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Title: SCOPE OF ANTICIPATED SFNS EFFORT ON VAGS 39 & 40

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U. S. NAVAL RADIOLOGICAL DEFENSE LABORATORY
San Francisco 24, California

16 June 1954

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From: Director, U. S. Naval Radiological Defense Laboratory
To: Commander, San Francisco Naval Shipyard (Planning Officer)

Subj: Scope of anticipated SFNS effort on YAGs 39 & 40

Ref: (a) Ltr Chief BuShips to CO SFNS, Director NRDL, ser 588-229
dtd 8 June 54

Encl: (1) Principal items of work on YAGs 39 & 40 ✓
(2) Anticipated Project Transit (6.4) rollup work aboard YAGs 39 & 40 ✓
(3) Suggested preliminary ship decontamination plan for YAGs 39 & 40 ✓
(4) Preliminary requirements for modification of YAGs 39 & 40 ✓
(5) Proposed Arrangement of Underwater Sampling System YAG-40 ✓
(6) Preliminary sketch of modifications to Hold #3 YAGs 39 & 40 ✓

1. In compliance with reference (a) the following is an outline of the work to be performed by SFNS on the USS YAG's 39 and 40 in connection with the completion of Bureau of Ships Project Transit (6.4). In addition, all of the work on the ships anticipated during the next ten month period has been included.

2. The work falls in four principal categories:

- (a) Project Transit rollup operations,
- (b) Decontamination and rehabilitation,
- (c) Modifications for Field Operation 12 (NRDL designation)
- (d) Maintenance and overhaul.

3. USNRDL will supply detailed requirements for Items (a) and (c) and will be glad to advise SFNS on various phases of Item (b). Item (d) requirements are understood to be the responsibility of the Commandant, 12th Naval District.

4. Enclosure (1) lists, in the approximate order to be performed, the principal items of work, a tentative schedule, and suggest the responsibility relationships of the various organizations. Enclosures (2), (3) and (4) describe in more detail the work entailed in the various categories and is intended to indicate the approximate scope of the effort. Enclosures (5) and (6) are appendices to enclosure (4).

5. Enclosure (1) indicates the requirement for certain items of work not included in the other enclosures. Principal among these are those involved in establishing and implementing radiological safety rules and procedures. To this end, USNRDL has requested of BuMed that USNRDL be delegated authority by dispatch to interpret those portions of the Radiological Safety Regulations (NavMed P-1325) upon request by SFNS.

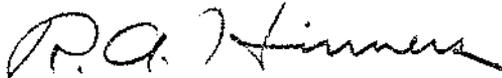
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6. In the case of category (c) items requiring development of design and detailed working drawings, the Laboratory will furnish a statement of the desired performance specifications, such as enclosure (4) and/or preliminary sketches of the ship modifications or apparatus required, such as enclosures (5) and (6). It is understood that the shipyard is in a position to undertake the necessary detailed design work for the items in this category.

7. It is to be recognized that the information contained herein is preliminary. While it is subject to modification by this command and other authority, it is believed that the information does provide a reasonable indication of the scope of effort required on YAGs 39 & 40 during the succeeding ten month period.


R. A. HINNERS

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Principal items of work on YAGs 39 & 40 during succeeding ten month period
(Listed in approximate sequential order)

- (a) Determination and implementation of radiological safety rules and procedures for work aboard the ships or involving contaminated equipment. Responsibility: SFNS on basis of advice and consultation with NRDL (Estimated completion date 15 July).
- (b) Determination of decontamination scope and effectiveness required in the rehabilitation of the ships. Responsibility: SFNS on basis of advice and consultation with NRDL (estimated completion date 15 July).
- (c) Design work for modifications. Responsibility: SFNS on basis of requirements from NRDL (see enclosure (4)) (estimated completion date 1 Sept).
- (d) Removal and preliminary decontamination of experimental equipment and instruments. Responsibility: SFNS on basis of requirements from NRDL (see enclosure (2)) (desired completion date 1 Aug).
- (e) Removal and decontamination of deck machinery. Responsibility: SFNS on basis of advice of NRDL (see enclosure (3)) (desired completion date 1 Sept).
- (f) Decontamination and rehabilitation of ships. Responsibility: SFNS (NRDL will be available for advice) (see enclosure (3)) desired completion date 1 Sept).
- (g) Removal of deck obstructions and items not necessary for FO-12. Responsibility: SFNS on basis of advice of NRDL (see enclosure (4)) (Desired completion date 1 Oct).
- (h) Overhaul. Responsibility: SFNS, 12th Naval District (desired completion date 1 Jan 55)
- (i) Modifications for FO-12. Responsibility: SFNS on basis of requirements from NRDL (see enclosure (4)) (Required completion date 1 Jan 55).
- (j) Instrument Installation. Responsibility: SFNS and NRDL (required completion date 1 Feb 55).
- (k) Instrument Calibration and Shielding Experiment. Responsibility: NRDL, assistance required from SFNS (required completion date 1 Mar 55).
- (l) Trial Runs. Responsibility: SFNS and 12th Naval District (required completion date 1 Apr 55).

ENCLOSURE (1) to memo MEH:jmb-15 dtd 16 Jun

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Anticipated Project Transit (6.4) rollup work
aboard YAGs 39 & 40

1. The following experimental equipment will be off-loaded for return and/or restoration for FO-12:

YAG-39

- (a) 3 - F4U aircraft (return to ANAS)
- (b) 1 - Generator (return to NRDL)
- (c) 1 - Chem Corp Panel Rack (return to Dugway Proving Grounds)
- (d) Misc. decontamination equipment (return to NRDL)

YAG-40

- (a) 3 - F4U aircraft (return to ANAS)
- (b) 1 - Air compressor (return to NRDL)
- (c) 5 - Paint spray compressors (return to NRDL)
- (d) 1 - Chem Corp Panel Rack (return to Dugway Proving Grounds)

2. The following experimental equipment will be removed and decontaminated, then sent to NRDL:

YAG-39

- (a) 5 - Air samplers
- (b) 7 - Suction units
- (c) Misc. Instruments

YAG-40

- (a) 20 - Air samplers
- (b) 29 - Suction units
- (c) Misc. Instruments

3. The following experimental equipment will be removed and delivered to NRDL after the decontamination of the ship's is completed:

YAG 39 & 40

- (a) Fixed Gamma Detector Stations
- (b) Control Units

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Suggested Preliminary Plan for Ship
Decontamination -- YAGs 39 & 40

1. Removal of deck machinery, boats and other items to prepare for industrial decontamination.

(a) The following equipment will be removed from the ships for decontamination and storage until re-installation aboard ships. Winches to be sent to appropriate shop after decontamination for repair and overhaul:

YAG 39 & 40

- (a) 1 - anchor winch fwd
- (b) 4 - cargo winches aft
- (c) 4 - cargo booms aft
- (d) 1 - spud locker aft
- (e) 2 - 24' plane personnel boats
- (f) 3 - lifeboats
- (g) 1 - whale boat (2 whale boats on YAG-39)

2. Industrial Decontamination, YAGs 39 & 40.

(a) Operation will consist of removal of exterior paint and the complete repainting of entire ships. Interior piping may have to be decontaminated and this might necessitate the removal and replacing of some pipes. The wood flight decks will have to be resurfaced. The wood boat deck will be removed in conjunction with the modification requirements for FO-12. The exterior hull surface is to be coated with four different types of hull paint after decontamination.

(b) This requirement is necessary for two reasons: (1) the existing paint on the two ships is in very bad condition. The field decontamination of the YAG-40 consisted of removal of a large percentage of the haze grey. Rust and scale is present in large quantities; (2) the radiation level must be lowered so that ships personnel can live aboard for a 12 month period and shipyard and NRDL personnel can perform modification work without Radiological Safety restrictions.

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ENCLOSURE (3) to memo MBH:jmb-15 dtd 16 Jun

U. S. NAVAL RADIOLOGICAL DEFENSE LABORATORY
SAN FRANCISCO 24, CALIFORNIA

3-933
MBH:gm
15 June 1954

Enclosure (4)

Preliminary Requirements for the Modification
of YAG-39 and YAG-40

Section A-1

General

This memorandum outlines the general requirements for the modification of the YAG's 39 and 40 for the forthcoming FO-12, and is issued instead of detail specifications. This includes at present only those modifications as are apparent to the USNRDL staff. Additional requirements for modifications to machinery and auxiliary equipment may be forthcoming from other sources.

The following sections are arranged in order in which they appear in "General Specifications for Machinery of the United States Navy". It is the intent that general specifications apply insofar as practicable.

Note: The NRDL sketches indicated herein are not available at present except for two uncompleted sketches included as Enclosure (5) and Enclosure (6).

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ENCLOSURE (4) to memo MF jmb/3-933 dtd 16 Jun

Section S-11

Hull Structure, Addition and Modification

- YAG-40 (1) Design, construct and install a retractable feeler, which will be attached to the bow of the ship. The feeler will be designed to accommodate (1) a water sampling tube attached to a submersible pump, and (2) field detectors mounted on removable dollies. NRDL Sketch _____
- YAG-40 (2) Design and construct a catwalk extending from the fwd edge of the flight deck up to and fwd of the bow. Catwalk to support feeler in retracted position. Hand rail to be provided around catwalk. NRDL Sketch _____
- YAG-40 (3) A lifting frame be designed and constructed on the bow of the ship to provide means of lifting feeler to retracted position. NRDL Sketch _____
- YAG-40 (4) A watertight room be designed and constructed in the lower deck of hold #1. This hold is normally flooded for ballasting purposes, and will be flooded after room is constructed. NRDL Sketch _____
- YAG's 39 and 40 (5) A watertight room be designed and constructed in the lower deck of hold #3. This hold is normally flooded for ballasting purposes, and will be flooded after room is constructed. NRDL Sketch _____
- YAG-40 (6) Design and construct an "A" frame in stern of ship for lifting and towing detectors. NRDL Sketch _____
- YAG-40 (7) Design a jettisonable radar buoy and the necessary quick release framework for holding buoy on aft part of ship. NRDL Sketch _____
- YAG-40 (8) A hatch davit and davit socket be provided near the striking down hatch on flight deck. Davit should be designed to handle a working load of 1,000 lbs.
- YAG's 39 and 40 (9) Davits and davit sockets be provided fwd and aft on stbd side of boat deck.
- YAG-40 (10) A padeye be provided over access trunk in 2nd deck compartment #1 hold (to accommodate an electric hoist).

Section S-11 (Continued)

- | | |
|-----------------|---|
| YAG's 39 and 40 | (11) A padeye be provided over access trunk in 2nd deck compartment. No. 3 hold (to accommodate an electric hoist). |
| YAG's 39 and 40 | (12) Remove existing winch foundations fwd #2 hatch and aft #2 hatch. |
| YAG's 39 and 40 | (13) Remove anchor and anchor clips aft #2 hatch. |
| YAG's 39 and 40 | (14) Remove wood boat deck and recondition original steel decking. |
| YAG's 39 and 40 | (15) Remove conning platform, and associated equipment, top of S.S. |
| YAG's 39 and 40 | (16) Remove Panel Rack Track and supporting frame aft #5 hold. |
| YAG's 39 and 40 | (17) Circular cover plates be installed on detector stations being deleted. (See Section S-67, Item 1.) |
| YAG's 39 and 40 | (18) Redesign and install new detector domes on stations to be used. Domes to be aluminum. Redesign method of holding domes to deck, a quick release retaining ring is desired. (See Section S-67, Item 1.) |

Section S-12

Fittings

YAG's 39 and 40

- (1) Repair portable life lines and stanchions on flight deck.

ENCLOSURE (4)

Section S-16

Access Openings

- YAG-40 (1) A striking down hatch to be installed in the flight deck. Hatch size 48" x 48" raised coaming, watertight, hinged hatch cover. NRDL Sketch No. _____
Ref. MINS drawing YAG-39-S-1106-808710
- YAG-40 (2) A striking down hatch to be installed on the main deck over #1 hold. Hatch to be directly underneath hatch installed in flt. deck. Hatch size 48" x 48", raised coaming, airtight, hinged hatch cover. NRDL Sketch No. _____
- YAG-40 (3) An access hatch to be installed on the main deck over #1 hold. Hatch size 36" x 72" raised coaming. (See Item 9.) NRDL Sketch No. _____
- YAG-40 (4) A circular access trunk be installed in #1 hold connecting the 2nd deck compartment with the new low-background instrument room. Hatch size 36" dia., raised coaming, airtight, hinged hatch cover. (See Item 20.) NRDL Sketch No. _____
- YAG-40 (5) A circular utility trunk be installed in #1 hold connecting the 2nd deck compartment with the new low background instrument room. NRDL Sketch _____
- YAG's 39 and 40 (6) A circular access trunk be installed in #3 hold connecting the 2nd deck compartment with new shielded control room. Hatch size 36" dia., raised coaming, hinged hatch cover. (See Item 11.) NRDL Sketch No. _____
- YAG-40 (7) A circular utility trunk be installed in #3 hold connecting 2nd deck platform with new shielded control room. NRDL Sketch No. _____
- YAG-40 (8) An access hatch to be installed in hold #2 connecting 2nd deck compartment with lower compartment. Hatch size 36" x 72" raised coaming. (See Item 13.) NRDL Sketch No. _____
- YAG-40 (9) An inclined ladder be installed leading from access hatch on main deck over #1 hold to 2nd deck compartment, 24" tread. (See Item 1.) NRDL Sketch No. _____

Section S-16 (Continued)

- YAG-40 (10) A vertical ladder be installed in the access truck leading from 2nd deck compartment hold #1 to low background instrument room. (See Item 4) NRDL Sketch No. _____
- YAG's 39 and 40 (11) A vertical ladder be installed in the access trunk leading from 2nd deck compartment hold #3 to the shielded control room. (See Item 6.) NRDL Sketch No. _____
- YAG-40 (12) Relocate existing ladder on port side, aft of flight deck to stbd side. NRDL Sketch No. _____
Ref. MINS YAG-39-S-1106-808710
- YAG-40 (13) An inclined ladder be installed leading from 2nd deck compartment hold #2 to lower deck. 24" tread. (See Item 8.) NRDL Sketch No. _____
- YAG's 39 and 40 (14) Repair or replace existing accommodation ladders to facilitate small boat operations at open sea.
- YAG's 39 and 40 (15) Locate a 30" x 57" quick acting, watertight door leading from #3 hold, 2nd deck platform into passage alongside boiler uptake. NRDL Sketch _____

Section S-17

Masts

YAG's 39 and 40

- (1) Remove No. 1 kingpost
- (2) Redesign instrument and sampling platform on kingpost
No. 2. NRDL Sketch No. _____

ENCLOSURE (4)

Section S-20

Winches

- YAG-40 (1) Select and install suitable winches located on flight deck and bow to provide means of retracting feeler. NRDL Sketch No. _____
- YAG-40 (2) Electric hoist be provided on flight deck for lifting material from flight deck into #2 hold, 1 ton capacity. NRDL Sketch No. _____
- YAG-40 (3) Electric hoist be provided for lifting materials in and out of low background instrument room, 1 ton capacity.
- YAG's 39 and 40 (4) Electric hoist be provided for lifting material in and out of control room in #3 hold, 1 ton capacity.
- YAG-40 (5) Suitable hoist be provided to lift instruments at stern of ship for SIO operations.
- YAG's 39 and 40 (6) Suitable hoist (electric) be provided on boat deck for lifting gear from small boats alongside to main deck.

Section S-28

Labelling

YAG's 39 and 40

(1) Provide labels and markings for new electrical circuits.

YAG's 39 and 40

(2) Provide necessary label plates for new radio control equipment.

Section S-38

Ventilating System

YAG-40

(1) Design and install an adequate ventilation system in the low background instrument room in #1 hold.

YAG's 39 and 40

(2) Design and install an adequate ventilation system in the control room in #3 hold.

Section S-48-1

General Piping System

- YAG-40 (1) A water sampling manifold to be designed and fabricated. Manifold to be located on 2nd deck platform of #1 hold. NRDL Sketch No. _____
- YAG-40 (2) A water sampling tube be designed and installed inside of retractable feeler. Tube will extend to bottom of feeler and connected to a submersible pump which will supply water to sampling manifold. A quick disconnecting flexible hose will connect sampling tube to manifold in #2 hold. NRDL Sketch _____
- YAG-40 (3) Install a vapor distillation unit, which includes all necessary piping, etc. (See NRDL Sketch _____)
- YAG's 39 and 40 (4) Provide adequate drainage from the following locations - top of superstructure, fwd of flight deck, port and stbd passageways.
- YAG-40 (5) Provide adequate drainage, waterways, scupper, in 2nd deck platform, #1 hold.

Section S-48-10

Steam Piping

YAG-40

- (1) Install 2" and 1 1/4" steam hose outlets. 2" steam lines for this purpose to extend from existing steam line to deck winches. Locations shown on NRDL Sketch No. _____

Section S-62

Electric Power Distribution

YAG's 39 and 40

- (1) Electric power distribution will be made available to following locations:
 - (a) 230v to submersible pump in feeler - YAG-40
 - (b) 110v req. for instrumentation in low background instrument room - YAG-40
 - (c) 110v req. for instrumentation in 2nd deck compartment, #1 hold - YAG-40
 - (d) 110v req. for electric winches (flt. deck, #1 hold, #2 hold, boat deck - YAG-40) (#3 hold and boat deck - YAG-39)
 - (e) 110v req. for remote control instruments in control room, #3 hold - YAG's 39 and 40.

Section S-64

Lighting Systems

- YAG-40 (1) The lighting system in #1 and #2 holds be redesigned to provide adequate lighting for experimental test operations.
- YAG-40 (2) Lighting system be provided in low background instrument room in #1 hold.
- YAG's 39 and 40 (3) Lighting system be provided in control room in #3 hold.

Section S-65

Interior Communications System

- YAG's 39 and 40 (1) A P.A. system be installed to provide communication between bridge and fireroom, Hold #1, Hold #2, Hold #3, Hold #4, main deck fwd and aft.
- YAG's 39 and 40 (2) A telephone circuit be installed between bridge, fire-room, control room Hold #3, recorder room Hold #4 and low background instrument room Hold #1.

Section S-67

Electronics

- YAG's 39 and 40
- (1) Relocation and deletion of gamma detector stations. Approximately 23 detector stations to be relocated (6 on YAG 39, 17 on YAG-40) and approximately 52 detector stations to be deleted (24 on YAG-39 and 28 on YAG-40). (Ref: memo MBR-25 May - Proposed Utilization of Detectors.)
- YAG-40
- (2) Installation of various electronic instruments associated with water sampling program. Instruments to be located in shielded instrument room in lower compartment of #1 hold.
- YAG's 39 and 40
- (3) A closed circuit television system be installed. Camera to be placed on top of bridge and receiver in control room. Camera adapted for remote control positioning on two axis.
- YAG's 39 and 40
- (4) Instruments be provided in control room for remote indication of course, speed, direction, etc.
- YAG's 39 and 40
- (5) A radar repeater be installed in control room.
- YAG's 39 and 40
- (6) External radio communications be provided in remote control room.
- YAG's 39 and 40
- (7) Necessary circuits for remote ship control be provided in remote control room.
- YAG's 39 and 40
- (8) Necessary instruments and cables be provided to control room for field indications taken from instruments in recorder room.

S-91

Workshop Equipment

YAG 40

(1) Work benches and storage cabinets be installed in #1 hold, 2nd deck compartment. NRDL Sketch _____

YAG-40

(2) Work bench and storage facilities be provided in after deckhouse for SIO Operations. NRDL Sketch _____