GEORGE G. SHARP, INC.

100 CHURCH STREET, NEW YORK, NY 10007

October 17, 2003

Mr. James Scheffer
Office of Marine Safety
National Transportation Safety Board
490 L'Enfant Plaza East, S.W.
Washington, D.C. 20594

Subject: ANDREW J. BARBERI – Sea Trial Data

Enclosures: (A) Excerpts from "Trial Report – Staten Island Ferry – ANDREW J. BARBERI"
(B) Principal Characteristics and General Arrangement – ANDREW J. BARBERI

(One (1) Copy of Each)

Dear Mr. Scheffer:

As per your request, we are pleased to forward Enclosures (A) and (B) to assist you in your investigation. If you have any questions or need further information, please call.

Very truly yours,

GEORGE G. SHARP, INC.

Allen Chin (HEC)

Allen Chin
President

AC:cb

cc: Robert Grotell
Jai Therattil
Raj Patel
Joe Albano
Sean McDermott
Tom Young

GEORGE G. SHARP, INC.

MARINE SYSTEMS ANALYSIS & DESIGN

ABS Quality Evaluations, Inc. Management System Certification

Washington Office

ISO 9001

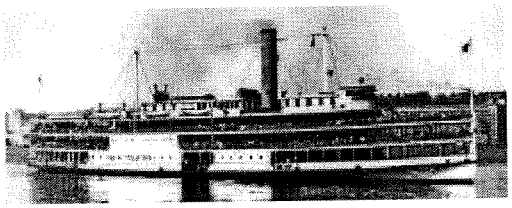
Certificate Number: 33392

History of George G. Sharp, Inc.

1920

Founded by George G. Sharp, Chief Surveyor of the American Bureau of Shipping

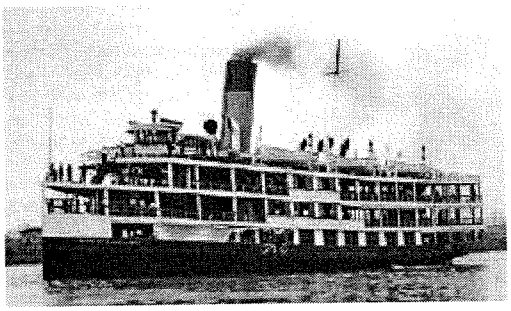
1920's

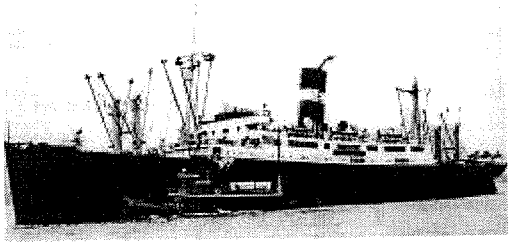


SS Bear Mountain - River excursion side wheeler

State of Delaware & State of Pennsylvania - Delaware River excursion vessels for Wilson Lines

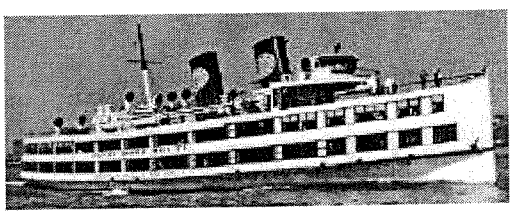
For more on these vessels click here





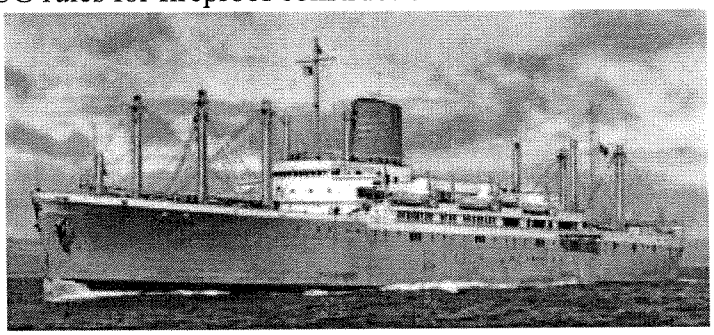
SS Excalibur - One of the "Four Aces" built for American Export Lines

1930's Prototype Hulls C2 & C3 - Designed for the Maritime Commission under the Merchant Marine Act of 1936



SS Sandy Hook - Day steamer for the Central Railroad of New Jersey

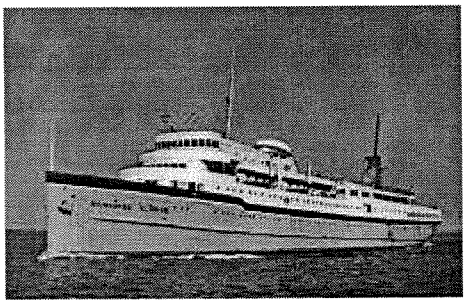
1939 **SS Panama, SS Ancon & SS Cristobal** - First "fireproof" ships, the "World of Tomorrow" ships, built for the Panama Railroad Steamship Line were the first ships to meet the USCG rules for fireproof construction.



"Now and then, some outstanding accomplishment is developed so far ahead of its predecessors as to be instantly identified as the beginning of a new era. In designing the PANAMA and her sister ships, George G. Sharp had accomplished just this result."

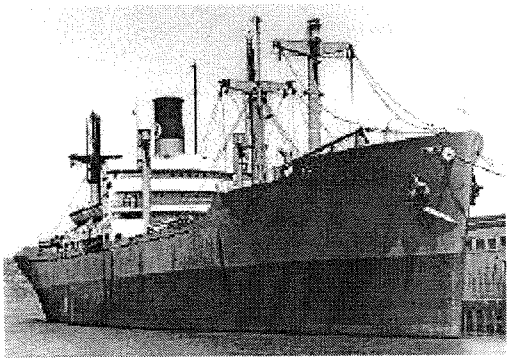
Marine Engineering, May 1939

1940

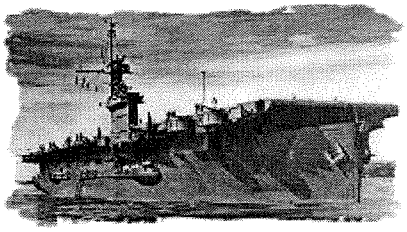


SS Milwaukee Clipper - Great Lakes ferry for service between Milwaukee and Muskegon

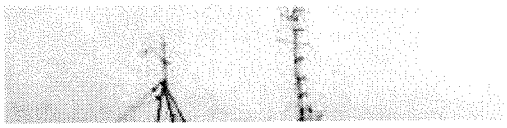
WW II **Victory Ship** - Designed for the US Maritime Commission to supplement and replace the Liberty Ship. 534 Victory Ships were built.



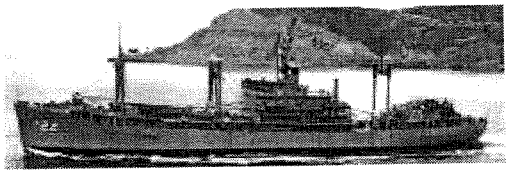
Escort Aircraft Carrier (CVE) - CVE-55 Casablanca Class ships designed under the Maritime Commission's program for the U.S. Navy. 50 ships were built by Kaiser-Vancouver from July 8, 1943 to July 8, 1944.



Bannock Class Fleet Ocean Tug (ATF-81) - Class of ten vessels

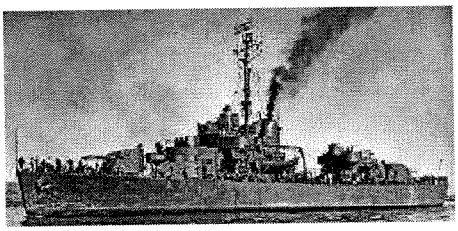


for the U.S. Navy

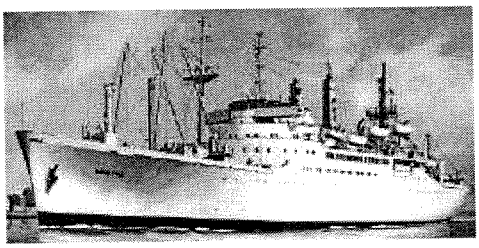


Klondike Class Destroyer Tender (AD-22) - Class of four C3 hull vessels for the U.S. Navy

Owasco Class Cutter (WPG/WHEC) - 13 255 foot high endurance cutters for the U.S. Coast Guard. Most vessels were completed and commissioned post war.



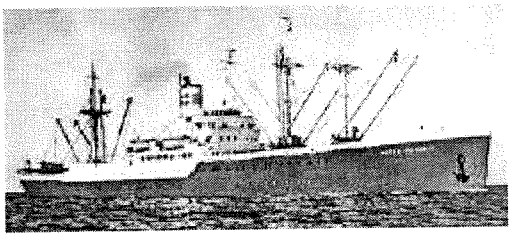
Post War

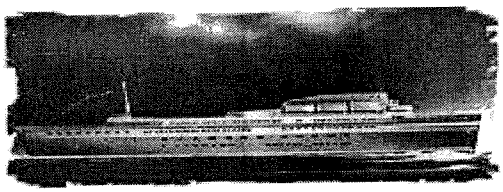


Passenger/Cargo Liners for American President Lines - Three ships completed as troop transports in the early 1950's for the Military Sea Transportation Service

Conversion of Victory Ship and CVE hulls to peacetime use.

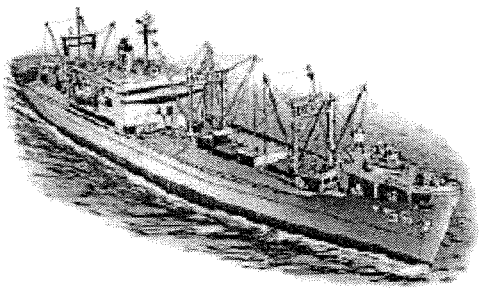
Right: Alcoa Cavalier, a converted Victory Ship





Various new designs for passenger/cargo vessels, Great Lakes and river ferry and excursion vessels

1950's

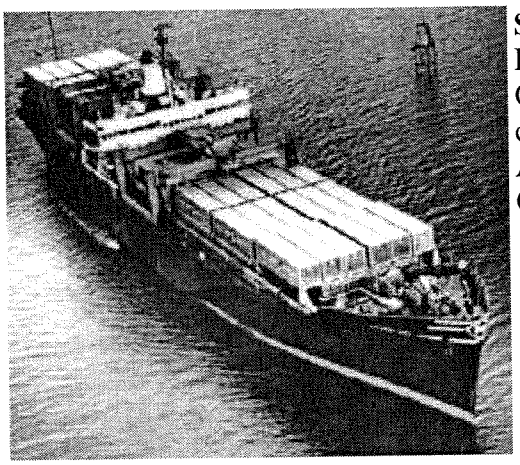


USS Rigel (AF-58) - Class of two refrigerated stores ships for the U.S. Navy

1951 **MV Carport** - First integrated Tugbarge

built for Cargill, Inc.

1957



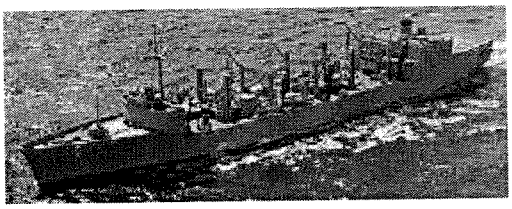
SS Gateway City - First Cellular Containership converted for Pan-Atlantic Steamship Company

1958

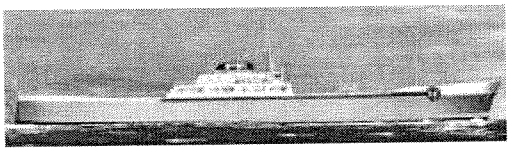
USNS Comet - First Roll-On/Roll-Off Vehicle Carrier built for the Military Sea Transportation Service

1960's

USS Wichita (AOR 1) - Class of seven replenishment oilers for the U.S. Navy

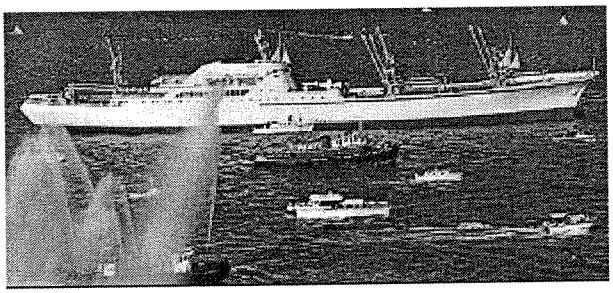


1960



MV New Yorker - First Roll-On/Roll-Off Containership built for Containerships, Inc.

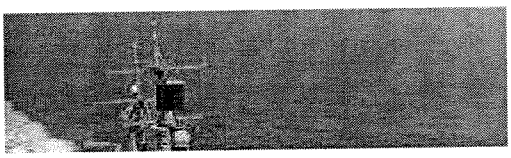
1962



NS Savannah - First nuclear powered merchant ship built for the Maritime Administration and the Atomic Energy Commission. Designated an ASME Historical Mechanical Engineering Landmark.

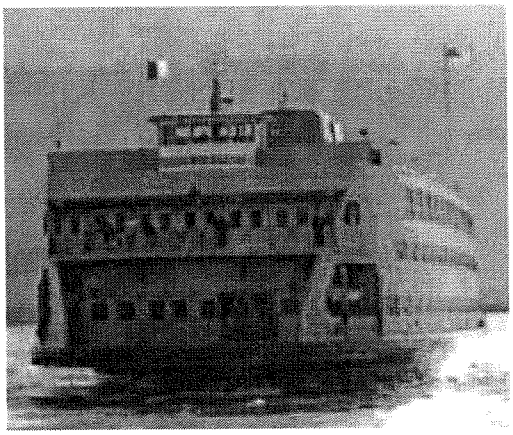
1970's

USS Virginia (CGN 38) - Class of four nuclear powered

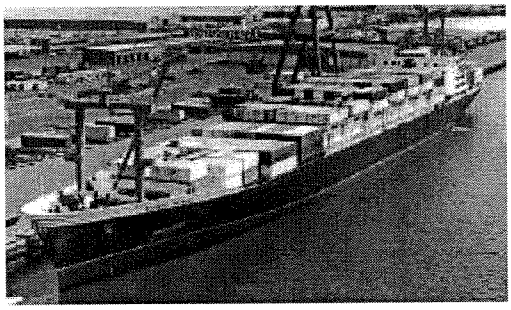


guided missile cruisers for the U.S. Navy

Andrew J. Barberi - Class of two ferries for Staten Island service for the city of New York

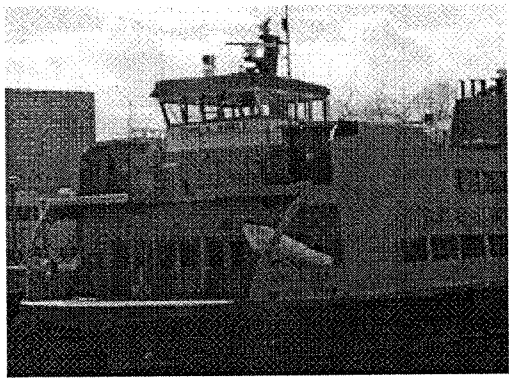


1977



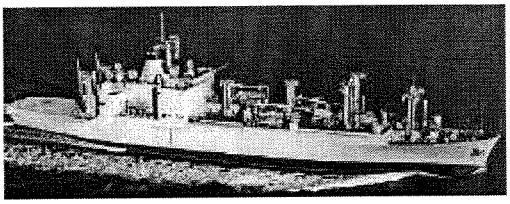
Austral Entente - Largest to date U.S. flag deep freeze containership converted for Farrell Lines

1980's & 90's



Alice Austen - Class of two ferries for Staten Island service for the city of New York

Combat Logistics Force - Kilauea Class AE's converted for civilian manning for the Military Sealift Command

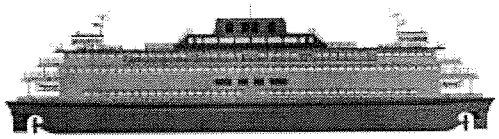


1999 **National Maritime Hall of Fame** - George G. Sharp inducted into the National Maritime Hall of Fame for outstanding

contributions to the maritime industry. The hall is housed at the American Merchant Marine Museum at the U.S. Merchant Marine Academy in Kings Point, New York.

2000 **Fire Boats** - For the cities of New York and Boston

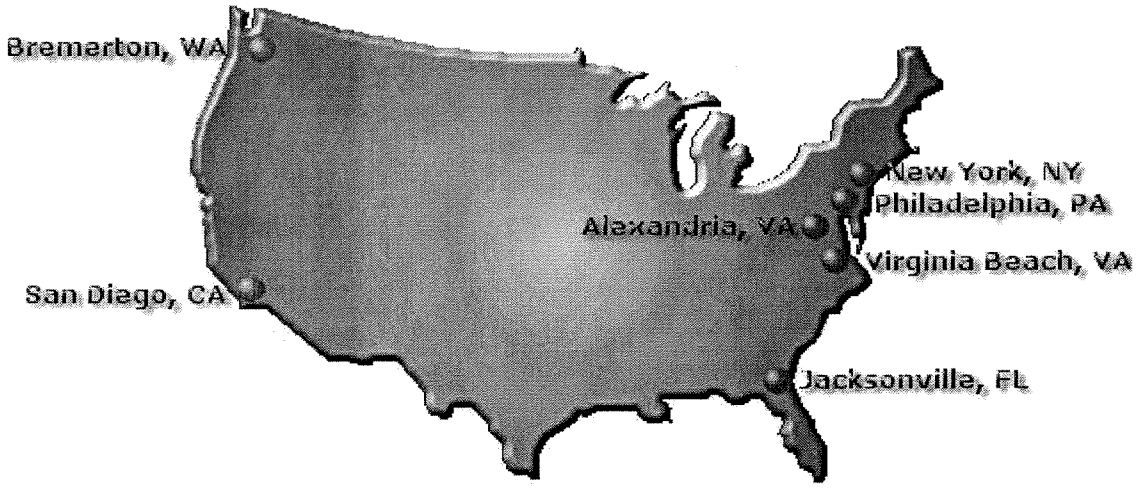
2003 **New Staten Island Ferry** - The new Kennedy Class of three vessels for Staten Island service for the city of New York. The first of three Sharp-designed ferries is christened and launched in Marinette, Wisconsin. Click here for details.



GEORGE G. SHARP, INC.

MARINE SYSTEMS ANALYSIS & DESIGN

Contact Us at Any of the Following Locations



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PO Box 4730
Bremerton, WA 98312-0421
Fax (360) 476-5033

For more information click to email or call:
SEND **Meredith Musick**
(360) 476-8896

Return to map

PRINCIPAL CHARACTERISTICS - A. J. BARBERI

LENGTH OVERALL	310'-0"
LENGTH BETWEEN PERPENDICULARS	300'-6-1/4"
BREADTH @ MIDSHIPS OVER GUARDS	70'-0"
DEPTH TO MAIN DECK AMIDSHIPS	20'-8"
DEPTH TO SALOON DECK AMIDSHIPS	29'-5"
DEPTH TO EMBARKATION LEVEL @ SIDE	34'-2"
DEPTH TO BRIDGE DK AMIDSHIPS @ SIDE	38'-2"
DEPTH TO HURRICANE DK AMIDSHIPS @ SIDE	46'-11"
SCANTLINGS AND SUB-DIVISION DRAFT	13'-11"

MACHINERY -4 DIESEL GEARED GM 16-645E6	
MAXIMUM CONTINUOUS RATING, SHP	6850
MAXIMUM INTERMEDIATE RATING, SHP	7400
PROPELLERS - 2 CYCLOIDAL (VOITH-SCHNEIDER)	

NUMBER OF PASSENGERS, TOTAL	6000
NUMBER OF PASSENGERS, SEATED	3672

DIESEL OIL, TOTAL	126.42 LTS
FRESH WATER, TOTAL	54.64 LTS

PASSENGER DISTRIBUTION (SEATED)	
MAIN DECK	1630
SALOON DECK	1258
BRIDGE DECK	784

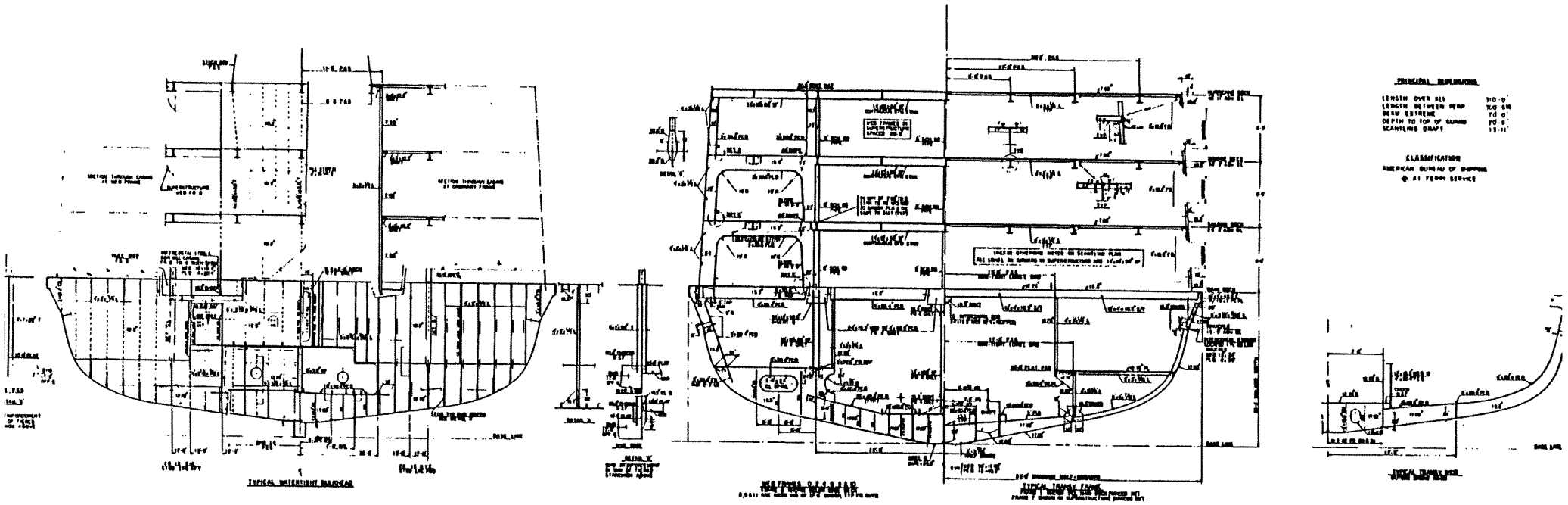
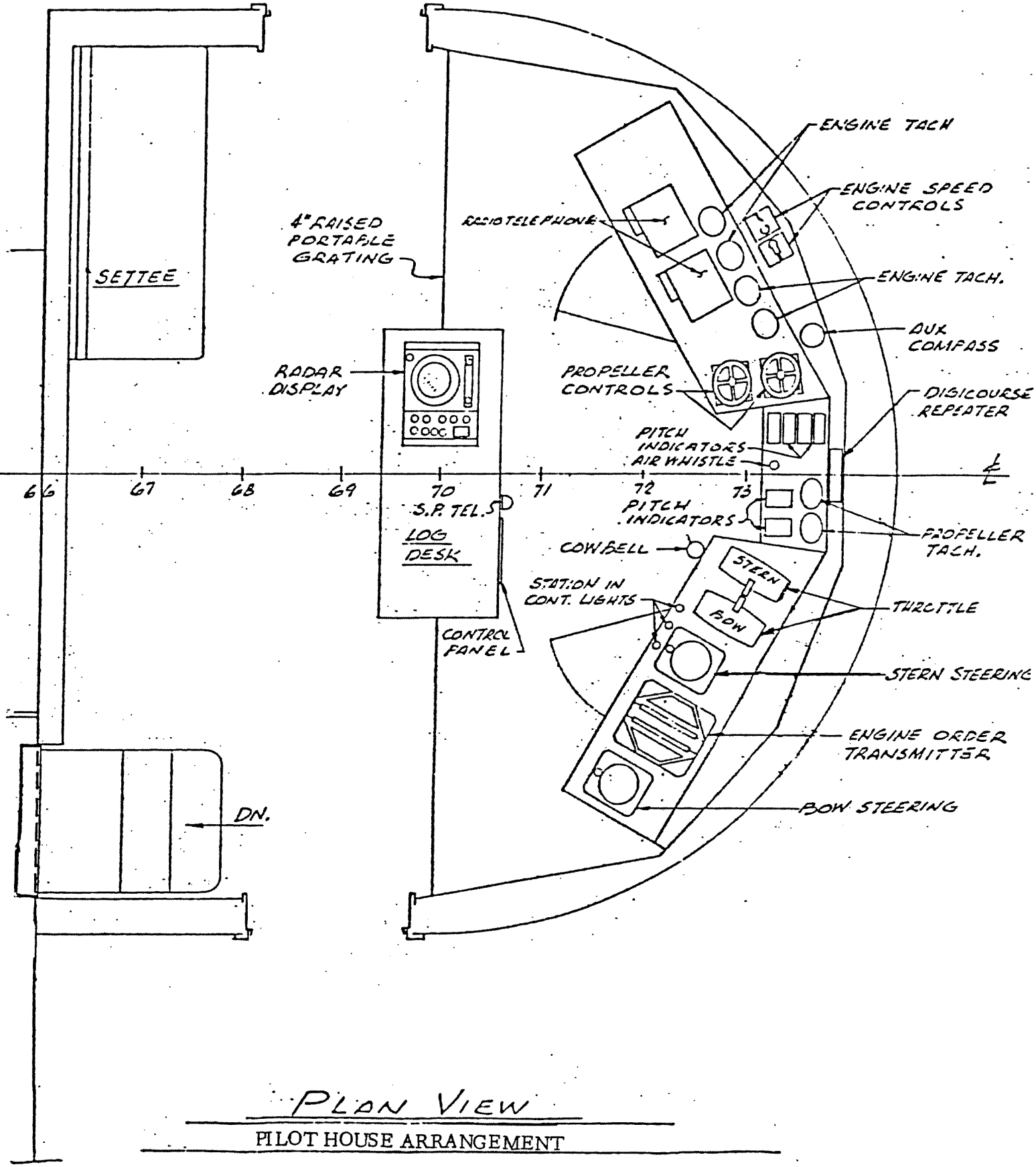


Fig. 10 Midship Section



PLAN VIEW

PILOT HOUSE ARRANGEMENT

Fig. 11

CRASH STOPS

The vessel shall be in free route speed with 800 RPM on all the engines and 100% pitch on both propellers.

The appliable ahead/astern pitch control levers in the command pilot house are to be shifted from 100% pitch ahead to 100% astern in a rapid, smooth motion.

The head reach is to be measured in vessel lengths by throwing markers overboard.

In order to gather data for USCG CFR 46-78,21-1 crash stops at half speed are to be made.

1. Going ahead in New York Direction
   A. Crash stop using both propellers
   B. Crash stop using New York propeller only.S.I. Propeller at 0 pitch
   C. Crash stop using Staten Island propeller only, New York Propeller at 0 pitch.

2. Going ahead in Staten Island Direction
   A. Crash stop using both propellers
   B. Crash stop using S.I. propeller only, N.Y. propeller at 0 pitch.
   C. Crash stop using N.Y. propeller only, S.I. propeller at 0 pitch.

3. Going ahead in New York direction, 1/2 speed *
   A. Crash stop using both propellers

4. Going ahead in Staten Island direction, 1/2 speed
   A. Crash stop using both propellers

CRASH STOP	TIME TO STOP	HEAD REACH	HEADING START	HEADING STOP
#1A				
#1B				
#1C				
#2A				
#2B		"NO	DATA TAKEN"	
#2C				
#3A				
#4A				

* 1/2 Speed will be 500 Eng RPM and 80% pitch on both propellers.

TURNING CIRCLES

Turns are to be made as follows:

1. Starboard in New York direction
2. Port in New York direction
3. Starboard in Staten Island direction
4. Port in Staten Island direction

The vessel is to be in free route at 800 RPM and 100% pitch ahead. The aft propeller will be used for steering in the turns as with a ship with a rudder. Hard over will be 25% athwartship pitch for the purpose of the turning circles.

A demonstration of the steering ability using both propellers for steering will be made. Because of the new concept of the ferry this demonstration is to start at slow speed and increased as considered as prudent.

TURNING CIRCLE

Base Course	61		
Athwartship Pitch Bow	50%		STOPPED
Athwartship Pitch Stern	50%	Right Left	100% 100%
Propeller RPM Start	800		
Propeller RPM Finish	800		1'29"
Depth of Water	50'	Left	100%
Sea Condition	2'		1'34"/1'35"
Wind Direction	255		
Wind Velocity	8 Knots		
Draft Forward	12'-6"		
Draft Aft	12'-6"		

Advance to 90° Heading Change

Diameter of Circle 2 Ship lengths

TIME SEC	HEADING CHANGE
0	0
	90°
	180°
	270°
Stbd. 2'11" Port 2'0"	2½ Dia. 360°

Z MANEUVER

The 20% pitch shown is only an estimation of the equivalent rudder angle normally used in the Z maneuver. This percentage of athwartship pitch may be adjusted after the response of the ship has been observed. The Z maneuver will be started with both propellers at 100% pitch ahead and 800 engine RPM. The maneuver will be made by using the stern propeller for steering.

One maneuver will be made starting to port and one maneuver to starboard, in the Staten Island direction.

Z MANEUVER

Depth of Water

Sea Conditions

Wind Direction

Wind Velocity

Shaft RPM

Propeller RPM

STEERING MOVEMENT	ELAPSED TIME SEC.		COMPASS HEADING		DEPARTURE FROM COURSE	HEAD REACH
(1) Start 20°R	4	4	130	125		
Attain 20°R	15	11	3			
(2) Start 20°L	30	21				
Attain 20°L	36	30				
) Start 20°R						
Attain 20°R						
(4) Start 20°L						
(5) Attain 0	1'-18"					

SECTION FIVE

ACCEPTANCE TRIAL

ESI HULL NO. 1713

MAY 6, 7, 8, 1981

NOTE

Pages 2 and 3 represent actual times and dates for key events that took place on the Acceptance Trial May 6, 7 & 8, 1981.

Following this you will note that pages 5 & 6 indicate a schedule of events that contemplated commencing the acceptance trial on May 5, 1981. The slippage of one day was attributed to bad weather.

ACTUAL TIME OF EVENTS

ACCEPTANCE TRIAL

MAY 6, 1981

2000 Start #1 generator, disconnect shore power. Start potable water pump #1, air compressors and ventilation system.
2130 Check navigation equipment
2200 Deport ESI wharf N.Y. Pilothouse in control, under way 750 RPM & 85% pitch.
2230 Enter Intracostal waterway.

MAY 7, 1981

0030 Change River Pilot to Bar Pilot at Hopedale, underway 550 RPM & 70% pitch.
0500 Arrive at sea buoy.
0530 Arrive at trial course, Voith representative making adjustments to propellers.
0640 Adjusted speed of engines #1-500, #2-500, #3-502, #4-502
0648 Start #1 standardization run 500 RPM & 80% pitch
0714 Start #2 standardization run 500 RPM & 80% pitch
0751 Start #3 standardization run 600 RPM & 80% pitch
0816 Start #4 standardization run 600 RPM & 80% pitch
0845 Start #5 standardization run 700 RPM & 80% pitch
0909 Start #6 standardization run 700 RPM & 80% pitch
0945 Start #7 standardization run 800 RPM & 85% pitch
1002 Start #8 standardization run 800 RPM & 85% pitch
1025 Start #9 standardization run 800 RPM & 92% pitch
1045 Start #10 standardization run 800 RPM & 92% pitch
1059 Make adjustments to engine overload devices.
1100 Parallel generators and change to #2 generators.
1155 Parallel #11 generators and change to 800 RPM & 90% pitch
1210 Parallel #12 generators and change to 800 RPM & 90% pitch
1300 Change to S. I. Pilot House
1323 Standardization run 800 RPM & 85% pitch
1338 Standardization run 800 RPM & 85% pitch
1430 Standardization run 800 RPM & 93% pitch
1500 Standardization run 800 RPM & 93% pitch
Six crash stops
Four turning circles
Two Z maneuvers
Emergency steering demonstration
1600 Change to N. Y. Pilot House
Four crash stops
Four turning circles
Emergency steering demonstration
1700 Single engine operation
1830 Finish single engine operation
1855 Speed runs 750RPM & 92% pitch

ACTUAL TIME OF EVENTS
ACCEPTANCE TRIAL
MAY 7, 1981

1915	Speed run 750RPM & 92% pitch Demonstrate emergency generator operation
2000	Change to S. I. Pilot House. Try to make speed runs at 700RPM & 100% pitch. But darkness and one platfor not lighted prevented runs.
2030	Pass sea buoy, enter MRGO
2115	End 700RPM & 92% pitch run. Finish of trial
2330	Change bar pilot to River pilot at Hopedale.

MAY 8, 1981

0200 Arrive at E.S.I. Shipyard

1713
ANDREW J. BARBERI
SEA TRIAL

DATE: MAY 5 & 6, 1981

The Sea Trial will be conducted in the Gulf of Mexico.

The ship will depart Equitable Shipyards at 10:00 PM.

The ship will be manned by a licensed Master and a qualified sea trial crew.

Services of accredited River and Bar Pilots will be used in restricted waters.

The route will be via the Industrial Canal and the Mississippi River - Gulf Outlet to the Gulf, where the trial will be conducted in daylight hours. The trial will be conducted in not less than 50 feet of water and within a 10 mile radius of the MRGO Sea Buoy.

The trials will be conducted in winds of less than 25 knots and seas less than 5 feet.

SEA TRIAL
ANDREW J. BARBERI
HULL 1713
SCHEDULE OF EVENTS

May 5 & 6, 1981

Twilight 0546 CDST
Sunrise 0612 CDST
Sunset 1931 CDST

May 5, 1981

2100 Start generator and Engines, remove shore power

2130 Check control systems and navigating systems
Take soundings of tanks and read draft marks.
Ship to be ballasted to level trim, fore, and aft, approximately 12'6".

2200 Underway (N.Y. Pilot House)
450 RPM and various pitches.

2230 In Intra Coastal Waterway increase speed

MAY 6, 1981

0500 Arrive at Sea Byoy

0530 Arrive at Trial course

0600 Start standardization trials

0900 Start 6 hour full power run

1000 Swap generators

1100 Demonstrate fire system

1200 Change to S.I. Pilot House

1500 Finish full power run
Start 6 full speed crash stops, S.I. direction
1 half speed crash stop, S.I. direction

1530 Full speed turns P & S in S.I. direction
Z maneuvers in S.I. direction

1600 Change to N.Y. Pilot House
Start 6 full speed crash stops in N.Y. direction
1 half speed crash stop in N.Y. direction
Full speed turns P & S in N.Y. direction
Z maneuver in N.Y. direction

1700 Demonstrate emergency control from N.Y. Pilot House
Demonstrate emergency control from S.I. Pilot House

Continued

MAY 6, 1981

1730 Demonstrate single engine control
Demonstrate emergency generator operation

1800 Finish Trial

1830 Enter M.R.G.O.

MAY 7, 1981

0100 Arrive at ESI Shipyard. Record Draft fore & Art. Take Final Tank Soundings.

12.6 18.3MPH
13.2FULL 18.0 APPROX.

MAY 5 & 6, 1981

0600 Adjusted pitch to 80% both props.
0640 Adjusted engines
#1-500 #2-500 #3-502 #4-502
0648 Start run #1 Sec-1009=438.696
0714 Start run #2 Sec-877=381.304
0735 #1-600 #2-600 #3-598 #4-600
0805 End run 3 Sec 861=374.347
Sec 721=313.478
732=318.260

909
945 Raise to 800 RPM & 85% pitch

2 crash stops, turning Z maneuver, emergency steering	576	250.43
4P.M. Change to N.Y.	513	273.043
2 Stand runs	519	225.65
2 Crash stops	505	219.56
Turning Circles	561	243.9
Z Maneuver	545	236.95
Emergency Steering	539	234.347
Single Engine op		

655 750 RPM X 95/92% pitch & repair-
800 Change to S.I.T.U.
830 Pass Sea Bouy
915 P.M. End Trial

All 4 800/805

Graham notes 6/7 may 1981 Re

	#1	#2	#3	#4
#.98	2	1.00	1.00	1.00
	#1	#2	#3	#4
	680	680	680	695

ESTIMATED DISTANCE TRAVELED ON SEA TRIAL

MAY 5, 6 & 7, 1981

ESI to sea buoy	79
S/B to trial course	8
1 run for adjustments	10
5 standardization runs @ 10	50
2 standardization runs @ 10	20
Maneuvering & steering	10
2 hrs. @ 15 kts.	30
S/B to ESI	79
	286

$\frac{286 \text{ miles}}{31 \text{ hours}} = 9.22$ knots average

May 6/8 Sea trial 4970 gallons consumed
April 27/28 Builder's trial 5350 gallons consumed

$\frac{4970}{31} = 160$ gal/hr.

$\frac{5350}{24} = 223$ gal/hr.

EQUITABLE SHIPYARDS, INC.
NEW ORLEANS, LA.

TEST MEMORANDUM

CONTRACT STATEN ISLAND FERRY DEPT ALL

ANDREW J. BARBERI HULL 1713-1714

TITLE	TEST MEMO NUMBER
SEA TRIAL AGENDA	M-36

REPARED BY G.G. Haddock

HECKED BY B.W. Hewett

APPROVED G.G. Haddock
CHIEF ENGINEER

TEST MEMO APPROVALS

SUBMITTED TO	INITIAL ISSUE	APPROVAL DATE BY	RESUB DATE	APPROVAL DATE BY	RESUB DATE	APPROVAL DATE BY
OWNER	12-9-80	TELEX 12-11-80	5-4-81	VERBAL 5-4-81		

REVISIONS

SHEET	REV. NO.	DESCRIPTION	APPROVAL OWNER	APPROVAL ESI
	1	GENERAL REVISION - HAND CORRECTED 5/4/81		

FOR U.S. COAST GUARD

FOR AMERICAN BUREAU OF SHIPPING

FOR OWNER

FOR BUILDER

TEST MEMO NO. M-36

DATE: _____

TEST MEMORANDUM

CONTRACT ANDREW J. BARBERI - 1713 STATEN ISLAND FERRY DEPARTMENT ALL

TEST NO. M-36 TITLE SEA TRIAL AGENDA

THIS UNIT OR SYSTEM COVERED BY THIS TEST MEMORANDUM HAS BEEN TESTED AND PERFORMS IN A SATISFACTORY MANNER. IT IS CERTIFIED THAT IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS AND GOOD SHIPBUILDING PRACTICE WITH THE FOLLOWING EXCEPTIONS:

_____

_____

_____

DATE _____

_____
NAME
FOR EQUITABLE SHIPYARDS, INC.

THE REGULATORY BODY/BODIES CONCURS WITH THE ABOVE CERTIFICATION WITH THE FOLLOWING EXCEPTIONS:

_____

_____

_____

DATE	BY	NAME
	ABS	
	USCG	

1713
ANDREW J. BARBERI
SEA TRIAL

The Sea Trial will be conducted in the Gulf of Mexico.

The ship will depart Equitable Shipyards at 10:00 PM.

The ship will be manned by a licensed Master and a qualified sea trial crew.

Services of accredited River and Bar Pilots will be used in restricted waters.

The route will be via the Industrial Canal and the Mississippi River - Gulf Outlet to the Gulf, where the trial will be conducted in daylight hours. The trial will be conducted in not less than 50 feet of water and within a 10 mile radius of the MRGO Sea Buoy.

The trials will be conducted in winds of less than 25 knots and seas less than 5 feet.

ANDREW J. BARBERI
HULL 1713
PERSONNEL

The vessel will be in charge of a licensed master, to be assisted by two able bodied seamen as helmsmen. There will be a licensed chief engineer in the engine room.

River pilots and bar pilots will be used for the transit of the waterways.

Other operating personnel will be from the yard.

Manufacturer's service personnel for the following equipment will be on board at the sea trial.

HULL 1713
ANDREW J. BARBERI
TRIAL PERSONNEL

SHARP:	ALLEN CHIN		CAPTAIN DAVENPORT & ASSOC.	4
	A. S. ZAHN		PILOTS	1
	STAN WOOD		JIM BLENKHORN	1
	JAMES TILLMAN		DAVID BARNES	1
	HARRY COUGAN		CATERERS	3
NEW YORK:	EUGENE O'NEAL		CLINT LARSON	1
	WALTER SCHIELL		GENE LINDSMEYER	1
	ROBERT HOBSON		USCG	3
	ROBERT WALLACE		A.B.S.	1
VENDORS:	EMD	1	WABCO	2
	POINT 8	1	VOITH - MR. FORK	2
	RISE (vibration)	1	MR. HHLUBECK	

TRIAL COORDINATOR:

GRAHAM HADDOCK

SUPERVISORS:

HAROLD VICKNAIR
DARRELL LADNER
SONNY ALLEY
STEVE BROWN

DATA RECORDERS:

BOB ENGLISH
DONALD MAJORS
MIKE BUSHNELL
GARY KRAUS
I. ROME
WARREN MOTT
DAN OAKEY

ELECTRICIONS:

RICHARD ANTHONY
CRAIG TROSCLAIR

MACHINIST:

STEVE BASS
RODNEY BLEVINS

PIPE FITTERS:

NEMOUR GRANIER
O'NEAL HEAD
DAVID A. SPENCE

RIGGERS:

HUEY EXPOSY
JOHN HUNTER
PAUL WUNDER
LOUIS DUPAS

TOTAL 56

HULL 1713
ANDREW J. BARBERI

GENE LINDSMEYER
CHIEF ENGINEER

SCHEDULE SHIFTS

MAY 5th 2000 - 0200
6th 0800 - 1400
6th 2000 - 0200
COMPT. ON 7th.

MIKE BUSHNELL — N.Y. PROP. ROOM
WARREN MOTT — S.I. PROP. ROOM
DONALD MAJORS — ENGINE ROOM LOG
I. ROME — CONSOLE - SWTBD.BEARING

ENGINE ROOM WATCH

NEMOUR GRANIER	PIPE
RICHARD ANTHONY	ELECTRIC
STEVEN BASS	MACHINIST

RELIEFS: STEVE BROWN
HAROLD VICKNAIR

SCHEDULE SHIFTS

6th 0200 -0800
6th 1400 -2000

CLINT LARSON
ASSISTANT ENGINEER

GARY KRAUS — N.Y. PROP ROOM
S.I. PROP ROOM
JOHN HUNTER — ENGINE ROOM LOG
PAUL WUNDER — CONSOLE - SWTBD - BEARING

ENGINE ROOM WATCH

ALAN SPENCE	PIPE
CRAIG TROSCLAIR	ELECTRIC
RODNEY BLEVINS	MACHINIST

RELIEFS: DARRELL LADNER
SONNY ALLEY

DAN OAKEY: Assist Rise Inc. with vibration and noise analysis.

BOB ENGLISH: To collect any miscellaneous data and collect all data sheets from data recorders.

LOUIS DUPAS:
HUEY EXPOSY
O'NEAL HEAD
Dupas will be in charge of maintaining the cleanness of the vessel while at sea.

ANDREW J. BARBERI
HULL 1713

DATE: MAY, 1981

The following systems will be in operation during the entire sea trial:

1. Ship's Service Generator (one at a time)
2. Pneumatic Engine Speed Controls
3. Electric Propeller Controls
4. Air Whistle
5. Running Lights
6. F.M. Radios
7. Electromagnetic Compass System
8. Radars
9. Sound Powered Telephones
10. P.A. System
11. POT/SOT System
12. Ventilation System
13. Potable Water System
14. Sewerage System
15. Compressed Air System
16. Fuel Oil
17. Lube Oil
18. Ship's Service Salt Water System
19. Coupling Hydraulic Pumps
20. Daily Service Bilge Pump & Oily Water Separator
21. Main Engines and Propellers
22. Ships interior lighting

The following will be on standby:

1. Emergency Generator
2. Bilge Pump
3. Fire Pump
4. Propeller Standby Pumps
5. Boiler & Heating System

HULL 1713
ANDREW J. BARBERI
TANK SOUNDINGS

DATE: 5/7/81

1. Tanks shall be sounded before the trial starts, including voids.
2. During trial the fuel system will be operationed to keep the service tanks for main engines, ship service generators and emergency generators full.
3. At end of sea trial the tanks shall be sounded and recorded.

TANK	TIME START	SOUNDING START	TIME FINISH	SOUNDING FINISH	GALLONS START	GALLONS FINISH
D.O. STORAGE TK. STBD		6'-2		5'-0½"	13209	10614
.O. STORAGE TK. PORT		6'-6 3/4		5'-0½"	13683	11295
D.O. SERVICE PORT		4'-2½		4'-7	518	884
D.O. SERVICE STBD		4'-6½		4'-3½	884	531
GEN SERVICE		5'-2 3/4		4'-1 7/8	219	219
D.O. OVERFLOW		1'-0		1'-0"	325	325
TOTAL					28838	23868
USE						4970

713 . DATE: MAY , 1981

	SOUNDING START	SOUNDING FINISH	INIT.
. Void C/L 12' Flat Fr N12-N18			
. Prop. L.O. Storage Tk N39-N41½ C/L			
Prop. L.O. Storage Tk S39-S41½ C/L			
. D.O. Overflow Tank Fr S17-S20 Port			
. Gen. D.O. Service Tank. Fr12S-13S Port			
. D.O. Service Tank Fr. S12-S14 Port			
A. D.O. STORAGE TANK FR. S12-S20 PORT			
. D.O. Ser. Tank Fr. S12-S14 Stbd.			
A. D.O. STORAGE TANK FR S12-S20 STBD			
. Void Stbd. N12-S12			
. Void Port N12-S12			
0. Void Stbd. N12-N20			
1. Void Port N12-N20			
2 Void Stbd. Fr N20-N31			
2. Void Port Fr N20-N31	NO		
3. Void Stbd. Fr N31-N40	READINGS		
4. Void Port Fr. N31-N40	TAKEN		
_. Void Port Fr S12-S20			
6. Void Stbd Fr S12-S20			
7. Void Port Fr S20-S31			
8. Void Fr. S20-S31 Stbd.			
9. Void Fr. S31-S40 Port			
0. Void Fr S31 - S40 Stbd.			
1. Void Fr. N14-N20 Centerline			
2. Void Fr N20 - N31 Centerline			
3. Void Fr N31 - N39 Centerline			
4. Void Fr. S14 - S20 Centerline			
5. Void Fr. S20-S31 Centerline			
6. Void Fr S31- S39 Centerline			
- Ballast tank N.Y. End			
8. Ballast tank S.I. End			

HULL 1713
ANDREW J. BARBERI
NAVIGATION SYSTEM

DATE: MAY, 1981

Accomplish Prior to Departure:

1. Demonstrate horn from New York Pilothouse, manual
2. Demonstrate horn from New York Pilothouse, pushbutton
3. Demonstrate horn from Staten Island P.H., manual
4. Demonstrate horn from Staten Island P.H., pushbutton
5. Demonstrate running lights from New York pilothouse
6. Demonstrate running lights from Staten Island pilothouse
7. Demonstrate change of direction switch NYE/SIE
8. Demonstrate cow bell system

HORN = Ship's Whistle

DECK LOG

DATE: MAY 5, 1981

TIME	COURSE MAG	PROP RPM N	PROP RPM S	PERCENTAGE PITCH N	PERCENTAGE PITCH S	ESTIMATED W DIR	ESTIMATED W VK	SEAS	PILOT HOUSE CONTROL REMARKS
					"NO	DATA	TAKEN"		

HULL 1713
ANDREW J. BARBERI

DATE: 6/7 MAY 81

SHIP SERVICE GENERATORS

1. The # 1 generator shall carry the ship load for 12 hours.
2. The #2 generator shall be started and paralleled with #1 generator.
3. The #1 generator shall be disconnected and stopped.
4. The #2 generator shall carry the ship load for the balance of the trial.
5. At the end of the trial, in open water with the ship under way the automatic start-up and transfer to the emergency generator shall be demonstrated by killing power on the main switchboard.
6. Upon return to the yard at the end of the trial the ship load shall be reduced to less than 200 amperes and the ship put on shore power.
7. A log recording meters on main switchboard at ½ hour intervals shall be kept, SEE PAGE 19.

	COMMENTS	INITIALS			
GEN #1	8PM 6MAY/81	R	C.L.		
GEN #2	10AM 7MAY/81 START UP #2 3/4 DIESEL GENERATOR DURATION 3HR TRIAL	R	C.T.		

ANDREW J. BARBERI - 1713

GENERATOR ENGINE #1

DATE: 7 MAY 81

TIME	WATER IN	WATER OUT	ENGINE OIL PRESS	FUEL OIL PRESS
1400	SECURED			
1430	SECURED			
1500	SECURED			
1530	SECURED			
1600	SECURED			
1630	SECURED			
1700	SECURED			
1730	SECURED			
1800	SECURED			
1830	SECURED			
1900	SECURED			
1930	SECURED			
2000	SECURED			
2030	SECURED			
2100	SECURED			
2200	SECURED			
2300	SECURED			
2400	SECURED			
0100	SECURED			
0200	SECURED			

ANDREW J. BARBERI - 1713

GENERATOR ENGINE #2

DATE: 7 MAY 81

TIME	WATER IN	WATER OUT	ENGINE OIL PRESS	FUEL OIL PRESS
1330	92	180	N	N
1400	95	190	N	N
1430	95	190	N	N
1500	95	190	N	N
1530	95	190	N	N
1600	95	190	N	N
1630	95	190	N	N
1700	95	190	N	N
1730	95	190	N	N
1800	95	190	N	N
1830	95	190	N	N
1900	95	190	N	N
1930	95	190	N	N
2000	95	190	N	N
2030	95	190	N	N
2100	95	190	N	N
2200	95	190	N	N
2300	95	190	N	N
2400	95	190	N	N
0100	95	190	N	N
0200	95	190	N	N

SHIP SERVICE GENERATOR #1 LOG

CONSOLE

DATE: 5-7-81

ANDREW J. BARBERI - 1713

TIME	# GEN	FW TEMP	LO PROS	'LO TEMP	EXH TEMP
2200	#1	175	64	185	460
2230	#1	175	64	185	480
2300	#1	175	64	185	480
2330	#1	175	62	185	480
0000	#1	175	62	185	480
0030	#1	175	62	185	480
1:00	#1	175	62	185	475
2:00	#1	175	62	185	460
2:30	#1	175	64	185	470
3:00	#1	175	64	185	470
3:30	#1	175	64	185	470
4:00	#1	175	64	185	470
4:30	#1	175	64	185	470
5:00	#1	175	64	185	470
:30	#1	175	63	185	470
6:00	#1	175	63	185	470
6:30	#1	175	64	185	470
7:00	#1	175	63	185	480
7:30	#1	175	63	185	470
8:00	#1	275	63	185	470
8:30	26	175	63	185	480
9:00	26	175	63	185	460
9:30	26	175	63	185	460
10:00	SWITCH OVER	GEN.			
10:30	26	165	66		

ANDREW J. BARBERI - 1713

SHIP SERVICE GENERATOR #2 LOG

CONSOLE

DATE: 6/7 MAY 81

TIME	F.O. PRESS	FW TEMP	LO PROS	LO TEMP	EXH TEMP
10:30	GEN. PARALLEL	170	68	190	520
11:00	50	170	68	185	520
11:30	50	170	70	190	560
12:00	50	170	70	185	500
12:30	52	170	70	185	500
1:00	52	165	70	190	500
1:30	52	165	70	190	500
1400	53	170	71	190	500
1430	53	170	70	193	520
1500	53	170	70	193	500
1530	53	170	70	193	500
1600	NO READING TAKEN DUE TO EM STEERING TEST				
1630	52	170	70	195	590
1700	52	170	70	192	530
1730	52	170	70	192	520
1800	52	170	70	192	520
1830	52	170	71	192	500
1900	54	170	71	192	470
1930	54	170	71	192	470
2000	54	170	55	192	460
2030	54	170	55	192	460
2100	54	170	71	192	480
2200	54	170	70	190	460
0000	54	170	70	190	460
100	52	170	70	190	470
200	52	170	20	190	470

MAIN SWITCHBOARD LOG

ANDREW J. BARBERI
1713

DATE: 5/7/81

TIME	POWER SOURCE	AMPS	VOLTS	KW	HERTZ HARTZ	P.F.	TEMP
1500	#2	420	230	130	60	.80	215
1530	#2	420	230	130	60	.80	215
1600	NO READING TAKEN DUE TO EMER. STERING TEST						
1630	#2	420	230	140	60	.80	215
1700	NO READING TAKEN DUE TO SINGLE ENG.						
1730	"	"	"	"			
1800	DITTO						
1830	#2	420	230	135	60	.80	215
1900	#2	420	230	110	60	.80	210
1930	#2	400	230	100	60	.80	220
2000	#2	340	230	100	60	.76	220
2030	#2	380	230	110	60	.76	220
2100	#2	400	230	110	60	.76	215
00	#2	400	230	110	60	.74	210
2300	#2	380	230	120	60	.72	205
0000	#2	400	230	130	600	.72	205
0100	#2	370	230	100	60	.74	205
0200	#2	370	230	100	60	.74	205

EMERGENCY SWITCHBOARD LOG

ANDREW J. BARBERI
HULL 1713

DATE: MAY -, 1981

TIME	VOLTS	AMPS	KW	GEN TEMP	GENERATOR OIL PRESSURE	ROOM TEMPERATURE
			"NO	DATA	TAKEN"	

COMMENTS	INITIALS			
"NO DATA TAKEN"				

EMERGENCY GENERATOR ENGINE

ANDREW J. BARBERI
HULL 1713

DATE: MAY 5, 1981

TIME	WATER IN	WATER OUT	ENGINE OIL PRESS	FUEL OIL PRESS
	"NO DATA TAKEN"			

ANDREW J. BARBERI - 1713
POTABLE WATER AND SANITARY SYSTEM

DATE: 7 MAY 81

1. During the trial the potable water system shall be under pressure.
2. One potable water pump shall carry the load for half the trial. The other shall carry the load the balance of the trial.
3. The sewerage treatment plant shall be energized for the duration of this trial.

TIME	PUMP #	PRESSURE	
6 MAY 81 8 PM	LIGHT OFF PUMP #1	65 #'s	Re + C.L.
7 MAY 81 10 AM	SECURED PUMP #1, LIGHT OFF PUMP #2 DURATION OF SEA TRIAL	65 #'s	Re + C.L.

POTABLE WATER TANK

TIME	SOUNDING	GALLONS	INITIALS			
6 MAY 81 9 PM		14,000	Re			

POTABLE WATER SYSTEM

COMMENTS	INITIALS			

HULL 1713
ANDREW J. BARBERI

FIRE MAIN SYSTEM

DATE: MAY 5, 1981

1. During the Trial run the fire main system shall be set up for operation by the shaft alley fire pump, so that in an emergency the system will be available.

2. The fire main system will be demonstrated by discharging a stream from the two pilot house hose stations.

TIME	PUMPS	NUMBER HOSES	PRESSURE AT PUMP	INITIALS			
		"NO	DATA TAKEN"				

HULL 1713

ANDREW J. BARBERI

DATE: MAY 5, 1981

MAIN ENGINES

1. After warm-up engage couplings and turn propellers at zero pitch and 450 RPM speed.

2. Main engines are to be available to orders from the pilot house for duration of trial.

3. Engine data from engine room and central control console are to be recorded at 30 minute intervals during trials in open water and at one (1) hour intervals during transit time.

EMD MAIN ENGINE LOG

ENGINE #1

7 MAY 81 Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM TEMP. C.
2100	5	65	17	192	360	1.72	104-8	25
2130	6	50	17	192	360	1.77	105-2	30
2230	29	62	40	185	770	1.32	106-2	30
2300	28	60	40	188	770	1.44	107-7	33
2330	27	60	38	180	760	1.24	107-3	38
2400	9	30	18	190	410	1.72	107-7	39
0030	9	38	7	185	400	1.56	108-2	38
0100	18	50	28	180	610	1.48	108-7	38
0130	18	52	28	185	600	1.48	109-2	38
0200	18	52	28	183	610	1.44	109.7	38
0230	20	55	32	190	620	1.62	110.2	38
0300	16	52	27	190	560	1.60	110.7	38
0330	16	52	27	180	560	1.60	111.1	38
0400	16	52	27	180	560	1.60	111.6	38
0430	16	52	27	185	560	1.58	112.1	38
0500	16	50	26	190	560	1.62	112.6	38
0530	16	50	26	190	560	1.58	112.1	38
0600	24	58	32	185	690	1.42	113.6	38
0630	12	45	22	187	500	1.60	114.1	38
0700	14	45	22	182	520	1.60	114.6	38
0730	14	47	22	185	510	1.62	115.1	38
0800	19	54	25	185	600	1.52	115.6	38
0830	19	52	29	190	600	1.48	116.1	38
0900	25	58	36	185	710	1.44	116.6	38
0930	30	60	39	180	800	1.36	117.0	38
1000	31	58	38	185	800	1.28	117.6	40
1030	30	58	34	190	800	1.00	118.1	41
1100	10	30	16	185	550	1.72	118.5	42

EMD MAIN ENGINE LOG

ENGINE #1

DATE; 7 MAY 81

Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM TEMP.
1130	31	59	35	190	800	1.00	119.2	44
1200	31	60	35	185	810	1.00	119.7	45
1230	31	60	35	190	810	1.00	120.3	45
1300	STANDSTILL							
1330	30	58	36	180	810	1.16	121.1	43
1400	30	58	34	190	810	1.20	121.5	43
1430	28	55	30	182	750	1.00	122.1	47
1500	30	59	35	190	800	1.00	122.5	48
1530	32	60	38	185	810	1.04	123.1	48
1600	MANEUVER							
1630	31	58	33	187	800	1.64	124.1	44
1700	SINGLE ENGINE							
1730	SINGLE ENGINE							
[illegible]00	" "							
[illegible]30	28	57	33	187	750	1.64	125.1	40
1900	28	57	33	185	750	1.10	125.5	40
1930	28	55	33	187	750	1.10	125.9	40
2000	25	55	30	185	700	1.12	126.5	40
2030	25	54	30	180	710	1.22	127.0	42
2100	25	52	30	190	710	1.20	127.4	44
2200	24	52	26	190	710	1.24	128.5	44
2300	24	50	30	190	710	1.16	129.5	44
2400	25	53	22	190	730	1.20	130.5	44
0100	26	53	22	180	730	1.12	131.4	44
0200	26	55	16	180	730	1.12	132.3	44

CONSOLE MAIN ENGINE LOG

ENGINE #1

7/ MAY 81 Andrew J. Barberi - Hull 1713

TIME	RPM	LO TEMP	LO PRES	FO PRES	SW PRES	FW OUT TEMP	FW IN TEMP	EXH TEMP 1-16
1400	800	175	54	32	30	180	36	
1430	800	175	57	31	32	180	42	
1500	800	175	52	34	30	180	40	
1530	800	175	60	40	32	175	30	
1600	NO READING TAKEN DUE TO EM. STEERING TEST							
1630	610	175	46	26	20	175	20	
1700	SINGLE ENG. RUN							
1730	DITTO							
1800	DITTO							
1830	760	170	57	30	27	175	25	
1900	750	173	54	32	27	175	27	
1930	750	175	52	30	27	175	28	
2000	700	170	52	30	25	175	22	
2030	700	125	52	30	25	175	22	
100	700	175	50	30	25	175	24	
2130								
2200	700	175	50	24	24	175	24	
2300	700	175	50	30	24	175	24	
0000	730	120	52	21	24	175	26	
100	730	175	50	21	26	175	26	
200	730	175	50	21	26	175	26	

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81
DATA TAKERS:
C. Tr scleir
R. Anthony

ENGINE # 1

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
8:30	360	360	360	350	350	350	360	340	340	360	360	360	360	360	360	350	340
9:00	420	420	420	420	400	400	420	400	400	400	400	400	400	400	420	400	400
9:30	500	500	500	480	480	500	500	500	500	500	500	570	500	500	500	520	500
10:00	570	570	570	540	560	560	580	570	560	560	560	560	570	560	560	560	560
10:30	660	660	660	660	650	670	670	660	660	660	680	680	670	650	660	670	660
11:00	660	660	660	640	660	660	680	680	680	660	670	680	600	680	660	680	660
11:30	740	740	720	720	720	720	740	730	710	700	730	730	740	730	710	730	720
12:00	730	740	740	710	720	730	720	720	720	720	730	730	740	740	730	740	720
12:30	730	740	740	700	700	700	710	710	700	700	700	700	700	710	700	690	700
13:00	310	310	310	300	300	300	320	300	300	320	320	320	300	320	320	290	300
13:30	620	620	620	600	620	600	620	620	600	600	620	650	630	620	600	610	600
14:00	700	700	710	690	700	690	700	700	680	670	690	690	690	690	670	670	640
14:30	720	730	740	710	720	700	730	740	710	710	720	730	730	720	710	730	700
15:00	730	730	730	720	720	700	720	730	720	720	730	730	730	730	720	730	690
15:30	460	460	460	480	480	500	540	540	560	600	620	600	600	600	600	610	590
16:00	NO READING TAKEN DUE TO EM. STEERING TEST																
16:30	460	470	460	460	460	460	460	480	460	470	470	470	470	470	470	460	450
17:00	SINGLE ENGINE RUN																
17:30	DITTO																
18:00	DITTO																
18:30	630	640	640	640	640	600	640	640	640	620	620	620	620	640	640	640	620

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81

DATA TAKERS:
C.TROSCLAIR
R.ANTHONY

ENGINE #1

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
19:00	640	640	650	630	650	620	650	650	640	630	630	640	640	640	620	640	620
19:30	660	660	670	650	670	630	670	670	660	650	650	660	670	670	650	670	660
20:00	560	560	560	570	570	540	570	560	560	540	530	530	540	520	520	520	520
20:30	570	570	560	550	560	580	580	560	580	580	580	580	580	580	580	580	560
21:00	570	570	580	560	580	560	580	580	570	560	570	570	580	570	570	560	550
21:30																	
22:00	570	570	570	560	560	530	570	560	560	550	560	560	560	560	560	560	560
23:00	580	580	580	570	570	550	570	570	580	570	580	590	600	600	580	580	560
00:00	560	570	600	580	600	560	600	580	590	580	600	610	620	620	580	610	590
1:00	620	620	620	640	620	580	600	590	590	590	610	610	620	620	610	610	600
2:00	620	620	620	640	620	580	600	590	590	590	610	610	620	620	610	610	600

EMD MAIN ENGINE LOG

ENGINE #2

Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM. TEMP. C.
2100	5	64	10	190	335	1.72	104-4	25
2130	5	55	10	185	335	1.72	104-8	30
2230	29	66	26	178	760	1.36	105-8	30
2300	28	65	26	182	770	1.40	106-3	33
2330	27	65	24	178	750	1.32	106-9	38
2400	8	42	10	185	370	1.72	107-3	39
0030	8	47	10	180	360	1.68	107-8	38
0100	18	60	18	180	580	1.48	108-3	38
0130	18	60	18	187	580	1.48	108-8	38
0200	18	60	18	178	585	1.52	109-3	38
0230	18	62	20	190	600	1.66	109.8	38
0300	16	60	16	180	540	164	110.3	38
0330	15	60	16	180	540	1.64	110.7	38
0400	15	60	16	175	540	1.62	111.2	38
0430	16	60	16	180	540	164	111-7	38
0500	16	60	16	190	540	1.60	112-2	38
0530	16	60	16	180	540	1.60	112.7	38
0600	23	65	20	180	680	1.46	113.2	38
0630	12	55	12	180	475	1.60	113.7	38
0700	12	57	14	180	495	1.60	114.2	38
0730	12	58	14	185	497	1.62	114.7	38
0800	18	61	18	180	600	1.52	115.2	38
0830	18	60	18	185	600	1.52	115.7	38
0900	24	65	22	180	720	1.44	116.2	38
0930	30	65	26	178	820	1.36	116.6	38
1000	31	65	25	180	800	1.24	117.2	40
1030	30	63	22	190	800	1.00	117.7	41
1100	20	60	20	180	350	1.72	118.1	42

EMD MAIN ENGINE LOG

ENGINE #2

DATE: 7 MAY 81

Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM TEMP.
1130	29	62	20	189	800	1.00	118.8	44
1200	31	62	21	180	810	1.00	119.3	45
1230	31	62	22	180	830	1.02	119.8	45
1300	STANDSTILL							
1330	31	62	22	180	810	1.16	120.7	43
1400	31	62	22	185	800	1.16	121.1	43
1430	26	62	20	180	820	1.00	121.7	47
1500	30	62	20	190	820	1.00	122.1	48
1530	32	65	24	180	830	1.12	122.7	48
1600	MANEUVERS							
1630	32	65	22	182	810	1.56	123.7	44
1700	SINGLE ENGINE							
1730	SINGLE ENGINE							
1800	" "							
830	28	65	20	182	750	1.66	124.°	40
1900	28	64	20	180	760	1.10	125.3	40
1930	28	60	19	185	760	1.08	125.7	40
2000	24	62	18	180	710	1.20	126.3	40
2030	25	62	18	170	710	1.22	126.7	42
2100	24	62	19	182	710	1.22	127.2	44
2200	24	62	18	185	710	1.20	128.2	44
2300	24	60	19	190	720	1.24	129.3	44
2400	2[illegible]	62	17	190	740	1.08	130.3	44
0100	26	62	18	175	740	1.24	131.2	44
0200	26	62	18	180	740	1.16	132.1	44

CONSOLE MAIN ENGINE LOG

ENGINE #2

7 MAY 81 Andrew J. Barberi - Hull 1713

TIME	RPM	LO TEMP	LO PRES	FO PRES	SW PRES	FW OUT TEMP	FW IN TEMP	EXH TEMP 1-16
1400	750	175	60	20	27	180	34	
1430	800	175	60	22	27	180	36	
1500	800	175	60	23	30	180	42	
1530	840	170	64	26	34	175	32	
1600	NO READINGS TAKEN DUE TO EM. STEERING TEST							
1630	520	170	59	18	18	175	22	
1700	SINGLE ENG. RUN----------							
1730	DITTO----------							
1800	DITTO----------							
1830	750	170	60	22	25	175	30	
1900	750	170	60	22	27	175	31	
1930	750	170	60	22	27	175	31	
2000	720	170	60	18	24	175	28	
2030	720	170	60	18	24	175	28	
100	720	170	60	20	26	175	28	
2200	720	170	60	18	24	175	28	
2300	720	170	60	20	27	175	28	
0000	750	170	60	18	25	175	28	
100	740	170	60	18	25	175	28	
200	740	170	60	18	25	175	28	

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81

DATA TAKERS:
C.TROSCLAIR
R.ANTHONY

ENGINE #2

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
8:30	340	340	340	340	340	330	320	320	340	340	340	320	340	340	340	320	320
9:00	400	400	400	400	400	380	400	380	420	400	400	400	380	400	400	400	400
9:30	560	540	540	540	540	540	540	540	560	540	520	520	520	540	540	560	560
10:00	540	540	540	540	540	540	540	540	540	540	540	520	540	540	540	550	540
10:30	680	660	660	660	660	660	660	660	680	660	660	660	660	660	660	680	680
11:00	720	700	700	700	700	700	700	700	700	680	680	700	720	700	700	720	700
11:30	760	730	740	740	730	730	730	730	740	720	730	740	720	720	720	740	730
12:00	760	750	740	750	730	730	740	730	740	720	740	740	720	720	720	760	740
12:30	770	760	760	750	740	740	740	740	740	730	740	750	730	740	740	770	760
13:00	300	300	300	300	300	300	300	280	300	300	300	300	290	290	290	260	270
13:30	640	620	620	620	600	620	620	640	640	640	620	620	600	580	580	600	560
14:00	740	700	740	720	720	720	720	720	720	700	710	730	700	700	710	730	700
14:30	760	730	760	740	740	740	740	740	740	700	710	710	700	700	710	720	710
15:00	750	730	750	750	750	740	740	750	750	720	720	710	710	710	710	710	730
15:30	620	620	620	610	660	620	620	620	620	620	620	620	630	640	620	640	620
16:00	NO READING TAKEN DUE TO EM. STEERING TEST																
16:30	470	480	470	500	500	480	480	480	500	500	510	510	480	480	500	480	480
17:00	SINGLE ENGINE RUN																
17:30	DITTO																
18:00	DITTO																
18:30	660	640	660	650	660	660	640	640	640	640	640	640	630	620	640	650	630

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81
DATA TAKERS:
C.TROSCLAIR
R.ANTHONY

ENGINE #2

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
19:00	730	700	730	730	720	720	700	700	720	710	710	720	700	710	710	730	730
19:30	730	700	730	700	720	720	700	700	700	720	720	720	700	710	700	730	730
20:00	580	560	570	570	570	560	560	560	580	560	560	560	560	560	560	570	520
20:30	580	560	570	560	560	540	550	560	510	560	560	550	560	560	560	580	540
21:00	600	570	580	600	590	550	560	560	570	550	560	560	550	560	560	570	580
22:00	560	550	550	550	550	530	560	560	570	560	560	560	560	550	550	560	540
23:00	550	550	560	560	560	550	560	560	560	560	560	560	560	550	560	560	540
00:00	600	590	600	590	580	570	590	600	600	600	600	600	590	600	600	620	590
1:00	600	590	600	600	600	590	600	610	610	600	600	600	590	590	590	590	560
2:00	600	590	600	600	600	590	600	610	610	600	600	600	600	590	590	590	560

EMD MAIN ENGINE LOG

ENGINE #3

7 MAY 81 Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM. TEMP. C.
2100	5	66	22	205	350	1.72	98-6	25
2100	5	60	22	200	350	1.72	98-1	30
2230	25	66	36	190	730	1.36	99-9	30
2300	24	65	34	200	740	1.40	100-5	33
2330	34	65	36	190	730	1.40	101-0	38
2400	7	50	22	200	400	1.68	101-5	39
0030	8	50	22	198	400	1.72	102-1	38
0100	18	62	30	198	600	1.56	102.4	38
0130	17	62	38	198	600	1.56	102.4	38
0200	17	62	28	198	600	1.52	103.4	38
0230	18	65	32	200	600	1.64	103.9	38
0300	15	62	28	200	550	1.64	104.4	38
0330	16	62	28	190	550	1.64	104.9	38
0400	15	62	28	200	550	1.66	105.4	38
0430	16	62	28	190	550	1.62	105-9	38
0500	15	62	28	200	550	1.62	106.4	38
0530	15	62	28	200	550	1.64	106.9	38
0600	20	65	32	195	650	1.50	107.4	38
0630	13	60	25	200	500	1.60	107.9	38
0700	13	60	26	200	500	1.62	108.4	38
0730	13	60	26	200	500	1.62	108.9	38
0800	17	63	25	197	597	1.46	109.4	38
0830	18	63	29	205	600	1.56	109.9	38
0900	23	65	34	198	710	1.56	110.4	38
0930	28	65	37	192	800	1.24	110.8	38
1000	29	65	37	198	780	1.12	111.4	40
1030	30	65	35	205	800	1.00	111.8	41

EMD MAIN ENGINE LOG

ENGINE #3

DATE: 7 MAY 81

Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM TEMP.
1100	30	65	38	200	780	1.60	112.3	42
1130	28	63	34	205	800	1.00	113.0	44
1200	29	65	35	195	820	1.12	113.5	45
1230	29	65	35	205	790	104	114.0	45
1300	STANDSTILL							
1330	28	65	36	198	800	1.16	114.8	43
1400	28	62	31	200-	750	1.00	115.3	43
1430	30	65	35	195	820	1.00	115.9	47
1500	30	65	37	205	825	1.00	116.3	48
1530	28	65	38	200	805	1.52	116.9	48
1600	MANEUVERS							
1630	18	60	28	200	600	1.56	117.9	44
1700	SINGLE ENGINE							
30	SINGLE ENGINE							
1800	" "							
1830	24	65	32	200	740	1.64	118.9	40
1900	24	65	34	197	750	1.24	119.3	40
1930	24	65	34	200	760	1.12	119.7	40
2000	22	63	30	200	690	1.16	120.3	40
2030	22	63	31	190	710	1.24	120.8	42
2100	22	63	32	200	705	1.24	121.2	44
2200	22	63	28	200	700	1.20	122.3	44
2300	22	62	30	205	700	1.16	123.3	44
2400	22	62	26	205	720	1.20	124.3	44
0100	22	62	25	190	710	1.16	125.2	44
0200	22	62	28	195	710	1.16	126.1	44

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81
DATA TAKERS:
C.TROSCLAIR
R.ANTHONY

ENGINE # 3

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
19:00	670	670	670	650	660	660	610	650	660	660	660	660	700	700	700	700	700
19:30	620	620	600	560	560	580	580	580	600	620	630	630	650	640	660	630	620
20:00	630	620	620	580	600	600	560	600	630	630	600	600	630	620	620	620	600
20:30	600	600	600	550	560	560	520	570	600	600	560	570	600	600	600	560	580
21:00	600	600	600	540	540	550	520	560	580	580	570	560	580	580	580	550	550
22:00	620	630	600	570	580	580	550	580	620	620	600	600	600	600	600	620	590
23:00	620	610	610	570	570	570	540	580	610	600	600	600	600	600	600	600	570
00:00	640	630	630	590	600	600	560	600	630	630	620	610	620	620	620	620	600
1:00	640	620	620	870	580	580	540	570	610	600	590	590	600	600	600	600	580
2:00	640	620	620	570	580	580	540	570	610	600	590	590	600	600	600	600	580

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 6/7, MAY 81

ENGINE # 3

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
2200	300	320	320	340	380	400	400	420	460	440	440	420	460	480	460	460	450
2230	500	500	500	460	460	460	440	470	500	480	480	460	500	500	500	480	460
2300	480	480	480	440	440	440	480	440	460	460	460	480	480	480	480	480	480
2330	500	500	500	440	440	440	420	460	460	460	460	480	460	460	460	460	460
0000	500	500	500	440	440	440	420	460	460	460	460	480	460	460	460	460	460
0030	260	260	240	240	240	240	240	240	260	240	240	240	240	240	260	240	240
1:00	340	340	340	320	320	320	320	320	360	340	340	340	340	340	340	340	320
1:30	340	340	340	320	320	320	320	320	360	340	340	320	340	340	320	320	320
2:00	380	380	380	360	340	320	340	380	360	360	340	340	360	360	360	340	340
2:30	300	310	290	290	290	300	290	290	290	300	310	310	300	310	300	300	290
3:00	300	300	300	290	290	290	290	290	310	300	300	300	300	310	300	300	288
3:30	300	300	290	280	280	280	280	280	300	300	300	300	300	300	300	300	290
4:00	300	300	290	280	280	280	280	280	300	300	300	300	300	300	300	290	280
4:30	300	300	280	300	280	280	290	290	290	300	310	290	290	300	300	300	280
5:00	300	300	280	280	280	290	290	300	300	300	310	300	300	300	300	300	280
5:30	310	370	360	340	340	340	340	360	400	380	380	360	380	380	380	380	360
600	320	320	320	300	300	300	300	300	340	320	320	320	320	320	320	320	360
6:30	300	320	310	290	290	290	290	290	320	320	320	300	320	320	320	320	300
7:00	320	320	330	310	310	300	310	300	320	320	320	320	330	320	320	320	300
7:30	320	300	300	310	310	300	300	300	300	300	290	290	290	290	280	290	290
8:00	380	380	360	340	360	340	360	400	380	380	360	360	380	360	360	380	360

CONSOLE MAIN ENGINE LOG

ENGINE #3

7 MAY 81 Andrew J. Barberi - Hull 1713

TIME	RPM	LO TEMP	LO PRES	FO PRES	SW PRES	FW OUT TEMP	FW IN TEMP	EXH TEMP 1-16
1400	800	175	62	36	27	175	30	
1430	840	175	62	38	30	175	34	
1500	840	175	63	40	30	175	35	
1530	840	175	63	40	30	175	30	
1600	NO READINGS TAKEN DUE TO EM. STEERING TEST							
1630	610	170	60	31	18	165	18	
1700	SINGLE R'N ENG.							
1730	DITTO							
1800	DITTO							
1830	750	170	62	36	35	170	18	
1900	750	170	62	36	25	170	26	
1930	750	170	62	36	25	170	26	
2000	720	170	62	32	24	170	26	
2030	720	170	62	32	24	170	24	
100	720	170	62	34	24	170	24	
2200	720	170	62	34	24	170	24	
2300	720	170	62	34	24	170	24	
0000	740	170	62	28	24	170	24	
100	740	70	62	28	24	170	24	
200	740	70	62	28	24	170	24	

EMD MAIN ENGINE LOG

ENGINE #4

7 MAY 81 Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM. TEMP. C.
2100	4	60	9	190	350	1.72	100.4	25
2130	4	55	9	185	350	1.76	100.8	30
2230	25	62	20	178	740	1.36	101.7	30
2300	25	62	20	182	740	1.44	102.2	33
2330	25	62	20	180	740	1.32	102.8	38
2400	9	45	10	185	405	1.72	103.2	39
0030	8	47	10	180	410	1.72	103.7	38
0100	17	58	16	170	610	1.56	104.2	38
0130	17	58	16	170	610	1.56	104.2	38
0200	18	60	17	180	620	1.56	105.2	38
0230	18	60	16	185	610	1.65	105.7	38
0300	15	60	14	180	5150	1.62	106.2	38
0330	15	60	14	180	5150	1.64	106.6	38
0400	15	60	14	185	5.50	1.66	107.1	38
0430	15	60	14	190	5.50	1.64	107.6	38
0500	15	60	14	190	5.50	1.62	108.1	38
0530	15	60	14	180	5.50	1.64	108.6	38
0600	20	60	16	180	650	1.48	109.2	38
0630	12	57	12	180	510	1.60	109.7	38
0700	12	56	12	180	510	1.58	110.2	38
0730	12	56	12	185	510	1.60	110.7	38
0800	17	60	16	182	610	146	111.2	38
0830	18	58	15	190	600	1.52	111.6	38
0900	23	60	17	180	710	1.48	112.1	38
0930	29	62	20	178	800	1.16	112.5	38
1000	29	60	20	180	810	1.12	113.1	40
1030	28	60	18	190	800	1.08	113.6	41
1100	26	60	16	170	780	1.44	114.0	42

EMD MAIN ENGINE LOG

ENGINE #4

DATE: 7 MAY 81

Andrew J. Barberi - Hull 1713

TIME	RAW WATER PRES PSI	L.O. PSI	F.O. PSI	START AIR PSI	RPM	FUEL RACK	RUN HOURS	ENGINE RM TEMP.
1130	30	60	18	188	800	1.00	114.6	44
1200	30	60	18	180	820	1.00	115.2	45
1230	30	60	18	185	800	1.04	115.7	45
1300	STANDSTILL							
1330	30	60	19	180	810	1.20	116.6	43
1400	29	60	17	185	770	1.80	117.0	43
1430	32	60	17	180	830	1.02	117.6	47
1500	32	60	19	187	820	1.00	113.0	48
1530	32	61	24	180	840	1.44	118.6	48
1600	MANEUVERS							
1630	18	56	14	182	600	1.40	119.6	44
1700	SINGLE ENGINE							
1730	SINGLE ENGINE							
1800	" "							
830	26	60	20	182	750	1.60	121.1	40
1900	26	60	16	180	750	1.24	121.5	40
1930	25	60	18	190	750	1.20	122.0	40
2000	22	60	15	180	695	1.18	122.6	40
2030	23	60	16	180	710	1.22	123.0	42
2100	24	60	16	184	710	1.22	123.5	44
2200	22	58	14	180	700	1.20	124.5	44
2300	23	58	16	185	700	1.20	125.5	44
2400	23	60	14	190	710	1.20	126.5	44
0100	23	60	15	175	710	1.16	127.4	44
0200	23	60	14	180	710	1.16	128.4	44

CONSOLE MAIN ENGINE LOG

ENGINE #4

7 MAY 81

Andrew J. Barberi - Hull 1713

TIME	RPM	LO TEMP	LO PRES	FO PRES	SW PRES	FW OUT TEMP	FW IN TEMP	EXH TEMP 1-16
1400	760	178	62	27	27	175	32	
1430	830	178	64	20	33	175	38	
1500	830	178	64	21	33	175	40	
1530	840	175	66	28	34	170	30	
1600	NO READINGS TAKEN DUE TO EM. STEERING TEST							
1630	800	170	66	20	32	165	30	
1700	SINGLE ENG. RUN----------							
1730	DITTO----------							
1800	DITTO----------							
1830	750	175	62	20	29	170	26	
1900	750	175	64	19	28	170	28	
1930	750	175	64	19	28	170	29	
2000	720	175	60	16	25	170	29	
2030	720	175	60	18	25	170	28	
2100	720	175	62	18	25	170	26	
2200	720	175	62	18	25	170	26	
2300	720	175	62	18	25	170	26	
0000	730	175	62	16	25	170	26	
100	720	175	62	16	25	170	26	
200	720	175	62	16	25	170	26	

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 6/7 MAY 81

ENGINE # 4

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
2200	500	480	480	480	480	460	460	460	480	460	460	460	460	490	480	480	480
2230	500	500	500	500	500	500	500	480	520	480	480	480	490	480	490	490	480
2300	460	480	480	480	480	480	480	480	460	460	460	460	460	460	460	460	460
2330	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
0000	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480	480
0030	260	260	240	260	240	240	240	220	240	240	220	220	220	220	220	220	220
1:00	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360	360
1:30	340	340	340	340	360	340	360	360	360	340	340	360	340	340	340	360	340
2:00	380	380	380	380	280	380	360	360	360	340	340	360	340	340	340	360	340
2;30	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	300
3:00	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
3:30	300	300	300	290	300	300	290	300	290	290	290	290	300	300	300	300	290
4:00	290	290	290	290	300	300	300	300	290	290	290	290	290	300	300	300	300
4:30	300	300	300	300	290	300	300	300	290	290	290	290	300	300	300	300	300
5:00	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
5:30	370	370	370	370	370	370	370	370	380	380	380	380	380	380	380	380	380
6:00	330	330	330	330	320	330	320	320	330	330	330	330	330	330	330	330	330
6:30	330	330	330	330	330	320	320	320	320	320	320	320	320	320	320	320	320
7:00	330	330	330	330	330	320	320	320	320	320	320	320	320	320	320	320	320
7:30	320	320	300	300	300	300	300	300	300	290	290	300	300	300	300	290	290
8:00	380	380	380	380	360	380	380	360	360	380	380	380	380	380	380	380	360

ANDREW J. BARBERI
HULL 1713
CONSOLE MAIN ENGINE LOG
EXHAUST TEMPERATURE

DATE: 5/7/81

DATA TAKERS:
C.TROSCLAIR
R.ANTHONY

ENGINE # 4

CYLINDERS

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	C
19:00	640	620	620	600	600	600	600	590	620	620	620	620	600	600	610	620	620
19:30	580	560	550	520	520	540	560	570	570	570	570	570	570	570	570	570	560
20:00	600	600	600	600	600	600	580	580	620	590	600	600	600	600	600	600	590
20:30	580	570	570	560	570	550	550	590	560	560	570	560	560	560	560	560	550
21:00	580	570	570	560	560	560	560	580	570	560	560	560	570	760	560	560	570
22:00	600	590	600	590	600	590	570	570	610	580	580	600	590	580	580	580	570
23:00	600	590	590	590	590	580	560	560	590	570	570	580	580	580	580	580	520
00:00	610	600	600	590	590	580	570	570	600	580	580	590	580	580	580	580	580
1:00	600	590	600	590	590	590	570	570	600	580	580	590	580	580	580	580	580
2:00	600	590	600	590	590	590	570	570	600	580	580	590	580	580	580	580	580

NEW YORK PROPELLER

ANDREW J. BARBERI
HULL 1713

DATE: 5/7/81

1. Start ship service sea water pump #1. Run pump for Twelve (12) hours. Switch over to #2 pump for balance of trials.

2. Start propeller standby oil pump.

3. Turbo coupling pump #1 to run for duration of trial. #2 pump is to be set up for automatic standby operation. The power source for #1 pump is the emergency switch board and this is considered the primary pump.

PROPULSION GEAR SPACE GAUGES

G. KRAUS

TIME	RPM	AHEAD ASTERN	% PITCH	CONTROL OIL PSI	LUBE OIL PSI		ROTOR OIL	CONT OIL TEMP	LO TEMP	ROTOR OIL TEMP
2 AM	370	A	80%	260	28		5		110	
2:30	540	A	50	265	28		5		110	
3:00	500	A	70	255	26		4.5		110	
3:30	490	A	70	255	26		4.5		110	
4:00	490	A	70	255	26.5		4.5		110	
:0	490	A	70	257	27		4.5		108	
5:00	490	A	70	257	27		4.5		108	
5:30	540	A	70	257	24		4.5		108	
6:00	610	A	80	275	32		6		108	
6:30	425	A	80	250	23		4		110	
7:00	425	A	80	250	25		4		100	
7:30	440	A	80	250	25		4			

ANDREW J. BARBERI - 1713

NEW YORK PROPELLER

DATE: 5/7/81

CENTRAL CONTROL CONSOLE

TURBO COUPLING

TIME	AHEAD ASTERN	% PITCH	RPM	ROTOR PRESS	LO TEMP	LO PRESS	CONTROL PRESS	PUMP 1	PUMP 2	LO PRESS
1500	ASTERN	98	51	5	120	29	275	23	19	28
1530	ASTERN	75	38	2.5	120	23	245	23	19	28
1600	NO READING TAKEN DUE TO EMER. STERING TEST									
1630	AHEAD	90	51	5	120	29	275	23	19	29
1700	NO READING TAKEN DUE TO SINGLE ENG.									
1730	"	"	"	"						
1800	DITTO									
1830	AHEAD	75	51	7.5	105	31	280	23	22	28
1900	AHEAD	100	50	7.5	110	31	295	28	27	34
1930	AHEAD	100	48	7.5	115	30	290	28	27	34
2000	ASTERN	97	44	6.5	115	29	280	28	27	34
2030	ASTERN	100	43	4	118	29	265	28	27	34
2100	ASTERN	100	43	4.5	115	29	265	28	27	34
2000	ASTERN	100	43	4.5	120	29	260	28	27	34
2300	ASTERN	100	43	4.5	115	29	260	28	27	34
000	ASTERN	95	48	5	115	30	270	24	22	28
0100	ASTERN	100	47	4.5	120	30	265	24	22	28
0200	ASTERN	100	47	4.5	120	29	270	24	22	28

drew J. Barberi - Hull 171

SHAFT BEARING TEMPS.

NEW YORK END

5/7/81 CENTRAL CONTROL CONSOLE

TIME	RPM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1500	700	150	120	95	95	93	93	90	93	93	105	100	100	100	115	95	95	120	120	
1530	640	150	120	95	95	93	93	90	93	93	105	100	100	100	115	95	95	118	118	
1600	NO READING TAKEN DUE TO EMER. STEERING TEST																			
1630	540	165	120	95	95	95	93	90	93	95	105	100	100	100	120	95	95	118	118	
1700	NO READING TAKEN DUE TO SINGLE ENG.																			
1730	"	"		"			"		"											
1800	DITTO																			
1830	640	150	118	95	95	95	93	90	93	93	100	95	95	95	105	95	95	110	115	
1900	675	150	120	93	93	93	93	90	95	95	105	95	95	95	105	95	95	115	115	
1930	680	150+	120	93	93	93	93	90	95	95	105	95	95	95	105	95	95	115	115	
2000	620	165	120	95	95	95	95	90	95	95	110	95	95	95	105	97	95	120	120	
2030	620	165	120	95	95	95	95	90	95	95	110	95	95	95	107	95	95	120	120	
2100	620	160	120	95	95	95	95	90	95	95	108	95	95	95	105	95	95	120	120	
2200	620	160	125	95	95	95	95	90	95	95	105	95	95	95	105	95	95	120	120	
2300	630	155	125	95	95	95	95	90	95	95	105	95	95	95	105	95	95	120	120	
0000	660	150	125	95	95	95	95	93	95	95	105	95	95	95	105	95	95	120	120	
0100	650	150	125	95	95	95	95	95	95	95	105	95	100	100	115	95	99	120	120	
0200	650	150	125	95	95	95	95	95	94	93	105	95	99	100	115	95	99	120	120	

HULL 1713
ANDREW J. BARBERI
STATEN ISLAND PROPELLER

DATE: -

1. Start ship service sea water pump #1. Run pump for three (3) hours. Switch over to #2 pump for balance of trials.

2. Start propeller standby oil pump.

3. Turbo coupling pump #3 to run duration of trial. #4 pump is to be set up for automatic standby operation.

TIME	RPM	AHEAD ASTERN	% PITCH	CONTROL OIL PSI	LUBE OIL PSI		OIL PSI	CONT OIL TEMP.	LO TEMP	ROTOR OIL TEMP
2 PM	780	B	80	280	29			7.5	120	
2:30	720	B	95	275	28			6	120	
3:00	690	B	95	275	28			6	120	
3:30	740	D	70	285	28			8.5	120	
[illegible]0	UKN.	C	65	245	20			2.5	UKN.	
4:30	540	A	75	255	25			4.5	120	
5:00	---	-	0	215	7.5			0	120	
5:30	---	-	0	225	10			0	---	
6:00	---	-	0	235	19			2	---	
6:30	680	A	75	285	30			8	120	
7:00	675	A	95	300	31			9	110	
7:30	670	A	95	300	30			9	115	

STATEN ISLAND PROPELLER

CENTRAL CONTROL CONSOLE

TURBO COUPLING

TIME	AHEAD ASTERN	% PITCH	RPM	ROTOR PRESS	LO TEMP	LO PRESS	CONTROL PRESS	PUMP 1	PUMP 2	LO PRESS
200	ASTERN	95	57	9	115	31	275	22	21	33
230	ASTERN	95	58	9	118	31	280	22	21	33
300	AHEAD	75	36	5	115	25	235	21	20	33
330	AHEAD	87	57	9	115	32	280	21	20	33
400	AHEAD	87	57	9	115	31	275	21	20	335
430	AHEAD	95	58	9	115	31	275	21	20	34

ANDREW J. BARBERI - 1713
STATEN ISLAND PROPELLER

DATE: 5/7/81

CENTRAL CONTROL CONSOLE

TURBO COUPLING

TIME	AHEAD ASTERN	% PITCH	RPM	ROTOR PRESS	LO TEMP	LO PRESS	CONTROL PRESS	PUMP #3	PUMP #4	LO PRESS
1500	AHEAD	95	58	9	115	31	275	21	20	33.5
1530	AHEAD	75	43	5.5	115	26	225	20	20	33
1600	NO READING TAKEN DUE TO EMER. STERING TEST									
1630	ASTERN	C	56	9	110	31	275	20	20	34
1700	NO READING TAKEN DUE TO SINGLE ENG.									
1730	"	"	"	"						
1800	DITTO									
1830	ASTERN	75	54	9	105	26	250	25	24	33
1700	ASTERN	100	51	9.5	105	28	250	25	24	33.5
1730	ASTERN	95	51	9.5	110	27	250	25	24	33.5
2000	AHEAD	100	49	9.5	110	27	270	25	24	33
2030	AHEAD	100	50	8.5	110	26	260	25	24	33
2100	AHEAD	100	50	8.5	115	26	265	25	24	33
2200	AHEAD	100	50	8.5	115	26	270	25	24	33
2300	AHEAD	100	50	8.5	115	26	270	25	24	33
0	AHEAD	100	51	8	115	25	275	25	24	33
0100	AHEAD	100	51	8	115	25	280	25	24	33
0200	AHEAD	95	51	8	115	25	280	25	24	33

ANDREW J. BARBERI - 1713

SHAFT BEARING TEMPS.

DATE: 5/7/81

STATEN ISLAND END

CENTRAL CONTROL CONSOLE

TIME	RPM	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1130	800	105	105	95	96	94	90	90	90	95	94	85	90	93	90	90	97	115	100
1200	800	105	108	96	96	95	90	90	93	95	90	85	90	93	90	90	93	115	103
1230	780	110	110	95	96	95	90	90	94	95	89	85	90	95	90	90	95	115	105
1300	500	108	105	95	95	95	87	90	92	94	90	85	90	92	90	90	93	110	105
1330	780	107	106	95	95	95	89	90	92	93	90	85	90	93	90	90	93	115	105
1400	800	107	105	95	95	95	85	90	90	93	90	85	90	93	90	92	93	115	105
1430	800	107	105	95	95	95	85	90	90	93	90	85	90	93	90	90	93	115	105

Andrew J. Barberi - Hull 1.13

SHAFT BEARING TEMPS.

STATEN ISLAND END

5/7/81 CENTRAL CONTROL CONSOLE

TIME	RPM	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
1500	800	110	105	95	95	93	85	90	90	90	90	85	90	93	90	90	90	115	105	
1530	760	110	105	95	95	93	85	90	90	90	90	85	90	93	90	90	90	115	105	
1600	NO READING TAKEN DUE TO ENER. STERING TEST																			
1630	640	110	105	95	95	95	85	90	90	93	90	89	90	90	90	90	90	110	110	
1700	NO READING TAKEN DUE TO SINGLE ENG.																			
1730	"	"			"				"											
1800	DITTO																			
1830	740	105	105	95	95	95	85	90	85	90	90	85	90	90	90	90	90	105	105	
1700	740	105	105	95	95	95	85	90	90	90	90	85	90	90	90	90	90	105	105	
1930	740	100+	100	95	95	95	85	90	90	90	90	85	90	90	90	90	90	105	105	
2000	680	100	100	95	95	93	89	90	90	92	90	87	90	90	90	90	90	105	105	
2030	680	105	105	95	95	90	89	90	90	93	90	89	90	90	90	90	90	105	105	
2100	680	105	105	95	95	95	90	90	90	93	90	89	90	90	90	90	90	105	105	
2200	700	105	105	95	95	95	90	90	90	90	90	90	90	90	90	90	90	105	105	
2300	680	105	105	95	95	90	90	90	90	90	90	90	90	90	90	90	90	105	105	
0000	700	105	105	95	93	90	89	89	90	90	90	87	90	90	90	90	90	105	105	
0100	700	105	105	95	95	90	90	90	90	90	90	90	90	90	90	90	90	110	110	
0200	700	105	105	95	95	90	90	90	90	90	90	90	90	90	90	90	90	110	110	

ANDREW J. BARBERI 1713

VOITH SCHNEIDER PROPULSION

DATE: 5/7/81

NEW YORK — DATA BY M. BUSHNELL

HEAD	N/A														
ASTERN	WARM UP			MN GO	MN GO										
TIME	2145	2145	2205	2215	2230	2245	2300	2320	2340	0000	0020	0040	0100	0120	0140
ENG. RPM			390		750	760									
SHAFT VSP RPM PORT			360	420 450	690	680	680	680	680	680	360	540	540	540	540
SHAFT VSP RPM STBD	N/A														
VSP PITCH A	-			95	80	80	80	85	85	85	50	65	80	80	80
VSP PITCH B							1								
BEARING TEMPERATURE DEGREES "F" No 1	24	30	32	34	37	40+	43+	46	47+	49	48+	47	46+	47	47
No 2	25	30	32+	34	36+	39	42	45	46+	48	48	47	46	47	47
No 3	32	32+	34	36	39	43	46	49	50+	52+	51	49+	51	50+	51
No 4	25	27	29	30+	35	38	41	43+	45	47	45	43	44	45	45
No 5	25	29	31	33+	38	40+	43	46	47	49	47	46	46	46+	47
No 6	25	28	30	31+	35	38	41+	44+	45+	47	46	45	45	45+	46
HYDRAULIC OIL "PSI"	15	24	24	25	25	26	28	28	29	30	30	30	30	30	30
LUBE OIL "PSI"	15	26	27	28	29	31	32	34	35	36	36	36	36	36	36
ROTOR OIL "PSI"	5	4	4	4	10+	10	9	9	8+	8+	2	7½	5	5	5
CASING OIL TEMP "C"	27	28	29	32	33	36	38	40+	42	44	45	44	43+	44	44
COOLER OIL TEMP "F" -IN-															
COOLER OIL TEMP "F" -OUT-															
OIL LEVEL 0=650mm +/- INS	1.5 CM	1.5 CM	1.5 CM	1.5 CM	1.5 CM	1.5 CM	2 CM	2.5 CM	2.5 CM	2.0 CM	2.5 CM	2.5 CM	3.0 CM	2.5 CM	2.5 CM
OIL-PUMP "ON"/"OFF"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROOM TEMP. F	78	78	78	77	78	78	78	77	77	77	78	77	77	77	77

NDREW J. BARBERI 1713

VOITH SCHNEIDER PROPULSION

DATE: 7/8 MAY 81

DATA RECORDED BY M. BUSHNELL

NEW YORK									
HEAD									
ASTERN									
TIME	2000	2030	2105	2130	2205	2300	0000	0105	0155
ENG. RPM									
SHAFT PORT	640	620	630	630	630	640	650	650	650
VSP RPM STBD									
VSP PITCH A									
VSP PITCH B	90 VAR	95	95	95	95	95	95	95	95
BEARING TEMPERATURE DEGREES C Nº 1	52+	53	53	53	53	53	52+	54	54
BEARING TEMPERATURE DEGREES C Nº 2	52+	53	53	53	53	53	52+	54	54
BEARING TEMPERATURE DEGREES C Nº 3	56	56+	57	57	57	57	56+	57+	57+
BEARING TEMPERATURE DEGREES C Nº 4	50+	51	51	51	51	51	50+	52	52
BEARING TEMPERATURE DEGREES C Nº 5	52	52+	53	53	53	53	52	53+	53+
BEARING TEMPERATURE DEGREES C Nº 6	51	51+	52	52	52	52	51	52+	53
COOLER OIL TEMP °F "OUT"	93F 34C	35	34	34	34	34	33	34	35
COOLER OIL TEMP °F "IN"	109F 40C	41	40	40	40	40	39	40	40
LUBE OIL PRESS PSI	29	29	29	29	29	29	29	29	29
ROTOR OIL PRESS PSI	8½	5½	5½	5½	5½	5½	6	5½	6
CONTROL OIL PRESS PSI "HYDRAULIC OIL"	290	268	268	268	268	268	270	270	270
CASING OIL TEMP °C	48+	49	48+	49	48+	48+	48	48+	49
OIL LEVEL 0=650mm +/- INS	½cm	1½cm	1cm	1cm	1cm	1cm	1cm	1cm	1cm
PUMP "1 ON"/"0 OFF"	0	0	0	0	0	0	0	0	0
ROOM TEMP. °F	80	81	80	81	81	81	81	81	80

V[illegible]TH SCHNEIDER PRO[illegible]ULSION

7 MAY 81

NEW YORK																
AHEAD																
ASTERN	*															
TIME	10:00 PM	10:30 PM	11:00 PM	11:30 PM	12:00 MDNT	12:30 AM	1:00 AM	1:30 AM	2:00 AM	2:30 AM	3:00 AM	3:30 AM	4:00 AM	4:30 AM	5:00 AM	5:30 AM
ENG. RPM	400	750	750	750	750	400	600	600	600	550	560	540	550	550	540	650
SHAFT RPM PORT VSP	400	730	730	740	740	420	600	600	600	550	560	540	550	530	540	650
SHAFT RPM STBD VSP	400	730	730	740	740	420	600	600	600	560	560	540	560	560	560	650
VSP PITCH A	90%	80%	80%	79%	79%	46%	78%	78%	80%	45%	65%	63%	63%	62%	63%	78%
VSP PITCH B																
BEARING TEMPERATURE °C No 1	88°	92°	102	106	108	110	108	108	110	116	116	116	115	115	115	115
BEARING TEMPERATURE °C No 2	90	100	110	114	116	116	116	116	117	118	118	118	118	117	117	117
BEARING TEMPERATURE °C No 3	84	90	102	106	108	107	107	107	109	114	11[illegible]	114	114	113	113	113
BEARING TEMPERATURE °C No 4	82	90	101	106	107	108	108	108	110	114	114	114	114	114	114	114
BEARING TEMPERATURE °C No 5	90	96	106	109	112	113	112	102	104	117	117	117	117	117	117	117
BEARING TEMPERATURE °C No 6	92	104	112	117	119	117	117	117	117	120	120	120	119	119	119	119
HYDRAULIC OIL "PSI"	240	300	280	280	280	240	260	260	280	260	255	260	260	260	260	270
LUBE OIL "PSI"	30	33	38	36	36	28	32	32	12	32	31	31	31	31	31	33
ROTOR OIL "PSI"	22	22	22	10	10	4	8	8	8	9	8	7	7	7	7	9
CASING OIL TEMP "F"	82	88	98	102	104	104	105	106	107	110	110	108	109	109	109	109
COOLER OIL TEMP "F" -IN-	75	80	85	85	85	85	85	85	85	90	90	90	85	95	95	95
COOLER OIL TEMP "F" -OUT-	75	80	80	80	80	80	80	85	85	85	85	90	95	85	90	85
L LEVEL 0=650mm +/- INS	-3/4	-1/4	-1/2	-1/4	-1/4	-1/4	-1/4	-1/4	-1/4	-1/4	-1/4	-1/2	-1/2	-1/2	-1/2	-1/4
L PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ROOM TEMP.	76	76	78	78	78	78	78	78	78	78	78	76	76	76	76	77

ANDREW J. BARBERI

VOITH SCHNEIDER PROPULSION

DATE: 7 MAY 81

NEW YORK		DATA RECORDED BY M. BUSHNELL														
HEAD																
ASTERN																
TIME	0800	0820	0845	0900	0920	0940	1000	1030	130	1200	1230	1300	1330			
ENG. RPM																
SHAFT VSP RPM PORT	540	540	640	640	640 720	720	715	720	700	780	720	720	445	720		
SHAFT VSP RPM STBD																
VSP PITCH A	80	80	80	80	80	85 12°D	85 12°D	92/82	93/77	98	95	95				
VSP PITCH B						85 12°D							15C 75	85		
BEARING TEMPERATURE DEGREES "F" No 1	46	46	46+	48	48+	51	52	53+	53+	54+	56	56	53	53		
BEARING TEMPERATURE DEGREES "F" No 2	46	46	47	48	48+	50	51+	53	54	54+	56	56+	54	53		
BEARING TEMPERATURE DEGREES "F" No 3	50	50	51	52	52+	54	55+	57	57	57+	59	59+	57	56+		
BEARING TEMPERATURE DEGREES "F" No 4	43+	44	113 45	46	46+	48	50		51	52	53+	54	50+	51		
BEARING TEMPERATURE DEGREES "F" No 5	45+	46	116 47	47+	48	50+	52		53	54+	55+	56	52	52+		
BEARING TEMPERATURE DEGREES "F" No 6	44	44+	114 45+	46+	47	49	50+		52	53	54	54+	52	51+		
HYDRAULIC OIL "PSI"	85F 29C	30C	30	30	31	31	32	32	33	34	34	34	33	32		
LUBE OIL "PSI"	93F 34C	34+	35	35	36	36	37	37	38	38	38	39	39	38		
ROTOR OIL "PSI"	29+	29	31	30+	30	30	29	29	29	28+	28	28	20+	29		
CASING OIL TEMP "F°"	5	5	5	6+	6+	8½	8½	7	9	6½	7	7½	3½	7½		
COOLER OIL TEMP "F°" -IN-	265	265	280	277	275	287	285	280	290	273	276	280	240	283		
COOLER OIL TEMP "F°" -OUT-	43	43	43	43+	45	46	47+	48	48	50	50	50+	49+	48+		
OIL LEVEL 0=650mm +/- INS	+2cm	+2	+3	+2	+2	+3	+2½	3	2	3cm	1.5	2cm	?	3cm		
PUMP "ON"/"OFF"	0	0	0	0	0	0	0	0	1	0	0	0	0	0		
ROOM TEMP.	77	77	77	77	77	77	77	77	77	77	77	77	78	78		

VOITH SCHNEIDER PROPULSION

7 MAY 81

NEW YORK																
AHEAD	*	----	----	----	----	----	----									
ASTERN																
TIME	2 PM	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30				
ENG. RPM	800	805	800	840	UKNO	600	0	0	0	720	750	760				
SHAFT VSP RPM PORT	780	720	690	740	UKNO	540	0	0	0	690	675	670				
SHAFT VSP RPM STBD																
VSP PITCH A																
VSP PITCH B	80	95	95	70	65	75	0	0	0	75	95	95				
BEARING TEMPERATURE C° No 1	54	55	51	55	54	54	52	46	46	47	49	52				
BEARING TEMPERATURE C° No 2	54	55	51	56	55	54	54	48	48	48	50	52				
BEARING TEMPERATURE C° No 3	57	58	59	59	57	57	56	51	49	51	53	56				
BEARING TEMPERATURE C° No 4	52	53	53	53	51	51	49	44	43	45	47	50				
BEARING TEMPERATURE C° No 5	53	54	55	54	52	53	51	50	45	46	49	52				
BEARING TEMPERATURE C° No 6	53	54	54	54	52	52	50	45	44	46	47	50				
HYDRAULIC OIL "PSI"	97	95	95	95	95	95	95	86	85	75	80	85				
LUBE OIL "PSI"	100	100	100	100	100	100	100	89	90	95	95	100				
ROTOR OIL "PSI"	29	28	28	28	20	25	7.5	10	19	30	31	30				
CASING OIL TEMP " "	7.5	6	6	8.5	2.5	4.5	0	0	2	8	9	9				
COOLER OIL TEMP "F°" —IN—	280	275	275	285	245	255	215	225	235	285	300	300				
COOLER OIL TEMP "F°" —OUT—	121	122	122	122	122	121	118	118	118	110	114	118				
L LEVEL 0=650mm +/- INS	+.25	+0.25	+.0	+0.25	+0.25	+1.0	+1.0	+.75	+.75	+.25	+.75	+.75				
E-PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	ON	OFF	ON	ON	ON	OFF	ON	ON				
ROOM TEMP.	78	78	79	79	80	80	80	80	80	80	80	80				

NDREW J. BARBERI 1713

DATE: 5/7/81

VOITH SCHNEIDER PROPULSION

STATEN ISLAND						
HEAD	**					
ASTERN	N/A	N/A	N/A	N/A	N/A	
TIME	10:00 PM	11:00 PM	12:00 MIDNT	1:00 AM	2:00 AM	
ENG. RPM	720	720	740	740	740	
SHAFT VSP RPM PORT	700	700	700	700	700	
SHAFT VSP RPM STBD	700	700	700	700	700	
VSP PITCH A	N/A					
VSP PITCH B	95%	96%	96%	96%	96%	
BEARING TEMPERATURE DEGREES "F" No 1	120	121	120	120	120	
No 2	130	130	130	130	130	
No 3	120	120	121	120	120	
No 4	122	122	122	122	122	
No 5	124	124	124	124	122	
No 6	128	129	129	129	127	
HYDRAULIC OIL "PSI"	270	280	280	280	270	
LUBE OIL "PSI"	28	28	27	27	27	
ROTOR OIL "PSI"	10	10	9	9	9	
CASING OIL TEMP "F"	117	117	117	117	117	
COOLER OIL TEMP "F" -IN-	100	100	102	102	102	
COOLER OIL TEMP "F" -OUT-	95	95	98	98	98	
OIL LEVEL 0=650mm +/- INS	EVEN	EVEN	EVEN	EVEN	-1/8	
L-PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	OFF	
ROOM TEMP.	82	82	82	82	82	

** denotes vessel ahead

VOITH SCHNEIDER PROPULSION

7 MAY 81

TATEN ISLAND																
AHEAD	*															
ASTERN																
TIME	2 AM	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30				
ENG. RPM	580	600	560	540	540	540	540	600	600	470	470	500				
SHAFT RPM PORT	370	540	500	490	490	490	490	540	610	425	425	490				
SHAFT RPM STBD																
VSP PITCH A	80	50	70	70	70	70	70	70	80	80	80					
VSP PITCH B																
BEARING TEMPERATURE —C°— Nº 1	47	49	47	47	47	47	47	47	48	47	46	45				
Nº 2	47	49	48	4	47	47	47	47	48	47	46	45				
Nº 3	51	51	51	51	51	51	51	50	51	51	50	50				
Nº 4	45	45	45	45	45	44	44	44	45	45	44	43				
Nº 5	47	47	46	46	46	46	46	45	47	46	45	45				
Nº 6	46	46	46	45	45	45	45	45	46	45	44	44				
HYDRAULIC OIL "PSI"	260	265	255	255	255	257	257	257	275	250	250	250				
LUBE OIL "PSI"	28	28	26	26	26.5	27	27	27	32	23	25	25				
ROTOR OIL "PSI"	5	5	4.5	4.5	4.5	4.5	4.5	4.5	6	4	4	4				
CASING OIL TEMP "F°"	112	112	112	113	110	110	110	110	112	110	108	108				
COOLER OIL TEMP "F°" —IN—	95°	95	95	95	959	95	95	95	95	95	95	95				
COOLER OIL TEMP "C°" —OUT—	87°	87	87	87	87	87	87	87	87	87	87	85				
L LEVEL 0=650mm +/- INS	+ 0.50	+ 0.50	+ 0.50	+ 0.50	+ 0.50	+ 0.50	+ 0.50	+ 0.50	+ 0.75	+ .75	+ .50	+ .50				
E-PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF				
ROOM TEMP.	77°	77°	77°	77°	77°	77°	77°	77°	77°	77°	77°	77°				

ANDREW J. BARBERI

VOITH SCHNEIDER PROPULSION

DATE: 5/7/81

STATEN ISLAND																
AHEAD	N/A															
ASTERN	**															
TIME	6:00 AM	6:30 AM	7:00 AM	7:30 AM	8:00 AM	8:30 AM	9:00 AM	9:30 AM	10:00 AM	10:30 AM	11:00 AM	11:30 AM	12:00 NOON	12:30 PM	1:00 PM	1:30 PM
ENG. RPM	500	500	500	500	600	720	720	820	800	800	800	800	830	830	500	820
SHAFT VSP RPM PORT	500	500	500	500	600	695	695	780	780	780	760	760	780	780	490	790
SHAFT VSP RPM STBD	500	500	500	500	600	695	695	780	780	780	760	760	780	780	490	490
VSP PITCH A	78%	80%	80%	80%	83%	80%	80%	85%	85%	92%	88%	92%	90%	91%	---	---
VSP PITCH B															80%	82%
BEARING TEMPERATURE DEGREES "F" No 1	110°	109°	108°	108°	106°	108°	111°	114°	116°	120°	122°	122°	124°	125°	120°	119°
BEARING TEMPERATURE DEGREES "F" No 2	118°	117	116	116	115	115	120	124	124	129	129	129	134	134	128	128
BEARING TEMPERATURE DEGREES "F" No 3	109°	108	107	107	106	107	110	115	116	120	120	124	126	126	120	119
BEARING TEMPERATURE DEGREES "F" No 4	115°	109	108	106	107	108	112	116	117	120	121	122	126	126	120	120
BEARING TEMPERATURE DEGREES "F" No 5	117°	117	116	116	112	113	115	115	115	120	123	124	124	125	125	122
BEARING TEMPERATURE DEGREES "F" No 6	120°	118	118	117	116	118	120	123	124	128	129	129	133	133	127	128
HYDRAULIC OIL "PSI"	270°	255	255	250	270	280	280	290	290	285	280	290	290	290	240	290
LUBE OIL "PSI"	33	29	30	30	32	35	35	35	35	34	32	32	34	34	27	34
ROTOR OIL "PSI"	9	6	6	7	8	10	9	10	10	10	10	10	10	10	4	10
CASING OIL TEMP "F°"	108	106	105	104	104	105	107	110	110	116	118	119	120	121	118	116
COOLER OIL TEMP "F°" -IN-	95	95	95	95	95	95	95	97	97	100	100	100	100	100	100	100
COOLER OIL TEMP "F°" -OUT-	90	85	85	85	85	90	90	90	90	95	95	95	95	95	95	95
*OIL LEVEL 0=650mm +/- INS	-1/4	-1/4	-1/2	-1/2	-3/16	-1/2	-1/2	-3/16	-3/16	-3/16	-1/2	-1/2	-1/8	-1/8	-1/4	-1/4
ERG PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ROOM TEMP.	78°	78	78	78	78	78	78	79	79	80	80	80	80	80	80	80

*OIL LEVEL- RECORD INCHES ABOVE OR BELOW CENTER MARK

** denotes astern

ANDREW J. BARBERI
DATE: 5/7/81

VOITH SCHNEIDER PROPULSION

STATEN ISLAND																
AHEAD	-----	AHEAD	-----		*	*	*						-----	AHEAD	-----	
ASTERN					*	*	*	-----	ASTERN	-----						
TIME	2:00 PM	2:30 PM	3:00 PM	3:30 PM	4:00 PM	4:30 PM	5:00 PM	5:30 PM	6:00 PM	6:30 PM	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
ENG. RPM	820	840	840	600	MANEUVERING			340	340	760	750	750	715	715	720	720
SHAFT RPM PORT	770	800	800	600				340	340	680	715	720	690	690	700	700
SHAFT RPM STBD	770	800	800	600				340	340	680	715	720	690	690	700	700
VSP PITCH A								20%	50%	75%	89%	90%				
VSP PITCH B	83%	90%	90%	10%	0%								98%	98%	95%	96%
BEARING TEMPERATURE DEGREES "F" No 1	121	123	124	122	120			116	118	116	117	118	120	120	120	120
No 2	130	134	136	132	128			119	120	120	122	132	129	129	130	130
No 3	122	124	128	124	120			115	116	118	118	118	120	120	120	120
No 4	124	126	128	124	122			116	116	117	118	120	121	121	122	122
No 5	122	124	126	128	126			118	119	118	119	120	124	124	124	124
No 6	130	132	134	132	128			120	120	122	122	128	128	128	128	128
HYDRAULIC OIL "PSI"	290	290	290	255	220			240	240	250	250	250	260	260	270	270
LUBE OIL "PSI"	33	33	33	27	22			34	27	29	29	29	28	28	28	28
ROTOR OIL "PSI"	10	10	10	5	4			10	9	10	10	10	10	10	10	10
CASING OIL TEMP "F°"	118	120	122	121	121			110	110	112	111	111	116	116	117	117
COOLER OIL TEMP "F°" -IN-	100	100	105	105	105			95	100	100	100	100	100	100	100	100
COOLER OIL TEMP "F°" -OUT-	95	95	95	95	95			90	90	90	95	95	95	95	95	95
OIL LEVEL 0=650mm +/- INS	-1/2	-1/4	-1/4	-1/4	-1/4			-1/2	-1/2	-1/4	-1/4	-1/4	-3/16	+3/16	EVEN	EVEN
E-PUMP "ON"/"OFF"	OFF	OFF	OFF	OFF	OFF			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ROOM TEMP.	80°	80	80	80	80	80	80	80	78	78	78	78	82	82	82	82

MANEUVERING EMERGENCY STEERING

SHUT DOWN SIE FOR SINGLE ENGINE TRIAL

* denotes maneuvering emergency steering - shut down SIE for single engine trial

VOITH TURBO COUPLING

ANDREW J. BARBERI - HULL 1713 DATE:

TIME →	1300	1330	1400	1430	1500	1530	1600	1630	1700	1730	1800	1830	1900	1930	2000	2030
ENG. RPM Nº 1	STANDSTILL	8100	800	750	800	810	MANEUVERS	800	SINGLE ENGINE	SINGLE ENGINE	SINGLE ENGINE	750	750	750	700	710
ENG. RPM Nº 2		820	820	820	820	830		810				750	760	760	710	710
OIL PUMP Nº		1	1	1	1	1		1				1	1	1	1	1
COUPLING ON/OFF		ON	ON	ON	ON	ON		ON				ON	ON	ON	ON	ON
		ON	ON	ON	ON	ON		ON				ON	ON	ON	ON	ON
MAIN OIL "PSI"		29	29	28	28	28		28				28	28	34	34	34
LUBE OIL Nº 1 "PSI"		23	23	23	23	23		23				23	28	28	28	28
LUBE OIL Nº 2 "PSI"		24	24	24	19	19		19				22	27	27	27	27
COUPL TEMP F°		109	111	119	121	118		108				121	119	120	118	116
		110	112	120	124	119		109				131	128	129	126	126
OIL TANK TEMP F°		N/A														
OIL COOLER IN F°		110	110	120	123	122		113				125	120	122	120	120
OUT F°		110	110	115	115	115		197				120	115	115	115	115
OIL LEVEL "M M"		N/A														
ENG. RPM Nº 3		810	800	820	825	805		600				740	750	760	690	710
ENG. RPM Nº 4		810	800	830	820	840		600				750	750	750	695	710
OIL PUMP Nº		3	3	3	3	3		3				3	3	3	3	3
COUPLING ON/OFF		ON	ON	ON	ON	ON		ON				ON	ON	ON	ON	ON
		ON	ON	ON	ON	ON		ON				ON	ON	ON	ON	ON
MAIN OIL "PSI"		33	33	33	33	33		33				33	33	33	33	33
LUBE OIL Nº 3 "PSI"		21	21	21	21	20		25				25	25	25	25	25
LUBE OIL Nº 4 "PSI"		20	20	20	20	20		19				23	24	24	24	24
COUPL TEMP F°		112	115	121	124	120		109				112	112	113	113	115
		113	116	123	126	121		110				111	112	113	114	115
OIL TANK TEMP F°		N/A														
L COOLER IN F°		105	110	122	125	123		113				115	115	115	115	115
OUT F°		100	110	115	115	115		105				110	105	105	105	110
OIL LEVEL "MM"		N/A														

VOITH TURBO COUPLING

ANDREW J. BARBERI - HULL 1713 DATE: 5/7/81

TIME →	2100	2130	2200	2230	2330	2400	0030	0100	0130	0200	0230	0300	0330	0400	0430
ENG. RPM Nº 1	360	360	770	760	760	760	410	600	600	600	620	560	560	560	560
ENG. RPM Nº 2	335	335	760	750	750	750	370	590	590	590	600	540	540	540	540
OIL PUMP Nº	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
COUPLING ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	36	36	29	29	29	28	27	29	29	29	29	29	29	29	29
LUBE OIL Nº 1 "PSI"	36	36	24	24	24	24	24	24	24	24	24	24	24	24	24
LUBE OIL Nº 2 "PSI"	33	33	22	22	22	21	21	21	22	22	22	22	22	22	22
COUPL TEMP F°	79	79	84	89	92	94	96	94	94	96	94	93	92	92	92
	78	78	90	94	102	104	96	94	95	96	93	91	91	90	90
OIL TANK TEMP F°	N/A	---	---	---	---	---	---	---	---	---	---	---	---	---	---
OIL COOLER IN F°	75	75	85	90	90	90	90	90	90	95	98	87	96	96	96
OUT F°	80	80	90	90	90	92	90	90	90	90	96	96	95	95	95
OIL LEVEL "MM" *	N/A	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ENG. RPM Nº 3	350	350	730	730	740	730	400	600	600	600	600	550	550	550	550
ENG. RPM Nº 4	350	350	740	730	740	750	410	610	610	610	610	550	550	550	550
OIL PUMP Nº	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
COUPLING ON/OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	36	36	33	33	33	33	33	33	33	33	33	33	33	33	33
LUBE OIL Nº 3 "PSI"	32	32	24	24	24	24	23	24	23	23	23	23	23	23	23
LUBE OIL Nº 4 "PSI"	31	31	23	23	22	23	22	23	22	22	22	22	22	22	22
COUPL TEMP "F° 3	82	82	92	98	100	102	94	94	94	94	93	93	92	93	93
4	80	80	82	84	90	92	90	92	95	96	94	94	94	93	93
OIL TANK TEMP "F°	N/A	---	---	---	---	---	---	---	---	---	---	---	---	---	---
COOLER IN F°	75	75	75	90	90	95	90	90	90	90	98	98	96	96	95
OUT F°	75	75	80	80	80	85	80	85	85	90	96	96	94	94	94
OIL LEVEL "MM" *	N/A	---	---	---	---	---	---	---	---	---	---	---	---	---	---

* OIL LEVEL RECORD + OR - INCHES ABOVE + OR BELOW - CENTER MARK

VOITH TURBO COUPLING

Andrew J. Barberi - Hull 1713

7 MAY 81

TIME →	0500	0530	0600	0630	0700	0730	0800	0830	0900	0930	1000	1030	100	1130	1200	1230
ENG. RPM Nº 1	560	560	690	500	520	510	600	600	710	800	800	800	350	810	800	810
ENG. RPM Nº 2	540	540	680	475	495	497	600	600	720	820	800	800	350	810	810	830
OIL PUMP Nº	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
COUPLING ON/OFF 1	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
COUPLING ON/OFF 2	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
LUBE OIL Nº 1 "PSI"	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
LUBE OIL Nº 2 "PSI"	22	22	21	21	21	21	21	21	21	20.5	20.5	20.5	20.5	21	20	20
COUPL TEMP F° 1	91	91	94	92	92	92	92	92	94	97	102	107	110	119	121	122
COUPL TEMP F° 2	90	90	92	90	90	89	90	90	94	97	103	108	110	119	123	123
OIL TANK TEMP F°																
OIL COOLER IN F°	95	95	95	95	95	93	93	95	95	95	95	90	95	115	125	125
OIL COOLER OUT F°	94	94	92	92	90	90	90	90	92	92	90	90	95	115	125	124
OIL LEVEL "MM"																
ENG. RPM Nº 3	550	550	650	500	500	500	597	600	700	800	780	800	370	800	790	790
ENG. RPM Nº 4	550	550	650	510	510	510	610	600	700	800	810	800	370	800	790	800
OIL PUMP Nº	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
COUPLING ON/OFF 3	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
COUPLING ON/OFF 4	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
LUBE OIL Nº 3 "PSI"	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	21
LUBE OIL Nº 4 "PSI"	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
COUPL TEMP F° 3	92	92	94	93	93	93	94	94	98	105	108	112	113	120	123	123
COUPL TEMP F° 4	92	92	94	93	93	93	94	94	98	110	110	114	114	121	124	124
OIL TANK TEMP F°																
OIL COOLER IN F°	96	96	95	95	95	95	95	90	95	90	95	90	92	91	115	115
OIL COOLER OUT F°	95	94	90	90	90	90	90	90	90	90	90	90	90	90	110	110
OIL LEVEL "MM"																

VOITH TURBO COUPLING

Andrew J. Barberi - Hull 1713

7/ MAY 81

TIME →	2100	2200	2300	2400	0100	0200
ENG. RPM Nº 1	710	710	710	730	730	730
ENG. RPM Nº 2	710	710	720	740	740	740
OIL PUMP Nº	1	1	1	1	1	1
COUPLING ON/OFF	ON	ON	ON	ON	ON	ON
	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	34	34	28	28	28	28
LUBE OIL Nº 1 "PSI"	28	28	24	24	24	24
LUBE OIL Nº 2 "PSI"	26	26	22	22	22	22
COUPL TEMP Fº	116	116	115	112	116	116
	125	126	125	122	126	126
OIL TANK TEMP Fº						
IL COOLER IN Fº	120	120	125	115	115	115
OUT	115	115	118	110	110	110
OIL LEVEL "M M"						
ENG. RPM Nº 3	710	700	700	720	710	710
ENG. RPM Nº 4	705	700	700	710	710	710
OIL PUMP Nº	3	3	3	3	3	3
COUPLING ON/OFF	ON	ON	ON	ON	ON	ON
	ON	ON	ON	ON	ON	ON
MAIN OIL "PSI"	33	33	33	33	33	33
LUBE OIL Nº 3 "PSI"	25	25	25	25	25	25
LUBE OIL Nº 4 "PSI"	24	24	24	24	24	24
COUPL TEMP "Fº"	115	116	117	116	117	118
	115	117	119	116	119	119
IL TANK TEMP "Fº"						
IL COOLER IN Fº	115	115	117	108	110	110
OUT	110	110	112	108	108	110
OIL LEVEL "MM"						

ANDREW J. BARBERI
HULL 1713
STANDARDIZATION TRIALS

The standardization trials are to be a series of runs over a known distance to establish the relation between speed, propeller RPM and pitch. The course will be between two charted oil platforms 2.2666 nautical miles apart. The radar will be used to determine distances relative to the platforms.

Two consecutive runs, one each in opposite directions are to be made at each speed condition as outlined in the next paragraph. The runs in opposite directions will be averaged to obtain the speed. The turns between the ends of the runs at same speed will be made, if practical, without adjusting the speed controls.

The engines and propellers are to be run in accordance with the following schedule:

ENGINE RPM	PROPELLER RPM	PROPELLER PITCH
500	36	80%
600	43	80%
700	50	80%
700	50	100%
750	57	100%

The series of five speeds are to be run in New York and Staten Island directions.

If any combinations of R.P.M. and pitch produces an overload condition, the pitch is to be reduced. Overload conditions are to be observed by injector rack settings on the main engines. Pitch settings are to be read from the inscribed glass window in the top of the propeller case.

Log sheets of readings from the pilot house, engine room and propeller rooms is to be recorded.

ANDREW J. BARBERI - 1713

STANDARDIZATION RUNS
DECK LOG

DATE: 5/7/81

RUN #	PH IN CONT	DIRECT.	DIST.	NY ENG RPM	NY PROP RPM	NY PITCH	SI ENG RPM	SI PROP RPM	SI PITCH	TIME MIN/ SEC.	SPEED KTS	AVG SPEED
1 0648	NY	75M	2.3	500	484	80	502	488	80	16'49"	8.206	
2 0714	NY	265M	2.3	500	-	80	502	-	80	14'31"	9.441	8.82
3 0751	NY	75M	2.3	600	580	80	600	584	80	14'21"	9.61	
4 0816	NY	260M	2.3	600	-	80	600	-	80	12'01"	11.484	10.547
5 0845	NY	75M	2.3	700	688	80	700	682	80	12'12"	11.31	
6 0909	NY	260M	2.3	700	-	80	700	-	80	10'19"	13.376	12.343
7 0945	NY	75M	2.3	800	787	85	800	777	85	9'36"	14.375	
8 1002	NY	260M	2.3	800	-	85	800	-	85	8'-33"	16.14	15.25
9 1025	NY	75M	2.3	800		92	800		92	8'39"	15.72 15.953	
0 1045	NY	260M	2.3	800		92	800		92	8'-25"	16.396	16.174
1059	FINISH. MAKE ADJUSTMENTS TO TOOL SHARING.											
1155	NY	75	2.3	805/795		93	805/795		90	9'-21"	14.759	
1210	NY	255	2.3	800	788	93	800	793	90	8'-25	16.396	
		75								9'-05	15.193	15.794

ANDREW J. BARBERI - 1713

STANDARDIZATION RUNS
DECK LOG

STATEN ISLAND

DATE: 5/7/81

RUN #	PH IN CONT	DIRECT.	DIST.	NY ENG RPM	NY PROP RPM	NY PITCH	SI ENG RPM	SI PROP RPM	SI PITCH	TIME MIN/ SEC.	SPEED KTS	AVG SPEED
1 1323	SI	260	2.3	800		85	800		85	8'59"	15.36	
2 1338	SI	70	2.3	800		85	800		85	9'59"	13.82	14.59
3 1430	SI	75	2.3	800/805		93	800/805		92	8'51"	15.593	
4 1500	SI	260	2.3	800/805		93	800/805		92	8'11"	16.863	16.228
5												
6												
7												
8												
9												
10												

ANDREW J. BARBERI
HULL 1713

ENDURANCE TRIAL

The endurance trial will be conducted in open water with a minimum depth of water, 50 feet. The endurance trial will be conducted within a 10 mile radius of the sea buoy, the radar will be used to determine distance off sea buoy.

Interruptions to the endurance run due to traffic or malfunctions will be made upon agreement with the owner's representative. The time up to the interruption is to be discounted by 10% in calculating total accumulated time of the run. Time used to switch pilot houses at the middle of the trial will not be discounted.

The endurance runs are to be conducted at 800 RPM and 92% pitch as indicated at the propeller, which gives a speed of 18 miles an hour.

The engine and propeller gauges and other data are to be recorded at 1/2 hour intervals during the endurance trial.

The turns at the ends of the course will be made by a long radius using minimum steering pitch.

About half the time of the endurance runs will be in the New York direction and half in the Staten Island direction.

ENDURANCE TRIALS

ANDREW J. BARBERI - 1713

DATE: 5/7/81

TIME	PILOT HOUSE IN CONT.	NY PROP RPM	NY PROP PITCH	SI PROP RPM	SI PROP PITCH	MAG COURSE	WIND DIRECT.	WIND KNOTS	SEAS	AIR TEMP.	RE-MARKS
1855	NY	750	95	750	92	60	95	10	2		
	TWO 2.3 KTS = 9'31"			=	14.50 KTS						
RODS	#1 1.10	#2	1.12	#3 =	132	#4 1.30					
TEMPS	#1	610	#2 605	#3 =	580	#4 = 595					
	NY	750	95	750	92	250	45	10	2		
	TIME	2.3 KTS = 8		50" =	15.62 KTS						
				AVG =	15.06 KTS						

HULL 1713
ANDREW J. BARBERI

CRASH STOPS

DATE: 5/7/81

The vessel shall be in free route speed with 800 RPM on all the engines and 92% pitch on both propellers.

The appliable ahead/astern pitch control levers in the command pilot house are to be shifted from 92% pitch ahead to 92% astern in a rapid, smooth motion, pitch is to be as indicated at the propeller.
The head reach is to be measured in vessel lengths by throwing markers overboard.

In order to gather data for USCG CFR 46-78,21-1 crash stops at half speed are to be made.

1. Going ahead in New York Direction
   A. Crash stop using both propellers
   B. Crash stop using New York propeller only.S.I. Propeller at 0 pitch
   C. Crash stop using Staten Island propeller only, New York Propeller at 0 pitch.

2. Going ahead in Staten Island Direction
   A. Crash stop using both propellers
   B. Crash stop using S.I. propeller only, N.Y. propeller at 0 pitch.
   C. Crash stop using N.Y. propeller only, S.I. propeller at 0 pitch.

3. Going ahead in New York direction, 1/2 speed *
   A. Crash stop using both propellers

4. Going ahead in Staten Island direction, 1/2 speed
   A. Crash stop using both propellers

CRASH STOP	TIME TO STOP	HEAD REACH	HEADING START	HEADING STOP	
#1A 0-0	43 sec.	420'	60	80	FULL
#1B 0-20	36 sec.	410'	210	215	FULL
#1C600x80	35 sec.	240'	210	212	1/2
#2A800x92	44 sec.	420'	85	90	FULI
#2B	34 sec.	390-'	85	95	FULI
#2C	31 sec.	240'	97	105	1/2
#3A					
#4A					

* 1/2 Speed will be 500 Eng RPM and 80% pitch on both propellers.

ANDREW J. BARBERI
HULL 1713

TURNING CIRCLES

Turns are to be made as follows:

1. Starboard in New York direction
2. Port in New York direction
3. Starboard in Staten Island direction
4. Port in Staten Island direction

The vessel is to be in free route at 800 RPM and 100% pitch ahead. Both propellers will be used for steering in the turns. Hard over will be 50% athwartship pitch for the purpose of the turning circles.

Turning circles, port and starboard, from one pilot house are to be made at half speed to gather data in accordance with 46 CFR 78-21-1.

TURNING CIRCLE

ANDREW J. BARBERI
HULL 1713
N.Y. PH

DATE: 5/7/81

	NY PORT	NY STBD	S.I. PORT	S.I. STBD.	N.Y. PORT	N.Y. STBD
BASE COURSE	180	0	0	0		
ATHWARTSHIP PITCH BOW						
ATHWARTSHIP PITCH STERN						
PROPELLER RPM START						
PROPELLER RPM FINISH						
DEPTH OF WATER						
SEA CONDITION						
WIND DIRECTION	45		45			
WIND VOLICITY	10K					
DRAFT FORWARD	12'-6					
DRAFT AFT	12'-6					
ADVANCE TO 90° HEADING CHANGE	½ SHIP	½ SHIP	½ SHIP			
DIAMETER OF CIRCLE	1 SHIP length	1 SHIP	SHIP			
SECONDS TO 90° HEADING CHANGE	29	29	36	30		
SECONDS TO 180° HEADING CHANGE	52	51	1'01"	54"		
SECONDS TO 270° HEADING CHANGE	1'13"	1'09"	1'27"	1'20"		
SECONDS TO 360° HEADING CHANGE	2'03"	2'00"	2'23"	1'45"		

HLUBACK TEST 1'22" 1'-20"

TURNING CIRCLE

ANDREW J. BARBERI
HULL 1713

DATE: 5/7/81

S.I.P.H.

	NY PORT	NY STBD	1 S.I. PORT	S.I. STBD.	SI ½ SPEED N.Y. PORT	SI ½ SPEED N.Y. STBD
BASE COURSE			190	180	0	
ATHWARTSHIP PITCH BOW			100	100		
ATHWARTSHIP PITCH STERN			100	100		
PROPELLER RPM START			800			
PROPELLER RPM FINISH						
DEPTH OF WATER						
SEA CONDITION			2'	2'		
WIND DIRECTION			45°	45°		
WIND VOLICITY			10K	10K		
DRAFT FORWARD						
DRAFT AFT						
ADVANCE TO 90° HEADING CHANGE						
DIAMETER OF CIRCLE			1 ship length	1 ship length		
SECONDS TO 90° HEADING CHANGE			42	39	36	35
SECONDS TO 180° HEADING CHANGE			56	60	1'-0"	1'-2"
SECONDS TO 270° HEADING CHANGE			1'21"	1'20	1-34	1'31"
SECONDS TO 360° HEADING CHANGE			1'40"	1'40"	2'0"	1'58
STOP SWING					2'11"	2'11"

HLUBACK MEASUREMENT 1'25 1'24

HULL 1713
ANDREW J. BARBERI

Z MANEUVER

The 50% pitch shown is only an estimation of the equivalent rudder angle normally used in the Z maneuver. This percentage of athwartship pitch may be adjusted after the response of the ship has been observed. The Z maneuver will be started with both propellers at 100% pitch ahead and 800 engine RPM. The maneuver will be made by using the stern propeller for steering.

One maneuver will be made starting to port and one maneuver to starboard, in the Staten Island direction.

REPORT OF SPEEDS TRIALS CONDUCTED ON

THE STATEN ISLAND FERRY

"ANDREW J. BARBERI"

May 27, 1981

At the request of Equitable Shipyards, Inc., Ocean Oil International Engineering Corp. conducted speed trial tests on the Staten Island Ferry "ANDREW J. BARBERI" on May 27, 1981 in the Intracoastal Waterway in east New Orleans. Weather conditions were very good with clear sky, temperature approximately 90 degrees fahrenheit. Water was calm and no estimate on current speed or direction. Water depth was approximately 36 feet.

Two independent methods were used to determine the speed of the vessel.

METHOD 1

For this method, two poles were set up on shore exactly 1000 feet apart. On the ferry, two poles were lined up athwart ships forty feet apart. One man sighted along these poles and time was measured from the beginning of the run when all three poles (two on the ferry, one on shore) were aligned to the end of the run when again the two poles on the ferry were aligned with the second pole on the shore. Two people kept time on the ferry and the average time was used.

To calculate the speed, the following calculations were done:

$$\frac{\text{distance between poles on shore (feet)}}{\text{time interval between alignments (sec.)}} = \text{feet per second (fps)}$$

feet per second x 0.6818 = (statute) miles per hour (mph)

METHOD 2

Speed was measured based on:

Distance: L.O.A. of the vessel

Time: lapse between forward and end extremes of vessel cross a target line, this was measured by means of a 16 m/m sound movie camera pointed at a square angle with the path of the vessel. The camera was set at 24 f.p.s.*. The number of frames taken during the elapsed time, divided by 24 gives the time in seconds. As a double check, a stop-watch was running in front of the camera, attached to the pole used as reference.

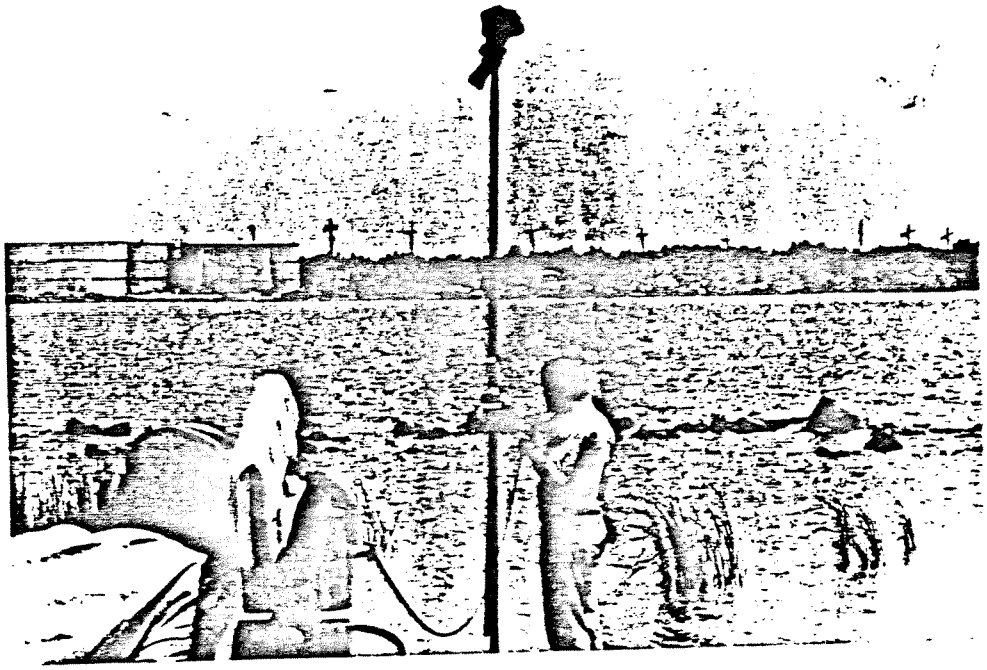
For certification, an assistant recorded the seconds count**.

* The camera used has practically no error, being of the crystal type and adjusting itself according to its feed back information, so that slight errors compensate. The possible error, if any, is of 1 frame in about an hour operation. Malfunction would be shown by an alarm on the camera.

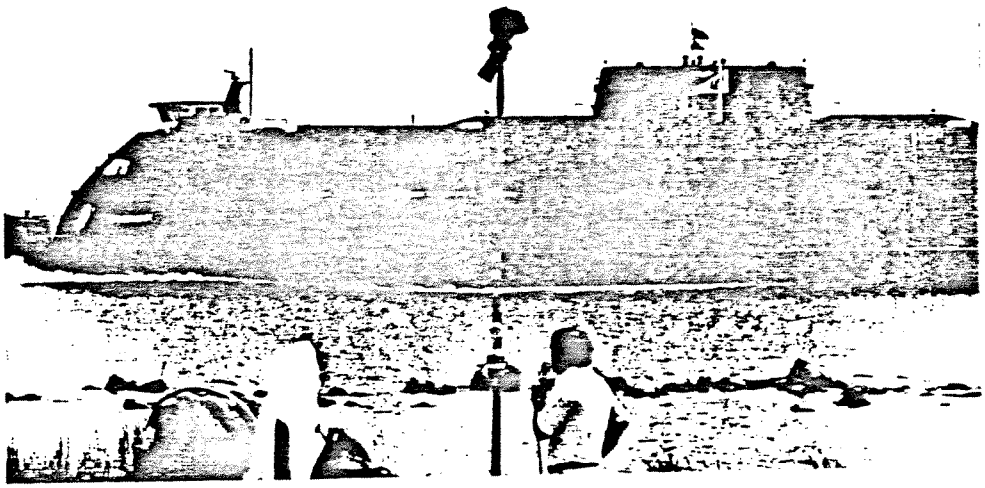
** Please see attached photograph for further reference. Please note, for frame counting, the same edge of the reference pole was used for both ends.

The following table contains the speeds for each run based on Methods 1 and 2 described above and the operating conditions of the ferry.

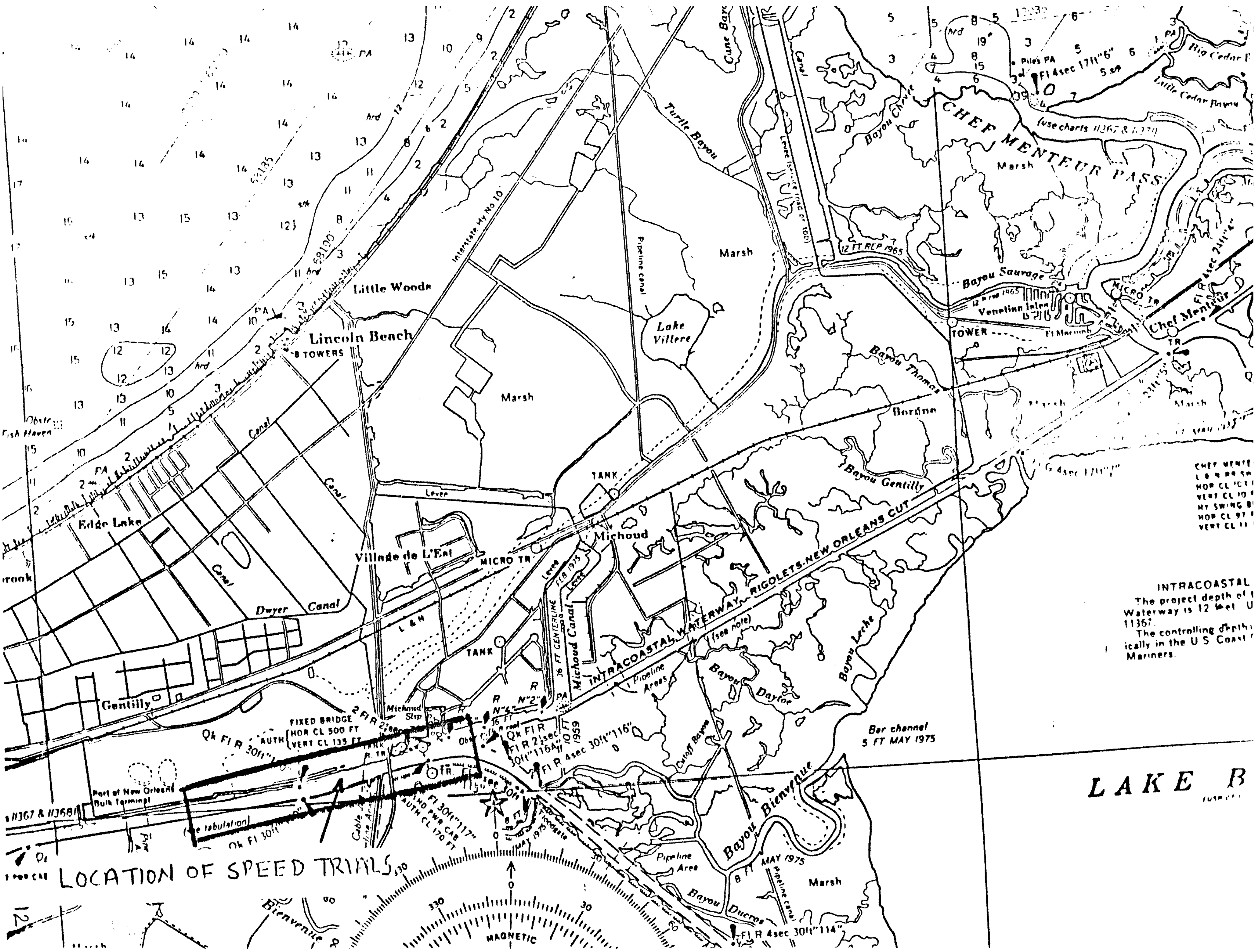
RUN	HELM	Engine RPM	Indicated Pitch,%	Actual Pitch	Direction Magn.Head	Speed in MPH	
						Meth 1	Meth 2
1	NYE	750	100	98	75°	17.26	17.25
2	SIE	750	100	-	285°	17.48	17.25
3	SIE	700	100	-	75°	17.71	17.27
4	SIE	700	100	-	285°	16.92	16.91



Picture shows arrangement camera, reference pole, stop-watch.



Camera crew at work while photo camera with auto-winder (2 fps) is used as a back-up.


LOCATION OF SPEED TRIALS
CHEF MENTEUR PASS
Chef Menteur
Marsh
Bayou Sauvage
Venetian Isles
TOWER
MICRO TR
Bayou Thomas
Bayou Chevee
Big Cedar Bayou
Little Cedar Bayou
(use charts 11367 & 11370)
12 FT REP 1965
Levee (service road or tops)
Canal
Cane Bayou
Turtle Bayou
Lake Villere
Pipeline canal
Interstate Hy No 10
Little Woods
Lincoln Beach
8 TOWERS
Edge Lake
Fish Haven
Villnde de L'Est
Michoud
TANK
Levee
Dwyer Canal
L & N
Gentilly
Borgne
Bayou Gentilly
INTRACOASTAL WATERWAY RIGOLETS-NEW ORLEANS CUT
(see note)
Michoud Canal
36 FT CENTERLINE FEB 1975
Michoud Slip
FIXED BRIDGE
AUTH
HOR CL 500 FT
VERT CL 135 FT
Qk Fl R 30ft
Fl R 4sec 30ft "116"
Qk Fl R 2sec 30ft "116A"
10 FT 1959
HD PWR CAB
AUTH CL 170 FT
Port of New Orleans Bulk Terminal
(see tabulation)
Pipeline Areas
Bayou Dupre
Cutoff Bayou
Bayou Loche
Bar channel
5 FT MAY 1975
Bayou Bienvenue
Pipeline Area
Bayou Ducros
8 FT MAY 1975
Fl R 4sec 30ft "114"
Marsh
MAGNETIC
LAKE B
INTRACOASTAL
The project depth of the
Waterway is 12 feet
11367.
The controlling depths
ically in the U S Coast
Mariners.
12

MINI TRIAL
ANDREW J. BARBERI
SUMMARY OF TRIAL DATA

JUNE 23, 1981

Mini Trial

RUN NUMBER	TIME START RUN	AVERAGE ENG. RPM/NYE	AVERAGE ENG. RPM/SIE	AVERAGE % PITCH/NYE	AVERAGE % PITCH/SIE	AVG. LORAN C/MPH	AVG. GUN SIGHT/MPH
1A	1010	773	765	94	90	19.32 17.95	18.01
1B	1050	770	763	94	90	18.03 17.58	17.60
2A	1230	740	748	98	100	20.25 18.6	18.77
2B	1255	754	751	99	100	19.32 18.2	18.19
3A	1410	718	723	100	99	19.92 19.56	18.31
3B	1440	745	724	100	99	18.51 17.82	17.81
4A	1505	695	698	100	100	19.32 18.16	18.29

DATE: 6/23/81

TIME	ELAPSED TIME		V=K	V=MPH
		RUN 1A		
1010	8M 43 Sec.	765 @ 90%	15.60K	17.95M
		RUN 1B		
1050	8M 54 Sec.	775 @ 90%	15.208	17.58
				17.765 AV.

DATE: 6/23/81

TIME	ELAPSED TIME		V=K	V=MPH
		RUN 2A		
12:30	8M 25S	750 @ 100%	16.158	18.597789
		RUN 2B		
12:55	8M 36S		15.81	18.20

DATE: 6/23/81

TIME	ELAPSED TIME		V=K	V=MPH
		RUN 3A		
1410	8M 31.5S	725 @ 100%	15.95K	18.36M
		RUN 3B		
1440	8M 47S	725 @ 100%	15.48K	17.82

18.09 AV.

DATE: 6/23/81

TIME	ELAPSED TIME		V=K	V=MPH
		RUN 4A		
15:05	8M 37S	700 @ 100%	15.78K	18.16M

ANDREW J. BARBERI

HULL 1713

MIKE BURNS

STATION NO. 1

LOCATION: PROPULSION GEAR SPACE: SIE

RUN NO. 1A

TIME: 10:20
PITCH: 90%
SHAFT RPM 800

TIME: 10:30
PITCH: 90%
SHAFT RPM: 800

TIME: 10:38
PITCH: 90%
SHAFT RPM: 800

MINI-TRIAL
ANDREW J. BARBERI
HULL 1713

Martin Donovan

DONOVAN

Station No. 2

Run No. 1A

LOCATION: Engine Room; Main Engines; SIE

DESCRIPTION	TIME	NO. 3 MAIN ENGINE	NO. 4 MAIN ENGINE
ENGINE RPM (Hand Tack)	1013 AM	765	765
ENGINE RPM (Ship's Tack)		765	765
RACK SETTING	1014 AM	1.20 ± .02	1.20 ± .02
EXHAUST TEMPERATURE			
Cylinder No. 1		610	620
Cylinder No. 2		595	580
Cylinder No. 3		590	590
Cylinder No. 4		535	570
Cylinder No. 5		555	585
Cylinder No. 6		555	575
Cylinder No. 7		525	550
Cylinder No. 8		575	570
Cylinder No. 9		610	615
Cylinder No. 10		585	565
Cylinder No. 11		580	580
Cylinder No. 12		560	590
Cylinder No. 13		585	565
Cylinder No. 14		585	580
Cylinder No. 15		595	590
Cylinder No. 16		580	585
Cylinder No. "C"		560	570
ENGINE RPM (Hand Tack)	1028 AM	763	763
RACK SETTING	"	1.20	1.20
ENGINE RPM (Hand Tack)		760 ± 2	761
RACK SETTING		1.18 ± .02	1.20

MINI-TRIAL
ANDREW J. BARBERI
HULL 1713

Station No. 3

Run No. 1A

BUSHNELL

LOCATION: Engine Room; Main Engines; NYE

DESCRIPTION	TIME	SLAVE NO. 1 MAIN ENGINE	MASTER NO. 2 MAIN ENGINE
ENGINE RPM (Hand Tack)	1015	770 ± 5 RPM	775 ± 5 RPM
ENGINE RPM (Ship's Tack)		775/± 15 RPM	780 ±
RACK SETTING		1.20 ~ 1.00	1.12 ~ 1.00
EXHAUST TEMPERATURE			10:23
Cylinder No. 1		660	625
Cylinder No. 2		665	615
Cylinder No. 3		680	640
Cylinder No. 4		655	640
Cylinder No. 5		670	640
Cylinder No. 6		655	645
Cylinder No. 7		670	640
Cylinder No. 8		675	655
Cylinder No. 9		660	640
Cylinder No. 10		640	625
Cylinder No. 11		650	630
Cylinder No. 12		~~675~~ 670	640
Cylinder No. 13		665	630
Cylinder No. 14		660 670	635
Cylinder No. 15		645	630
Cylinder No. 16		655	645
Cylinder No. "C"		640	625
ENGINE RPM (Hand Tack)		770 ± 1027	770±5 } 1030
RACK SETTING		1.08 ± .08 }	1.08±.08 }
ENGINE RPM (Hand Tack)		770 } 1039	775 } 1037
RACK SETTING		1.04 ± }	1.04±.02 }

ANDREW J. BARBERI
HULL 1713

ROBERT ENGLISH

STATION NO. 4

LOCATION: PROPULSION GEAR SPACE: "NYE"

RUN NO. 1A

TIME: 10 AM

PITCH: 94%

SHAFT RPM 776

TIME: 1010 AM

PITCH: 93%

SHAFT RPM: 778

TIME: 1020 AM

PITCH: 92%

SHAFT RPM: 780

TIME: 1030 AM

PITCH: 95%

SHAFT RPM: 778

TIME: 1040 AM

PITCH: 92%

SHAFT RPM: 779

MINI-TRIAL
ANDREW J. BARBERI
HULL 1713

Rev. = 775
Pitch = 90%

RUN NO. 1A

TEAM 1 MEASURED TIME MIN./SEC.	TEAM 2 MEASURED TIME MIN./SEC.	AVG. TIME	SPEED KNOTS	AVG. SPEED MPH
8.41.25	8.41	8.41.25	15.66	18.01

RUN # 1A

LORAN C DATA

	TIME	LAT.	LONG.	AVG. G/SPEED	COURSE	WIND D/S	SEA	REMARKS
INITIAL WAYPOINT		2930.98				030/19		
START WAYPOINTT	10:17	2929.93	3849.42		256			
MID WAYPOINT	10:22	2729.61		16.8		015/17	1½ Ft.	
STOP WAYPOINT	10:24		8848.57	17.0	255	020/14	1½Ft.	
FINAL WAYPOINT	10:34							

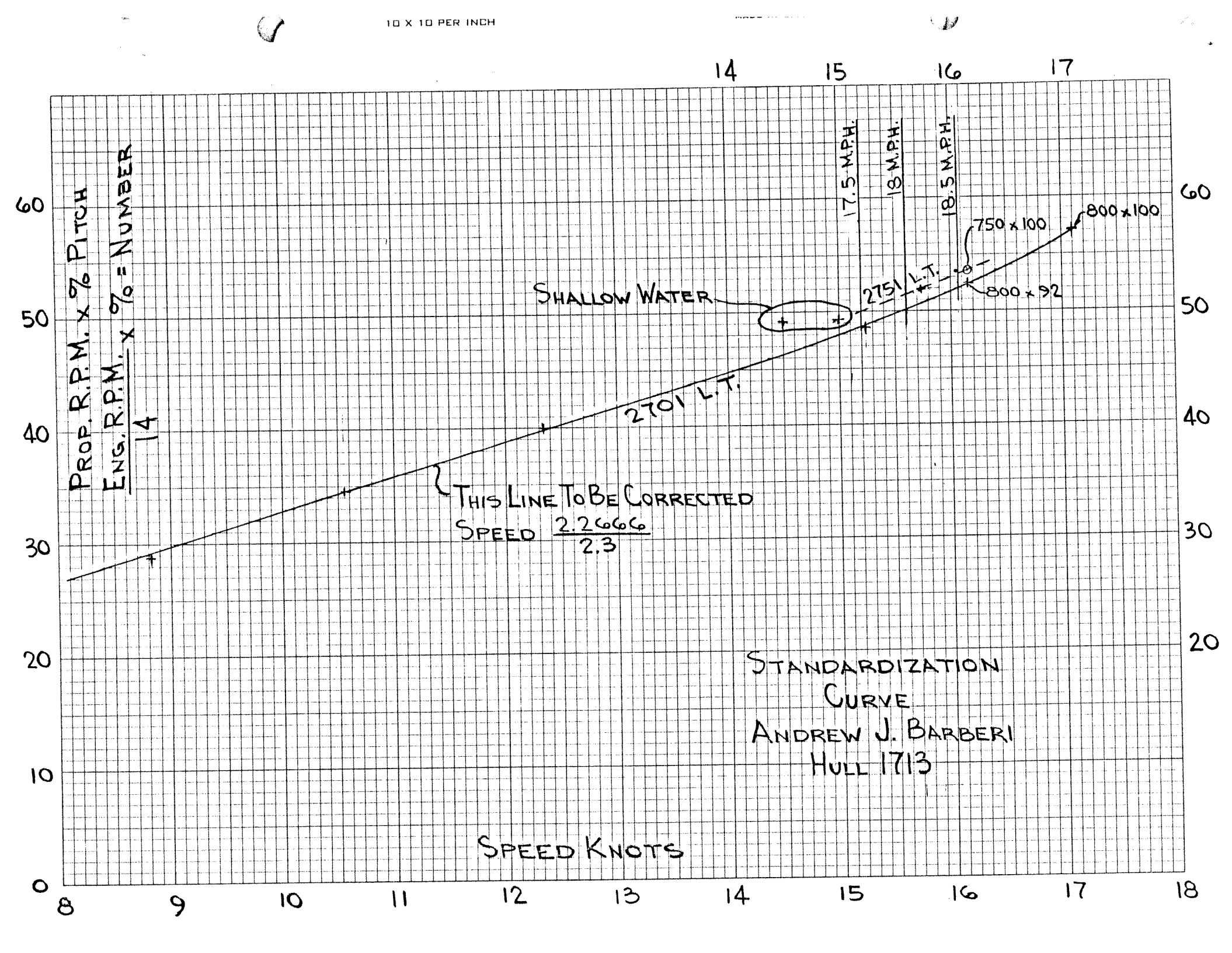
RUN # 1A	LORAN C DATA							
	TIME	LAT.	LONG.	AVG. G/SPEED	COURSE	WIND D/S	SEA	REMARKS
INITIAL WAYPOINT	19:[illegible]	2930.48	8[illegible]	[illegible]	[illegible]	030/10	1 [illegible]	
START WAYPOINT	19:17	2923.93	8848.42	16.2	256	[illegible]	1½ [illegible]	19.32 [illegible] AVG. Good [illegible]
MID WAYPOINT	19:[illegible]	29[illegible].61	8[illegible]	16.2	25[illegible]	015/17	1½ FT	19.32 START [illegible] AVG. [illegible]
STOP WAYPOINT	19:24	[illegible].32	8848.57	17.0	255	020/14	1½ FT.	19.06 START [illegible] Good Run.
FINAL WAYPOINT	19:34	[illegible].37	885[illegible]	[illegible]	[illegible]	[illegible]/10	1½ [illegible]	[illegible] TOTAL [illegible]

MINI-TRI
ANDREW J. BARBERI
HULL 1713

PRELIMINARY

RUN NUMBER 1A

ME	PH IN CONT	MAG-NETIC HEAD-ING	RELA-TIVE WIND SPEED	WIND DIREC-TION	NEW YORK ENGINES #1 RPM	#1 RACK	#2 RPM	#2 RACK	STATEN ISLAND ENGINES #3 RPM	#3 RACK	#4 RPM	#4 RACK	NY PITCH	NY SHAFT RPM	SI PITCH	SI SHAFT RPM	TEAM 1 MIN./ SEC.	TEAM 2 MIN./ SEC.	AVG. TIME	SPEED KNOTS	AVG. SPEED MPH
00	SIE												94%	776							
02	SIE	251	19	030																	
10	SIE												93%	778							
13	SIE								765		765										
14	SIE									1.20		1.20									
15	SIE				770	1.20	775	1.12													
17	SIE	256	18	010																	
20	SIE												92%	780	90%	800					
22	SIE	256	17	015																	
24	SIE	255	14	020																	
27	SIE				770	1.08															
28	SIE								763	1.20											
30	SIE						770	1.08					95%	778	90%	800					
34	SIE	249	10	000																	
37							775	1.04							90%	800					
38									760	1.18	761	1.20									
39					770	1.04															
40													92%	779							
																	8.41.5	8.41	8.41.25	15.66	18.01



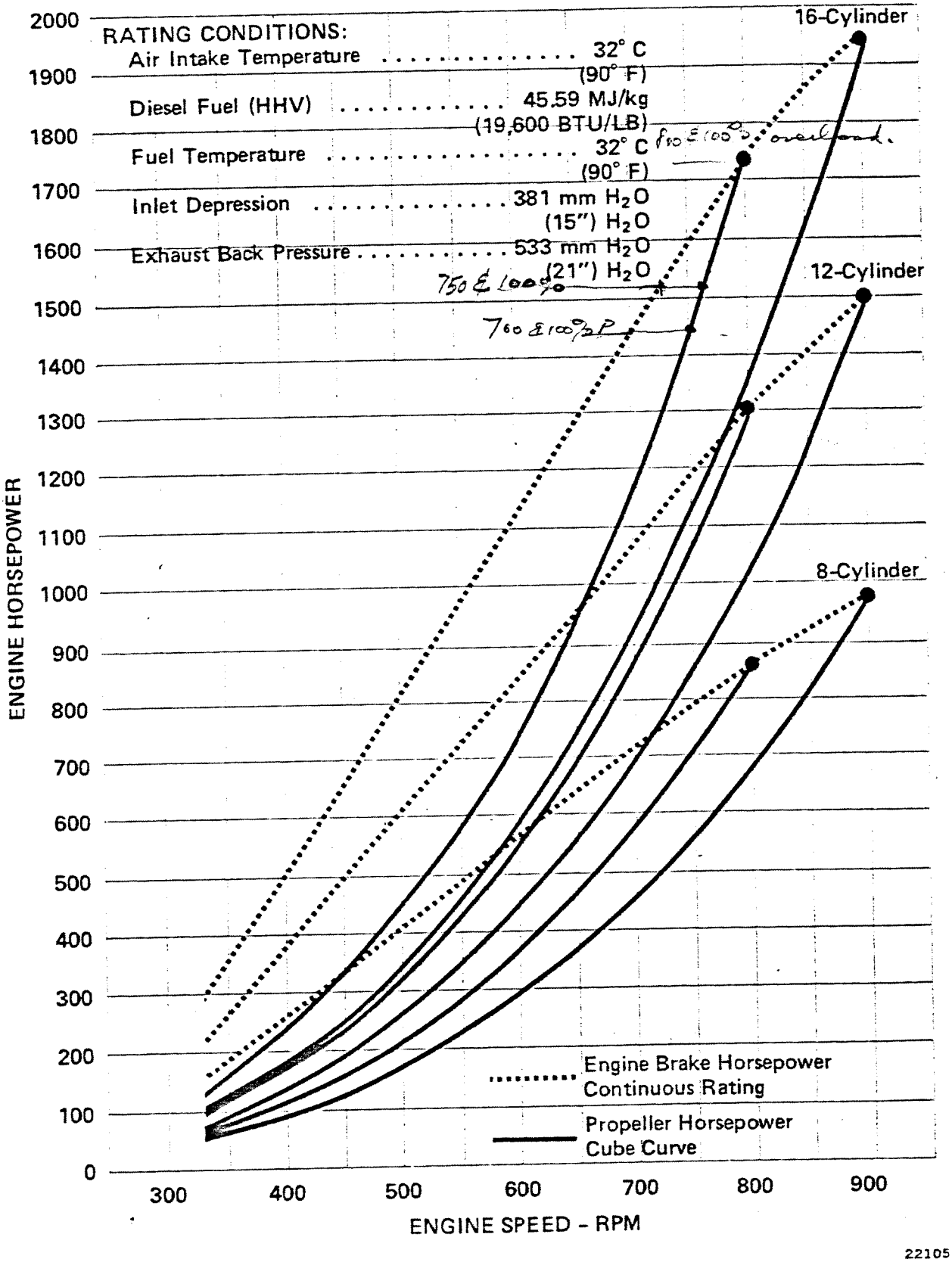


Fig. C-2 – Engine HP/Engine RPM Curves

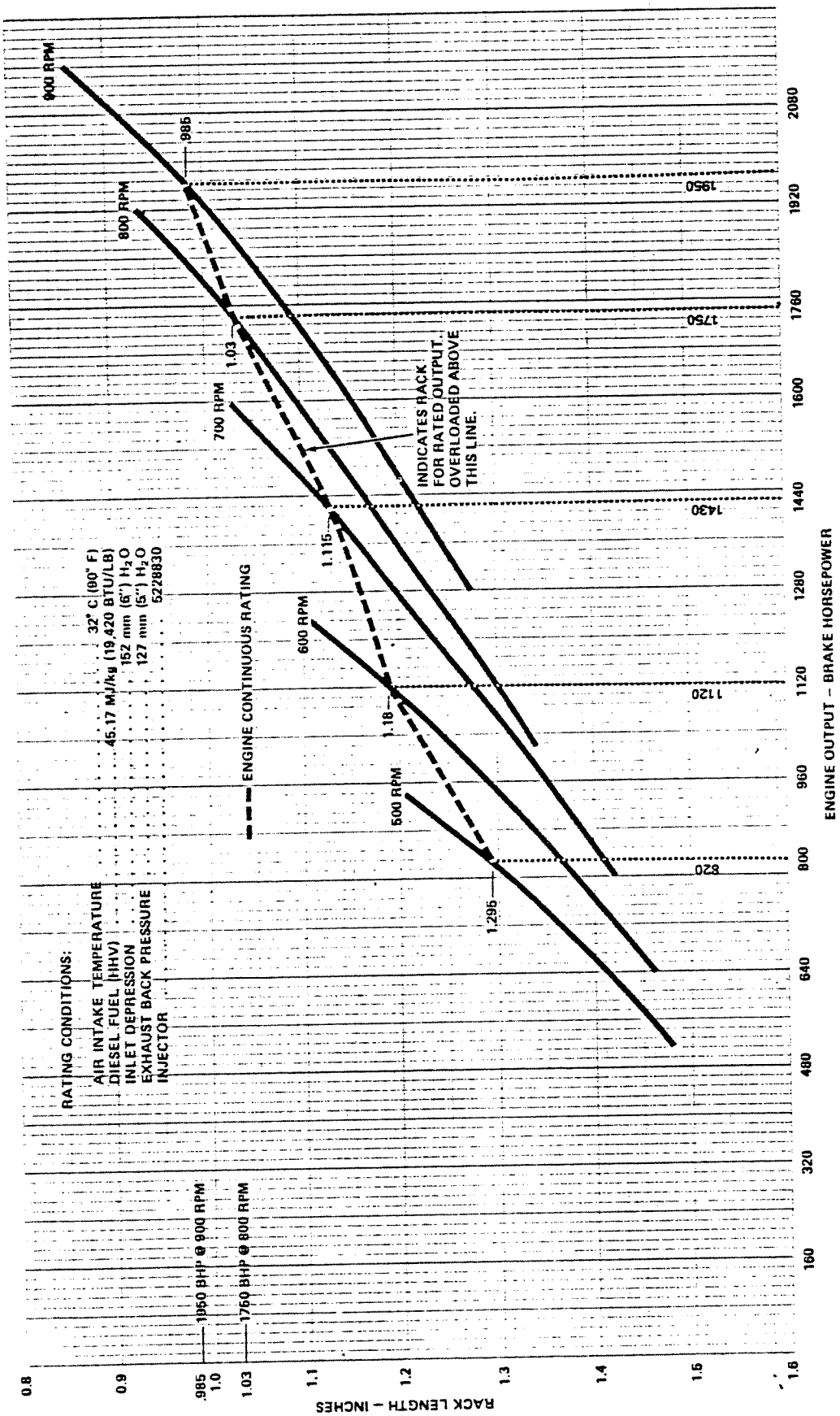
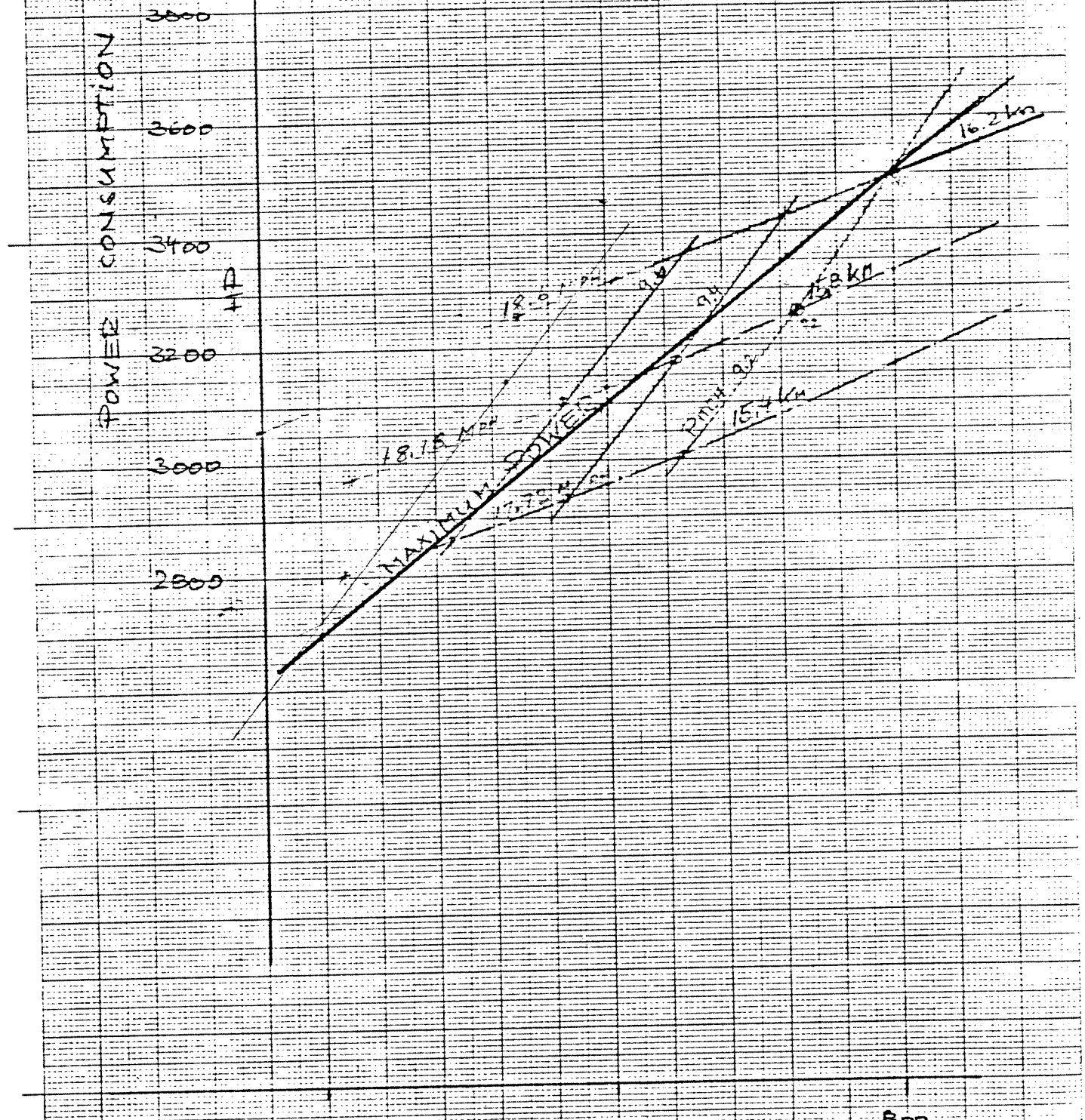


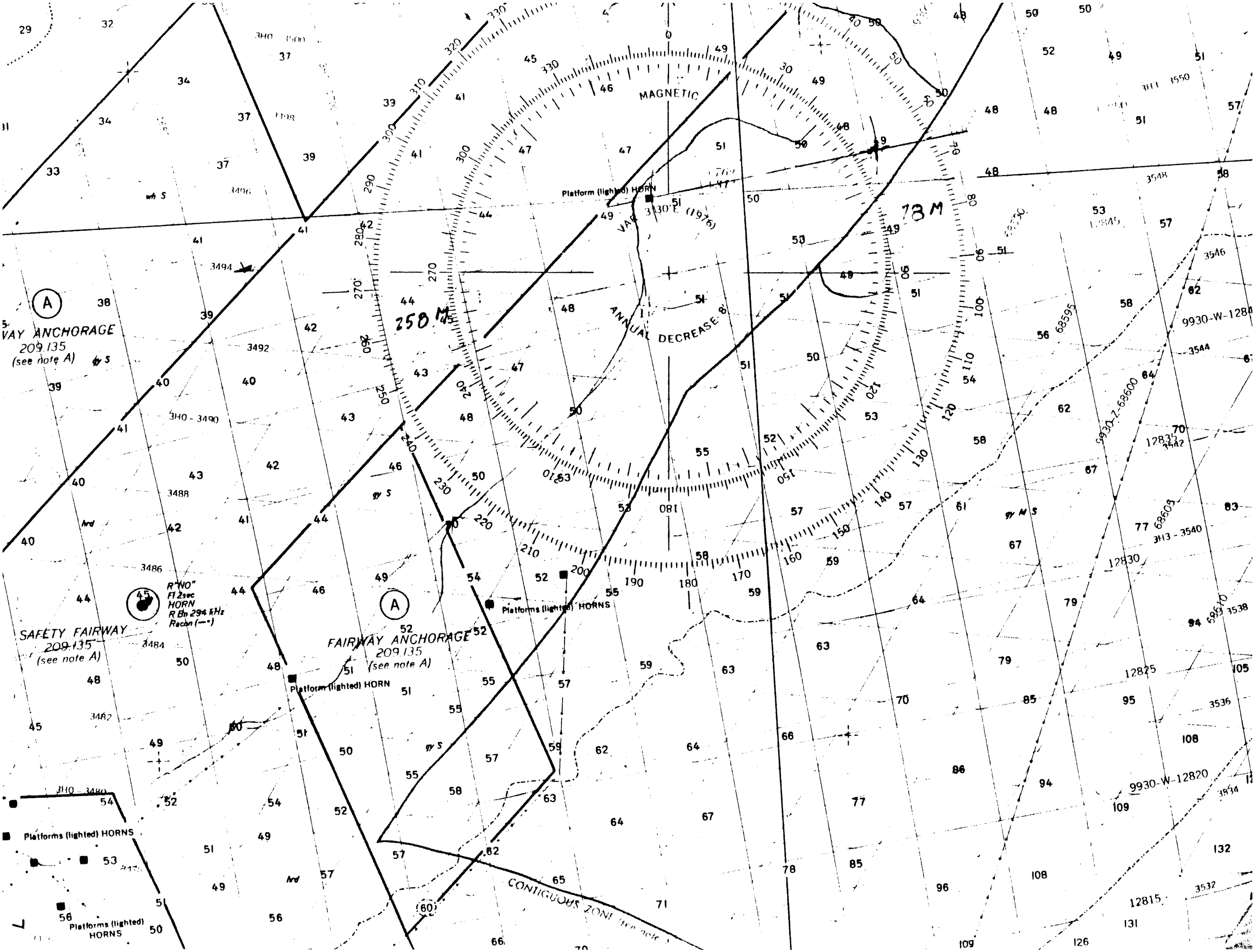
Fig. C-5 – 16-645E6 Injector Rack Position/Brake HP
At Various Engine Speeds

VEB NEW YORK

PROPELLER CHARACTERISTIC



J.M. VOITH GmbH
4/61 583 HGr
22.5.81


MAGNETIC
VAR 3°30'E (1976)
ANNUAL DECREASE 8'
Platform (lighted) HORN
Platforms (lighted) HORNS
FAIRWAY ANCHORAGE
209.135
(see note A)
SAFETY FAIRWAY
209.135
(see note A)
VAY ANCHORAGE
209.135
(see note A)
R "NO"
Fl 2sec
HORN
R Bn 294 kHz
Racon
CONTIGUOUS ZONE
9930-W-12820
9930-Z-68600
250 M
73 M

ELECTRO-MOTIVE

ADDRESS REPLY TO:
121 Brookhollow Esplanade, Suite 600
Harahan, Louisiana 70123

Electro-Motive Division General Motors Corporation LaGrange, Illinois 60525 (312) 387-6000

April 16, 1981

Mr. Graham G. Haddock
Equitable Shipyards, Inc.
P. O. Box 8001
New Orleans, Louisiana 70001

Subject: P. O. No. 203022
Equitable Hull Nos. 1713 & 1714
EMD Nos. 770226 & 770227

Dear Mr. Haddock:

In response to your request of March 20, 1981, enclosed are copies of the Engine Test Data for the following listed engines:

MODEL NO.		SERIAL NO.	
16-645E6	#1713	77K1-1061	N.Y. PORT
16-645E6		77K1-1088	S.I. STBD
16-645E6		77K1-1116	N.Y. STBD
16-645E6		77L1-1029	S.I. PORT
16-645E6		78C1-1147	
16-645E6		78D1-1007	
16-645E6		78D1-1018	
16-645E6		78D1-1019	

Please advise if you require additional information or if we may be of further service.

Very truly yours,

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION

T. L. Easterday
Marine Sales

TLE:dh
Enc.

ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 26 Oct 77

ENGINE SERIAL # 77-K1-1061 MODEL GM 16 E6 CELL 10

	STAGE OF READING (STEP - NOTCH - F.L.)		80 c	Idle	800	800	Rated	Rated	
1	TIME OF READING		1940	2000	2030	2100	2130	0245	
2	TOTAL RUN TIME		0320	0340	0410	0440	0510	0540	
3	ENGINE RPM	800	805	323	805	806	803	800	
4	AIR BOX PRESSURE	PSI "HG	4.2	.6	4.1	4.1	4.1	3.8	
5	QUADRANT	~~92~~	92		94	904	94	94	
6	BRAKE HORSE POWER - CORRECTED								
7	EXHAUST TEMP. INTO TURBINE - CORR. °F								
8	SCALE LOAD (DYNAMOMETER)								
9	~~VOLTS - E. GEN.~~ Smoke Monitor		5.5	4.5	5.5	5.5	5.5	5.0	
10	~~AMPS. - E. GEN.~~ Main lube Elbo		66	30	69	67	67	69	
11	VOLTS - W. GEN.		830		830	830	830	830	
12	AMPS. - W. GEN.		1490		1490	1490	1490	1490	
13	K.W. - TOTAL		1237		1237	1237	1237	1237	
14	H.P. - ACTUAL (FACTOR	(706) W	1752		1752	1752	1752	1752	
15	LBS./HR.		690	NR	690	690	690	670	
16	PRESSURE IN - PSI		46	53	46	46	46	46	
17	RETURN MANIFOLD PRESS. - PSI		21	22	21	21	21	22	
18	TEMPERATURE IN - °F		80	80	80	80	80	80	
19	SPECIFIC GRAVITY	(845)	845	845	845	845	845		
20	PRESS. AT GOVERNOR - PSI		59	32	61	60	60	62.5	
21	PRESS. AT TURBO OR BLO. BRGS. - PSI		54	27	55	54	55	57	
22	PRESS. DROP ACROSS TURBO - PSI		5	.5	6	6	5	5.5	
23	TEMPERATURE IN - °F		180	175	175	175	175	180	
24	TEMPERATURE OUT - °F		195	180	195	195	195	195	
25	PISTON COOLING PRESS. - PSI		28	11	28	28	28	28.5	
26	SCAV. OIL PRESS. - PSI		25	6	25	25	25	22.5	
27	SOAK BACK PRESS. BEFORE START - PSI								
28	PRESSURE OUT - PSI		20	10	20	20	20	20	
29	TEMPERATURE IN - °F		150	150	150	150	150	156	
30	TEMPERATURE OUT - °F		165	165	160	160	160	166	
31	EXHAUST TEMP. INTO TURBO - °F								
32	BAROMETRIC PRESSURE	29.4 "HG	29.4	29.4	29.4	29.4	29.4		
33	OIL PAN + PRESS. OR - SUCTION - "H₂O		-2.8	+.8	-2.8	-2.8	+.3	-3.0	
34	AIR IN TEMPERATURE - °F		130	135	135	135	135	120	

(Margin annotation: ABS 27-10-77 Wilkins)

CRANKSHAFT END THRUST .015 IN. Reset OVERSPEED TRIP 905 RPM

IDLE OIL: TEMP. 180 °F WATER TEST PRESSURE 85 PSI

PRESS @ 330 RPM 32 PSI FUEL TEST PRESSURE 95 PSI

TURBO RUN-DOWN TIME SEC. [signature] Foreman, Engine Te[st]

ENGINE TEST DATA

DATE 10-26-77

ENGINE SERIAL # 77K1-1061 MODEL EMD F? CELL 10

	STAGE OF READING (STEP - NOTCH - F.L.)	390	[illegible]	720	900	800		
1	TIME OF READING	1420	1445	1515	1545	1620		
2	TOTAL RUN TIME	1/0	110	140	210	240		
3	ENGINE RPM 800	390	633	719	901	801		
4	AIR BOX PRESSURE "HG	1.0	24	31	375	3.75		
5	QUADRANT		120	102	92	.92		
6	BRAKE HORSE POWER - CORRECTED	[illegible]	[illegible]	[illegible]	844	[illegible]	[illegible]	77K1-
7	EXHAUST TEMP. INTO TURBINE - CORR. °F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	SCALE LOAD (DYNAMOMETER)	3.7	4.5%	5.4%	5.5%	5.5	[illegible]	1170
9	VOLTS - E. GEN. [illegible] Lube Press	68	62	63	66	66		CROSS
10	AMPS. - E. GEN.							
11	VOLTS - W. GEN.		660	770	830	840		
12	AMPS. - W. GEN.		1200	1390	1500	1500		
13	K.W. - TOTAL		792	1070	1245	1260		
14	H.P. - ACTUAL (FACTOR 706)		1121	1515	1763	1784		
15	LBS./HR.	N/R	445	575	690	700		
16	PRESSURE IN - PSI	53	51	50	47	46		
17	RETURN MANIFOLD PRESS. - PSI	25	22	20	19	19		
18	TEMPERATURE IN - °F		77	78	80	80		
19	SPECIFIC GRAVITY .845					845		
20	PRESS. AT GOVERNOR - PSI	65	57	57	59	59		
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	60	52	52	54	53		
22	PRESS. DROP ACROSS TURBO - PSI	5	5	5	5	6		
23	TEMPERATURE IN - °F	134	178	184	185	185		
24	TEMPERATURE OUT - °F	126	185	197	200	200		
25	PISTON COOLING PRESS. - PSI	21	21	23	27	28		
26	SCAV. OIL PRESS. - PSI	11.5	19	24	25	26		
27	SOAK BACK PRESS. BEFORE START - PSI							
28	PRESSURE OUT - PSI	11	15	18	20	20		
29	TEMPERATURE IN - °F	132	154	152	150	150		
30	TEMPERATURE OUT - °F	172	164	162	160	163		
31	EXHAUST TEMP. INTO TURBO - °F							
32	BAROMETRIC PRESSURE 29. "HG							
33	OIL PAN + PRESS. OR - SUCTION - "H₂O	[illegible]	-0.3	-0.5	0.0	0		
34	AIR IN TEMPERATURE - °F	92	118	128	136	136		

CRANKSHAFT END THRUST .015 IN. Rosey OVERSPEED TRIP 905 RPM

IDLE OIL: TEMP. 180 °F WATER TEST PRESSURE 85 PSI

PRESS. @ 336 RPM 32 PSI FUEL TEST PRESSURE 95 PSI

TURBO RUN-DOWN TIME SEC. A. J. Kopp Foreman, Engine Te[st]

ED 2465A

ENGINE TEST DATA

DATE ______

INE SERIAL # 77-K1-1041 MODEL GM 16EG CELL 10

	AGE OF READING (STEP - NOTCH - F.L.)	800	800						
1	TIME OF READING	2000	2030						
2	TOTAL RUN TIME	[illegible]	[illegible]						
3	ENGINE RPM 800	805	805						
4	AIR BOX PRESSURE PSI "HG	4.3	4.5						
5	QUADRANT	.96	.96						
6	BRAKE HORSE POWER - CORRECTED								
7	EXHAUST TEMP. INTO TURBINE - CORR. °F								
8	SCALE LOAD (DYNAMOMETER)								
9	~~VOLTS - E. GEN.~~ Fuel Lube Pressure	77	77						
10	~~AMPS. - E. GEN.~~ Main Lube Ell.	65	66						
11	VOLTS - W. GEN.	830	830						
12	AMPS. - W. GEN.	1490	1490						
13	K.W. - TOTAL	1237	1237						
14	H.P. - ACTUAL (FACTOR 706)	1752	1752						
15	LBS./HR.	690	690						
16	PRESSURE IN - PSI	45	45						
17	RETURN MANIFOLD PRESS. - PSI	0	0						
	TEMPERATURE IN - °F	80	80						
19	SPECIFIC GRAVITY 845	→	845						
20	PRESS. AT GOVERNOR - PSI	58	59						
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	53	54						
22	PRESS. DROP ACROSS TURBO - PSI	5	5						
23	TEMPERATURE IN - °F	185	185						
24	TEMPERATURE OUT - °F	200	200						
25	PISTON COOLING PRESS. - PSI	28	28						
26	SCAV. OIL PRESS. - PSI	23	23						
27	SOAK BACK PRESS. BEFORE START - PSI								
28	PRESSURE OUT - PSI	20	20						
29	TEMPERATURE IN - °F	155	155						
30	TEMPERATURE OUT - °F	165	165						
31	EXHAUST TEMP. INTO TURBO - °F								
32	BAROMETRIC PRESSURE 29.4 "HG	29.4	29.4						
33	OIL PAN + PRESS. OR - SUCTION - "H₂O	-.3	-.3						
34	AIR IN TEMPERATURE - °F	130	135						

NKSHAFT END THRUST .015 IN. OVERSPEED TRIP 935 RPM

IDLE OIL: TEMP. 180 °F WATER TEST PRESSURE 85 PSI

PRESS @ 320 RPM 32 PSI FUEL TEST PRESSURE 95 PSI

TURBO RUN-DOWN TIME SEC.

[signature] Foreman, Engine Test

770236-2

ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 10-31-77

ENGINE SERIAL # 77K1-1088 MODEL L-16-645E6 CELL 8

#	STAGE OF READING (STEP - NOTCH - F.L.)	390	640	720	800	800		ABS
1	TIME OF READING	1700	0515	0545	1730	1100		
2	TOTAL RUN TIME	40	1110	1.40	2.10	2.40		
3	ENGINE RPM	390	642	721	801	800		
4	AIR BOX PRESSURE PSI "HG	1.0	2.3	3.0	3.7	3.7		
5	QUADRANT	1.52	1.18	1.04	.93	.93		
6	BRAKE HORSE POWER - CORRECTED	16 CYL – PART # 8446.23 SPEC # 77K1-1088						
7	EXHAUST TEMP. INTO TURBINE - CORR. °F	[illegible]				85		[illegible]
8	SCALE LOAD (DYNAMOMETER)	MALTESE CROSS FYK						
9	~~VOLTS - E. GEN.~~ Smoke Monitor	2.5	4.0	4.0	5.0	5.0		
10	~~AMPS. - E. GEN.~~ Main Lube Press	70	70	70	66	70		
11	VOLTS - W. GEN.		640	720	820	820		
12	AMPS. - W. GEN.		1200	1380	1520	1500		
13	K.W. - TOTAL		752	1062	1246	1230		
14	H.P. - ACTUAL (FACTOR 706)		1121	1504	1765	1742		
15	LBS./HR.		390	535	670	665		
16	PRESSURE IN - PSI	48	42	26	11	12		
17	RETURN MANIFOLD PRESS. - PSI	21	20	20	20	20		
18	TEMPERATURE IN - °F	76	80	81	84	85		
19	SPECIFIC GRAVITY							
20	PRESS. AT GOVERNOR - PSI	65	65	64	62	65		
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	61	62	61	59	62		
22	PRESS. DROP ACROSS TURBO - PSI	4	3	3	3	3		
23	TEMPERATURE IN - °F	110	156	160	150	152		
24	TEMPERATURE OUT - °F	120	168	180	168	174		
25	PISTON COOLING PRESS. - PSI	31	26	27	38	35		
26	SCAV. OIL PRESS. - PSI	14	12	12	14	14		
27	SOAK BACK PRESS. BEFORE START - PSI							
28	PRESSURE OUT - PSI	11	11	10	11	11		
29	TEMPERATURE IN - °F	90	154	153	148	148		
30	TEMPERATURE OUT - °F	100	164	167	160	160		
31	EXHAUST TEMP. INTO TURBO - °F							
32	BAROMETRIC PRESSURE "HG							
33	OIL PAN + PRESS. OR – SUCTION - "H₂O	OPEN	+0.2	+0.3	+0.1	+0.1		
34	AIR IN TEMPERATURE - °F	88	102	118	104	106		

Witness [illegible] ABS 10-31-77

SALES ENGINEERING DEC 13 1977

CRANKSHAFT END THRUST .012 IN. RESET OVERSPEED TRIP 910 RPM

IDLE OIL: TEMP. 148 °F WATER TEST PRESSURE 90 PSI

PRESS. 42 PSI FUEL TEST PRESSURE 90 PSI

TURBO RUN-DOWN TIME LWS N/A SEC. [signature] Foreman, Engine Test

12

ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-2-77

ENGINE SERIAL # 77 L1 1054 — MODEL R-16 645E6 — CELL 8

	STAGE OF READING (STEP - NOTCH - F.L.)	800	704	Rated	Rated				
	TIME OF READING	20.0	50.0	2'00	1100				
2	TOTAL RUN TIME	320	340	440	442				
3	ENGINE RPM 800	803	350	801	804				
4	AIR BOX PRESSURE 13.1 "HG	4.0	1.0	4.6	4.0				
5	QUADRANT	.92	1 7/8	.93	.93				
6	BRAKE HORSE POWER - CORRECTED								
7	EXHAUST TEMP. INTO TURBINE - CORR. °F								
8	SCALE LOAD (DYNAMOMETER)								
9	VOLTS - E. GEN. Same as No 2	5.5	2.0	5.0	6.0				
10	AMPS. - E. GEN. Min ½ press	70	62	70	70				
11	VOLTS - W. GEN.	840		840	825				
12	AMPS. - W. GEN.	1510		1510	1500				
13	K.W. - TOTAL	1238		1238	1238				
14	H.P. - ACTUAL (FACTOR .70)	1754		1754	1753				
15	LBS./HR.	680	710	675	675				
16	PRESSURE IN - PSI	12	50	12	12				
17	RETURN MANIFOLD PRESS. - PSI	20	22	20	20				
	TEMPERATURE IN - °F	55	55	56	80				
19	SPECIFIC GRAVITY .8515								
20	PRESS. AT GOVERNOR - PSI	65	59	65	64				
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	66	57	62	61				
22	PRESS. DROP ACROSS TURBO - PSI	3	3	3	3				
23	TEMPERATURE IN - °F	164	136	156	157				
24	TEMPERATURE OUT - °F	180	154	178	178				
25	PISTON COOLING PRESS. - PSI	34	16	34	34				
26	SCAV. OIL PRESS. - PSI	14	9	13	13				
27	SOAK BACK PRESS. BEFORE START - PSI	N/A							
28	PRESSURE OUT - PSI	12	10	11	11				
29	TEMPERATURE IN - °F	162	106	150	150				
30	TEMPERATURE OUT - °F	172	110	164	164				
31	EXHAUST TEMP. INTO TURBO - °F								
32	BAROMETRIC PRESSURE — °HG								
33	OIL PAN + PRESS. OR - SUCTION - "H₂O	2.0	-0.6	-2.2	-2.2				
34	AIR IN TEMPERATURE - °F	104	90	104	108				

CRANKSHAFT END THRUST .012 IN. — OVERSPEED TRIP 910 RPM

IDLE OIL: TEMP. 143 °F — WATER TEST PRESSURE 80 PSI

PRESS. 42 PSI — FUEL TEST PRESSURE 90 PSI

TURBO RUN-DOWN TIME 1'45 N/A SEC.

Foreman, Engine Test

13

ECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA — 2B T

DATE 11-8-77

ENGINE SERIAL # 77K-1082 MODEL R645E-6 CELL 4

	STAGE OF READING (STEP - NOTCH - F.L.)	800						
	TIME OF READING	0340	0810	0840	0910			ABS
2	TOTAL RUN TIME	5:10	5:40	6:10	6:40			
3	ENGINE RPM 800	639	721	801	800			
4	AIR BOX PRESSURE 800 "HG	2.5	3.1	3.5	3.9			
5	QUADRANT	1.16	1.04	.92	.92			
6	BRAKE HORSE POWER - CORRECTED	16 CYL - PART # 8440023 SOC 77K-1082						
7	EXHAUST TEMP. INTO TURBINE - CORR. °F	[illegible]	[illegible]	[illegible]	[illegible]	1045 WHT 7-11-77 MALTESE		
8	SCALE LOAD (DYNAMOMETER)							C.COSS
9	VOLTS - E. GEN. SMOKE MON.	4.0	4.1	4.2	4.1			F&K
10	AMPS - E. GEN. MAIN LUBE	70	69	71	70			
11	VOLTS - W. GEN.	660	770	820	820			
12	AMPS. - W. GEN.	1200	1380	1520	1520			
13	K.W. - TOTAL	792	1062	1246	1246			
14	H.P. - ACTUAL (FACTOR .706)	1121	1504	1765	1765			
15	LBS./HR.	380	540	675	670			
16	PRESSURE IN - PSI	43	30	16	16			
17	RETURN MANIFOLD PRESS. - PSI	20	21	20	20			
	TEMPERATURE IN - °F	79	81	81	81			
19	SPECIFIC GRAVITY							
20	PRESS. AT GOVERNOR - PSI	65	63	65	64			
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	62	60	62	61			
22	PRESS. DROP ACROSS TURBO - PSI	3	3	3	3			
23	TEMPERATURE IN - °F	157	160	152	156			
24	TEMPERATURE OUT - °F	166	181	176	178			
25	PISTON COOLING PRESS. - PSI	27	27	32	31			
26	SCAV. OIL PRESS. - PSI	12	12	12	12			
27	SOAK BACK PRESS. BEFORE START - PSI							
28	PRESSURE OUT - PSI	7	8	8	8			
29	TEMPERATURE IN - °F	152	153	148	151			
30	TEMPERATURE OUT - °F	162	164	160	163			
31	EXHAUST TEMP. INTO TURBO - °F							
32	BAROMETRIC PRESSURE "HG							
33	OIL PAN + PRESS. OR - SUCTION - "H_2O	0	6.1	6.2	6.2			
34	AIR IN TEMPERATURE - °F	96	100	102	101			

CRANKSHAFT END THRUST [illegible] IN. — OVERSPEED TRIP RPM

IDLE OIL: TEMP. °F — WATER TEST PRESSURE PSI

PRESS. PSI — FUEL TEST PRESSURE PSI

TURBO RUN-DOWN TIME SEC. — R. Gen Foreman, Engine Test

ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-17-77

ENGINE SERIAL # 77-[illegible]-7055 MODEL [illegible] CELL 8

		STAGE OF READING (STEP - NOTCH - F.L.)	800	800					
	1	TIME OF READING	1155	1225					
	2	TOTAL RUN TIME	1:30	2:00					
	3	ENGINE RPM 800	801	802					
	4	AIR BOX PRESSURE 3.1 "HG	3.5	3.5					
	5	QUADRANT	1.00	1.00					
	6	BRAKE HORSE POWER - CORRECTED	1707	1707	O/K.				
	7	EXHAUST TEMP. INTO TURBINE - CORR. °F							
LOAD	8	SCALE LOAD (DYNAMOMETER)							
	9	~~VOLTS - E. GEN.~~ Smoke Monitor	3.5	3.5					
	10	~~AMPS. - E. GEN.~~ MAN. PRESS	77	68					
	11	VOLTS - W. GEN.	800	800					
	12	AMPS. - W. GEN.	1470	1470					
	13	K.W. - TOTAL	1176	1176					
	14	H.P. - ACTUAL (FACTOR .706	1666	1666					
FUEL OIL	15	LBS./HR.	675	675					
	16	PRESSURE IN - PSI	12	12					
	17	RETURN MANIFOLD PRESS. - PSI	N/A	N/A					
	18	TEMPERATURE IN - °F	77	77					
	19	SPECIFIC GRAVITY .845							
LUBE OIL	20	PRESS. AT GOVERNOR - PSI	62	62					
	21	PRESS. AT TURBO OR BLO. BRGS. - PSI	59	59					
	22	PRESS. DROP ACROSS TURBO - PSI	3	3	O/K.				
	23	TEMPERATURE IN - °F	150	145					
	24	TEMPERATURE OUT - °F	163	163					
	25	PISTON COOLING PRESS. - PSI	37	36					
	26	SCAV. OIL PRESS. - PSI	13	13					
	27	SOAK BACK PRESS. BEFORE START - PSI	N/A						
WATER	28	PRESSURE OUT - PSI	8	8					
	29	TEMPERATURE IN - °F	130	130					
	30	TEMPERATURE OUT - °F	140	140					
	31	EXHAUST TEMP. INTO TURBO - °F							
	32	BAROMETRIC PRESSURE [illegible] "HG							
	33	OIL PAN + PRESS. OR - SUCTION - "H₂O	-1.5	-1.5	O/K.				
	34	AIR IN TEMPERATURE - °F	96	100					

CRANKSHAFT END THRUST .011 IN. — OVERSPEED TRIP RPM

IDLE OIL: TEMP. °F — WATER TEST PRESSURE PSI

PRESS. PSI — FUEL TEST PRESSURE 90 PSI

TURBO RUN-DOWN TIME SEC. — [signature] Foreman, Engine Te[st]

EMD 2465A

ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-13-[illegible]

ENGINE SERIAL # 77K1-1088 MODEL GM 16-645E[illegible] CELL 8

No.	Stage of Reading (Step - Notch - F.L.)	800	800	
	TIME OF READING	1530	1400	AGS
2	TOTAL RUN TIME	:30	1:00	
3	ENGINE RPM 800	800	800	
4	AIR BOX PRESSURE [illegible] "HG	2.6	35	
5	QUADRANT	1.00	1.01	
6	BRAKE HORSE POWER - CORRECTED	1707	1695	(+ 3½% STACKS)
7	EXHAUST TEMP. INTO TURBINE - CORR. °F	—	—	
8	SCALE LOAD (DYNAMOMETER)			
9	~~VOLTS - E. GEN.~~ Smoke %	3.5	3.5	
10	~~AMPS. - E. GEN.~~ MAIN LUBE	68	70	
11	VOLTS - W. GEN.	800	790	
12	AMPS. - W. GEN.	1470	1460	
13	K.W. - TOTAL	1176	1153	
14	H.P. - ACTUAL (FACTOR 1706)	1666	1634	
15	LBS./HR.	625	620	
16	PRESSURE IN - PSI	15	14	
17	RETURN MANIFOLD PRESS. - PSI	—	—	
	TEMPERATURE IN - °F	76	77	
19	SPECIFIC GRAVITY .845			
20	PRESS. AT GOVERNOR - PSI	62	63	
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	59	60	
22	PRESS. DROP ACROSS TURBO - PSI	3	3	
23	TEMPERATURE IN - °F	152	151	
24	TEMPERATURE OUT - °F	168	169	
25	PISTON COOLING PRESS. - PSI	36	36	
26	SCAV. OIL PRESS. - PSI	14	14	
27	SOAK BACK PRESS. BEFORE START - PSI			
28	PRESSURE OUT - PSI	8	8	
29	TEMPERATURE IN - °F	130	130	
30	TEMPERATURE OUT - °F	142	142	
31	EXHAUST TEMP. INTO TURBO - °F			
32	BAROMETRIC PRESSURE "HG			
33	OIL PAN + PRESS. OR - SUCTION "H₂O	-1.9	-1.8	
34	AIR IN TEMPERATURE - °F		126	

INJECTOR C/O & RACK CHECK OUT [illegible]

CRANKSHAFT END THRUST .011 IN. — OVERSPEED TRIP RPM

IDLE OIL: TEMP. °F — WATER TEST PRESSURE PSI

PRESS. PSI — FUEL TEST PRESSURE PSI

TURBO RUN-DOWN TIME SEC. — [signature] Foreman, Engine Test

16

ENGINE TEST DATA

770226-3

ENGINE SERIAL # 77K1-1116 MODEL LH 645 E6 DATE 8 NOV 77 CELL #10

STAGE OF READING (STEP - NOTCH - F.L.)	390	640	720	800	800		ABS
1 TIME OF READING	0840	0910	0940	1010	1040		
2 TOTAL RUN TIME	40	110	140	210	240		
3 ENGINE RPM	390	640	720	800	800		
4 AIR BOX PRESSURE +51 "HG	1.0	2.5	3.0	3.75	3.75		
5 QUADRANT		118	108	92	92		
6 BRAKE HORSE POWER - CORRECTED							
7 ~~EXHAUST TEMP. INTO TURBINE - CORR. °F~~ MAIN LUBE PRESSURE	72	63	66	69	69		
8 ~~SCALE LOAD (DYNAMOMETER)~~ SMOKE METER	0	0	0	0	0		
9 VOLTS - E. GEN.	ABS - 16 CYL - PART # 8444223					SEC. #	77K1-1116
10 AMPS. - E. GEN.	FRONT	K-075998 REN - 1/2 - 45834 -				FRONT 1/2	RLC 14-16-77
11 VOLTS - W. GEN.	-	635	710	830	830	REAR	K RLC 14-16-77
12 AMPS. - W. GEN.		1245	1320	1500	1500	MALTESE	ENG
13 K.W. - TOTAL	/	790	934	1242	1242		F+R
14 H.P. - ACTUAL (FACTOR 706	11	1100	1304	1760	1760		
15 LBS./HR.	/	445	535	690	690		
16 PRESSURE IN - PSI	53	48	46	45	45		
17 RETURN MANIFOLD PRESS. - PSI	25	31	53	62	62		
TEMPERATURE IN - °F	75	76	78	79	80		
19 SPECIFIC GRAVITY 845	845	845	845	845	845		
20 PRESS. AT GOVERNOR - PSI	68	57	59	60	60		
21 PRESS. AT TURBO OR BLO. BRGS. - PSI	63	53	54	55	55		
22 PRESS. DROP ACROSS TURBO - PSI	5	4	5	5	5		
23 TEMPERATURE IN - °F	125	177	181	182	183		
24 TEMPERATURE OUT - °F	132	188	192	197	199		
25 PISTON COOLING PRESS. - PSI	22	21	24	28	28		
26 SCAV. OIL PRESS. - PSI	14	20	23	23	23		
27 SOAK BACK PRESS. BEFORE START - PSI	N/A	/	/	/	/		
28 PRESSURE OUT - PSI	11	16	18	20	20		
29 TEMPERATURE IN - °F	120	155	149	144	145		
30 TEMPERATURE OUT - °F	126	166	162	158	160		
31 EXHAUST TEMP. INTO TURBO - °F	/	/	/	/	/		
32 BAROMETRIC PRESSURE "HG							
33 OIL PAN + PRESS. OR - SUCTION - "H2O	OPEN	+0.1	+0.2	+0.3	+0.3		
34 AIR IN TEMPERATURE - °F		112	116	122	128		

CRANKSHAFT END THRUST .028 IN. Reset OVERSPEED TRIP 915 RPM

IDLE OIL: TEMP. 180 °F WATER TEST PRESSURE 55 PSI

PRESS. 26 PSI FUEL TEST PRESSURE 60 PSI

TURBO RUN-DOWN TIME N/A SEC. [signature] Foreman, Engine Test

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ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-9-77

ENGINE SERIAL # 77K1-1116   MODEL L16-645-E6   CELL 10

	STAGE OF READING (STEP - NOTCH - F.L.)	800	IDLE	800	800	RATED	RATED		
1	TIME OF READING	1155	1215	1245	1315	1030	1315		
2	TOTAL RUN TIME	3 20	3 40	4 10	4 40	5 10	5 40		
3	ENGINE RPM	801	350	804	801	801	88		
4	AIR BOX PRESSURE PSI "HG	3.75	1.0	3.75	3.75	4.0	4.0		
5	QUADRANT	1.00	1.76	1.00	1.00	1.00	1.00		(1½
6	BRAKE HORSE POWER - CORRECTED				1736 +	2½ =	177½	Hi	
7	EXHAUST TEMP. INTO TURBINE - CORR. °F								
8	SCALE LOAD (DYNAMOMETER) Smoke 70	0	0	0	0	0	4.2		
9	VOLTS - E. GEN. MAIN LUBE PSI	68	43	70	69	67	67		
10	AMPS. - E. GEN.								
11	VOLTS - W. GEN.	800	/	800	800	815	820		
12	AMPS. - W. GEN.	1430	/	1430	1430	1490	1490		
13	K.W. - TOTAL	1144	/	1144	1144	1214	1221		
14	H.P. - ACTUAL (FACTOR .706)	1620	/	1620	1620	1720	1730		
15	LBS./HR.	630	N/R	630	630	660	665		
16	PRESSURE IN - PSI	23	54	20	20	20	54		
17	RETURN MANIFOLD PRESS. - PSI	25	23	25	25	24	24		
18	TEMPERATURE IN - °F	76	78	79	79	73	75		
19	SPECIFIC GRAVITY .845								
20	PRESS. AT GOVERNOR - PSI	60	41	61	60	58	59		
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	55	37	56	55	53	54		
22	PRESS. DROP ACROSS TURBO - PSI	5	4	5	5	5	5		
23	TEMPERATURE IN - °F	180	160	180	180	185	181		
24	TEMPERATURE OUT - °F	195	165	194	195	198	195		
25	PISTON COOLING PRESS. - PSI	27	12	28	27	26	27		
26	SCAV. OIL PRESS. - PSI	19	6	20	20	18	17		
27	SOAK BACK PRESS. BEFORE START - PSI	N/A	/	/	/	/	/		
28	PRESSURE OUT - PSI	20	10	20	20	20	20		
29	TEMPERATURE IN - °F	145	140	144	145	153	145		
30	TEMPERATURE OUT - °F	160	140	160	160	165	160		
31	EXHAUST TEMP. INTO TURBO - °F								
32	BAROMETRIC PRESSURE "HG								
33	OIL PAN + PRESS. OR - SUCTION - "H₂O	-3.8	-1.0	-3.8	-3.8	-3.8	-3.8		
34	AIR IN TEMPERATURE - °F	110	102	126	128	120	122		

CRANKSHAFT END THRUST .018 IN.   RESET OVERSPEED TRIP 915 RPM

IDLE OIL: TEMP. 150 °F   WATER TEST PRESSURE 85 PSI

PRESS. 20 PSI   FUEL TEST PRESSURE 60 PSI

TIMED RUN-DOWN TIME N/A SEC.   [illegible signature] Foreman, Engine Test

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ELECTRO-MOTIVE DIVISION — GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-19-77

ENGINE SERIAL # 77L1-1059 MODEL R16E6 CELL 8

	STAGE OF READING (STEP - NOTCH - F.L.)	390	640	720	800	800		AB
1	TIME OF READING	0200	0230	0300	0330	0400		
2	TOTAL RUN TIME	40	110	140	210	240		
3	ENGINE RPM	390	640	720	800	800		
4	AIR BOX PRESSURE PSI	1.0	2.1	3.0	3.2	3.2		
5	QUADRANT	-	1.12	1.04	.93	.93		
6	BRAKE HORSE POWER - CORRECTED	16 CYL - A	BS -	PART	# 84	4662	3 - SER #	
7	EXHAUST TEMP. INTO TURBINE - CORR. °F	½ CTS	34 - RE	AR ½	CX536	FRONT ½	4ED 3-11	REAR ½
8	SCALE LOAD (DYNAMOMETER)	MALT	ESE	PASS				
9	VOLTS - E. GEN. MAIN L.O.P.	70	74	74	73	73		
10	AMPS. - E. GEN. SMOKE %	3.6	3.5	5.0	5.5	5.5		
11	VOLTS - W. GEN.		660	770	820	820		
12	AMPS. - W. GEN.		1200	1380	1500	1500		
13	K.W. - TOTAL		792	1062	1230	1230		
14	H.P. - ACTUAL (FACTOR .706)		1121	1504	1765	1765		
15	LBS./HR.		380	540	670	670		
16	PRESSURE IN - PSI	48	45	42	41	41		
17	RETURN MANIFOLD PRESS. - PSI	19	17	19	19	19		
18	TEMPERATURE IN - °F	79	80	80	81	81		
19	SPECIFIC GRAVITY .845							
20	PRESS. AT GOVERNOR - PSI	66	69	67	67	67		
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	62	65	64	63	63		
22	PRESS. DROP ACROSS TURBO - PSI	4	4	3	4	4		
23	TEMPERATURE IN - °F	125	138	150	156	155		
24	TEMPERATURE OUT - °F	130	150	165	169	172		
25	PISTON COOLING PRESS. - PSI	26	35	34	35	35		
26	SCAV. OIL PRESS. - PSI	13	14	14	14	14		
27	SOAK BACK PRESS. BEFORE START - PSI	—						
28	PRESSURE OUT - PSI	7	7	8	8	8		
29	TEMPERATURE IN - °F	100	120	135	148	151		
30	TEMPERATURE OUT - °F	104	130	150	163	165		
31	EXHAUST TEMP. INTO TURBO - °F							
32	BAROMETRIC PRESSURE "HG							
33	OIL PAN + PRESS. OR - SUCTION - "H₂O	OPEN	0	0	0	0		
34	AIR IN TEMPERATURE - °F	88	94	102	109	115		

(Row groups: LOAD — rows 1–14; FUEL OIL — rows 15–19; LUBE OIL — rows 20–27; WATER — rows 28–30)

CRANKSHAFT END THRUST .011 IN. Reset OVERSPEED TRIP 905 RPM

IDLE OIL: TEMP. 154 °F WATER TEST PRESSURE 100 PSI

349 RPM PRESS. 52 PSI FUEL TEST PRESSURE 95 PSI

TURBO RUN-DOWN TIME SEC. [signature] Foreman, Engine Test

GENERAL MOTORS CORPORATION

ENGINE TEST DATA

DATE 11-21-77

ENGINE SERIAL # 77L7-1029 MODEL R-16-E-6 CELL 8

	STAGE OF READING (STEP - NOTCH - F.L.)	800	Idle	Rated	Rated			
	TIME OF READING	0710	0730	~~[illegible]~~	1040			
2	TOTAL RUN TIME	3^00	3^40	4^10	4^40			
3	ENGINE RPM	800	349	800	802			
4	AIR BOX PRESSURE PSI ~~"HG~~	3.5	0.4	3.5	3.5			
5	QUADRANT	93		102	100			
6	BRAKE HORSE POWER - CORRECTED							
7	EXHAUST TEMP. INTO TURBINE - CORR. °F							
8	SCALE LOAD (DYNAMOMETER)							
9	~~VOLTS - E. GEN.~~ MAIN L.O.P.	74	50	70	68			
10	~~AMPS. - E. GEN.~~ SMOKE %	1.5		26%	41%			
11	VOLTS - W. GEN.	820		780	795			
12	AMPS. - W. GEN.	1500		1470	1420			
13	K.W. - TOTAL	1230		1147	1127			
14	H.P. - ACTUAL (FACTOR, ~~730~~) .708	1765		1624	[illegible]			
15	LBS./HR.	663		610	615			
16	PRESSURE IN - PSI	35	49	35	35			
17	RETURN MANIFOLD PRESS. - PSI	13	20	12	14			
	TEMPERATURE IN - °F	81	81	72	72			
19	SPECIFIC GRAVITY .845							
20	PRESS. AT GOVERNOR - PSI	68	52	64	62			
21	PRESS. AT TURBO OR BLO. BRGS. - PSI	64	48	61	59			
22	PRESS. DROP ACROSS TURBO - PSI	4	4	3	3			
23	TEMPERATURE IN - °F	150	136	160	170			
24	TEMPERATURE OUT - °F	170	148	180	189			
25	PISTON COOLING PRESS. - PSI	38	20	35	30			
26	SCAV. OIL PRESS. - PSI	14	6	12	12			
27	SOAK BACK PRESS. BEFORE START - PSI	—						
28	PRESSURE OUT - PSI	8	6	7	8			
29	TEMPERATURE IN - °F	132	120	154	150			
30	TEMPERATURE OUT - °F	148	130	162	160			
31	EXHAUST TEMP. INTO TURBO - °F							
32	BAROMETRIC PRESSURE "HG							
33	OIL PAN + PRESS. OR - SUCTION "H_2O	-2.2		-2.6	-2.6			
34	AIR IN TEMPERATURE - °F	110	112	116	114			

Handwritten (vertical): RAB 5-27-77 [illegible] William Wagner

CRANKSHAFT END THRUST .011 IN. Reset OVERSPEED TRIP 905 RPM

IDLE OIL: TEMP. 154 °F WATER TEST PRESSURE 100 PSI

PRESS. 52 PSI FUEL TEST/PRESSURE 75 PSI

TURBO RUN-DOWN TIME [illegible] RJ Koy[illegible] Foreman, Engine Test

T R I A L R E P O R T

STATEN ISLAND FERRY

"ANDREW J. BARBERI"

BUILT FOR DEPARTMENT OF MARINE & AVIATION

NEW YORK, NY

BY

EQUITABLE SHIPYARDS, INC., NEW ORLEANS, LA

ESI HULL NUMBER 1713

INTRODUCTION

The purpose of this report is to consolidate data which was obtained at various trials performed during construction and prior to delivery of ESI Hull Number 1713 to the owner. Material contained herein is organized chronologically by sections, starting with Section Number 1 being the first Dock Trial conducted on October 21, 1980 and continuing through the last or final sea trial, for a total of eight separate trials.

With the exception of certain vendor data and vibration readings, all data presented here follows the format of ESI's Test Memos as follows:

NUMBER	TITLE	TIME FRAME
M-35	"Dock Trials"	October 21, 1980
M-36	"Sea Trials"	December 10, 1980
M-37	"Builders Trial"	April 28, 29, 1980

Note that portions of some test memos are left blank because no data was collected during that part of the trial due to propeller failures, etc., or else that particular event was not scheduled. Data collected is presented herewith without prejudice and without editorial comments regarding accuracy or applicability.

Vibration data gathered during the trial conducted on May 6, 7, 8, 1981 was provided by two independent sources:

1. Rise, Inc. - Baton Rouge, Louisiana
2. J. M. Voith GMBH - Heidenheim, West Germany

An appendix is provided to gather together for ready reference useful information that is applicable to all trials rather than one specific trial. Included are engine HP/RPM curves, VSP propeller curves, chart of trial course, factory test data for main engines, calibration certificates, etc.

TABLE OF CONTENTS

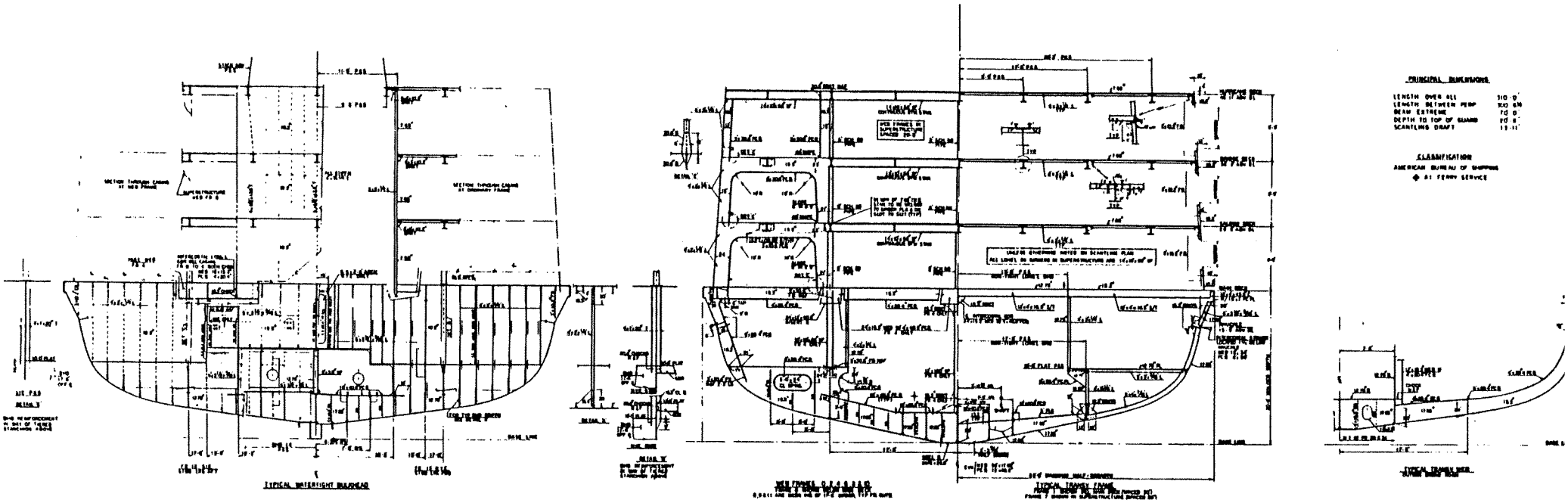


Fig. 10 Midship Section

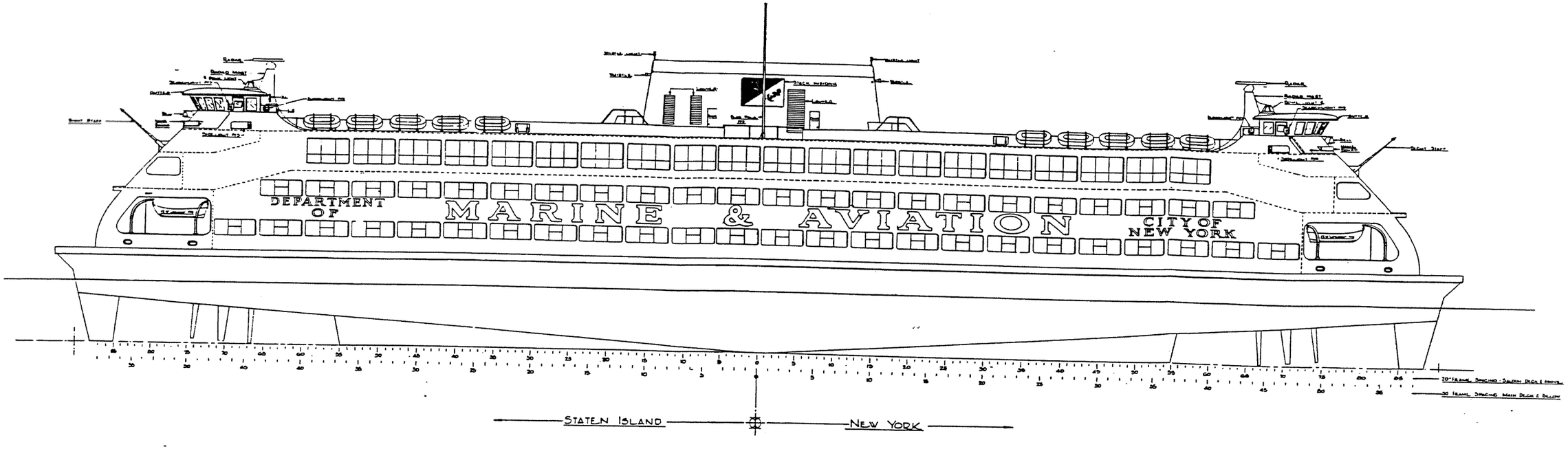


Fig. 3 Outboard Profile

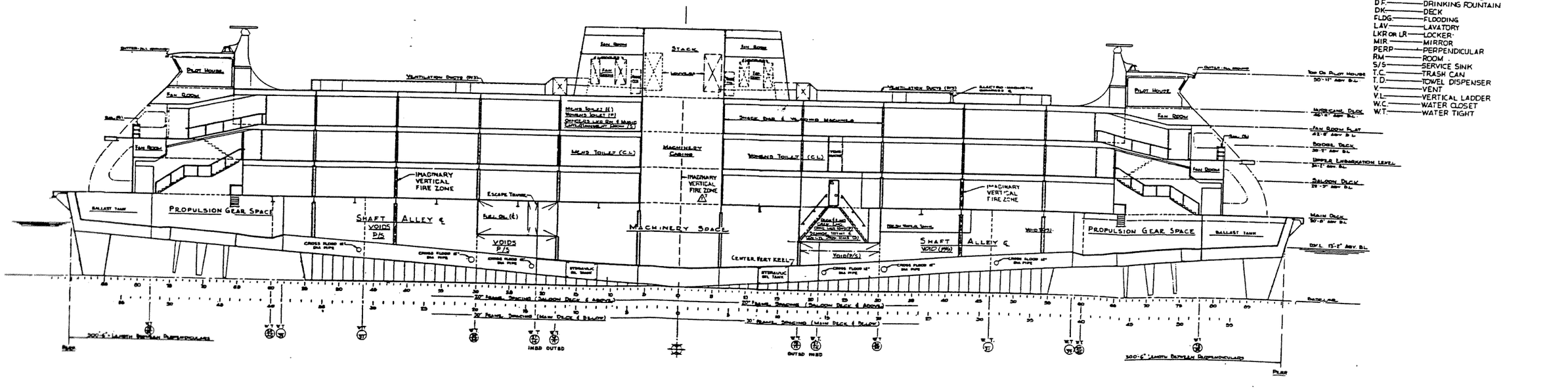
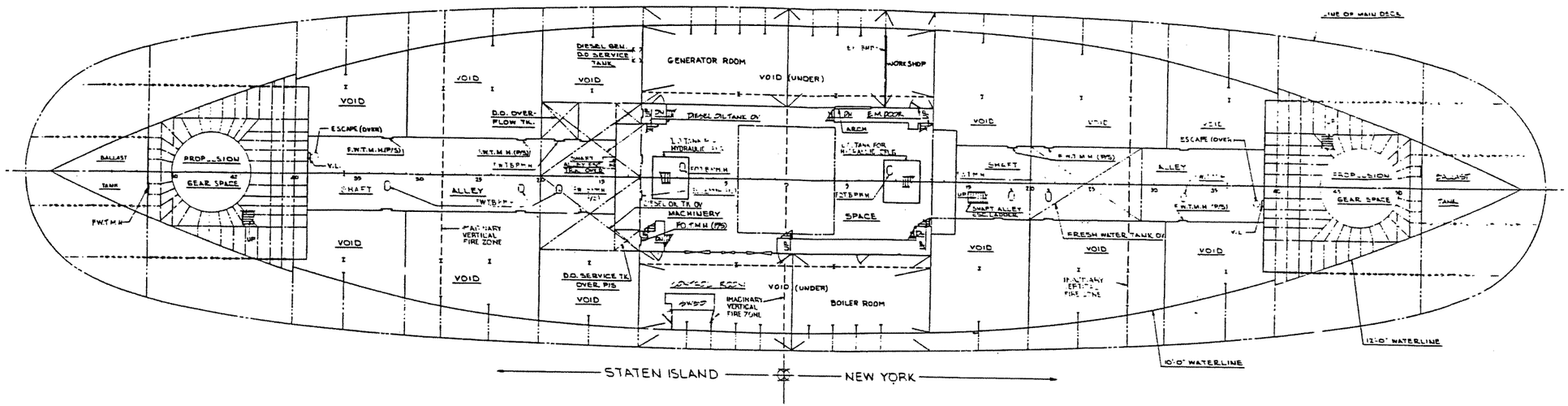
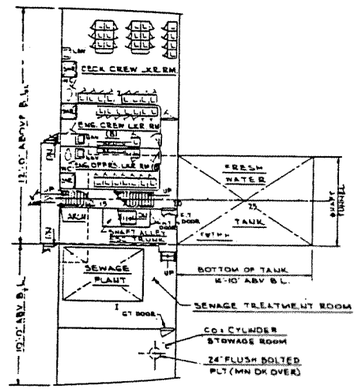
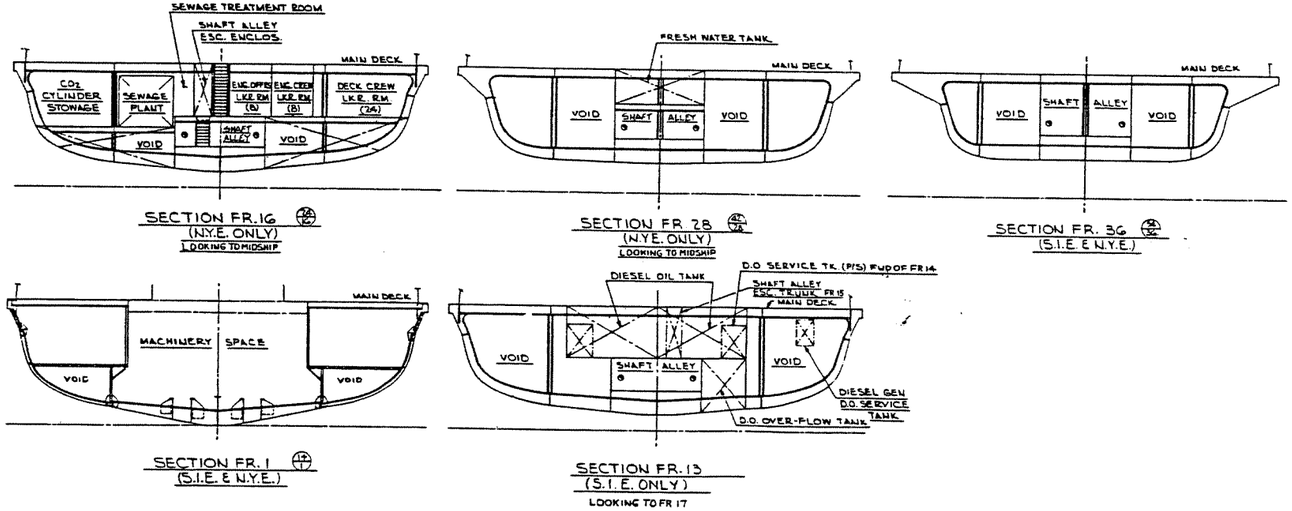


Fig. 4 Inboard Profile





ENG. OFFICERS, ENG. CREW & DECK CREW LOCKER ROOMS, SEWAGE TREATMENT & CO_2 CYL STON RMS. BETWEEN FRS 12 TO 20 (N.Y.E.)



LEGEND

UPPER NO. INDICATES FR. NO. (20' SPCG) SALOON DK & ABOVE
LOWER NO. INDICATES CORRESPONDING FR. NO. (30" SPCG.) MAIN DECK & BELOW.

N.Y.E. = NEW YORK END
S.I.E. = STATEN ISLAND END
ABV——ABOVE
B.L.——BASELINE
DK.——DECK
ESC.——ESCAPE
F.W.T.M.H.——FLUSH WATER TIGHT MANHOLE
LAV.——LAVATORY
LKR. OR L.——LOCKER
RM.——ROOM
SHR.——SHOWER
TRK.——TRUNK
V.L.——VERTICAL LADDER
W.C.——WATER CLOSET
W.L.——WATER LINE
W.T.——WATER TIGHT

Fig. 5 Hold and Flats

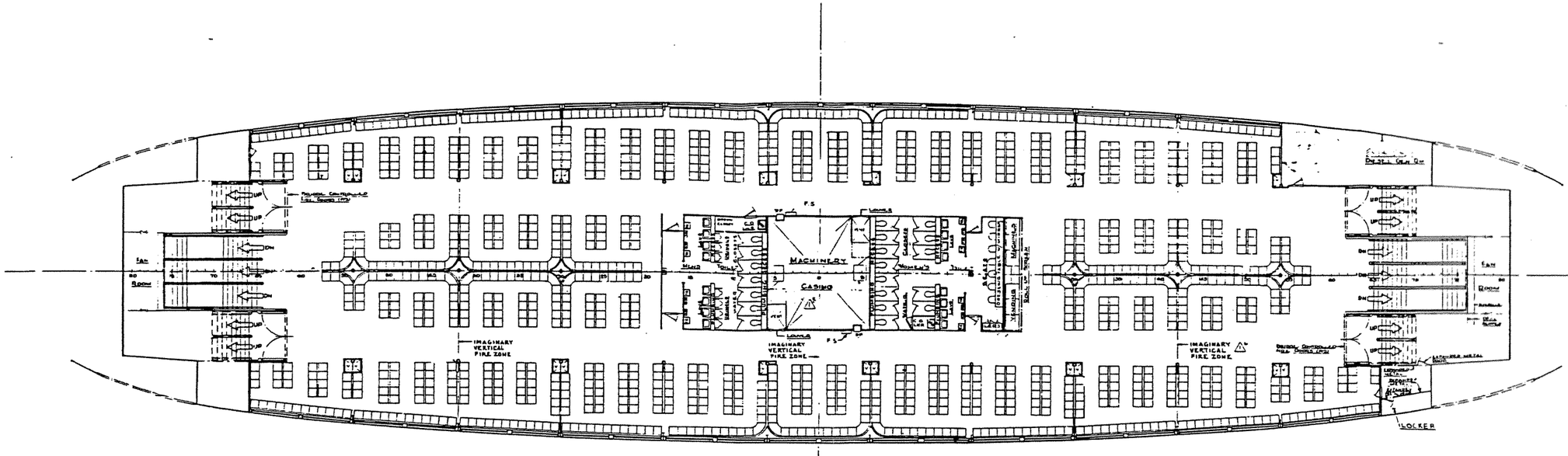


Fig. 7 Saloon Deck

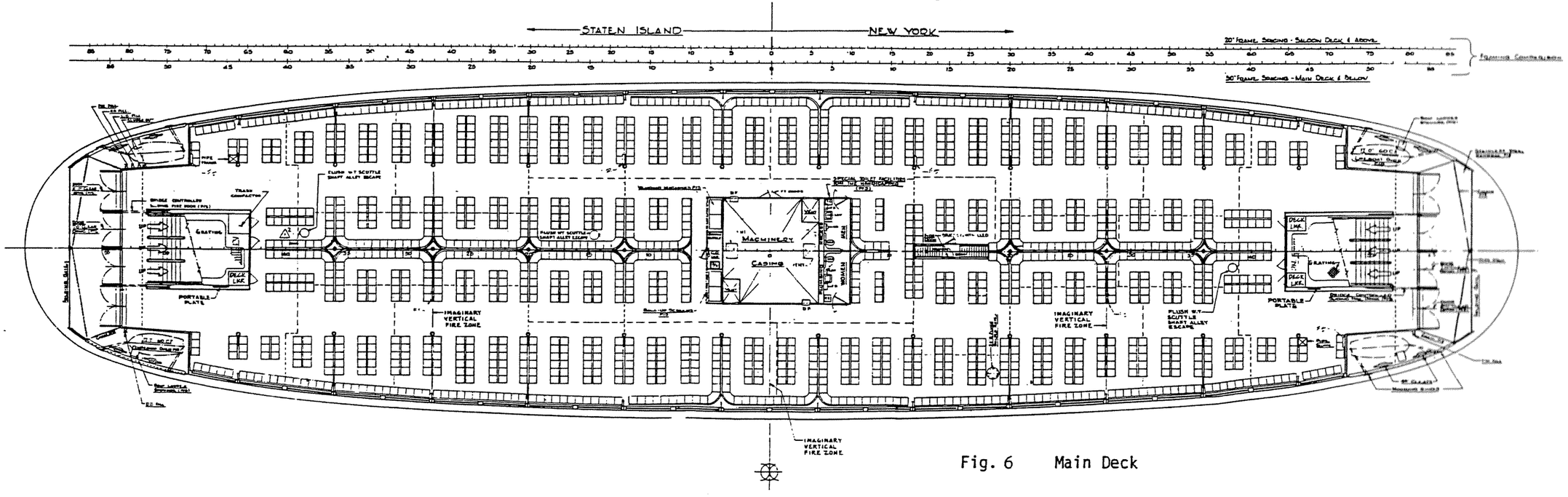
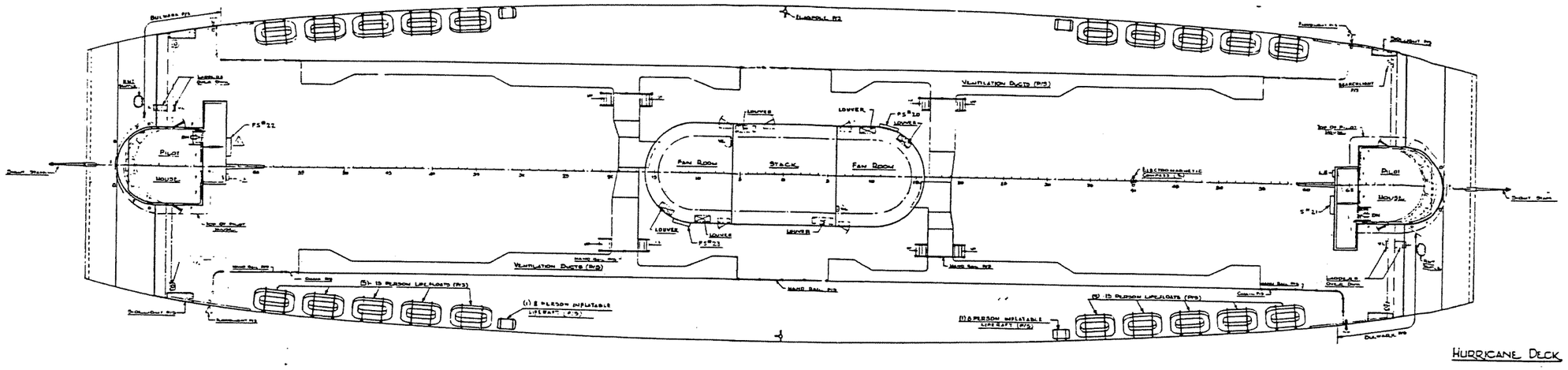


Fig. 6 Main Deck



HURRICANE DECK

LEGEND

BWK——BULWARK
L.R.——LADDER RUNGS
R.W.T.——RAISED WATER TIGHT
V.L.——VERTICAL LADDER
F.——FIXED WINDOW
O.——OPENING WINDOW

Fig. 9 Hurricane Deck

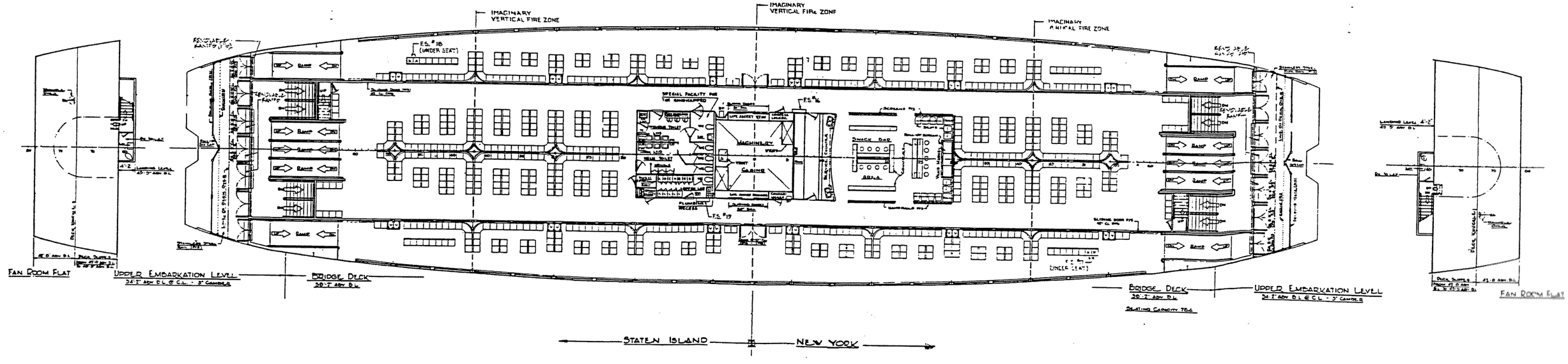


Fig. 8 Bridge Deck