaid	1	still	1
ah	45	board	3	repair	2	do	1	rotor	1
of	38	state	3	CASREP	2	Pearl	1	sixty	1
is	33	class	3	speed	2	TACTAS	1	port	1
are	26	Towers	3	route	2	local	1	Which	1
to	17	Worden	3	track	2	me	1	latest	1
for	16	The	3	Fletcher	2	stop	1	putting	1
in	14	associated	3	enters	2	How	1	percentage	1
Kinkaid	14	Japan	3	eventual	1	you	1	data	1
on	13	status	3	nine	1	Are	1	seven	1
McClusky	12	Fox	3	problem	1	goes	1	surface	1
mission	10	Obrien	3	join	1	wrong	1	DDs	1
and	10	as	3	description	1	give	1	towards	1
aboard	9	it	3	As	1	re	1	Tower	1
ships	9	CASREPs	3	SS	1	upon	1	dispatch	1
other	9	Yokosuka	3	Brewton	1	main	1	there	1
with	9	company	3	off	1	bout	1	maintain	1
what	9	like	3	embarked	1	SPS	1	geographic	1
location	8	List	3	concerned	1	Reeves	1	significant	1
Merrill	8	mark	3	destination	1	after	1	right	1
rating	7	decision	3	continue	1	five	1	engine	1
capabilities	7	LAMPS	3	primary	1	FF	1	wing	1
area	7	I	3	suffice	1	oilers	1	CENPAC	1
her	7	casualty	2	intend	1	up	1	condition	1
Sea	7	locations	2	last	1	either	1	shaft	1
Copeland	6	base	2	database	1	employment	1	offered	1
Chandler	6	reflect	2	plant	1	degraded	1	DD	1
Jouett	5	max	2	helo	1	return	1	Pacific	1
fuel	5	ASUW	2	can	1	Harbor	1		
she	5	nature	2	a	1	show	1		
Constellation	5	any	2	ten	1	wait	1		
three	5	has	2	now	1	FFG	1		
helicopter	5	Does	2	meet	1	operations	1		
Where	4	respective	2	was	1	Start	1		
air	4	at	2	Based	1	points	1		
available	4	USS	2	states	1	along	1		
ASW	4	UNITREP	2	be	1	Yoko	1		
casualties	4	far	2	fifty	1	trail	1		
ETR	4	And	2	down	1	ETA	1		
propulsion	4	that	2	related	1	cruiser	1		
helicopters	4	before	2	use	1	tract	1		
have	4	ship	2	into	1	Central	1		
does	4	assests	2	proceed	1	Towed	1		
or	4	ratings	2	located	1	because	1		

Scenario 1 PARTICIPANT #24.1423

What's the estimated time of repair on the forty-eight radar? What is the extent of the radar casualty?

What is our current location? What is my destination? How long will I be in transit?

List some ships that are within thirty-six north, one five six east. Ships in WESTPAC.

Give me Copeland, Halsey and Kirk.

What radar capabilities does the Copeland have? What are the capabilities, ah, radar capabilities of the Halsey, please.

What is the current employment description of the USS Halsey?

For the Copeland what are its, what's its percentage fuel remaining and the maximum sustained speed? What is the overall combat readiness rating for the Copeland? Could you list CASREP dates, descriptions, and ETRs on any radar for the Copeland?

At this time I'd just like to continue.

Scenario 4 PARTICIPANT #24.1423

For the Brewton, ah, give me the description of the CASREP for the main rotor. And, ah, could you give me the ETR?

Give me a listing of, ah, ships in the Central Pacific.

Ah, give me latitude longitude of the, ah, Fox, Kinkaid, Merrill, and Reeves.

Just give me the helicopter capabilities of the Fox. Give me the, ah, helicopter capabilities of the Kinkaid.

For the Fox list CASREP dates, description, that's it. List CASREP dates, description for Kinkaid.

For USS Fox would you list the current employment description. For Kinkaid list current employment description.

I'm going to decide to replace the Worden with the, ah, USS Fox.

Scenario 2 PARTICIPANT #24.1423

For the Chandler provide me with the description of, ah, CASREPs of all CASREPs, please. List max sustained speed for the Chandler.

List other ships in the general area of the Sea of O.

Tell me what the database says for the, ah, Jouett's primary mission area. List for the Callahan the primary mission area.

For Callahan would you list CASREPs?

For the, ah, Chandler have her replaced by the Callahan. Have the Chandler proceed to port for repair. And the Jouett and the Callahan will continue with the mission.

Scenario 3 PARTICIPANT #24.1423

For the McClusky, ah, list CASREPs.

List ships in, ah, South China Sea. List ships, ah, near the following coordinates sixteen north, one fourteen west. There's a correction on that. It's one fourteen east.

For Sterett could you provide me current employment description?

My answer is continue the mission in a degraded condition.

PARTICIPANT #24: WORD USE FREQUENCY COUNT

the	23	Sea	2	our	1	me	1
of	20	status	2	splash	1	then	1
ah	14	need	2	be	1	go	1
in	14	Yokosuka	2	have	1	two	1
on	12	Constellation	2	board	1	time	1
for	10	Capabilities	2	Harbor	1	Pearl	1
data	10	primary	2	Bay	1	do	1
Location	8	mark	1	DDG	1		
Request	8	distance	1	Current	1		
to	7	Based	1	Require	1		
Buchanan	7	FF	1	number	1		
and	6	west	1	Subic	1		
McClusky	5	upon	1	a	1		
Sterett	5	radar	1	detaching	1		
Vincennes	4	this	1	three	1		
with	4	unfigurable	1	capabilities	1		
area	4	assigned	1	Will	1		
rating	4	bring	1	north	1		
CASREP	4	has	1	outstanding	1		
units	4	passage	1	presently	1		
I	3	conduct	1	point	1		
Japan	3	information	1	detach	1		
Worden	3	embarked	1	four	1		
LAMPS	3	Brewton	1	right	1		
ll	3	specifically	1	tattletale	1		
location	3	here	1	hull	1		
mission	3	description	1	give	1		
ships	3	At	1	same	1		
And	3	If	1	San	1		
Callahan	3	can	1	little	1		
Locating	2	anything	1	request	1		
will	2	leave	1	required	1		
company	2	one	1	Fuel	1		
vessels	2	continue	1	thirty	1		
Naval	2	its	1	freedom	1		
current	2	fill	1	forty	1		
Towers	2	My	1	The	1		
employment	2	We	1	chart	1		
if	2	ten	1	is	1		
locating	2	class	1	Diego	1		
rendezvous	2	ops	1	fuel	1		
vicinity	2	decision	1	ETR	1		
it	2	role	1	you	1		
Chandler	2	transit	1	task	1		
we	2	as	1	down	1		

Scenario 4 PARTICIPANT #25.4321

Where is the Constellation? Where is the, ah, Brewton?

What is the employment configuration of the Connie? What are the assets, helicopter assets, of the Constellation?

And, ah, how long will it take to fix the helicopter on the Brewton? What is the ETR on the LAMPS helo on the Brewton?

What is the, ah, closet ship, ah, with helicopter capabilities to thirty-two north, one forty-four west? What are the, ah, closets ships to thirty-two north, one forty-four west?

What ships are in the geographic location of Pearl Harbor?

What are the, ah, ships in Western Pacific? And, ah, of those ships which ones have helicopter capabilities?

What's the capability of Halsey?

C capability of Worden. And, ah, capability of the third ship.

The decision would be to continue the mission with the Constellation.

Scenario 3 PARTICIPANT #25.4321

What is the ETR on the McClusky ELW?

What ships are in the geographic location of the South China Sea? Ships in the area of sixteen, ah, north, one fourteen east.

Ah, capabilities of the Sterett. Helicopter capabilities of the Sterett.

Helicopter capabilities of the Thach. Radar capabilities of the Thach. Percentage fuel remaining on Thach.

My decision is to, ah, replace the McClusky with the Thach.

Scenario 2 PARTICIPANT #25.4321

Description on Chandler propulsion CASREP.

Ah, list of ships in the geographic area of the, ah, Sea of, ah, Oktusha. List ships in vicinity of forty-eight, one sixty-two east.

What are the sonar capabilities of the Worden? And, ah, what is the helo capabilities of Worden?

Continue the mission with Jouett and repair the casualty on the Chandler.

Scenario 1 PARTICIPANT #25.4321

Ah, description Worden EQP CASREP. And ETR on, ah, air search radar CASREP.

Ah, list of ship in geographic area of Pearl Harbor.

Radar capabilities of the Brewton. Sonar capabilities of the Brewton. Ah, primary mission areas of the Brewton.

Listing of ships in Western Pacific.

Ah, location of Copeland. Location of, ah, Halsey. Location of Kirk.

Copeland's primary mission areas. And, ah, Copeland's radar capabilities. Copeland's sonar capabilities.

Halsey's radar capabilities. Halsey's sonar capability.

My decision will be to replace the Worden with the Halsey.

PARTICIPANT #25: WORD USE FREQUENCY COUNT

the	47	will	2	our	1	my	1
ah	13	its	2	WESTPAC	1	Reeves	1
of	13	six	2	McClusky	1	ETRs	1
For	10	And	2	be	1	this	1
me	10	would	2	proceed	1	decide	1
description	8	time	2	longitude	1	forty	1
for	8	Jouett	2	Have	1	location	1
What	8	please	2	Sterett	1	it	1
List	7	sustained	2	correction	1	some	1
list	6	repair	2	by	1	five	1
in	6	primary	2	rotor	1	Worden	1
is	6	fourteen	2	casualty	1	answer	1
Fox	5	have	2	combat	1		
capabilities	5	coordinates	1	Central	1		
and	5	extent	1	South	1		
radar	5	Sea	2	overall	1		
you	5	east	2	thirty	1		
current	5	north	2	How	1		
ships	5	speed	2	maximum	1		
Copeland	5	helicopter	2	percentage	1		
Chandler	4	latitude	1	other	1		
employment	4	her	1	ETR	1		
give	4	Ah	1	long	1		
to	4	Brewton	1	Ships	1		
mission	4	any	1	There	1		
CASREP	4	fuel	1	Just	1		
CASREPs	4	Could	1	Merrill	1		
Callahan	4	At	1	Tell	1		
Kinkaid	4	max	1	China	1		
Halsey	3	remaining	1	port	1		
a	3	all	1	condition	1		
are	3	It	1	estimated	1		
with	3	destination	1	does	1		
one	3	like	1	general	1		
continue	3	west	1	within	1		
USS	3	eight	1	replace	1		
what	3	near	1	rating	1		
Give	3	database	1	Pacific	1		
on	3	My	1	degraded	1		
I	3	going	1	Kirk	1		
dates	3	listing	1	descriptions	1		
that	3	sixteen	1	readiness	1		
area	3	transit	1	just	1		
could	2	following	1	replaced	1		
provide	2	main	1	says	1		

What type of part support is required to repair the damage?

Do you have an estimated time of repair? And, what is that estimated time of repair?

Are the rest of her sensors operating properly?

And what's her time on station?

Are there any other assets available to take McClusky's place?

Can you give me the other FFG seven class ships available?

And do we know if they're assigned to any other duties now?

Where's the Thach and the Copeland? The Copeland. And McClusky. What was Copeland again, please?

Do we know the direction, nah, task force where they're heading? Ah, the Soviet task force.

I think I'd keep McClusky on station.

Scenario 1 PARTICIPANT #26.3124

What air search radars are on board Worden? Do we know that is wrong with the ah, forty-eight, SPS forty-eight? Estimated time of repair. What are the capabilities of the SPS forty-nine?

Is she transiting with any other ships? What other ships are transiting with the Worden?

When Worden arrives in the Sea of Japan will she have a turnover with any other ships? What mission is she to perform once she arrives in the Sea of Japan?

OK I'd let her go.

Scenario 2 PARTICIPANT #26.3124

What main engine problems does Chandler have?

Does she have a max speed available given? Which is? Do we know the transit speed?

Based on that just have to wait till repairs if she can't make any way.

Scenario 4 PARTICIPANT #26.3124

What helo capabilities are on board the Constellation?

Are there any other ships in the area? In the splash down area?

Are there any helo facilities ah, let's see, you've got ah, Yokosuka there, or Sasibo, right that ah, could land on the carrier?

Have ah, estimated time of repair for Brewton's LAMPS?

Does Jouett carry a helo? And Jouett's location?

So there're no other ships in the area with helo capabilities. That's correct. If they're all hugging the coast of California, I'd would think you'd have a better chance getting something out of Yokosuka or Sasibo.

Ah, see Buchanan, Buchanan. She won't have a helo. How 'bout the Midway? Midway have any helo capabilities?

Looks like Jouett's the closest thing. I would have Jouett make ah, make best possible speed to join up with Constellation for the recovery.

PARTICIPANT #26: WORD USE FREQUENCY COUNT

the	43	Location	2	ELW	1
of	28	Helicopter	2	Jouett	1
ah	16	west	2	EQP	1
capabilities	13	will	2	search	1
What	11	Pacific	2	remaining	1
in	8	areas	2	Connie	1
is	8	replace	2	it	1
on	8	Chandler	2	vicinity	1
ships	8	Sea	2	South	1
And	6	Where	2	Listing	1
are	6	list	2	Percentage	1
Ah	6	assets	2	fix	1
Brewton	6	four	2	closets	1
to	6	primary	2	Description	1
Halsey	5	helo	2	propulsion	1
with	5	Harbor	2	description	1
Worden	5	would	1	how	1
one	4	fuel	1	continue	1
capability	4	closet	1	Okhotsk	1
mission	4	casualty	1		
Thach	4	long	1		
geographic	4	Sonar	1		
Copeland	4	take	1		
helicopter	4	those	1		
decision	3	which	1		
area	3	China	1		
radar	3	ones	1		
two	3	The	1		
Constellation	3	third	1		
sonar	3	employment	1		
ETR	3	sixty	1		
location	3	Ships	1		
forty	3	configuration	1		
CASREP	3	Continue	1		
ship	3	List	1		
north	3	repair	1		
My	2	fourteen	1		
McClusky	2	what	1		
Radar	2	eight	1		
be	2	and	1		
Sterett	2	Kirk	1		
Western	2	air	1		
Pearl	2	have	1		
east	2	sixteen	1		
thirty	2	LAMPS	1		

From this information, what is the estimated time to repair of McClusky's radar?

Is McClusky in port at this time? What we need to know, can it, can the McClusky be ah, put into port to ah, to effect a repair on her radar?

What other units are available to take the mission for McClusky? Now what, ah besides FFGs we might also consider, FFs, DDs, DDGs as being able to take the mission. What, what, what are those ships available? And DDs?

Which of those ships are, will be ah, close enough to ah, take a mission in the South China Sea? Which, which ones are in ah, Subic Bay, Indian Ocean, and WESTPAC?

What is, what is McClusky's ah, transit time or that would McClusky's ah, estimated time to ah, go to Subic Bay be? What is ah, McClusky's fuel state?

What is the ah, position of the Copeland and the Kirk? Ah, Copeland, let's take. And the Kirk.

Are there any units in the Sea of Japan? Are there any units in Indonesia? And ah, what's their coordinates?

What is the Thach's current mission? What is the Thach's next port of call? What is the Thach's fuel state? And the Thach's ah, what's her overall equipment ah, status?

What I wanna do is ah, task the Thach to assume the mission from the McClusky. Ah, have the Thach ah, proceed to Subic to ah, to refuel and ah, be briefed on this mission and then be underway in time to assume the mission.

Scenario 4 PARTICIPANT #27.3421

What's the ah, estimated time to repair ah, Brewton's LAMPS?

What other ships are in company with Constellation?

What ships are in ah, the Central Pacific?

What is the, ah, what is the Brewton's current position? How many LAMPS ah, helos are ah, on board Brewton?

Does Constellation ah, have any LAMPS on board? How many LAMPS does ah, LAMPS helos does Constellation report on board? How many LAMPS ah, helicopters are in port Pearl Harbor?

What ships are in ah, California?

What is Chandler's position? How many LAMPS does Chandler have on board? What is ah, Chandler CROVL? What is the ah, M three in MOB for? What CASREPs does Chandler show? What Chandler's ah, fuel state?

What is ah, what is Fletcher's position? How many LAMPS does Fletcher have on board? What is Fletcher's CROVL? What is fuel state?

...Fletcher is to proceed to rendezvous with the Constellation participate in the spacecraft recovery...

Scenario 2 PARTICIPANT #27.3421

What is the ah, current position of Chandler?

What ships are available in ah, Central, er ah, California?

What is the CROVL status of the Fletcher? And ah, what CASREPs does she have? And what type of ship is Fletcher?

And O'Brien what is her CROVL? And what are her CASREPs?

Task the Fletcher to assume the ah, Chandler's mission to get underway ah, as soon as possible and to rendezvous at sea with the Jouett and proceed on the mission to the Sea of Okhotsk.

Scenario 1 PARTICIPANT #27.3421

It's impossible to get from Pearl Harbor to the Sea of Japan in three days for any ship. The scenario's ah, unrealistic from the point of view that ah, a, a ship can't make a transit from Pearl Harbor to the Sea of Japan in a, in just ah, three days. The distance involved is too great.

PARTICIPANT #27: WORD USE FREQUENCY COUNT

the	23	Ah	2	wait	1	main	1
of	11	Midway	2	max	1	give	1
have	9	what	2	got	1	Which	1
any	8	for	2	In	1	facilities	1
What	8	board	2	could	1	wrong	1
other	8	would	2	carry	1	again	1
with	6	let	2	Is	1	possible	1
she	6	transiting	2	just	1	down	1
ah	6	see	2	keep	1	seven	1
helo	6	task	2	given	1	thing	1
on	6	force	2	land	1	something	1
to	6	station	2	rest	1	When	1
ships	6	Does	2	So	1	Based	1
And	5	Sea	2	now	1	best	1
a	5	arrives	2	was	1	turnover	1
time	5	if	2	LAMPS	1	carrier	1
I	5	or	2	transit	1	right	1
is	5	Constellation	2	way	1	That	1
repair	5	Sasibo	2	out	1	properly	1
there	5	Yokosuka	2	The	1	like	1
are	4	think	2	Can	1	Looks	1
Do	4	Buchannan	2	Have	1	engine	1
that	4	support	1	an	1	Thach	1
know	4	and	1	Chandler	1	repairs	1
in	4	air	1	required	1	join	1
you	4	coast	1	won	1	problems	1
re	4	all	1	She	1	getting	1
Jouett	4	assigned	1	do	1	mission	1
we	4	can	1	take	1	chance	1
capabilities	4	radars	1	go	1	up	1
Are	4	recovery	1	damage	1	California	1
make	3	OK	1	operating	1	place	1
her	3	will	1	me	1	splash	1
Worden	3	Estimated	1	How	1	correct	1
they	3	Brewton	1	perform	1	please	1
McClusky	3	type	1	part	1	Soviet	1
forty	3	duties	1	direction	1	ve	1
estimated	3	nah	1	does	1	assets	1
area	3	closest	1	location	1	hugging	1
speed	3	class	1	bout	1	sensors	1
available	3	till	1	FFG	1	no	1
Copeland	3	If	1	heading	1		
Japan	2	search	1	where	1		
SPS	2	nine	1	better	1		
eight	2	once	1	Where	1		

APPENDIX H
WORDS IN C^2 SCENARIOS IN DECREASING ORDER BY COLUMN

ah	continue	Towers	Are	east	home
on	decision	Sterett	DDGs	estimated	far
of	you	maximum	from	helos	same
McClusky	that	it	Do	made	just
have	at	there	CASREPS	outstanding	date
to	class	Give	ve	do	hundred
the	forty	an	my	take	FFGs
I	be	The	type	thirty	group
Chandler	time	give	within	if	Tower
in	repair	as	north	percentage	CGs
ships	one	Location	casualty	Minsk	Leahy
mission	employment	her	need	request	Ships
with	Harbor	many	about	twenty	point
and	replace	capability	sustained	ten	When
for	this	they	hull	TACTAS	ask
is	transit	Western	going	sixty	think
Worden	air	Vincennes	long	so	surveillance
Brewton	SPS	ETR	propulsion	please	Indian
speed	has	Where	again	rotor	able
Constellation	does	we	say	know	Replace
are	Pearl	all	readiness	sonar	task
What	area	database	now	let	UNITREP
radar	capabilities	right	degraded	tell	ll
Sea	Pacific	max	Can	DDG	then
location	Merrill	helicopters	those	by	operational
what	eight	Brien	remaining	them	All
three	description	List	condition	located	could
search	will	Fox	nine	she	see
other	helo	China	board	west	Spruance
a	And	South	re	main	Kidd
Jouett	port	number	radars	overall	make
LAMPS	Halsey	Reeves	FFG	bout	Could
Copeland	two	four	how	Fletcher	place
CASREP	Thach	San	Does	problem	ones
Callahan	rating	list	combat	was	here
Japan	helicopter	Diego	recovery	miles	operating
or	OK	like	rendezvous	Buchanan	proceed
ship	five	primary	its	information	down
can	would	mark	Ocean	Request	Helicopter
me	status	go	sea	cruiser	required
How	any	fifty	send	Central	fix
Ah	surface	Current	areas	At	wait
available	Kinkaid	My	Have	WESTPAC	embarked
current	fuel	position	their	up	next
Kirk	Is	get	want	which	Horne

WORDS IN C^2 SCENARIOS IN DECREASING ORDER BY COLUMN

Please	problems	Capabilities	bearing	Southern	destination
local	period	third	tasking	Tell	than
Continue	repairs	detach	posit	over	fourth
Yokosuka	closest	seven	latest	Yes	concerned
don	present	until	must	Employment	On
equipment	carry	destroyers	CG's	battle	much
purpose	specifically	FFs	Sonar	commander	specific
bring	control	carrier	track	Send	recommendation
capable	estimate	geographic	participate	turn	See
Buchanan	numbers	system	ELW	Position	your
ASW	fourteen	order	Estimated	also	We
did	Yokosuka	Ship	press	plant	once
out	due	last	Number	substitute	So
still	repeat	tattletale	weeks	parts	vessels
where	array	Based	correction	ETRs	latitude
currently	Midway	first	towed	engine	being
our	locations	days	replacement	update	repaired
Towed	state	actually	Will	specifics	CROVL
into	aircraft	near	along	Who	delay
assets	wing	Connie	presently	splash	join
exercise	sixteen	statement	stop	cruisers	who
names	six	been	zero	duties	read
ops	CG	return	Understand	hours	In
mobility	coast	scheduled	SOCAL	weather	Radar
listing	May	choose	standby	Taiwan	further
company	aboard	soon	sorry	SH	use
Bay	arrival	length	best	only	longitude
departure	onboard	operations	dispatch	ratings	yes
Of	FF	eighty	Other	Read	around
perform	part	You	Array	RTB	station
wrong	Subic	assigned	underway	direction	Go
SQS	ASUW	deploy	Philippines	another	ha
off	data	Yoko	geo	because	Any
leave	report	Type	these	done	Status
after	upon	ETA	orders	Last	scenario
keep	coordinates	possible	NTDS	ready	states
Name	Which	Coast	passage	before	mechanical
no	units	AAW	ported	but	schedule
oilers	West	back	frigates	Fuel	goes
name	nature	handle	idea	ninety	ahead
damage	center	failure	factor	distance	If
California	based	Closest	conduct	rest	listed
types	between	Hawaii	Just	op	Percentage
both	critical	I'd	CASREPs	solution	finish
USS	spacecraft	alternate	steaming	reason	vicinity

WORDS IN C^2 SCENARIOS IN DECREASING ORDER BY COLUMN

answer	submitted	lieu	Island	reflect	Out
operation	Max	descriptions	reach	sonars	MR
As	blade	dates	sent	model	expected
freedom	transiting	loca	capacity	correct	Hull
recommend	scan	US	copy	replaced	Solution
stateside	lost	cancel	support	Transit	planning
Say	Missouri	particularly	mean	directed	TC
completed	pos	constraint	indicated	offered	commitment
No	Actually	won	configuration	SLQ	Listing
shoulds	match	sailing	demonstrate	fire	find
chart	encountered	really	warfare	A	commence
more	needs	arrives	properly	um	define
radius	Indonesia	respective	fly	assests	Beach
shuttle	above	deployed	figures	remain	enters
method	Fly	got	Assign	little	Long
affect	assessment	Locations	weapons	items	shafts
suffice	survey	deployment	decide	CREOP	Looks
given	For	assign	free	chance	degrades
intend	way	submit	Okhotsk	range	officer
computer	hugging	Has	divert	From	participating
shouldn	decided	occur	locate	themselves	Class
Nature	own	Geo	similarly	allowable	shaft
It	Soviet	Ask	Overall	Repair	cold
relieved	gonna	believe	either	maintenance	Bering
She	Basin	vacinity	comment	patrol	leaving
new	Geographic	meet	ability	words	eventual
general	provide	reported	operative	Repeat	supposed
basis	mind	complete	land	getting	shall
assume	link	even	guess	urgency	visibility
force	Was	working	comparable	second	Top
assigning	Available	level	missile	Obrien	CENPAC
estimating	combine	soonest	Description	closets	circumstances
Given	DDG's	called	gunfire	closet	reevaluate
Names	mile	good	economical	herself	following
Now	postponed	enough	forward	Describe	Order
contact	Naval	pack	Duration	fill	American
set	related	locating	relieve	Sasibo	Perry
not	top	Make	SM	never	storm
Critical	percent	left	recovering	refuel	concerning
speeding	questions	cause	initial	closer	Chandler's
anything	degradation	extent	Illuminate	fifteen	Present
conducting	warranted	Cape	flight	Reeve	eighteen's
version	yet	Frigates	refueling	says	supply
Let	remains	efficiently	sailor	sensors	serach
Honolulu	fixed	SS	lat	Specific	That

WORDS IN C^2 SCENARIOS IN DECREASING ORDER BY COLUMN

effect	CV	better	deck
degree	rephrase	prior	steam
till	Eastern	conclusion	years
role	didn	amplifying	Distance
besides	suite	associated	trail
Length	unreliable	stage	direct
work	whether	annual	total
doing	Nearest	central	Require
though	geographical	day	while
follow	equator	route	harassment
classes	certain	personnel	allow
equipped	putting	suit	ASU
amount	choice	locationwise	Decision
screw	DDs	pull	tract
There	Kinkaid	stay	notify
significant	fleet	characteristics	obligation
dimension	criticality	vehicle	reports
carries	serve	ways	assumption
degrees	synopsis	navigation	
dimensional	crossing	communications	
show	saying	choices	
maintain	unfigurable	electronic	
engines	depart	remainder	
operable	spares	stick	
Impact	Barbers	base	
since	facilities	narrative	
turnover	Swap	identify	
casualties	something	Start	
using	ESM	impact	
delayed	EQP	others	
during	detaching	points	
replacements	backwards	resource	
Database	were	nearest	
Report	fact	already	
when	turbine	composition	
Point	PAC	particular	
nautical	priority	heading	
towards	splashdown	DD	
forget	spare	question	
Locating	received	Halsey's	
thing	should	filed	
some	inventory	twelve	
immediate	break	aside	
south	without	alternative	
gas	Warden	stand	

APPENDIX I

(A) QUANTITY OF WORDS AND SENTENCES/QUESTIONS USED IN FIRST AND LAST SCENARIOS

FIRST SCENARIO GIVEN

PART.	SCENARIO NUMBER	# OF WORDS	# OF UNIQUE WORDS	# OF ARTICLES	# OF PREPO-SITIONS	# OF PROPER NOUNS
1	1	82	40	1	12	22
2	4	93	55	12	6	9
3	3	183	71	26	20	28
4	4	307	103	46	41	38
5	3	36	32	3	2	7
6	4	106	51	6	10	24
7	2	87	52	2	8	11
9	2	109	54	17	13	15
10	1	102	48	6	14	18
11	3	241	86	35	22	36
14	4	74	38	7	12	17
15	2	219	83	21	29	38
16	4	238	106	21	33	32
17	1	46	31	9	3	7
18	1	168	71	11	26	30
19	3	97	50	2	13	25
20	2	73	34	19	10	14
21	2	73	42	0	9	12
22	1	60	38	9	9	10
23	1	58	34	8	10	14
24	1	125	75	14	12	16
25	4	126	54	17	16	16
26	3	107	68	9	8	10

(A) QUANTITY OF WORDS AND SENTENCES/QUESTIONS USED IN FIRST AND LAST SCENARIOS

LAST SCENARIO GIVEN

PART.	SCENARIO NUMBER	# OF WORDS	# OF UNIQUE WORDS	# OF ARTICLES	# OF PREPOSITIONS	# OF PROPER NOUNS
1	2	10	8	0	1	5
2	3	61	28	9	5	6
3	1	70	38	1	12	21
4	3	43	32	7	6	9
5	2	59	33	11	8	8
6	2	18	15	2	1	5
7	4	43	23	3	3	9
9	1	84	38	7	14	24
10	4	119	50	4	16	26
11	2	16	14	2	2	3
14	1	216	79	32	29	44
15	4	88	39	0	5	26
16	2	97	49	0	13	22
17	2	100	53	8	8	19
18	3	62	35	5	12	17
19	4	38	21	1	2	5
20	3	164	63	30	23	26
21	3	90	55	0	9	24
22	4	236	67	54	27	35
23	1	68	40	6	14	14
24	3	43	35	3	5	8
25	1	75	39	3	12	18
26	4	71	51	6	7	9

(B) QUANTITY OF ARTICLES PER SENTENCES/QUESTIONS USED IN FIRST VS. LAST SCENARIO

	# OF S/Q			*	# OF S/Q		
	FIRST	# OF	ARTICLES	*	LAST	# OF	ARTICLES
PART.	SCENARIO	ARTICLES	PER S/Q	*	SCENARIO	ARTICLES	PER S/Q
1	9	1	0.11	*	2	0	0.00
2	5	12	2.40	*	4	9	2.25
3	20	26	1.30	*	17	1	0.06
4	26	46	1.77	*	5	7	1.40
5	3	3	1.00	*	6	11	1.83
6	14	6	0.43	*	2	2	1.00
7	9	2	0.22	*	5	3	0.60
9	16	17	1.06	*	21	7	0.33
10	11	6	0.55	*	16	4	0.25
11	27	35	1.30	*	2	2	1.00
14	10	7	0.70	*	35	32	0.91
15	22	21	0.95	*	18	0	0.00
16	19	21	1.11	*	15	0	0.00
17	7	9	1.29	*	16	8	0.50
18	19	11	0.58	*	11	5	0.45
19	19	2	0.11	*	14	1	0.07
20	7	19	2.71	*	17	30	1.76
21	12	0	0.00	*	20	0	0.00
22	7	9	1.29	*	24	54	2.25
23	9	8	0.89	*	9	6	0.67
24	14	14	1.00	*	6	3	0.50
25	14	17	1.21	*	15	3	0.20
26	14	9	0.64	*	9	6	0.67

(C) QUANTITY OF PREPOSITIONS PER SENTENCES/QUESTIONS USED IN FIRST VS. LAST SCENARIO

	# OF S/Q	# OF		*	# OF S/Q	# OF	
	FIRST	PREPO-	PREPS	*	LAST	PREPO-	PREPS
PART.	SCENARIO	SITIONS	PER S/Q	*	SCENARIO	SITIONS	PER S/Q
1	9	12	1.33	*	2	1	0.50
2	5	6	1.20	*	4	5	1.25
3	20	20	1.00	*	17	12	0.71
4	26	41	1.58	*	5	6	1.20
5	3	2	0.67	*	6	8	1.33
6	14	10	0.71	*	2	1	0.50
7	9	8	0.89	*	5	3	0.60
9	16	13	0.81	*	21	14	0.67
10	11	14	1.27	*	16	16	1.00
11	27	22	0.81	*	2	2	1.00
14	10	12	1.20	*	35	29	0.83
15	22	29	1.32	*	18	5	0.28
16	19	33	1.74	*	15	13	0.87
17	7	3	0.43	*	16	8	0.50
18	19	26	1.37	*	11	12	1.09
19	19	13	0.68	*	14	2	0.14
20	7	10	1.43	*	17	23	1.35
21	12	9	0.75	*	20	9	0.45
22	7	9	1.29	*	24	27	1.13
23	9	10	1.11	*	9	14	1.56
24	14	12	0.86	*	6	5	0.83
25	14	16	1.14	*	15	12	0.80
26	14	8	0.57	*	9	7	0.78

(D) QUANTITY OF SENTENCES/QUESTIONS USED IN SCENARIOS

PARTICIPANT AND SCENARIO ORDER	FIRST SCENARIO GIVEN	SECOND SCENARIO GIVEN	THIRD SCENARIO GIVEN	FOURTH SCENARIO GIVEN	TOTAL	AVERAGE
1.1432	9	19	19	2	49	12.25
2.4213	5	20	31	4	60	15.00
3.3241	20	14	6	17	57	14.25
4.4123	26	0	11	5	42	10.50
5.3412	3	5	6	6	20	5.00
6.4312	14	10	2	2	28	7.00
7.2134	9	8	8	5	30	7.50
9.2431	16	17	9	21	63	15.75
10.1234	11	13	0	16	40	10.00
11.3142	27	15	6	2	50	12.50
12.3421	23	23	12	(LOST)	58	19.33
14.4231	10	13	23	35	81	20.25
15.2314	22	7	15	18	62	15.50
16.4132	19	13	21	15	68	17.00
17.1342	7	2	14	16	39	9.75
18.1243	19	13	16	11	59	14.75
19.3214	19	8	10	14	51	12.75
20.2413	7	15	13	17	52	13.00
21.2143	12	5	2	20	39	9.75
22.1324	7	17	26	24	74	18.50
23.2341	9	4	11	9	33	8.25
24.1423	14	10	6	6	36	9.00
25.4321	14	8	5	15	42	10.50
26.3124	14	8	4	9	35	8.75
27.3421	21	19	7	0	47	11.75
TOTAL	322	259	272	280	1133	288.08
AVERAGE	27.71	21.08	21.04	24.48	93.29	23.73

(E) AVERAGE NUMBER OF SENTENCES/QUESTIONS PER SCENARIO WITH MINIMUM CRITERIA APPLIED

	SCENARIOS					
PART.	# 1	# 2	# 3	# 4	TOTAL	AVERAGE
1	9	2	19	19	49	12.25
2	31	20	4	5	60	15
3	17	14	20	6	57	14.25
4	0	11	5	26	42	14*
5	6	6	3	5	20	5
6	2	2	10	14	28	7
7	8	9	8	5	30	7.5
9	21	16	9	17	63	15.75
10	11	13	0	16	40	13.33*
11	15	2	27	6	50	12.5
12	0	12	23	23	58	19.33*
14	35	13	23	10	81	20.25
15	15	7	7	18	47	11.75
16	13	15	21	19	68	17
17	7	16	2	14	39	9.75
18	19	13	11	16	59	14.75
19	10	8	19	14	51	12.75
20	13	7	17	15	52	13
21	5	12	20	2	39	9.75
22	7	26	17	24	74	18.5
23	9	9	4	11	33	8.25
24	14	6	6	10	36	9
25	15	5	8	14	42	10.5
26	8	4	14	9	35	8.75
27	0	7	21	20	48	16*
TOTAL	290	255	318	338	1201	253.25
DELETE PARTICIPANTS						
4/10/12/27	279	212	269	258	1002	191.84
AVG. OF 21						
PARTICIPANTS	13.28	10.1	12.8	12.29	47.71	9.14

APPENDIX J

SENTENCES USED FOR SYNTAX DISCUSSION

SCENARIO 1 PHRASES FOR CASREP

Request, a ah, request any CASREPs on Reeves.
C Q S
CASREP on Worden.
Q S
What are the other CASREPs the Worden has?
C Q S
What are the other outstanding CASREPs on Worden?
C Q S
OK what is ETR on the CASREP?
C Q Q
List the CASREP status of Halsey.
C Q S
Report, ah, reason for SPS forty-eight CASREP.
C D Q
Read the CASREP description.
C Q
What,ah, what's the nature of the CASREP?
C Q
I need the specifics on the M three AAW CASREP.
C D Q
Will request CASREP data then, ah, on ETR on the radar.
C Q Q D
Could you list CASREP dates, descriptions, and ETRs on any radar for
C Q D D Q Q
the Copeland?
S
Ah, description Worden EQP CASREP.
Q S Q

SCENARIO 2 PHRASES FOR SPEED

Ah, do you have a transit speed for these,ah, vessels?
C Q S
What is the max speed available for the Chandler right now?
C Q S
What speed can Chandler make?
C Q S
Ah max speed of the Chandler.
Q S
What is Chandler's max speed?
C S Q
What is the maximum speed of the Chandler?
C Q S

What is ah, what is Chandler's maximum sustained speed?
C S Q
What is Chandler's available speed?
C S Q
Report maximum sustained speed for Callahan.
C Q S
What is her maximum speed available?
C S Q
The Chandler's CASREP, does it have a maximum speed available?
S Q Q
Understand M three on mobility, ah, update maximum sustained speed.
C Q
What is the max speed available for the Chandler?
C Q S
List max sustained speed for the Chandler.
C Q S
Does she have a max speed available given?
C S Q

SCENARIO 3 PHRASES FOR LOCATION OF MCCLUSKY

OK, where is McClusky?
C S
Where is the McClusky?
C S
Where is McClusky located?
C S Q
Where is the McClusky located?
C S Q
What's the location of McClusky?
C Q S
Location.
Q
Location FFG class ships.
Q D S
Location on the McClusky.
Q S
Location of the McClusky and Thach.
Q S S
And McClusky.
S
And the geo position of McClusky.
Q S
Ships in the area of sixteen, ah, north, one fourteen east.
S Q
Give me position report on McClusky.
C Q S

List all ships in Indian Ocean and Western Pacific.
C S D D
Report present location of McClusky.
C Q S
List ships, ah, near the following coordinates sixteen north, one
C S Q
fourteen west.

I need the current location of the McClusky.
C Q S

SCENARIO 4 PHRASES FOR HELO/LAMPS CAPABILITIES/ASSETS

Request, ah units in PAC fleet with LAMPS capability.
C Q D
Does the, ah, Constellation, ah, currently handle or have any LAMPS
C S
helos on board?
Q
Number of helos aboard Brewton at this time.
Q S
Of those ships, list ah, the ones with helicopter capabilities.
C S Q
What are the capabilities of ah the USS Constellation as for as ah
C S
helicopters are concerned?
Q
List O'Brien's capabilities helos first.
C S Q
What LAMPS helos are in the database?
C Q
LAMPS capability on the carrier.
D S
OK what are ah helo capabilites of Kinkaid?
C Q S
What are the helo capabilites of the Fox?
C Q S
How many operational LAMPS are in Pearl Harbor?
C D Q
State Merrills's helo capabilites.
C S Q
Does ah the Brewton only, how many helicopters, LAMPS helicopters,
S Q Q
does the Brewton carry?

Name the number of SH three helicopters she has on board.
C Q S

Type helicopters available on Constellation.

```
          Q                    S
Ah, Brewton helicopter.
       S       Q
I need the names of ships that have LAMPS helicopter capabilites.
   C                 S                    Q
What are the helicopters embarked aboard the Constellation?
    C            Q                          S
Capabilities of Buchannan specifically if it has LAMPS embarked.
                 S                          D
Just give me the helicopter capabilities of the Fox.
       C            Q                    S
What are the assets, helicopter assets, of the Constellation?
    C                 Q                       S
What helo capabilites are on board the Constellation?
    C  Q                                  S
How many LAMPS ah, helos are on board Brewton?
  C                    Q                  S
```

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