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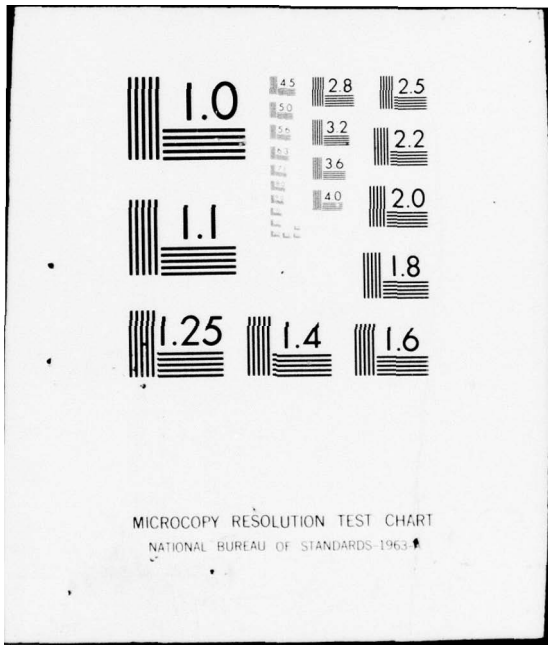
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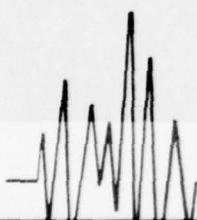
DEVELOPMENT OF A CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST

31 MARCH 1977

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Prepared for
DIRECTOR, CRUISER DESTROYER
SHIP LOGISTIC DIVISION
NAVAL SEA SYSTEMS COMMAND
WASHINGTON, D.C.
under Contract N00024-76-C-4319



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MAINTENANCE-CRITICAL EQUIPMENT LIST,

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S.M. Halupa

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SUMMARY

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This report presents the results of an analysis performed by ARINC Research Corporation to identify Maintenance-Critical Equipments of the CG-16 Class. A Maintenance-Critical Equipment is one that has been a significant maintenance burden to the ships of the class. The objective of the study was to establish the primary areas of concentration for future engineering efforts in the Destroyer Engineered Operating Cycle (DDEOC) Program.

Information for the analysis was obtained from Forces Afloat maintenance experience reported in the Maintenance Data System (MDS), Casualty Reports (CASREPTs), and Regular Overhaul (ROH) data.

The study results identified 186 equipments of the CG-16 Class as maintenance-critical. Of this total, two equipments were highlighted as being the most significant contributors to the overall maintenance burden of the class. They are the AN/SPG-55() Radar and the Main Propulsion Boiler. These equipments were reported as requiring Forces Afloat maintenance, CASREPTs, and ROH work far in excess of other CG-16 Class equipments. The AN/SPS-48() Air Search Radar, while not a significant contributor to overhaul activity, was a major problem when measured by Forces Afloat maintenance and CASREPTs.

ARINC Research Corporation recommends that the results of the study be used to identify ship systems for in-depth analysis; further, that a preliminary review and analysis be performed to determine whether the AN/SPG-55 and AN/SPS-48() radars present problems that may require long-term development fixes. Analysis of the 1200 PSI Propulsion Boilers should be undertaken only after consultation with PMS-301, which has conducted numerous studies of these equipments.

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CHAPTER ONE

INTRODUCTION

This report presents listings of CG-16 Class ships' equipments that have been a significant maintenance burden. The listings are based on analyses of maintenance data and are intended to be used as a guide for engineering activity conducted for this class in the Destroyer Engineered Operating Cycle (DDEOC) Program. This report has been prepared for the Naval Sea Systems Command DDEOC Program Office (NAVSEA 934X) under Contract N00024-76-C-4319.

The goal of the DDEOC Program is to effect an early improvement in the material condition of ships, at an acceptable cost, while maintaining or increasing the ships' operational capability during an extended operating cycle. In support of this goal, a Maintenance-Critical Equipment List is developed for each ship class in the DDEOC Program. The list is based on the following information:

- Forces Afloat maintenance burdens in terms of maintenance actions, man-hours, and material cost
- Maintenance attention during past overhauls
- Casualty Reports (CASREPT) frequency

The CG-16 Class Maintenance-Critical Equipment List is a listing of the identified equipments for the entire ship, ranked by total experienced maintenance burden. Development of the listing did not include analysis of the reasons why equipments are significant maintenance burdens. The reasons will be investigated in subsequent DDEOC engineering studies. The Maintenance-Critical Equipment listing indicates priorities for these analyses.

Chapter Two of this report documents the approach used in the identification of the Maintenance-Critical Equipments of the CG-16 Class. Chapter Three summarizes the results; and Chapter Four presents the conclusions and recommendations. The appendixes to this report provide information on the observed maintenance burdens of the CG-16 Class Maintenance-Critical Equipments.

CHAPTER TWO

APPROACH

2.1 OVERVIEW

The analytical process used to develop the CG-16 Class Maintenance-Critical Equipments List involved two steps, (1) identification of equipments that were the most significant contributors to the Navy's maintenance burden for that class and (2) ranking of the equipments in the order of the highest maintenance burden experienced. As a basis for these steps, documented maintenance history data were compiled from several sources: Forces Afloat maintenance experience, as reported in the Maintenance Data System (MDS); CASREPT information; and data from past regular overhauls (ROH) of CG-16 Class ships were used in the analytical process.

Data analysis was conducted at the equipment/component level where Allowance Parts List (APL) numbers are assigned.

2.2 DATA COLLECTION AND COMPILATION

The starting point for the analysis was the compilation of a data base to provide information on the maintenance history for ships of the CG-16 Class. The data base consisted of four key elements: (1) MDS data, (2) CASREPT narrative summaries, (3) a summary of the Ship Alteration and Repair Packages (SARPs) of four CG-16 Class overhauls, and (4) the CG-16 Class Proposed Repair Profile.*

2.2.1 MDS Data

MDS maintenance transaction data for the period January 1970 through September 1976 were acquired in Generation IV format on computer tape from the Maintenance Support Office (MSO). The data were sorted into APL number

*CG-16 Class Proposed Repair Profile, prepared by PERA (CRUDES), November 1975.

sequence after being edited for validity and screened for repair applicability (i.e., only corrective maintenance actions were considered). The resultant data, consisting of approximately 600,000 records, represented the CG-16 Class MDS data file.

2.2.2 CASREPT Data

Summaries of all CG-16 Class CASREPTs reported from January 1973 to November 1976 were received from MSO. The summaries for each individual ship in the class were reviewed and integrated into a class CASREPT data file. The file contained 1,963 separate CASREPTs.

2.2.3 ROH Data

The CG-16 Class Repair Profile identifies the repair items that are recommended for inclusion in the PERA (CRUDES) CG-16 Class Routine Repair Ship Alteration and Repair Package (SARP). The Repair Profile was developed by PERA (CRUDES) by analyzing recent SARPs and identifying repetitive repairs planned for accomplishment during overhauls of ships of the class. For the CG-16 Class Repair Profile, a repetitive repair is described as a specifically defined repair (such as an equipment Class B overhaul*) that could be identified as having occurred in at least 60 percent of the overhauls of ships in the class. The information for the CG-16 Class Repair Profile was derived from an analysis of the SARPs prepared for the ship overhauls identified in Table 1. The CG-16 Class Repair Profile was received from PERA (CRUDES) and was used in the development of the Maintenance-Critical Equipment List.

Hull	Ship Name	Overhaul Start Date
CG-16	USS LEAHY	10 March 1972
CG-17	USS YARNELL	8 April 1974
CG-21	USS GRIDLEY	1 February 1973
CG-22	USS ENGLAND	8 October 1975
CG-24	USS REEVES	19 November 1973

*Work that requires such overhaul as will restore the operating and performance characteristics of a system, subsystem, or component to its original design and technical specifications.

The work sheets used to prepare the CG-16 Class Repair Profile were also a part of the CG-16 Class data base. The work sheets itemized, by SWBS number, each repair action item and highlighted the repetitious repairs performed during the CG-16 Class overhauls.

2.3 DATA ANALYSIS

2.3.1 Identification of Maintenance-Critical Equipments

The identification of the Maintenance-Critical Equipments was accomplished by using Maintenance Data System (MDS) data, CASREPT data, and the CG-16 Class Proposed Repair Profile.

2.3.1.1 MDS Data Analysis

Maintenance-Critical Equipments were identified from the MDS data base using APL numbers. The APL numbers were used because they readily relate to an equipment or component. Four indicators of maintenance burden were analyzed from the MDS data:

1. Ship's Force parts dollars
2. Ship's Force man-hours
3. Intermediate Maintenance Activity (IMA) man-hours
4. Number of Ship's Force labor transactions

Ship's Force parts dollars were used for an indication of maintenance parts costs. The Ship's Force man-hours and IMA man-hours were used because they show the Forces Afloat effort required to maintain an equipment. The number of Ship's Force labor transactions was used because it provides an indication of the total number of times manpower was expended on an equipment.

These four categories represent the full range of maintenance techniques that different types of equipments require. For example, some equipments are modular in composition and their maintenance requires wholesale replacement of parts. The net result is a high parts cost and, conceivably, a relatively low manpower expenditure. Other equipments require high manpower expenditures, but little or no parts cost (e.g., a leaking valve bonnet that needs to be lapped). Some equipments can only be repaired at an IMA facility and other equipments, while not requiring large amounts of parts dollars or manpower, require maintenance attention often enough to be a burden.

In the total maintenance reported against an APL numbered equipment, if any of the four indicators of maintenance burden was significant in relation to the entire class data base, the equipment was designated Maintenance-Critical. One-tenth of one percent of the data base total for

the indicator was the Significance Threshold (e.g., \$29.5 million spent for repair parts by the class during the data period makes the Significance Threshold for parts expenditure \$29,500). If an equipment (represented by an APL number) had \$29,500 in parts cost reported against it, the equipment was included in the Maintenance-Critical Equipment List. Significance Thresholds for the CG-16 Class are shown in Table 2.

Forces Afloat Maintenance Indicator	CG-16 Class Expenditure*	Maintenance-Critical Significance Threshold
Ship's Force Parts Dollars	\$29,504,972	\$29,505
Ship's Force Man-Hours	1,148,348	1,148
IMA Man-Hours	401,937	402
Ship's Force Labor Transactions	166,249	166

*January 1970 through September 1976.

2.3.1.2 CASREPT Data

CASREPTs were used as a data source for identifying maintenance burdens because the maintenance necessary to correct a CASREPT represents that which is required by a ship to fulfill its operational commitments. Information regarding the effect of a maintenance requirement on a ship mission is not contained in the MDS. The maintenance burden equipments were identified by determining the equipments that have had a significant number of CASREPTs reported across the class. Maintenance-Critical Equipments were identified from reported CASREPTs, using APL numbers as identifiers. Four CASREPTs within the class in the data period (January 1973 through November 1976) was considered a significant amount. Any equipment identified by an APL number having four CASREPTs reported against it was selected as a Maintenance-Critical Equipment.

2.3.1.3 Overhaul Data Analysis

Maintenance-Critical Equipments were identified from the CG-16 Class Proposed Repair Profile prepared by PERA (CRUDES). If the repair of an equipment was included in the Repair Profile, the equipment was selected as a Maintenance-Critical Equipment. Repeated industrial maintenance during overhaul was considered to be an indicator of maintenance burden because it indicated equipments which require repair/refurbishment because of material condition or because it was "insurance" work necessary to support the operating period. Maintenance during ROH was used because some equipments are repaired only in the shipyard.

2.3.2 Maintenance-Critical Equipment Ranking

After the Maintenance-Critical Equipments were identified, they were ranked in accordance with the maintenance burden experienced. This was done to compare the relative maintenance burdens between equipments that may be maintained differently. For example, it is of interest to know how the maintenance burden imposed by a main feed pump compares to that of a Gun Fire Control System or a Surface Search Radar. This information is useful in the allocating and scheduling resources to analyze the effectiveness of existing maintenance practices and identifying areas of concentration for Baseline Overhaul.

The ranking of the Maintenance-Critical Equipments was accomplished by identifying the class population of each Maintenance-Critical Equipment, identifying the total equipment maintenance burdens, and ranking the Maintenance-Critical Equipments by maintenance burden.

2.3.2.1 Identification of Equipment Population

Identification of Maintenance-Critical Equipments through the MDCS and CASREPT was accomplished by determining equipment APL numbers against which significant maintenance was reported. However, identification of the APL numbers only presents problems associated with configurations.

One problem is that the same APL designator may not be universally used across the entire class because of different manufacturers of the same equipment type. To account for this, a complete set of lead APL numbers was identified for each Maintenance-Critical Equipment. This was accomplished by preparing a configuration matrix, for each Maintenance-Critical Equipment, that identified the lead APL numbers utilized within the class. For example, there could be two lead APL numbers for the main feed pumps of the CG-16 Class.

To determine the APL numbers necessary to prepare the configuration matrix, the Surface Ship Type Commander's (TYCOM) COSAL for both the Atlantic and Pacific Fleets was researched to identify similar equipments used to fulfill the same function (e.g., main feed pump). TYCOM COSAL information, as of June 1976, was used for this research.

Another problem to be considered was that, for each equipment represented by a lead APL number, there may be a subcomponent with its own APL numbers (ancillary APL numbers). Therefore, the ancillary APL numbers had to be identified. This identification was accomplished by reviewing the list for each lead APL number that represented a Maintenance-Critical Equipment and extracting the ancillary APL numbers. When this was done, a complete class population was available for each Maintenance-Critical Equipment.

2.3.2.2 Identification of Equipment Maintenance Burdens

When the complete listing of lead and ancillary APLs for each Maintenance-Critical Equipment was prepared, total maintenance burdens were determined from each of the maintenance data sources (i.e., MDS, CASREPT, and ROH).

A total equipment maintenance burden was calculated for each of the four MDS indicators (i.e., Ship's Force parts dollars, Ship's Force man-hours, Ship's Force labor transactions, and IMA man-hours). To obtain for each equipment a single factor that provides an indication of the magnitude of the MDS maintenance burden imposed on the Forces Afloat, a term called the MDS Factor was computed. This term is the sum of the ratios of each of the four MDS indicators of the equipment to the total of the indicator for the class. Expressed symbolically

$$(MDS)_i = \frac{(PC)_i}{(PC)_T} + \frac{(SFMH)_i}{(SFMH)_T} + \frac{(IMAMH)_i}{(IMAMH)_T} + \frac{(SFLT)_i}{(SFLT)_T} \times 100$$

where

- $(MDS)_i$ = MDS Factor for i^{th} equipment
- $(PC)_i$ = Total parts costs for i^{th} equipment
- $(PC)_T$ = Total parts costs for class
- $(SFMH)_i$ = Total Ship's Force man-hours expended for i^{th} equipment
- $(SFMH)_T$ = Total Ship's Force man-hours expended for class
- $(IMAMH)_i$ = Total Ship's IMA Force man-hours expended for i^{th} equipment
- $(IMAMH)_T$ = Total Ship's IMA Force man-hours expended for class
- $(SFLT)_i$ = Total Ship's Force labor transactions for i^{th} equipment
- $(SFLT)_T$ = Total Ship's Force labor transactions for class

To calculate the CASREPT burden, the number of CASREPTs for each identified Maintenance-Critical Equipment (reported against all lead and ancillary APLs for the CG-16 Class) was extracted from the CASREPT data file. The resultant total represented the CASREPT burden for the equipment.

ROH burdens were calculated from the work sheets used to prepare the ROH Repair Profile. These work sheets itemized all the work planned for accomplishment during four CG-16 Class ship overhauls.* The work sheets were reviewed to determine if an equipment was subjected to maintenance during each of the four ship overhauls. The percentage of times in the four overhauls the equipment received significant maintenance represented the ROH burden.

*Data from only 4 of the 5 overhauls used to prepare the CG-16 Class ROH Repair Profile were included in the work sheets. USS ENGLAND (CG-22) overhaul data were not available.

2.3.2.3 Ranking of Maintenance-Critical Equipments by Maintenance Burden

After the maintenance burdens were calculated for each Maintenance-Critical Equipment, the equipments were ranked within each of the three data sources. The MDS ranking was made by descending MDS factors; the CASREPT ranking was made by descending CASREPT frequency; and the ROH frequency ranking was made by descending percentage.

The ranking was done from highest to lowest burden in each data source, and each equipment was assigned a relative standing in each category.

A final ranking was made, using the ranking in each of the three individual reported maintenance sources. The relative standings of the equipments from each of the three sources were summed. The resultant sum was the Maintenance Burden Factor for the equipment. Expressed symbolically

$$MBF_i = R_{MDS_i} + R_{C_i} + R_{O_i}$$

where

- MBF_i = Maintenance Burden Factor for i^{th} equipment
- R_{MDS_i} = Rank of i^{th} equipment by MDS Factor
- R_{C_i} = Rank of i^{th} equipment by CASREPT frequency
- R_{O_i} = Rank of i^{th} equipment by ROH frequency

Since the equipment with the lowest Maintenance Burden Factor (MBF) represented the highest maintenance burden, the Maintenance-Critical Equipments were ranked by ascending Maintenance Burden Factors as illustrated in Table 3.

Rank	Equipment	MDS Factor Rank	CASREPT Frequency Rank	ROH Frequency Rank	MBF
1	Equipment 1	1	4	2	7
2	Equipment 2	9	2	1	12
3	Equipment 3	16	1	5	22
4	Equipment 4	4	9	10	23
5	Equipment 5	15	6	12	33

CHAPTER THREE

RESULTS

3.1 CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENTS

As a result of the review and analysis of the various maintenance and maintenance-related data, 186 equipments in the CG-16 Class were identified as being maintenance-critical. Appendix A lists each of the identified critical equipments in Ship's Work Breakdown Structure (SWBS) order. Included in this listing is a notation of the significant data source indicator or combination of indicators (i.e., MDS, CASREPT, or ROH data) that caused the equipment to be identified as maintenance critical. Further review of this listing can provide guidance for subsequent engineering analyses. (Burners and Registers [SWBS 221] were identified by the MDS data as a Maintenance-Critical Equipment because of the high expenditure of parts dollars. Any detailed analysis of the maintenance history of CG-16 Burners and Registers should look first into the causes for such expenditures.)

Twenty-three equipments in the listing were identified by all three data sources as maintenance critical, 48 were identified by two sources, and 115 were identified by a single source. The MDS was the source for identifying the majority of Maintenance-Critical Equipments. Table 4 summarizes the sources of identification of Maintenance-Critical Equipments for the CG-16 Class.

3.2 RANKING OF MAINTENANCE-CRITICAL EQUIPMENTS BY MAINTENANCE BURDEN

The results of the ranking of the CG-16 Class Maintenance-Critical Equipments are presented in Appendixes B and C. Appendix B lists the equipments in MBF rank order; Appendix C lists the equipments in SWBS order. Each listing includes:

- Equipment nomenclature
- SWBS number
- MBF rank, as defined in Section 2.3.2.3
- MDS Factor, as defined in Section 2.3.2.2
- Number of reported CASREPTs against the equipment
- Overhaul frequency, as defined in Section 2.3.2.2

Table 4. SOURCES OF CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT CONFIGURATION	
Data Source	Number of Maintenance-Critical Equipments Identified
MDS Only	78
CASREPT Only	23
Repair Profile Only	14
MDS and CASREPT	35
MDS and Repair Profile	10
CASREPT and Repair Profile	3
MDS, CASREPT, and Repair Profile	23
Total	186

The data in the last three columns were computed for each Maintenance-Critical Equipment identified, regardless of the source(s) that established it as a Maintenance-Critical Equipment.

The number one and number two MBF-ranked equipments stand out among all the others in this analysis. Each of these equipments met all of the MDS indicator thresholds and the CASREPT and ROH criteria. The AN/SPG-55 Radar had over twice as many CASREPTs as any other equipment and its Forces Afloat maintenance burden was significantly higher than any other equipment. Another equipment which experienced significant Forces Afloat maintenance and CASREPTs activity was the AN/SPS-48 Air Search Radar. The AN/SPS-48 Radar did not experience significant overhaul activity but was comparable in the other categories.

The method used to rank the Maintenance-Critical Equipments was developed to equally weight the three data sources (i.e., MDS data, CASREPT data, and ROH data). However, the overhaul frequency contribution to MBF can be influenced by a small sample size of overhauls. For instance, the AN/SPS-48 Air Search Radar, which ranked second by MDS data and third by CASREPT data, had an MBF rank of 16 because it was maintained in only two of the four overhauls analyzed. It would have had an MBF rank of 5 if it had been maintained in but one more overhaul.

Appendix D lists the Maintenance-Critical Equipments in Maintenance Data System (MDS) factor order. The listing indicates the comparative burden of each equipment in terms of reported Forces Afloat maintenance. The appendix was included to show how the information in Appendixes B and C can be used. The same type of listing can be prepared to analyze the CASREPT or ROH data.

3.3 IMPACT OF MAINTENANCE-CRITICAL EQUIPMENTS ON CLASS MAINTENANCE BURDEN

The CG-16 Class Maintenance-Critical Equipments identified by this analysis account for a sizable portion of the reported total maintenance burden of the class. The 186 Maintenance-Critical Equipments account for 82 percent of all the CASREPTs reported by the class, 83 percent of the Ship's Force parts dollars, 74 percent of the Ship's Force corrective maintenance man-hours, 64 percent of the IMA corrective maintenance man-hours, and 64 percent of the corrective maintenance labor actions.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

The analysis presented in this report resulted in the identification of 186 equipments of the CG-16 Class that have been significant contributors to the maintenance burden of ships of the class. These equipments have been the cause for the expenditure of a sizable portion of the Ship's Force corrective maintenance resources, as reported in the MDS. Significant contributors, insofar as Forces Afloat maintenance is concerned, are the AN/SPG-55 Radar, the Main Propulsion Boilers, and the AN/SPS-48 Radar.

This study provided the initial engineering analysis required for beginning in-depth analyses required in the DDEOC Program. Use of these results will direct analytical efforts to areas where significant advances can be realized in developing an engineering maintenance strategy for equipments that historically have been a source of maintenance problems.

The next effort in the DDEOC Development Program for the CG-16 Class is the use of these results to identify ship systems for further in-depth analysis. Because of their high maintenance burden, it is recommended that a preliminary review and analysis be conducted to identify potential problems with the AN/SPS-55 and AN/SPS-48 Radars that may require long-term development fixes. Analysis of the 1200 PSI Propulsion Boilers should be undertaken only after consultation with PMS-301, which has conducted numerous studies of these equipments.

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APPENDIX A

SOURCE OF IDENTIFICATION OF CG-16 CLASS
MAINTENANCE-CRITICAL EQUIPMENTS

APPENDIX A

SOURCE OF IDENTIFICATION CG-16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SWBS	Equipment/Component Nomenclature	Met or Exceeded MDS Indicator Thresholds				Four or More CASREPTs	ROH Repair Profile Items
		Indicator					
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
221	Main Boiler	X	X	X	X	X	X
221	Burners & Registers	X					X
221	Boiler Safety Valves						X
221	Rotary Soot Blowers						X
221	ACC/FWC System					X	
231	HP/LP Turbines		X	X			
241	Main Reduction Gears		X				
243	Propulsion Shaft Seal		X	X			
244	Line Shaft Bearing Assy.		X				X
245	Propeller Assy.						X
251	Forced Draft Blower		X	X	X	X	X
253	MFP Root Steam Valves			X			
253	Main Steam 6" (1500 PSI) Gate Valves		X	X	X		
254	Auxiliary Gland Condenser			X			
254	Propulsion Gland Exhauster			X			
254	Auxiliary (SSTG) Gland Exhauster			X		X	
255	Main Feed Pump	X	X	X	X	X	X
255	Main Condensate Pump	X	X	X	X	X	X
255	Main Feed Booster Pump	X	X	X	X	X	X
255	Auxiliary Condensate Pump		X				
255	Deaerating Feed Tank			X			
255	MFP Discharge Relief Valve			X			
256	Main Circulating Pump					X	X
256	Auxiliary Circulating Pump		X	X			
258	600 PSI Bi-Metallic Steam Trap			X			
261	Port Fuel Oil Service Pump					X	
261	Fuel Oil Service Pump	X	X	X	X	X	
261	Fuel Oil Duplex Strainer			X		X	
262	Main Lube Oil Service Pump						X
262	Main Lube Oil Service Standby Pump	X	X	X	X		
264	Lube Oil Purifier	X	X		X	X	
311	Ships Service Turbine Generator		X	X	X	X	X
312	Emergency Ships Service Gas Turbine Generator	X	X	X	X	X	
314	60 KW 400 Hz. MG Set		X	X	X	X	
314	NTDS 60 KW 400 Hz. MG Set (PU-655/U)			X			
314	SPR-4 400 Hz Line Voltage Regulator	X					
314	30 KW 400 Hz MG Set		X	X	X	X	X
314	200 KW 400 Hz MG Set					X	X
342	Emergency Gas Turbine Generator Circulating Pump						X
411	AN/SPA-25() Radar PPI		X		X		X
411	AN/SPA-74() Radar Indicating Group	X	X		X	X	
411	OA-3953/SYA-4(V)() Console	X					
411	AN/UUA-4(V) Data Display Group		X				

(continued)

APPENDIX A - (continued)						
SWBS	Equipment/Component Nomenclature	Met or Exceeded MDS Indicator Thresholds			Four or More CASREPTs	ROH Repair Profile Items
		Indicator				
		Part \$	SF Mhrs	IMA Mhrs		
411	OA-7979/UUA-4 PPI Console	X	X		X	
412	MK-19 Recorder				X	
412	CV-2517() Digital Data Converter				X	
412	CP-789/UYK Digital Computer	X				
412	AN/USQ-20(V) General Computer				X	
412	CP-642()/USQ-20(V) Digital Computer		X		X	
412	CV-2036/USQ-20(V) Digital Converter		X		X	
412	RD-243/USQ-20(V) Recorder-Reproducer		X		X	
415	AN/SSQ-29() Data Terminal Set	X				
415	AN/USQ-36() Data Terminal Set				X	
421	Alidade			X		
421	MK-3 Binoculars			X		
421	Chelsea Clock		X	X		
423	AN/SRN-6() TACAN	X	X		X	
423	AN/SRN-12() TACAN				X	
424	AN/UQN-1() Fathometer					X
426	MK-19 Gyro Compass	X	X	X	X	X
426	Dead Reckoning Analyzer Indicator		X		X	
426	NC-2 Plotter	X				X
426	Underwater Log Rodmeter				X	X
426	Underwater Log Transmitter		X	X	X	X
431	IC Switchboards (FWD & AFT)					X
432	Dial Telephone Switchboard		X		X	X
432	Sound Powered Telephone Ckts.		X			
433	Intercom Loudspeakers	X			X	
434	16 mm Movie Projector			X		
437	Wind Speed & Direction Transmitter	X			X	
437	Salinity Cells		X			
441	AN/SRC-23() (V) Radio Set	X			X	
441	AM-3790()/SRC-23(V) RF Amplifier	X			X	
441	T-1004/SRC-23(V) Radio Transmitter	X				
441	AN/SRA-22 Antenna Coupler Group	X			X	
441	AN/SRC-16() Comm Central	X	X		X	
441	CV-1169/SRC-16 Antenna Coupler	X				
441	AN/SRC-20() Radio Set	X	X	X	X	
441	AN/SRC-21() Radio Set	X	X		X	
441	AN/SRC-31() Radio Set	X	X		X	X
441	AN/URC-9() Radio Set	X	X	X	X	
441	AN/URC-32() Radio Set	X	X		X	
441	AN/URD-4() Direction Finder Set	X	X	X	X	X
441	AN/URT-23() (V) Radio Transmitter	X			X	
441	AM-3924()/URT-23 RF Amplifier				X	
441	T-827/URT-23 Transmitter				X	
441	AN/VRC-46() Radio Set		X			
441	AN/WRC-1() Radio Set	X				
441	AN/WRR-2() Radio Receiving Set				X	
441	AN/WRT-2() Radio Transmitter	X	X		X	
441	R-1051()/URR Radio Receiver	X	X		X	

(continued)

APPENDIX A - (continued)

SWBS	Equipment/Component Nomenclature	Met or Exceeded MDS Indicator Thresholds				Four or More CASREPTs	ROH Repair Profile Items
		Indicator					
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
441	AN/URA-38() Antenna Coupler Group					X	
442	AN/UQC-1() Underwater Telephone					X	
445	AN/UGC-6 TTY Printer			X	X		X
445	AN/UGC-25 TTY Set		X	X	X		
445	AN/UXH-2() Facsimile Recorder Set						X
445	AN/UCC-1() Telegraph Terminal						X
446	TSEC/KY-8 Auto		X				
446	TSEC/KW-7				X		
446	TSEC/KG-22					X	
451	AN/SPS-10() Surface Search Radar	X	X		X	X	X
453	AN/SPS-39() 3D Air Search Radar	X	X		X		
452	AN/SPS-43() 2D Air Search Radar	X	X	X	X	X	X
453	AN/SPS-48() 3D Air Search Radar	X	X		X	X	X
455	AN/UPA-24() Decoder Set				X		
455	AN/UPX-11() Interrogator Set	X	X		X	X	
455	AN/UPX-17 Transponder		X			X	
455	AN/UPX-23 Interrogator Set					X	
455	AN/SQS-23() Sonar Set	X	X	X	X	X	
461	Transducer (AN/SQS-23 Sonar Set)						X
471	AN/ULQ-6() Countermeasures Set	X	X		X	X	X
471	AM-4530/ULQ-6() RF Amplifier	X					
472	AN/SLR-12 Countermeasures Set					X	
472	AN/WLA-3() Amplifier Group	X				X	X
472	AN/WLR-1() ECM Receiving Set	X	X		X	X	X
472	AS-899()/SLR DF Antenna					X	
473	T-MK-6 Fanfare Winch			X			X
475	Degaussing Switchboard					X	
481	MK-5 Train Parallax Corrector					X	
481	MK-1 Air Supply Unit					X	
482	MK-75 Data Converter					X	
482	MK-10 FCS Amplifier	X					
482	MK-22 FCS Amplifier Console	X					
482	MK-25 Radar Antenna Mount	X	X		X		
482	MK-1 Director Pedestal	X			X	X	
482	MK-29 Gunsight	X			X	X	
482	MK-24 TDT		X	X	X		X
482	MK-4 MOD 0 WDE	X					
482	MK-119 Computer	X	X		X	X	
482	MK-152 Computer					X	
482	AN/SPA-42() Electronic Synchronizer			X			
482	AN/SPG-50() Radar Set	X	X		X	X	
482	AN/SPG-55() Radar Set	X	X	X	X	X	X
482	SPTE AN/SPG-55	X			X		
482	MK-53 Attack Console	X	X	X	X	X	X
491	AN/USM-116() Multimeter				X		
491	AN/USM-117() Oscilloscope			X	X		
491	AN/USM-140() Oscilloscope			X			

(continued)

APPENDIX A - (continued)

SWBS	Equipment/Component Nomenclature	Met or Exceeded MDS Indicator Thresholds				Four or More CASREPTs	ROH Repair Profile Items
		Indicator					
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
491	AN/USM-281() Oscilloscope			X	X		
491	CBTV-545() Oscilloscope	X		X	X		
491	CBVT-1107() Signal Generator			X			
512	2 Speed Ventilation Fan		X	X			
514	A/C Condenser			X			
514	A/C Compressor	X	X	X			
514	A/C Chilled Water Pump			X			
521	Fire Pump	X	X	X	X	X	X
524	A/C Plant SW Circ Pump		X	X			
524	Refrigeration SW Circ Pump			X			
529	Bilge & FO Tank Stripping Pump			X			X
529	Main Drain Ejector			X			
531	Distiller SW Feed Pump		X	X			
531	Distilling Plant		X	X	X	X	
531	Main Overboard Brine Pump		X	X			
532	AN/SPG-55 Cooling Water Pump	X	X	X		X	X
532	Sonar Transmitter Cooler			X			
533	Ships Service Fresh Water Pump			X			
534	Fresh Water Drain Pump		X	X		X	
534	Auxiliary Steam 3" (1500 PSI) Gate Valve			X			
534	600-150 PSI Steam Reducing Valve			X			
534	1200-600 PSI Steam Reducing Valve		X	X	X		
551	HP Air Dehydrator						X
551	HP Air Compressor	X	X	X	X		X
551	LP Air Dehydrator					X	
551	LP Air Compressor	X	X	X	X		
581	Anchor						X
581	Anchor Windlass			X			
583	Boat Handling Winch					X	
583	Personnel Boat		X	X			
583	Utility Boat			X			
583	Motor Whaleboat			X	X		
661	Typewriter			X			
711	MK-33 3"/50 Twin Mount						X
711	MK-2 Loader		X	X	X	X	
711	MK-40 Amplifier	X					
721	MK-10 Terrier Launcher System	X	X	X	X	X	
721	ASROC Launcher						X
721	MK-7 Carriage (ASROC)		X	X	X	X	
721	MK-7 Guide (ASROC)	X			X		
721	ASROC Loading Crane			X	X	X	X
722	Missile Transfer Carriage		X		X		
729	AN/SPM-9 Terrier Test Set	X					
729	AN/SPM-17 Radar Test Set	X					
750	MK-46 Torpedo			X			
750	MK-44 Torpedo			X			
751	MK-32 Torpedo Tube		X	X	X		
799	Tools-Terrier Launching System				X		

APPENDIX B

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST
MAINTENANCE BURDEN FACTOR (MBF) ORDER

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APPENDIX B

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE BURDEN FACTOR ORDER

EQUIPMENT NOMENCLATURE	SMBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
AN/SPG-551 () RADAR SET	482	1	44.8410	230	100.00
MAIN BOILERS	221	2	14.8420	106	100.00
FIRE PUMP	521	3	5.7451	55	100.00
MAIN FEED PUMP	255	4	3.8002	23	100.00
SHIPS SERVICE TURBINE GENERATOR	311	5	2.6782	22	100.00
AN/SPS-431 () 2D AIR SEARCH RADAR	452	6	4.4223	43	75.00
FORCED DRAFT BLOWERS	251	7	2.3452	17	100.00
AN/SQS-231 () SONAR SET	461	8	3.8764	26	75.00
AN/SRC-201 () RADIO SET	441	8	3.7997	27	75.00
AN/SRC-311 () RADIO SET	441	10	1.2704	24	100.00
MK-19 GYRO COMPASS	426	11	2.7012	12	100.00
AN/SRC-161 () COMH CENTRAL	441	12	2.4921	19	75.00
AN/MLR-11 () ECM RECEIVING SET	472	13	1.5303	23	75.00
MK-29 GUNSIGHT	482	14	2.1916	14	75.00
MAIN CONDENSATE PUMP	255	15	1.6670	10	100.00
AN/SPS-481 () 3D AIR SEARCH RADAR	453	16	16.4510	97	50.00
AN/SPG-501 () RADAR SET	482	16	1.9081	13	75.00
EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	18	1.1614	15	75.00
CP-6421 () USQ-20(V) DIGITAL COMPUTER	412	19	.8880	23	75.00
HP/LP TURBINES	231	20	1.6141	12	75.00
MK-2 LOADER	711	20	.7183	14	100.00
MK-10 TERRIER LAUNCHER SYSTEM	721	22	6.0829	23	50.00
AN/URD-4 () DIRECTION FINDER SET	441	23	.9074	15	75.00
FUEL OIL SERVICE PUMP	261	24	2.5946	32	50.00
PERSONNEL BOAT	583	25	2.8233	7	75.00
AN/SPG-55 COOLING WATER PUMP	532	26	.9958	12	75.00
AN/ULQ-61 () COUNTERMEASURES SET	471	27	2.0809	30	50.00
MK-33 3IN/50 TWIN MOUNT	711	27	.8943	13	75.00
HP AIR COMPRESSOR	551	29	1.7765	5	100.00
AN/SRM-61 () TACAN	423	30	1.3481	23	50.00
AN/URC-32 () RADIO SET	441	30	2.0731	15	50.00
MK-53 ATTACK CONSOLE	483	32	1.3169	7	75.00
AN/SPS-101 () SURFACE SEARCH RADAR	451	33	.9439	15	50.00
R-10511 () URR RADIO RECEIVER	441	33	2.7903	27	25.00
ASROC LOADING CRANE	722	35	.4544	9	100.00
MAIN CIRCULATING PUMP	256	36	.4623	8	100.00
MAIN FEED BOOSTER PUMP	255	36	1.9459	9	50.00
AN/UYA-4(V) DATA DISPLAY GROUP	411	38	.8722	3	100.00
FRESH WATER DRAIN PUMP	534	39	.5825	8	75.00
RD-243/USQ-20(V) RECORDER-REPRODUCER	412	40	.4892	11	75.00

APPENDIX B

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE BURDEN FACTOR ORDER

EQUIPMENT NOMENCLATURE	SMBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
MOTOR WHALEBOAT	583	40	.8483	5	75.00
MC-2 PLOTTER	426	42	.6549	4	100.00
MK-7 CARRIAGE (ASROC)	721	43	.7070	6	75.00
DA-7979/UVA-4 PPI CONSOLE	411	44	2.4783	20	25.00
LUBE OIL PURIFIER	264	45	.9094	10	50.00
MAIN LUBE OIL SERVICE STANDBY PUMP	262	46	1.3500	2	75.00
AN/SPA-25() RADAR PPI	411	47	.6526	5	75.00
MK-119 COMPUTER	482	48	2.5364	12	25.00
MAIN STEAM 6IN (1500 PSI) GATE VALVE	253	49	.6134	3	100.00
AN/SPA-74() RADAR INDICATING GROUP	411	50	.6624	12	50.00
MK-32 TORPEDO TUBE	751	50	.9917	1	100.00
AN/MRT-21 () RADIO TRANSMITTER	441	52	.7019	11	50.00
ACC/FWC SYSTEM	221	53	.5385	13	50.00
UTILITY BOAT	583	54	.8625	2	75.00
AUXILIARY CONDENSATE PUMP	255	55	.5454	2	100.00
30 KW 400 HZ MG SET	314	56	.6450	9	50.00
MK-7 GUIDE (ASROC)	721	57	.7257	2	75.00
DISTILLING PLANT	531	58	2.0751	8	25.00
BILGE & FO TANK STRIPPING PUMP	529	59	.6252	2	75.00
AN/URT-23() (V) RADIO TRANSMITTER	441	60	.6016	23	25.00
DISTILLER SW FEED PUMP	531	61	.7723	1	75.00
MK-24 TDT	482	62	1.1632	0	75.00
AN/UPX-11() INTERROGATOR SET	455	63	.7399	12	25.00
PROPULSION SHAFT SEAL	243	64	.4635	3	75.00
AUXILIARY GLAND CONDENSER	254	65	.4937	2	75.00
A/C PLANT SW CIRC PUMP	524	66	1.1284	2	50.00
T-MK-6 FANFARE WINCH	473	67	.3521	2	100.00
DEAD RECKONING ANALYZER INDICATOR	426	68	.7313	8	25.00
1200-600 PSI STEAM REDUCING VALVE	534	68	.4543	2	75.00
LIME SHAFT BEARING ASSY	244	70	.3718	3	75.00
AN/UQR-11 () FATHOMETER	424	70	.3197	2	100.00
200 KW 400 HZ MG SET	314	72	.2236	6	75.00
ASROC LAUNCHER	721	73	.3910	1	100.00
MFP ROOT STEAM VALVES	253	74	.2882	2	100.00
LP AIR COMPRESSOR	551	74	1.1550	1	50.00
60 KW 400 HZ MG SET	314	76	.4415	5	50.00
A/C COMPRESSOR	514	76	1.0094	4	25.00
AN/WA-31 () AMPLIFIER GROUP	472	78	.3950	6	50.00
AS-899() 1/5LR OF ANTENNA	472	79	.2143	5	75.00
AN/URC-91 () RADIO SET	441	80	1.8346	5	.00

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE BURDEN FACTOR ORDER

EQUIPMENT NOMENCLATURE	SMBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
CP-789/UWK DIGITAL COMPUTER	412	81	.4380	1	75.00
INTERCOM LOUDSPEAKERS	433	82	.5062	0	75.00
AUXILIARY (SSTG) GLAND CONDENSER	254	83	.4220	12	25.00
AN/UCC-61) TTY PRINTER	445	83	.4935	0	75.00
MK-25 FCS RADAR ANTENNA MOUNT	482	85	.4886	3	50.00
BOAT HANDLING WINCH	583	86	.1257	7	75.00
DIAL TELEPHONE SWITCHBOARD	432	87	.5387	2	50.00
CV-2036/USO-201V) DIGITAL CONVERTER	412	88	.5782	11	.00
UNDERWATER LOG TRANSMITTER	426	89	.3752	4	50.00
AUXILIARY STEAM 3IN (1500 PSI) GATE VALVE	534	90	.3322	1	75.00
MK-3 BINOCULARS	421	91	.7711	0	50.00
UNDERWATER LOG RODMETER	426	92	.2063	8	50.00
AN/SRC-211) RADIO SET	441	92	.5548	1	50.00
HP AIR DEHYDRATOR	551	92	.1487	2	100.00
AN/UCC-251) TTY SET	445	95	.7243	0	50.00
600-150 PSI STEAM REDUCING VALVE	534	96	.3598	0	75.00
LP AIR DEHYDRATOR	551	96	.1930	8	50.00
AN/SRC-231 (1V) RADIO SET	441	98	.4772	8	.00
DEGAUSSING SWITCHBOARD	475	99	.0996	4	75.00
MAIN LUBE OIL SERVICE PUMP	262	100	.1739	2	75.00
A/C CHILLED WATER PUMP	514	101	.5356	2	25.00
MISSILE TRANSFER CARRIAGE	722	101	.2985	3	50.00
AN/SPH-9 TERRIER TEST SET	729	101	.2222	1	75.00
DEAERATING FEED TANK	255	104	.4511	1	50.00
MK-1 DIRECTOR PEDESTAL	482	105	.3550	6	25.00
AN/SRN-121) TACAN	423	106	.1170	8	50.00
WIND SPEED & DIRECTION TRANSMITTER	437	107	.2157	4	50.00
AN/MRR-21) RADIO RECEIVING SET	441	108	.1981	5	50.00
BURNERS & REGISTERS	221	109	.4754	0	50.00
MOTOS 60 KW 400 HZ MG SET (PU-655/U)	314	110	.1858	5	50.00
TC SWITCHBOARD(FWD & AFT)	431	111	.1924	1	75.00
BOILER SAFETY VALVES	221	112	.3518	1	50.00
AN/SLK-12 COUNTERMEASURES SET	472	112	.0863	7	50.00
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	114	.2479	2	50.00
AN/UCC-11) TELEGRAPH TERMINAL	445	114	.0754	2	75.00
TSEC/KW-7	446	116	.3496	4	25.00
AUXILIARY CIRCULATING PUMP	256	117	.7916	0	25.00
SALINITY CELL	437	117	.6773	2	.00
MK-22 FCS AMPLIFIER CONSOLE	482	117	.2103	3	50.00
FUEL OIL DUPLEX STRAINER	261	120	.2973	5	25.00

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE BURDEN FACTOR ORDER

EQUIPMENT NOMENCLATURE	SWBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
AM-3790()/SRC-23(V) RF AMPLIFIER	441	121	.2858	9	.00
AN/UQC-11() UNDERWATER TELEPHONE	442	122	.1282	4	50.00
ROTARY SOOT BLOWERS	221	123	.1714	0	75.00
16MM MOVIE PROJECTOR	434	123	1.0237	0	.00
AN/VRC-46() RADIO SET	441	125	.4654	1	25.00
PORT FUEL OIL SERVICE PUMP	261	126	.2076	6	25.00
AN/SPM-17 RADAR TEST SET	729	127	.3212	0	50.00
A/C CONDENSER	514	128	.2318	1	50.00
MK-5 TRAIN PARALLAX CORRECTOR	481	129	.0786	4	50.00
ANCHOR	581	129	.0196	1	75.00
AN/SRA-22() ANTENNA COUPLER GROUP	441	131	.3625	4	.00
MK-40 AMPLIFIER	711	132	.3239	3	25.00
AN/USQ-20(V) GENERAL COMPUTER	412	133	.0406	4	50.00
ANCHOR WINDLASS	581	133	.2892	3	25.00
PROPELLER ASSY	245	135	.1244	0	75.00
AN/USH-28() CSCILLOSCOPE	491	136	.8241	0	.00
MK-75 DATA CONVERTER	482	137	.1314	13	.00
AN/UPX-23 INTERROGATOR SET	455	138	.1246	14	.00
AN/USQ-36() DATA TERMINAL SET	415	139	.1906	5	25.00
AN/UXH-21() FACSIMILE RECORDER SET	445	140	.0784	0	75.00
AN/UPX-17() TRANSPONDER	455	141	.2227	6	.00
CHELSEA CLOCK	421	142	.6561	0	.00
TRANSDUCERS (AN/SQS-23() SONAR SET)	461	143	.0079	0	75.00
AN/SPS-39() 30 AIR SEARCH RADAR	453	144	.6291	0	.00
MAIN OVERBOARD BRINE PUMP	531	145	.4371	0	25.00
AN/SPA-42() ELECTRONIC SYNCHRONIZER	482	146	.1684	1	50.00
2-SPEED VENTILATION FAN	512	147	.3183	1	25.00
OA-3953/SYA-4(V) CONSOLE	411	148	.3976	0	25.00
MK-1 AIR SUPPLY UNIT	481	149	.1708	7	.00
MFP DISCHARGE RELIEF VALVE	255	150	.2016	0	50.00
MK-46 TORPEDO	750	151	.5178	0	.00
MK-152 DIGITAL COMPUTER	482	152	.1106	8	.00
AN/MRC-11() RADIO SET	441	153	.2676	3	.00
TSEC/KG-22	446	153	.0872	8	.00
MAIN REDUCTION GEARS	241	155	.4129	1	.00
AN/SSQ-29() DATA TERMINAL SET	415	156	.3050	2	.00
AM-3924()/URT-23 RF AMPLIFIER	441	156	.0645	9	.00
CV-2517() DIGITAL DATA CONVERTER	422	158	.1687	6	.00
SONAR TRANSMITTER COOLER	252	159	.1984	2	25.00
PUSPULSION GLAND EXHAUSTER	254	160	.2477	1	25.00

APPENDIX B
CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE BURDEN FACTOR ORDER

EQUIPMENT NOMENCLATURE	SWBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
CBTV-5451 () OSCILLOSCOPE	491	160	.4749	0	.00
SHIPS SERVICE FRESH WATER PUMP	533	162	.3210	0	25.00
AN/USM-1171 () OSCILLOSCOPE	491	163	.4612	0	.00
MK-10 FCS AMPLIFIER	482	164	.1376	0	50.00
T-827/URT-23 TRANSMITTER	441	165	.0806	7	.00
AN/USM-1401 () OSCILLOSCOPE	491	166	.4344	0	.00
SFTE AN/SPG-55 RADAR	482	167	.4240	0	.00
EMERGENCY GAS TURBINE GENERATOR CIRCULATING PUMP	342	168	.0862	0	50.00
MAIN DRAIN EJECTOR	529	169	.2412	0	25.00
TSEC/KY-8 AUTO	446	170	.2294	0	.00
ALIDADE	421	171	.3476	0	.00
AN/UPA-241 () DECODER SET	455	172	.3129	0	.00
SOUND POWERED TELEPHONE CKTS	432	173	.2061	0	25.00
MK-44 TORPEDO	750	173	.2997	0	.00
MK-19 RECORDER	412	175	.0353	4	.00
REFRIGERATION SW CIRC PUMP	524	176	.2982	0	.00
AN/URA-381 () ANTENNA COUPLER GROUP	441	177	.0162	4	.00
CV-1169/SRC-116 ANTENNA COUPLER	441	178	.2081	1	.00
MK-4 MODO WDE	482	179	.2678	0	.00
AN/USM-1161 () MULTIMETER	491	180	.2542	0	.00
CBVT-11071 () SIGNAL GENERATOR	491	181	.2481	0	.00
TOOLS-TERRIER LAUNCHING SYSTEM	799	182	.2295	0	.00
TYPEWRITER	661	183	.2152	0	.00
AM-4530/UHQ-61 () PF AMPLIFIER	471	184	.2148	0	.00
Y-1004/SRC-23(TV) RADIO TRANSMITTER	441	185	.1867	2	.00
600 PSI BIMETALLIC STEAM TRAP	258	186	.1306	0	.00

APPENDIX C

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST
SWBS ORDER

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SHIPS WORK BREAKDOWN STRUCTURE ORDER

EQUIPMENT NOMENCLATURE	SWBS	MBE RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
MAIN BOILERS	221	2	14.8420	106	100.00
BURNERS & REGISTERS	221	109	.4754	0	50.00
BOILER SAFETY VALVES	221	112	.3518	1	50.00
ROTARY SOOT BLOWERS	221	123	.1714	0	75.00
ACC/FMC SYSTEM	221	53	.5385	13	50.00
HP/LP TURBINES	231	20	1.6141	12	75.00
MAIN REDUCTION GEARS	241	155	.4129	1	.00
PROPULSION SHAFT SEAL	243	64	.4635	3	75.00
LINE SHAFT BEARING ASSY	244	70	.3718	3	75.00
PROPELLER ASSY	245	135	.1244	0	75.00
FORCED DRAFT BLOWERS	251	7	2.3452	17	100.00
MFP ROOT STEAM VALVES	253	74	.2882	2	100.00
MAIN STEAM 6IN (1500 PST) GATE VALVE	253	49	.6134	3	100.00
AUXILIARY GLAND CONDENSER	254	65	.4937	2	75.00
PROPULSION GLAND EXHAUSTER	254	160	.2477	1	25.00
AUXILIARY (SSTG) GLAND CONDENSER	254	83	.4220	12	25.00
MAIN FEED PUMP	255	4	3.8002	23	100.00
MAIN CONDENSATE PUMP	255	15	1.6670	10	100.00
MAIN FEED BOOSTER PUMP	255	36	1.9459	9	50.00
AUXILIARY CONDENSATE PUMP	255	55	.5454	2	100.00
DEAERATING FEED TANK	255	104	.4511	1	50.00
MFP DISCHARGE RELIEF VALVE	255	150	.2016	0	50.00
MAIN CIRCULATING PUMP	256	36	.4623	8	100.00
AUXILIARY CIRCULATING PUMP	256	117	.7916	0	25.00
600 PST BIMETALLIC STEAM TRAP	258	186	.1306	0	.00
PORT FUEL OIL SERVICE PUMP	261	126	.2076	6	25.00
FUEL OIL SERVICE PUMP	261	24	2.5946	32	50.00
FUEL OIL DUPLEX STRAINER	261	120	.2973	5	25.00
MAIN LUBE OIL SERVICE PUMP	262	100	.1739	2	75.00
MAIN LUBE OIL SERVICE STANDBY PUMP	262	46	1.3500	2	75.00
LUBE OIL PURIFIER	264	45	.9094	10	50.00
SHIPS SERVICE TURBINE GENERATOR	311	5	2.6782	22	100.00
EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	18	1.1614	15	75.00
60 KW 400 HZ MG SET	314	76	.4415	5	50.00
NTDS 60 KW 400 HZ MG SET (PU-655/U)	314	110	.1858	5	50.00
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	114	.2479	2	50.00
30 KW 400 HZ MG SET	314	56	.6450	9	50.00
200 KW 400 HZ MG SET	314	72	.2236	6	75.00
EMERGENCY GAS TURBINE GENERATOR CIRCULATING PUMP	342	168	.0862	0	50.00
AN/SPA-251 J RADAR PPI	411	47	.6526	5	75.00

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APPENDIX C

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SHIPS WORK BREAKDOWN STRUCTURE ORDER

EQUIPMENT NOMENCLATURE	SHBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
AN/SPA-74() RADAR INDICATING GROUP	411	50	.6624	12	50.00
OA-3953/SVA-4(V) CONSOLE	411	148	.3976	0	25.00
AN/UYA-4(V) DATA DISPLAY GROUP	411	38	.8722	3	100.00
OA-7979/UYA-4 PPI CONSOLE	411	44	2.4783	20	25.00
MK-19 RECORDER	412	175	.0353	4	.00
CV-2517() DIGITAL DATA CONVERTER	412	158	.1687	6	.00
GP-789/UYK DIGITAL COMPUTER	412	81	.4380	1	75.00
AN/USQ-20(V) GENERAL COMPUTER	412	133	.0406	4	50.00
CP-642()/USQ-20(V) DIGITAL COMPUTER	412	19	.8880	23	75.00
CV-2036/USQ-20(V) DIGITAL CONVERTER	412	88	.5782	11	.00
RD-243/USQ-20(V) RECORDER-REPRODUCER	412	40	.4892	11	75.00
AN/SSQ-29() DATA TERMINAL SET	415	156	.3050	2	.00
AN/USQ-36() DATA TERMINAL SET	415	139	.1906	5	25.00
AL IDADE	421	171	.3476	0	.00
MK-3 BINOCULARS	421	91	.7711	0	50.00
CHELSEA CLOCK	421	142	.6561	0	.00
AN/SRR-6() TACAN	423	30	1.3481	23	50.00
AN/SRN-12() TACAN	423	106	.1170	8	50.00
AN/URN-11() FATHOMETER	424	70	.3197	2	100.00
MK-19 GYRO COMPASS	426	11	2.7012	12	100.00
DEAD RECKONING ANALYZER INDICATOR	426	68	.7313	8	25.00
MC-2 PLOTTER	426	42	.6549	4	100.00
UNDERWATER LOG RODMETER	426	92	.2063	8	50.00
UNDERWATER LOG TRANSMITTER	426	89	.3752	4	50.00
TC SWITCHBOARD(FWD & AFT)	431	111	.1924	1	75.00
DIAL TELEPHONE SWITCHBOARD	432	87	.5387	2	50.00
SOUND POWERED TELEPHONE CKTS	432	173	.2061	0	25.00
INTERCOM LOUDSPEAKERS	433	82	.5062	0	75.00
16MM MOVIE PROJECTOR	434	123	1.0237	0	.00
WIND SPEED & DIRECTION TRANSMITTER	437	107	.2157	4	50.00
SALINITY CELL	437	117	.6773	2	.00
AN/SRC-23() (V) RADIO SET	441	98	.4772	8	.00
AR-3790()/SRC-23(V) RF AMPLIFIER	441	121	.2858	9	.00
T-1004/SRC-23(V) RADIO TRANSMITTER	441	185	.1867	2	.00
AN/SRA-22() ANTENNA COUPLER GROUP	441	131	.3625	4	.00
AN/SRC-16() COMM CENTRAL	441	12	2.4921	19	75.00
CV-1169/SRC-16 ANTENNA COUPLER	441	176	.2081	1	.00
AN/SRC-20() RADIO SET	441	8	3.7997	27	75.00
AN/SRC-21() RADIO SET	441	92	.5548	1	50.00
AN/SRC-31() RADIO SET	441	10	1.2704	24	100.00

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SHIPS WORK BREAKDOWN STRUCTURE ORDER

EQUIPMENT NOMENCLATURE	SWBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
AN/URC-91) RADIO SET	441	80	1.8346	5	.00
AN/URC-321) RADIO SET	441	30	2.0731	15	50.00
AN/URD-41) DIRECTION FINDER SET	441	23	.9074	15	75.00
AN/URT-231) VVI RADIO TRANSMITTER	441	60	.6016	23	25.00
AM-39241) URT-23 RF AMPLIFIER	441	156	.0645	9	.00
T-827/URT-23 TRANSMITTER	441	165	.0806	7	.00
AN/VRC-461) RADIO SET	441	125	.4654	1	25.00
AN/WRC-11) RADIO SET	441	153	.2676	3	.00
AN/WRR-21) RADIO RECEIVING SET	441	108	.1981	5	50.00
AN/WRT-21) RADIO TRANSMITTER	441	52	.7019	11	50.00
R-10511) URR RADIO RECEIVER	441	33	2.7903	27	25.00
AN/URA-381) ANTENNA COUPLER GROUP	441	177	.0162	4	.00
AN/UOC-11) UNDERWATER TELEPHONE	442	122	.1282	4	50.00
AN/UGC-61) TTY PRINTER	445	83	.4935	0	75.00
AN/UGC-251) TTY SET	445	95	.7243	0	50.00
AN/UXH-21) FACSIMILE RECORDER SET	445	140	.0784	0	75.00
AN/UCC-11) TELEGRAPH TERMINAL	445	114	.0754	2	75.00
TSEC/KY-8 AUTO	446	170	.2294	0	25.00
TSEC/KW-7	446	116	.3696	4	25.00
TSEC/KG-22	446	153	.0872	8	.00
AN/SPS-101) SURFACE SEARCH RADAR	451	33	.9439	15	50.00
AN/SPS-431) 2D AIR SEARCH RADAR	452	6	4.4223	43	75.00
AN/SPS-391) 3D AIR SEARCH RADAR	453	144	.6291	0	.00
AN/SPS-481) 3D AIR SEARCH RADAR	453	16	16.4510	97	50.00
AN/OPA-281) DECODER SET	455	172	.3129	0	.00
AN/UPX-111) INTERROGATOR SET	455	63	.7399	12	25.00
AN/UPX-171) TRANSPONDER	455	141	.2227	6	.00
AN/UPX-23 INTERROGATOR SET	455	138	.1246	14	.00
AN/SOS-231) SONAR SET	461	8	3.8764	26	75.00
TRANSDUCERS (AN/SQS-231) SONAR SET)	461	143	.0079	0	75.00
AN/ULQ-61) COUNTERMEASURES SET	471	27	2.0809	30	50.00
AM-4530/ULQ-61) RF AMPLIFIER	471	184	.2148	0	.00
AN/SLR-12 COUNTERMEASURES SET	472	112	.0863	7	50.00
AN/HLA-31) AMPLIFIER GROUP	472	78	.3950	6	50.00
AN/HLR-11) ECM RECEIVING SET	472	13	1.5303	23	75.00
AS-8991)/SLR OF ANTENNA	472	79	.2143	5	75.00
T-MK-6 FANFARE WINCH	473	67	.3521	2	100.00
DEGAUSSING SWITCHBOARD	475	99	.0996	4	75.00
MK-5 TRAIN PARALLAX CORRECTOR	481	129	.0786	4	50.00
MK-1 AIR SUPPLY UNIT	481	149	.1708	7	.00

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SHIPS WORK BREAKDOWN STRUCTURE ORDER

EQUIPMENT NOMENCLATURE	SWBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
MK-75 DATA CONVERTER	482	137	.1314	13	.00
MK-10 FCS AMPLIFIER	482	164	.1376	0	50.00
MK-22 FCS AMPLIFIER CONSOLE	482	117	.2103	3	50.00
MK-25 FCS RADAR ANTENNA MOUNT	482	85	.4886	3	50.00
MK-1 DIRECTOR PEDESTAL	482	105	.3550	6	25.00
MK-29 GUNSIGHT	482	14	2.1916	14	75.00
MK-24 TOT	482	62	1.1632	0	75.00
MK-4 MOD0 WDE	482	179	.2678	0	.00
MK-119 COMPUTER	482	48	2.5364	12	25.00
MK-152 DIGITAL COMPUTER	482	152	.1106	8	.00
AN/SPA-421 () ELECTRONIC SYNCHRONIZER	482	146	.1684	1	50.00
AN/SPG-501 () RADAR SET	482	16	1.9081	13	75.00
AN/SPG-551 () RADAR SET	482	1	44.8410	230	100.00
SFTE AN/SPG-55 RADAR	482	167	.4240	0	.00
MK-53 ATTACK CONSOLE	483	32	1.3169	7	75.00
AN/USM-1161 () MULTIMETER	491	180	.2542	0	.00
AN/USM-1171 () OSCILLOSCOPE	491	163	.4612	0	.00
AN/USM-1401 () OSCILLOSCOPE	491	166	.4344	0	.00
AN/USM-2811 () OSCILLOSCOPE	491	136	.8241	0	.00
CBIV-5451 () OSCILLOSCOPE	491	160	.4749	0	.00
CBVT-11071 () SIGNAL GENERATOR	491	181	.2481	0	.00
2-SPEED VENTILATION FAN	512	147	.3183	1	25.00
A/C CONDENSER	514	128	.2318	1	50.00
A/C COMPRESSOR	514	76	1.0094	4	25.00
A/C CHILLED WATER PUMP	514	101	.5356	3	100.00
FIRE PUMP	521	3	5.7451	55	50.00
A/C PLANT SW CIRC PUMP	524	66	1.1284	2	50.00
REFRIGERATION SW CIRC PUMP	524	176	.2982	0	.00
BILGE & FO TANK STRIPPING PUMP	529	59	.6252	2	75.00
MAIN DRAIN EJECTOR	529	169	.2412	0	25.00
DISTILLER SW FEED PUMP	531	61	.7723	1	75.00
DISTILLING PLANT	531	58	2.0751	8	25.00
MAIN OVERBOARD BRINE PUMP	531	145	.4371	0	25.00
AN/SPG-55 COOLING WATER PUMP	532	26	.9958	12	75.00
SONAR TRANSMITTER COOLER	532	159	.1984	2	25.00
SHIPS SERVICE FRESH WATER PUMP	533	162	.3210	0	25.00
FRESH WATER DRAIN PUMP	534	39	.5825	8	75.00
AUXILIARY STEAM 3IN (1500 PSI) GATE VALVE	534	90	.3322	1	75.00
600-150 PSI STEAM REDUCING VALVE	534	96	.3598	0	75.00
1200-600 PSI STEAM REDUCING VALVE	534	68	.4543	2	75.00

APPENDIX C

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SHIPS WORK BREAKDOWN STRUCTURE ORDER

EQUIPMENT NOMENCLATURE	SBS	MBF RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY ()
HP AIR DEHYDRATOR	551	92	.1487	2	100.00
HP AIR COMPRESSOR	551	29	1.7765	5	100.00
LP AIR DEHYDRATOR	551	96	.1930	8	50.00
LP AIR COMPRESSOR	551	74	1.1550	1	50.00
ANCHOR	581	129	.0196	1	75.00
ANCHOR WINDLASS	581	133	.2892	3	25.00
BOAT HANDLING WINCH	583	86	.1257	7	75.00
PERSONNEL BOAT	593	25	2.8233	7	75.00
UTILITY BOAT	583	54	.8625	2	75.00
MOTOR WHALEBOAT	583	40	.8483	5	75.00
TYPEWRITER	661	183	.2152	0	.00
MK-33 3IN/50 TWIN MOUNT	711	27	.8943	13	75.00
MK-2 LOADER	711	20	.7183	14	100.00
MK-40 AMPLIFIER	711	132	.3239	3	25.00
MK-10 TERRIER LAUNCHER SYSTEM	721	22	6.0829	23	50.00
ASROC LAUNCHER	721	73	.3910	1	100.00
MK-7 CARRIAGE (ASROC)	721	43	.7070	6	75.00
MK-7 GUIDE (ASROC)	721	57	.7257	2	75.00
ASROC LOADING CRANE	722	35	.4544	9	100.00
MISSILE TRANSFER CARRIAGE	722	101	.2985	3	50.00
AN/SPM-9 TERRIER TEST SET	729	101	.2222	1	75.00
AN/SPM-17 RADAR TEST SET	729	127	.3212	0	50.00
MK-46 TORPEDO	750	151	.5178	0	.00
MK-44 TORPEDO	750	173	.2997	0	.00
MK-32 TORPEDO TUBE	751	50	.9917	1	100.00
TOOLS-TERRIER LAUNCHING SYSTEM	799	182	.2295	0	.00

APPENDIX D

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST
MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST
 MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

EQUIPMENT NUMERCLATURE	SWRS	MDS RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (%)
AN/SPG-551 () PADAP SET	482	1	44.8410	230	100.00
AN/SPS-481 () 3C AIR SEARCH RADAR	453	2	16.4510	97	50.00
MAIN BOILERS	221	3	14.8420	106	100.00
MK-10 TERRIER LAUNCHER SYSTEM	721	4	6.0829	23	50.00
FIRE PUMP	521	5	5.7451	55	100.00
AN/SPS-431 () 2D AIR SEARCH RADAR	452	6	4.4223	43	75.00
AN/SOS-231 () SONAR SET	461	7	3.8764	26	75.00
MAIN FEED PUMP	255	8	3.8002	23	100.00
AN/SRC-201 () RADIC SET	441	9	3.7997	27	75.00
PERSONNEL BOAT	583	10	2.8233	7	75.00
H-10511 ()/URK RADIO RECEIVER	441	11	2.7903	27	25.00
SHIPS SERVICE TURBINE GENERATOR	311	12	2.6782	22	100.00
FUEL OIL SERVICE PUMP	261	13	2.5946	32	50.00
MK-119 COMPUTER	482	14	2.5364	12	25.00
AN/SRC-161 () COMM CENTRAL	441	15	2.4921	19	75.00
CA-7479/UYA-4 PPT CONSOLE	411	16	2.4783	20	25.00
FORCED DRAFT BLOWERS	251	17	2.3452	17	100.00
MK-29 GUN SIGHT	482	18	2.1916	14	75.00
AN/DLQ-61 () COUNTERMEASURES SET	471	19	2.0809	30	50.00
DISTILLING PLANT	531	20	2.0751	8	25.00
AN/URC-321 () RADIC SET	441	21	2.0731	15	50.00
MK-19 GYRO COMPASS	426	22	2.7012	12	100.00
MAIN FEED BOOSTER PUMP	255	23	1.9459	9	50.00
AN/SPG-501 () RADAR SET	482	24	1.9081	13	75.00
AN/URC-91 () RADIO SET	441	25	1.8346	5	.00
HP AIR COMPRESSOR	551	26	1.7765	5	100.00
MAIN CONDENSATE PUMP	255	27	1.6670	10	100.00
HP/LP TURBINES	231	28	1.6141	12	75.00
AN/MLR-11 () ECM RECEIVING SET	472	29	1.5303	23	75.00
MAIN LUBE OIL SERVICE STANDBY PUMP	262	30	1.3500	2	75.00
AN/SPN-61 () TALAN	423	31	1.3481	23	50.00
MK-53 ATTACK CONSOLE	483	32	1.3169	7	75.00
AN/SRC-311 () RADIO SET	441	33	1.2704	24	100.00
MK-24 TDT	482	34	1.1632	0	75.00
EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	35	1.1614	15	75.00
LP AIR COMPRESSOR	551	36	1.1550	1	50.00
A/C PLANT SW CIRC PUMP	524	37	1.1284	2	50.00
16MM MOVIE PROJECTOR	434	38	1.0237	0	.00
A/C COMPRESSOR	514	39	1.0094	4	25.00
AN/SPG-55 COOLING WATER PUMP	532	40	.9958	12	75.00

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CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST
 MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

EQUIPMENT NOMENCLATURE	SWBS	MDS PANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (%)
MK-32 TORPEDO TUBE	751	41	.9917	1	100.00
AN/SPS-101) SURFACE SEARCH RADAR	451	42	.9439	15	50.00
LUBE OIL PURIFIER	264	43	.9094	10	50.00
AN/URD-41) DIRECTION FINDER SET	441	44	.9074	15	75.00
MK-33 3IN/50 TWIN MOUNT	711	45	.8943	13	75.00
CP-642(1/USQ-20(V) DIGITAL COMPUTER	412	46	.8880	23	75.00
AN/UYA-4(V) DATA DISPLAY GROUP	411	47	.8722	3	100.00
UTILITY BOAT	583	48	.8625	2	75.00
MOTOR WHALEBOAT	583	49	.8483	5	75.00
AN/USM-2811) OSCILLOSCOPE	491	50	.8241	0	.00
AUXILIARY CIRCULATING PUMP	256	51	.7916	0	25.00
DISTILLER SW FEED PUMP	531	52	.7723	1	75.00
MK-3 BINOCLULARS	421	53	.7711	0	50.00
AN/UPK-111) INTERROGATOR SET	455	54	.7399	12	25.00
DEAD RECKONING ANALYZER INDICATOR	426	55	.7313	8	25.00
MK-7 GUIDE (ASRCC)	721	56	.7257	2	75.00
AN/UUC-251) TTY SFT	445	57	.7243	0	50.00
MK-2 LOADER	711	58	.7183	14	100.00
MK-7 CARRIAGE (ASRCC)	721	59	.7070	6	75.00
AN/MRT-21) RADIO TRANSMITTER	441	60	.7019	11	50.00
SALINITY CELL	437	61	.6773	2	.00
AN/SPA-741) RADAR INDICATING GROUP	411	62	.6624	12	50.00
CHELSEA CLOCK	421	63	.6561	0	.00
NC-2 PLOTTER	426	64	.6549	4	100.00
AN/SPA-251) RADAR PFI	411	65	.6526	5	75.00
30 KW 400 HZ MG SET	314	66	.6450	9	50.00
AN/SPS-391) 3C AIR SEARCH RADAR	453	67	.6291	0	.00
BILGE & FO TANK STRIPPING PUMP	529	68	.6252	2	75.00
MAIN STEAM BIN (1500 PSI) GATE VALVE	253	69	.6134	3	100.00
AN/URT-231 (V) RADIO TRANSMITTER	441	70	.6016	23	25.00
FRESH WATER DRAIN PUMP	534	71	.5825	8	75.00
CV-2036/USC-201V) DIGITAL CONVERTER	412	72	.5782	11	.00
AN/SRC-211) RADIO SET	441	73	.5548	1	50.00
AUXILIARY CONDENSATE PUMP	255	74	.5454	2	100.00
DIAL TELEPHONE SWITCHBOARD	421	75	.5387	2	50.00
ACC/FWC SYSTEM	221	76	.5385	13	50.00
A/C CHILLED WATER PUMP	514	77	.5356	3	25.00
MK-46 TORPEDO	750	78	.5178	0	.00
INTERCOM LOUDSPEAKERS	433	79	.5062	0	75.00
AUXILIARY GLAND CONDENSER	254	80	.4937	2	75.00

APPENDIX D
CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST
MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

EQUIPMENT NOMENCLATURE	SWBS	MDS RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (x)
AN/UGC-61 () TTY PRINTER	445	81	.4935	0	75.00
RD-243USQ-20(V) RECORDER-REPRODUCER	412	82	.4892	11	75.00
MK-25 FCS RADAR ANTENNA MOUNT	482	83	.4886	3	50.00
AN/SRC-23 () (V) RADIO SET	441	84	.4772	8	.00
BURNERS & REGISTERS	221	85	.4754	0	50.00
CBTV-5451 () OSCILLOSCOPE	491	86	.4749	0	.00
AN/VRG-461 () RADIO SET	441	87	.4654	1	25.00
PROPULSION SHAFT SEAL	243	88	.4635	3	75.00
MAIN CIRCULATING PUMP	256	89	.4623	8	100.00
AN/USM-1171 () OSCILLOSCOPE	491	90	.4612	0	.00
ASROC LOADING CRANE	722	91	.4544	9	100.00
1200-600 PSI STEAM REDUCING VALVE	534	92	.4543	2	75.00
DEAERATING FEED TANK	255	93	.4511	2	50.00
60 KW 400 HZ MG SET	314	94	.4415	5	50.00
CP-789/UJK DIGITAL COMPUTER	412	95	.4380	1	75.00
MAIN OVERBOARD BRINE PUMP	531	96	.4371	0	25.00
AN/USM-1401 () OSCILLOSCOPE	491	97	.4344	0	.00
SETE AN/SPG-55 RADAR	482	98	.4240	0	.00
AUXILIARY (SSTG) GLAND CONDENSER	254	99	.4220	12	25.00
MAIN REDUCTION GEARS	241	100	.4129	1	.00
DA-3953/SYA-41(V) CONSOLE	411	101	.3976	0	25.00
AN/WLA-31 () AMPLIFIER GROUP	472	102	.3950	6	50.00
ASROC LAUNCHER	721	103	.3910	1	100.00
UNDERWATER LOG TRANSMITTER	426	104	.3752	4	50.00
LINE SHAFT BEARING ASSY	244	105	.3718	3	75.00
AN/SRA-22 () ANTENNA COUPLER GROUP	441	106	.3625	4	.00
600-150 PSI STEAM REDUCING VALVE	534	107	.3598	0	75.00
MK-1 DIRECTOR PEDESTAL	482	108	.3550	6	25.00
T-MK-6 FANFARE WINCH	473	109	.3521	2	100.00
BOILER SAFETY VALVES	221	110	.3518	1	50.00
TSEC/KW-7	446	111	.3496	4	25.00
ALIDADE	421	112	.3476	0	.00
AUXILIARY STEAM 3IN (1500 PSI) GATE VALVE	534	113	.3322	1	75.00
MK-40 AMPLIFIER	711	114	.3239	3	25.00
AN/SPM-17 RADAR TEST SET	729	115	.3212	0	50.00
SHIPS SERVICE FRESH WATER PUMP	533	116	.3210	0	25.00
AN/UON-11 () FATHOMETER	424	117	.3197	2	100.00
2-SPEED VENTILATION FAN	512	118	.3183	1	25.00
AN/ZUPA-24 () DECODER SET	455	119	.3129	0	.00
AN/SSQ-29 () DATA TERMINAL SET	415	120	.3050	2	.00

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

EQUIPMENT NOMENCLATURE	SMDS	MDS RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (Y)
MK-44 TORPEDO	750	121	.2997	0	.00
MISSILE TRANSFER CARRIAGE	722	122	.2995	3	50.00
REFRIGERATION SW CIRC PUMP	524	123	.2982	0	.00
FUEL OIL DUPLEX STRAINER	261	124	.2973	5	25.00
ANCHOR WINDLASS	581	125	.2892	3	25.00
MFP ROOT STEAM VALVES	253	126	.2882	2	100.00
AM-3790(1)/SRC-23(V) RF AMPLIFIER	441	127	.2858	9	.00
MK-4 MODO MDE	482	128	.2678	0	.00
AN/MRC-11) RADIO SET	441	129	.2676	3	.00
AN/USM-116(1) MULTIMETER	491	130	.2542	0	.00
CBVT-1107(1) SIGNAL GENERATOR	491	131	.2481	0	.00
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	132	.2479	2	50.00
PROPULSION GLAND EXHAUSTER	254	133	.2477	1	25.00
MAIN DRAIN EJECTOR	529	134	.2412	0	25.00
A/C CONDENSER	514	135	.2318	1	50.00
TOOLS-TERRIER LAUNCHING SYSTEM	799	136	.2295	0	.00
TSEC/KY-B AUTO	446	137	.2294	0	25.00
200 KW 400 HZ MG SET	314	138	.2236	6	75.00
AN/UPX-17(1) TRANSPONDER	455	139	.2227	6	.00
AN/SPM-9 TERRIER TEST SET	729	140	.2222	1	75.00
WIND SPEED & DIRECTION TRANSMITTER	437	141	.2157	4	50.00
TYPEWRITER	661	142	.2152	0	.00
AM-4530/UHQ-6(1) PF AMPLIFIER	471	143	.2148	0	.00
AS-895(1)/SLK DF ANTENNA	472	144	.2143	5	75.00
MK-22 FCS AMPLIFIER CONSOLE	482	145	.2103	3	50.00
CV-1169/SRC-16 ANTENNA COUPLER	441	146	.2081	1	.00
PORT FUEL OIL SERVICE PUMP	261	147	.2076	6	25.00
UNDERWATER LOG ROOMETER	426	148	.2063	8	50.00
SOUND POWERED TELEPHONE CATS	432	149	.2061	0	50.00
MFP DISCHARGE RELIEF VALVE	255	150	.2016	0	50.00
SONAR TRANSMITTER COOLER	532	151	.1984	2	25.00
AN/MRR-2(1) RADIO RECEIVING SET	441	152	.1981	5	50.00
LP AIR DEHYDRATOR	441	153	.1930	8	50.00
IC SWITCHBOARD(FWD & AFT)	431	154	.1924	1	75.00
AN/USQ-361) DATA TERMINAL SET	415	155	.1906	5	25.00
T-1004/SRC-23(V) RADIO TRANSMITTER	441	156	.1867	2	.00
MTDS 60 KW 400 HZ MG SET (PU-655/U)	314	157	.1858	5	50.00
MAIN LUBE OIL SERVICE PUMP	262	158	.1739	2	75.00
ROTARY SOOT BLOWERS	221	159	.1714	0	75.00
MK-1 AIR SUPPLY UNIT	481	160	.1708	7	.00

APPENDIX D

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST
 MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

EQUIPMENT NOMENCLATURE	SWBS	MDS PANK	MDS FACTOR	NO. OF CASKEPTS	OVERHAUL FREQUENCY (Y)
LV-25171 () DIGITAL DATA CONVERTER	412	161	.1687	6	.00
AN/SPA-42() ELECTRONIC SYNCHRONIZER	482	162	.1684	1	50.00
HP AIR DEHYDRATOR	551	163	.1487	2	100.00
MK-10 FCS AMPLIFIER	482	164	.1376	0	50.00
MK-75 DATA CONVERTER	482	165	.1314	13	.00
600 PSI BIMETALLIC STEAM TRAP	258	166	.1306	0	.00
AN/UQC-11 () UNDERWATER TELEPHONE	442	167	.1282	4	50.00
BOAT HANDLING WINCH	583	168	.1257	7	75.00
AN/UPX-23 INTERROGATOR SET	455	169	.1246	14	.00
PROPELLER ASSY	245	170	.1244	0	75.00
AN/SMN-121 () TACAN	423	171	.1170	8	50.00
MK-152 DIGITAL COMPUTER	482	172	.1106	8	.00
DEGAUSSING SWITCHBOARD	475	173	.0996	4	75.00
TSEC/KG-22	446	174	.0872	8	.00
AN/SLH-12 COUNTERMEASURES SET	472	175	.0863	7	50.00
EMERGENCY GAS TURBINE GENERATOR CIRCULATING PUMP	342	176	.0862	0	50.00
T-827/URT-23 TRANSMITTER	441	177	.0806	7	.00
MK-5 TRAIN PARALLAX CORRECTOR	481	178	.0786	4	50.00
AN/UXH-21 () FACSIMILE RECORDER SET	445	179	.0784	0	75.00
AN/UCC-11 () TELEGRAPH TERMINAL	180	180	.0754	2	75.00
AM-3924() URT-23 RF AMPLIFIER	441	181	.0645	9	.00
AN/USQ-20(V) GENERAL COMPUTER	412	182	.0406	4	50.00
MK-19 RECORDER	412	183	.0353	4	.00
ANCHOR	581	184	.0196	4	75.00
AN/ZURA-38() ANTENNA COUPLER GROUP	441	185	.0162	4	.00
TRANSDUCERS (AN/SCS-23() SONAR SET)	461	186	.0079	0	75.00

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