



DEPARTMENT OF THE NAVY  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
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OPNAVINST 3930.7D  
N873  
27 Apr 2000

OPNAV INSTRUCTION 3930.7D

From: Chief of Naval Operations

Subj: OPERATIONAL CONCEPTS FOR THE SUBMARINE NR-1

Ref: (a) OPNAVINST C3000.5E (NOTAL)  
(b) MOU between CNO(N873) and NOAA(NURP) (NOTAL)

Encl: (1) Charter for the Submarine NR-1 Advisory Group

1. **Purpose.** To revise the operational concepts for Submarine NR-1. This instruction is a substantial revision and should be reviewed in its entirety

2. **Cancellation.** OPNAV Instruction 3930.7C.

3. **Background.** The NR-1 is a small deep submergence nuclear powered submarine designed to operate at extended depths for a variety of deep ocean tasks.

4. **Objectives.** The NR-1 System objectives include the following:

a. **Primary Objective.** The primary objective of the NR-1 is to exploit the long endurance capability derived from the nuclear power plant. This includes conducting extended military operations and oceanographic research at deep depths, including operations of an ocean engineering nature.

b. **Secondary Objective.** The secondary objective of the NR-1 is to allow the Navy oceanographic research community to utilize the unique capabilities of this submarine in their tasks. Participation of Navy laboratories and research activities in utilization of NR-1 for oceanographic research and ocean engineering operations is encouraged.

5. **Mission Capabilities.** The following listed mission capabilities have been established for the NR-1.

a. **Search.** The NR-1 is capable of acoustic and visual search independent of other ships for the location and inspection of sunken ships, aircraft and other objects down to 3000 feet

b. **Survey.** The NR-1 is able to perform oceanographic surveys to test depth including collection of oceanographic and bathymetric data and samples.

c. **Object Recovery/Implantation.** The NR-1 is capable of recovering/implanting objects, within size and weight limitations, and assisting surface ships to recover/implant heavier objects to test depth.

6. **Organization and Control**

a. **Personnel.** Submarine NR-1 crew consists of four officers [Officer in Charge, Engineer Officer, Executive Officer/Navigator (Assistant Engineer Officer), Operations Officer] and 22 enlisted Sailors.

(1) Fifteen of the enlisted billets are for nuclear-trained enlisted Sailors.

(2) Seven of the enlisted billets are for one submarine qualified yeoman, senior submarine qualified storekeeper, one junior storekeeper, one submarine qualified Independent Duty Corpsman, and three submarine qualified electronics technicians. These Sailors provide dedicated supply, administrative and medical support to the NR-1 crew while ashore and underway onboard the Submarine Support Vessel.

(3) The minimum crew required for underway operation of NR-1 consists of an Officer in Charge, one additional officer, and five nuclear-trained enlisted Sailors. In addition, two research personnel (military or civilian) may be carried as necessary, depending on the specific missions.

(4) The normal crew complement for sustained at-sea operations of NR-1 consists of an Officer in Charge, two additional officers, and eight nuclear-trained enlisted Sailors. Two research personnel as mentioned above may replace two of the nuclear-trained enlisted Sailors.

(5) In addition to the normal crew compliment, there are nine temporary duty billets for nuclear-trained enlisted Sailors, normally filled by recent nuclear power training pipeline graduates, serving a 9-month tour.

(6) The temporary crewmembers and non-nuclear-trained Sailors go to sea and stand underway watched on the Submarine Support Vessel. The temporary nuclear-trained personnel qualify to stand inport watches on the NR-1.

b. **Operational Control.** Operational control will be exercised by the cognizant fleet commander in accordance with reference (a).

c. **Tasks and Missions.** Approval of all mission objectives and tasks assigned NR-1 must be obtained from Chief of Naval Operations(CNO) with the concurrence of the Commander, Naval Sea Systems Command (COMNAVSEASYSKOM 08). Organizations desiring the services of NR-1 will forward requests to Commander, Atlantic Submarine Fleet(COMSUBLANT (N311)) with copies to CNO (N873), COMNAVSEASYSKOM(PMS-395 and SEA 08), Commander, Atlantic Fleet(CINCLANTFLT), Commander, Submarine Squadron Two(COMSUBRON TWO), and SUBMARINE NR-1. The request for services should contain a detailed outline of the proposed operations and include any special equipment installations or other technical requirements and should be made and include any special equipment installations or other technical requirements and should be made with sufficient lead time to allow any required modifications to be technically reviewed prior to accomplishment. Modifications to NR-1 are conducted with the standard TEMPALT procedures and must be approved by the type commander.

(1) COMSUBLANT will prioritize mission tasks based on asset availability, operational requirements, and guidance from CNO(N873) and COMNAVSEASYSKOM(08).

(2) The prioritized list of mission objectives will be coordinated through NR-1 Advisory Group prior to final CNO approval. Service requests will be reviewed and, if approved, forwarded for scheduling purposes.

(3) Reimbursement of operating funds expended in support of military or scientific research will normally be sought.

(a) Navy missions. Military missions or scientific research sponsored or supported by Navy activities, such as COMSUBLANT, Office of Naval Research(ONR), or CNO(N873) will be paid for out of cognizant fleet or program operational funds.

(b) Oceanographic Community Use. In certain cases, where no interference with the performance of official responsibilities or decline in operational readiness will result, NR-1 may be authorized to support scientific endeavors of other Federal agencies, academic institutions, and private entities. Methods of reimbursement are dependant upon the underlying basis for provision of support. For example, if provided at the request of another Federal agency, and interagency transfer of funds under the Economy Act(31 U.S.C. § 1535) may be appropriate. Where support falls within Navy salvage authorities (10 U.S.C. § 7361, OPNAVINST 4740.2F), a reimbursable

salvage contract may be authorized. Under certain circumstances, costs associated with special or technical services provided to state and local governments may be recouped (31 U.S.C. § 6505, DOD Financial Management Regulations Volume 11A, chapter 11). As an important factor in determining whether to grant requests for support, authority to reimburse Navy appropriated accounts must be considered early in the project evaluation process and coordinated with appropriate financial management offices.

7. **Scheduling.** Submarine NR-1 Officer in Charge(OIC) will prepare proposed operating schedules based on mission assignment priorities from the fleet commander. Proposed schedules will be forwarded annually to the Submarine NR-1 Advisory Group for concurrence with copies to COMNAVSEASYSCOM(PMS-395 and SEA 08). Changes which significantly affect accomplishment of scheduled missions will be forwarded to CNO as soon as practicable. COMNAVSEASYSCOM(08) will be informed of changes that affect significant missions. Normally COMSUBLANT, in conjunction with the NR-1 Officer in Charge and CNO(N873), will plan the scientific deployments that are conducted in accordance with reference (b). COMSUBLANT(N312) will merge military requests for service with these scientific missions to develop the schedule.

8. **Support.** Administrative, operational and logistic support in the execution of these tasks and schedules will be provided by the Fleet Commander in Chief. The appropriate Submarine Force Commander will have responsibility for safe operation of NR-1. Submarine NR-1 will normally require several maintenance drydockings annually. Operational schedules of the support ship will be such as to allow sufficient time for NR-1 equipment onload and offload for assigned missions.

9. **Nuclear Aspects.** It is desired that operations be approved and administered in basic conformance with the procedures delineated for nuclear submarines in reference (a). Nothing in this document should be construed to detract in any way from the responsibilities assigned to the Director, Naval Nuclear Propulsion Program, for the safe and proper operation of the nuclear propulsion plant as defined in reference (a).

10. **Fast Transport Capability.** In order to provide responsive support to missions at a widely separated geographic locations, NR-1 has the capability to be towed, surfaced or submerged, to a mission site.

11. **Logistics/Support.** The design of the NR-1 incorporates long endurance submerged capability. Reliance is placed on an escort ship or a support ship while NR-1 is operating on the surface. Whether as escort is necessary after the NR-1 submerges will vary with specific missions. In general, the requirements for escort capabilities will not exceed those listed below:

a. **Escort Ship Capabilities.**

- (1) Surface and submerged towed capability
- (2) Transfer at sea capability for NR-1 personnel by boat
- (3) At-sea endurance of 90 days
- (4) Communication
  - (a) Capability to communicate with the NR-1 surfaced and submerged
  - (b) Capability to communicate with shore-based facilities
  - (c) Capability to track the NR-1, while submerged, in range and bearing.

b. **Submarine Support Vessel.** Submarine NR-1 is normally supported by a Military Sealift Command(MSC)-contracted submarine support vessel(SSV). The general escort and support duties of the SSV include, but are not limited to, the following:

- (1) Surface and submerged tow capability

- (2) At sea transfer of personnel and equipment to and from the NR-1
- (3) Communications
- (4) Capability to communicate with the NR-1 surfaces and submerged
- (5) Capability to communicate with shore based facilities
- (6) Capability to track the NR-1, while submerged, in range and bearing
- (7) Capability to provide accurate position information to NR-1 while submerged to allow NR-1 to reset its navigation system
- (8) Capability to navigate precisely to any given exercise/search area
- (9) Capability of remaining at sea for operational and tow periods of up to 90 days
- (10) Capability to resupply the NR-1 for 90 days
- (11) Capability to affect minor repairs to the NR-1 and its equipment in a protected anchorage or port.
- (12) Capability to provide electrical power to the NR-1 while the NR-1 is moored alongside (3 phase, 440 volts, 60Hz, 100 amperes)
- (13) Provide secure mooring outboard of the SSV when pier side out of homeport.
- (14) Facilities for berthing and messing of NR-1 personnel
- (15) Secure spaces for storage of NR-1 records and spare parts sufficient to support a 90-day operation. For some operations that may include back deck stowage.
- (16) Capability to receive and stow samples, objects or equipment recovered by or for implementation by the NR-1 and carry them to homeport or other specified locations. Refrigerated space requirements will vary, and will be specified for each mission.
- (17) Provide space aboard for portable equipment for data analysis, calibration, photo processing and other special test equipment to support the NR-1 and its operations. Provide the necessary electrical and interconnecting hardware to support computer networks required for data manipulation, logistical support, and communication.

c. **Escort Ship and Support Ship Availability.** Currently the support/escort ship is provided by a vessel chartered by MSC. This ship was designed specifically to meet the requirements of NR-1. Other ships may meet the requirements of support/escort ship when this ship is not available. Other available surface ships will be temporarily modified as required.

12. **Shore Support.** The NR-1 homeport compound facility should have ship repair and electronic equipment repair capability, office, administration and berthing spaces. A nuclear repair and docking capability suitable for NR-1 should be available in the homeport. The Naval Submarine Support Facility or comparable entity or tender with appropriately qualified nuclear repair facilities adequately performs the maintenance and repair tasks. Submarine Base New London or a comparable shore station adequately provides the requirements for office, supply, administration and berthing spaces.

### 13. **Training.**

a. With the exception of military mission related or scientific personnel carried for specific missions and with the exception of the NR-1 Officer in Charge, support personnel, and temporary nuclear-trained crewmembers, all officer and enlisted personnel will be qualified as follows prior to reporting to the NR-1.

(1) Qualified in Submarines

(2) Qualified for the supervision, operation, and maintenance of nuclear propulsion plants.

(3) Have completed U.S. Navy Diver entrance examination (attended SCUBA or First Class Diver school if possible).

b. With the exception of scientific missions and with the exception of the NR-1 yeoman, storekeepers, Electronics Technicians(non-nuclear), Independent Duty Corpsman, and nuclear-trained temporary crewmembers, all officer and enlisted personnel will be qualified and certified in the critical operation of the nuclear propulsion plant and will receive the following additional training.

(1) Qualification in shiphandling, up to and including Officer of the Deck, for surface cruising, surface towing, and submerged operation.

(2) Training in operation and maintenance of ship control equipment.

(3) Training in operation and maintenance of oceanographic equipment.

(4) Training in the operation of software, hardware and equipment necessary to perform data manipulation and analysis in support of mission objectives.

(5) Nuclear-trained temporary crewmembers will be trained, qualified, and certified to stand shutdown watches on NR-1 while the ship is in port and at sea watches on the support ship while underway. Non-nuclear-trained support personnel will stand watch onboard the support ship or at the NR-1 compound as appropriate.

14. **Submarine NR-1 Advisory Group** as chartered by enclosure (1), facilitates the planning and logistic management for use of this unique deep diving submarine. COMSUBLANT(N3) or his designated representative, will serve as Advisory Group Chairperson, issue meeting minutes, and forward recommendations of the Group as appropriate. The Advisory Group will be guided in its functions by the following:

a. NR-1 will be made available for general use by the oceanographic community subject to existing financial reimbursement and security requirements.

b. Where necessary, Navy/military operational uses of NR-1 will take priority over research, non-operational Navy uses of NR-1.

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24G1	(COMSUBLANT(N2, N3, N4))
28K1	(COMSUBGRU TWO)
28K1	(COMSUBBRON TWO)
FKA1G	(NAVSEA(08))
FKA1G	(NAVSEA(PMS 395))
FS1	(ONI)
NOAA	
SUBMARINE NR-1	

OPNAV(N096, N09B, N09C, N09J, N311, N873)

CHARTER FOR THE  
SUBMARINE NR-1 ADVISORY GROUP

1. Purpose. To facilitate the planning and logistic management for the use of the submarine NR-1.
2. Functions
  - a. To survey projects and identify and encourage those that could utilize the services of the Submarine NR-1 effectively to further their objectives.
  - b. To establish a recommended priority for the accomplishment of projects utilizing the submarine NR-1. The priority listing will be based on consideration of:
    - (1) Need for unique capabilities of the submarine NR-1
    - (2) Compatibility of NR-1 characteristics with mission needs
    - (3) Military payoff and benefits
    - (4) Probability of success
    - (5) Emergent operational uses
  - c. To monitor overall funding requirements of the Submarine NR-1 and make related recommendations when appropriate.
  - d. To review other aspects of Submarine NR-1 and make recommendations accordingly.
3. Membership
  - a. The Advisory Group will be chaired by COMSUBLANT(N3) and consist of representative from:
    - (1) CNO(N873,N09B,N096,N09C,N09J,N311)
    - (2) COMSUBLANT(N2,N4)
    - (3) Commander, Submarine Group Two(COMSUBGRU TWO)
    - (4) COMSUBRON TWO
    - (5) SUBMARINE NR-1
    - (6) COMNAVSEASYS COM(08)
    - (7) COMNAVSEASYS COM(PMS 395)
    - (8) ONR
    - (9) Office of Naval Intelligence(ONI)
    - (10) National Oceanic and Atmospheric Administration(NOAA)
  - b. The following offices will be represented on the Advisory Group in an advisory capacity when appropriate:
    - (1) Office of General Counsel

(2) Naval Historical Center

(3) Other offices as required

4. Procedure

a. The Advisory Group will meet at least twice per year to perform its functions and to update(review) its priority listing based on results and new projects brought to its attention.

b. Meetings will be open to those with ongoing projects which utilize Submarine NR-1 services and to those with potential projects which may be under consideration for use of Submarine NR-1 services.

c. A standing invitation will be maintained for representatives of CINCLANTFLT.

d. The Submarine NR-1 priority list formulated by the Advisory Group will be used to assist the operating forces in preparation of Submarine NR-1 Schedules.