

AD-A190 910

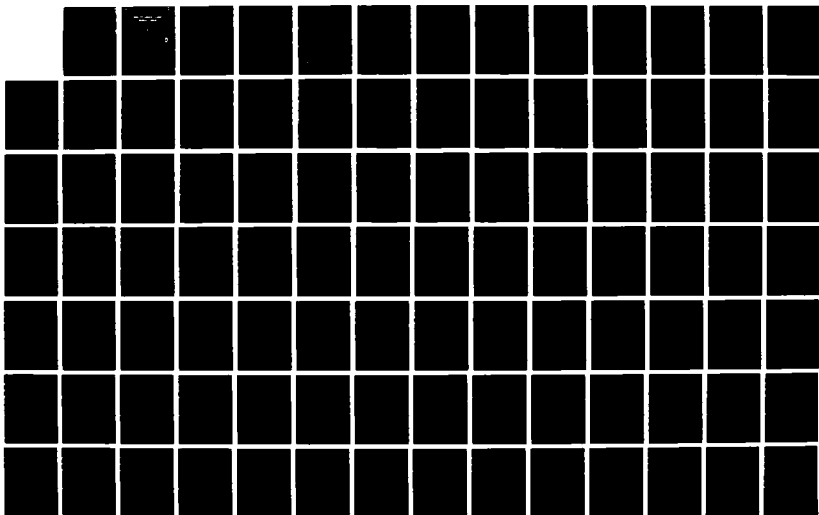
UNITED STATES NAVAL HOSPITAL SHIP PROGRAM: HISTORY
EVOLUTION AND CONFIGURATION MANAGEMENT(U) NAVAL
POSTGRADUATE SCHOOL MONTEREY CA W H ROBERTS DEC 87

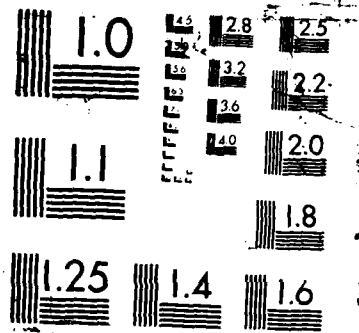
1/3

UNCLASSIFIED

F/G 6/12

NL





AD-A190 918

NAVAL POSTGRADUATE SCHOOL Monterey, California



THESIS

DTIC
ELECTE
MAR 31 1988
S E D

UNITED STATES NAVAL HOSPITAL SHIP
PROGRAM: HISTORY, EVOLUTION, AND
CONFIGURATION MANAGEMENT

by

William Hadyn Roberts, Jr.

December 1987

Thesis Advisor: Advisor: David R. Whipple

Approved for public release; distribution is unlimited.

88 3 30 042

A190 918

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			5. MONITORING ORGANIZATION REPORT NUMBER(S)	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			7a. NAME OF MONITORING ORGANIZATION Naval Postgraduate School	
6a. NAME OF PERFORMING ORGANIZATION Naval Postgraduate School		6b. OFFICE SYMBOL (If applicable) Code 54	7b. ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000	
8a. NAME OF FUNDING SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code) Monterey, California 93943-5000		10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. PROJECT NO. TASK NO. WORK UNIT ACCESSION NO.		
11. TITLE (Include Security Classification) UNITED STATES NAVAL HOSPITAL SHIP PROGRAM: HISTORY, EVOLUTION, AND CONFIGURATION MANAGEMENT				
12. PERSONAL AUTHOR(S) Roberts, Jr., William H.				
13a. TYPE OF REPORT Master's Thesis	13b. TIME COVERED FROM TO	14. DATE OF REPORT (Year, Month, Day) 1987 December	15. PAGE COUNT 225	
16. SUPPLEMENTARY NOTATION				
17. COSATI CODES FIELD GROUP SUB-GROUP			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) Hospital Ship, Configuration Management (CM), Technical-Political-Cultural (TPC) Theory	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This thesis presents an analysis of past and present American and International hospital ships with the goal of categorizing Technical, Political and Cultural (TPC) influences. The theoretical framework for such an effort is the TPC Theory advocated by Noel M. Tichy. Configuration Management (CM) is offered to the reader as a unique managerial and integrative mechanism for controlling, coordinating and implementing TPC influences in a Department of Defense system such as the 1980's hospital ship project. The author concludes that a successful merging of TPC Theory and Configuration Management is a possible and desired result. Recommendations include utilizing the TPC/CM ideas in future Naval Medical Command systems and specific recommendations for managing TPC influences in future hospital ship projects.				
20. DISTRIBUTION AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL David R. Whipple			22b. TELEPHONE (Include Area Code) 408-646-2161	22c. OFFICE SYMBOL 54Wp

Approved for public release; distribution is unlimited

United States Naval Hospital Ship Program: History,
Evolution, and Configuration Management

by

William Hadyn Roberts, Jr.
Lieutenant, Medical Service Corps, United States Navy
A.A., Atlantic Community College, 1977
B.S., Jacksonville University, 1979
M.B.A., Augusta College, School of Business, 1981

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
December 1987

Author:

William Hadyn Roberts, Jr.
William Hadyn Roberts, Jr.

Approved by:

David R. Whipple
David R. Whipple, Thesis Advisor

Benjamin J. Roberts
Benjamin J. Roberts, Second Reader

David R. Whipple
David R. Whipple, Chairman, Department of
Administrative Sciences

James M. Fremgen
James M. Fremgen, Acting Dean of
Information and Policy Sciences

ABSTRACT

This thesis presents an analysis of past and present American and International hospital ships with the goal of categorizing Technical, Political and Cultural (TPC) influences. The theoretical framework for such an effort is the TPC Theory advocated by Noel M. Tichy. Configuration Management (CM) is offered to the reader as a unique managerial and integrative mechanism for controlling, coordinating and implementing TPC influences in a Department of Defense system such as the 1980's hospital ship project. The author concludes that a successful merging of TPC Theory and Configuration Management is a possible and desired result. Recommendations include utilizing the TPC/CM ideas in future Naval Medical Command systems and specific recommendations for managing TPC influences in future hospital ship projects.

Accession For	
NTIS GRA&I	☒
DTIC TAB	☐
Unannounced	☐
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	6



TABLE OF CONTENTS

I.	INTRODUCTION-----	9
A.	BACKGROUND-----	9
B.	THE TECHNICAL, POLITICAL, CULTURAL (TPC) THEORY-----	10
C.	OBJECTIVES OF THE RESEARCH-----	12
D.	RESEARCH METHODOLOGY-----	13
E.	SCOPE AND LIMITATIONS-----	14
F.	THESIS CHAPTER SUMMARY-----	15
II.	HISTORICAL EVOLUTION OF UNITED STATES HOSPITAL SHIPS-----	17
A.	INTRODUCTION-----	17
B.	PRE-CIVIL WAR-----	17
C.	CIVIL WAR, 1860-1865-----	18
D.	SPANISH-AMERICAN WAR, 1898-1899-----	18
E.	WORLD WAR I, 1914-1918-----	19
F.	POST-WWI/PRE-WWII, 1919-1940-----	20
G.	WORLD WAR II, 1941-1945-----	21
H.	POST WORLD WAR II, KOREAN WAR AND VIETNAM WAR, 1945-1976-----	23
I.	PROJECT HOPE-----	25
J.	LIFE INTERNATIONAL-----	26
K.	MERCY SHIPS-----	29
L.	NEW YORK CITY'S FLOATING HOSPITAL-----	31
M.	SUMMARY-----	31

III.	INTERNATIONAL 'HOSPITAL SHIP'/MEDICAL TREATMENT FACILITY CONFIGURATIONS-----	33
A.	INTRODUCTION-----	33
B.	MICRONESIA/U. S. TRUST TERRITORY-----	33
C.	ASIA-----	35
D.	PHILIPPINES-----	37
E.	BRAZIL-----	38
F.	ARGENTINA-----	40
G.	UNITED KINGDOM-----	41
H.	EUROPEAN FISHING FLEETS-----	46
I.	TUBERCULOSIS HOSPITAL SHIPS-----	47
J.	USSR-----	48
K.	TPC ASPECTS OF HOSPITAL SHIP CONVERSION-----	49
L.	SUMMARY-----	51
IV.	HISTORICAL EVOLUTION OF THE 1980'S HOSPITAL SHIP PROGRAM-----	53
A.	INTRODUCTION-----	53
B.	TECHNICAL ASPECTS OF THE HOSPITAL SHIP PROJECT-----	53
C.	POLITICAL ASPECTS OF THE HOSPITAL SHIP PROJECT-----	55
D.	CULTURAL ASPECTS OF THE HOSPITAL SHIP PROJECT-----	56
E.	PROJECT INITIATION TPC INFLUENCES-----	58
F.	POLITICAL INFLUENCES-----	61
G.	TECHNICAL INFLUENCES-----	62
H.	TPC INTEGRATING MECHANISMS-----	64
I.	POLITICAL INFLUENCES IN THE CONTRACTING PROCESS-----	67

J.	TECHNICAL INFLUENCES IN THE CONTRACTING PROCESS-----	68
K.	POLITICAL INFLUENCES IN THE CONTRACT AWARD---	69
L.	PRODUCTION TPC INFLUENCES-----	70
M.	MILITARY SEALIFT COMMAND AS A TECHNICAL INFLUENCE-----	71
N.	SUPSHIP SAN DIEGO AS AN INTEGRATING MECHANISM-----	75
O.	THE PROJECT MANAGEMENT OFFICE AS A INTEGRATING MECHANISM-----	76
P.	THE MEDICAL CONSTRUCTION OFFICE AS A TECHNICAL INFLUENCE-----	77
Q.	THE NAVAL MEDICAL MATERIAL SUPPORT COMMAND AS A TECHNICAL INFLUENCE-----	79
R.	DEPLOYMENT PHASE TPC INFLUENCES-----	80
S.	NAVAL MEDICAL COMMAND TPC INFLUENCES-----	83
T.	SUMMARY-----	85
V.	CONFIGURATION MANAGEMENT AND TPC THEORY IN THE HOSPITAL SHIP PROGRAM-----	86
A.	INTRODUCTION-----	86
B.	CONFIGURATION MANAGEMENT AND TPC CHANGE LEVERS-----	86
C.	CONFIGURATION MANAGEMENT DEFINITIONS-----	87
D.	CONFIGURATION MANAGEMENT HISTORY-----	90
E.	CONFIGURATION MANAGEMENT POLICY-----	92
F.	THE ROLE OF CONFIGURATION MANAGEMENT-----	94
G.	CONFIGURATION MANAGEMENT MEDICAL ENVIRONMENT-----	98
H.	TIMING OF CONFIGURATION MANAGEMENT CHANGES-----	101

I.	SEA TRIALS AND THE MILITARY SEALIFT COMMAND IN THE CONFIGURATION MANAGEMENT PROCESS-----	102
J.	CONFIGURATION MANAGEMENT DOCUMENTATION-----	105
K.	CURRICULUM OF REQUIREMENTS (COR)-----	109
L.	CONFIGURATION CONTROL BOARD-----	112
M.	PROGRAM MANAGER PROPOSAL-----	113
N.	EXAMPLE OF A MEDICAL PMP-----	117
O.	SIMA-SHORE INTERMEDIATE MAINTENANCE FACILITY-----	122
P.	SUMMARY-----	126
VI.	CONCLUSIONS AND RECOMMENDATIONS-----	129
A.	CONCLUSION-----	129
B.	RECOMMENDATIONS-----	131
	APPENDIX A-----	134
	APPENDIX B-----	144
	APPENDIX C-----	151
	APPENDIX D-----	209
	LIST OF REFERENCES-----	218
	INITIAL DISTRIBUTION LIST-----	224

ACKNOWLEDGEMENT

I would like to acknowledge the assistance of the following individuals in researching this thesis: Mr. Jack Cameron - Assistant Project Manager - NAVSEASYSCOM, Mr. Joe Dollar - Program Engineer - NAVSEASYSCOM, and LT Doug Faulls, MSC, USN - Operations Officer - USNS COMFORT. In the actual writing of the thesis, I would like to thank Dr. David Whipple and Dr. Benjamin Roberts, Administrative Sciences Department, Naval Postgraduate School. I also owe a great debt of gratitude to my fiancée, LT Janet Fujikawa, MC, USNR, for her continuing moral support over the 18-month academic program.

I. INTRODUCTION

A. BACKGROUND

The main theme running through this thesis is evolution and the management of change. The author is primarily interested in the evolution of past and present American hospital ships. This interest is expressed in comparing the changes that have occurred over the years in the choice of ship configuration, and the changes in the onboard medical treatment facility (MTF).

But the evolution of any system, and the management of change in that system, does not occur in a vacuum. It is the author's contention that hospital ships are affected by unique Technical, Political and Cultural (TPC) influences that are expressed in the final choice of hospital ship configuration and MTF configuration. Many times one of these TPC influences is the dominant one, usually there are three involved in a decision for change and are difficult to separate.

It is not enough to know that systems evolve and are subject to TPC influences that affect changes made to the system. Managers, particularly health care managers, have a reason and need to know how to manage these TPC systems in a system under construction, or in the end product being deployed. One useful tool is Configuration Management (CM)

which is a DOD wide procedure for administering and documenting changes to a system.

It is more than just a collection of manuals in contract administration. CM, properly constructed, can serve as a unique vehicle for managing the competing TPC systems in a health care system and is especially appropriate for a deployed hospital ship.

B. THE TECHNICAL, POLITICAL, CULTURAL (TPC) THEORY

The TPC Theory was formulated by Noel M. Tichy in his book Managing Strategic Change - Technical, Political, and Cultural Dynamics [Ref. 1]. The author of this thesis chose this particular theory as a model to categorize the various pressures within the 1980's hospital ship project for two reasons. The first reason is the TPC Theory was derived directly from Tichy's involvement in various health care systems in the United States. Second is the author's belief that the TPC Model will have an intuitive appeal to the working health care manager, and layman, alike.

The model's foundation is composed of three distinct yet interrelated and interdependent [Ref. 1:p. 10] change management foci in a health care endeavor such as the hospital ship project: (1) the technical aspects of work, (2) power, and (3) values. Tichy uses the analogy of the strands of a 'strategic rope' [Ref. 1:p. 11] where the comparable strands match the foci in the technical strand,

political strand and cultural strand. Tichy states in his preface that:

It should be made clear that TPC theory is not a formal theory. It is a meta-theory, a framework for working with organizational problems, . . . it is, hopefully, a pragmatic tool as well as a conceptual framework for conducting research and building a body of knowledge in the field of change. Theories are intellectual tools for organizing data in such a way that one can make inferences on logical transitions from one set of data to another; they serve as guides to the investigation, explanation, organization, and discovery of matters of observable fact (Deutsch and Krauss). Even though TPC theory generally meets these criteria, it is not explicit enough about its assumptions, the mode of logical inference and the empirical referents are not worked out; and there is no ability to unambiguously test the theory's implications. As a theoretical orientation, however, I hope it will stimulate work that will move it from a meta-theory to a more formal theory. [Ref. 1:p. 9]

The above quote points out some of the strengths as well as weaknesses of the TPC theory. It not only provides a theoretical orientation for this thesis but it also provides a framework to categorize the Technical, Political and Cultural pressures throughout the life history of the hospital ship project. The TPC theory aids in tracing the evolution of hospital ship configurations, American and foreign, past and present, by categorizing all pressures and configuration changes into one of three areas.

The practicing health care manager will gain a new awareness of how organizational processes work through and around him or her by identifying the TPC influences. Perhaps the single greatest benefit of the orientation the TPC theory provides is in the area of change management. The day to day

manager will become aware that no change in any of these areas will be successful unless the other two systems are considered. Tichy's book provides a multitude of practical change mechanisms all of which are beyond the scope of this thesis. Common to all these mechanisms and of interest to the pragmatic health care manager, is the first step - one must correctly identify and categorize the influences and associated changes into one of the three TPC systems before change management can occur.

Later in this thesis the role of configuration management is explored as a practical change mechanism for the pragmatic manager to utilize. It is not mentioned in Tichy's book, and most of the current literature on Configuration Management (CM) focuses on the clerical, administrative and technical aspects of Configuration Management documentation. It is the author's view that the Configuration Management procedures and philosophy can be successfully merged with the TPC theory to provide a useful change mechanism within the confines of Department of Defense regulations.

C. OBJECTIVES OF THE RESEARCH

This thesis strives to reach a number of research objectives. Each objective is judged equally important by the author because there is a need for information in each area. The following list sums up the identified research objectives:

1. To provide a concise history of the U. S. Navy's Hospital Ship Program, from the needs assessments of the late 1970's to project completion of two hospital ships in 1986 and 1987.
2. To trace and compare the evolution of American hospital ship configuration from the Civil War to the present.
3. To compare present-day hospital ship/clinic ship configurations in the international community.
4. To outline the Technical, Political and Cultural Theory (TPC) as a model to categorize the various internal and external pressures present in the 1980's hospital ship project.
5. To survey the field of Configuration Management and its methodology as a unique vehicle for communicating and balancing the TPC influences among interested parties.
6. To categorize the concrete configuration changes of the USNS Mercy and USNS Comfort in terms of Configuration Management documentation, and the associated dollar cost of these changes.
7. To draw conclusions and recommendations from the roles of Configuration Management and the TPC model in present and future construction of hospital ships.
8. To provide a bibliography of references on hospital ships and configuration management.

D. RESEARCH METHODOLOGY

This research effort consisted of two separate approaches: (1) on-site visits to the Hospital Ship Project Manager Office, Naval Sea Systems Command, Washington, D. C. and the Supervisor of Shipbuilding (SUPSHIP)/USNS COMFORT Cadre Crew Office, San Diego. Extensive personal interviews and research through office documents were conducted; and (2) extensive literature searches through the standard and

military indexes as well as computer searches through DTIC, MEDLARS/MEDLINE and ARLEN.

E. SCOPE AND LIMITATIONS

The scope of the thesis in regards to hospital ships is limited to those floating platforms which have as their primary mission the provision of some type of health care. The scope of the thesis in researching the field of configuration management was limited to those aspects of CM which are the approval mechanisms and processes which manage change. The thesis does not address the intricate technical and administrative details of CM processes, accounting audits and procedures for documenting CM changes.

Limitations in the research interviews primarily involve the reluctance of civilian and military personnel to 'speak on the record' concerning specific changes made in the 1980's hospital ship project and what specific technical, political or cultural influence was the impetus for the implemented change. The literature search on the general topic of hospital ships was primarily hampered by the lack of time to obtain them. The topic has not been written about extensively. Many articles are in overseas journals and only in a foreign language. Domestic sources of literative searches were limited by computerized data bases going back only as far as the late 1960's. Manual indexes and

college/university libraries within reasonable commuting distance of the Monterey Peninsula were also utilized.

F. THESIS CHAPTER SUMMARY

The first chapter briefly introduces the reader to the hospital ship concept, the Technical, Political, Cultural Theory, the nature of change and evolution in hospital ships, the nature of configuration management as a change mechanism, and the cost aspect of all implemented changes.

In Chapter II the author traces the evolution of hospital ship configuration with commentary on the TPC influences in each time period. Historical summaries are kept to a minimum.

Present day international hospital ship configurations and onboard medical treatment facility configurations are covered in Chapter III. Historical summaries are kept to a minimum and TPC influences are also commented on when appropriate.

The history and evolution of the 1980's hospital ship program is discussed in Chapter IV. A detailed history of the project complete with TPC influences is given from project initiation through deployment of the USNS MERCY.

Configuration Management (CM) is covered in Chapter V. Several definitions, the role of CM in the hospital ship project and specific examples of documented CM changes are

given. The CM process as a TPC integrating mechanism is also discussed.

Chapter VI presents the author's summary and conclusions and makes some recommendations for future consideration.

II. HISTORICAL EVOLUTION OF UNITED STATES HOSPITAL SHIPS

A. INTRODUCTION

This chapter will trace the evolution of American hospital ship configurations, and onboard medical treatment facility configurations throughout United States history. Where possible the various technical, political and cultural influences of the specific time period will be commented on, along with their effect on the particular hospital ship under construction.

B. PRE-CIVIL WAR

There were no American hospital ships prior to 1860. There was a tradition of Spanish, French and British hospital ships dating back to the Spanish Armada fleet (1587-1588) which included fifteen galleons designated to carry only the sick and wounded. In the innumerable wars between these three great European seapowers, there were designated sailing ships, of various configurations and minimal medical facilities, to carry home the sick and wounded [Ref. 2:pp. 1-15].

The Americans may have used sailing vessels primarily for carrying sick and wounded men but none have been recorded. During the War of 1812 a British hospital ship, the HMHS GORGEN accompanied the British expedition to the United

States. No details were available [Ref. 2:p. 16] on the ship configuration or medical treatment facilities.

C. CIVIL WAR, 1860-1865

The American use of hospital ships began with floating barges that served as make-shift hospitals near battles fought by large inland rivers. In 1862 the Union army captured a large Mississippi river side-wheeler from the Confederates at New Orleans. In that same year the steam propelled, wooden ship was transferred to the Western Gunboat Flotilla and was commissioned the RED ROVER on December 26, 1862. The ship weighed 786 tons and had holds that could carry three hundred tons of ice and two month's supply of food and medical needs. The ship's crew complement was twelve officers and thirty-five enlisted personnel. The medical treatment facility included seventy medical personnel--doctors and orderlies. One quote described her:

as the most capable thing of its kind ever floated . . . gauze blinds at the windows to keep the cinders and smoke from annoying the sick . . . two water closets on every deck, an elevator and special amputating rooms. [Ref. 3:p. 16]

The RED ROVER could treat up to two hundred patients at a time.

D. SPANISH-AMERICAN WAR, 1898-1899

The (first) USS RELIEF was used by the United States Army as a floating ambulance. The ship's medical treatment facility had 195 beds. The technical medical innovations of

that time: "included a 30-cot, insect-proof isolation ward and two padded cells." [Ref. 3:p. 18]

The other hospital ship used during this war was the USS SOLACE (AH-2). The ship configuration was that of a 377 foot passenger steamer. After the war the ship's configuration was modified in 1909 at Charleston, SC. As stated in one source [Ref. 3 :p. 17] at Charleston the superstructure was enlarged, but then SOLACE tended to roll too much to carry patients comfortably. To counteract this, the superstructure height was reduced and, according to one account, 200 Civil War cannon were embedded in concrete in the hull, making SOLACE, a hospital ship, the most heavily gunned (ship) in the Navy. This might be thought amusing until one remembers that both the USNS MERCY and COMFORT have water ballast in their holds making up almost half of the ship's weight. It has been said by the crew of the MERCY that if the ship were torpedoed, (15 allied hospital ships were in World War I) more water would flow out than would flow in.

One interesting note on the medical treatment facility configuration of the SOLACE is that she was the first U. S. Navy ship to fly the Red Cross flag, a "cultural" influence.

E. WORLD WAR I, 1914-1918

Three American hospital ships were used after World War I. They were the USS COMFORT (AH-3), USS MERCY (AH-4) and USS SOLACE (AH-5). The ships were small, steam powered

passenger liners. The medical treatment facility had 250 beds in each ship. The political and cultural influences of that time period were such that: "hospital ships had been viewed essentially as transports for casualties, converted liners or cargo ships designed to get the wounded out of the combat zone and back to a hospital ashore" [Ref. 3:p. 18]

F. POST-WWI/PRE-WWII, 1918-1940

The first U. S. Navy ship originally designed and built as a hospital ship was the (second) USS RELIEF (AH-1). She was commissioned on December 28, 1920, served through the inter-war period, and all through World War II. The RELIEF was 438 feet long and weighed 10,112 tons. She was considered the most sophisticated Navy medical facility afloat. The medical treatment facility configuration included 44 medical officer, 331 corpsmen and space for 500 patients. The ship " . . . offered all the facilities of a shore-based hospital, including specialists in different branches of medicine" [Ref. 3:p. 19]

The political influence of the time was such that additional hospital ships were not built. Technical influences took a backseat during this time period.

One critic wrote in favor of building hospital ships from the keel up, rather than converting existing vessels,

Above all other things, the fleet hospital ship should be a vessel designed and built for that specific purpose. . . . a house or a factory on shore, made over into a hospital.

would by no means be expected to approach the ideal. [Ref. 3:p. 18]

Johnson (R. ADM . . . MC) made several recommendations to improve hospital ship constructions. Among them: that the ships displace about 10,000 tons:

a convenient size, large enough to house a hospital, yet small enough to navigate in cramped harbors; that they are fast enough steam with battle groups; and that they be able to darken ship without detracting from the care given to patients. [Ref. 3:p. 19]

It is interesting to note the TPC conflict between those who wish to build new construction hospital ships from the keel up, and those who wish to convert existing vessels. Usually the political influence has 'won out' due to emergent needs of armed conflict. But even in the 1980's hospital ship project this conflict was reflected in various studies on the need for new hospital ships, and reflected in the Request for Proposals (RFP's) submitted by potential hospital ship offerors. The final result of the TPC dilemma was a compromise--large supertanker hulls almost completely gutted, and then rebuilt in a hospital ship configuration.

3. WORLD WAR II, 1941-1945

There were twelve American hospital ships used during World War II. The USS BELIEF (AH-1) has already been described. (The USS SOLACE (AH-2), USS COMFORT (AH-3) and USS MERCY (AH-4) were decommissioned during the inter-war period and although these ship names were used again--the original ships were not).

The (second) USS SOLACE (AH-5) was an 8,900-ton converted passenger liner. She was commissioned August 9, 1941 and treated casualties during the Pearl Harbor attack. The (second) USS COMFORT (AH-6) and the (second) USS MERCY (AH-8) were also converted passenger liners. Both were commissioned in the summer of 1944. No information was found on the USS HOPE (AH-7) as to ship configuration.

The USS BOUNTIFUL (AH-9) ship configuration was that of a World War I marine transport that was converted, and then commissioned as a hospital ship on March 23, 1944. The USS SAMARITAN (AH-10) ship configuration was initially a military transport ship (the USS CHAUMONT) before commissioned as a hospital ship on May 24, 1944.

More information than usual was available on the USS REFUGE (AH-11). Her basic ship configuration was also that of a military transport (the USS KENMORE). She was 544 feet long and had 14,000 tons displacement. The following quote is typical of hospital ships converted from military transports:

One significant construction (or conversion feature) was the building of cargo ports (for embarking and debarking patients) on each side of the second deck opposite the elevator, with a lobby connecting the cargo ports with the elevator and with the passageways to the wards. This facilitated patient loading since half the hospital beds were on the second deck and the elevator was required only for the litter patients on the third deck and in Sick Officers Quarters. The conversion process also involved extensive repairs of decks, laundry spaces, and other areas to meet medical needs. This was accomplished at the Maryland Dry Dock Company shipyard in Baltimore. A patch-work job of conversion first proposed was finally

replaced by a thorough rebuilding of the ship. An Optical Lens Unit was installed and several motor launch life boats and life rafts; comprehensive equipment for a first class hospital was obtained and placed aboard the converted vessel. With Red Cross help, large quantities of surgical dressings were procured. [Ref. 4:pp. 38-39]

The medical treatment facility configuration aboard these ships was 630 beds with a 72 cot mobile field hospital. The medical personnel consisted of 29 medical officers, 27 Navy nurses and "many" hospital corpsmen.

The last of the 'early' World War II hospital ships was the USS RESCUE (AH-18). Her ship configuration was of a passenger liner before converted and commissioned as a hospital ship on May 7, 1941. Her medical treatment facility configuration was initially that of an ambulance transport for dock loading only. Later she was equipped with an electric hoist for litter patients. The MTF bed capacity was 776 beds. The medical complement was 11 medical, 1 dental and 4 hospital corps officers, 25 nurses and 164 enlisted corpsmen.

H. POST WORLD WAR II, KOREAN WAR AND VIETNAM WAR 1945-1976

The last six hospital ships that served from 1945, to the last one decommissioned in 1976, were "Haven" class hospital ships. The basic ship configuration was 520 feet by 71.5 feet by 22 feet. The displacement in tons was 11,141 standard and 15,500 full load. The main engines were General Electric steam turbines with 1 shaft of 1,000 shaft horse power and 18 knots speed. [Ref. 5:p. 761]

The hospital ships in this class were:

<u>USS HAVEN</u> (AH-12)	-	Commissioned May 5, 1945
<u>USS BENEVOLENCE</u> (AH-13)	-	Commissioned May 18, 1945
<u>USS TRANQUILITY</u> (AH-14)	-	Commissioned April 24, 1945
<u>USS CONSOLATION</u> (AH-15)	-	Commissioned May 22, 1945
<u>USS REPOSE</u> (AH-16)	-	Commissioned June 2, 1945
<u>USS SANCTUARY</u> (AH-17)	-	Commissioned June 20, 1945

Each ship had a complete hospital with operating rooms, wards and ancillary services. Each ship's crew complement had 67 officers and 420 enlisted men. The MTF personnel was composed of 45 officers and 120 enlisted men. The USS CONSOLATION (AH-15), the USS REPOSE (AH-16) and the USS HAVEN (AH-12) were used during the Korean War. The TPC system during the Korean War is evident in the following excerpt:

All three ships were anchored offshore at Inchon for a considerable period of time and used as floating base hospitals. Together they provided complete, definitive, surgical and medical care and approximately 2,500 beds for combat troops within a relatively short distance from the battlelines. This close support was possible because the United Nations forces controlled the sea and airways. Such close support had not been possible during most of World War II owing to the danger of enemy air or naval attack. After the fighting in northern Korea became heavy, the hospital ships served mostly on the east coast of Korea as floating hospitals and to take casualties to Japan. The most important event at that time was the development and installation of helicopter landing platforms on the sterns of the ships. This enabled the helicopter ambulance to pick up wounded men from near the battlelines and deposit them aboard a modern floating hospital almost within sight and sound of enemy guns, sometimes in less than 20-30 minutes. For the first time in the history of warfare battle casualties could receive definitive medical and surgical care in a matter of minutes after being stricken. The hospital ship with the landing platform, first suggested in the battle area by

Vice Admiral Joel T. Boone, MC, USN made this possible.
[Ref. 4:p. 431]

During the Vietnam War the USS REPOSE (AH-16) and the USS SANCTUARY (AH-17) were used in much the same manner as expressed in the above excerpt. Both these ships were decommissioned near the end of the war. There were no active duty hospital ships until the USNS MERCY (T-AH-14) and USNS COMFORT (T-AH-20) were constructed in the late 1980's. Appendix A lists the specific ship configurations and medical treatment facility configurations of these two ships. A photograph and drawings are also provided of these ships. A specific history of these ships, along with their TPC influences, is provided in Chapter IV.

I. PROJECT HOPE

One of the best known hospital ships, at least to the American people, is the SS HOPE. In 1959 a non-profit organization called the People to People Health Foundation persuaded President Eisenhower to release from the "mothball fleet" the USS CONSOLATION (AH-15)--one of the Haven Class hospital ships used in World War II and the Korean War. The following excerpt shows the TPC influences during the initial outfitting of Project Hope:

The CONSOLATION will be a great floating hospital center--a medical school, a training and treatment center, a base for medical, nursing, and sanitation teams, and the logistic center for medical aid, health, and exchange programs. It will be a tangible evidence of American friendship and understanding. The great 800-bed hospital was constructed during World War II and was service in

that war and the Korean conflict. Its equipment includes ample hospital beds, and space which can be used as class and demonstration rooms, operating rooms, and laboratories. It has quarters for the personnel and crew needed to staff and operate the ship, and only some new equipment from private sources is needed to make it completely modern and able to provide a broad training base. [Ref. 6:p. 414]

The medical treatment facility configuration of this type of ship has already been described. The medical complement described by one source is:

The permanent medical staff aboard will include 10 physicians, experts in various fields of medicine and surgery, about 20 graduate nurses, technicians, and practical nurses, and 10 to 15 epidemiologic, nutrituional, sanitation, and public health mobile groups. The remainder of personnel will be volunteer units of specialists who will serve three-month tours. They will be selected by a committee representing American medical colleges. [Ref. 7:p. 28]

Project Hope sailed from 1959 to 1972, visiting over fifteen different countries over that time period. The ship was eventually scrapped as too cost inefficient and Project Hope went to flying teams of medical specialists and supplies to needed areas.

J. LIFE INTERNATIONAL

Life International is a non-profit organization "dedicated to providing medical care and training and other humanitarian services to the people of less developed countries (LDC's). [Ref. 8:p. 2]. The purpose of H. R. 406 is to amend Public Law 97-360 to extend the expiration date for Life International to remove up to three ships from the

National Defense Reserve Fleet (NDRF) for conversion to hospital ships along the lines of the SS HOPE.

Among the candidates mentioned for conversion in this legislation is the USS SANCTUARY (AH-17) which is still "retained in the inactive fleet as a contingency until new construction ships are completed." [Ref. 9:p. 6] This ship is the surviving sister of the Haven Class hospital ships. If reactivated she will be the last of the old style hospital ships. The prospect for this appears doubtful due to the inability of Life International to raise \$100,000 a year, much less the \$10 million needed to retrofit even one ship.

The bill passed the House of Representatives and was sent to the U. S. Senate for consideration. Opponents of the bill objected to the Federal Government providing two-thirds of the retrofitting cost, others opposed it on deficit reduction reasons, still others opposed it because they thought the eventual goal of Life International was total funding of the project.

In an interesting turnabout in TPC influences the Project Hope organization turned out to be a major opponent. The various reasons Project Hope listed against the Life International ship or ships are stated below:

1. The cost of repair and refitting of ships of this vintage for the purpose outlined are beyond reason. Inflation and age take a drastic toll.
2. If repaired and refitted, the maintenance and constant repair required of ships of this age is

2. If repaired and refitted, the maintenance and constant repair required of ships of this age is arbitrary. We know, we have been there. Spare parts are lacking and frequently must be fabricated adding to expense.
3. The cost of fuel--which is required in considerable amount even in port, is still arbitrarily expensive. Keep in mind, when we last sailed the SS HOPE, fuel was only \$1.80 per barrel.
4. Such vessels cannot be manned by volunteer crews. Unemployment in the maritime industry is at an all time high. American union seamen, although the most efficient in the world, are also the highest paid.
5. It is impossible to obtain authorization from the Coast Guard for an American Flag Ship to be cleared to go to sea without union seamen. This is not a political problem but one of safety at sea in the eyes of the Coast Guard.
6. Navigation and radar equipment required for maritime vessels is far in excess of that required for military ships. The expense of these additions is significant, and must be kept current as regulations change.
7. If these vessels have not been utilized in recent years, just the installation of sewage disposal systems as required by international and United States law are an arbitrary expense. This requirement cannot be waived.
8. Once such ships are utilized by a private voluntary organization, each time they return to the United States they must be recertified by the Coast Guard. During all the years we sponsored the SS HOPE, there was never an occasion that regulations had not changed--and substantial expenses encountered in the shipyard before recertification was obtained. This does not even address the normal maintenance and repairs constantly required by an ocean going vessel.
9. During this time of budgetary crisis, the national security of the United States will not benefit in any way from such an activity. The Executive Branch and the Congress are faced with

difficult decisions on the establishment of priorities. Indications that the budget of the Agency for International Development will be reduced by 10.6% this coming year is evidence of the seriousness with which congress is looking at expenditures for this type of activity. It would seem to us that any action which would imply the eventual use of such vessels with substantial federal funding is remote." [Ref. 9:p. 53]

The cynical might also add that there is competition even among charities. The TPC reasons against reactivating the SANCTUARY or any other ship appear insurmountable. Federal funding for such a purpose would be better spent on the USNS MERCY and USNS COMFORT for future additional humanitarian missions.

K. MERCY SHIPS

There is one non-profit charitable organization that runs two hospital ships on a continuous basis. A Christian missionary organization. "Youth With A Mission" [Ref. 10] has one full fledged hospital ship on the West Coast, and a medical clinic ship on the East Coast. The Mercy Vessel ANASTASIS is based on the West coast and has been in operation since 1981. The ship makes frequent trips to Mexico and has conducted a South Pacific cruise to Fiji, Tanga, Samoa and New Zealand.

The ship configuration of M/V ANASTASIS is that of a cargo passenger vessel built in 1953. She was purchased for \$4 million in 1978 by Mercy Ships to provide medical care and Christian missionary activities to less developed countries.

The ship is 522 feet long by 68 feet wide and is nine stories tall. The vessel weighs 11,695 tons and is powered by an 8,000 horse power diesel engine. The medical treatment facility configuration consists of a 30-bed hospital with one general operating room, one eye operation/corrective surgery room, laboratory, X-Ray room, dental clinic, dental laboratory and pharmacy. The core medical staff is comprised of two doctors, eight nurses, and a varied number of LPNs. Depending on the nature of a medical mission, a roster of 50-60 specialists can be provided for any particular trip which can last up to three months.

The other ship, the M/V SAMARITAN, is a medical clinic ship based in Florida. The ship configuration is that of a former yacht, 173 feet long by 38 feet wide and weighing 1,036 tons. It has refrigerated storage space of 2,500 cubic feet. The ship's medical missions include trips to countries in the Caribbean Basin and the Amazon River in Brazil.

In contrast to some of the TPC influences listed in the preceding section these ships are much smaller operations than those contemplated by Life International. Also, the ship's crew are all volunteers with the M/V ANASTASIS of Maltese Registry and the M/V SAMARITAN of Panamanian Registry.

L. NEW YORK CITY'S FLOATING HOSPITAL

A 'hospital ship' on a much smaller scale than all of those discussed before is found on the Hudson River in New York City. The hospital ship is actually a floating medical clinic for the indigent poor of New York City. The medical clinic is a barge constructed to look like a small ship with three decks. Its source of power is a tugboat and a long towline.

The group that operates the Floating Hospital is St. John's Guild which is a private, non-profit and non-sectarian organization. [Ref. 11:p. 8]

The ship can carry over 800 patients for day trips up the Hudson river. Over 2/3 of the patients are children. There are 100 staff members including doctors, dentists, nurses and physicians's assistants in all the usual outpatient services.

M. SUMMARY

The concept of the hospital ship mission, as well as the ship/MTF configuration, has changed over the years. Initially this change was due to Cultural influences in societies at large. Compassion for those wounded in action evolved from simple transport to rudimentary medical care. As the Technical influence of advancing medical technology was achieved it was reflected in even more complex MTF configurations. State of the art in ship building also

advanced from the simple sailing ships of so many years ago, to the modern supertanker/hospital ship platforms of today.

Political influences also played their part through the years. Most of the time hospital ship conversions appeared as an afterthought to armed conflict. Occasionally some advanced preparation was made and a hospital ship was constructed in advance of need. When a Political influence was made known in the form of an armed conflict, the available Technical and Cultural influences were reflected in the available ship configurations, and available medical technology of the time. This chapter has attempted to show the evolution of these TPC influences as reflected in ship and MTF configurations of the time.

III. INTERNATIONAL 'HOSPITAL' SHIP/MEDICAL TREATMENT FACILITY CONFIGURATIONS

A. INTRODUCTION

The objective of this chapter is to prevent a parochial interest in only American hospital ships. Many countries, friendly and otherwise, use hospital ships in their military forces or in civilian uses. Although the available research material was quite sketchy in this area the author will present the data which was available on the various ship configurations and onboard MTF configurations in current use. The reader should gain an appreciation that TPC influences are not uniquely American but affect the development and utilization of hospital ships in many different cultures.

Another objective of this chapter is to indicate which other countries have hospital ships, their configurations and missions and to comment on some of the TPC influences that may have affected their development. The last section of this chapter details some of the unique TPC influences in the British experience of converting civilian ships to hospital ships.

B. MICRONESIA/U. S. TRUST TERRITORY

One of the first areas of the world to be surveyed is close to home in an administrative sense. The area of the Pacific known as Micronesia is administered by the United States under a United Nations mandate. This has been the

situation since the end of World War II. Culturally the area is a mix of Pacific island cultures and languages. Japanese and English are the main unifying languages among the major island groupings.

Politically the area has been ignored by the United States, at least until recently. Minimal economic aid, and minimal health care aid, has been the norm. The twin pressures of Pacific island nationalism and Russian encroachment have forced the United States to view the area in a new perspective.

One expression of the interest has been strictly altruistic. A private, non-profit organization called Marimed provides health care and training to the people of Micronesia. This area presents serious logistical problems because Micronesia is composed of over 3100 islands spread over 3000 miles.

The basic ship configuration used by Marimed are 150 foot sail boats built at a cumulative total cost of \$2.6 million. The medical treatment facility configuration aboard each sailing vessel consists of an X-Ray room, diagnostic laboratory, and treatment rooms.

One article [Ref. 12:p. 52] states that:

Volunteer health educators, doctors, dentists, and nurses will treat patients while training native healers, midwives, and health assistants. Because the ships will use sail propulsion at trade wind latitudes, they will burn less than \$100 per day in fuel--compared to the \$2800 per day now spent by motorized ship's bringing supplies to the outer islands.

Thus the geography of the area and (so far) low economic support given to the area have dictated the configuration of one of the more unique hospital ship platform configurations in this chapter.

There is also a Cultural influence in the operation of these sailing hospital ships. The islanders have a need to be involved with the delivery of health care in their island groups. Island and tribal centers of power can be disrupted if the local health care professionals are not added to 'the team'.

The plan of operation is as follows:

Marimed's ships will circle the Marshall Islands and other Micronesian territories, staying a week or two at each atoll. In addition to going ashore to treat patients and train local health care workers, Marimed personnel will use the ships as "central switchboards" that will be accessible to all of Micronesia. Micronesian health care workers will call in symptoms and receive instructions about treating patients via radio. [Ref. 12:p. 53]

C. ASIA

Another area of the world of increasing United States concern is Asia. Politically the United States has large stakes in the area through bases in Korea, Japan and the Philippines. Asia is also America's largest trading partner. The Soviet Union continues its efforts to increase political and military pressures in the area. Some of the Asian countries appreciate this, other do not. The aforementioned pressures have caused many of the Asian countries to escalate

their military expenditures. Among these expenditures are health care needs with a distinctly military bent. Those Asian countries with the money have recognized their current Political climate and are buying the latest Technical capability in the hospital ship area.

According to one source [Ref. 13:p. 71] an unnamed ASEAN nation launched "a revolutionary new form of hospital ship" in August 1985. The ship was deemed revolutionary because the basic ship configuration was that of a modified Landing Ship Tank (LST).

The Rapid Deployment Hospital Ship (RDHS) has more in common with a Field Hospital than a conventional hospital ship. Firstly, it will get closer to the action in a battle or disaster area because of its configuration and dual role as a transport vessel. Secondly, the LST can approach an active area, perform its first level of responsibility--whether it be unloading equipment or troops--and then, in the space of about two hours, re-emerge as a floating surgical and medical facility. Finally, because this dual role will cause forfeiture of protection under the Geneva Convention in times of declared war, the RDHS will experience the same potential for enemy attack as a Field Hospital unit on land.

The medical treatment facility consists of a series of Medical, Ward, and Service modules to be stored on deck during a combat support mission. The modules would then be lowered into the ship and set into a hospital configuration after all combat troops and supplies have been removed. The concept is quite similar to the United States Naval Fleet Hospital Support Program which builds modular land hospitals of 250, 500 and 1000 bed hospitals to be prepositioned in allied nations around the world.

Some examples of Medical Container are Pathology Laboratory and Blood Bank, X-Ray, Recovery and Operating Theatre. Some examples of Service Modules are Generator, Waste Treatment Plant, Incinerator, Desalinator, and Morgue/Store. The article went on [Ref. 13:p. 72] to state that: "the containers are lowered into the hold of the ship . . . connected to the necessary plumbing and electrical outlets. Within an hour or two, the ship will be prepared to receive casualties."

The ships are modified by International Military Services Limited (IMS), a United Kingdom company described as "wholly owned by the British Ministry of Defense." IMS claims much of its knowledge and experience from the Falklands War. It converted the SS UGANDA, an educational cruise ship, into a combat troop carrier and floating hospital. IMS also converted the oceanographic survey ship HMS HYDIA, HEDA and HERALD into sea-ambulance ships serving the UGANDA.

D. PHILIPPINES

Countries such as South Korea, Japan or Indonesia can afford the technology offered in the preceding section--the Philippines cannot. This nation recognizes the Political influences in its part of the world but by history and trade is tied both Politically and Culturally very closely to the United States. Although the Philippines has had a long relationship with the United States it remains a relatively

poor country. The best this nation can do in the Technical area is to buy a Vietnam War era 'hospital ship'.

There was a very short entry in Jane's Fighting Ships [Ref. 5:p. 417] on a 'hospital' ship in the Philippine Navy. The ship is called the WESTERN SAMAR and it is an amphibious ship type configuration built in the United States as an LSM-1 class. The ship configuration characteristics are as follows: displacement in tons: 743 beaching, 1,114 full load, dimensions in feet" 203.5 X 34.5 X 7.5, guns: 1 - 40 mm(single) and 4 - 20 mm(single), main engines: 2 diesels, 2 shafts at 2,880 bhp = 12.9 knots, range in miles: 4,500 at 12.5 knots. There was little information on the medical treatment facility configuration except that the ship's complement was approximately 70 and that the "LP66 was fitted as hospital ship (LSM-H) for treating casualties retaining her armanent. Has deckhouses in and above well-deck."

Its interesting history is as follows:

WESTERN SAMAR (ex-Hat Giang, ex-LSM 9011, ex-USS LSM 355), number LP66, commissioned 24 December 1944. LP66 originally transferred from U. S. Navy to French Navy for use in Indo China in January 1954; subsequently transferred to South Vietnam in December 1955.

E. BRAZIL

This survey of international hospital ships now leaves the Pacific and Asian areas for a look at South America. One of the largest countries in South America has two types of hospital ships, one military ship and one civilian use ship.

The Political influences in this region of the world are almost as turbulent as those in Asia. The countries in this area are extremely nationalistic, against outsiders as well as each other. Thus it is not surprising to see a health care Technical influence expressed as a military hospital ship.

Jane's Fighting Ships [Ref. 5:p. 61] lists one hospital ship in the Brazilian Navy. It is named the CARLOS CHAGAS and was built in Rio de Janeiro in 1984. The basic ship configuration characteristics are as follows: dimensions in feet: 154.2 X 26.9, displacement in tons: 500 full load, main engines: 2 diesels, 2 shafts, 714 Horsepower, Range in miles: 4,000 at 9 knots. The ship can carry a helicopter on an aft platform. The medical treatment facility configuration is composed of two sick bays, dental surgery, laboratory, two clinics and an X-Ray center. The ship's complement is four officers, six doctors and dentists, twenty-one ratings and fifteen medical ratings.

The civilian hospital ship operating in Brazil has much in common with the Marimed sailing ships operating in Micronesia.

An unnamed nonprofit organization in Phoenix, Arizona supports a 'hospital ship' on the Amazon River in the amount of \$250,000 a year. The ship configuration is that of a former San Diego, CA harbor ferry, named the ESPERANEA, that was brought to the Amazon in 1974. The article [Ref. 14:p.

53] did not detail the specifics of the configuration of the medical treatment facility. It did state that the:

. . . crew of volunteer doctors, dentists and nurses provide most of the medical and dental care for 175,000 people who live along the river. Their deadly enemies are diptheria, tetanus, measles, polio, tuberculosis and typhoid fever, as well as less exotic but still crippling afflictions like tooth decay.

The Political influence evident in the hospital ship configuration is that the Brazilians remain suspicious of United States intentions. They will accept health care support that is low key and that does not stir up any of the indigenous peoples in the area. Low key means a small vessel with a limited staff and capabilities. Culture may also play a part in ship configuration. South American cultures like to rely on themselves and don't like handouts especially from the North. These TPC influences all tend to keep the vessel configuration limited.

F. ARGENTINA

The TPC influences attributed to Brazilians can also be said to apply to another 'feisty' South American country-- Argentina. Argentina has long vied for leadership of the South American continent against Chile and Brazil. It is also an extremely nationalistic and territorial country as shown with its frequent clashes with Chile and its recent war with the United Kingdom. All these Political influences led to the Technical development of military use hospital ships converted from other vessels.

Very little information was available in the current literature on the three Argentinian vessels that were designated hospital ships during the Falklands War. One was an Antarctic Support Ship named the ARA BAHIA PARAISO. The actual ship configuration was not mentioned, and neither were the details of the medical treatment facility configuration. The one source [Ref. 15:p. 18] on this subject, stated:

The Argentine ship carried specialists in surgery, trauma, intensive care and anaesthetics supported by others in medicine, cardiology, ophthalmology and dentistry, the complement was said to comprise of 25 medical officers and 50 male nurses with a potential capacity for 250 patients.

TPC influences that develop hospital ships in a war time scenario appear similar to American influences in the last chapter, or British influences to be covered in the next section. The Culture of health care afloat is the same--treating the sick and wounded in accordance with the Geneva Convention. Political trends are easily discernable in watching a war develop while Technical influences are based on each countries individual resources and ship configurations available for short term conversion.

G. UNITED KINGDOM

British TPC influences are the most closely aligned with the United States for obvious Cultural and historical reasons. Technical and Political influences vary in detail and time. The Political influences leading up to the Falklands War were short term, a matter of months, before

actual shooting started. The Political influences of poor readiness and planning resulted in a lack of foresight in having contingency hospital ships ready to deploy--quite similar to TPC influences to be covered in the next chapter.

Technical influences again depend on a nation's state of the art in ship building and health care technology--areas in which the United Kingdom is a leader. The British lead the world in converting a civilian ship into a hospital ship in less than one week. An education cruise liner, the SS UGANDA, provided the basic ship configuration for the conversion process. The ship was in Alexandria, Egypt when hostilities were declared and was quickly transported to a Gibraltar shipyard. While undergoing conversion (which took only 65 hours!) medical supplies were airlifted from London to Gibraltar for the supply effort.

The cruise liner of 77,000 tons already came equipped with berthing, messing, and rehabilitation (recreation) areas. The ship also already had massive storage areas, and a large sports deck was converted into a helicopter landing pad able to land fully laden Sea King helicopters. Patient ramps were constructed to provide access to the triage area, fitting of a jackstay for replenishment at sea, provision of extra power supplies and lighting to clinical areas, and the addition of a satellite communications facility.

The medical treatment facility configuration consisted of a 'Reception/Triage Area' with eight stations and individual

oxygen supply, suction facility and resuscitation equipment setups. The 'Main High Dependency Ward' was located beneath the flight deck and provided 44 beds. This ward had quick access to the triage area and the pharmacy. The 'Pharmacy' was complete in all wartime requirements and had easy access to the main ward and triage area. The hospital ship had one large 'operating theatre' with three operating tables and complete individual operating room setups. The 'X-Ray Department' had two machines with full automatic developing facilities. The 'Laboratory' was located in the former cocktail bar and provided facilities for hematology, biochemistry, limited bacteriology and crossmatching of blood. The storage of blood was also accomplished here by keeping the blood in "the cold drinks cabinets at a constant 4C." The 'Burns Unit,' which saw extensive use, was housed in the cruise liner's 'hospital' and provided 20 beds. The bed totals besides those already mentioned were 100 high dependency beds, with the former student dormitories providing accommodation for several hundred less seriously wounded patients. The article concluded with a determination that the United Kingdom prepare contingency plans ". . . for the future use of hospital and ambulance ships, which have again proved their place in modern warfare." [Ref. 16:p. 15]

The last sentence above is a bitter lesson learned for the British and a warning to other countries including the United States. The British have a set of TPC influences that

resulted in a civilian 'hospital ship' that the United States does not have--the oil drilling environment of the North Sea. Construction of a hospital ship for this environment is not as exciting as the preceding military story but is just as necessary.

The Culture of oil drilling is a remote, isolated and hazardous one--self reliance is regarded as a virtue. This influence is reflected in a new type of hospital ship configuration designed for the unique demands of the North Sea. Political influences were not available, as in the preceding sections, except at the most macro level. The British government is closely tied to, and dependent on, a continuous flow of oil (and dollars) from the North Sea. Therefore any measures taken to protect the oil rigs and the trained personnel who work on them has great government support.

A concrete expression of this Political and Technical support is demonstrated by the development of a Disaster Relief/Hospital Ship by SEDCO (South Eastern Drilling Company) a British government owned company. The basic ship configuration is that of a semi-submersible service vessel [Ref. 17:p. 194] with:

. . . the idea of having a large service vessel which would have the capability of providing routine maintenance facilities as well as acting as a rescue and hospital ship in addition to coordinating any necessary disaster control.

The South Eastern Drilling Company (SEDCO) spent \$40 million dollars constructing this "13,000 ton column stabilized semi-submersible utility vessel."

The vessel has overall dimensions of 312 feet long by 249 feet wide with a main deck some 90 feet above sea level of 234 feet long by 197 feet wide. They have a distinct advantage over conventional hulls in that they are able to operate more effectively in extreme weather conditions and provide a more stable and more spacious base for operation.

The vessel can maintain its position next to an oil rig in even the roughest weather by a combination of conventional propellers, anchors and thrusters.

The medical treatment facility onboard this vessel consists of one large and fully equipped operating room, and a patient ward of permanent and folding beds for a total of 18 beds. In an emergency more beds can be added since the MTF has easy access to adjoining cabins in the vessel. The MTF also has a portable X-Ray and developing facility and laboratory facilities. Patient access is ambulatory, or by litter, or by crane which can lower patients through an access port directly into the hospital.

The medical treatment facility can also offer immediate treatment for diving accidents with a saturation diving complex that adjoins the hospital. This includes a diving bell and an emergency compression unit for treating decompression sickness. The vessel has a helicopter pad for evacuation of the most critical patients, and a boat landing area for calm weather.

H. EUROPEAN FISHING FLEETS

TPC influences result in 'hospital ships' that travel with the wide ranging European fishing fleets. Political and Cultural forces demand that health care be provided to this traditional European industry. Technical health care capabilities afloat are limited and serious emergency cases are airlifted to the nearest host country. Both West Germany and Portugal use small ships for this health care function.

The Germans have a combined hospital ship/fishery research vessel named the ANTON DOHUN that sails with this country's international fishing fleet. The source [Ref. 18:pp. 4-5] described hospital ship operations very briefly in the fishing grounds off Spitzbergen. The basic configuration is of a large modified fishing trawler. The medical treatment facility consists of: "a hospital with eight cabins, and X-Ray and dental rooms, it has a well-equipped operating and treatment room in which emergency operations can be performed."

The Portuguese have a hospital ship named the GIL EANNES, which serves their roving fishing fleet. The article [Ref. 19:p. 40] did not give the basic configuration but described it as a 'weather ship'. The medical treatment facility consists of 74 beds but can accommodate up to 320 patients in an emergency. The ship is equipped with one large operating room and three X-Ray units. It has regular hospital wards as well as an isolation section for patients with communicable

diseases. The medical staff is composed of two surgeons and three general practitioners. They work in concert with 40 male nurses stationed on fishing trawlers throughout the fleet.

I. TUBERCULOSIS HOSPITAL SHIPS

TPC influences have resulted in another type of unique hospital ship--one used exclusively by TB patients. Again, there are strong Political and Cultural pressures to take care of such afflicted patients. The Technical solution depends on a country's resources and ships available for construction or conversion. Two countries that have TB hospital ships are the Netherlands and Canada.

The Dutch Red Cross for years had chartered passenger liners, in the off season, for week long trips for long term tuberculosis patients. With funding from Dutch trade industry, and the National Emergency Fund, they built their own hospital ship. The basic ship configuration is described as a small cruise liner named the J. HENRY DUNANT. The reference [Ref. 20:p. 48] states:

. . . this new boat which will contain among other things an examination, an isolation, and a sterilization room . . . The National Emergency Fund has stipulated that in case of emergency, the J. HENRY DUNANT, must be placed at the disposal of the government within 24 hours because she is so constructed that she can be used either as a hospital or as an evacuation ship - or even as a center for assistance and help in a stricken area. This latter use will be possible because the new ship will have a capacity to provide meals for 200 persons.

In Canada the basic ship configuration is that of a large fishing trawler. The medical treatment facility onboard provides TB diagnostic and preventive services. The ship, the CHRISTMAS SEAL, is run by the Newfoundland Tuberculosis Association and serves 1,800 ports along 6,000 miles of coast. The medical staff consists on doctors, nurses, X-Ray technicians and rehabilitation officers from the regional tuberculosis association. The source [Ref. 21:p. 123] did not go into detail about how many X-Ray machines were onboard or any other details of the medical treatment facility.

J. USSR

No survey of current hospital ships would be complete without mentioning the Russians! Unfortunately there was little information available and TPC influences that are inferred by the reader should be similar to any country that has gone through an armed conflict and found its health care capability to be lacking.

The Russians have two "OB" class hospital ships. One of the ships is named the YENISEI, the other is the OB. The ship configuration characteristics as listed in Jane's Fighting Ships [Ref. 5:p. 623] are as follows: displacement in tons: 11,000 full load, dimensions in feet: 498.7 X 20.3, aircraft: one Hormone helicopter with hanger, main engines: 2 diesels, 2 shafts with 14,000 bhp = 20 knots, range in miles: 20,000 at 18 knots. There was little

information on the medical treatment facility configuration except that each ship has up to 500 beds and has a ship's complement of 85 plus a medical staff of 200. Jane's gives the following short history:

Built at Szcum, Poland. OB completed in 1980 and transferred to the Pacific in September 1980. YENISEI completed in 1981 . . . The first purpose--built hospital ships in the Soviet Navy, a program which may have been prompted by the use of several merchant ships off Angola for Cuban casualties in the "war of liberation."

K. TPC ASPECTS OF HOSPITAL SHIP CONVERSION

In most of this chapter TPC influences have been discussed from a macro approach--for the most part due to a lack of research literature on hospital ships in foreign countries. Political and Cultural influences leading up to constructing or converting a hospital ship depend on each unique situation. The British have provided some important Technical influences to keep in mind when contemplating a hospital ship.

One reference [Ref. 13:pp. 72-73] noted that the British gained invaluable experience in short term conversion of civilian ships into hospital ships during the Falklands War. One individual was responsible for the design and overseeing the conversion of the SS UGANDA from an educational cruise ship to a floating hospital. This individual was Surgeon Commander Roger J. Leicester, Royal Navy, Consultant Surgeon and Head of Surgery at the Royal Naval Hospital, Hasburg, U. K.

Any country using whatever type of ship and medical facility configuration, the following excerpt on the most important aspects to consider when a hospital ship conversion is planned is most pertinent:

1. Keep it simple. It is not possible to recreate the operating and medical care facilities available in a land--based hospital. Recognize this fact and be prepared for some different arrangements of facilities.
2. The personnel are central to the success of the unit. Wherever possible, the surgical and nursing teams should be allowed to train and get to know each other BEFORE they need to function under battle or disaster conditions.
3. One hospital ship will probably not be enough, particularly in island countries. In addition to ambulance ships for transporting wounded to and from the floating medical facility, more than one hospital ship may be necessary. This is particularly true in conditions where a utility ship--such as an LST is used. Under surprise conditions, such as natural disasters, the ship may be several thousand miles away performing its standard naval function. Unless a second ship is closer and available for medical use, days of precious time will be lost while the vessel is being moved into the disaster areas.
4. Every detail of the ship must be known before the conversion is attempted. One must make certain the space available is suited for patient care, and that movement of wounded and supplies is possible in the areas defined.
5. Equipment must be able to withstand marine conditions. For example, sterilizers and X-Ray processing equipment must be able to function on a ship rolling at sea. Many designs do not: a few do.
6. Re-supply procedures must be preplanned in a practical way and given priority.
7. Planners must remember that a flow of injured--on and off the ship--is necessary. It is not enough to plan how to get wounded men to the floating

hospital. In order to provide room for treatment of a maximum number of casualties, arrangements must be made to move treated cases from the ship as soon as it is safe to do so.

L. SUMMARY

This chapter has attempted to show the diversity and inventiveness of foreign countries in meeting their wartime and peacetime 'hospital ship' needs. TPC influences in such cases can usually be viewed only from a macro perspective, as opposed to a more micro approach used in discussing the current American hospital ship program in the next chapter.

Cultural influences in each nation mean taking care of wartime injuries and potential civilian casualties. This is often translated into Political demands that a hospital ship be built or converted from an existing vessel. This is usually done on a last minute basis, particularly if a war is imminent.

Technical influences are not only determined by a nation's industrial and health care capability, but also by the use to which a hospital ship will be put. The design and capability of a hospital ship in servicing a fishing fleet or TB population is obviously going to be much different from a hospital ship used in a war zone. In each of the examples in this chapter survey there were unique Technical, Political and Cultural influences at work. Each combination of TPC influences resulted in the configuration of the hospital ship achieved. The question of how well these TPC influences were

managed and used in attaining the final configuration, can only be answered by those individuals involved in each nation's hospital ship project.

IV. HISTORICAL EVOLUTION OF THE 1980'S HOSPITAL SHIP PROGRAM

A. INTRODUCTION

This chapter will outline the history of the 1980's hospital ship project, from project initiation to actual deployment of a completed hospital ship. The purpose of this chapter is to gain a microperspective of the role of TPC influences in a hospital ship construction project. As mentioned in the introduction, a health care manager must first recognize TPC influences and their interrelationship with one another. The manager can then take action to utilize change mechanisms to manage the individual TPC influences. Technical and Political influences are frequently detailed but Cultural influences remain, for the most part, unstated. This is due to the reluctance of sources of information to discuss 'on the record' military health care attitudes versus military shipbuilder attitudes in the construction of the world's first 'supertanker' hospital ships.

B. TECHNICAL ASPECTS OF THE HOSPITAL SHIP PROJECT

The technical influences in the hospital ship are perhaps the most obvious. The TPC Model [Ref. 1:p. 8] defines the Technical system as a technical design problem where the: Organization faces a production problem. Social and technical resources must be arranged to produce desired

output." The organization responsible for the construction of the hospital ships is the Naval Sea Systems Command (NAVSEASYS COM). Tichy [Ref. 1:p. 9] is speaking of an organizational entity like the NAVSEASYS COM when he writes:

All organizations face a production problem. That is, in the context of environmental threats and opportunities, social financial, and technical resources must be arranged to produce some desired output.

There are many technical influences in the hospital ship project which represent the varied agencies involved in the construction.

First of all is the conversion of two supertankers into hospital ships--something which has never been done before. Described briefly in Chapter Four are the innovative methods of reconstructing the ship, particularly the medical treatment facility. The major technical 'players' in the project are the National Steel and Shipbuilding Company (NASSCO), Supervisor of Shipbuilding (SUPSHIP) San Diego, Naval Sea Systems Command (NAVSEASYS COM), Military Sealift command (MSC), Naval Medical Command (NAVMEDCOM), and the Surgeon General of the Navy. The last two agencies are the primary Technical input for the medical equipment and the design of medical spaces within the medical treatment facility.

Other technical influences come on line during the testing and inspection phases of the project. Most notable is the Board of Inspection and Survey (INSURV) in conducting

their inspection. There are some competing technical influences from the American Bureau of Shipping Standards, and United States Coast Guard Standards which were primarily used in building the two hospital ships. The Ships Parts Control Center, PA, provided technical input, particularly on the logistics side of the project. Additional Technical input was provided by the Navy Medical Material Support Command, particularly in regard to the purchase of medical equipment.

C. POLITICAL ASPECTS OF THE HOSPITAL SHIP PROJECT

In addition to those agencies mentioned in the preceding section, other interested parties were: the White House, U. S. Congress, the Office of the Secretary of Defense for Health Affairs, Chief of Naval Operations, the Secretary of the Navy, the Defense Secretary, the media, and the general public. Many of the agencies in this section exerted political influence of varying degrees when the decision was reached to send the USNS MERCY to the Philippines.

Tichy states:

All organizations face the problem of allocating power and resources. The uses to which the organization will be put, as well as who will reap the benefits of the organization, must be determined. Decisions around these

issues get reflected in . . . budget decisions, and the internal power structure of the organization. [Ref. 1:p. 10]

One of the mixed blessings of the hospital ship project has been the high visibility and 'command attention' from

numerous flag officers and high ranking civilians. This has most often manifested itself in extensive media campaigns and frequent tours by flag officers/civilians representing the aforementioned agencies as well as flag officers from the 'line Navy.'

In this area of influence, the political pressure for a specific configuration change may be easily identified but [Ref. 1:p. 10] "the concepts and language are less formal and often less obvious." Many political observations were made to the researcher but most 'were off the record.' In every case of configuration change there was at least a superficial Technical reason to justify it. The trick for a health care manager in a construction scenario is to first identify the Political influence, and then try to mitigate or manage the Political pressure to the 'best' advantage for the project.

D. CULTURAL ASPECTS OF THE HOSPITAL SHIP PROJECT

There are also many unique cultural influences in the hospital ship project, particularly in the military culture and medical culture influences. What is a Cultural influence? Tichy states [Ref. 1:p. 10]:

Organizations are in part held together by a normative glue that is called culture. Culture consists of the values, objectives, beliefs, and interpretations shared by organizational members. One of the most important and most difficult tasks of top management is to decide the content of the organization's culture, that is, to determine what values should be shared, what objectives are worth striving for, what beliefs the employees should be committed to, and what interpretations of past events

and current pronouncements would be most beneficial

This aspect of the TPC model may be the most foreign to the reader but it has had an effect on the evolution of the hospital ship configuration and in the continuing configuration control effort. The deployed hospital ship will have a mix of military, medical and civilian cultures aboard it. The hospital ships were built by a civilian shipyard while the contract was administered by a military agency. The deployed hospital ship, USNS MERCY, was crewed and captained by civilians of the Military Sealift Command, her medical contingent was a tri-service DOD and Public Health Service effort, her funding came from OPNAV while her operational control was under the Pacific military command structure.

Speaking in generalities, American's have a love for the biggest and the brightest of anything in the world. Although all the initial design initiatives were big ships, it is ironic that a supertanker was selected for the hospital ship conversion which resulted in the largest hospital ships in the world. The medical culture manifests itself in the desire to have the 'latest' technology onboard, also usually the largest and most expensive equipment available. The

decision to add CAT scanners to the hospital ships so late in the contracting process could be interpreted as another manifestation of the cultural aspect of the TPC model. Military culture is perhaps best demonstrated by the Board of Inspection & Survey with their emphasis on Military Standards during their inspection--on a ship built primarily to American Bureau of Shipping Standards, and U. S. Coast Guard and Military Sealift Command standards.

E. PROJECT INITIATION TPC INFLUENCES

Hospital ships have been used in one form or another so nothing is new about the overall concept. With one exception (the USS RELIEF in 1920) all hospital ships in the past have been converted from liners, freighters and troop transports [Ref. 22:p. 32]. With the decommissioning of the last Vietnam-era hospital ship in 1974 (USS REPOSE) the United States had no dedicated hospital ship capability in existence until the USNS MERCY sailed for the Philippines on 27 February 1987.

In the late 1970's the U. S. Marine Corps determined that "a significant deficiency exists in medical support for amphibious operations" [Ref. 23: p. 11]. To determine the magnitude of this need a study was commissioned by the Chief of Naval Operations and conducted by the Naval Medical Command. This study evaluated all alternatives to dedicated hospital ships.

criteria, select one or more alternatives to overcome earlier identified medical deficiencies. Ten years later, the same deficiencies exist according to an internal Department of Defense study prepared in June 1984 [Ref. 23:p. 22]. That study found the readiness of existing medical units (in the Pacific Command) is low and that "the medical assets designated for the Pacific could not be activated in time to meet wartime needs."

On February 1979 the following alternatives were offered for consideration by the U. S. Navy and U. S. Marine Corps as illustrated in Table 1.

TABLE 1

ALTERNATIVE ONE: New Construction Commercial Ship (NCCS)

- Type of Ship
 - Container capable
 - Relocatable structures capable
 - Modular capable
- Method of Acquisition
 - Subsidy
 - Build and charter
- Ownership
 - Commercial with contingency guarantees

ALTERNATIVE TWO: Dry Cargo Ship (DCS)

- Type of Ship
 - Existing - container ship
 - RO/RO (Roll-On/Roll-Off)
 - Barge Carrier
 - LASH (Lighter aboard ship)
 - SEABEE (Type of self loading barge)
 - Seatrain

TABLE 1 (Continued)

Method of Acquisition - Lease

Ownership - Commercial

ALTERNATIVE THREE: Passenger Ship (PS)

Type of Ship - Inactive Passenger Ship

- Inactive Passenger/Cargo Ship (Ferry)

Method of Acquisition - Lease

Ownership - Commercial

ALTERNATIVE FOUR: U. S. NAVY SHIP (USNS)

Type of Ship - Inactive Ships - LST-1173
LSD-28
TAP
CV

- Active Ship

Method of Acquisition - Existing

Ownership - Navy

[Ref. 22:p. c-4]

Among the final recommendations of the ADHOS four hundred page study was: 1) designating the Chief of Naval Operations as sponsor of a hospital ship project. 2) designating the aircraft carrier (training) or one or more dry cargo ships as hospital ships during wartime and 3) utilizing the SS UNITED STATES, a laid up civilian passenger liner, as a rapid deployment hospital ship. It is interesting to note that Technical influences can change so rapidly that supertankers were not considered as possible hospital ship platforms less than ten years ago.

F. POLITICAL INFLUENCES

According to the project manager [Ref. 24] for the hospital ship program, the initial contract process began in September 1980. The Department of Defense directed the Navy to develop a budget estimate and a schedule to convert the passenger ship SS UNITED STATES to a two thousand bed hospital ship.

This alternative is important because it sets the financial baseline for the present hospital ship program. DOD Secretary Brown next submitted a figure of \$450 million in an amended program decision memorandum (PDM) through the Office of Management and Budget for the fiscal year 1983 budget. A few months later OPNAV tasked NAVSEA to develop alternatives to the SS UNITED STATES. It is revealed in another reference [Ref. 25:p. 1] that the political push for the passenger ship was actually coming from then Assistant Secretary of Defense for Health Affairs, Dr. John H. Moxley. He advocated this vessel because: "it is the only ship found so far which can provide the stated requirement for beds and operating rooms at a reasonable cost and within a reasonable time frame."

There were many different opinions about the project from the very beginning. The Defense Resources Board (DRB) wanted to support the newly formed Rapid Deployment Force (RDF) as quickly as possible but had no objections to examining other alternatives. The Navy Surgeon General at the time, Vice

Admiral J. William Cox, wanted to utilize the USS SANCTUARY, at that time a dependent support vessel docked in Philadelphia. Secretary of Defense, Casper Weinberger, said he wanted to have a hospital "ready to go in 1984." OFNAV opposed both the SS UNITED STATES and USS REPOSE alternatives on grounds of inadequacy in "stated requirements for beds and operating rooms at a reasonable cost and within a reasonable time frame."

G. TECHNICAL INFLUENCES

Another reference [Ref. 25:p. 5] also mentioned controversy on the financial end of the project. DOD tried to move up the funding from fiscal year 1983 to 1982. In considering the budget request for DOD the Senate deleted funds for converting a hospital ship while the House voted to provide the money. The Deputy Defense Secretary, Frank C. Carlucci, lobbied the House/Senate conference committee and eventually got the funds restored.

In January 1981 the Assistant Secretary of the Navy, Shipbuilding and Logistics (ASN (S&L)) directed that NAVSEA "lobby" the private sector to develop alternatives. This first request for proposal (RFP) spelled out the RDF requirements for medical support. [Ref. 26]

Potential contractors submitted "rough form" proposals due to lack of detailed specifications from the Navy and the short time (5 months) they had to prepare [Ref. 26]. In June

1981 OPNAV Code 04 completed a preliminary review of NAVSEA proposed alternatives based on the preliminary proposals made by private industry. OPNAV 04 determined that the proposed alternatives were not necessarily better than conversion of the SS UNITED STATES.

In July 1981 [Ref. 26] OPNAV again tasked the Military Sealift Command (MSC) to solicit proposals from industry. This decision was made because industry was proposing to convert/build and charter. At this time the first (of four) Circular Of Requirements (COR) was published. A COR lists all medical and technical requirements needed for the hospital ship. This was a joint effort between the NAVSEA 03 medical liaison officer and the Surface Medicine Code of the Bureau of Medicine and Surgery (now called COMNAVMEDCOM). In August this COR was approved by OPNAV 04 and released to industry as part of the MSC RFP process.

In September 1981 another 'twist' occurred in the contracting process. OPNAV redirected management of the hospital ship program to NAVSEA. It was not clear from an interview with the hospital ship project manager [Ref. 26] why the occurred. NAVSEA notified the industry of the new 'management change', conducted an industry briefing and issued an amendment to the original RFP issued by the MSC.

In December 1981 the preliminary industry data was received and submitted to a NAVSEA Ship Acquisition Improvement Panel (SAIP) decision process. The SS UNITED

STATES was still under consideration at this point. The Deputy Secretary of Defense reviewed the results of the SAIP and decided on a construction or conversion of a "new" hospital ship instead of the SS UNITED STATES. This office also set the program procurement cost at \$560 million.

H. TPC INTEGRATING MECHANISMS

Integrating mechanisms [Ref. 1:p. 212]:

represent the means by which the organization achieves coordination and control over its tasks and people. The mechanisms vary in their capacity to process information, and in how simple, how complex, and how costly their use may be." . . . "There is a considerable range of integrating mechanisms. The technical organizational design problem is to match low uncertainty with simple and cheap mechanistic integration devices and to save the expensive, complex devices for those situations with high uncertainty. Complex devices are appropriate when there are high information-processing requirements and complex interdependence.

Configuration Management (CM) contains most of the integration mechanism mentioned by Tichy [Ref. 1:p. 213]. Tichy uses John Galbraith's "categorization scheme for integrating mechanisms" proposed in his 1973 book Designing Complex Organizations. CM in it's most basic administrative procedures contains the simple integration mechanisms of rules and programs, hierarchy of authority and goal setting and planning. CM is weaker on integration devices which decrease the need for information processing. One of the purposes of CM is to communicate and process large amounts of information. The management structure of the Naval Sea Systems Command and its shipbuilding proxy, the Supervisor of

Shipbuilding-San Diego, provides for the creation of these self-contained subunits. The Medical Liaison Officer and his department are a prime example of this.

The Naval Sea Systems Command utilizes complex integration mechanisms such as vertical information systems and lateral relations. This is again done through CM procedures to increase information-processing capacity and to force communication between the government (NAVSEA) and the prime contractor (NASSCO). Most of the lateral relations used to decentralize the decision making load are used in CM procedures at the SUPSHIP-San Diego level. Examples are direct contact (sea trials), liaison roles (Medical Liaison Officer), task forces (Military Sealift Command), teams (special NAVSEA management and engineering teams) and occasionally a modified matrix approach. The matrix is more often found in higher level NAVSEA management structures than in frontline shipbuilding organizations.

In January 1982 NAVSEA began 'Phase I' of their source selection process. The source selection organization consisted of fifty-eight members headed by NAVSEA Code 91 as the source selection authority. There were three primary teams within this organization:

1. The Definitive Care Facility Evaluation Team which consisted of ten members from COMNAVMEDCOM.
2. A Ship Characteristics Evaluation Team composed of fifteen engineers from NAVSEA and MSC and,

3. A Schedule/Management Evaluation Team with seven NAVSEA management specialists.

The first team represents a panel of experts from the Naval Medical Command who provide detailed technical advice on all medical spaces aboard the hospital ship. The second team consists of the Navy's shipbuilding experts from the Military Sealift Command and the Naval Sea Systems Command. They design and engineer the entire hospital ship including the main parameters of the medical treatment facility. The third team schedules the actual construction of the hospital ship and monitors the schedule through the Supervisor of Shipbuilding (SUPSHIP) San Diego. The management specialists can also act to resolve any disputes between the first two teams.

These various teams in turn reported to the NAVSEA Contract Award Review panel (CARP) which consisted of six members including the NAVSEA medical liaison officer. This panel had the responsibility to coordinate and evaluate the reports from these three teams and separate Cost Evaluation Team. The CARP's findings were then presented to a Source Selection Review Board which consisted of seven senior personnel from OPNAV, COMNAVMEDCOM, NAVMAT, MSC and NAVSEA. This Review Board was responsible for providing the recommendations for award to the Source Selection Authority. Between February and May [Ref. 26] twelve proposals from eight offerors were received and evaluated. Best and Final

Proposals were then requested from five offerors. The actual selection criteria are contained in a "business sensitive" Source Selection Plan (not available to the author). Such a plan consists of a matrix with ratings, rankings and weights applied to each proposal. The objective is to look for 'natural breaks' in the ratings. The final five were again subjected to the rating matrix and two finalists were picked.

I. POLITICAL INFLUENCES IN THE CONTRACTING PROCESS

With the contracting process grinding slowly away, political interest (and controversy) continued in Congress [Ref. 27:p. 1]. The Assistant Secretary for Health Affairs had to "admit" to the Senate Armed Services manpower and personnel subcommittee that the project had "slipped a year". Senator Roger w. Jepson (R. Iowa) objected to this news and when informed that the U. S. would have to convert passenger ships on short notice (like the British in the Falklands War) if there was a war, responded that this was "most unacceptable" [Ref. 27:p. 1]

The Navy Surgeon General at the time, Vice Admiral J. William Cox, also admitted there was a large medical support gap that was only partially filled by such stop gap measures as deployable medical support units (MMART's) and the upgrade of medical spaces on amphibious ships (i.e. LHA's). When Senator Jepson suggested the problem had been not only neglected, but "ignored completely" by the Navy, Dr. Cox

responded that it was his feeling the issue continually ended up in the "too hard basket" [Ref. 27:p. 4]. In another interesting exchange Senator Jepson asked, "It currently takes 21 months to de-mothball and convert a battleship. It takes 3 years to build a nuclear attack submarine. How can it take 4 years to convert a hospital ship?" Dr. Cox blamed the problem on "the low priority that the hospital ship (program) had received in Congress, as well as in DOD". The controversy over the Navy's handling of the design and purchase of a hospital ship prompted a General Accounting Office investigation.

In July 1982 [Ref. 24] contracts were awarded to APEX Marine Corporation and Prudential Lines, Inc. for contract design. APEX Marine Corporation was owner of the two San Clemente Class supertankers which they proposed for conversion to hospital ships. APEX entered into a 'Team Arrangement' with National Steel and Shipbuilding Company (NASSCO) of San Diego, California. The other design contract went to Prudential Lines, Inc. which owned two LASH (dry cargo) vessels and had a 'Joint Venture' company with Maryland Shipbuilding and Construction Company, Baltimore Maryland.

J. TECHNICAL INFLUENCES IN THE CONTRACTING PROCESS

In the last six months of 1982 the original COR went through three major revisions before it was finally released

for the design competition. However, in January 1983 the Navy changed the rules in the middle of the game. Mr. Sawyer (ASN, S&L) suddenly decided that the two finalists would be in a strict cost competition instead of the originally planned design to cost competition. According to NAVSEA, [Ref. 24] contractor teams screamed about the change of rules but Mr. Sawyer stood firm. Both finalists had to completely rework their proposals for the Phase II Evaluation process.

Between January and July the following actions took place:

1. a Phase II RFP was issued,
2. Phase II Source Selection Plan was approved,
3. proposals were received,
4. preliminary evaluation was completed,
5. requests went out for Best and Final Offer,
6. requests were received and
7. an evaluation was completed.

At the end of June 1983 a Firm Fixed Price contract (with Economic Price Adjustment) was awarded to NASSCO.

K. POLITICAL INFLUENCES IN THE CONTRACT AWARD

In September PMJVC filed suit in U. S. District Court for the District of Columbia seeking to overturn the award, another Political controversy for the hospital ship project. During House and Senate appropriations committee debates on the fiscal year 1984 appropriations bill an attempt was made

to delay funding for the awarded contract. Representative Steny Hoyer (D., Maryland) wanted the Navy to respond to charges of improprieties made by lawyers for the unsuccessful bidding team.

Then Secretary of the Navy, John Lehman, issued a point by point defense and stated, "the contract selection process was properly and professionally conducted and the issues raised by the unsuccessful offeror . . . without substance" [Ref. 28:p. 1]. Both Appropriation committees accepted the defense and approved funding for the project. In June 1984 a summary judgement was issued in favor of the U. S. Navy. PMJVC appealed that month to the U. S. Court of Appeals for the District of Columbia. In November 1984 PMJVC withdrew their appeal. The action was withdrawn because NAVSEA had been more than fair to the unsuccessful team [Ref. 26]. The last evaluation process consisted of each contractor submitting three envelopes: a cost proposal, a design proposal, and contract enhancements. The winning team was lowest in cost and closest to the COR in all three evaluations. This was done even though only the first envelope was required to be opened and evaluated.

L. PRODUCTION TPC INFLUENCES

In one sense the production of the two hospital ships actually started in 1976 when the National Steel and Shipbuilding Company (NASSCO) built two "90,000 deadweight-

ton supertankers to haul Mideast crude oil through the Suez Canal" [Ref. 29:p. 1] These two ships were actually in service until the worldwide surplus of oil forced them into early retirement.

In 1983 NASSCO won a \$400 million contract to convert the two ships to hospital vessels. From that time to the present the Navy has spent another \$110 million to outfit the ships with the latest medical equipment. To support the proper procurement and placement of the \$110 million investment the Department of the Navy (DON) and the Commander, Naval Medical Command (NAVMEDCOM) has relied upon a plethora of medical specialists and ship building specialists to advise the contractor on the hospital ship project.

A list of the primary players includes: 1) Naval Medical Command Medical Doctrine Center and Surface Medicine Code, 2) Medical Construction Officer T-(AH) Project, 3) Supervisor of Shipbuilding - Conversion and Repair, 4) Naval Sea Systems Command, 5) NAVSCO New Construction Project Officer, 6) Navy Medical Command, and 7) the Military Sealift Command.

M. MILITARY SEALIFT COMMAND AS A TECHNICAL INFLUENCE

The Military Sealift Command, which will operate the USNS MERCY and USNS COMFORT after contract delivery, has played an essential advisory role during the Production Phase which leads naturally to the Deployment Phase. The MSC has a construction representative assigned to the T-AH project at

NASSCO, to work closely with the commanding officer of the USNS MERCY.

The MSC master is Capt. Hosey who has 34 years of experience in the MSC Pacific Region. He sums up his view of the production phase:

This can be a frustrating time for those of us who will crew the ships. Someone else is administering the shipbuilding contract for a vessel we have to sail, and we have little say over how the ship is built or converted. We are trying to identify all the deficiencies of the ship which must be corrected before we sail, and those that can be deferred. [Ref. 29:p. 2]

The MSC has an ongoing relationship with the hospital ships throughout the production phase of the program. In an interview with the MSC Construction Representative (CONREP) [Ref. 30], the involvement was found to be comprehensive. The first function of the CONREP is to represent the Commander, MSC, Washington, D. C., as an on-site survey and engineering office. Such CONREP offices are located at any shipyard where vessels will pass into MSC control.

The CONREP is under temporary duty (TEMDU) to SUPSHIP, San Diego. The main role is as technical advisor on conversion aspects of this project to bring the hospital ships into compliance with MSC rules and regulations. The CONREP office is composed of five people and is closely involved with the various trials and testing of the hospital ships. An example of CONREP involvement would be the check off of a 'Test Memorandum' for each piece of hull and deck equipment on the USNS MERCY. Such equipment might be

lifeboats and cranes on the ship. These checks are prior to the first sea trials.

The first sea trial is called a Builder's Trial and lasts about two days. The general procedure is for personnel from the CONREP office to write up Trial Cards on all discrepancies found during the Builder's Trial. A screening conference, another integrating TPC mechanism, is held in part with CONREP and SUPSHIP personnel and representatives from the contractor, in this case National Steel. The cards are assigned to government or contractor responsibility to repair or construct an item. If the area is uncertain it undergoes government investigation until a decision is reached. If the contractor feels a decision has gone against him unfairly they can appeal through SUPSHIP and NAVSEASYSKOM chain of command. If the decision favors the contractor, and the work must be done to meet MSC regulations, a Field Modification Request is filed by the MSC CONREP with SUPSHIP so that a price can be negotiated with the contractor to perform the work.

The second sea trial is called an Acceptance Trial and is conducted in concert with a Board of Inspection and Survey (INSURV) Team from Washington, D. C. This agency has a statutory responsibility to inspect all newly constructed USS and USNS vessels initially and approximately every three years afterwards. This trial can last less than two days and the procedure is the same as in the first sea trial except

preprinted forms called TWO-KILOS are used as inspection cards. These cards must be filled out in a prescribed and detailed manner using a rank/order system from life threatening to routine.

The third and final Acceptance Trial is actually conducted during the deployment phase of the hospital ship. This trial is conducted at the end of the Guarantee Period, which in this case is eight months. This action will occur as the USNS MERCY steams back from its humanitarian mission to the Philippines. The trial will consist of the same process and the first two times except that the trial cards will be called Government Action Cards. These various inspection cards used in the three different sea trials are important because they formally document the various Technical and Political influences between agencies involved in the testing and evaluation of the hospital ship. The cards are the focus of intense bargaining and negotiation at the various screening conferences where competing agency TPC influences are resolved. During the last of the three sea trials the overall grading during these trials is not done as a tactical warship but as a hybrid or USN, INSURV, MSC and Coast Guard standards, many of which conflict with each other and must be reconciled after each trial.

N. SUPSHIP SAN DIEGO AS AN INTEGRATING MECHANISM

SUPSHIP, the Supervisor of Shipbuilding, Conversion and Repair, San Diego, plays a most important role in the hospital ship program. SUPSHIPS are located at all shipyards [Ref. 31] where ship repair, conversion or construction is being conducted on government contracts. The SUPSHIP in San Diego is the largest because of the amount of ship construction taking place there.

SUPSHIP is foremost a contracting organization. It administers the government contract with the prime contractor, in this case National Steel. SUPSHIP prepares contract specifications, oversees a design section and conducts constant quality assurance on the project. Although numerous other agencies are involved on the project, everyone must go through SUPSHIP to request contract modifications or to have the contractor do any kind of work. All the various players in the project understand this, especially National Steel.

SUPSHIP is an organizational entity under the Commander, Naval Sea Systems Command which gained importance after the demise of U. S. Navy Shipyards. SUPSHIP is actually the third and highest level of ship maintenance activity in the Navy--the first two levels are shipboard activity and SIMA (an intermediate level maintenance activity dealing with relatively simple projects).

There are actually two relatively independent sections [Ref. 32] under the SUPSHIP organizational umbrella. One is the Repair Section which is supervising other ship repair projects at National Steel. The other section is New Construction whose only project is the hospital ship program. SUPSHIP reports to Code PMS 363-Auxillary and Special Mission Ship Acquisition Project. This code reports to the Deputy Commander of the Surface Ships Directorate, SEA 91. Code SEA 91, also called DEPCOM Surface Ships, reports directly to Vice Commander and Commander, Naval Sea Systems Command Headquarters.

O. THE PROJECT MANAGEMENT OFFICE AS AN INTEGRATING MECHANISM

The Project Management Office (PMO), located in Washington D. C. at the Naval Sea Systems Command, is the main controlling and integrating mechanism for TPC influences within and without the hospital ship project. The PMO employs approximately sixty-five people and oversees up to twenty-two programs at any one time, of which the hospital ship program is one. The three teams mentioned earlier in the chapter all operate within the authority of this office. Configuration Management (CM) procedures, discussed in the next chapter, are the primary change mechanisms used to manage external and internal TPC influences exerted by the various agencies involved in the project. For example, the hospital ship Program Engineer [Ref. 33] stated that all

major modifications must be approved by this office but that routine modifications can be approved by SUPSHIP San Diego.

P. THE MEDICAL CONSTRUCTION OFFICE AS A TECHNICAL INFLUENCE

The Naval Medical Command also has an on-site representative for technical input. The individual [Ref. 34] is a Medical Service Corps officer designated as the Medical Construction Officer, T-(AH) project, who works for SUPSHIP, Conversion and Repair, San Diego. The Lieutenant-in-charge heads an office composed of two officers and five enlisted personnel. The enlisted personnel are hospital corpsmen (independent duty and biomedical repairmen) and one dental technician.

The officers and enlisted personnel are constantly crawling through the medical and dental spaces aboard the ships, reviewing drawings and specifications, and observing the installation of equipment in these areas. This on-site inspection has resulted in numerous contract modifications by SUPSHIP.

The ongoing hospital ship program is helped because the suggestions are made by the type of Medical Service Corps Officers and enlisted ratings who will work on the hospital ship during deployment. Frequent visits by medical and dental officers from NAVMEDCOM also result in suggestions for equipment modification and placement.

Actual production of the two hospital ships started with a simple fact--no one had ever turned a former supertanker into a hospital ship. The SS WORTH became the USNS MERCY, and the SS ROSE CITY became the USNS COMFORT. One reason supertanker hulls were selected (besides cost competition) is that "Navy ship designers say (such hulls) lend themselves well to the needs of massive floating hospitals. They cite the designs inherent stability and low center of gravity, resulting in a unique anti-roll feature." [Ref. 35:p. 32]

Each ship is 894 feet long. The largest of the supertankers are over 1,244 feet long and an idea of size can be gained by the height of the Empire State Building which is 1,250 feet high [Ref. 36:p 383]. Although the hospital ships are not built from the keel up, they come close! First the deck was removed from the supertanker leaving only the shell, engine room and athwartship watertight-bulkheads intact [Ref. 37:5]. Then 3,200 tons of steel and over 13 miles of piping were removed from each ship.

One source [Ref. 37:p. 7] states that U. S. shipyards have lost their competitive edge and have been forced to reimport shipbuilding technology that the Japanese have improved on. The new technology involves using modular, mass production methods. One method is called the "on unit concept" in which [Ref. 37:p. 9] an entire unit of equipment is made outside the ship and then placed in the hull and welded to a deck.

In the on-block concept, several units with foundations are welded to a single deck section off ship. Other units and deck may be welded on top of the first, and then the entire block is hoisted into the hull for installation [Ref. 37:p. 9].

The "on-board" concept means that the installation takes place with the ship. These blocks are constructed with ample workroom and ventilation and greatly increased safety. They are usually constructed upside down which helps the welds to flow by taking advantage of gravity.

Using the blue sky concept [Ref. 37:p. 10], blocks below the waterline are constructed and installed first, then any associated equipment not installed at the on-block stage is landed on the ship prior to the installation of the deck or block immediately above.

The traditional method was much more complex and costly. It involved building each room inside the ship including all electrical, piping and vent systems. Thus the actual production of the hospital ships has been as unique as the supertanker/hospital ship concept.

Q. NAVAL MEDICAL MATERIAL SUPPORT COMMAND AS A TECHNICAL INFLUENCE

The Naval Medical Material Support Command, Fredrick, MD has played a significant role as the primary outfitter [Ref. 38] for all medical government furnished equipment (GFE). There are two categories of medical GFE onboard the hospital ships. They are called Authorized Medical Allowance Lists (AMAL's) and Authorized Dental Allowance Lists (ADAL's).

Approximately \$30 million has been spent on each hospital ship on items ranging from medical consumables to

medical/dental x-ray equipment. GFE is established on the hospital ships in three ways; through the AMAL/ADAL lists, mission specific needs (i.e. humanitarian cruises), and shipboard medical staff requests.

As a current example of this process the USNS MERCY mission to the Philippines provides a good example. The AMAL/ADAL lists are based on a wartime shock/trauma unit basis. GFE such as pediatrics equipment and items for large scale immunization programs have been added that were never initially considered for a hospital ship operating in a war zone. The acquisition cycle for these items has been running 90-180 days. GFE is purchased primarily stateside but many items have come from around the world.

Contingency support will be provided to the hospital ships through regular OPN (Other Procurement, Navy) procedures as the equipment life cycles for medical and dental items expire. Ongoing research continues to find the best equipment suitable for the hospital ship mission in the unique demands of the afloat hospital environment.

R. DEPLOYMENT PHASE TPC INFLUENCES

The deployment phase of the hospital ship program has proven to be an interesting one from a political standpoint and from the switch in original intentions. The hospital ships after construction and sea trials were initially scheduled to go into a AReduced Operating Status (ROS) [Ref.

39:p. 25]--basically a caretaking status until mobilized on a wartime or national disaster contingency basis.

The idea for some type of humanitarian mission evidently originated with Assistant Secretary of Defense William Mayer in late 1985 [Ref. 40:p. 8]. Dr. Mayer thought the United States and its Navy could "show the flag" in Third World ports around the globe to conduct Project Hope type projects. This would essentially involve large scale immunization and public health programs in various countries. One way of doing this would be to carry a Fleet Hospital onboard to deploy at each visit.

Another idea of Dr. Mayer's would use [Ref. 41:p. 9] the hospital ships:

as sort of a major worldwide continuing education process. When they are near a first world country like Scotland, we could conduct jointly with the University of Edinburgh and some civilian universities in this country really massive graduate education programs on disaster medicine, one of the world's great needs today.

The first mention of a humanitarian mission to the Philippines [Ref. 41:p. 4] originated with the White House. It was mentioned as primarily a preventive medicine program to be funded from \$10 million in emergency aid authorized for the Philippines by President Reagan. This source mentions that there are not many ports in the Philippines which can handle a supertanker sized hospital ship. As mentioned earlier a helicopter support squadron will probably have to

be deployed with the ship since the USNS MERCY has limited capacity to transfer patients from the sea.

A related Political influence and side effect of this mission was the Navy's assurance that the deployment "will have no impact on the availability of care in Stateside military facilities" [Ref. 42:p. 25]. The Navy did admit that the availability of inpatient care might slow down. With all the problems Navy medicine has had lately this announcement did not sit well with many military special interest groups. This is the reason DOD has made the mission a tri-service effort with Reserve augmentation [Ref. 42:p. 2] whenever possible.

Dr. Mayer disagreed with the Navy's plans [Ref. 42:p. 2] for the hospital ships after the humanitarian deployments. He still wants a continuing deployment of some type for the hospital ships. The biggest obstacle to this idea is the funding situation, and the problems of manning the vessel in peacetime. But this Political infighting, with White House involvement, shows how the original idea has evolved from the original ROS status. A humanitarian mission is also planned for the USNS COMFORT in the Atlantic Basin.

Depending on the degree of success of the Philippines mission we just might see many more deployments of the hospital ships. A Political influence can be found with the Cubans. They not only deploy military personnel in the countries they assist, but also many health care personnel

such as doctors and nurses. In many such cases these countries have limited medical expertise and this goes quite a distance in winning hearts and minds. The author thinks Dr. Mayer summed up the situation quite well [Ref. 42:p. 2] when he said: " . . . a great big white ship with a red cross and the American flag is a whole different message than a battleship."

S. NAVAL MEDICAL COMMAND TPC INFLUENCES

The NAVMEDCOM code concerned with Surface Medicine has played a key role in the production and deployment of the two hospital ships. An interview with CAPT Hooper [Ref. 43] revealed the uniqueness of the hospital ship program. He mentioned that there are four key players in the ongoing deployment of the USNS MERCY. The agencies and their roles are:

1. OPNAV 093 and 42 - Resource Control
2. CINCPACFLT - Operational Control
3. MILITARY SEALIFT COMMAND - Administrative Control
4. NAVAL MEDICAL COMMAND - Technical Control

Surface Medicine has served as the primary liaison with the Naval Sea Systems Command which has overall control of the building of the hospital ships through its PMO and subordinate offices. This Code provided detailed Technical advice on medical and dental issues dealing with space design and construction, equipment, supplies, manning, and

inspections. During the recent operational demonstration of the USNS MERCY this Code conducted a simulated patient flow from the helicopter landing pad through surgery, post op and genral ward placement.

One noticeable problem identified on the MERCY, was the lack of patient access by small boats. The main transfer point is by helicopters and reflects a historical bias from the Vietnam War. Both the USS SANCTUARY and REPOSE were fully supported by helicopters to deliver patients and rarely received patients from another ship. CAPT Hooper agreed with the author that all options should be covered and that a future modification of the hospital ships will involve the installation of an access port to solve this problem.

The Naval Medical Command, Contingency Planning Code is responsible for the staffing of the hospital ships in port and on deployment. Although the current humanitarian mission of the USNS MERCY to the Philippines is a tri-service/civilian effort, the majority of the personnel will be composed of U. S. Navy personnel. The proposed ship's complement will look like this:

Ship Operational Personnel	
MSC Officers	14
MSC Crew	54
Total Civilian	68
Medical Staff	
Senior Officers	9
Other Officers	250
C1#s	31
Other Enlisted	530
Medical Support	
Officers	12

CPOs	18
Enlisted	342
Communications	
Officers	1
CPOs	1
Other Enlisted	13

Total Military	1,207	[Ref. 43]
----------------	-------	-----------

The COMFORT is scheduled to make a humanitarian cruise in Atlantic waters in late 1987. During wartime, medical Navy reservists will fill many of the billets now being filled by active duty personnel on the humanitarian cruises.

T. SUMMARY

This chapter has attempted to document the various TPC influences involved in the hospital ship project initiation, production and deployment phases. Each of the agencies involved exerted their particular Technical and Political influences, and to a much lesser extent, Cultural influences. Although the Technical and Political influences are readily identifiable to the reader, the Cultural influences are not. Since sources of information refused to be put 'on the record' suffice it to say that the military medical culture and the military shipbuilding culture often did not mesh well. The TPC integration mechanism of Configuration Management (CM) was fully utilized to resolve conflicts and improve communication among all the agencies involved.

V. CONFIGURATION MANAGEMENT AND TPC THEORY IN THE HOSPITAL SHIP PROGRAM

A. INTRODUCTION

This chapter will attempt to explain the role of Configuration Management (CM) as a change mechanism to be used within the TPC Model. There are many different types of change mechanisms that can be used to promote and manage change--this is one more tool that can be added to the manager's toolchest. Configuration management is a unique vehicle for managing TPC influences and changes because it is already established by DOD regulations and directives, and practiced by some U. S. Navy Syscoms, for example the Naval Sea Systems Command.

Configuration Management (CM) definitions, history, policy, and the role of CM in a medical environment will be commented on. The specific categories of CM documentation will be explained. Lists of each type of change can be found in Appendix B.

B. CONFIGURATION MANAGEMENT AND TPC CHANGE LEVERS

Tichy [Ref. 1:p. 6] lists change levers such as external interface, mission, strategy, managing organizational mission/strategy processes, tasks, prescribed networks, organizational processes such as communication, problem solving and decision making, people and emergent networks. A

change lever is a subcomponent of an organization used to initiate and manage change in that organization.

As will be seen in the following sections, configuration management touches upon most of these change levers used for managing change in an organization. As a quick preview, configuration management forces communication between all interested parties. Through its structure, problem solving and decision making are of paramount importance. Many of the changes in the configuration of the hospital ships resulted from the outside environment as well as internal contract considerations. Decisions made regarding the mission and strategy of the hospital ships were formalized, managed, and documented through configuration management procedures. Both the formal chain-of-command and informal "grapevine" (emergent networks) were used to manage the changes.

C. CONFIGURATION MANAGEMENT DEFINITIONS

Configuration Management (CM) may be defined as: "the process that identifies the functional and physical characteristics of an item during its life cycle, controls changes to those characteristics, and provides information on the status of change actions." [Ref. 45:p. 6]

Configuration Management involves four basic functions:

1. Identifications,
2. Control,

3. Status accounting, and

4. Audits.

The primary emphasis in this chapter will be on configuration control outside of the purview of SUPSHIP San Diego. The three other areas will only briefly be commented on.

A configuration management program is required for government contracts involving major acquisitions. The hospital ship program is not considered such an acquisition, but a CM program is in place as part of the normal business procedure of SUPSHIP San Diego. Such a program has many benefits. These include a current description of the developing hospital ship, an audit trail and history of changes to a particular item, and documentation of the reasoning behind the change. CM contains the written foundation for future analysis and correction of errors, ensures that such errors are corrected in a cost efficient manner, and "ensures that such errors are corrected in a cost efficient manner, and "ensures that the system can be maintained and modified at minimum cost and down time" [Ref. 45:p. 11-1].

Changes will certainly occur throughout the life expectancy of the hospital ship due to changes in mission requirements (i.e. humanitarian deployments) and changes in political factors affecting cost and schedule influences on hospital ship design.

Ruckert [Ref. 46:pp. 4-87] confirms the CM definition and adds that it is a discipline applying administrative direction and surveillance in performing the four functions. It states that the purpose of configuration management: "is to prevent engineering anarchy and permit orderly development, recording, reproduction, and support of a system. CM is intended to control configuration changes, not to prevent them." [Ref. 46:pp. 4-88]

A philosophy emerges here that briefly sums up the main problem with the hospital ship program. The Navy Program Manager's Guide [Ref. 46:pp. 4-88] states that: "effective (CM) control procedures will hopefully eliminate the nice-but-not-necessary changes that keep designs in a state of turmoil, lead to litigation, and unnecessarily burden the logistic support system and training program."

OPNAVINST 4130.2A of 16 December 1985 provides the basic policy and objectives of the Navy Configuration Management System (NCMS) used in the construction and maintenance of the USNS MERCY and USNS COMFORT. The general policy of the NCMS is that of a "cradle to grave evolution". This means that integrating the CM elements starts with the initial contract acquisition and continues until the system under CM is scrapped at the end of its life time. By definition this will mean a great deal of coordination between the cognizant government activities and private industry. The formal structure of a NCMS system will increase communication and

the capability for standardizing procedures and practices of CM throughout the Navy in dealing with private industry.

The objectives of the NCMS are defined and enumerated (Ref. 47:p. 2] as follows: "Many discrepancies perceived as logistics support problems are directly attributable to inadequate configuration management. The objectives of CM are to obtain and maintain:

1. Effective planning to ensure that the elements of CM are appropriately implemented for each CI during each phase of its life-cycle.
2. An optimum degree of design and development latitude and yet introduce the elements of CM at the appropriate time, degree and depth.
3. Visibility of development progress and compliance with design requirements during the acquisition process.
4. Appropriate interfaces and coordination.
5. Efficient processing, control and implementation of configuration changes.
6. Adequate and verified technical documentation and configuration status accounting records to satisfy total program needs.
7. Desired life-cycle costs and the required level of operational readiness, supportability, interchangeability and interoperability through standardization and ILS consideration.
8. Accurate and timely knowledge of the current configuration of the CI."

D. CONFIGURATION MANAGEMENT HISTORY

Configuration management and control as a distinct process can be traced back to the 1950's when a series of program management initiatives were instituted by government

(customer)/industry (contractor) teams [Ref. 48:p. 7]. Configuration management and other initiatives (i.e., data management or systems engineering) in the 1960's were brought under tighter control by the Department of Defense through a series of instructions and directives. Among others the reason was to ensure "consistency with overall DOD policy and direction and compatibility with other management disciplines." It is said that nothing succeeds like success, and configuration management has been successful in the sense that it is still around today--it has stood the test of time.

Roveling [Ref. 49:p. 88] provides the following succinct

The principles and procedures of configuration management have been developed and applied in many system programs during the past 25 years. They originated as a set of techniques for controlling and verifying changes to operational military equipment. These were revised and expanded in the early 1960's to cover the preparation and control of specifications during the definition and acquisition phases of a system program.

Configuration management is a unique vehicle to balance the Technical, Political and Cultural influences in the hospital ship project. Configuration management, particularly the management approval mechanisms within it are enough to adapt to changing TPC environments.

Acker [Ref. 48:p. 10] states:

The application of configuration and data management must be carefully tailored to be consistent with the quantity, size, scope, stage of life-cycle, nature, and complexity of the system/end product involved. Program managers need to tailor the procedures that have been established to the complexity of the system/end product to be managed.

Configuration management has been praised by many because its structure forces the government and contractor to communicate with each other. Configuration management is again a unique vehicle to enforce this communication and therefore align and balance the various technical, political and cultural influences within the hospital ship project. The structured management approval mechanisms enhance this communication process and thereby the balancing of the TPC influences.

E. CONFIGURATION MANAGEMENT POLICY

The state policy of the Department of the Navy (DON) covering the initiation and approval of changes is as follows:

. . . configuration control will be exercised rigorously, and that no changes which effect the approved configuration (delineated by the contract specifications) of an item shall be made in the items on their documentation, except those which are necessary of offer substantial benefits to the Government. [Ref. 50:p. 1202]

Changes are limited to five categories which benefit the government. Changes can:

1. Correct errors of deficiencies,
2. Upgrade capability (i.e., humanitarian deployment to the Philippines),
3. Achieve a net life-cycle cost savings to the Government.
4. Upgrade capability and achieve a net life-cycle cost savings, and
5. Provide for the safety of personnel of equipment.

All approved changes are divided into two categories which are a) Headquarters Modification Requisitions (HMRs) and b) Field Modification Requisitions (FMRs). These categories are defined by various levels of approval authority and dollar thresholds which will be defined shortly.

Another issue in configuration management arises when a proposed change is accomplished under the hospital ship contract. All approved changes are categorized as essential or optional--which is a matter of judgement of SUPSHIP San Diego and NAVSEA Headquarters.

Essential changes are defined as: [Ref. 50:p. 1203]

The changes that are necessary for essential military or operational requirements, and must be done by the contractor under the contract prior to delivery of the ship to the Government. They include items that would effect the ship's ability to perform her mission if not accomplished prior to delivery of the ship, and certain necessary technical improvements for military reliability, safety, and important operational features. They also may include changes for repairs to Government-Furnished Materials (GFM), Government-responsible items the Headquarters directs to be performed prior to delivery of the ship, Government-responsible system defects and repairs under conversion contracts. (Such as the hospital ship program).

Optional changes [Ref. 50:p. 1204] are:

those technically approved changes that do not have to be accomplished before delivery of the vessel by the contractor. To be truly optional a change must be subject to cancellation without later accomplishment, or accomplishment deferred until after the Government accepts delivery of the vessel. All changes that have been classified as optional may be implemented only by a contract modification which establishes the price and delivery impact of the change . . .

The author of this thesis proposes that only by understanding the nature and influence of the various Technical, Political and Cultural influences within and without the hospital ship project can a sound basis be prepared for the future logistic support of the hospital ships. Configuration management and control is the methodology for channeling the TPC influences into the end product of a hospital ship. It is a continuing configuration management program that will be of great benefit to the individual hospital ship commands, and the Naval Medical command as a whole.

Although this thesis is restricted in scope to identifying the TPC influences and the management approval mechanisms through which they are funneled there is an overall long term goal. Dean [Ref. 51:p. 21] states it succinctly as: "The purpose of configuration management, at the bottom line, is to ensure the continuing logistics supportability of systems in the government inventory."

F. THE ROLE OF CONFIGURATION MANAGEMENT

The role of configuration management is integrating Technical, Political and Cultural influences is not likely to diminish or stay in equilibrium. The need for CM will grow. As medical projects grow ever more complex, be they hospital ships or sickbays aboard combatant ships, the need for managing the often conflicting influences will continue to be

felt. Dean [Ref. 51:p. 37] believes the basic structure of configuration management will not change but the working tools will. These tools include increased use of mathematical modelling, automation and computerization of the project under configuration control and the TPC influences impacting on the project.

As the medical projects grow more complex, there is no reason not to believe that the TPC environment within and without the project will also become more complex and dynamic, particularly as resources become more constrained. This has been the trend in naval medicine. The author expects this trend to continue in direction, if not in intensity.

Dean [Ref. 51:p. 37] sums up overall (medical) configuration management:

If we look into the future, we see a new frontier in configuration and data management. Our challenge is to define it and apply our innovation and imagination to the solution of its problems. We must evolve with the times by using the technology of tomorrow to manage the products of tomorrow. If we don't, we are in danger of becoming obsolete. The message is clear. We must promote today the discipline, tools, and caliber of personnel required to manage tomorrow's sophisticated world of configuration and data management.

The author strongly believes the Naval Medical Center possesses the requisite personnel to successfully implement a medical configuration management program.

AD-A198 918

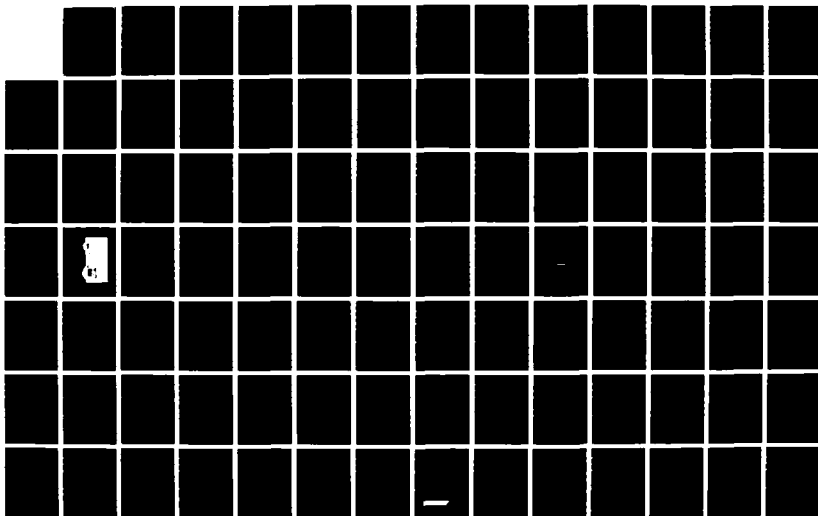
UNITED STATES NAVAL HOSPITAL SHIP PROGRAM: HISTORY
EVOLUTION AND CONFIGURATION MANAGEMENT(U) NAVAL
POSTGRADUATE SCHOOL MONTEREY CA W H ROBERTS DEC 87

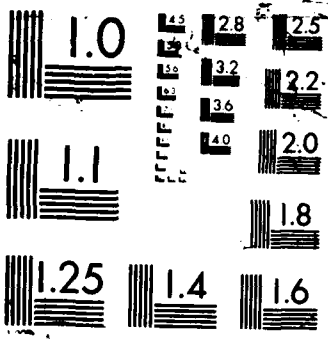
2/3

UNCLASSIFIED

F/G 6/12

NL





Although configuration management is a process which can readily handle all Technical, Political and Cultural influences Fohnman [Ref. 52:p. 55] believes the individual configuration manager can handle the Technical influences the best. This author's view's: "configuration management as involving three elements: administrative, clerical and technical management."

He accuses many in the field of being little more than administrative and clerical functionaries and of ignoring the real purpose of the position--technical management. This author states there are two reasons for this:

1. The administrative and clerical emphasis of most configuration management instructions, and
2. The lack of engineers in positions of configuration managers.

The author's preference for engineers is quite obvious:

We have found that, generally, the technically oriented configuration manager does a better job than a nontechnical person and, specifically, that the configuration managers who are engineers tend to do the best job. The reasons seem to be that there is no credibility gap when dealing engineer to engineer, and that the depth of understanding of technical problems tends to be greater, therefore stimulating questions/discussions that lead to better configuration management performance.

The lesson in this quote for the Naval Medical Command in implementing a configuration management program is that technically oriented individuals attuned to the ever changing technology of medical equipment and medical design will be the best choices for medical configuration management. But

even the best technical person will be unsuccessful if he ignores the Political and Cultural considerations of his job. The author further states that "configuration management activities are not normally visible to top management". Therefore the Political and Cultural aspects of a military medical CM position are as important as the technical aspects.

Only a strong configuration management program can balance the competing TPC influences to keep a project under cost and on schedule. Source after source documents this. For example:

The key to controlling engineering changes and the configuration of the production line lies with the techniques and discipline within a well structured configuration management function enjoying full support of the Program Manager Control of engineering changes was made possible through the consistent, disciplined application of good judgement, technical competence, and management techniques which are necessary to achieve and maintain program balance. [Ref. 54:p. 1]

The author goes on to state that:

Program Management is often referred to as the 'management of change', which it certainly is in the broadest sense. However, all too often this broad interpretation of the management of change has not properly included change management. In this more limited context, change management is one of the major functions of configuration management . . . [Ref. 54:p.1]

Powers [Ref. 53] also recognized that there are discrete 'Forces for Change' that fit into the TPC framework--they are:

1. The contractor and associated technical representatives

2. The User in separating goals from requirements
3. Changes in personnel
4. Changes in requirements dictated by expanded missions
5. Changes by altered threats.

Changes in user personnel affect the program in several ways. At the headquarters level, the replacements of those who helped design the system by evaluating and suggesting changes from the user's point of view do not always agree with their predecessors. [Ref. 53:p. 16]

Without configuration management follow-up on a project:

. . . the only way out of the tangle was to spend many dollars and much time. The out-of-control condition was not an inevitable thing and would not have developed had the government maintained the configuration control it has exercised up to that point. Apparently, good configuration management is a habit difficult to acquire and easily forgotten. [Ref. 53:28]

and:

. . . there is no clear answer to the question--How many changes should be made? All that can be said is that change management is an essential part of cost management and changes must be made in response to a dynamic environment. The Program Manager must recognize the forces at work and achieve the balance. [Ref. 53:p. 34]

G. CONFIGURATION MANAGEMENT MEDICAL ENVIRONMENT

Powers [Ref. 53:p. 1] comments on the balancing act of technical, political and cultural forces that the process of configuration management strives to address.

One school of thought is that a continual flow of changes are necessary to continually improve the product, its usefulness, its value, its production, its maintenance, etc. Another is that design configurations should be frozen once a workable, useful design has been achieved.

Both positions have a great deal of merit and the TPC influences inherent in a project determine to what degree a

project will move on the continuum between the two extremes.

The author goes on to state:

. . . that changes do, over a given cycle of time, improve a product, make it better, more useful and simplify its manufacture and maintenance. In addition, there is a continuing advancement in the general state of particular product involved. On the other hand, design freeze results in the desired economies of stabilized production processes, tooling, and quality control, plus standardized specifications and stabilization of the maintenance and supply situation.

The hospital ship project is an ideal example of this balancing act and the pull of the two extremes. There are strong TPC influences for more and better medical equipment and technology onboard the hospital ships. At the same time there are very real cost and schedule considerations, along with long term logistics support considerations and their cost aspects that must be balanced.

Graham [Ref. 54:p. 2] supports the general consensus of authors in this field when writing:

A middle ground, somewhere between the excessive issuance of changes and no changes at all would probably be best, though. And the answer is Configuration Management. Properly administered, the configuration management program should result in an optimum situation with respect to changes, economies and the ever important advancement in the state of the art.

The Naval Medical Command, and the individual hospital ship commands, need to establish and maintain formal configuration management and control programs. On the surface this will not be greeted with great enthusiasm from anybody. The following quote [Ref. 55:p. 28] provides a glimpse of the reasons:

The problem is, where will you find the person with the qualification to accomplish those configuration management tasks for you? For many years, configuration managers have been 'configuration recorders', required merely to track and record the accomplishment of various program activities without participating in the initial decisions about the tasks. The configuration manager has acquired a reputation as a 'paper pusher' and a stick in the mud'. . . the configuration manager all too frequently receives sparse recognition or praise for his efforts and management expertise. The resulting feelings of low esteem and low status compared to other functional managers have led to a perception of poor career progression and low promotability within the configuration management field.

If the Navy Medical Command and hospital ship commands follow up on this recommendation, the aforementioned pitfall perceptions can be avoided with strong 'front office' support for the CM program implemented. This support includes rewarding individuals appropriately for a successful CM tour.

Carr [Ref. 56:p. 21] talks about the recurring headaches (to the supply officer) that occur when repair parts for equipment are not onboard after deployment. The author states:

. . . your ship needs a solid Configuration Management program, and why improper or nonexistent shipboard Configuration Management remains one of the primary contributions to poor shipboard logistics support. To be effective Configuration Management should be an aggressive ongoing program of verification of all allowance documentation for installed equipments onboard a particular ship.

This reference states the following steps are necessary to implement a viable Configuration Management program aboard ship:

1. Designate a ship's Configuration Officer (usually Supply Officer or 3-M Coordinator)

2. All work center personnel should become familiar with the COSAL Use and Maintenance Manual
3. Routinely, equipment changes and documentation should be identified, confirmed and corrected using OPNAV 4790/OK (Ships Configuration Change Form)
4. Ensure all configuration changes are documented accurately and correctly on a timely basis.

H. TIMING OF CONFIGURATION MANAGEMENT CHANGES

Configuration Management not only deals with the justification for, and documentation of changes, it also deals with the impact of the timing of changes. [Ref. 57: p. 58] states:

Poorly timed changes may unnecessarily disrupt contractor operations, create scrap or rework, and/or generally increase cost to the Government. Delayed changes, on the other hand, may jeopardize corrective actions designed to avoid fatal or serious injury to operation personnel. Inadequate attention to how changes are ordered may lead to disputes and claims by the contractor.

An example of changes implemented in an unanticipated and rushed schedule were the 'finishing touches' for the USNS MERCY in 1986. This process was yet another example in which Naval Sea Systems Command in general, and SUPSHIP San Diego in particular, were caught in the middle of events. The deployment phase of the USNS MERCY was touched upon in Chapter Four but its effect on the configuration management control process was significant.

Both NASSCO and NAVSEA were pressured to finish the ship months ahead of schedule and were rushed in particular to finish the multitude of Two-Kilo cards generated by the Board of Inspection and Survey during the Acceptance Trial. The majority of the discrepancies were corrected, particularly the safety items. Although difficult to measure quantitatively, there was an increased cost to both the government and the contractor in trying to complete the INSURV inspection changes in a compressed schedule. Personnel at all the agencies, involved agreed that the process as conducted was neither optimal nor the preferred way of doing business. But the configuration management control process did work even when operation under unanticipated and shortened deadlines.

I. SEA TRIALS AND THE MILITARY SEALIFT COMMAND IN THE CONFIGURATION MANAGEMENT PROCESS

One of the great advantages of a formalized configuration management control system is the corporate knowledge as represented in the documentation of the reasons for change. The sister ship of the USNS MERCY, and the USNS COMFORT, has benefited greatly in the 'lessons learned' category in constructing the second ship. NASSCO was helped in particular by the documentation in the form of trial cards for the Builder's Trial, the first of the series of sea trials the hospital ships go through. The preparation for, and conduct of the Builder's Trial went much more smoothly

than the first one (on the MERCY) due to the voluminous amount of change documentation kept at the construction site at NASSCO.

The Military Sealift Command plays an integral role in the configuration management process. [Ref. 58] The onsite function is through MSC participation during construction of the ships and the Builder's Trial and Acceptance Trial. This process, as well as the Final Acceptance Trial during the Guarantee Period, were outlined in Chapter Four.

The MSC CONREP Office reviews and proposes modifications to the hospital ships. The review function of contractor proposals is part of their job as attached to SUPSHIP San Diego. Proposed configuration management changes can originate at the field level or from the Engineering Code at Military Sealift Command Headquarters. Copies of completed reviews and proposals, in the form of internal memos for modifications are sent through the SUPSHIP/NAVSEA chain of command and to MSC headquarters. Close coordination and communication is maintained at all times through this dual reporting process. The connection to NAVSEA is from two directions,

1. Up, through SUPSHIP San Diego, and,
2. Across, from MSC HQ Engineering which supplies the MSC voting member to the NAVSEA PMS Configuration Control Board.

The post-construction configuration management phase starts from the actual delivery of the hospital ship to the

Navy and lasts for the full eight months of the Guarantee Period as called for in the contract. This period is a warranty period in which all Contractor Furnished Material (CFM) is supposed to work without failure for eight months. The other category of material, Government Furnished Material (GFM) is also tested and inspected during this period but the contractor does not have to pay for the failure of this equipment unless it is proven that it was installed incorrectly.

The MSC crew during the Guarantee Period writes up Guarantee Deficiency Reports on all CFM equipment. MSC personnel such as Engineering and Deck Officers, and MTF department heads, forward their respective GDR's to the Chief Engineer who reviews and transmits these reports to NAVSEA and MSC HQ. These reports are part of "Rolling-Over" configuration management information when building subsequent ships of the same class. For example the humanitarian deployment of the USNS_MERCY to the Philippines provided valuable information for the construction of the USNS_COMFORT the following year.

A somewhat unique arrangement of resolving configuration management changes is the presence of a Guaranty Engineer aboard the hospital ship for the entire Guaranty period. This individual is an employee of the prime contractor (NASCO) but is paid for by the Navy under provisions of the contract. The Guaranty Engineer attempts to correct as many

CFM deficiencies as possible while underway or in foreign ports.

After the Guarantee Period MSC involvement in the configuration management process does not stop. When for example the USNS MERCY is homeported in Oakland, CA the actual berth will be at an MSC maintenance facility. A complete archive of all configuration management documentation should be located at both the shore facility and aboard the hospital ship. The archive's purpose will be to facilitate future maintenance and modifications by providing a fund of corporate knowledge of lessons learned. This archive will be directed mainly at hull, deck and machinery spaces the MSC is responsible for, and not the MTF spaces since the assigned medical personnel are responsible for equipment maintenance.

J. CONFIGURATION MANAGEMENT DOCUMENTATION

In discussing the various types of configuration management control documentation (HMR, FMR, RFW, RFD, and PMP) it is important to note that there are various levels of approval for each type of document. There are four levels of approval within the hospital ship project and they are:

1. SUPSHIP San Diego,
2. SHAPM,
3. COMNAVSEA, and
4. CNO.

It is beyond the scope of this thesis to cover the myriad of details of approval for each change. However, in general, [Ref. 50:p. 1207] "the greater the technical, cost, and/or schedule impact of a proposed change, the higher the organizational level of approval."

The overall goal in this chapter is to enumerate the variety of types and causes of configuration management control changes of the hospital ship project rather than to review the minutiae of detail in how these changes are administratively pursued through the chain of command.

Whether changes are Technically, Politically or Culturally influenced, they all fall into the following categories:

1. Engineering Change Proposal (ECP),
2. Request for Waiver (RFW).
3. Request for Deviation (RFD),
4. Field Modification Request (FMR),
5. Headquarters Modification Request (HMR),

A complete listing of all categories and associated dollar amounts can be found in Appendix B. Each category will be defined and an example (or notable examples) will be given for each category of documentation of configuration management control.

1. Engineering Change Proposal (ECP)

As defined in MIL-STD-481 an engineering change is [Ref. 59:p. 2]:

an alteration in the configuration of an item, delivered, to be delivered, or under development, after formal establishment of its configuration identification. An engineering change proposal therefore is a term which includes both a proposed engineering change and the documentation by which the change is described and suggested.

DOD-STD 480A goes into exhaustive detail on the requirements for engineering changes, and the internal classifications for such changes. Once again this thesis will forego such a detailed discussion and instead stay with the broad categories of documented changes with representative examples and how they fit into the change process.

Examples of ECP's are red cross markings for the lifeboats, floor covering in the operation room, installing additional autoclaves (laboratory) or telephones (administration), or correcting discrepancies in any part of the ship. SUPSHIP San Diego ECP computer printouts did not list specific costs but did note affected specifications and drawings and any related FMR's or HMR's.

2. Request for Waiver (RFW)

A Request for Waiver (RFW) is an "after-the-fact" action. The prime contractor has completed a specific segment of the contract and later it is found out (either through government or contractor quality assurance efforts) that the job does not meet contract specification. The SACAM states [Ref. 50:p. 1233]:

Requests for waivers may indicate defects in the contractor's quality assurance and inspection procedures,

and the SUPSHIP surveillance of these procedures. MIL-STD-481 [Ref 59:p. 2] defines a waiver as "a written authorization to accept an item which during production or after having been submitted for inspection, is found to depart from specified requirements, but nevertheless is considered suitable for use 'as is' or after rework by an approved method.

Examples of RFW's are lighting requirements in different spaces of the hospital ship, lubricating systems, types of paint, adhesives for decks and alarms.

3. Request for Deviation (RFD)

A Request for Deviation (RFD) is a before-the-fact action. A deviation, as defined in MIL-STD-481 [Ref. 59:p. 1] is:

a specific written authorization, granted prior to the manufacture of an item, to depart from a particular performance or design requirement of a specification, drawing or other documents, for a specific number of units or a specific period of time.

RFD's include changes to piping systems, doors and passageways, insulation, painting, deck tile, dental and laboratory equipment and even hospital ship lettering.

4. Field Modification Requisition (FMR)

As described by SUPSHIP San Diego [Ref. 60], a Field Modification requisition (FMR) is an idea or concept initiated at the field contracting activity level. It does not fit any of the preceding categories and does not have any particular dollar threshold.

A good example of an FMR is the feasibility study for medical storage that was funded and compiled, and ended up as a project manager proposal. Medical storage areas aboard the hospital ships were increased from the original estimate after calculation showed the growing authorized medical allowance lists (AMAL) would not fit within the estimated original storage areas.

5. Headquarters Modification Requisition (HMR)

Like the FMR, the headquarters modification requisition (HMR) is a concept or idea originated within the Project Manager's Office at Naval Sea Systems Command. HMR's therefore do not fit any of the preceding categories and does not have a dollar range. The difference between the FMR and an HMR are the respective staffs, and specialties within each staff, when modification requisitions are proposed.

As a corollary to the preceding example, the actual authorization and funding of the increase in AMAL storage space, once the PMP was approved, was administratively handled as an HMR. Another example would be the small marine sanitation device (MSD) provided for the reduced operating status (ROS) crew when in homeport status.

K. CURRICULUM OF REQUIREMENTS (COR)

1. COR Evolution

Configuration management changes in their most preliminary and fluid form are demonstrated in the evolution

of the four Curriculum of Requirements (COR's) (although only the first and last COR's were actually published.

The COR's were jointly developed between the Naval Sea Systems Command--represented by the Project Manager's Office, and the Naval Medical Command--represented by it's Surface Medicine Code and Medical Liaison Officer. The following COR History shows the lifespan of the effort. There were complex TPC influences in the evolution, but participants were reluctant to speak 'on the record' in separating out specific technical, political and cultural influences.

The COR History as outlined by the hospital ship program manager is as follows:

- 31 July 1981 - Original Grey COR
- 21 July 1982 - Blue COR - Minor revisions intended to incorporate several changes approved during the proposal phase for phase I.
- 25 August 1982 - Red COR - Never officially released to the offerors. This was a major revision to the original requirements, and was considered too severe a reduction in capability.
- 21 October 1982 - Yellow COR - Final approved document released to offerors. [Ref. 26]

2. First Original (Grey) COR

Ref. Circular of Requirements for Afloat Definitive Care Facility T-AH(X) dated 31 July 1981, Department of the Navy, Naval Sea Systems Command, Washington, D.C. 20362

The original COR, also known to the Naval Sea Systems Command as the Grey COR, set requirements (not specifications) that resemble a Functional Baseline as set out in the System Engineering Management Guide (p. 11-1). A Functional Baseline is defined as follows, the functional baseline is established at the of the CE (Concept Exploration) Phase. The systems specification (Type A) (on development specification, Type B, for smaller programs) defines the technical portion of the program requirements. Normally the initial system specification is included in the RFP and provides the basis for contracting and controlling the system design during the Demonstration/Validation (D/V) Phase. It is the foundation for configuration management during the subsequent phases of the program. Once the system specification has been authenticated, formal configuration control is initiated.

As mentioned previously the hospital ship program has many unique aspects. Most specifications for the ship were developed by the individual offeror's in response to the RFP. Other ships constructed by NAVSEA would have voluminous military specifications provided to the contractor which

would form the Functional Baseline and progressing to the second Allocated Baseline and final Product Baseline.

The first and subsequent COR's provided only requirements that had to be met in responding to the series of RFP's as mentioned in Chapter Four. These requirements, although not considered specifications, can become quite detailed. Appendix D, taken directly from the Grey COR [pp. ii-iv], represents aspects of a 'regular' configuration management Functional, Allocated and Product Baseline.

Largely in response to financial pressures, some major and many minor configuration changes were made to the COR Requirements through the second 'Blue' COR, third 'Red' COR and fourth 'yellow' COR. Rather than list all four revisions and the third Table of Contents/List of Appendices, the author has enclosed only the first and fourth COR's so that the reader may compare for himself the extensive configuration changes listed in Appendix B. [Ref. 61]

L. CONFIGURATION CONTROL BOARD

The Configuration Control Board (CCB) was the main TPC integrating mechanism which resulted in the evolution of the three preliminary and the final COR. The Configuration Control Board (CCB) represents an important integration mechanism for aligning the complex and competing Technical, Political and Cultural influences within the hospital ship project. CCB's are located at both the SUPSHIP and NAVSEA

levels. They are a dynamic and organic mechanism for dealing with TPC influences in the following components (TICHY, p. 128) of the hospital ship project:

1. mission/strategy,
2. people/managmeent style,
3. prescribed methods,
4. organizational processess and,
5. emergent networks.

Representatives from management and the functional areas such as engineering, contracting and quality assurance come together to work out their differences in finalizing the decisions and documentation for the categories of configuration managemnet changes. Most often the resultant decisions are reached by consensus, particularly at the SUPSHIP field activity level.

The CCB at the Naval Sea Systems Command level also uses consensus but may have to resort to formal majority votes when the TPC conflict influence among the NAVSEA, NAVMEDCOM and MSC cannot be overcome. This evidently occurs rarely since consensus is reached on most issues.

M. PROGRAM MANAGER PROPOSAL (PMP)

The Program Manager Proposal (PMP) is another major form of Configuration Management documentation.

A PMP, is partially defined [Ref. 50:p. 1201] as "changes that do not meet the policies, requirements, and procedures

contained in this chapter shall be forwarded to the cognizant Ship Acquisition Project Manager (SHAPM)."

The PMP Process is not actually part of the Configuration Management Process but is an adjunct to it. It is a procedure for managing change and the hospital ship project was subject to it. In the four areas it was used, stored configuration management documentation was utilized while the actual approval process was elevated from the internal Naval Sea Systems Command command structure to the Secretary of the Navy.

The draft of the OPNAV Instruction on the Program Management Proposal Process [Ref. 62:p. 1] states:

The purpose of the Program Management Proposal process is to provide a mechanism to regulate research and development and to control configuration changes and modifications which lead to increases in non-recurring, recurring or support costs to ships, aircraft, missiles, weapons, systems, combat vehicles and combat equipment both during and subsequent to production.

1. Background of the Program Manager Proposal Program

The PMP program [Ref. 62:pp. 1-2] was established in 1982 by SECNAV direction to control spiraling costs. Initially only selected programs were required to submit PMP's when a threshold was broken. The PMP program has proven to be a valuable tool in managing configuration control and cost, and has therefore been expanded to include all Department of the Navy RDT&E, acquisition and retrofit programs. Thresholds have been eliminated. The intent of PMP control is to prevent unit cost growth and requirements

creep' due to unnecessary configuration changes, adding capabilities to existing systems or making improvements that entail 'hidden' execution costs. Once a baseline is established, either through an approved Operational Requirement and its attendant approved PMP, an approved milestone, a prior approved PMP or through a PPBS decision, no changes will be made to that baseline without an approved PMP or a subsequent PPBS change. This process will enforce configuration freeze between milestones, ensuring block upgrades and long range planning. Once approved, the PMP shall be considered directive in nature. By their signatures, the OPNAV Resource Sponsor certifies commitment to fund the proposed change, and the SYSCOM Commander certifies the program is executable for the dollars specified in the PMP. The approved PMP will be attached to the existing program documentation and will be considered the new program baseline.

The draft OPNAV Instruction states the submission criteria must be submitted when there is a new operational requirement, when a change is proposed for the approved baseline, or when there is an increase in unit cost for the system (hospital ship) in production. Discretion and the political aspect of the TPC model come into play in the change management process.

The instruction mentions that there may be 'fact-of-life' changes [Ref. 62:p. 3] to a program that may

be beyond the control of the SYSCOM, Resource Sponsor or the SECNAV. The four hospital ship changes that were handled as PMPs could have been interpreted as 'fact-of-life' changes, or as operational requirements, or as increases in unit cost.

In interviews with the Supervisor of Shipbuilding Office, and the Program Manager's Office, it became clear to the research that there are many subtleties to the Political process between these internal bodies of NAVSEASYSCOM, and the 'external' bodies of OPNAV and SECNAV. The subtleties were such that no party would comment beyond the fact that each instance had 'command interest' to a degree that a PMP was required. The main philosophy behind the PMP process appears to be a concern for unit costs of new systems.

The hospital ship program consists of only two ships, spread over a seven year construction life, and has a relatively modest cost (under \$100 million) compared to billion dollar weapon systems. On this basis the PMP process appears more appropriate for the major weapons systems than for a 'minor' medical acquisition.

The Technical, Political and Cultural influences in the hospital ship project are an integral part of the PMP process. They are part of the decision to initiate a PMP, and they are part of each step in the PMP approval chain. This section on this type of change management mechanism will conclude with an outline of how PMPs are reviewed [Ref. 62:p. 6]:

1. SUPSHIP San Diego to NAVSEASYSKOM Program Manager's Office.
2. NAVSEASYSKOM to Resource Sponsor (in this case OPNAV 093 & 42)
3. After completion of a review board the PMP is forwarded to the Department of the Navy Program Information Center (DONPIC), who forwards the PMPs to the Chief of Naval Operations.
4. After approval by CNO, DONPIC forwards the PMPs to the Office of Program Appraisal (OPA) which coordinates within the Secretariat.
5. OPA forwards SECNAV decisions to DONPIC who sends the PMP approval or rejection to OPNAV and NAVSEASYSKOM.

At the time of the writing of this thesis. (June 1987), there were five hospital ship project PMPs in various stages of approval. They were to add:

1. A sideport for patient access by boat,
2. 70,000 cubic feet of medical storage space,
3. A brig and master-at-arms office,
4. An undetermined amount of office/administrative space and,
5. A CT scanner.

All PMP's would be added to both ships. The CT scanner is the most notable of the five PMPs, and the most controversial.

N. EXAMPLE OF A MEDICAL PMP

The addition of a CT scanner to the hospital ships is an example of incorrect input information going into a good configuration management control system. The CT scanner

issue is also an example of flag officer influence, congressional interest and local newspaper coverage. A local newspaper in San Diego [Ref. 63, p.1] reported the issue as a minor expose on the project, to the dismay of SUPSHIP San Diego and NASSCO.

In the article, a Navy spokesman in Washington, D.C. was quoted as saying that "the Navy is studying the possibility of adding CT scanners to the ships". Both ships are to have standard X-ray equipment. Any analysis of the four revisions of the 1COR shows this to be true. The final COR calls for (per ship) eight X-ray rooms with at least six of the eight rooms "equipped with a 500 MA unit with fluoroscope and image intersurfaction capability" (Yellow COR, p.10).

The article went on to say that "Originally, the Navy had rejected as impractical the idea of having CT scanners aboard, but after a tour by some admirals last year, it (the Navy) decided to reconsider the issue". The hospital ship program has been the subject of intense flag officer discussion since its inception, particularly among flag officers in OPNAV, NAVSEASYSCOM, COMNAVMEDCOM, and MSC.

To add to the bad impression left by this article, a spokesman in the office of U.S. Senator Pete Wilson (R-Ca.) added that "Serious questions would be raised if the Navy had to rebuild part of the ships to add the equipment".

In addition, a local trauma center indicated: "We feel that the CT scanner is crucial to care for patients. Regular

skull X-rays are almost useless in letting us know what we need to know. CT scanners have been widely used since the mid-1970's. Use of the scanners is the standard of care in the community. By law, the Navy is required to provide care equal to that in the civilian community".

Although this reporter put the issue in the worst light possible, the CT scanner addition had been grinding through the configuration management control process a year earlier. No documentation exists on whether CT scanners were rejected on technical, cost, supportability, or medical grounds between 1981 and 1984 when the COR's were written and revised. The issue was raised by many of bidders responding to the RFP's issued by the Military Sealift Command and Naval Sea Systems Command.

A precise history of the subject was provided by a telephone interview [Ref. 64] with the assistant program manager for the hospital ship project. This source stated that the subject of the CT scanner came up a few times between 1982 and 1985 but was never made part of the COR. In mid-1985 OPNAV Code 04 directed that CT scanners be added to the two hospital ships. Technical input was requested from NAVMEDCOM, and NASSCO was directed to prepare an ECP for the modification. A Program Manager Proposal (PMP) was submitted to OPNAV but was first withdrawn, and later resubmitted.

One reason was that a NAVSEA contract consultant (Designer's and Planner's) questioned the NAVMEDCOM choices

for suitability for shipboard use. In response to this NAVMEDCOM advised NAVSEA that the submitted models were not equivalent and would have to be redone. In fact, two out of three chosen companies later refused to sign a document stating that their equipment would work on a ship. While the ECP for installation was forwarded from NASCO to NAVSEA (via SUPSHIP San Diego) the PMP was still hung up in OPNAV because NAVMEDCOM needed to provide new choices for CT scanners. A PMP needs definite cost estimates to proceed through the 'chop-chains' at OPNAV. This 'old' PMP was withdrawn and a new PMP was submitted in July 1986 with new choices of CT scanners from NAVMEDCOM. By October 1986, the PMP had worked it's way through OPNAV and was submitted to SECNAV where the PMP was approved that month.

In 1987 the problem continued with funding of the PMP as the main obstacle. Although the configuration control review procedures functioned properly they do not address funding concerns (nor are they designed to). Many configuration changes are approved before the funding is finalized. NAVSEA would prefer to have the funding first but three other PMP's approved and awaiting funding are: additional medical storage space, brig & master-at-arms space, and expanded administrative space.

Also surprising is that in May/June 1987 there were unfunded configuration management control proposals before NAVSEA and OPNAV. Among these the controversial and

expensive CAT scanners and three other program manager proposal's (PMP's) already approved by OPNAV and awaiting funding.

The literature and structure of configuration management is for the most part silent on the subject of funding of changes. The unspoken assumption is that time and effort would not go into preparing any of the various documents, from and ECP to a PMP, unless funding could be found. This assumption, at least in the hospital ship project, is threatened by fluctuating funding levels, and sources of funding, for the ship (USNS MERCY).

The thesis author has to admit to feelings of surprise and dismay upon reading this article. At best this placement of the two hospital ships on a "Pentagon cut list" is a budget battle ploy to press Congress for continued funding. At worst this turn of events shows the continued lack of priority 'medical readiness' is given when planning 'combat readiness'. The article appeared when the USNS COMFORT was still being constructed at NASSCO and not 70% complete. It is surprising in light of the many comments made by various Pentagon officials supporting improved and increased medical readiness.

With the recurring battles over the Pentagon's budget Military Medicine [Ref. 65:p. A10] states:

. . . with the Navy nearing its 600 ship goal, the government is discovering that there simply isn't enough money to pay for the crews to operate the ships, or to

maintain them. So, Pentagon planners, realizing that the 600-ship Navy will be a fleeting (no pun intended) reality at best, are looking for ways to cut costs. Given a choice between a big gray destroyer and a big white hospital ship, the Navy prefers to keep the warship. Last fall, the Pentagon announced that the hospital ships were on a list of programs to be cut if next year's (FY 88) Pentagon budget is cut . . . a skeleton crew will settle down to maintaining requested modifications and additions to the two hospital ships.

Configuration management philosophy speaks of controlling 'unnecessary changes'. It is increasingly apparent that such changes must not only be viewed in an engineering, technical, or medical sense, but also in a funding sense. An unnecessary change might be one in funding in unstable or remote.

Configuration management does address the impact of changes on logistic support in a system, in this case the two hospital ships. A proposed change might also be viewed as an unnecessary one if the funding for the original modification is unknown or probabilistic, the funding for logistic support and life-cycle cost can only be more of an unknown. These considerations should be discussed when deciding whether to invest the time, effort, and money into proposing a documented configuration management change and forwarding it up the chain of command for approval.

O. SIMA - SHORE INTERMEDIATE MAINTENANCE FACILITY

Configuration management changes have also occurred in the hospital ship program between the date of acceptance of a vessel after work was completed at NASSCO, and the departure

date of the USNS MERCY for it's humanitarian deployment to the Philippines. Configuration management is very important when a series of ships in a class are being constructed and feedback from the fleet is used to aid construction in subsequent ships.

The hospital ship program is unique (once again using that overworked phrase) in that only two ships are being constructed, one right after the other, with only limited operational deployment feedback to aid in the construction of the sister ship. Each ship will operate in widely different environmental conditions and potential strategic scenarios. The USNS MERCY will operate in the tropical climate of the Pacific Ocean while the USNS COMFORT will operate in the colder North Atlantic Ocean. The USNS MERCY will most likely have to transit several thousand miles before reaching a potential combat zone while the USNS COMFORT will have to transit in a few short days to Europe to support any potential NATO combat scenarios.

Some of these factors will influence configuration management and control of the two ships. Even the specific 'personality' of each ship's crew, and command influence, can influence configuration management of a hospital ship. Example of some of these influences is demonstrated by the modifications made to the USNS MERCY at the Shore Intermediate Maintenance Activity (SIMA), Naval Station, San Diego.

The USNS MERCY was affected by the timing of the humanitarian deployment and the resulting rush to depart San Diego on time in February 1986. Much of the work completed at SIMA was out-of-scope on the NASSCO contract but considered necessary for the humanitarian deployment. An example of this would be expanded general storage areas throughout the ship. In contrast, USNS COMFORT will not install specific additional storage areas until a specific operational assignment is made and the overall logistic requirements are known.

Command influence or crew climate plays a large role in the configuration of MSC and MTF administrative spaces which will be different on each ship. Many of the changes can be broken out in a separate list that can be shown to directly result from the Board of Inspection and Survey (INSURV), while others will be lumped together on the SIMA list or Post Delivery Availability work list. There were a multitude of Technical, Political and Cultural influences at work in interactions between SUPSHIP, the USNS MERCY, MSC, COMNAVMEDCOM, NAVSEASYSKOM, OPNAV, SECNAV, INSURV and the various 'visitors' from each of these political bodies.

It is beyond the scope and depth of this thesis to attempt to trace each change to each interested party. This thesis will list the changes to give a 'taste' of the changes involved. Appendix E lists the changes completed or contemplated at SIMA San Diego before the USNS MERCY departed

for the Philippines. The bottom line technical-political-cultural cost of these changes was \$449,630.10 [Ref. 66]

Appendix E also lists the changes to be completed during the Post Delivery Availabiltiy period after the USNS MERCY returns from the Philippines and homeports at the MSC facility in Oakland.

Many of the changes were the result of INSURV inspections, while others could not be completed at SIMA due to time or, material constraints. The TPC influences of the INSURV Board were particularly interesting due to Technical interpretations of military versus commercial standards, apparent Political friction between the INSURV Board and NAVSEASYSKOM, and Cultural influences of inspecting US Navy combatants/auxillaries versus a hospital ship. Not much more can be written due to the reluctance of all parties concerned to talk about specific issues. Suffice it to say that a large number of 'safety items' were generated by the INSURV Board for NAVSEASYSKOM to correct.

A Navy Times Article [Ref. 67:p. 22] mentioned some of the items to be added to the Post Delivery Availabilty list that were discovered during the humanitarian deployment. The article stated that "the ship is capable of receiving casualties in wartime and of caring for them" Among the changes mentioned were:

several alterations, including changing some gravity-fed medical equipment that doesn't operate properly in rough seas and mounting an eyeglass lens grinder on gimbals. Another may be to cut an opening near the waterline so patients can be brought into the ship by boat. At present the most convenient access to MERCY is by helicopter. A second alteration may be to subdivide the giant ballast tanks. When in heavy seas, water sloshing in the tanks caused the ship to roll more than it should.

P. SUMMARY

The author asserts that only by understanding the nature and influences within and without the hospital ship project can a sound basis be prepared for the future logistics support of the hospital ships. Configuration management and control is the methodology for channeling the TPC influences into the end product of a hospital ship. It is a continuing configuration management program that will be of great benefit to the individual hospital ship commands, and the Naval Medical Command as a whole.

Although this thesis is restricted to identifying the TPC influences and the management approval mechanisms they are funneled through, there is an overall long term goal. Dean [Ref. 68:p. 21] states it succinctly as "The purpose of configuration management, at the bottom line, is to ensure the continuing logistics supportability of systems in the government inventory."

One of the specific recommendations to result from the thesis research is to recommend the writing of an instruction

covering configuration management in a military health care system.

There is precedence for writing a separate instruction on configuration management for the hospital ships. NAVMATINST 9020.1B entitled "Standards in Shipboard Command and Control Space Configurations" [Ref. 70:p. 1] "requires that application of configuration management be tailored, carefully, total Navy material involved".

The Commander, Naval Sea Systems Command (COMNAVSEA) is directed to:

1. Conduct studies covering as many ship types and classes as necessary for the purpose of determining operational requirements and developing optimum standard arrangements for each ship type and class,
2. Develop standards which cover installations or various ship types,
3. Establish documentation requirements, and provide procedures to support each arrangement, and
4. Issue directives and monitor progress . . . and adhere to the configurations and standards prescribed.

Since the Military Sealift Command has an established system for the hull, deck and equipment spaces it appears reasonable to have a specialized directive on configuration management on the USNS MTF in particular, and afloat MTF's in general. The ROS crews of the two hospital ships should be particularly interested in MTC C. M. during routine maintenance and space/equipment upgrade phases of the

hospital ships. Configuration management needs to be an ongoing effort on the two hospital ships.

As mentioned before, a formal configuration management system is an excellent way of managing the inevitable TPC influences in any ongoing or future medical treatment facility construction effort. There is support for such an idea in the configuration management field.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSION

The overall theme of this thesis has been the management of change as expressed in the evolution of American and International hospital ships. In order to manage change in a health care environment one must first identify the various Technical, Political and Cultural (TPC) influences present in such an environment. The first step is to identify each influence and their discrete or combined effects on the project in question.

Configuration Management (CM) was selected as a management vehicle for identifying, controlling and coordinating TPC influences in constructing and operating American hospital ships. CM has the virtue of being an accepted and well established method for constructing and operating Department of Defense systems. Managers can utilize the procedures and integration mechanisms within CM to deal with TPC influences as they arise within the system life cycle.

Following a brief background on the use of the TPC Theory in a health care environment, the TPC Theory advocated by Tichy was then explained in some detail. While still only a meta-theory " . . . a framework for working with organizational problems . . . " [Ref. 1:p. ix], the thesis author uses TPC Theory to categorize the many pressures and

influences at work within the 1980's hospital ship program. TPC Theory provides a rationale to organize influences into three main categories. It also provides the idea of integration mechanisms to utilize the TPC influences in a productive way. The procedures of Configuration Management (CM) were thus viewed in a new perspective and the management and integrative aspects of CM were outlined.

The research delved into the historical evolution of American and International hospital ships. In each chapter it was the author's belief that the discrete and combined effects of TPC influences would be expressed in the final design configuration of the vessel and the onboard medical treatment facility. All TPC influences gleaned from the available literature were identified and discussed. The commentary was of a macro perspective due to the dearth of research materials available. Technical and Political influences were more readily identifiable than Cultural influences.

Chapter IV provided the best 'laboratory' for the utilization of TPC influences in a Configuration Management (CM) health care environment. The research effort was two pronged: 1) after the fact with the USNS MERCY and 2) an ongoing construction effort with the USNS COMFORT. Some literature was also available on the deployment phase of the USNS MERCY to the Philippines.

A much more detailed research effort and accompanying micro perspective was available in analyzing and identifying TPC influences in the 1980's hospital ship program. Voluminous CM data and documentation was also available to observe the effects of various TPC influences within and without the hospital ship project. The detailed discussion of TPC influences in Chapter IV and the management mechanisms of Configuration Management in Chapter V have lead the author to make the recommendations listed in the following section. Hopefully the thesis research into a pragmatic application of TPC Theory to this type of health care environment will contribute to the movement of TPC Theory from a meta-theory to a more formal theory.

B. RECOMMENDATIONS

1. Future construction of hospital ships should include a formal performance feedback mechanism between hospital ships deployed and hospital ships still under construction. Such feedback will result in improved Configuration Management in minimizing unnecessary changes, and in improving modifications still under construction.
2. Liaison planning between the Board of Inspection and Survey (INSURV) and the program sponsor (OPNAV) must be greatly improved regarding inspection standards in judging future hospital ships built to Commercial, Bureau of American Shipping, U. S. Coast Guard, Military Sealift Command, and Military Standards.
3. The Naval Sea Systems Command and the Supervisor of Ship Building should develop a formal matrix plan listing all conflicting standards and specifications. This plan would function as an aid in resolving conflicts in the construction of future hospital ships.

4. The Office of the Surgeon General and Commander, Naval Medical Command should develop a Medical/Dental Configuration Control Board whose decisions are final. The composition of the Board is not as important as the need to have one point-of-control with the Naval Sea Systems Command in the construction of future hospital ships.
5. All Configuration Management changes should be reviewed with probability of successfully obtaining funding for the proposed change with review mechanisms in place at the SUPSHIP, NAVSEA and OPNAV levels of approval. Consideration of funding the proposed change should include logistic support, and life cycle cost consequences, not just the original cost of the modification.
6. NAVMEDCOM and MSC proposals for Configuration Management changes as inputs into the CM process should include 'financial impact statements' with original cost, logistic support and life cycle costs, and identifying funding sources and (initial) probability of success in obtaining such funding. Such a procedure helps justify a modification as 'needed'.
7. At the various levels of approval for different Configuration Management changes, a review mechanism should rank and prioritize all requests, not only on engineering, technical and medical grounds, but also on financial grounds. This aids in utilizing the Configuration Management process in a 'systems approach' instead of viewing each proposed change and its impact in isolation.
8. NAVSEA should maintain an archive of all proposed, implemented and discarded Configuration Management changes to the hospital ship project. This goes beyond the minimum required by Configuration Management regulations with the emphasis on the history and alternative rationales for the decision to implement, or not to make the change. One example would be the documented reasoning for the actual and proposed changes to the four (published and unpublished) revisions of the 'Circular of Requirements for Afloat Definitive Care Facility T-AH (x)'.

9. After the hospital ships enter their respective home ports in a reduced operating status, copies of the Configuration Management archive should be transferred to the Military Sealift Command maintenance facility in charge of each ship and to the Command of each hospital ship. Proposed changes can be measured against the archive rationale for deferral or rejection when Configuration Management changes are contemplated at future SUPSHIP or SIMA facilities.
10. An education and awareness campaign should be a duty of future hospital ship commands on Configuration Management procedures and philosophy in general, and the timing of changes in particular. This program would be directed at MSC, NAVMEDCOM, OPNAV and the operational command in the area.

APPENDIX A

USNS MERCY

FACT SHEET

Principal Characteristics:

Length Overall.....894'- 0"
Beam.....105'- 9"
Draft, Design.....32'- 9"
Displacement (S.W. at Design Draft).....69,360 Long Tons
Speed (at 80% ABS SHIP, Design Draft).....17.5 knots

Mission:

Primary Mission: To provide acute medical and surgical care in support of Rapid Deployment Forces, U.S. Marine Amphibious Task Forces, and Forward Deployed Navy Fleet activities located in hostile areas.

Secondary Mission: To provide a full-service hospital facility that can be deployed world-wide to support disaster relief operations.

Patient Care Facilities:

Patient care wards (each ship)

Intensive Care Wards.....80 beds
Recovery Wards.....20 beds
Intermediate Care Wards.....280 beds
Light Care Wards.....120 beds
Limited Care Wards.....500 beds
Total Patient Capacity.....1000 beds

Operating rooms (each ship).....12

The following major Departments and Facilities are provided on each ship:

Casualty Reception
Radiological Services
Main laboratory plus satellite lab
Central sterile receiving
Medical supply/pharmacy
Physical therapy and burn care
Dental service
Optometry/lens lab
Morgue
Laundry
Oxygen producing plants (two)

Hull Arrangement:

Raised forecastle, transom stern, bulbous bow, extended deckhouse with forward bridge, helicopter landing deck with flight control facility.

Accommodations for 68 ship operating crew and 1508 medical support personnel.

Propulsion Plant:

Main propulsion type.....Single screw, geared steam turbine

Shaft Horsepower.....24,500

Fuel.....DFM

Endurance (at sustained speed).....13,420 nautical miles

Additional features include three 2000 KW auxiliary diesel generators for medical space support, with one 1500 KW emergency diesel generator for backup; one 1000 KW ship's service turbo-generator with one 750 KW emergency diesel generator for backup; four 75,000 gallon per day distilling plants; and three 400 ton air conditioning plants.

Hull Machinery:

Two forward and two aft mooring winches
Nine 7500 pound capacity elevators
Two 1000 pound capacity medical supply lifts
One 3 ton stores crane
electro-hydraulic patient litter handling hoist

Navigation and Communication:

Two radars
Collision avoidance systems
Satellite navigator
Radio direction finder
Air control and aviation navigation aids including TACAN
Gyro compass, course recorder and repeaters
Dual control gyropilot steering system
Doppler sonar speed log
Rate-of-turn indicator

Safety Equipment:

- Firemain system throughout ship
- Halon flooding in diesel engine enclosures and O2
- Foam system in machinery spaces
- AFFF system for helo deck

Lifeboats

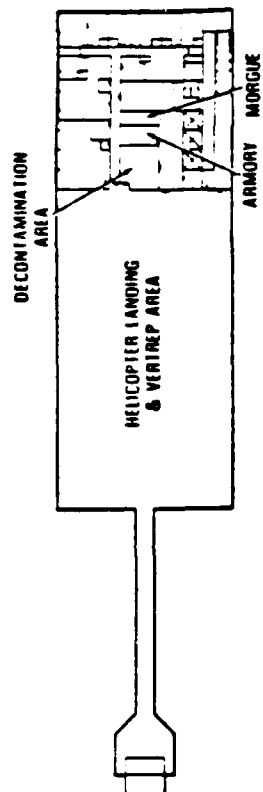
Life rafts

[Ref. NASSCO Tour Package]



Figure 1.1 USNS Mercy.

03 LEVEL



02 LEVEL

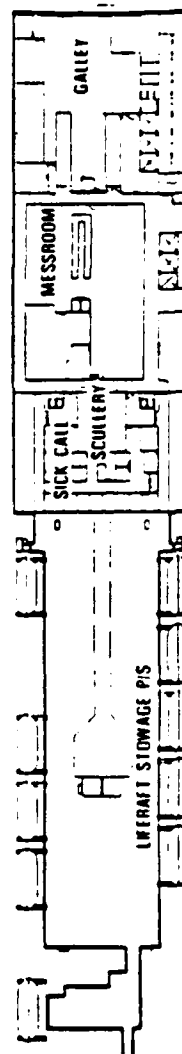
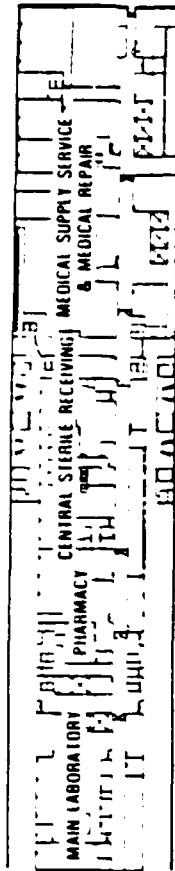


Figure 1.2 Deck Arrangements.

01 LEVEL



MAIN DECK

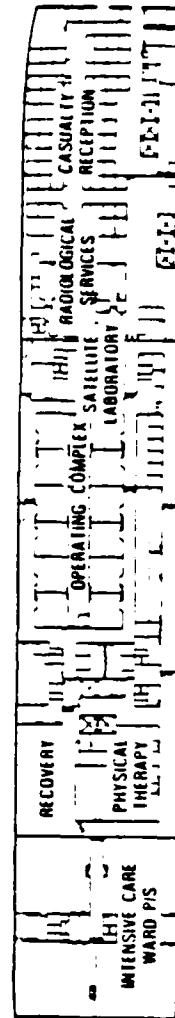


Figure 1.3 Deck Arrangements.

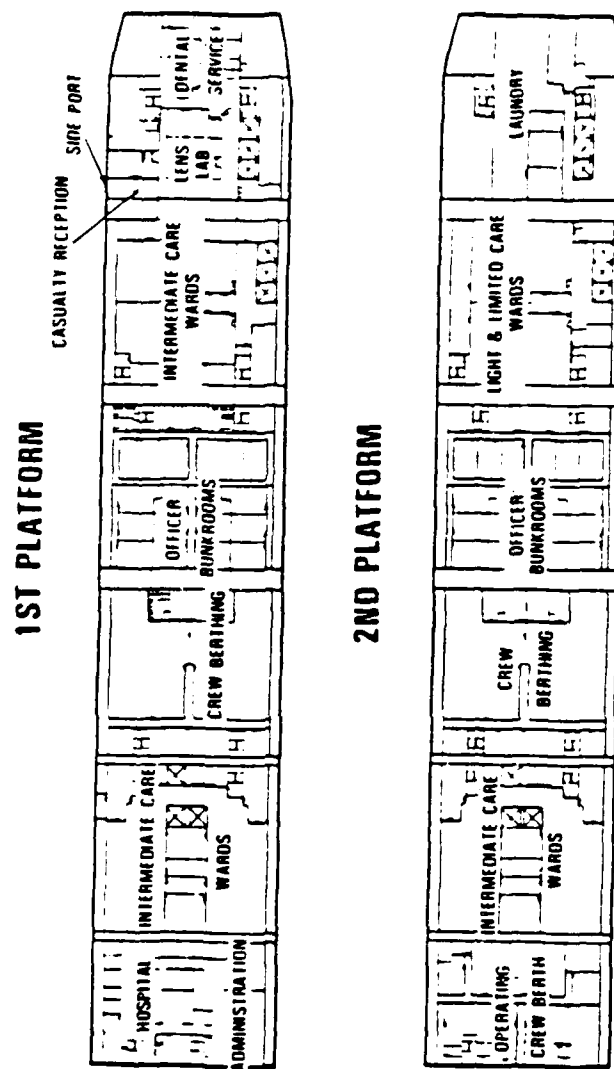
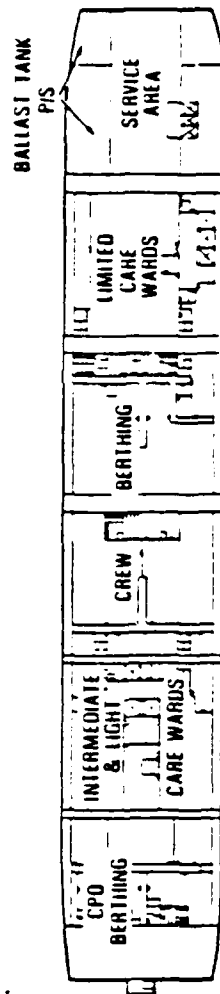


Figure 1.4 Deck Arrangements.

3RD PLATFORM



4TH PLATFORM

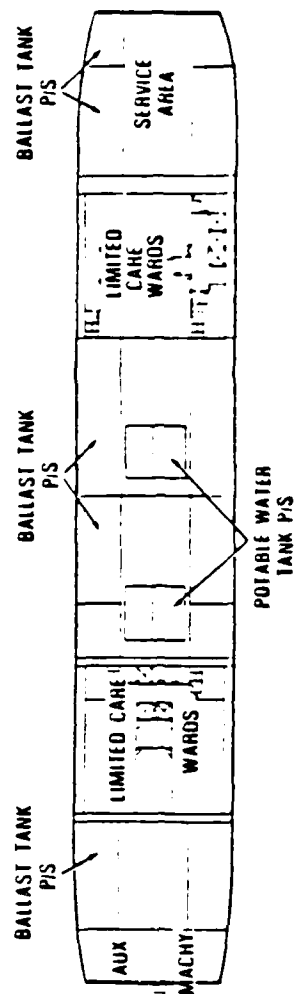


Figure 1.5 Deck Arrangements.

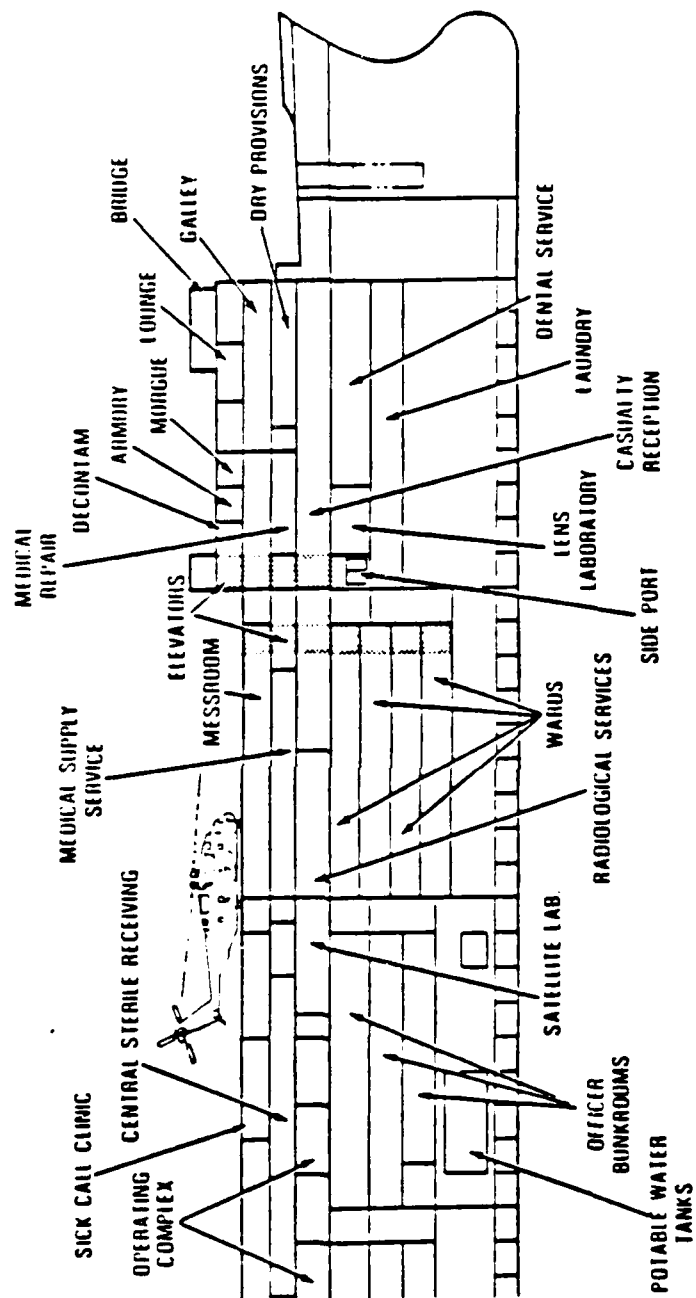


Figure 1.6 Bow Inboard Profile.

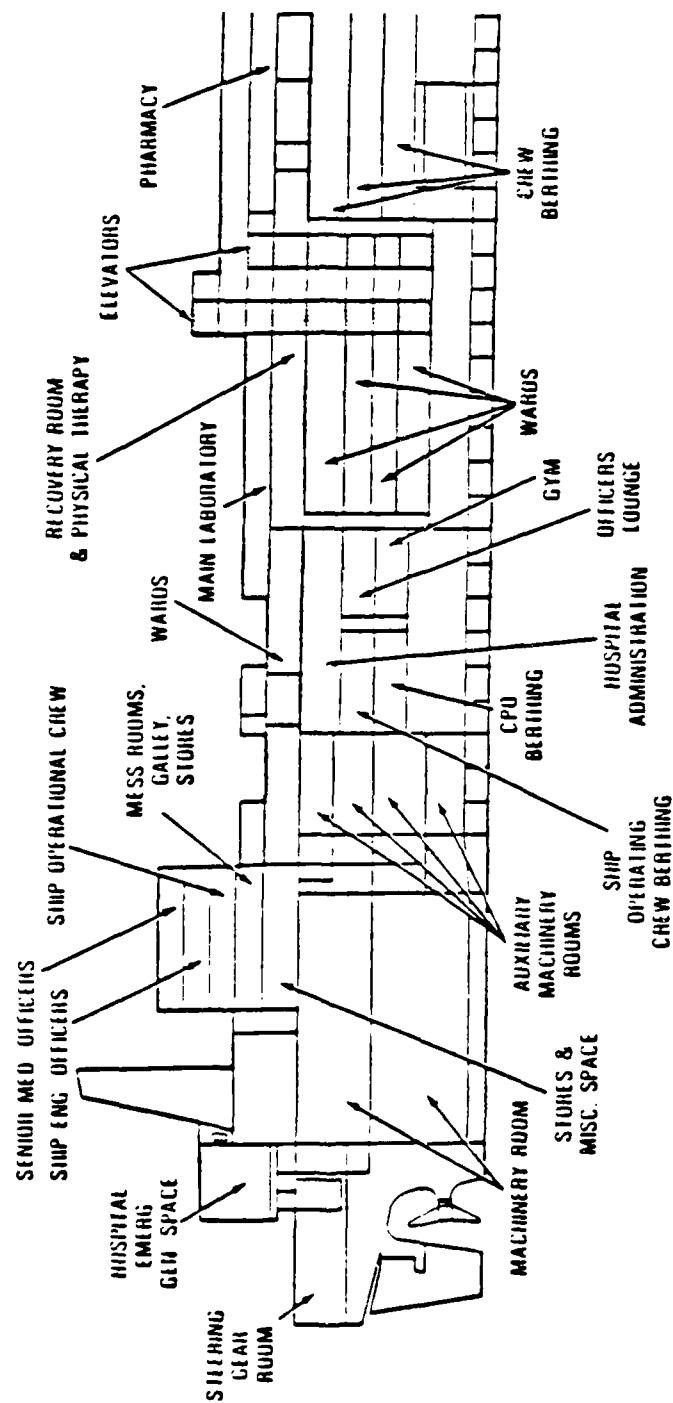


Figure 1.7 Stern Inboard Profile.

APPENDIX B

DISCLAIMER

The appended NAVSEASYSCOM contract excerpts, configuration management documents and SIMA San Diego modifications do not reflect final settlement costs! They are enclosed in the thesis only to give some idea of the bottom line financial impact of TPC influences in the hospital ship project. Any and all figures could remain the same, go up, or down--final settlement on such a contract can take up to ten years to complete.

PRIORITY FORM NO. 1 JULY 1963 GENERAL SERVICES ADMINISTRATION GSA GEN. REG. NO. 27 U.S. GPO 16-70810-1		AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		Page 1 of 2
1. AGENCY USE ONLY (Do not write)		2. SPECIFIC ORDER NUMBER <u>See Bix 19</u>		3. REQUEST FOR QUOTATION/PROPOSAL NUMBER <u>N00024-83-PB-04687</u>
4. CONTRACT NUMBER <u>P0001</u>		5. DATE OF ORDER (If other than blank)		6. PROJECT NUMBER (If applicable) <u>3-0212-04687</u>
7. CONTRACTOR NAME AND ADDRESS Commander, Naval Sea Systems Command Washington, D.C. 20362 Buyer/Symbol: K. J. O'Neill /SEA 02 24 Phone: Area Code <u>202</u> /692-7517		8. DESCRIPTION OF (If other than blank) Supervisor of Shipbuilding, Conversion and Repair, USN Naval Station, Box 119 San Diego, CA 92136		
9. CONTRACTOR'S MAILING ADDRESS National Steel & Shipbuilding Co. Harbor Drive & 28th Street San Diego, CA 92138		10. MODIFICATION OF CONTRACT/CANCELLED ☐ CANCELLATION OF CONTRACT/CANCELLED NO. <u>N00024-83-C-0094</u> DATE <u>29 June 83</u> (See item 11)		
11. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS ☐ The above referenced solicitation is amended as set forth in item 12. The time and date specified for receipt of offers ☐ is extended, ☐ is not extended. Offerors must acknowledge receipt of this amendment prior to the time and date specified in the solicitation, or as amended, by one of the following methods: (a) By signing and returning copies of this amendment. (b) By acknowledging receipt of this amendment on each copy of the offer submitted, or (c) By separate letter or telegram which specifies a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE DEADLINE DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. (d) By effect of the amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.				
12. ACCOUNTS AND OTHER MATTER (If required) N/A				
13. BLOCK APPLIES ONLY TO MODIFICATIONS OF ORDERS/ORDERS ☐ The Change Order is issued pursuant to _____ The Contract or task in item 12 are made in the above referenced contract/task. ☒ The above referenced contract/order is modified to reflect the amendments changes back as changes to issuing office, expiration date, etc. as set forth in item 12. This supplemental agreement is entered into pursuant to authority of <u>the mutual agreement of the parties</u> .				
14. DESCRIPTION OF AMENDMENT/MODIFICATION 				
WHEREAS, the contractor's proposal for this contract was based on the conversion of San Clemente Tankers in accordance with the provisions of this contract and the contractor's proposal and the prices set forth in this contract are based on acquisition of these vessels from Apex Marine Corporation, First Pennsylvania Bank N.A. (as trustee), Worth Oil Transport Company, and Northwest Shipping Corp. (collectively "Apex") for an estimated acquisition cost of \$30 million for each vessel based on the vessels meeting the classification of the American Bureau of Shipping (ABS) in effect on the date of Agreement of Sale between the Contractor and such other certification from the Coast Guard as would be necessary if the vessel were to remain in service as a commercial tank vessel, NOW, THEREFORE, the contractor agrees to use his best efforts to acquire the vessels from Apex for an acquisition cost of less than \$30 million per vessel.				
15. SIGNATURES AND DATES 15a. CONTRACTOR'S OFFENSE IS NOT EXTENDED TO SIGN THIS AMENDMENT <u>[Signature]</u> 15b. DATE SIGNED <u>29 JUN 83</u> 15c. CONTRACTOR'S OFFENSE IS EXTENDED TO SIGN THIS AMENDMENT AND OTHER COPIES TO REMAIN OPEN FOR RETURN WITHIN 5 DAYS AS REQUIRED. <u>[Signature]</u> 15d. DATE SIGNED <u>29 JUN 83</u> 15e. CONTRACTOR'S OFFENSE IS EXTENDED TO SIGN THIS AMENDMENT AND OTHER COPIES TO REMAIN OPEN FOR RETURN WITHIN 5 DAYS AS REQUIRED. <u>E. J. O'NEILL</u> Contracting Officer				

N00024-83-C-2094

P0001

Page 2 of 2

FURTHER, if the contractor acquires any vessel to be converted for a cost less than \$30 million based on the vessel's meeting the standards described in the first paragraph above, the contract price for the ships under this Contract will be reduced by an equitable adjustment to cover the difference between \$30 million and the contractor's cost for the vessel.

The contractor is to advise the Procuring Contracting Officer within 120 days of this modification of the actions taken to implement the above and to reduce the acquisition costs of the vessels to be converted under this contract. The contractor shall promptly notify the Procuring Contracting Officer of any circumstances that prohibit the successful accomplishment of the above or which may affect delivery of the ships.

SOLICITATION, OFFER AND AWARD

FORM DO-A3

1 120

1. SOLICITATION NO. N00024-83-R-2094(S)	2. DATE ISSUED J-383A-23809	3. REQUEST COMMERCIAL REQUEST NO. P.R. N00024-83-PR-23809
4. ADDRESS TO WHICH OFFER TO BE MADE SEA SYSTEMS COMMAND DEPARTMENT OF THE NAVY WASHINGTON, D. C. 20362 SYMBOL: Mr. R. Switzer PHONE: Area Code 202 692-7517 SEA 0224	5. ADDRESS TO WHICH OFFER TO BE MADE DEPARTMENT OF THE NAVY NAVAL SEA SYSTEMS COMMAND, SEA 0215 NATIONAL CENTER BLDG. #3, ROOM 5E40 WASHINGTON, D. C. 20362	

SOLICITATION

6. Latest offer in original and 1 Signed Copy for forwarding the schedule will be prepared at the place specified in item 4, or if handwritten, at the place specified in item 5, and 2:00 P.M. Eastern 6 April 1983.

7. This is an advertisement solicitation offer and is subject to the following:

CAUTION - LATE OFFERS See part. Award of Solicitation Instructions and Conditions.

8. The Solicitation Instructions and Conditions of SF 33A Rev. 1-78

9. The General Provisions which are attached

10. The Schedule included herein under attached hereto.

11. Each offer, proposal, representation, certification, and test features is an enclosed or incorporated herein by reference.

FOR INFORMATION CALL ITEM 8 Paragraph 2 (1) This contract will be awarded (See Paragraph 21(b) of Section L)

TABLE OF CONTENTS

ITEM	SEC	PAGE	ITEM	SEC	PAGE
PART I - THE SCHEDULE			PART II - GENERAL PROVISIONS		
1	A	1	1	E	72
2	B	2	PART III - LIST OF REQUIREMENTS, CONDITIONS AND OTHER ATTACHMENTS		
3	C	3	1	A	87
4	D	4	PART IV - GENERAL INSTRUCTIONS		
5	E	5	1	E	87
6	F	6	1	L	96
7	G	7	1	M	121
8	H	8			
9	I	9			

OFFER (must be fully completed by offeror)

12. Offeror must submit the original and two copies of this offer in triplicate within the time specified in item 6, or if handwritten, within the time specified in item 7, and must submit the original and two copies of this offer in triplicate within the time specified in item 8, or if handwritten, within the time specified in item 9.

13. Offeror must submit the original and two copies of this offer in triplicate within the time specified in item 6, or if handwritten, within the time specified in item 7, and must submit the original and two copies of this offer in triplicate within the time specified in item 8, or if handwritten, within the time specified in item 9.

14. Offeror must submit the original and two copies of this offer in triplicate within the time specified in item 6, or if handwritten, within the time specified in item 7, and must submit the original and two copies of this offer in triplicate within the time specified in item 8, or if handwritten, within the time specified in item 9.

15. Offeror must submit the original and two copies of this offer in triplicate within the time specified in item 6, or if handwritten, within the time specified in item 7, and must submit the original and two copies of this offer in triplicate within the time specified in item 8, or if handwritten, within the time specified in item 9.

16. Offeror must submit the original and two copies of this offer in triplicate within the time specified in item 6, or if handwritten, within the time specified in item 7, and must submit the original and two copies of this offer in triplicate within the time specified in item 8, or if handwritten, within the time specified in item 9.

17. OFFEROR

18. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER

19. SIGNATURE

20. OFFER DATE

21. CODE AND TELEPHONE NO.

22. CODE AND TELEPHONE NO.

23. CODE AND TELEPHONE NO.

24. CODE AND TELEPHONE NO.

25. CODE AND TELEPHONE NO.

26. CODE AND TELEPHONE NO.

27. CODE AND TELEPHONE NO.

28. CODE AND TELEPHONE NO.

29. CODE AND TELEPHONE NO.

30. CODE AND TELEPHONE NO.

31. CODE AND TELEPHONE NO.

32. CODE AND TELEPHONE NO.

33. CODE AND TELEPHONE NO.

34. CODE AND TELEPHONE NO.

35. CODE AND TELEPHONE NO.

36. CODE AND TELEPHONE NO.

37. CODE AND TELEPHONE NO.

38. CODE AND TELEPHONE NO.

39. CODE AND TELEPHONE NO.

40. CODE AND TELEPHONE NO.

41. CODE AND TELEPHONE NO.

42. CODE AND TELEPHONE NO.

43. CODE AND TELEPHONE NO.

44. CODE AND TELEPHONE NO.

45. CODE AND TELEPHONE NO.

46. CODE AND TELEPHONE NO.

47. CODE AND TELEPHONE NO.

48. CODE AND TELEPHONE NO.

49. CODE AND TELEPHONE NO.

50. CODE AND TELEPHONE NO.

51. CODE AND TELEPHONE NO.

52. CODE AND TELEPHONE NO.

53. CODE AND TELEPHONE NO.

54. CODE AND TELEPHONE NO.

55. CODE AND TELEPHONE NO.

56. CODE AND TELEPHONE NO.

57. CODE AND TELEPHONE NO.

58. CODE AND TELEPHONE NO.

59. CODE AND TELEPHONE NO.

60. CODE AND TELEPHONE NO.

61. CODE AND TELEPHONE NO.

62. CODE AND TELEPHONE NO.

63. CODE AND TELEPHONE NO.

64. CODE AND TELEPHONE NO.

65. CODE AND TELEPHONE NO.

66. CODE AND TELEPHONE NO.

67. CODE AND TELEPHONE NO.

68. CODE AND TELEPHONE NO.

69. CODE AND TELEPHONE NO.

70. CODE AND TELEPHONE NO.

NY 100-81-100-100
000000

INCIDENT OF AMENDMENTS	Amendment No.	Date	Amendment No.	Date
or acknowledges receipt sentments to the Solicitation offers and related documents and dated as follows:	A001	3/15/83	A003	5/5/83
	A002	4/13/83	A004	5/16/83

SECTION B - SUPPLIES/SERVICES AND PRICES

NO.	SUPPLIES/SERVICES	QUANTITY	AMOUNT
	Conversion of one T-AE 19 Class Hospital Ship	1	\$185,221,000.00
	Repair parts, Equipment - Unique Tools, Test Equipment, Equipage and Consumables	1 Ship Set	\$3,000,000.00
	Data for Items 0001 and 0002 (See Attachment "A", DD Form 1423, and Attachment "B" hereto) NSP - Price included in price of Items 0001 and 0002		INCLUDED ABOVE
ON	Conversion of one T-AE 19 Class Hospital Ship	1	\$185,576,796.00
	Repair parts, Equipment - Unique Tools, Test Equipment, Equipage and Consumables	1 Ship Set	\$3,000,000.00
	Data for Items 0004 and 0005 (See Attachment "A", DD Form 1423, and Attachment "B" hereto) NSP - Price included in price of Items 0004 and 0005		INCLUDED ABOVE
	TOTAL AMOUNT		\$344,797,816.00
A:	Option Items to which the clause is applicable and which is to be exercised.	OPTION FOR INCREASED QUANTITY is applied only if and to the extent said option is exercised.	

Standard Form 33 (REV 3-77)

2 (Exception to SF 33, Approved by NARS 9-25-78)

3. AMENDMENT FORM 30, JULY 1980 GENERAL SERVICES ADMINISTRATION REG. NO. 41 (01) 1-16101		AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		PAGE 1 OF 2
1. AMENDMENT/MODIFICATION NO. 004	2. EFFECTIVE DATE 16 May 83	3. SOLICITATION/PURCHASE REQUEST NO. N00024-83-PR-23809	4. PROJECT NO. (If applicable)	
5. BY See Systems Command, Department of Avy, Washington, D.C. 20362 /Symbol: /SEA-02 -none: Area Code 202-692-		6. ADMINISTERED BY (If other than block 5) CODE		
7. CONTRACTOR NAME AND ADDRESS CODE FACILITY CODE (Street, apt., suite, suite, and ZIP Code)		8. AMENDMENT OF SOLICITATION NO. N00024-83-R-2094(S) DATE 27 JAN 83 (See block 9) AMENDMENT OF CONTRACT/ORDER NO. DATE (See block 11)		
9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS ☒ The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified at the solicitation, or as extended, by one of the following methods: (a) By signing and returning a copy of this amendment to the contracting officer or (b) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN ELIGIBILITY OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter provided such telegram or letter makes reference to the solicitation and this amendment, and a received error in the opening hour and date specified.				
10. ACCOUNTING AND APPROPRIATION DATA (If required)				
11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS ☐ The Change Order is issued pursuant to: The Change or Order in block 12 are made to the above numbered contract/order. The above numbered contract/order is modified to reflect the administrative changes (such as changes in pricing, offer, appropriation data, etc.) set forth in block 12. ☒ The Supplemental Agreement is entered into pursuant to authority of: ☐ modifies the above numbered contract as set forth in block 12.				
12. DESCRIPTION OF AMENDMENT/MODIFICATION Solicitation N00024-83-R-2094(S) is hereby modified as follows: 1. Circular of Requirements for Hospital Ship T-AH(X), dated 21 October 1982, pages 19, C-1, C-2, C-4, D-2, D-3, D-7, D-8 and D-9, delete in their entirety and replace with the attached revised pages 19, C-1, C-2, C-4, D-2, D-3, D-7, D-8 and D-9 respectively.				
(Except as provided herein, all terms and conditions of the document referenced in block 8 as hereinafter changed, remain unchanged and in full force and effect)				
13. CONTRACTOR/OFFICE IS NOT REQUIRED TO SIGN THIS DOCUMENT ☐ CONTRACTOR/OFFICE IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE				
14. NAME AND TITLE OF SIGNER (Type or print) S. D. V. P. BUSINESS AFFAIRS		15. DATE SIGNED 6-10-83		
16. NAME OF CONTRACTING OFFICER (Type or print)		17. DATE SIGNED		

10-101

U.S. GOVERNMENT PRINTING OFFICE: 1980 O-100-101

14 July 1987

MEMORANDUM

From: EMC Steven A. Cushman

To: Lt. William Roberts

Subj: USNS Mercy's SIMA Availability Jobs

1. Enclosed is a copy of the lessons learned letter by the Assistant Repair Officer in charge of Mercy's work. It refers to a Supply Dept. lessons letter, this letter was never written. Also enclosed is a list of the jobs we worked with some explanatory notes.

2. Accounting data given below includes the totals for contracted jobs and all material and parts SIMA ordered to complete the work.

<u>JIC</u>	<u>AMOUNT</u>
21636	\$391,139.10
46245	58,101.00
	<u>\$449,530.10-TOTAL</u>

3. Just in case you don't already have it, my point of contact with MSC was:

Mr. Jesse Cruz, Code P4E2
MSC-Pac
Bldg 310-5
Naval Supply Center
Oakland, Ca. 94625-5010

AV- 836-4878/9
COM- (415) 466-4878/9

4. If any other information or more detail is needed feel free to contact me again.

Very Respectfully,

EMC Steven A. Cushman
EMC Steven A. Cushman

Commanding Officer
Shore Intermediate Maintenance Activity, San Diego
Naval Station, Box 106
San Diego, Ca. 92136-5106
ATTN: Code 2110

APPENDIX C

DISCLAIMER

The appended NAVSEASYSKOM contract excerpts, configuration management documents and SIMA San Diego modifications do not reflect final settlement costs! They are enclosed in the thesis only to give some idea of the bottom line financial impact of TPC influences in the hospital ship project. Any and all figures could remain the same, go up, or down--final settlement on such a contract can take up to ten years to complete.

DATE: September 23, 1987

T-AN 20

NAVSAT LUNAR LUNAR NUMBER: 00004 HLT 0094 1 AM 19/20

HRK NO. SPR. NO. DATE	HRK NO. SPR. NO. DATE	CHANGES	REMARKS	SUP. SHIP FORMED DATE / SPR. NO.	MOD. DATE / MOD. DATE	REFERENCE DOCUMENT
HRK 001	M-001	SAVAN SYSTEMS DETECT LOW FUEL ANNUNCIATOR 8/ KAWA	1002	151.286 3/16/84	811.781	A0023 4 OCT 84
HRK 002	VELE 001	PLATFORM DEER HEIGHTS CARGO HOLD 1.2, 3.4, 5.6	1002		854.403	A0009 5 APR 84 A0019 1 AUG 84
HRK 003	M-001	DISTILLING PLANT CAPACITIES INCREASE FROM 2 TO 4 75 GPM UNITS	1002		87.691.989	A0011 18 JUN 84 A0078 13 AUG 85
HRK 004.1	MM 001	TECHNICAL MANUALS (TM)	LAMELLED		87.413.794	
HRK 005	MM 002	CDM CHANGES	1002	1532770 4/19/85	81.46	A0084 20 SEP 85
HRK 006	M-004	SHOWERS FACILITIES IN D.R. COMPLEX	1002	90	A00017	21 JUL 84
HRK 007	M-007	AUTHORIZED MEDICAL ALLOWANCE LIST (AMAL)	1002	87.495	A00049	9 MAY 85
HRK 008	M-008	MELTDOWN SLASTING AUXILIARY POWER UNIT (APU)	1002	82.626.630	A00066	
HRK 009	M-003	SCHEDULE A/T MODIFICATION AND CDM FAULT CORRECTION	1002	820.316	A00050	7 MAY 85
HRK 010.1	M-009	MAKINE SAMITATION DEVICE (MDS)	952	81.461	A00070	25 JUL 85
HRK 011.1	M-012	DENTAL CENTRAL EVACUATION SYSTEM	1002	812.095.904	A00046	918.000 OF 1 27 JUN 85 MAX MOD
HRK 012	M-013	CORRECTION TO SCHEDULE A/T	1002	8120.518	A001.1	3 JAN 86
HRK 013	M-015	INCREASE AND SUPPLY STOWAGE	1002	81.662	A00101	18 NOV 85
HRK 014	M-017	LIFE RAFT MODIFICATION	1002	87.566.840	A00227/A00335	20 NOV 86 29 MAY 87
HRK 015.1	MM 018	CHANGE TO ATTENDANCE AND	1002	8135.291	A00172/A00199	18 JUN 86 10 OCT 86

DATE: September 23, 1987

NAVSAT LUNAR LUNAR NUMBER: 00004 HLT 0094 1 AM 19/20

HRK NO. SPR. NO. DATE	HRK NO. SPR. NO. DATE	CHANGES	REMARKS	SUP. SHIP FORMED DATE / SPR. NO.	MOD. DATE / MOD. DATE	REFERENCE DOCUMENT
HRK 016	M-017	LIFE RAFT MODIFICATION	1002		84.679	A00184
HRK 017	M-018	CHANGE TO ATTENDANCE AND	1002			

NAUSIA LIMITED NUMBER 00024 H3 C 2094 1 AM 19/20

110-1 110-1
110-1 110-1

MAUSA I UNIKAT I NUMER MOO 4 H 1 2094 1 AM 19/30

LFMAFAS

DATE: September 23, 1987

MOUSE CONTACT NUMBER: MOU-4 83 E 1094

1 AM 19/20

TIME MO. TIME DATE	CHANGE DESCRIPTION	REMARKS	TIME MO. TIME DATE
1 AM 001 21 FEB 84	RELOCATION OF 0.2% FLAMIS 1 AM 19/20	NO LOST	MOUSE 28 FEB 84
1 AM 002 05 JUN 84	DELTA CONTRACTORS REQUIREMENT TO FURNISH TUM TRACTORS	9/1-023	MOUSE 10 JUL 84
1 AM 003 14 JUN 84	CONVERSION SPECIFICATION APPROVAL	NO LOST	MOUSE 19 JUN 84
1 AM 004 11 JUL 84	MOI USED		MOUSE 21 AUG 84
1 AM 005 11 JUL 84	MO BAKAR FORMER SUPPLY 1 AM 19/20	610-411	MOUSE 28 MAR 85
1 AM 006 19 JUL 84	MO BAKAR FORMER SUPPLY 1 AM 19/20	610-007	MOUSE 01 APR 85
1 AM 007 10 JUL 84	WIND SPEED INDICATION SYSTEM 1 AM 19/20	611-063	MOUSE 21 JUL 84
1 AM 008 11 JUL 84	HOSPITAL SHIP MARKING 1 AM 19/20	611-831	MOUSE 05 JUL 85
1 AM 009 11 JUL 84	EXCESS FREQUENCY 1 AM 19/20	644-611	MOUSE 07 MAY 85
1 AM 010 07 JAN 85	SEMI-REPAIRMENT SYSTEM 1 AM 19/20	644-000	MOUSE 17 JAN 85
1 AM 011 08 JAN 85	EXCESS FREQUENCY 1 AM 19/20	644-904	MOUSE 25 APR 85
1 AM 012 10 JUL 84	FREE CHARGE FOR 1002 FOR TABLE MTR LAMPS	644-222	MOUSE 24 MAY 85
1 AM 013 03 APR 85	UNDER WATER TANK 1 AM 19	644-941	MOUSE 05 JUL 85
1 AM 014 19 MAY 85	EXCESS FREQUENCY 1 AM 19/20	644-005	MOUSE 25 JUL 85
1 AM 015 14 MAY 85	EXCESS FREQUENCY 1 AM 19/20	644-889	MOUSE 04 JUN 85
1 AM 016 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-984	MOUSE 04 JUN 85
1 AM 017 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-180	MOUSE 20 JUL 85
1 AM 018 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-180	MOUSE 20 JUL 85

DATE: September 23, 1987

MOUSE CONTACT NUMBER: MOU-4 83 E 1094

1 AM 19/20

TIME MO. TIME DATE	CHANGE DESCRIPTION	REMARKS	TIME MO. TIME DATE
1 AM 001 21 FEB 84	RELOCATION OF 0.2% FLAMIS 1 AM 19/20	NO LOST	MOUSE 28 FEB 84
1 AM 002 05 JUN 84	DELTA CONTRACTORS REQUIREMENT TO FURNISH TUM TRACTORS	9/1-023	MOUSE 10 JUL 84
1 AM 003 14 JUN 84	CONVERSION SPECIFICATION APPROVAL	NO LOST	MOUSE 19 JUN 84
1 AM 004 11 JUL 84	MOI USED		MOUSE 21 AUG 84
1 AM 005 11 JUL 84	MO BAKAR FORMER SUPPLY 1 AM 19/20	610-411	MOUSE 28 MAR 85
1 AM 006 19 JUL 84	MO BAKAR FORMER SUPPLY 1 AM 19/20	610-007	MOUSE 01 APR 85
1 AM 007 10 JUL 84	WIND SPEED INDICATION SYSTEM 1 AM 19/20	611-063	MOUSE 21 JUL 84
1 AM 008 11 JUL 84	HOSPITAL SHIP MARKING 1 AM 19/20	611-831	MOUSE 05 JUL 85
1 AM 009 11 JUL 84	EXCESS FREQUENCY 1 AM 19/20	644-611	MOUSE 07 MAY 85
1 AM 010 07 JAN 85	SEMI-REPAIRMENT SYSTEM 1 AM 19/20	644-000	MOUSE 17 JAN 85
1 AM 011 08 JAN 85	EXCESS FREQUENCY 1 AM 19/20	644-904	MOUSE 25 APR 85
1 AM 012 10 JUL 84	FREE CHARGE FOR 1002 FOR TABLE MTR LAMPS	644-222	MOUSE 24 MAY 85
1 AM 013 03 APR 85	UNDER WATER TANK 1 AM 19	644-941	MOUSE 05 JUL 85
1 AM 014 19 MAY 85	EXCESS FREQUENCY 1 AM 19/20	644-005	MOUSE 25 JUL 85
1 AM 015 14 MAY 85	EXCESS FREQUENCY 1 AM 19/20	644-889	MOUSE 04 JUN 85
1 AM 016 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-984	MOUSE 04 JUN 85
1 AM 017 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-180	MOUSE 20 JUL 85
1 AM 018 1 MAY 85	EXCESS FREQUENCY 1 AM 19	644-180	MOUSE 20 JUL 85

DATE: September 23, 1987

MOUSEA LUMINAI HUMPER MOOD: 4 B3 E 2094 1 AM 19/20

ENS NO.	CHANGE DESCRIPTION	ALPHAS	MOOD
198 018	FIRE 3 BUTTERWORTH FUM	98-581	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:801:00 OF 4/28/85	17 SEP 85
198 019-1	FIRE 3 BALLAST FUM	94-950	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:801:00 OF 4/28/85	13 JUN 85
198 020	FIRE 3 BUTTERWORTH 3 ALLESSURIES	97-115	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:801:00 OF 4/28/85	16 JUL 85
198 021	CLEAN BALLAST FUM TURKINE	811-267	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:801:00 OF 4/28/85	19 JUN 85
198 022	83 MOORING WINDH	915-841	1002
5 MAY 85	ON 1 AM 19	10K 7419:74/LS:801:00 OF 4/28/85	17 AUG 85
198 023	ITEM INSPECT MOORING WINCHES	NOT USED SEP 11K 410-1013 6/3/85	
16 MAY 85	81-2-4-5 8 8 ON 1 AM 19		
198 024	ITEM INSPECT MOORING WINCHES	NOT USED SEP 11K 410-1013 6/3/85	
16 MAY 85	81 THROUGH 8A ON 1 AM 20		
198 025	MAIN COMPRESSOR RETAINS	91-908	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	16 JUL 85
198 026	81 MAIN COMPRESSOR FUM RETAINS	91-958	1002
5 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	12 AUG 85
198 027	MAIN STEAM STEAMER RETAINS	91-014	1002
21 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	19 JUN 85
198 028	TURBO DIESEL SURE AIR COOLER RETAINS	92-11A	1002
21 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	19 JUL 85
198 029	81 8 92 MM L.B. COOLER RETAINS	91-986	1002
21 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	19 JUL 85
198 030	COMBINE AIR COMPRESSOR RETAINS	92-881	1002
21 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	19 JUL 85
198 031	CLEAN BALLAST FUM TURKINE	9412	1002
21 MAY 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/12/85	19 JUL 85
198 032	ITEM INSPECT MAIN EXHAUSTION FUM	910-810	1002
21 MAY 85	ON 1 AM 19		19 JUL 85
198 033	ITEM FLOSH MAIN REDUCTION DEAR	910A	1002
21 MAY 85	ON 1 AM 20	ITEM 11A11	04 JUN 85
198 034	REPAIR FUM/STEAM STORES DAVIT	91-271	952
6 JUNE 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/22/85	6 JUL 85
198 035	REPAIRS TO M.F. TURKINE	921-045	1002
6 JUNE 85	ON 1 AM 20	10K 7419:74/LS:811:00 OF 5/22/85	08 JUL 85

MOOD: 4 B3 E 2094
MOOD: 4 B3 E 2094

DATE: September 23, 1987

MOUSEA LUMINAI HUMPER MOOD: 4 B3 E 2094 1 AM 19/20

CHANGE DESCRIPTION
ALPHAS

DATE: September 23, 1987

NAUSIA LUNIKAL NUMBER 00004 BE 1 094 1 AM 19/20

PRK NO. PRK DATE	CHANGE DESCRIPTION	MARKS	MOD. NO. MOD. DATE
PRK 036 13 JUN 85	REPAIRS P/S STROKE VALVES ON 1 AM 19	912-271 MSC MEND 4/9/85	A00074 6 AUG 85
PRK 037 14 JUN 85	REPAIRS TO L.P. TURBINE ON 1 AM 20	945-047 LUR 7419:74/CS:1810:00 UM 5/21/85	A00081 19 SEP 85
PRK 038 17 JUN 85	POILER INNER STALK ON 1 AM 19	949-99A LUR 7418:74/CS:803:00 UM 3/10/85	A0008A 10 AUG 85
PRK 039 1 JUL 85	82 MM CIRC PUMP ON 1 AM 20	911-169 LUR 7419:74/CS:811:00 UM 5/12/85	A00079 19 AUG 85
PRK 040 1 JUL 85	TURBO GEN REDUCTION GEAR ON 1 AM 20	914-165 LUR 7419:74/CS:822:00 UM 5/12/85	A00087 17 SEP 85
PRK 041 15 JUL 85	GLAND EXHAUSTER COMPUSEK ON 1 AM 20	93-960 LUR 7419:74/CS:819:00 UM 4/9/85	A00081 19 SEP 85
PRK 042 18 JUL 85	MUNITORS, STRIP CHART RECORDER ON 1 AM 19/20	9237-287	A00071 31 JUL 85
PRK 043 4 JUL 85	REPAIRS TO TURBO GEN TURBINE ON 1 AM 20	912-661 LUR 7419:74/CS:818:00 UM 6/9/85	A00104 19 NOV 85
PRK 044 4 JUL 85	REPAIRS TO 82 MM CIRC PUMP ON 1 AM 20	918-48A LUR 7419:74/CS:840:00 UM 6/9/85	A0009A 10 OCT 85
PRK 045 7 AUG 85	AUX DIESEL GEN MULEX STRAINER ON 1 AM 19/20	9291 CANCELLED SUBSHIP LTR 1512/162N 9/19/85	A00100 1002
PRK 046 7 AUG 85	FEASIBILITY STUDY FOR MED STOWAGE ON 1 AM 19	917-029	A00097 17 SEP 85
PRK 047 12 AUG 85	SPECIFICATION MODIFICATIONS ON 1 AM 19	NO EDSI	A00080 18 OCT 85
PRK 048 21 AUG 85	LIFEWAT MARKINGS ON 1 AM 19/20	916-694	A00111 22 NOV 85
PRK 049 1 AM 19/20	I.O. REGULATING VALVE ON 1 AM 19/20	9497 CANCELLED SUBSHIP LTR 1532/1549 9/13/85	A00101 1002
PRK 050 12 SEP 85	CANCELLATION CHARGE FOR ECF FREE- I.O. COOLER/PUMP	911-810	A00093 08 OCT 85
PRK 051 13 SEP 85	GEN INSPECT REDUCTION GEARS ON 1 AM 20	911-303	A00095 10 OCT 85
PRK 052 13 SEP 85	PAINTS FOLIOLE & DISTILLED WTR TANKS ON 1 AM 19	917-019 LUR 7418:72/CS:811:00	A00201 10 OCT 86
PRK 053 1 AM 19	REPAIR TO 84 MCKING WINCH	922-1540	A00111 1002

DATE: September 23, 1987

NAUSIA LUNIKAL NUMBER 00004 BE 1 094 1 AM 19/20

PRK NO. PRK DATE	CHANGE DESCRIPTION	MARKS	MOD. NO. MOD. DATE
PRK 054 13 SEP 85	REPAIR TO 84 MCKING WINCH	922-1540	A00111 1002

DATE: September 23, 1987

MAUSIA (UNITARY) NUMBER M00074 B3 E 2094 1 AM 19/20

PK NO.	PK DATE	CHANGE DESCRIPTION	REMARKS	PK NO.	PK DATE
17 SEP 85	1 AM 19		10K 7438:74/LS:819:00	04 OCT 85	
PK 054	1 AM 19	REPAIR TO 85 HOODING WINCH	921-014	00103	1002
17 SEP 85	1 AM 19		10K 7438:74/LS:818:00	19 NOV 85	
PK 055	1 AM 19	REPAIR TO 86 HOODING WINCH	819-395	00104	1002
17 SEP 85	1 AM 19		10K 7438:74/LS:820:00	18 NOV 85	
PK 056	1 AM 19	PAINT MACHINERY SHALES	84-302 (LAMELLED)	00107	1002
26 SEP 85	1 AM 19		MAUSIA LTR PMSB3A1/1016 1/12/86	10 SEP 86	
PK 057	1 AM 19	REPAIRS TO BOILER STACK FAME LEG	816-402	00117	1002
27 SEP 85	1 AM 19		10K 7438:71/LS:825:00	26 NOV 85	
PK 058	1 AM 19	PAINT STEERING ROOM	927-817	00140	982
10 SEP 85	1 AM 19		MAUSIA LTR 84E20/300A 7/29/85	03 MAR 86	
PK 059	1 AM 19/20	INSTALL SHELLS AND BLASTER	924-708	00119	952
10 OCT 85	1 AM 19	PAINT BOILER INNER STACK	910-899	19 OCT 85	
PK 060	1 AM 19		7438:72/LS:826:00	00148	1002
11 OCT 85	1 AM 20	PAINT PAINTS TANKS	917-476	01 MAR 86	
PK 061	1 AM 20		10K 7439:72/LS:433:00	00119	1002
17 OCT 85	1 AM 19	REPAIR TO 82 L.O. PUMP	917-724	14 MAY 87	
PK 062	1 AM 19		10K 7438:72/LS:823:00	00117	902
PK 063	1 AM 19/20	TEST OPERATION HEAT RUM	959-229	19 DEC 85	
PK 064	1 AM 19	CONVERSION SPECIFICATION B (CONTRACT DWG)	0	10 DEC 85	
PK 065	1 AM 20	CANCELLATION CHANGE FOR E/F (003-1411)	82-113	000102	1002
PK 066	1 AM 20	L.O. B.F.O. FILTER INSTALLATION 1-AM 19/20	94-669	30 OCT 85	
PK 067	1 AM 20	REPAIR 81 HOODING WINCH HYD RIK/PM	10K 7439:74/LS:844:00	000107	1002
PK 068	1 AM 20	REPAIR 82 HOODING WINCH HYD RIK/PM	94-669	00114	1002
PK 069	1 AM 20	REPAIR TO 83 HOODING WINCH HYD RIK/PM	94-669	1A JAN 86	
PK 070	1 AM 20	REPAIR TO 84 HOODING WINCH HYD RIK/PM	94-669	000117	1002
PK 071	1 AM 20	REPAIR TO 85 HOODING WINCH HYD RIK/PM	10K 7439:74/LS:844:00	00117	1002
PK 072	1 AM 20		94-669	00117	1002
PK 073	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 074	1 AM 20		94-669	00117	1002
PK 075	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 076	1 AM 20		94-669	00117	1002
PK 077	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 078	1 AM 20		94-669	00117	1002
PK 079	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 080	1 AM 20		94-669	00117	1002
PK 081	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 082	1 AM 20		94-669	00117	1002
PK 083	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 084	1 AM 20		94-669	00117	1002
PK 085	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 086	1 AM 20		94-669	00117	1002
PK 087	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 088	1 AM 20		94-669	00117	1002
PK 089	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 090	1 AM 20		94-669	00117	1002
PK 091	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 092	1 AM 20		94-669	00117	1002
PK 093	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 094	1 AM 20		94-669	00117	1002
PK 095	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 096	1 AM 20		94-669	00117	1002
PK 097	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 098	1 AM 20		94-669	00117	1002
PK 099	1 AM 20		10K 7439:74/LS:844:00	00117	1002
PK 100	1 AM 20		94-669	00117	1002

DATE: September 23, 1987

MAUSIA (UNITARY) NUMBER M00074 B3 E 2094 1 AM 19/20

PK NO. CHANGE DESCRIPTION

REMARKS

DATE: September 23, 1987

NAUSICA UNIT/BAIT NUMBER M00024 B1 E 2094 1 AM 19/20

INR NO. INR DATE	CHANGE DESCRIPTION	REMARKS	MID NO. MID DATE
INR 071 25 DEC 85	REPAIR TO 6A MOUNTING WINCH WITH MTR/PM 1 AM 20	INR 7439:74/LS:8551:00 92-416 INR 7439:74/LS:8551:00 INR 7439:74/LS:8551:00	1002 29 JAN 86
INR 072 7 NOV 85	FLOOR COVERING FOR O.R. 1 AM 19/20	917-044	1002 1 JAN 86
INR 071 12 NOV 85	REPAIR 93 MOUNTING WINCH MECHANICAL 1 AM 20	927-876 INR 7439:74/LS:8558:00	1002 03 MAR 86
INR 074 12 NOV 85	REPAIR 81 MOUNTING WINCH MECHANICAL 1 AM 20	924-177 INR 7439:74/LS:8559:00	1002 03 MAR 86
INR 075 1 AM 20	REPAIR 82 MOUNTING WINCH MECHANICAL 1 AM 20	927-916 INR 7439:74/LS:8600:00	1002 03 MAR 86
INR 076 12 NOV 85	GALLIES & DISFUSERS (EXISTING MOUSE) 1 AM 19	94-016 INR 7438:72/LS:0280:00	1002 7 FEB 86
INR 077 12 NOV 85	JACKSTAFF FOR LIFEBOATS 1 AM 19/20	94-171	1002 7 FEB 86
INR 078 12 NOV 85	REPAIR 86 MOUNTING WINCH MECHANICAL 1 AM 20	922-700 INR 7439:74/LS:8627:00	1002 03 MAR 86
INR 079 12 NOV 85	REPAIR 85 MOUNTING WINCH MECHANICAL 1 AM 20	924-054 INR 7439:74/LS:8631:00	1002 03 MAR 86
INR 080 21 NOV 85	REPAIR 84 MOUNTING WINCH MECHANICAL 1 AM 20	932-878 INR 7439:74/LS:8645:00	1002 03 MAR 86
INR 081 22 NOV 85	FIRE DAMAGE 1 AM 19 9/19/85 REQUEST EQUIPMENT ADJUSTMENT 1 AM 19	927-762	1002 20 DEC 85
INR 082 4 DEC 85	TELEPHONE INVOICE PAYMENT 1 AM 19	9617	1002 7 JAN 86
INR 083 4 DEC 85	BOLTS - CLEAN BALLAST PUMP 1 AM 20	92-347 INR 7438:74/LS:8651:00	1002 7 FEB 86
INR 084 4 DEC 85	PAINT FUL SLE DECK RM IN 1 AM 19	94-181 INR 7438:72/LS:8629:00	1002 1 MAR 86
INR 085 4 DEC 85	PAINT OI LVL IN PASSAGE 1 AM 19	94-705 INR 7438:72/LS:8630:00	981 14 MAR 86
INR 086 4 DEC 85	PAINT FAN ROOM RM IN 1 AM 19	94-999 INR 7438:72/LS:8631:00	1002 10 FEB 86
INR 087 4 DEC 85	SHOWER IN & SHOWER CURTAINS 1 AM 19	94-471 INR 7438:040/LS:8631:00	1002 7 FEB 86

DATE: September 23, 1987

NAUSICA UNIT/BAIT NUMBER M00024 B1 E 2094 1 AM 19/20

INR NO. INR DATE	CHANGE DESCRIPTION	REMARKS	MID NO. MID DATE
---------------------	--------------------	---------	---------------------

DATE: September 23, 1987

MOUSEA LUNIKAI NUMBER: MO0014 BIL 2094

1 AM 19/20

PR NO.	PR DATE	CHANGE DESCRIPTION	REMARKS	PR NO.	PR DATE
001	01 MAR 86	CURTAINS & MATRESS	97-000	001	01 MAR 86
002	01 MAR 86	TERRAZO IN GALLEY	10K 7418:7418:814:00	002	01 MAR 86
003	01 MAR 86	LAUNDRY EQUIPMENT	91-907	003	01 MAR 86
004	01 MAR 86	GALLEY EQUIPMENT	10K 7418:7418:815:00	004	01 MAR 86
005	01 MAR 86	VENT SYSTEMS	91-912	005	01 MAR 86
006	01 MAR 86	REPAIR BIL D. FUMP	10K 7418:7418:816:00	006	01 MAR 86
007	01 MAR 86	UPPER INSIDE REHABILITATION WORKS	91-907	007	01 MAR 86
008	01 MAR 86	PAGE TIDING IN OR/CLIM WORK AREAS	91-912	008	01 MAR 86
009	01 MAR 86	REPAIR ALARM FOR J. 5. SLUDGE TANK	10K 7418:7418:817:00	009	01 MAR 86
010	01 MAR 86	DANGER LIGHTS/STORM ROOM	91-912	010	01 MAR 86
011	01 MAR 86	ALIGNMENT CHECK OF SHAF	91-912	011	01 MAR 86
012	01 MAR 86	SAFE/SECURITY CABINET	91-912	012	01 MAR 86
013	01 MAR 86	SHAW LIGHTS/SECURITY CURTAINS	91-912	013	01 MAR 86
014	01 MAR 86	ELECTRONIC COT OPERAL TEST (CONSE)	91-912	014	01 MAR 86
015	01 MAR 86	PUMP BOILER CROSS MEMBER	91-912	015	01 MAR 86
016	01 MAR 86	PATIENT REPAIRING ACCOMMODATION LAUNDRY	91-912	016	01 MAR 86
017	01 MAR 86	WATER/TEST CONNECTIONS JP 5 SYSTEM	91-912	017	01 MAR 86
018	01 MAR 86	REPAIR SNEED A ITEMS	91-912	018	01 MAR 86

DATE: September 23, 1987

MOUSEA LUNIKAI NUMBER: MO0014 BIL 2094

1 AM 19/20

PR NO.	PR DATE	CHANGE DESCRIPTION	REMARKS	PR NO.	PR DATE
001	01 MAR 86	CURTAINS & MATRESS	97-000	001	01 MAR 86
002	01 MAR 86	TERRAZO IN GALLEY	10K 7418:7418:814:00	002	01 MAR 86
003	01 MAR 86	LAUNDRY EQUIPMENT	91-907	003	01 MAR 86
004	01 MAR 86	GALLEY EQUIPMENT	10K 7418:7418:815:00	004	01 MAR 86
005	01 MAR 86	VENT SYSTEMS	91-912	005	01 MAR 86
006	01 MAR 86	REPAIR BIL D. FUMP	10K 7418:7418:816:00	006	01 MAR 86
007	01 MAR 86	UPPER INSIDE REHABILITATION WORKS	91-907	007	01 MAR 86
008	01 MAR 86	PAGE TIDING IN OR/CLIM WORK AREAS	91-912	008	01 MAR 86
009	01 MAR 86	REPAIR ALARM FOR J. 5. SLUDGE TANK	10K 7418:7418:817:00	009	01 MAR 86
010	01 MAR 86	DANGER LIGHTS/STORM ROOM	91-912	010	01 MAR 86
011	01 MAR 86	ALIGNMENT CHECK OF SHAF	91-912	011	01 MAR 86
012	01 MAR 86	SAFE/SECURITY CABINET	91-912	012	01 MAR 86
013	01 MAR 86	SHAW LIGHTS/SECURITY CURTAINS	91-912	013	01 MAR 86
014	01 MAR 86	ELECTRONIC COT OPERAL TEST (CONSE)	91-912	014	01 MAR 86
015	01 MAR 86	PUMP BOILER CROSS MEMBER	91-912	015	01 MAR 86
016	01 MAR 86	PATIENT REPAIRING ACCOMMODATION LAUNDRY	91-912	016	01 MAR 86
017	01 MAR 86	WATER/TEST CONNECTIONS JP 5 SYSTEM	91-912	017	01 MAR 86
018	01 MAR 86	REPAIR SNEED A ITEMS	91-912	018	01 MAR 86

DATE: September 23, 1987

MAUSIA LUNIKAL 1 NUMBER N00024 B3 L 2094 1 AM 19/20

PRM NO.	PRM DATE	CHANGE DESCRIPTION	REMARKS	MIL. NO.	MIL. DATE
PRM 129	20 APR 86	ABS FELS	910-814	A0014V	10 JUN 86
PRM 129	1 AM 19/20			A0017A	1002
PRM 129	10 APR 86	LOGISTIC SUPPORT/ADMIN STALES	9105-402	A0014V	9/2
PRM 129	1 AM 19	FEASIBILITY STUDY 1 AM 19		A0014V	1002
PRM 130	2 MAY 86	RETELE COMET 1 100 0	92-981	A0014V	9/2
PRM 131	5 MAY 86	PERF BLOWAGE INSTALLATION DUES	914-120	A0014V	1002
PRM 132	1 AM 19	CREDIT UNUSED HOMIES FROM PRM 10A	964-782	A0014V	1002
PRM 133	19 MAY 86	1 AM 19		A0014V	1002
PRM 133-1	1 AM 20	REFILLAGE 2 (600LB) VALUES IN AUX STM 5/ST.	974-239	A0014V	1002
PRM 134	27 MAY 86	REMOVE MILLER TUBES FOR INSPT.	CANCELLED SUPSHIP LTR 1531/1188 B/5/86	A0014V	1002
PRM 135	1 AM 19	INSTALL MAGNET IN L.O. STRAINERS	91-016	A0014V	1002
PRM 136	10 MAY 86	MSC WORKSHOPS IN AUX MACH AREA	9186-5A2	A0014V	802
PRM 137	4 JUN 86	EMERG FTY WASH IN PLASTIC TELS LAB	96-972	A0014V	1002
PRM 138	5 JUN 86	SEPARATE L.W. URAIM 1AMA FUM	913-417	A0014V	952
PRM 139	11 JUN 86	REMOVE ROLLER TUBES FOR INSPT.	91-682	A0014V	1002
PRM 140	8 JUL 86	RECHAL TERRAZO GALLEY DECK (MSC CRW)	95-701	A0014V	1002
PRM 141	14 JUL 86	MODIFY LJO CIRCUIT	91-055	A0014V	1002
PRM 142	19 JUL 86	INSURANCE CLAIM	CANCELLED SUPSHIP LTR 1532/1366 9/9/86	A0014V	1002
PRM 143	29 JUL 86	PAINT ENGINEERING SCALE	973-034	A0014V	1002
PRM 144	5 AUG 86	PAINT STEERING RM	974-584	A0014V	952
PRM 145	5 AUG 86	PAINT TURT 1 AM AM RM 0A	91-164	A0014V	1002
PRM 145	1 AM 20		106-7439/26:874-100	A0014V	1002

DATE: September 23, 1987

MAUSIA LUNIKAL 1 NUMBER N00024 B3 L 2094 1 AM 19/20

PRM NO.	PRM DATE	CHANGE DESCRIPTION	REMARKS	MIL. NO.	MIL. DATE
PRM 145	5 AUG 86	PAINT TURT 1 AM AM RM 0A	91-164	A0014V	1002
PRM 145	1 AM 20		106-7439/26:874-100	A0014V	1002

DATE: September 23, 1987

NAUSEA LUNIKAT MURKIN MO0024 B1 E 2094 1 AM 19/20

CHANGE DESCRIPTION

PRM NO. PRM DATE	CHANGE DESCRIPTION	REMARKS	PRM NO. PRM DATE
PRM 144.1 5 AUG 86	SHOWN IN 1 AM 20	90.974 10K 7419086/LS:879100	000.1 08 SEP 86
PRM 147 6 AUG 86	RECOAT/RESEAL TERRAZZO WALLS IN CRSE LUNIKAT	94.893 10K 7419086/LS:881100	000.2 07 JAN 87
PRM 148 6 AUG 86	CURTAINS/MATRICES 1 AM 20	CANCELLED SUBMIT LTR 1531/1516 11/4/86	000.24 19 FEB 87
PRM 149 6 AUG 86	REFLAT CARPET EXISTING IN HOUSE 1 AM 19/20	CANCELLED SUBMIT LTR 1531/1516 11/4/86 10K 7419086/LS:882100 91.091 10K 7419086/LS:882100	000.27 19 FEB 87
PRM 150 7 AUG 86	REPLACE ILE MARKERS OF 100 0-01 100 7 1 AM 19/20	92.171	000.19 05 SEP 86
PRM 151 7 AUG 86	REFLAT CURTAINS & ILE MARKERS CRSE LUNIKAT 1 AM 19	CANCELLED SUBMIT LTR 1531/1516 11/4/86 10K 7419086/LS:884100 91.091	000.26 19 FEB 87
PRM 152 7 AUG 86	PAINT THE LE AREA 1 AM 20	94.180 10K 7419086/LS:885100	000.14 5 NOV 86
PRM 153 7 AUG 86	REFLAT 02 LVI PASSAGEWAY APT 101P HOUSE 1 AM 19/20	95.421 10K 7419086/LS:885100	000.15 19 NOV 86
PRM 154 18 AUG 86	JEFFERSON PROVIDE 1 AM 19/20	96.7	000.16 28 AUG 86
PRM 155 17 AUG 86	TRIAL AGENDA DELTA 1 AM 19	97.051	000.17 10 SEP 86
PRM 156 20 AUG 86	CRASH/RESQUE TOOL FOUUM 1 AM 19/20	97.051	000.18 08 SEP 86
PRM 157 21 SEP 86	SPEC A UFA 59A EMERG ALARM 1 AM 19	97.051 CANCELLED SUBMIT LTR 1531/1516 11/4/86 NOT USED	000.19 08 SEP 86
PRM 158	CANCELLATION OF WT BOOK INSTALLATION	98.125	000.17 19 NOV 86
PRM 159	CANCELLATION OF STUDY PLATFORM/LADDER	98.250	000.18 19 NOV 86
PRM 160 10 SEP 86	SAID A ITEM 1 AM 19	98.425	000.20 03 FEB 87
PRM 161 10 SEP 86	PROVIDE 1 SWITCHE 2/100 LPI VALVES IN APT 10 SEP 86	98.141	000.21 08 SEP 87
PRM 162 21 SEP 86	PROVIDE SEAME STRAINER BASKETS 1 AM 19/20	98.159	000.21 19 FEB 87

DATE: September 23, 1987

NAUSEA LUNIKAT MURKIN MO0024 B1 E 2094 1 AM 19/20

CHANGE DESCRIPTION

PRM NO. PRM DATE	CHANGE DESCRIPTION	REMARKS	PRM NO. PRM DATE
---------------------	--------------------	---------	---------------------

DATE: September 23, 1967

MAUSIA LUMIKAI I NUMBER: 0000-4 BT 1 0094 1 AM 19-20

TIME NO.	TIME DATE	CHANGE DESCRIPTION	REMARKS	TIME NO.	TIME DATE
✓ PM 161	1 OCT 86	INITIAL TEND.	9184-607	000-13	17 OCT 86
PM 164	5 OCT 86	MSI WORK SHOE IN AUX MAIN AREA	CANCELLED 83-1A	000-15	17 OCT 86
PM 165	5 OCT 86	MINOR GUV DEFECTS	980-55A	000-17	20 MAR 87
✓ PM 166	15 OCT 86	REPLACE FURNITURE EXES IN MOON	6103-594	000-18	27 OCT 86
✓ PM 167	15 OCT 86	CHILL STONES	981-ROU	000-19	20 MAR 87
PM 168	15 OCT 86	CHILL STONES	912-970	000-21	1002
PM 169	15 OCT 86	TECH LIBRARY SERVICES	913-019	000-22	1002
PM 170	15 OCT 86	REMOVE ROLLER TUNES FOR INVEL.	914-827	000-23	1002
PM 171	25 OCT 86	FILE IDENTIFICATION	916-110	000-24	1002
PM 172	25 OCT 86	ADDITIONAL DEMO OF OPERATIONS/STRENGTHS	93-184	000-25	1002
PM 173	29 OCT 86	HYDRO SING ROLLER	917-004	000-26	1002
PM 174	05 NOV 86	ELECTRICAL MATERIAL	CANCELLED SUS SHOE (IN 15:10/15:11 11-25/86)	000-27	1002
PM 175	08 NOV 86	DIAGNOSTIC ENGINEER	919-749	000-28	1002
PM 176	1 AM 19	LAPPING	92-022	000-29	1002
PM 177	1 AM 19	LAPPING	92-249	000-30	1002
PM 178	1 AM 19	LAPPING	95-108	000-31	1002
✓ PM 179	1 AM 19	WORK BENCH	93-065	000-32	1002
PM 180	1 AM 19	REPAIR ROLLER	98-1-30	000-33	1002

DATE: September 23, 1967

MAUSIA LUMIKAI I NUMBER: 0000-4 BT 1 0094 1 AM 19-20

TIME NO.	TIME DATE	CHANGE DESCRIPTION	REMARKS
PM 181	1 AM 19		

DATE: September 23, 1987

NOV'S A LUMINATE MP-BK MO0024 R1 1 2094 1 AM 19/20

PK NO. PK DATE	CHANGE DESCRIPTION	REMARKS	MDP NO. MDP DATE
PK 181	MELTING CURT 145 1 AM 19	91-404 18010 OH	900-47 952 07 JAN 87
PK 182	D.R. DOOR WINDOWS 1 AM 19	91-214 810019 MP	900-20 1002 27 DEC 86
PK 183	PURGE TRAT BRAINS IN MURGUI 1 AM 19	91-208 810015 MR/18115 MP	900-20 952 18 DEC 86
PK 184	KARE FOR DOOR SILL 1 67 1 1 AM 19	91-118 18-119 MP	900-24 952 27 DEC 86
PK 185	WASH LEAF TABLES INSIDE 1 AM 19	91-111 810015 MP	900-24 952 22 DEC 86
PK 186	GOVERNMENT DISCREPANCIES 1 AM 19	91-111 810015 MP	900-24 952 22 DEC 86
PK 187	PAINT ENGINEERING STATES 1 AM 20	91-249	900-24 1002 5 AUG 87
PK 188	CABINET DOORS 1 AM 19	NOT USED	PK 185 009
PK 189	PAINT BECKS COMET 1 101 2-1 101 0 1 AM 19	91-684	900-24 1002 19 FEB 87
PK 190	PAINT INNER STACK/RENEW 20 UP 20 INSULATION 1 AM 20	91-224	900-27 1002 20 FEB 87
PK 191	RELOCATE SHIP 1 AM 19	91-145	900-27 1002 20 FEB 87
PK 192	DISCREPANCIES IN PMO BR 1 AM 19	91-191	900-27 1002 05 MAR 87
PK 193	REMOVE TURNER 1 AM 19	91-758	900-27 1002 26 JAN 87
PK 194	PAINT EXIST ELEVATOR SHAFT 1 AM 19	91-452	900-24 1002 18 DEC 86
PK 195	MUN SAID APPLICATION HELD IN 1 AM 20	91-044	900-24 1002 05 MAR 87
PK 196	212 STATION (1 91 2) 1 AM 19/20	91-429	900-29 1002 17 FEB 87
PK 197	SWAT II SYSTEM 1 AM 19	91-160	900-24 952 01 FEB 87
PK 198	SHORE STEER DRAWINGS 1 AM 19	91-804	900-28 902

MDP NO.
MDP DATE

REMARKS

DATE: September 23, 1987

NOV'S A LUMINATE MURPH MO0024 R1 1 2094 1 AM 19/20

PK NO.
PK DATE

REMARKS

NAUSEA (CONTINUED) NUMBER N00024 H3 1 '094 1 AM 1970

Call: September 23, 1981

LAUSHA (INITIAL) NUMBER 00024 HJ 1 094 1 AM 10/10

[illegible]

Call: 603-886-1414

DATE: 1968-01-03 08:00 AM

1 AM 14.30

PRG NO.	PRG NAME	STATUS	REMARKS
PRG 234	MODIFY STATION MAINT ELEVATION	1 AM 20	85-119
PRG 235	ELECTRICAL WORK MENUS	1 AM 20	85-087
PRG 236	EXHAUST DUCT FOR KITCHEN	1 AM 20	85-215
PRG 237	CARDUWEL DRAIN, SODIATION PLANT	1 AM 20	85-270
PRG 238	ELEVATOR ENHANCEMENT	1 AM 20	85-865
PRG 239	MECH SEALS FOR MSD PUMPS	1 AM 20	85-256
PRG 240	INSTALL REFR	1 AM 20	85-222, 249
PRG 241	INSTALL RELAT CONTROLLER LAMENAS	1 AM 20	85-277, H
PRG 242	FORGET DONT FLAME DISINTEGRATES	1 AM 20	85-466
PRG 243	SEALERS OF BOV. LOCKDOWN MATERIAL	1 AM 19	85-077
PRG 244	VENTILATION LAMENAS	1 AM 20	85-277
PRG 245	LORE SODIATION	1 AM 20	NOT USED
PRG 246	RELAT C.O. COOKERS ON RM STEP PUMPS	1 AM 20	85-282
PRG 247	SAFETY AND OPERATION INSTRUCTION PLATS	1 AM 20	85-508
PRG 248	FIXABLE HOSE	1 AM 20	85-451
PRG 249	LIFELINGS W-MARKER LIGHTS	1 AM 20	85-558
PRG 250	PRELIMINARY INSTALL TADDER AND SHUTTLE 1 AM 20	1 AM 20	85-549
PRG 251	REPAIR TEST DRAINS	1 AM 20	85-604
PRG 252	ADD 100	1002	ADD 100

DATE: September 21, 1987

NAVSUBA (INITIAL) NUMBER 000-8 B I , 2094 1 AM 1970

0.0

Year	Rate	Amount of Premium	Rate	Amount of Premium
1905	5.05	\$100.00	5.05	\$100.00
1906	5.05	\$100.00	5.05	\$100.00
1907	5.05	\$100.00	5.05	\$100.00
1908	5.05	\$100.00	5.05	\$100.00
1909	5.05	\$100.00	5.05	\$100.00
1910	5.05	\$100.00	5.05	\$100.00
1911	5.05	\$100.00	5.05	\$100.00
1912	5.05	\$100.00	5.05	\$100.00
1913	5.05	\$100.00	5.05	\$100.00
1914	5.05	\$100.00	5.05	\$100.00
1915	5.05	\$100.00	5.05	\$100.00
1916	5.05	\$100.00	5.05	\$100.00
1917	5.05	\$100.00	5.05	\$100.00
1918	5.05	\$100.00	5.05	\$100.00
1919	5.05	\$100.00	5.05	\$100.00
1920	5.05	\$100.00	5.05	\$100.00
1921	5.05	\$100.00	5.05	\$100.00
1922	5.05	\$100.00	5.05	\$100.00
1923	5.05	\$100.00	5.05	\$100.00
1924	5.05	\$100.00	5.05	\$100.00
1925	5.05	\$100.00	5.05	\$100.00
1926	5.05	\$100.00	5.05	\$100.00
1927	5.05	\$100.00	5.05	\$100.00
1928	5.05	\$100.00	5.05	\$100.00
1929	5.05	\$100.00	5.05	\$100.00
1930	5.05	\$100.00	5.05	\$100.00
1931	5.05	\$100.00	5.05	\$100.00
1932	5.05	\$100.00	5.05	\$100.00
1933	5.05	\$100.00	5.05	\$100.00
1934	5.05	\$100.00	5.05	\$100.00
1935	5.05	\$100.00	5.05	\$100.00
1936	5.05	\$100.00	5.05	\$100.00
1937	5.05	\$100.00	5.05	\$100.00
1938	5.05	\$100.00	5.05	\$100.00
1939	5.05	\$100.00	5.05	\$100.00
1940	5.05	\$100.00	5.05	\$100.00
1941	5.05	\$100.00	5.05	\$100.00
1942	5.05	\$100.00	5.05	\$100.00
1943	5.05	\$100.00	5.05	\$100.00
1944	5.05	\$100.00	5.05	\$100.00
1945	5.05	\$100.00	5.05	\$100.00
1946	5.05	\$100.00	5.05	\$100.00
1947	5.05	\$100.00	5.05	\$100.00
1948	5.05	\$100.00	5.05	\$100.00
1949	5.05	\$100.00	5.05	\$100.00
1950	5.05	\$100.00	5.05	\$100.00
1951	5.05	\$100.00	5.05	\$100.00
1952	5.05	\$100.00	5.05	\$100.00
1953	5.05	\$100.00	5.05	\$100.00
1954	5.05	\$100.00	5.05	\$100.00
1955	5.05	\$100.00	5.05	\$100.00
1956	5.05	\$100.00	5.05	\$100.00
1957	5.05	\$100.00	5.05	\$100.00
1958	5.05	\$100.00	5.05	\$100.00
1959	5.05	\$100.00	5.05	\$100.00
1960	5.05	\$100.00	5.05	\$100.00
1961	5.05	\$100.00	5.05	\$100.00
1962	5.05	\$100.00	5.05	\$100.00
1963	5.05	\$100.00	5.05	\$100.00
1964	5.05	\$100.00	5.05	\$100.00
1965	5.05	\$100.00	5.05	\$100.00
1966	5.05	\$100.00	5.05	\$100.00
1967	5.05	\$100.00	5.05	\$100.00
1968	5.05	\$100.00	5.05	\$100.00
1969	5.05	\$100.00	5.05	\$100.00
1970	5.05	\$100.00	5.05	\$100.00
197				

Date: September 23, 1987

MAINTENANCE LOG: NUMBER 00024811 2094 1 AM 19 20

TIME NO.	CHANGE DESCRIPTION	REMARKS	TIME NO.
10 FEB 87	1 AM 20		08 MAY 87
11 FEB 87	400. MED. EQUIP. CLEAN UP	8/22-2005	01 JUN 87
12 FEB 87	1 AM 20		20 MAY 87
13 FEB 87	CHLORINATION IMITATION SYS.	8/23-428	10 AUG 87
14 FEB 87	1 AM 20		20 MAY 87
15 FEB 87	DEEM RIM STORAGE CAPACITY 1 49 0	8/22-903	10 MAY 87
16 FEB 87	1 AM 20		10 MAY 87
17 FEB 87	DEEP LEAF TABLES 01 54 01	8/22-026	10 MAY 87
18 FEB 87	1 AM 20		10 MAY 87
19 FEB 87	CLEAN WATERSTONES & MINOR AFFAIRS	8/23-834	10 MAY 87
20 FEB 87	ON BOILERS 81 8 02 1 AM 20		10 MAY 87
21 FEB 87	1 AM 20		10 MAY 87
22 FEB 87	CHEMICAL INJECTION SYS.	8/23-173	10 MAY 87
23 FEB 87	1 AM 20		10 MAY 87
24 FEB 87	ALLEGABLE SOOT BLOWER	8/23-252	10 MAY 87
25 FEB 87	1 AM 20		10 MAY 87
26 FEB 87	CREDIT HOUSED MURKES FROM FAN 165	8/23-194	10 MAY 87
27 FEB 87	1 AM 19		10 MAY 87
28 FEB 87	INSTALL FEEDINGS IN 01 51 A	8/23-460	10 MAY 87
29 FEB 87	1 AM 20		10 MAY 87
30 FEB 87	DIAGNOSTIC WATER PIPING	8/23-274	10 MAY 87
31 FEB 87	1 AM 20		10 MAY 87
32 FEB 87	EXHAUST F.F. FUEL IN ENG. NO.	8/23-118	10 MAY 87
33 FEB 87	1 AM 20		10 MAY 87
34 FEB 87	TOTAL MTR. GAUSS. COMBUST	CANCELLED SUBSHIP LTR 1531 275 8/23/87	10 MAY 87
35 FEB 87	1 AM 20		10 MAY 87
36 FEB 87	VENT/DRAIN VALV. ON F.O. DUTTER STRAINER	8/23-190	10 MAY 87
37 FEB 87	1 AM 20		10 MAY 87
38 FEB 87	FIRE MAIN SYSTEM FILTER	CANCELLED SUBSHIP LTR 1531 275 8/23/87	10 MAY 87
39 FEB 87	1 AM 20		10 MAY 87
40 FEB 87	CURSET ELECTRICAL DISCREPANCIES IN MED ROOM	8/23-111	10 MAY 87
41 FEB 87	1 AM 20		10 MAY 87
42 FEB 87	COMMUNICATIONS CENTER, MURPHY	8/23-280	10 MAY 87
43 FEB 87	1 AM 20		10 MAY 87
44 FEB 87	SPRINGING MEDIUM THICKS	8/23-408	10 MAY 87
45 FEB 87	1 AM 20		10 MAY 87

Date: September 23, 1987

MAINTENANCE LOG: NUMBER 00024811 2094 1 AM 19 20

TIME NO.	CHANGE DESCRIPTION	REMARKS	TIME NO.
10 FEB 87	1 AM 20		08 MAY 87
11 FEB 87	400. MED. EQUIP. CLEAN UP	8/22-2005	01 JUN 87
12 FEB 87	1 AM 20		20 MAY 87
13 FEB 87	CHLORINATION IMITATION SYS.	8/23-428	10 AUG 87
14 FEB 87	1 AM 20		20 MAY 87
15 FEB 87	DEEM RIM STORAGE CAPACITY 1 49 0	8/22-903	10 MAY 87
16 FEB 87	1 AM 20		10 MAY 87
17 FEB 87	DEEP LEAF TABLES 01 54 01	8/22-026	10 MAY 87
18 FEB 87	1 AM 20		10 MAY 87
19 FEB 87	CLEAN WATERSTONES & MINOR AFFAIRS	8/23-834	10 MAY 87
20 FEB 87	ON BOILERS 81 8 02 1 AM 20		10 MAY 87
21 FEB 87	1 AM 20		10 MAY 87
22 FEB 87	CHEMICAL INJECTION SYS.	8/23-173	10 MAY 87
23 FEB 87	1 AM 20		10 MAY 87
24 FEB 87	ALLEGABLE SOOT BLOWER	8/23-252	10 MAY 87
25 FEB 87	1 AM 20		10 MAY 87
26 FEB 87	CREDIT HOUSED MURKES FROM FAN 165	8/23-194	10 MAY 87
27 FEB 87	1 AM 19		10 MAY 87
28 FEB 87	INSTALL FEEDINGS IN 01 51 A	8/23-460	10 MAY 87
29 FEB 87	1 AM 20		10 MAY 87
30 FEB 87	DIAGNOSTIC WATER PIPING	8/23-274	10 MAY 87
31 FEB 87	1 AM 20		10 MAY 87
32 FEB 87	EXHAUST F.F. FUEL IN ENG. NO.	8/23-118	10 MAY 87
33 FEB 87	1 AM 20		10 MAY 87
34 FEB 87	TOTAL MTR. GAUSS. COMBUST	CANCELLED SUBSHIP LTR 1531 275 8/23/87	10 MAY 87
35 FEB 87	1 AM 20		10 MAY 87
36 FEB 87	VENT/DRAIN VALV. ON F.O. DUTTER STRAINER	8/23-190	10 MAY 87
37 FEB 87	1 AM 20		10 MAY 87
38 FEB 87	FIRE MAIN SYSTEM FILTER	CANCELLED SUBSHIP LTR 1531 275 8/23/87	10 MAY 87
39 FEB 87	1 AM 20		10 MAY 87
40 FEB 87	CURSET ELECTRICAL DISCREPANCIES IN MED ROOM	8/23-111	10 MAY 87
41 FEB 87	1 AM 20		10 MAY 87
42 FEB 87	COMMUNICATIONS CENTER, MURPHY	8/23-280	10 MAY 87
43 FEB 87	1 AM 20		10 MAY 87
44 FEB 87	SPRINGING MEDIUM THICKS	8/23-408	10 MAY 87
45 FEB 87	1 AM 20		10 MAY 87

[illegible][illegible]

RECEIVED: 1961

MAUSIA (UNIKAT) NUMBER 0000.4 HT 1 '094 1 AM 19. '00

	FILE	CUS SUB	SER NO.	MOTION OF PROPOSITION	FORM DATE	STATION	STATE
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
9							

DATE: September 23, 1987

MOUSE CONTROL NUMBER 000024 H3 1 2094 1 AM 19/20

PRC NO.	PRC DATE	CHANGE DESCRIPTION	REMARKS	PRC NO.	PRC DATE
PRC 322	20 JUL 87	PAINT DELTA AT OPERATING DESK	8:20-0:20	000004	19 AUG 87
PRC 323	22 JUL 87	CANCELLATION CHARGE ECD 1 014	8:21-6:29	000007	1002
PRC 324	27 JUL 87	PAINT PINK/DORADO MAIN IN FOR SLE AREA	TO CANCELLATION UM 8/23/87 410/1379 UM 743927761158:00	000008	19 AUG 87
PRC 325	10 AUG 87	CANCELLATION CHARGE ECD 1 011	TO CDD 410 UM 8/23/87		
PRC 326	11 AUG 87	OFFER'S 8044, 8047, 8049, 8049, 8051, 8054	TO CDD 410 UM 8/23/87		
PRC 327	19 AUG 87	SYSTEM SYSTEM CDDOUT VLOS	TO CDD 410 UM 8/23/87		
PRC 328	20 AUG 87	ECDD/DE TEND OFFICE SPACE			
PRC 329	20 SEP 87	ECDD/DE TEND TRAINING	TO CANCELLATION UM 9 16-87 410/1805		
PRC 330	10 SEP 87	ECDD/DE TEND TO RADIATOR	TO CDD 410 UM 9 22-87		
PRC 331	21 SEP 87	PAINT OLD MOUSE FAN FLEMMING 1 AM 20	TO CDD 410 UM 9/22/87		

SMALL REGULATION

DATE: September 23, 1987

MOUSE CONTROL NUMBER 000024 H3 1 2094 1 AM 19/20

PRC NO.	PRC DATE	CHANGE DESCRIPTION	REMARKS
PRC 322	20 JUL 87	PAINT DELTA AT OPERATING DESK	8:20-0:20
PRC 323	22 JUL 87	CANCELLATION CHARGE ECD 1 014	8:21-6:29
PRC 324	27 JUL 87	PAINT PINK/DORADO MAIN IN FOR SLE AREA	TO CANCELLATION UM 8/23/87 410/1379 UM 743927761158:00
PRC 325	10 AUG 87	CANCELLATION CHARGE ECD 1 011	TO CDD 410 UM 8/23/87
PRC 326	11 AUG 87	OFFER'S 8044, 8047, 8049, 8049, 8051, 8054	TO CDD 410 UM 8/23/87
PRC 327	19 AUG 87	SYSTEM SYSTEM CDDOUT VLOS	TO CDD 410 UM 8/23/87
PRC 328	20 AUG 87	ECDD/DE TEND OFFICE SPACE	
PRC 329	20 SEP 87	ECDD/DE TEND TRAINING	TO CANCELLATION UM 9 16-87 410/1805
PRC 330	10 SEP 87	ECDD/DE TEND TO RADIATOR	TO CDD 410 UM 9 22-87
PRC 331	21 SEP 87	PAINT OLD MOUSE FAN FLEMMING 1 AM 20	TO CDD 410 UM 9/22/87

DATE: September 23, 1987

NAVSEA CONTRACT NUMBER N00024-B1-C-2094 1 AM 19720

FILE NO. FILE DATE	SUBJECT	APPROVED SPECIFICATIONS APPROVED DRAWINGS	REVISIONS	REMARKS
VEEP 001 24 FEB 84 92 084	THREE DECK HEIGHTS	PLATFORM DECK HEIGHTS		MRK 001, DATE 9 MAR 84 PLATFORM DECK HEIGHTS ADDED ON 5 MAR 84 MRK 1
VEEP 002 05 MAY 84 92 100	NO BALKAN FUMES SUPPLY	SPEC SECT 90/96		MRK 2
L-001	02M2 FLAMIS	SPEC SECT 1/13/50/58/59		MRK 1
L-002	FOOTABLE WATER TANKAGE			MRK 1
L-003	10/70 FILTER	SPEC SECT 56/57		MRK 10 CANCELLATION CHARGE
L-004	PAINTING REQUIREMENTS	SPEC SECT 14		MRK 11
L-005	SEALING AREA			MRK 11
L-005	SHORE BASE STAKES	SPEC SECT 86		MRK 11
L-006	WATER TIGHT DOORS	SPEC SECT 4		MRK 15B CANCELLATION CHARGE
L-006	COMPUTED AXIAL FUMOGRAHY (CAT) SCANNER 1 AM 19720	SPEC SECT 26		MRK 12
L-010	EMERGENCY ESCAPE MAINTAINING DEVICE (EED) SIGNAGE LUMINAIR	SPEC SECT 1		MRK 131
L-011	POST FEASIBILITY STUDY TO INSTALL PLATFORM LADDER			MRK 15B CANCELLATION CHARGE
L-012	MODIFY LUMINAIR 31 2 "CHILL STOPS" 1 AM 20	SPEC SECT 66		MRK 167
L-013	STIFFPORT DOOR INST. 04H 1 AM 19			10 FMS 181 FOR EVALUATION
L-014	REPLACE SIM TURNING W/ELC MKS			10 FMS 181 FOR EVALUATION
L-015	REPLACE SIM TURNING WITH UPGRADED MODEL ON BUTTERWORTH PUMP 1 AM 20			MRK 287
L-016	REPLACE SIM TURNING FOR BALLAST PMS 1 AM 20			MRK 101 FOR EVALUATION
L-0001	CONVEYANCE SUSTAINMENT (REFRINT APPROVAL)			MRK 1
L-0004	MEDICAL GAS CYLINDER TANKS	SPEC SECT 26		MRK 6
L-0007	WIND SPEED/DIRECTION	SPEC SECT 94		MRK 7

DATE: September 23, 1987

NAVSEA CONTRACT NUMBER N00024-B1-C-2094 1 AM 19720

FILE NO. FILE DATE	SUBJECT	APPROVED SPECIFICATIONS APPROVED DRAWINGS	REVISIONS	REMARKS
-----------------------	---------	--	-----------	---------

DATE: September 23, 1987

WASHCO UNIT 603 NUMBER ROOM 4 ME 1 2004 1 AM 19 20

ISS NO ISS DATE	SUBJECT	AFFECTED SECTIONS AFFECTED DRAWINGS	REVISIONS	REMARKS
10008	INSULATION SYSTEM			
10008	MINI THERM COOL MARKING	SEE SECT 18 24		ENR 8
10009	EXCESS EXPOSURE REMOVAL			ENR 9
10010	PLASTER/STUCCO DAMAGE TREATMENT	SEE SECT 20		ENR 10
10011	PATIENT BED FRAM	SEE SECT 24		ENR 11
10013	EXTENDED METAL RISER	SEE SECT 01		ENR 14
10014	ADDITIONAL STEEL CHART KILN/DIA	SEE SECT 14		ENR 42
10015	AUX DIESEL GEN DUTY SIGNALS	SEE SECT 18		ENR 43
10016	SEALANT/MORTAR REPAIRS	SEE SECT 19		ENR 47
10017	RED CROSS THERMAL MARKINGS	SEE SECT 19		ENR 48
10018	P.O. REGULATING VALVE	SEE SECT 24		ENR 49
10019	CORRECT SEC FRAMES	SEE SECT 24		ENR 50
10020	COMPRESSION SEALANT/STUCCO TREATMENT FOR ATTACH	SEE SECT 24		ENR 064
10021	FLUOR CHUCKING, R.K.	SEE SECT 14		ENR 077
10021	BASE THERM OK	SEE SECT 14		ENR 097.1
10023	ADDITIONAL WORK	SEE SECT 01		ENR 09A
10024	SAFE SECURITY CABINET	SEE SECT 24		ENR 99
10025	ROOM VENTILATION FURNISHES	SEE SECT 19		ENR 100
10026	ELECTRIC FUSE ORIGNAL TEST	SEE SECT 101		ENR 101
10027	PATIENT BATHING ALUMINUM LADDERS 1 AM 19 20	SEE SECT 26		ENR 103
10029	SAMPLE TEST CONNECTIONS W.C. SYSTEM	SEE SECT 48		ENR 104
10029	FLUOR THROUGH FOR SUB ENG FR	SEE SECT 20		ENR 111
10030	TRANSFER TIME BETWEEN VOA	SEE SECT 22 60		ENR 127

DATE: September 23, 1987

WASHCO UNIT 603 NUMBER ROOM 4 ME 1 2004 1 AM 19 20

ISS NO ISS DATE	SUBJECT	AFFECTED SECTIONS AFFECTED DRAWINGS	REVISIONS	REMARKS

DATE: September 23, 1987

MOUSEA LUNARAT I NUMBER MOUS-A-13-C-2094 1 AM 19-20

REF NO. REF DATE	SUP-REF	ADDITIONAL SPECIFICATIONS ADDITIONAL DRAWINGS	REVISIONS	REMARKS
00031	CREW TO EVAL. RESETTING 1 AM 19-20 MSC MOAR SHOPS 1 AM 20	SEE SEE NO 1		ENR 136
00032	ENR 136 MASH 1 AM 19-20	SEE SEE NO 2		ENR 137
00033	MODIFY JUV. LIRCUIT	EXISTING DWG		ENR 141
00034	INSTALL ELEV 1 AM 19	SEE SEE NO 3		ENR 145
00035	MSC MOAR SHOP 1 AM 19	SEE SEE NO 4		ENR 144
00036	277 STATION PUMP STA 1 AM 19-20	SEE SEE NO 5		ENR 146
00037	SHORE SIVAN CONNECTION 1 AM 19-20	SEE SEE NO 6		ENR 148
00038	PAVING/INSTALL AUTOCLAVE 1 AM 20	SEE SEE NO 7		ENR 224
00039	AGRICULTURAL BIAL TELEPHONES 1 AM 20	SEE SEE NO 8		ENR 223
00040	LIFFPORT STAIR 1 TO MODIFY 1 AM 20	DWG		ENR 214
00041	ADDITIONAL PORTABLE CO2 EXTINGUISHER 1 AM 20	DWG		ENR 216
00042	ADD RELIABLES-OUT OPS SWITCH 01 41 01 1 AM 20	DWG		ENR 218
00043	ACCESS LADDER 1 AM 20	DWG		ENR 221
00044	DISTRIBUTES AT LETTER HOUSE AREA 1 AM 20	SEE SEE NO 9		ENR 19
00045	LEARNABLE STOWAGE TANK 1 AM 20	SEE SEE NO 10		ENR 231
00046	MECHANICAL SEPARATOR CABINETS 1 AM 20	SEE SEE NO 11		ENR 23
00047	INDUSTRIAL DRAINAGE PROTECTIVE SLATE 1 AM 20	SEE SEE NO 12		ENR 237

DATE: September 23, 1987

MOUSEA LUNARAT I NUMBER MOUS-A-13-C-2094 1 AM 19-20

REF NO. REF DATE	SUP-REF	ADDITIONAL SPECIFICATIONS ADDITIONAL DRAWINGS	REVISIONS	REMARKS

DATE: September 23, 1987

MOOSE LUMBER COMPANY, 400 N. 4th St., 2004 1 AM 19/20

EXP. NO.	DATE	PROJECT	COLLECTED SPECIES LOCATION	KEYWORDS	REMARKS
10066	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10067	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10068	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10069	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10070	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10071	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10072	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10073	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10074	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10075	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10076	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10077	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10078	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10079	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10080	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10081	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10082	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10083	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10084	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10085	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10086	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10087	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10088	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10089	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10090	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10091	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10092	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10093	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10094	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10095	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10096	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10097	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10098	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10099	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10100	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10101	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261
10102	1 AM 19	COLEMAN WIS. FIELD	SECT. SECT. 4		100 261

DATE: September 23, 1987

MOOSE LUMBER COMPANY, 400 N. 4th St., 2004 1 AM 19/20

EXP. NO. DATE PROJECT COLLECTED SPECIES LOCATION KEYWORDS REMARKS

10103 1 AM 19 COLEMAN WIS. FIELD SECT. SECT. 4 100 261

10104 1 AM 19 COLEMAN WIS. FIELD SECT. SECT. 4 100 261

10105 1 AM 19 COLEMAN WIS. FIELD SECT. SECT. 4 100 261

10106 1 AM 19 COLEMAN WIS. FIELD SECT. SECT. 4 100 261

DATE: 19/09/2004 15:10:00 HAUSSEA CONTROL NUMBER: 800014 B3 1 2004 1 AM 19/20

PERIOD DATE	SUPPLY	REMARKS	REVISIONS	REMARKS
1 AM 19				
19013	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 10K 7418271810100 1/30 85		PRK 16
19014	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 17
19015	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 18
19016	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 19
19017	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 20
19018	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 21
19019	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 81		PRK 22
19020	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 81		PRK 23
19021	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 24
19022	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 25
19023	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 73		PRK 26
19024	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 63		PRK 27
19025	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 77		PRK 28
19026	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 77		PRK 29
19027	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 72		PRK 30
19028	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 73		PRK 31
19029	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 70		PRK 32

DATE: September 21, 1987

HAUSSEA CONTROL NUMBER: 800014 B3 1 2004 1 AM 19/20

PERIOD DATE	SUPPLY	REMARKS	REVISIONS	REMARKS
1 AM 19				
19013	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 10K 7418271810100 1/30 85		PRK 16
19014	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 17
19015	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 18
19016	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 19
19017	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 20
19018	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 58		PRK 21
19019	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 81		PRK 22
19020	REPAIR PUMP EXHAUSTION MINUTS 1 AM 19	SEEK SET AT 81		PRK 23
19021	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 24
19022	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 81		PRK 25
19023	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 73		PRK 26
19024	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 63		PRK 27
19025	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 77		PRK 28
19026	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 77		PRK 29
19027	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 72		PRK 30
19028	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 73		PRK 31
19029	REPAIR PUMP EXHAUSTION MINUTS 1 AM 20	SEEK SET AT 70		PRK 32

Date: September 23, 1987

MAUSA LUMINACE NUMBER 000024 B3 E 2094 1 AM 19/20

SLP NO. SLP DATE	SUBJECT	ANALYSIS SPECIFICATIONS AFFECTED DRAWINGS	REVISIONS	REMARKS
	EQUIP 1 AM 19			
PN010	OPEN/CLOSE REDUCTION GEAR 1 AM 20	SEEC SECT 52		PNK 33
PN011	1/5 STOKS DAVIES 1 AM 20	SEEC SECT 51		PNK 34
PN012	H.P. TURBINE 1 AM 20	SEEC SECT 51		PNK 35
PN013	1/5 STOKS DAVIES 1 AM 19	SEEC SECT 51		PNK 36
PN014	L.P. TURBINE 1 AM 20	SEEC SECT 51		PNK 37
PN015	BULLOCK STALK (LINER) 1 AM 19	SEEC SECT 41		PNK 38
PN016	92 MAIN FEED PUMP 1 AM 20	SEEC SECT 40		PNK 39
PN017	TURBO GEM REDUCTION GEAR 1 AM 20	SEEC SECT 50		PNK 40
PN018	WINDMILL ROUSSEAU LUMINACE 1 AM 20	SEEC SECT 40		PNK 41
PN019	TURBO GENERATION TURBINE	SEEC SECT 50		PNK 43
PN020	92 MAIN FEED PUMP	SEEC SECT 40		PNK 44
PN041	MEDICAL STORAGE FEASIBILITY STUDY	SEEC SECT 53		PNK 46
PN042	OPEN/CLOSE REDUCTION GEAR	SEEC SECT 52		PNK 51
PN043	PAINT FORTABLE & DISTILLED WATER LUMES 1 AM 19	SEEC SECT 14		PNK 52
PN044	RETAINS TO 84 MUCKING MINCH 1 AM 19	SEEC SECT 81		PNK 53
PN045	RETAINS TO 85 MUCKING MINCH 1 AM 19	SEEC SECT 81		PNK 54
PN046	RETAINS TO 86 MUCKING MINCH 1 AM 19	SEEC SECT 81		PNK 55
PN047	PAINT MOUNTMENT SEALS	SEEC SECT 14		PNK 56

Date: September 23, 1987

MAUSA LUMINACE NUMBER 000024 B3 E 2094 1 AM 19/20

SLP NO.	TITLE	SOS	SEA	NATURE OF EQUIPMENT	SHIP	SEA	RESOLUTION	SOS TO A SEA
		SOS	SEA		SHIP	SEA		DATE

DATE: September 23, 1987

NAVSUP CONTRACT NUMBER N00024-B3-1-204 1 AM 1970

REF. NO.	SUBJECT	AFFECTED SPECIFICATIONS	REVISIONS	REMARKS
1	1 AM 19			
1M048	REPAIR TO RUBBER STAIR FRONT LEG 1 AM 19	SECT SECT 61		1M 57
1M049	PAINT PUMP AND PUMPS & SINKING ON 1 AM 19	SECT SECT 14		1M 58
1M050	PAINT RUBBER JAMES STAIR 1 AM 19	SECT SECT 14		1M 60
1M051	REPAIR TO 82 L.O. TUBE 1 AM 19	SECT SECT 73		1M 62
1M052	REPAIR 81 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 64
1M053	REPAIR 82 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 67
1M054	REPAIR 83 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 68
1M055	REPAIR 84 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 69
1M056	REPAIR 85 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 70
1M057	REPAIR 86 RUNNING MINCH HED MIN/END 1 AM 20	SECT SECT 81		1M 71
1M058	REPAIR 87 RUNNING MINCH MECHANICAL 1 AM 20	SECT SECT 81		1M 73
1M059	REPAIR 88 RUNNING MINCH MECHANICAL 1 AM 20	SECT SECT 81		1M 74
1M060	REPAIR 89 RUNNING MINCH MECHANICAL 1 AM 20	SECT SECT 81		1M 75
1M061	UNITS AND REEFS 1 AM 19	SECT SECT 11		1M 76
1M062	UNITS AND REEFS 1 AM 19	SECT SECT 11		1M 77
1M063	REPAIR 88 RUNNING MINCH 1 AM 20	SECT SECT 81		1M 78
1M064	REPAIR 89 RUNNING MINCH 1 AM 20	SECT SECT 81		1M 79
1M065	REPAIR 88 RUNNING MINCH 1 AM 20	SECT SECT 81		1M 80

DATE: September 23, 1987

NAVSUP CONTRACT NUMBER N00024-B3-1-204 1 AM 1970

REF. NO.	TITLE	SOS	SEA	DATE	NATURE OF FAILURE	SOP	SEA	DATE	REVISION	SOS TO K. SEA
1	REPAIR TO 82 L.O. TUBE	153	109		EMERGENCY TUBE TO SECT 11	104	104			153 214

DATE: September 23, 1987

NAVSUB CONTRACT NUMBER N00024-B3-1-0094 1 AM 19/20

REF NO. REF DATE	SUBJECT	ATTACHED SPECIFICATIONS ATTACHED DRAWINGS	REVISIONS	REMARKS
PM064	TELEPHONE INVOICE PAYMENT 1 AM 19	H 12 OF LUMINAL 1		PMK 82
PM067	PAINT DONOR 1 AM 19	H 22 OF LUMINAL 1		PMK 81
PM068	BELTS, CLEAN BALLAST PUMP 1 AM 20	SPEC SECT 50		PMK 84
PM069	PAINT FUC SLE BELT PM DP 1 AM 19	SPEC SECT 14		PMK 84
PM070	PAINT Q1 LUL ON PASSAGE 1 AM 19	SPEC SECT 14		PMK 85
PM071	PAINT FAN PM PM DP 1 AM 19	SPEC SECT 14		PMK 86
PM072	SHOWER DR/SHOWER CURTAINS 1 AM 19	SPEC SECT 6 & 19		PMK 87
PM073	CURTAINS, PILLOWS & MATINGS 1 AM 19	SPEC SECT 19		PMK 88.1
PM074	TENSARD DR IN GALLEY 1 AM 19	SPEC SECT 6		PMK 89
PM075	LAUNDRY EQUIPMENT 1 AM 19	SPEC SECT 18		PMK 90
PM076	GALLEY EQUIPMENT 1 AM 19	SPEC SECT 17		PMK 91
PM077	VENT SYSTEMS 1 AM 20	SPEC SECT 12		PMK 92
PM078	HEAT DISTRIBUTIONAL HEAT NIMS 1 AM 19/20	SPEC SECT 101		PMK 93
PM079	REFRAK RI L.O. PUMP 1 AM 19	SPEC SECT 74		PMK 93
PM080	UPPER GEAR PM REDUCTION GEAR 1 AM 20	SPEC SECT 52		PMK 94
PM081	DAMAGE CONTROL STUNDRUM 1 AM 19/20	APPENDIX 1		PMK 97
PM082	ALIGNMENT CHECK OF SHAFT 1 AM 19/20	SPEC SECT 53		PMK 98

DATE: September 23, 1987

NAVSUB CONTRACT NUMBER N00024-B3-1-0094 1 AM 19/20

REF NO.	TITLE	SOS	SEN	DATE	NATURE OF EQUIPMENT	SHIP	SER	RESOLUTION	SHIP TO A SER
		SOS	SEN	DATE		SHIP	DATE		DATE
1	MEDICAL EFT ON EMERGENCY	151 309		10 MAR 84	EMERGENCY FORMER TO SELLER MEDICAL AREA AND FOOT	1045 PMS181	22 MAY 84	APPROVED MAJOR UP CONST ORDER REINFORCEMENT	150 / 14 11 JUN 84

Date: September 23, 1987

NAUSICA LUMINALI NUMBER: 000074 R3 T 2094 1 AM 19/20

FILE NO. ECP DATE	SUBJECT	ATTACHED SPECIFICATIONS ATTACHED DRAWINGS	REVISIONS	REMARKS
PM001	MULTI-KROSS MEMBER 1 AM 19	SPEC SHEET 61		PMK 102
PM004	SAVED A ITEMS 1 AM 19	DATA 8008-8009-8010-8011-8012		PMK 105.1
PM005	GOVERNMENT RESPONSIBLE DEFICIENCIES	SPEC SHEET 1		PMK 10A
PM006	MSC CONTRACT CREW	L.O.R.		PMK 107
PM007	REFRIGERATION AIR WINTER	SPEC SHEET 72		PMK 108
PM008	TELEPHONE INVOICE PAYMENT 1 AM 19	M 22 OF LUMINALI		PMK 109
PM009	LADDER FOR EXTENSION STACK 1 AM 19/20	SPEC SHEET 1		PMK 110
PM010	ARS FEELS	M 21 OF LUMINALI		PMK 128
PM011	FEASIBILITY STUDY ADDITIONAL LOGISTIC SUPPORT ADMIN SPACES 1 AM 19/20	M 19 OF LUMINALI		PMK 129
PM012	SETTLE OF 91.0 & 1-100.0 1 AM 19	SPEC SHEET 6		PMK 110
PM013	CREDIT UNUSED ROMIES FROM PMK 10A 1 AM 19	SPEC SHEET 1		PMK 132
PM014	REPLACE 7 400 LB VALVES IN AUX SWM SYSTEM. 1 AM 20	SPEC SHEET 61		PMK 133.1
PM015	REMOVE ROLLER TUBES FOR INSFT. 1 AM 19	SPEC SHEET 61		PMK 134
PM016	REPLACE MAGNETS IN L.O. SINKAINESS 1 AM 19/20	SPEC SHEET 57		PMK 135
PM017	REPAIR F.M. DRAIN TANK PM 1 AM 19	SPEC SHEET 71		PMK 138
PM018	REMOVE ROLLER TUBES FOR INSFT. 1 AM 20	SPEC SHEET 61		PMK 139
PM019	ACTUAL TERN-670 HELIX (RSC CREW) 1 AM 19	SPEC SHEET 6		PMK 140
PM100	INSURANCE CLAIM 1 AM 19	M 22 OF LUMINALI		PMK 142
PM101	PAINT/REPLACE LAUGHING IN	SPEC SHEET 7 & 14		PMK 143

Date: September 23, 1987

NAUSICA LUMINALI NUMBER: 000074 R3 T 2094 1 AM 19/20

FILE NO.	TITLE	SOS	SEA	NATURE OF PROBLEM	SUM	SER	RESOLUTION	SOS TO A SEA
								DATE

DATE: September 23, 1987

NAUSIA LUMINACE NUMBER 000074 B3 1 2094 1-AM 19/20

REF. NO. REF. DATE	SUBJECT	OFFICED SPECIFICATIONS OFFICED DRAWING	REVISIONS	REMARKS
PM102	EXISTING MAIN STAIR 1 AM 19			
PM103	PAINT STEERING NO 1 AM 20	SPEC SECT 14		PMK 144
PM104	PAINT FORT 1 AM 19 AM 19 1 AM 20	SPEC SECT 14		PMK 145
PM105	RESEAL SHOWER DECKS 1 AM 20	SPEC SECT 6 B 19		PMK 146
PM106	RECOAT/RESEAL GALLEY DECK 1 AM 20	SPEC SECT 6		PMK 147
PM107	CURTAIN/MATRESS REPLACE 1 AM 20	SPEC SECT 19		PMK 148
PM108	REFACE CARPETS IN APT HOUSE 1 AM 19/20	SPEC SECT 6		PMK 149
PM109	REFACE ICE MAKERS 1 AM 19/20	SPEC SECT 17		PMK 150
PM110	REFACE LUSTINGS/JIE MAIN CNSL GINS 1 AM 19	SPEC SECT 19		PMK 151
PM111	PAINT FOLLE AREA ON DECK 1 AM 20	SPEC SECT 14		PMK 152
PM112	REPLACE Q2 LVL PASSAGEWAY APT DECK 1 AM 19/20	SPEC SECT 6		PMK 153
PM113	TRIAL AGENDA DELTA			
PM114	TELEPHONE INVOICE M 22 OF LUMINACE			
PM115	REPAIR SHIP A ITEM 008-001	DECK 8027		PMK 155
PM116	REPAIR SHIP A ITEM 004-005-04	DECK 8027/8029		PMK 154
PM117	PROVIDE ONE SHIP-AIT 7/ADU 184 VALVES IN AIR SHIP 1 AM 19	SPEC SECT 61		PMK 157
PM118	PROVIDE SPARE SINKER PARTS 1 AM 19/20	SPEC SECT 52		PMK 160
PM119	MINOR GUV DEFICIENCIES 1 AM 19	SPEC SECT 1		PMK 161
PM120	FURNITURE EXISTING HOUSE 1 AM 19/20	SPEC SECT 19		PMK 162
PM121	CHILL STONES	SPEC SECT 22		PMK 163

DATE: September 23, 1987

NAUSIA LUMINACE NUMBER 000074 B3 1 2094 1-AM 19/20

ITA	TITLE	SOS	SEN	NATURE OF TENDER	SHIP	DER	RESOLUTION	SOS	ED & SER
					SHIP	DER			DATE

DATE: September 23, 1987

NOVA CONTRACT NUMBER NO0024 B3 1 2094 1 AM 19 20

REF NO. EEO DATE	SUBJECT 1 AM 19	ATTACHED SPECIFICATIONS ATTACHED DRAWING	REVOLUTIONS	REMARKS
00121	TECH LIBRARY SERVICE 1 AM 19			PK 189
00122	SENTRY POLICE JONES FOR INSPECTION 1 AM 19	SEE SHEET 61		PK 170
00123	OFFICE INFORMATION 1 AM 19	SEE SHEET 14		PK 171
00124	ADDITIONAL DISPOSITION OF LITERATURES & LIBRARY 1 AM 19	SEE SHEET 16		PK 172
00125	REPAIR SINK POLICE 1 AM 19	SEE SHEET 61		PK 173
00126	TECHNICAL MATERIAL 1 AM 19	SEE SHEET 26		PK 174
00127	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 150
00128	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 159
00129	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 175
00130	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 186
00131	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 186
00132	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 186
00133	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 187
00134	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 189
00135	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 190
00136	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 191
00137	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 192
00138	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 193
00139	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 194

DATE: September 23, 1987

NOVA CONTRACT NUMBER NO0024 B3 1 2094 1 AM 19 20

REF NO. EEO DATE	TITLE	SUBJECT SUS 1000 1000 10 10	REMARKS SUS 1000 1000 10 10	REVISIONS SUS 1000 1000 10 10
00139	CONSTRUCTION CHART 1 AM 19	SEE SHEET 1000 1000 10 10		PK 194

REF. NO.	DATE	SUBJECT	APPROVED OFFICIALS	REVISIONS	REMARKS
ENR 176	1976	LANDING	1 AM 17		ENR 176
ENR 178	1978	LANDING	1 AM 17		ENR 178
ENR 194	1974	LANDING	1 AM 17		ENR 194
ENR 195	1975	LANDING	1 AM 20		ENR 195
ENR 197	1977	LANDING	1 AM 17		ENR 197
ENR 199	1979	LANDING	1 AM 17		ENR 199
ENR 200	1980	LANDING	1 AM 20		ENR 200
ENR 201	1981	LANDING	1 AM 17		ENR 201
ENR 202	1982	LANDING	1 AM 20		ENR 202
ENR 203	1983	LANDING	1 AM 20		ENR 203
ENR 204	1984	LANDING	1 AM 17		ENR 204
ENR 205	1985	LANDING	1 AM 20		ENR 205
ENR 206	1986	LANDING	1 AM 20		ENR 206
ENR 207	1987	LANDING	1 AM 17		ENR 207
ENR 208	1988	LANDING	1 AM 17		ENR 208
ENR 209	1989	LANDING	1 AM 20		ENR 209
ENR 210	1990	LANDING	1 AM 20		ENR 210
ENR 211	1991	LANDING	1 AM 20		ENR 211

0. - A1 M9 1 5604 1 58 5' (C) 011 4 1441111 1 09-41111 1 9250711

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524
--	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

DATE: September 23, 1987 NAVSEA CONTRACT NUMBER N00024-83-C-2094 T-AM 19/20

ECR NO.	SUBJECT	AFFECTED SPECIFICATIONS	REVISIONS	REMARKS
ECR DATE		AFFECTED DRAWINGS		
	T-AM 19/20			
FM157	REPLACE RIM IN 1-50-1 SOILED UTILITY 1-AM 20	SPEC SECT 24 DIA 052 1-AM 19		FMR-225
FM158	BOILER INSPECTION ASSISTANCE 1-AM 20	SPEC SECT 61		FMR-226
FM159	TELEPHONE INVOICE	N22 OF CONTRACT		FMR-222
FM160	SWITCHES SECURING BRACKETS (ELEVATOR) 1-AM 20	SPEC SECT 26-81		FMR-215
FM161	ID SWITCHBOARD PANELS EMERGENCY DIESEL SUBD 1-AM 20	SPEC SECT 50		FMR-217
FM162	INCREASE STORAGE PHARMACY VAULT 1-AM 20	SPEC SECT 26		FMR-219
FM163	PORTABLE LADDER ACCESS TO 3-39-1	SPEC SECT 5		FMR-220
FM164	PORTABLE EYEWASH STATIONS 1-AM 20	SPEC SECT 26		FMR-228
FM165	LOAD TEST P/S STORE CRANES 1-AM 20	SPEC SECT 81		FMR-229
FM166	REPLACE LABEL PLATES FOR VLS (L.D.) 1-AM 20	SPEC SECT 24		FMR-233
FM167	REPAIR GOV. FURNISH MATERIAL 1-AM 19	BRKD A		FMR-243
FM170	EXHAUST DUCTS ON REFER UNITS 1-AM 20	SPEC SECT 12		FMR-234
FM171	CLEAN WATERSIDES & REPAIR ON 1-AM 20	SPEC SECT 61		FMR-236
FM172	CABLE-FLUTATION 1-AM 20	SPEC SECT 5		FMR-245
FM173	RETRACTABLE BOOT HOOKERS 1-AM 20	SPEC SECT 61		FMR-258
FM174	CREDIT UNDEB MONIES FROM FMR-165 1-AM 19	SPEC SECT 1		FMR-259

DATE: September 23, 1987

NAVSEA CONTRACT NUMBER N00024-83-C-2094 T-AM 19/20

ECR NO.	TITLE	SUS	SEC	NATURE OF PROBLEM	SUS	SEC	DATE	DATE	DATE	DATE
ECR DATE										
	MEDICAL EQUIPMENT	151	109	REPAIR EQUIPMENT TO SPECIFIED	109	109	109	109	109	109

Date: September 23, 1987

MAVIA LUNALAI NUMBER 80004 BT 1094 1 AM 19/20

REF NO. REF DATE	SUBJECT	APPROX. SITUATION, QUALITY OF WORKING	SIGHTING	REMARKS
PM125	PORTABLE FUEL TANK IN TUG BOAT 1 AM 20	SECT SECT 11		PMK 262
PM176	SEMI ENRICHED FUEL BOLLER STAINLESS 1 AM 20	SECT SECT 26		PMK 264
PM177	SPONTANEOUS MECHANICAL 1 AM 20	SECT SECT 26		PMK 268
PM178	250MM STEEL DIAMETER 1 AM 20	SECT SECT 08		PMK 269
PM179	REPAIR AT 800T BOLLERS 1 AM 20	SECT SECT 01		PMK 271
PM180	ATKINS ROCKET FAMILIARIZATION 1 AM 20	SECT SECT 100		PMK 274
PM181	ADDITIONAL TIE BOWNS 1 AM 20	SECT SECT 26		PMK 275
PM182	REVISIONS INQUIRY 1 AM 20	W 27 UP CONTAINER		PMK 276
PM183	MODIFICATIONS TO FRAMING 1 AM 20	SECT SECT 26		PMK 277
PM184	FUNCTION OF BOLLERS 1 AM 20	SECT SECT 11		PMK 278
PM185	ADDITIONAL ORIENTATION OF ELEVATORS 1 AM 20	SECT SECT 100		PMK 279
PM186	ELEVATOR BOWNS INQUIRY 1 AM 20	SECT SECT 100		PMK 280
PM187	STORAGE SHELVES IN CLOSET 1 AM 20	SECT SECT 26		PMK 281
PM188	6" SHIRT STEAM CONDENSATE 1 AM 20			PMK 281
PM189	160MM FINEST ELEVATOR 1 AM 20	SECT SECT 14		PMK 284
PM190	160MM STAINLESS 100 0 1 AM 20	SECT SECT 14		PMK 285
PM191	REPAIR SHOWER BATH 1 AM 20	SECT SECT 2		PMK 286
PM192	INSTALL BOLLER GUARDS 1 AM 20	SECT SECT 11		PMK 288

Date: September 23, 1987

MAVIA LUNALAI NUMBER 80004 BT 1094 1 AM 19/20

REF	TITLE	SQS SQS	NATURE OF FRAMING	SHEW SHEW	REVISION	SPS TO A SER DATE
1	MEDICAL EQUIPMENT FURNISHMENT SMITHSONIAN	151.309 20 MAR 84	EMERGENCY TOWERS TO SELECTED MEDICAL AREAS AND CMT FORSETT TOWER 1A CROSS TOWER 005-001 TOWER	1000. FRS 184 27 MAR 84	ATTACHED VALVE IN CURRY GARDEN REQUISITION	170-114 11 JUN 84

100

4100
424 427 428 429

DATE: 10/10/1960		OFFICE: COMBAT NORTH, ROOM 4, W-1, 004		10/10/1960
FILE NO.	SUBJECT	ATTACHED TO DESCRIPTIONS OF THE INFORMATION	REVISION	STATUS
0001	DATA, BUREAU			0001
0002	DATA, BUREAU			0002
0003	DATA, BUREAU			0003
0004	DATA, BUREAU			0004
0005	DATA, BUREAU			0005
0006	DATA, BUREAU			0006
0007	DATA, BUREAU			0007
0008	DATA, BUREAU			0008
0009	DATA, BUREAU			0009
0010	DATA, BUREAU			0010
0011	DATA, BUREAU			0011
0012	DATA, BUREAU			0012
0013	DATA, BUREAU			0013
0014	DATA, BUREAU			0014
0015	DATA, BUREAU			0015
0016	DATA, BUREAU			0016
0017	DATA, BUREAU			0017
0018	DATA, BUREAU			0018
0019	DATA, BUREAU			0019
0020	DATA, BUREAU			0020
0021	DATA, BUREAU			0021
0022	DATA, BUREAU			0022
0023	DATA, BUREAU			0023
0024	DATA, BUREAU			0024
0025	DATA, BUREAU			0025
0026	DATA, BUREAU			0026
0027	DATA, BUREAU			0027
0028	DATA, BUREAU			0028
0029	DATA, BUREAU			0029
0030	DATA, BUREAU			0030
0031	DATA, BUREAU			0031
0032	DATA, BUREAU			0032
0033	DATA, BUREAU			0033
0034	DATA, BUREAU			0034
0035	DATA, BUREAU			0035
0036	DATA, BUREAU			0036
0037	DATA, BUREAU			0037
0038	DATA, BUREAU			0038
0039	DATA, BUREAU			0039
0040	DATA, BUREAU			0040
0041	DATA, BUREAU			0041
0042	DATA, BUREAU			0042
0043	DATA, BUREAU			0043
0044	DATA, BUREAU			0044
0045	DATA, BUREAU			0045
0046	DATA, BUREAU			0046
0047	DATA, BUREAU			0047
0048	DATA, BUREAU			0048
0049	DATA, BUREAU			0049
0050	DATA, BUREAU			0050
0051	DATA, BUREAU			0051
0052	DATA, BUREAU			0052
0053	DATA, BUREAU			0053
0054	DATA, BUREAU			0054
0055	DATA, BUREAU			0055
0056	DATA, BUREAU			0056
0057	DATA, BUREAU			0057
0058	DATA, BUREAU			0058
0059	DATA, BUREAU			0059
0060	DATA, BUREAU			0060
0061	DATA, BUREAU			0061
0062	DATA, BUREAU			0062
0063	DATA, BUREAU			0063
0064	DATA, BUREAU			0064
0065	DATA, BUREAU			0065
0066	DATA, BUREAU			0066
0067	DATA, BUREAU			0067
0068	DATA, BUREAU			0068
0069	DATA, BUREAU			0069
0070	DATA, BUREAU			0070
0071	DATA, BUREAU			0071
0072	DATA, BUREAU			0072
0073	DATA, BUREAU			0073
0074	DATA, BUREAU			0074
0075	DATA, BUREAU			0075
0076	DATA, BUREAU			0076
0077	DATA, BUREAU			0077
0078	DATA, BUREAU			0078
0079	DATA, BUREAU			0079
0080	DATA, BUREAU			0080
0081	DATA, BUREAU			0081
0082	DATA, BUREAU			0082
0083	DATA, BUREAU			0083
0084	DATA, BUREAU			0084
0085	DATA, BUREAU			0085
0086	DATA, BUREAU			0086
0087	DATA, BUREAU			0087
0088	DATA, BUREAU			0088
0089	DATA, BUREAU			0089
0090	DATA, BUREAU			0090
0091	DATA, BUREAU			0091
0092	DATA, BUREAU			0092
0093	DATA, BUREAU			0093
0094	DATA, BUREAU			0094
0095	DATA, BUREAU			0095
0096	DATA, BUREAU			0096
0097	DATA, BUREAU			0097
0098	DATA, BUREAU			0098
0099	DATA, BUREAU			0099
0100	DATA, BUREAU			0100

DATE: 10/10/1960		OFFICE: COMBAT NORTH, ROOM 4, W-1, 004		10/10/1960
FILE NO.	SUBJECT	OFFICE: COMBAT NORTH, ROOM 4, W-1, 004	REVISION	STATUS
0101	DATA, BUREAU			0101
0102	DATA, BUREAU			0102
0103	DATA, BUREAU			0103
0104	DATA, BUREAU			0104
0105	DATA, BUREAU			0105
0106	DATA, BUREAU			0106
0107	DATA, BUREAU			0107
0108	DATA, BUREAU			0108
0109	DATA, BUREAU			0109
0110	DATA, BUREAU			0110
0111	DATA, BUREAU			0111
0112	DATA, BUREAU			0112
0113	DATA, BUREAU			0113
0114	DATA, BUREAU			0114
0115	DATA, BUREAU			0115
0116	DATA, BUREAU			0116
0117	DATA, BUREAU			0117
0118	DATA, BUREAU			0118
0119	DATA, BUREAU			0119
0120	DATA, BUREAU			0120
0121	DATA, BUREAU			0121
0122	DATA, BUREAU			0122
0123	DATA, BUREAU			0123
0124	DATA, BUREAU			0124
0125	DATA, BUREAU			0125
0126	DATA, BUREAU			0126
0127	DATA, BUREAU			0127
0128	DATA, BUREAU			0128
0129	DATA, BUREAU			0129
0130	DATA, BUREAU			0130
0131	DATA, BUREAU			0131
0132	DATA, BUREAU			0132
0133	DATA, BUREAU			0133
0134	DATA, BUREAU			0134
0135	DATA, BUREAU			0135
0136	DATA, BUREAU			0136
0137	DATA, BUREAU			0137
0138	DATA, BUREAU			0138
0139	DATA, BUREAU			0139
0140	DATA, BUREAU			0140
0141	DATA, BUREAU			0141
0142	DATA, BUREAU			0142
0143	DATA, BUREAU			0143
0144	DATA, BUREAU			0144
0145	DATA, BUREAU			0145
0146	DATA, BUREAU			0146
0147	DATA, BUREAU			0147
0148	DATA, BUREAU			0148
0149	DATA, BUREAU			0149
0150	DATA, BUREAU			0150
0151	DATA, BUREAU			0151
0152	DATA, BUREAU			0152
0153	DATA, BUREAU			0153
0154	DATA, BUREAU			0154
0155	DATA, BUREAU			0155
0156	DATA, BUREAU			0156
0157	DATA, BUREAU			0157
0158	DATA, BUREAU			0158
0159	DATA, BUREAU			0159
0160	DATA, BUREAU			0160
0161	DATA, BUREAU			0161
0162	DATA, BUREAU			0162
0163	DATA, BUREAU			0163
0164	DATA, BUREAU			0164
0165	DATA, BUREAU			0165
0166	DATA, BUREAU			0166
0167	DATA, BUREAU			0167
0168	DATA, BUREAU			0168
0169	DATA, BUREAU			0169
0170	DATA, BUREAU			0170
0171	DATA, BUREAU			0171
0172	DATA, BUREAU			0172
0173	DATA, BUREAU			0173
0174	DATA, BUREAU			0174
0175	DATA, BUREAU			0175
0176	DATA, BUREAU			0176
0177	DATA, BUREAU			0177
0178	DATA, BUREAU			0178
0179	DATA, BUREAU			0179
0180	DATA, BUREAU			0180
0181	DATA, BUREAU			0181
0182	DATA, BUREAU			0182
0183	DATA, BUREAU			0183
0184	DATA, BUREAU			0184
0185	DATA, BUREAU			0185
0186	DATA, BUREAU			0186
0187	DATA, BUREAU			0187
0188	DATA, BUREAU			0188
0189	DATA, BUREAU			0189
0190	DATA, BUREAU			0190
0191	DATA, BUREAU			0191
0192	DATA, BUREAU			0192
0193	DATA, BUREAU			0193
0194	DATA, BUREAU			0194
0195	DATA, BUREAU			0195
0196	DATA, BUREAU			0196
0197	DATA, BUREAU			0197
0198	DATA, BUREAU			0198
0199	DATA, BUREAU			0199
0200	DATA, BUREAU			0200

[illegible]

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1

REF NO.	REVISION	DATE	ACTION	DESCRIPTION	BY	CHKD	DATE
0020A/B	29 JUL 84		DESIGN	DESIGN	0020A/B	0020A/B	29 JUL 84
0021A/B	29 JUL 84		DESIGN	DESIGN	0021A/B	0021A/B	29 JUL 84
0022A/B	29 JUL 84		DESIGN	DESIGN	0022A/B	0022A/B	29 JUL 84
0023A/B	29 JUL 84		DESIGN	DESIGN	0023A/B	0023A/B	29 JUL 84
0024A/B	29 JUL 84		DESIGN	DESIGN	0024A/B	0024A/B	29 JUL 84
0025A/B	29 JUL 84		DESIGN	DESIGN	0025A/B	0025A/B	29 JUL 84
0026A/B	29 JUL 84		DESIGN	DESIGN	0026A/B	0026A/B	29 JUL 84
0027A/B	29 JUL 84		DESIGN	DESIGN	0027A/B	0027A/B	29 JUL 84
0028A/B	29 JUL 84		DESIGN	DESIGN	0028A/B	0028A/B	29 JUL 84
0029A/B	29 JUL 84		DESIGN	DESIGN	0029A/B	0029A/B	29 JUL 84
0030A/B	29 JUL 84		DESIGN	DESIGN	0030A/B	0030A/B	29 JUL 84
0031A/B	29 JUL 84		DESIGN	DESIGN	0031A/B	0031A/B	29 JUL 84
0032A/B	29 JUL 84		DESIGN	DESIGN	0032A/B	0032A/B	29 JUL 84
0033A/B	29 JUL 84		DESIGN	DESIGN	0033A/B	0033A/B	29 JUL 84
0034A/B	29 JUL 84		DESIGN	DESIGN	0034A/B	0034A/B	29 JUL 84
0035A/B	29 JUL 84		DESIGN	DESIGN	0035A/B	0035A/B	29 JUL 84
0036A/B	29 JUL 84		DESIGN	DESIGN	0036A/B	0036A/B	29 JUL 84
0037A/B	29 JUL 84		DESIGN	DESIGN	0037A/B	0037A/B	29 JUL 84
0038A/B	29 JUL 84		DESIGN	DESIGN	0038A/B	0038A/B	29 JUL 84
0039A/B	29 JUL 84		DESIGN	DESIGN	0039A/B	0039A/B	29 JUL 84
0040A/B	29 JUL 84		DESIGN	DESIGN	0040A/B	0040A/B	29 JUL 84
0041A/B	29 JUL 84		DESIGN	DESIGN	0041A/B	0041A/B	29 JUL 84
0042A/B	29 JUL 84		DESIGN	DESIGN	0042A/B	0042A/B	29 JUL 84
0043A/B	29 JUL 84		DESIGN	DESIGN	0043A/B	0043A/B	29 JUL 84
0044A/B	29 JUL 84		DESIGN	DESIGN	0044A/B	0044A/B	29 JUL 84
0045A/B	29 JUL 84		DESIGN	DESIGN	0045A/B	0045A/B	29 JUL 84
0046A/B	29 JUL 84		DESIGN	DESIGN	0046A/B	0046A/B	29 JUL 84
0047A/B	29 JUL 84		DESIGN	DESIGN	0047A/B	0047A/B	29 JUL 84
0048A/B	29 JUL 84		DESIGN	DESIGN	0048A/B	0048A/B	29 JUL 84
0049A/B	29 JUL 84		DESIGN	DESIGN	0049A/B	0049A/B	29 JUL 84
0050A/B	29 JUL 84		DESIGN	DESIGN	0050A/B	0050A/B	29 JUL 84
0051A/B	29 JUL 84		DESIGN	DESIGN	0051A/B	0051A/B	29 JUL 84
0052A/B	29 JUL 84		DESIGN	DESIGN	0052A/B	0052A/B	29 JUL 84
0053A/B	29 JUL 84		DESIGN	DESIGN	0053A/B	0053A/B	29 JUL 84
0054A/B	29 JUL 84		DESIGN	DESIGN	0054A/B	0054A/B	29 JUL 84
0055A/B	29 JUL 84		DESIGN	DESIGN	0055A/B	0055A/B	29 JUL 84
0056A/B	29 JUL 84		DESIGN	DESIGN	0056A/B	0056A/B	29 JUL 84
0057A/B	29 JUL 84		DESIGN	DESIGN	0057A/B	0057A/B	29 JUL 84
0058A/B	29 JUL 84		DESIGN	DESIGN	0058A/B	0058A/B	29 JUL 84
0059A/B	29 JUL 84		DESIGN	DESIGN	0059A/B	0059A/B	29 JUL 84
0060A/B	29 JUL 84		DESIGN	DESIGN	0060A/B	0060A/B	29 JUL 84
0061A/B	29 JUL 84		DESIGN	DESIGN	0061A/B	0061A/B	29 JUL 84
0062A/B	29 JUL 84		DESIGN	DESIGN	0062A/B	0062A/B	29 JUL 84
0063A/B	29 JUL 84		DESIGN	DESIGN	0063A/B	0063A/B	29 JUL 84
0064A/B	29 JUL 84		DESIGN	DESIGN	0064A/B	0064A/B	29 JUL 84
0065A/B	29 JUL 84		DESIGN	DESIGN	0065A/B	0065A/B	29 JUL 84
0066A/B	29 JUL 84		DESIGN	DESIGN	0066A/B	0066A/B	29 JUL 84
0067A/B	29 JUL 84		DESIGN	DESIGN	0067A/B	0067A/B	29 JUL 84
0068A/B	29 JUL 84		DESIGN	DESIGN	0068A/B	0068A/B	29 JUL 84
0069A/B	29 JUL 84		DESIGN	DESIGN	0069A/B	0069A/B	29 JUL 84
0070A/B	29 JUL 84		DESIGN	DESIGN	0070A/B	0070A/B	29 JUL 84
0071A/B	29 JUL 84		DESIGN	DESIGN	0071A/B	0071A/B	29 JUL 84
0072A/B	29 JUL 84		DESIGN	DESIGN	0072A/B	0072A/B	29 JUL 84
0073A/B	29 JUL 84		DESIGN	DESIGN	0073A/B	0073A/B	29 JUL 84
0074A/B	29 JUL 84		DESIGN	DESIGN	0074A/B	0074A/B	29 JUL 84
0075A/B	29 JUL 84		DESIGN	DESIGN	0075A/B	0075A/B	29 JUL 84
0076A/B	29 JUL 84		DESIGN	DESIGN	0076A/B	0076A/B	29 JUL 84
0077A/B	29 JUL 84		DESIGN	DESIGN	0077A/B	0077A/B	29 JUL 84
0078A/B	29 JUL 84		DESIGN	DESIGN	0078A/B	0078A/B	29 JUL 84
0079A/B	29 JUL 84		DESIGN	DESIGN	0079A/B	0079A/B	29 JUL 84
0080A/B	29 JUL 84		DESIGN	DESIGN	0080A/B	0080A/B	29 JUL 84
0081A/B	29 JUL 84		DESIGN	DESIGN	0081A/B	0081A/B	29 JUL 84
0082A/B	29 JUL 84		DESIGN	DESIGN	0082A/B	0082A/B	29 JUL 84
0083A/B	29 JUL 84		DESIGN	DESIGN	0083A/B	0083A/B	29 JUL 84
0084A/B	29 JUL 84		DESIGN	DESIGN	0084A/B	0084A/B	29 JUL 84
0085A/B	29 JUL 84		DESIGN	DESIGN	0085A/B	0085A/B	29 JUL 84
0086A/B	29 JUL 84		DESIGN	DESIGN	0086A/B	0086A/B	29 JUL 84
0087A/B	29 JUL 84		DESIGN	DESIGN	0087A/B	0087A/B	29 JUL 84
0088A/B	29 JUL 84		DESIGN	DESIGN	0088A/B	0088A/B	29 JUL 84
0089A/B	29 JUL 84		DESIGN	DESIGN	0089A/B	0089A/B	29 JUL 84
0090A/B	29 JUL 84		DESIGN	DESIGN	0090A/B	0090A/B	29 JUL 84
0091A/B	29 JUL 84		DESIGN	DESIGN	0091A/B	0091A/B	29 JUL 84
0092A/B	29 JUL 84		DESIGN	DESIGN	0092A/B	0092A/B	29 JUL 84
0093A/B	29 JUL 84		DESIGN	DESIGN	0093A/B	0093A/B	29 JUL 84
0094A/B	29 JUL 84		DESIGN	DESIGN	0094A/B	0094A/B	29 JUL 84
0095A/B	29 JUL 84		DESIGN	DESIGN	0095A/B	0095A/B	29 JUL 84
0096A/B	29 JUL 84		DESIGN	DESIGN	0096A/B	0096A/B	29 JUL 84
0097A/B	29 JUL 84		DESIGN	DESIGN	0097A/B	0097A/B	29 JUL 84
0098A/B	29 JUL 84		DESIGN	DESIGN	0098A/B	0098A/B	29 JUL 84
0099A/B	29 JUL 84		DESIGN	DESIGN	0099A/B	0099A/B	29 JUL 84
0100A/B	29 JUL 84		DESIGN	DESIGN	0100A/B	0100A/B	29 JUL 84

Date: September 25, 1947

[illegible]

NO-A190 918

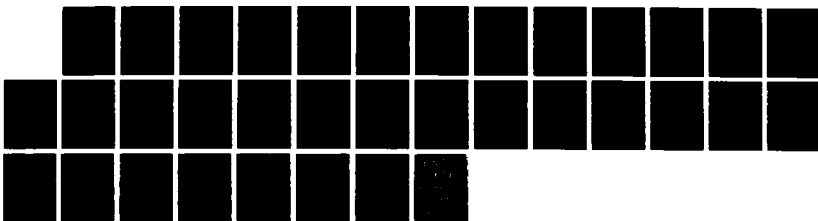
UNITED STATES NAVAL HOSPITAL SHIP PROGRAM: HISTORY
EVOLUTION AND CONFIGURATION MANAGEMENT(U) NAVAL
POSTGRADUATE SCHOOL MONTEREY CA W H ROBERTS DEC 87

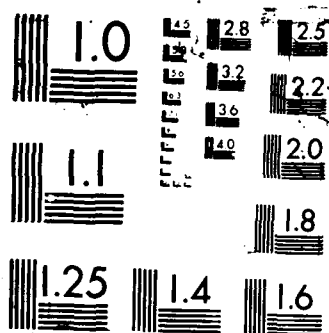
3/3

UNCLASSIFIED

F/G 6/12

NL





DATE: September 23, 1987

MOBILE CONTACT NUMBER MO0024 05 1 0094

1 AM 1987

NEW NO.	RECEIVED DATE	ACTION DATE	DESCRIPTION	REMARKS
001A/B	10 OCT 87		DETAILED INFORMATION	REMOVED ON 10/11/87
002A/B	14 SEP 86		DETAILED INFORMATION	REMOVED ON 10/11/87
003A/B	26 MAR 86		DETAILED INFORMATION	REMOVED ON 10/11/87
004A/B	06 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
005A/B	02 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
006A/B	07 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
007A/B	21 OCT 86		DETAILED INFORMATION	REMOVED ON 10/11/87
008A/B	13 NOV 86		DETAILED INFORMATION	REMOVED ON 10/11/87
009A/B	02 DEC 86		DETAILED INFORMATION	REMOVED ON 10/11/87
010A/B	10 DEC 86		DETAILED INFORMATION	REMOVED ON 10/11/87
011A/B	09 JAN 87		DETAILED INFORMATION	REMOVED ON 10/11/87
012A/B	26 MAY 87		DETAILED INFORMATION	REMOVED ON 10/11/87
013A/B	08 SEP 87		DETAILED INFORMATION	REMOVED ON 10/11/87

DATE: September 23, 1987

MOBILE CONTACT NUMBER MO0024 05 1 0094

1 AM 1987

NEW NO.	RECEIVED DATE	ACTION DATE	DESCRIPTION	REMARKS
001A/B	10 OCT 87		DETAILED INFORMATION	REMOVED ON 10/11/87
002A/B	14 SEP 86		DETAILED INFORMATION	REMOVED ON 10/11/87
003A/B	26 MAR 86		DETAILED INFORMATION	REMOVED ON 10/11/87
004A/B	06 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
005A/B	02 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
006A/B	07 JUN 86		DETAILED INFORMATION	REMOVED ON 10/11/87
007A/B	21 OCT 86		DETAILED INFORMATION	REMOVED ON 10/11/87
008A/B	13 NOV 86		DETAILED INFORMATION	REMOVED ON 10/11/87
009A/B	02 DEC 86		DETAILED INFORMATION	REMOVED ON 10/11/87
010A/B	10 DEC 86		DETAILED INFORMATION	REMOVED ON 10/11/87
011A/B	09 JAN 87		DETAILED INFORMATION	REMOVED ON 10/11/87
012A/B	26 MAY 87		DETAILED INFORMATION	REMOVED ON 10/11/87
013A/B	08 SEP 87		DETAILED INFORMATION	REMOVED ON 10/11/87

3

UNIT: SEPTEMBER 1950		UNIT: CONTINUED MONTH: SEPTEMBER 1950		UNIT: SEPTEMBER 1950	
UNIT NO. TIME DATE	SUBJECT	ATTACHED SECTIONS ATTACHED DRAWING	MARKS	UNIT NO. TIME DATE	SUBJECT
430 060500	DISORDERING INFORMATION	SEE SET 10	PRK 149	430 060500	DISORDERING INFORMATION
430 060500	NOT RECEIVED		PRK 149	430 060500	NOT RECEIVED
430 060500	REPLACE COVER OF VE 1-04-91-4	SEE SET 10	PRK 149	430 060500	REPLACE COVER OF VE 1-04-91-4
430 060500	REPLACE PEEK TIE OF 17-00-1 PEEK HOUSE	SEE SET 10	PRK 149	430 060500	REPLACE PEEK TIE OF 17-00-1 PEEK HOUSE
430 060500	SMOKE TUNNEL WITH VENTILATORS		CODE 1500 FOR EVALUATION E-100	430 060500	SMOKE TUNNEL WITH VENTILATORS
430 060500	CONNECTIONS	SEE SET 10	PRK 149	430 060500	CONNECTIONS
430 060500	REPAIR AND RE-ERECT	SEE SET 10	PRK 149	430 060500	REPAIR AND RE-ERECT
430 060500	NOT RECEIVED			430 060500	NOT RECEIVED
430 060500	NOT RECEIVED			430 060500	NOT RECEIVED
430 060500	NOT RECEIVED			430 060500	NOT RECEIVED
430 060500	CLARGE SWELPS	SEE SET 10	CODE 1500 FOR EVALUATION E-100	430 060500	CLARGE SWELPS
430 060500	ENGINE WORK ALUMINUM	SEE SET 10	PRK 149	430 060500	ENGINE WORK ALUMINUM
430 060500	WORKER	SEE SET 10	PRK 149	430 060500	WORKER
430 060500	CLAMPING	SEE SET 10	PRK 149	430 060500	CLAMPING
430 060500	PAINT WITH EXISTING HOUSE	SEE SET 10	PRK 149	430 060500	PAINT WITH EXISTING HOUSE
430 060500	DETA DETAILS END KM	SEE SET 10	PRK 149	430 060500	DETA DETAILS END KM
430 060500	NOT RECEIVED			430 060500	NOT RECEIVED

DATE: September 13, 1987		PROJECT: CONTACT NUMBER: 800-24-1000		DATE: 10/19
FOR MR. TON DALL	SUBJECT	ATTACHED SECTIONS	ATTACHED DRAWINGS	REMARKS
7430 867700	NOT RECEIVED			
7430 868100	NOT RECEIVED			
7430 868700	STAKE 1.0. SINKHOLE FRANKS	5000-5000-50		FRANK 10.2 5.1/87
7430 869100	NOT RECEIVED			
7430 869500	NOT RECEIVED			
7430 869900	NOT RECEIVED			
7430 870300	NOT RECEIVED			
7430 870700	NOT RECEIVED			
7430 871100	NOT RECEIVED			
7430 871500	NOT RECEIVED			
7430 871900	NOT RECEIVED			
7430 872300	NOT RECEIVED			
7430 872700	NOT RECEIVED			
7430 873100	NOT RECEIVED			
7430 873500	NOT RECEIVED			
7430 873900	NOT RECEIVED			
7430 874300	NOT RECEIVED			
7430 874700	NOT RECEIVED			
7430 875100	NOT RECEIVED			
7430 875500	NOT RECEIVED			
7430 875900	NOT RECEIVED			
7430 876300	NOT RECEIVED			
7430 876700	NOT RECEIVED			
7430 877100	NOT RECEIVED			
7430 877500	NOT RECEIVED			
7430 877900	NOT RECEIVED			
7430 878300	NOT RECEIVED			
7430 878700	NOT RECEIVED			
7430 879100	NOT RECEIVED			
7430 879500	NOT RECEIVED			
7430 879900	NOT RECEIVED			
7430 880300	NOT RECEIVED			
7430 880700	NOT RECEIVED			
7430 881100	NOT RECEIVED			
7430 881500	NOT RECEIVED			
7430 881900	NOT RECEIVED			
7430 882300	NOT RECEIVED			
7430 882700	NOT RECEIVED			
7430 883100	NOT RECEIVED			

DATE: September 13, 1987

PROJECT: CONTACT NUMBER: 800-24-1000

DATE: 10/19

SUBJECT

ATTACHED SECTIONS

ATTACHED DRAWINGS

REMARKS

DATE: September 23, 1987	HAUSEN CONTROL NUMBER: M0014 M014 M024 M034 M044 M054 M064 M074 M084 M094 M104 M114 M124 M134 M144 M154 M164 M174 M184 M194 M204 M214 M224 M234 M244 M254 M264 M274 M284 M294 M304 M314 M324 M334 M344 M354 M364 M374 M384 M394 M404 M414 M424 M434 M444 M454 M464 M474 M484 M494 M504 M514 M524 M534 M544 M554 M564 M574 M584 M594 M604 M614 M624 M634 M644 M654 M664 M674 M684 M694 M704 M714 M724 M734 M744 M754 M764 M774 M784 M794 M804 M814 M824 M834 M844 M854 M864 M874 M884 M894 M904 M914 M924 M934 M944 M954 M964 M974 M984 M994	DATE: September 23, 1987	HAUSEN CONTROL NUMBER: M0014 M014 M024 M034 M044 M054 M064 M074 M084 M094 M104 M114 M124 M134 M144 M154 M164 M174 M184 M194 M204 M214 M224 M234 M244 M254 M264 M274 M284 M294 M304 M314 M324 M334 M344 M354 M364 M374 M384 M394 M404 M414 M424 M434 M444 M454 M464 M474 M484 M494 M504 M514 M524 M534 M544 M554 M564 M574 M584 M594 M604 M614 M624 M634 M644 M654 M664 M674 M684 M694 M704 M714 M724 M734 M744 M754 M764 M774 M784 M794 M804 M814 M824 M834 M844 M854 M864 M874 M884 M894 M904 M914 M924 M934 M944 M954 M964 M974 M984 M994
10K M01	SUBJECT	10K M01	SUBJECT
10K M02		10K M02	
10K M03		10K M03	
10K M04		10K M04	
10K M05		10K M05	
10K M06		10K M06	
10K M07		10K M07	
10K M08		10K M08	
10K M09		10K M09	
10K M10		10K M10	
10K M11		10K M11	
10K M12		10K M12	
10K M13		10K M13	
10K M14		10K M14	
10K M15		10K M15	
10K M16		10K M16	
10K M17		10K M17	
10K M18		10K M18	
10K M19		10K M19	
10K M20		10K M20	
10K M21		10K M21	
10K M22		10K M22	
10K M23		10K M23	
10K M24		10K M24	
10K M25		10K M25	
10K M26		10K M26	
10K M27		10K M27	
10K M28		10K M28	
10K M29		10K M29	
10K M30		10K M30	
10K M31		10K M31	
10K M32		10K M32	
10K M33		10K M33	
10K M34		10K M34	
10K M35		10K M35	
10K M36		10K M36	
10K M37		10K M37	
10K M38		10K M38	
10K M39		10K M39	
10K M40		10K M40	
10K M41		10K M41	
10K M42		10K M42	
10K M43		10K M43	
10K M44		10K M44	
10K M45		10K M45	
10K M46		10K M46	
10K M47		10K M47	
10K M48		10K M48	
10K M49		10K M49	
10K M50		10K M50	
10K M51		10K M51	
10K M52		10K M52	
10K M53		10K M53	
10K M54		10K M54	
10K M55		10K M55	
10K M56		10K M56	
10K M57		10K M57	
10K M58		10K M58	
10K M59		10K M59	
10K M60		10K M60	
10K M61		10K M61	
10K M62		10K M62	
10K M63		10K M63	
10K M64		10K M64	
10K M65		10K M65	
10K M66		10K M66	
10K M67		10K M67	
10K M68		10K M68	
10K M69		10K M69	
10K M70		10K M70	
10K M71		10K M71	
10K M72		10K M72	
10K M73		10K M73	
10K M74		10K M74	
10K M75		10K M75	
10K M76		10K M76	
10K M77		10K M77	
10K M78		10K M78	
10K M79		10K M79	
10K M80		10K M80	
10K M81		10K M81	
10K M82		10K M82	
10K M83		10K M83	
10K M84		10K M84	
10K M85		10K M85	
10K M86		10K M86	
10K M87		10K M87	
10K M88		10K M88	
10K M89		10K M89	
10K M90		10K M90	
10K M91		10K M91	
10K M92		10K M92	
10K M93		10K M93	
10K M94		10K M94	
10K M95		10K M95	
10K M96		10K M96	
10K M97		10K M97	
10K M98		10K M98	
10K M99		10K M99	

[illegible]

100	NU.	500	1000	10000	100000	1000000
100	1000	1000	1000	1000	1000	1000

REL
500-004
CMZ
11 JAN 1961
OPEN/INSTITUTE FILE

MSL
500 009
1/1/85

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

001 000/10651441 - mk. 32

A/C SYSTEM : AM
MSL :
00 014
00 015

UNIT W/INSULATED PAKS 32

UNITED STATES PATENT AND TRADEMARK OFFICE

HOTEL SUPPLY AIR FAN

UNIT/MINUTE 1 PM6.32

[illegible]

Alt: Sealeader, J. J. 1987

20054 (UNICAL) NINETEEN 1994 1 1096 1 4 13 10

[illegible]

DATE: September 23, 1987

MASSIA LUMIGET NUMBER 0000 4 DEC 1994 1 AM 20

TRK NO.	TRK DATE	SUBJECT	AFFECTED SPECIFICATIONS	AFFECTED DRAWINGS	REMARKS
74391746	400100	SHIP SERVICE AIR COMPRESSOR			NO ACTION REQUIRED
74391746	400100	FM-50 HEAT EXCHANGER			NO ACTION REQUIRED
74391746	400100	TURNPIKE AIR-UP MAN VALVE			NO ACTION REQUIRED
74391746	400100	MAIN CONDENSER SW SILE			NO ACTION REQUIRED
74391746	400100	01 RW COMPENSATE PUMP			NO ACTION REQUIRED
74391746	400100	02 RUDGE & BALLAST PUMP			NO ACTION REQUIRED
74391746	400100	01 HOT FW CIRC PUMP			NO ACTION REQUIRED
74391746	400100	DRUM EXTRACTOR PUMP			NO ACTION REQUIRED
74391746	400100	0A FUM DISTILLATE PUMP			NO ACTION REQUIRED
74391746	400100	BALLAST TANKS	SEE SPEC 14		PRK 61
74391746	400100	F/S ANTIHON WINDLASS	SEE SPEC 01		PRK 17
74391746	400100	FIRE & BUTTERWORTH PUMP	SEE SPEC 50		PRK 19
74391746	400100	FIRE & BALLAST PUMP	SEE SPEC 50		PRK 19

DATE: September 23, 1987

MASSIA LUMIGET NUMBER 0000 4 DEC 1994 1 AM 20

TRK NO.	TRK DATE	SUBJECT	AFFECTED SPECIFICATIONS	AFFECTED DRAWINGS	REMARKS
74391746	400100	FIRE & BUTTERWORTH PUMP	SEE SPEC 50		PRK 19

DATE: September 23, 1987

NAUSIA LUMINATE MIMRA NO. 024 BT 1094 1 AM 1970

ITEM NO.	ITEM TITLE	DESCRIPTION	REMARKS
7439/74 803100 8-10/85	SUBJECT	SELECTED SPECIFICATIONS OFFICIAL DRAWING	ITEM 20
7439/74 803100 8-10/85	ENGINE & POWERWORK ATTACHMENTS	SEE SHEET 50	ITEM 21
7439/74 803100 8-10/85	CLAMP WALLS EUM	SEE SHEET 50	ITEM 410/1030 8-10/85
7439/74 803100 8-10/85	MIMRA	SEE SHEET 51	NO ACTION REQUIRED SUBJECT ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	ASTERN VALVE	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	ABEAD PROTECTOR VALVE	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	DA TANK & MUZZLES	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	TRUNK FEED EUM	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	8.2 MAIN LINE EUM	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	W/OT BLEED EXTRACTION VALVES	SEE SHEET 51	NO FOR ACTION ITEM 150/1024 8-10/85
7439/74 803100 8-10/85	MAIN CONDENSERS	SEE SHEET 50	ITEM 20
7439/74 803100 8-10/85	MAIN STEAM SINKING SINKING	SEE SHEET 51	ITEM 21
7439/74 803100 8-10/85	TURBO GENERATOR SURFACE AIR CONDENSER	SEE SHEET 50	ITEM 20

DATE: September 23, 1987

NAUSIA LUMINATE MIMRA NO. 024 BT 1094 1 AM 1970

ITEM	TITLE	SUBS	SEA	DATE	NATURE OF PROBLEM	SHEW	SEP	RESOLUTION	SUBS TO A SEA
1	MECHANICAL EQUIPMENT	151.309	10.066.04	10.066.04	PRESSURE TANK TO SESS 151.309	100%	100%	100%	100%

DATE: September 23, 1994

NOV-14 CONTRACT NUMBER 8000-4 DEL 1094 1 AM 10

LOG NO. LOG DATE	SUBJECT	AFFECTED IDENTIFICATIONS AFFECTED IDENTIFICATIONS	REMARKS
7439174 8/12/85	PIKE & MOUTONSHIRE AIR DEFENSE DESIGNATION VALVE	SEE SHEET 50	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	MAIN REDUCTION DECK	SEE SHEET 52	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	GAS TANK COMPRESSOR	SEE SHEET 50	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	EL & BZ MAIN TUBE DIE LOCKERS	SEE SHEET 57	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	CONTROL AIR COMPRESSOR	SEE SHEET 61	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	TURBO GEN REDUCTION DECK	SEE SHEET 50	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	CELANO BALLAST TUBE LUBRICATOR	SEE SHEET 58	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	BZ DISTILLATE LUBRICATOR TUBE	SEE SHEET 60	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	EL MAIN COMPRESSOR TUBE	SEE SHEET 60	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	EVAP FEED TUBE	SEE SHEET 55	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	EVAP BULK TUBE	SEE SHEET 55	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	EVAPURATORS	SEE SHEET 55	AA FOR ACTION LIK 15024/10.4 6/1/85
7439174 8/12/85	W.J. TURKINE	SEE SHEET 57	AA FOR ACTION LIK 15024/10.4 6/1/85

DATE: September 23, 1994

NOV-14 CONTRACT NUMBER 8000-4 DEL 1094 1 AM 20

LOG NO. LOG DATE	SUBJECT	AFFECTED IDENTIFICATIONS AFFECTED IDENTIFICATIONS	REMARKS
7439174 8/12/85	W.J. TURKINE	SEE SHEET 57	AA FOR ACTION LIK 15024/10.4 6/1/85

Date: September 23, 1967

MOUSE CONTRACT NUMBER MUGO-4 BJ C-2094 1 AM 20

LOG NO.	SUBJECT	ASSIGNED SPECIFICATIONS ATTACHED DRAWINGS	REMARKS
LOG DATE			
7439:74	HYDRO FIDUCIARY TANK	SECT SECT 59	NO ACTION TAKEN TANK BEING LOST BY FIRE 74
7439:74	46 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	45 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	44 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	43 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	42 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	41 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	40 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	39 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	38 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	37 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	36 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	35 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	34 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	33 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	32 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	31 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	30 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	29 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	28 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	27 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	26 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	25 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	24 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	23 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	22 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	21 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	20 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	19 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	18 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	17 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	16 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	15 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	14 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	13 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	12 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	11 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	10 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	9 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	8 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	7 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	6 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	5 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	4 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	3 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	2 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	1 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74
7439:74	0 WORKING WINCH MECHANISM	SECT SECT 61	FIRE 74

DATE: September 23, 1987

MOUSTA LIMITED I NUMBER 0000-4 BS 1 2094 1 PM 20

TRA NO. TRA DATE	SUBJECT	ATTACHED SPECIFICATIONS ATTACHED DRAWINGS	REMARKS
7439:00 8/9/80	SHOWER DRALES	SEE SHEET 6-17	PRK 14A
7439:00 8/9/80	LAUNDRY EQUIPMENT	SEE SHEET 6-18	NA FOR ACTION IN MEETING 7/29/86
7439:00 8/9/80	REFURBISHMENT TERRAZZO	SEE SHEET 6	PRK 147
7439:00 8/9/80	REPLACE CURTAINS/WALLPAPER	SEE SHEET 19	PRK 149
7439:00 8/9/80	PAINT FLOOR AREA	SEE SHEET 14	PRK 152
7439:00 8/9/80	WATER LOOKER	SEE SHEET 20	PRK 202
7439:00 8/9/80	BLEST/PAINT TANKS	SEE SHEET	IN LINE 1500 FOR EVALUATION
7439:00 8/9/80	BLEST/PAINT STAIN INTERIOR	SEE SHEET 61	PRK 190
7439:00 8/9/80	NOT RECEIVED		
7439:00 8/9/80	NOT RECEIVED		
7439:00 8/9/80	REFURBISHMENT ON FLOOR-MOUNTED FRI	SEE SHEET 50/71	REQUEST FOR ELO
7439:00 8/9/80	REFURBISHMENT SUITE ROOMS	SEE SHEET 61	PRK 208
7439:00 8/9/80	NOT RECEIVED		
7439:00 8/9/80	SUITE ROOMS (GUEST/STAFF)	SEE SHEET 61	PRK 208
7439:00 8/9/80	LAGGING	SEE SHEET 75	
7439:00 8/9/80	PAINT ELEVATION/INTERIOR	SEE SHEET 14	
7439:00 8/9/80	PAINT STAIRWELL	SEE SHEET 14	
7439:00 8/9/80	GENERAL TERRAZZO	SEE SHEET 6	

DATE: September 23, 1987

MOUSTA LIMITED I NUMBER 0000-4 BS 1 2094 1 PM 20

TRA NO. TRA DATE	SUBJECT	ATTACHED SPECIFICATIONS ATTACHED DRAWINGS	REMARKS
---------------------	---------	--	---------

DATE: September 23, 1967

AGUSTA LUNARACE NUMBER: 0000-4 BS C 2094 1 AM 20

TIME NO. TIME DATE	SUBJECT	AFFECTED SPECIFICATIONS AFFECTED DRAWINGS	REMARKS
7439:00 948:00	RETAIL AREA IN AFT DECK HOUSE	SPEC SECT A	FRN 289
7439:00 959:00	VENT SECT IN AFT DECK HOUSE AREA	SPEC SECT 12	
7439:00 960:00	NUMBER CONTAIN	SPEC SECT 19	
7439:00 961:00	WATERSHED AFT DECK HOUSE	SPEC SECT 19	
7439:00 962:00	LUBRICANTS	SPEC SECT 1	NA FOR ACTION
7439:00 963:00	CANAL OF VLT SENSOR W/OFF	SPEC SECT A	
7439:00 964:00	DECK IN AFT HOUSE (HILL/REEFER)	SPEC SECT 6/17	FRN 290
7439:00 965:00	A/C & EXHAUST FAN AFT DECK HOUSE	SPEC SECT 12	
7439:00 966:00	WASHER/DRYER FOR FARM	SPEC SECT 10	
7439:00 974:00	PAINT INTENTION AFT HOUSE	SPEC SECT 14	FRN 293
7439:00 975:00	SHIP SERVICE/CONTROL AIR ST	SPEC SECT 20	FRN 294
7439:00 976:00	DECK TIE IN TURN 01 V6 0	SPEC SECT 6	FRN 304
7439:00 980:00	PAINT E.R. ACLES	SPEC SECT 14	C/1300
7439:00 990:00	PAINT E.R. CONSOLE	SPEC SECT 14	C/1300
7439:00 991:00	PAINT GRATING ENG RM	SPEC SECT 14	C/1300
7439:00 992:00	PAINT BEHIND MULLINS	SPEC SECT 14	C/1300
7439:00 993:00	PAINT 216 GRATING/HANDRAILS	SPEC SECT 14	C/1300

NAME	UNIT	AC	NUMBER	DATE	TIME
...	...	...	...	...	...

TITLE	CDS CDS	SEA DATE	NATURE OF INCIDENT	SIN R SIN R	SIN R DATE	APPROVED SIGNATURE OF COAST GUARD REPRESENTATIVE	SPS TO A SEN DATE
MEDICAL EQUIPMENT PACKAGING SWITCHBOARD	151-109 10 MAR 84		FREQUENTLY TURNER TO SELLER MEDICAL ASST. AND EQUIP CORRECT PAGE 16 COAST GUARD DOES NOT PERMIT COMPLETION OF MEDICAL EQUIP TO INCIDENT SWITCHBOARD	LOGS FINISHED 22 MAY 84		150 / 14 13 JUN 84	
MELTOUTER LAMPING FAD	150-714 11 APR 84		TWO DIFFERENT COORDINATIONS OF MELLOUTER LAMPING FADS	SEA 02-24-13-4 12 OCT 84		DWG SHOW TIME CIP LAMPING FOR CRUISING NOT CO-ORDINATED	150 OH 12 JAN 85
CONTROLLER PINK OZM2 COMPRESSIONS			SIZE 7 MAINTENANCE CORRELATION REQUIRED NO REG FOR SIZE 7 CONTROLLER VARIABLE STATE SIZE 6 MODIFIED TIME FROM CORRELATION				ATTACHED 1-11-85

APPENDIX D

"TABLE OF CONTENTS

INTRODUCTION

Mission

Primary Mission

Secondary Mission

OPERATIONAL REQUIREMENTS

Sustained Speed and Endurance

Helicopter Operations

General

Air Control and Aviation Navigation Aids

PRI FLY (Primary Flying Control)

Air Control Equipment List

Aviation Support Facilities

General

Aircraft Handling Firefighting, and Crash Rescue

Aircraft Mooring

Flight Deck Gear/Yellow Gear Stowage

External Aircraft Power

Aircraft Washdown

Aircraft Fuel, JP-5

Aircraft Lubricants

Fire Fighting

Flight Deck Equipment List

Personnel Safety

Vertical Replenishment (VERTREP)

General

VERTREP Transfer Rates

Boat Operations

Stores Endurance

Connected Replenishment

Mobilization

At-Sea Operations

Canal Transit

DEFINITIVE CARE FACILITY REQUIREMENTS

Evacuation/Admission Policy

Medical Space Requirements

Casualty Reception

Operating Complex

Radiological Service

Wards

Intensive Care Unit (ICU)

Recovery Room

General Wards

Neuropsychiatric

Intermediate Care

Light Care

Quiet Rooms

Support Functions

Laboratory

Central Sterile Receiving

Medical Supply Service

Other Medical Facilities

Functional Relationships Between Spaces

Medical Staff

OPERATIONAL AND SUPPORT PERSONNEL REQUIREMENTS

Ship Operational Personnel

Medical Support Personnel

Communications Detachment

SHIP SYSTEM REQUIREMENTS

General

Safety

Hull

Propulsion and Auxiliary Machinery

Electrical Plant

Navigation

Exterior Communications

Interior Communications

Heating, Ventilation, and Air Conditioning

Special Gases and Piping

Pollution Control

Fire Extinguishing System

Distilling Plant

Stores Handling System

Patient Handling System

Elevators

Outfit and Furnishings

Boats and Lifesaving Equipment

Deck Covering, Sheathing

Equipment and Furnishings

Chemical Biological Defense

LIST OF APPENDICES

Air Capable Ship Aviation Facilities Bulletin ID

Requirements Allocation Guidance

Medical/Dental Equipment

U. S. Navy Habitability Standards

Category I Standards: New Ships

Category II & III Standards: Existing Ships

Exterior Communications Capability

Sheathing and Deck Covering Requirements

Sheathing

Deck Covering."

"TABLE OF CONTENTS

INTRODUCTION

Medical Capability

MISSION

Primary Mission

Secondary Mission

OPERATIONAL REQUIREMENTS

Sustained Speed and Endurance

Helicopter Operations

General

Air Control and Aviation Navigation Aids

PRI FLY (Primary Flying Control)

Air Control Equipment List

Aviation Support Facilities

General

Aircraft Handling Firefighting, and Crash Rescue

Aircraft Mooring

Flight Deck Gear/Yellow Gear Stowage

External Aircraft Power

Aircraft Washdown

Aircraft Fuel, JP-5

Aircraft Lubricants

Fire Fighting

Flight Deck Equipment List

Personnel Safety

Vertical Replenishment (VERTREP)

General

VERTREP Transfer Rates

Boat Operations

Stores Endurance

Connected Replenishment

Mobilization

At-Sea Operations

Canal Transit

MEDICAL FACILITY REQUIREMENTS

Evacuation/Admission Policy

Medical Space Requirements

Casualty Reception

Operating Complex

Radiological Service

Wards

Intensive Care Unit (ICU)

Recovery Room

General Wards

Intermediate Care

Light Care

Limited Care

Support Functions

Morgue

Laboratory

Central Sterile Receiving

Medical Supply Service

Other Medical Facilities

Functional Relationships Between Spaces

Medical Staff

OPERATIONAL AND SUPPORT PERSONNEL REQUIREMENTS

Ship Operational Personnel

Medical Support Personnel

Communications Detachment

SHIP SYSTEM REQUIREMENTS

General

Safety and Damage Control

Safety

Damage Control

Hull

Propulsion and Auxiliary Machinery

Electrical Plant

Navigation

Exterior Communications

Interior Communications

Heating, Ventilation, and Air Conditioning

Special Gases and Piping

Pollution Control

Fire Extinguishing System
Distilling Plant
Stores Handling System
Elevators
Outfit and Furnishings
Boats and Lifesaving Equipment
Deck Covering, Sheathing
Equipment and Furnishings
Collective Protection System
Integrated Logistics Support
Medical Space Requirements Summary
Flow Density Of Core Treatment Functions
Helicopter Data

LIST OF APPENDICES

Air Capable Ship Aviation Facilities Bulletin ID with
Amendment 2 of 8 Dec 1981

Requirements Allocation Guidance

Medical/Dental Equipment

Environmental Control Standards

Exterior Communications Capability

Sheathing and Deck Covering Requirements

Sheathing

Deck Covering

Logistics Support Requirements

Provisioning Requirements for the T-AH(X)

Weight and KG Margin Policy for Surface Ships

Estimate of Weight for Ships

Damage Control Requirements."

LIST OF REFERENCES

1. Tichy, Noel M., Managing Strategic Change - Technical, Political and cultural Dynamics, pp. 1-434, John Wiley & Sons, Inc., New York, 1983.
2. Plumridge, John H., LT, COL., Hospital Ships and Ambulance Trains, pp. 1-203, Seely Service & Co., 1975.
3. "Mercy Afloat . . . A Navy Tradition" All Hands Magazine of the U. S. Navy, pp. 16-26, March 1986.
4. Sangen, Quintin M., "U.S. Naval Hospital Ships in World War II and Korean Action," Military Medicine, pp. 36-43, January 1966.
5. Jane's Fighting Ships, 1986-1987, Copyright 1986, pp. 61, 417, 761, 623, Jane's Publishing Co., London.
6. "The Consolation Sails Again - with HOPE," Nursing Outlook, p. 414, July 1959.
7. "A.M.A Backs Goodwill Hospital Ships," Journal of the American Medical Association, Vol. 169, No. 9, p. 28, February 28, 1959.
8. House Report 4046 "Certain Surplus Vessels for Health Service to Developing Countries," Report 99-984, 99th Congress, 2nd Session, p. 2, October 9, 1986
9. "Life International - Documentation of Vessels," Hearing before the Subcommittee on Merchant Marine of the Committee on Merchant Marine and Fisheries, House of Representatives, 99th Congress, 2nd Session, Serial # 99.53, p. 6, 53, July 31, 1986.
10. Telephone interview with Mr. Jim Hamlitt, Advanced Communications Coordinator in Mercy Ships - A Ministry of Youth With A Mission, September 9, 1987.
11. "Spotlight on . . . the Floating Hospital," Health Services Manager, Vol. 11, No. 10, pp. 8-9, October 1978.
12. Talbott, Beverly, "Sailing to the Ailing," Oceans, Vol. 18, pp. 52-53, September-October 1985.
13. Haase, J. V., "A Rapid Deployment Hospital Ship," Asian Defense Journal, pp. 71-74, May 1986.

14. Lanning, Rick, "On His Floating Hospital, Dr. Harry Owens Fights Disease and Superstition Along the Amazon," People Magazine, Vol. 8, pp. 53-54, July 18, 1977.
15. Beely, J. M., "Hospital Ship SS Uganda At War in the South Pacific," U. S. Medicine, pp. 14-20, July-August 1983.
16. Leicester, J. J., "Conversion of SS Uganda to a hospital ship," Journal of the Royal Naval Medical Service, Vol. 69, No. 1, pp. 10-16, Spring 1983.
17. Adamsan, R. J. W. and Fitzgerald, M. J. F., "SEDCO Phillips S. S. (Semi-Submersible) Service Vessel," Journal of the Royal Naval Medical Service, Vol. 64, No. 3, pp. 194-197, Winter 1978.
18. "Floating Hospital for Northern Fishing Fleets," Nursing Mirror, pp. 4-5, December 27, 1957.
19. Gorman, Thomas, "Emergency Care on the High Seas," Today's Health, pp. 40-42, March 1957.
20. DeJong, Frieda, "New Outlook for Long Term Tuberculosis Patients," International Nursing Review, p. 48, January 1959.
21. Grant, Anne "TB Control in Canada," Bulletin of the National Tuberculosis Association, Vol. 45, pp. 122-124, September 1959.
22. "Mercy & Comfort Hospital Ships Part of Military Readiness," Officer, p. 32, April 1986.
23. Final Report of the Feasibility Study of Alternatives to Dedicated Hospital Ships (ADHOS), U. S. Navy Chief of Naval Operations, pp. 11, 22, February 27, 1978.
24. Interview with Mr. Elmer Waye, former Program Manager for the hospital ship program, Naval Sea Systems Command, Washington, D. C., April 15, 1987.
25. Jemison, Terry, "Hospital Ship Solution Drawn Up," N. S. Medicine, September 15, 1981.
26. Interview with Mr. Jack Cameron, Hospital Ship Project Manager, Naval Sea Systems Command, Washington, D. C., April 20, 1987.

27. Viau, Suzanne, "Hospital Ships Remain Off Schedule-Contractor Field Narrowed," U. S. Medicine, p. 30, June 1, 1982.
28. "Hospital Ship Deal Proper Lehman Says," U. S. Medicine, p. 1, November 15, 1983.
29. Borden, Bob, "MSC Hospital Ship Mercy Christened," Sealift, pp. 1-2, December 1986.
30. Interview with Mr. Dick Carles, Military Sealift Construction Office, San Diego, CA, February 25, 1987.
31. Interview with CAPT Erikson, Naval Postgraduate School, Monterey, CA, February 19, 1987.
32. Interview with CDR Dick Cummings, SUPSHIP New Construction Project Officer, San Diego, CA, February 6, 1987.
33. Interview with Mr. Joe Dollar, Program Engineer, Naval Sea Systems Command, Hospital Ship Project Management Office, Washington, D. C., February 2, 1987.
34. Interview with LT Doug Faulls, Medical Construction Officer, Supervisor of Shipbuilding, San Diego, CA, February 2, 1987.
35. Matthews, William, "Hospital Ship Comfort Readied," Navy Times, p. 32, February 16, 1987.
36. Mostert, Noel, Super Ship, New York, Warner Books, Inc., p. 383, 1975.
37. "Hospital Ship: The Next Chapter," U. S. Navy Medicine, pp. 7, 9, 10, July-August 1985.
38. Interview with LCDR Larry Walters, Navy Medical Materiel Support Command, Fredrick, Maryland, February 13, 1987.
39. Strategic Sealift Program Information, Office of the Chief of Naval Operations, April 16, 1985.
40. LaMacchia, Diane M., "Assistant Secretary of Defense Mayer Speaks on the State of Military Medicine," U. S. Navy Medicine, p. 8, January-February 1986.
41. Maze, Rick, "Medic Shortage, Combat Needs Cut Kin, Retiree Care," Navy Times, p. 4, October 6, 1986.

42. Philpott, Tom, "Mercy's Mission Won't Cut Navy Health Care: Mayer," Navy Times, pp. 21-25, October 20, 1986.
43. Interview with CDR Eversman, Naval Medical Command, Washington D. C., February 11, 1987.
44. "Configuration Management," Department of Defense Instruction 5010.19, p. 1.
45. System Engineering Management Guide, Contract Number MDA 903-82-C-0399, Defense Systems Management College, Fort Belvoir, Virginia, p. 1, 6.
46. Navy Program Manager's Guide, prepared by William C. Ruckert under the auspices of Deputy Chief of Naval Material for Acquisition, Naval Material Command, Washington, D. C., 1985 Edition, pp. 4-87, 4-88.
47. OPNAV INSTRUCTION 4130.2A, Department of the Navy, Office of the Chief of Naval Operations, Washington, D. C. 20350-2000 "Policy For Navy Configuration Management System-Ships, Ship Requirements and Selected Shorebased Requirements (NCMS)," December 16, 1985, p. 2.
48. Acker, David D., "Management Disciplines: Harbingers of Successful Programs," Defense Systems Management Review, Vol. 2, No. 3, pp. 7-12, Summer 1979.
49. Roveling, Jerry L., "Meeting the Evolving Micro Requirement," Defense Systems Management Review, Vol. 2, No. 3, pp. 88-96, Summer 1979.
50. SACAM, Ship Acquisition Contract Administration Manual, NAVSEA 0900-LP-079-6010, December 1978, p. 1203, 1204.
51. Dean, William A., "Why Worry About Configuration Management?" Defense Systems Management Review, Vol. 2, No. 3, p. 21, 37, Summer 1979.
52. Fohnman, William G., Lieutenant Colonel, USAF, "Observations on Configuration Management," Defense Systems Management Review, Vol. 2, No. 3, p. 55, Summer 1979.
53. Study Project Report, PMC 75-2, The Effect of Configuration Management on the Program Cost of the A-710 Aircraft, by David S. Powers, Lt Col, USAF, Defense Systems Management School, p. 1, November 1975.
54. "Charge Orders - Some Control and Pricing Aspects" by J. D. Graham, p. 1, October 23, 1970.

55. Dean, William H., "Why Worry About Configuration Management?" Defense Systems Management Review, Vol. 2, No. 3, pp. 21-29, Summer 1979.
56. Carr, W. W., LCDR, Navy Supply Corps Newsletter, "Configuration Management - How It Can Work For You!" Vol. 45, No. 11, p. 21, November 1982.
57. Contract Administration Course #6606, Extension Course Institute, AV University, Prepared by Department of Contracting Staff, The Air Force Institute of Technology, School of Systems and Logistics, Wright-Patterson Air Force Base, Ohio, p. 58, 1987.
58. Personal interview with Mr. Al Midboe, MSC CONREP Office, NASSCO, on Monday, June 22, 1987.
59. MIL-STD-481 A, Department of Defense, Washington, D. C., p. 2, October 18, 1972.
60. Telephone interview with CDR Cummings, SUPSHIP, San Diego, CA, New Construction Project Officer, August 24, 1987.
61. Ref: Circular of Requirements For Hospital Ship T-AH(X), Department of the Navy, Naval Sea Systems Command, Washington, D. C. 20362, pp. 1-5, Revised October 21, 1982.
62. OPNAVINST. 5000.xx (DRAFT), "Program Management Proposal Process," p. 1-3, 6, November 6, 1986.
63. Dalton, Rex, "New hospital ships lack CT scanners," The San Diego Union, p. 1, May 11, 1986.
64. Telephone interview with Mr. Jack Cameron, Assistant Project Manager, NAVSEA, Washington, D. C. June 5, 1987.
65. "Navy's 2 Hospital Ships May Not Get Call to Serve," Military Medicine, Vol. 152, No. 5, p. A10, May 1987.
66. Memorandum, from EMO to Gen A. Cushman, SIMA, San Diego, CA to LT William R. Berts, Jr., MSC, USN, July 14, 1987.
67. Matthews, William, "Floating Combat Hospital Ends Four-Month Mission," Nav Times, p. 22, July 20, 1987.
68. Dean, William A., "Why Worry About Configuration Management?" Defense Systems Management Review, Vol. 2, No. 3, pp. 21-29, Summer 1979.

69. NAVMATINST 9020.1B, Department of the Navy, Headquarters Naval Material Command, Washington, D. C. 20360, "Standards in Shipboard Command and Control Space Configurations; policies and procedures for," p. 1.
70. NAVMATINST 9020.1B, Naval Material Command, Washington, D. C., p. 1, April 1980.

INITIAL DISTRIBUTION LIST

	No. of Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22304-6145	2
2. Library, Code 0142 Naval Postgraduate School Monterey, California 93943-5002	2
3. David R. Whipple, Ph.D., Code 54Wp Naval Postgraduate School Monterey, California 93943-5000	1
4. Benjamin J. Roberts, Code 54Ro Naval Postgraduate School Monterey, California 93943-5000	1
5. LT William H. Roberts, Jr., MSC, USN 21 Wendy Drive Linwood, N. J. 08221	3

END

DATE

FILMED

5-88

DTIC