NAVSEA S9040-AA-GTP-010/SSCR

REVISION NO. 4

SHIPBOARD SYSTEMS CERTIFICATION REQUIREMENTS FOR SURFACE SHIP INDUSTRIAL PERIODS [NON-NUCLEAR]

THIS SUPERSEDES
NAVSEA S9040-AA-GTP-010/SSCR REVISION NO. 3
DATED JUNE 1990
AND ALL PREVIOUS EDITIONS

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DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
2531 JEFFERSON DAVIS HWY
ARLINGTON VA 22242-5160

IN REPLY REFER TO

3960
Ser 91T/37

01 June 1998

From: Commander, Naval Sea Systems Command

Subj: SHIPBOARD SYSTEM CERTIFICATION REQUIREMENTS FOR SURFACE SHIP INDUSTRIAL PERIODS

Ref: (a) NAVSEA Instruction 3960.5, Subj: Policy on Ship Testing

Encl: (1) NAVSEA S9040-AA-GTP-010/SSCR Revision 4, Shipboard System Certification Requirements for Surface Ship Industrial Periods (Non-Nuclear)
(2) Summary of Changes from Revision 3

1. In accordance with reference (a), NAVSEA has completed a review of the requirements for special certifications imposed during surface ship industrial periods. Enclosure (1) is an update of the manual that describes the currently authorized certifications. Changes to the previous version of the manual are summarized in enclosure (2).

2. Comments on this manual should be directed to the NAVSEA Test and Evaluation Office (SEA 91T) at 703-602-8557 or on e-mail at Test_Evaluation@hq.navsea.navy.mil.

EDWARD L. SHELTON
Executive Director
Surface Ship Directorate

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SUMMARY OF CHANGES FROM REVISION 3 - Cont.

Other Major Changes:

All blocks on the requirement data sheets, including the notes, were updated to reflect the current certification conditions.

SUMMARY OF CHANGES FROM REVISION 3

System Deletions:

1200 PSI and 600 PSI Steam and Diesel Propulsion Plants Included in the Steam Propulsion Plant Improvement Program and Gas Turbine Powered Ships

U.S. Navy Diving Systems Safety

Sonar Certification Policy

AN/SQR-17, Sonar Signal Processor

AN/SQR-18A, Sonar Set

AN/SLQ-25, torpedo Countermeasures Transmitting Set (NIXIE)

AN/SQS-56, Sonar Set

AN/SQS-53A, Sonar Set

AN/SQQ-23A and AN/SQQ-23B, Sonar Set

AN/SQQ-89(V)(Series), Surface ASW Combat System

Liquid-fueled (Hypergolic) Missile and Fuel-Air-Explosive (FAE) Bomb Stowage Facilities

MK 15 PHALANX (CIWS) System Explosive Safety

System Additions:

Oil Pollution Abatement

Heads Up Display (HUD) MK 1 MOD 0

Major System Modifications:

Deleted MACI and HAPI from:

Modified Close-In Approach Indicator (MACI), Horizontal Approach Path Indicator (HAPI), Hover Position Indicator (HPI) and Wave-Off/Cut System MK 2 MOD 1

Added AN/WSN-7 Ring Laser Gyro Navigator to:

AN/WSN-5 Inertial Navigation Set and Navigation System in Surface Combatants

LIST OF EFFECTIVE PAGES

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3-1 through 3-2	Rev 4
4-1 through 4-4	Rev 4
5-1 through 5-2	Rev 4
6-1 through 6-3	Rev 4
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A-1	Rev 4
B-1 through B-4	Rev 4

RECORD OF CHANGES

CHANGE NUMBER	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

PREFACE

BACKGROUND The increasing complexity of the newer systems installed in surface ships in the 1970's frequently resulted in technical problems going undetected until the systems were placed in service. One method used to minimize such problems was to impose the requirement for special government "certification" teams to ensure proper operation of the systems when they were installed on each ship. At the same time, NAVSEA and the public and private shipyards greatly improved the normal test and inspection programs conducted during ship construction and later ship industrial periods, thereby lessening the need for some certifications. In 1983, NAVSEA refined the criteria it uses for authorizing certification programs. This manual is maintained as the catalog of the certifications that are so authorized.

SCOPE This manual applies only to certifications during the construction and industrial periods of surface ships, and not to those outside those periods. It does not apply to nuclear propulsion plants under the cognizance of the NAVSEA Deputy Commander for Nuclear Propulsion, who separately exercises control of certifications under its cognizance.

POLICY NAVSEA Instruction 3960.5; Subj: Policy on Ship Testing, articulates the following policy: "Special certification requirements shall be minimized. When possible, the responsibility for conducting testing to support certifications shall be assigned to the shipyard or local Supervisor of Shipbuilding (SUPSHIP). Test procedures that support certifications shall be developed and treated as part of the ship's Integrated Test Package, even if organizations outside the shipyard will actually be conducting some of the tests and even if the tests are to be scheduled during a time frame separate from tests to be conducted by shipyard personnel. The continuity of the test program must be maintained if it is to remain integrated and is to be both efficient and effective."

CRITERIA NAVSEA authorizes certifications for one or more of the following four reasons:

1. the requirement is codified in Public Law;
2. it is directed by the Office of Secretary of Defense, the Secretary of the Navy, or the Chief of Naval Operations;
3. it is necessary to insure the safety of personnel; or
4. the normal test and quality assurance programs are not able, in NAVSEA's judgment, to adequately uncover mission critical or safety deficiencies.

The NAVSEA Test and Evaluation Office (SEA 91T) is responsible for managing the process of reviewing certifications and for maintaining this manual.

CHANGES TO THIS MANUAL

Omissions, inaccuracies, recommended changes and suggestions for improving the utility of this manual should be brought to the attention of:

Commander, Naval Sea Systems Command
NAVSEA Test and Evaluation Office (SEA 91T)
2531 Jefferson Davis Highway
Arlington, VA 22242-5160

NAVSEA lists the most recent version of this manual as well as recently approved changes to it on the World Wide Web Home Page of the NAVSEA Test and Evaluation Office:
http://www.navsea.navy.mil/navysea-te

COPIES OF THE MANUAL

Copies may be obtained by electronically transmitting a DD 1348 in MILSTRIP format to:

Naval Inventory Control Point
5450 Carlisle Pike
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SECTION 1

SUPPORT SYSTEMS

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CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Potable Water Purity

PURPOSE: To ensure that the ship's potable water is acceptable in accordance with the Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 6 (Potable Water Afloat)

SOURCE OF REQUIREMENTS: Public Law 93-523
DoD Directive 6230.1 dtd 24 Apr 1978
BUMEDINST 6240.10 dtd 3 Feb 1993

CERTIFICATION TESTING (INSPECTION) IS DONE BY: For new construction, by a laboratory certified by the State or the EPA for testing potable water purity; for active fleet, by Naval medical personnel.

CERTIFYING AUTHORITY: Examining laboratory	**CERTIFICATION IS MADE TO:** INSURV, SUPSHIP, Shipbuilder, Ship's CO

TIME FRAME RELATIVE TO OTHER EVENTS: Prior to system use after construction, modernization, or overhaul

APPLICABLE TEST PROCEDURES: Potable water requirements are contained in the Manual of Naval Preventive Medicine, NAVMED P-5010, Chapter 6. See note 1. Two potable water tests, the Halogen Residual Test (HRT) and the Total Coliform Bacterial Content Analysis (TCBCA), are required for certification.

PREREQUISITES: Completion of potable water system disinfection process

SUPPORT SERVICES REQUIRED: None

NOTES:

1. A certificate is required if work was accomplished on the ship's potable water distribution system to insure that the system is safe prior to going to sea. Another certificate is required if the ship's potable water production equipment is installed, overhauled or replaced; the water production equipment shall be operated at sea during sea trials and the water produced shall be tested.

2. Certification funding for new construction ships is provided by the SPM. For in-service ships, certification funding is provided by the activity requiring the repair, alteration, replacement or overhaul of the system.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Sewage Systems in U.S. Navy Surface Ships and Craft

PURPOSE: To ensure that the sewage system is fully operational and all regulatory requirements have been met

SOURCE OF REQUIREMENTS: NAVSEAINST 9593.1B dtd 3 Jul 1985

CERTIFICATION TESTING (INSPECTION) IS DONE BY: FTSCLANT 4315/FTSCPAC 303 or Naval Surface Warfare Center, Carderock Division (NSWC CD) Code 631

CERTIFYING AUTHORITY: SPM or TYCOM, see note 1	**CERTIFICATION IS MADE TO:** TYCOM, SUPSHIP, Ship's CO, Shipyard, SPM, NAVSEA 03L13.

TIME FRAME RELATIVE TO OTHER EVENTS: Prior to system use after construction, modernization or overhaul

APPLICABLE TEST PROCEDURES: NAVSEAINST 9593.1B dtd 3 Jul 1985

PREREQUISITES: None

SUPPORT SERVICES REQUIRED: SUPSHIP and shipyard industrial personnel.

NOTES:

1. The SPM certifies the sewage systems on new construction ships. The TYCOM recertifies the system when major design changes are made after the initial certification.

2. Certification inspection may be conducted dockside or at sea, and requires approximately 1-5 days. The inspector cost varies with the size of the ship and ranges from approximately 4 man-days for destroyer types to 10 man-days for aircraft carriers. Approximately 2 man-days of industrial support are required.

3. Certification funding for new construction ships is provided by the SPM. For in-service ships, certification funding is provided by the activity requiring the repair, alteration, replacement or overhaul of the system.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Air Purity for Emergency Air Breathing (EAB) Stations	
PURPOSE: To ensure that the fixed EAB stations deliver air of sufficient quality for breathing	
SOURCE OF REQUIREMENTS: OPNAVINST 5100.19C dtd 19 Jan 1994	
CERTIFICATION TESTING (INSPECTION) IS DONE BY: A licensed or government laboratory equipped for testing air purity. See note 1.	
CERTIFYING AUTHORITY: Examining laboratory	**CERTIFICATION IS MADE TO:** SUPSHIP, Ship's CO
TIME FRAME RELATIVE TO OTHER EVENTS: Not later than 30 days prior to first Builder's Trials	
APPLICABLE TEST PROCEDURES: American National Standards Institute Z-86.1, 1973	
PREREQUISITES: None	
SUPPORT SERVICES REQUIRED: None	

NOTES:

1. An approved laboratory for testing air purity can be obtained from the local U.S. Navy Diver's Locker.

2. This certification requirement applies to new construction ships only.

3. Cost for this certification is one man-day.

4. Certification funding is provided by the SPM.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Oil Pollution Abatement (OPA)

PURPOSE: To ensure that OPA systems and equipment are fully operational and installed in accordance with current design and installation guidance and all certification requirements have been met

SOURCE OF REQUIREMENTS: Title 33, United States Code, Sections 1901 - 1911 ("Act to Prevent Pollution From Ships)
DoD Directive 6050.15 dtd 14 Jun 1985
OPNAVINST 5090.1B dtd 1 Nov 1994
NAVSEAINST 9593.2 dtd 1 Oct 1996

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Surface Warfare Center, Carderock Division (NSWC CD) 631 conducts initial OPA certification inspections. TYCOM conducts periodic and recertification inspections.

CERTIFYING AUTHORITY: NSWC CD 631, SPMs or TYCOM. See notes 1 & 2	**CERTIFICATION IS MADE TO:** Ship (Copy to SEA03L11, NSWC CD 631, SPM, and TYCOM)

TIME FRAME RELATIVE TO OTHER EVENTS: See note 2

APPLICABLE TEST PROCEDURES: NAVSEAINST 9593.2 dtd 1 Oct 1996, Enclosure (1)

PREREQUISITES: None

SUPPORT SERVICES REQUIRED: None

NOTES:

1. NSWC CD, Code 631 completes and issues certification if no critical deficiencies are found after initial inspection of OPA systems and equipment installed under new construction, modernization, and the Fleet Modernization Program (FMP). SPMs complete and issue certification when critical deficiencies are corrected after inspection of OPA systems and equipment installed under new construction and modernization. TYCOM completes and issues certification when critical deficiencies are corrected after inspection of OPA systems and equipment installed under FMP. The TYCOM conducts periodic inspections for compliance. The TYCOM recertifies and issues new certificates for ships previously certified. Certificates are valid for a period of five years.
2. Initial inspection and certification is conducted before Builder's Trials for new construction and modernization and after equipment installation under FMP. Periodic inspections are conducted by the TYCOM at intervals not to exceed 18 months (± 2 months) until certificate renewal. Recertification inspections are conducted every five years (± 2 months of expiration date).
3. Certification funding for new construction and in-service (FMP) ships is provided by the SPM. For periodic and recertification inspections, funding is provided by the TYCOMs.

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CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Tactical Air Navigation (TACAN) System, AN/URN-25

PURPOSE: To validate that the equipment meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Federal Aviation Administration (FAA) or Shipboard Electronic System Evaluation Facility (SESEF). See note 1.

CERTIFYING AUTHORITY: FAA (Regional), SESEF	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: Prior to acceptance of new construction ships and prior to the end of the warranty period when certification is required because of work performed during overhaul. See note 2.

APPLICABLE TEST PROCEDURES: United States Standard Flight Inspection Manual, Sections 104 and 203 (FAA), *Instruction and Procedures Guide for* Requesting Flight Certification for TACAN (NAVAIR AE-TACAN-GYP-000)

PREREQUISITES: None

SUPPORT SERVICES REQUIRED: Flight inspection aircraft or SESEF; shipyard or ship's force personnel to operate TACAN

NOTES:

1. FAA headquarters is located at the Department of Transportation, 800 Independence Avenue, S.W., Washington D.C. The SESEF Manager is located at the Naval Undersea Warfare Center, Off Site Office, Fort Story Building 102, Virginia Beach, Virginia.
2. Certification is required:
   a. After initial installation.
   b. After replacement of the TACAN antenna or the ship's gyro.
   c. After a major change in topside configuration.
   d. Annually or at the discretion of the TYCOM.
3. TACAN certification is performed at sea and requires one hour or less time depending on the certifying authority. The certification cost is approximately two work-hours.
4. Certification funding for new construction ships is provided by the SPM. For in-service ships, certification/recertification is funded by the TYCOM.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Aviation Facilities on Air Capable Ships

PURPOSE: To validate that the facility meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.4)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-AWS-91-859, Air Capable Ship Aviation Facilities Certification Inspection Report; and
NAVAIR Air Capable Ships Aviation Facilities Bulletin No. 1 Series

PREREQUISITES:
1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification

SUPPORT SERVICES REQUIRED: Shipboard personnel knowledgeable in the applicable areas of: Lighting, Communications, Fire Protection, Personnel Safety, JP-5 System, Starting and Auxiliary Power, Pneumatic Services, and Aircraft Launch and Recovery Equipment (ALRE)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification is valid for a maximum of 3 years. However this may be rescinded upon installation of subsequent ship modifications which impact the certification requirements.
3. Certification may be conducted dockside or at sea and requires 5 days for the initial certification and 5 days for recertification. The NAWCAD cost is approximately 15 man-days for certification and 15 man-days for recertification.
4. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Aviation Facilities on Amphibious Assault Ships

PURPOSE: To validate that the facility meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 NOV 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See notes 1 and 2

APPLICABLE TEST PROCEDURES: NAEC-AWS-91-805, Amphibious Assault Ship Aviation Facilities Certification Inspection Report; and NAVAIR Amphibious Assault Aviation Facilities Bulletin No. 1 Series

PREREQUISITES:
1. Load testing of aircraft securing and engine run-up fittings
2. Load testing of electrical power system
3. Pre-Overhaul and Pre-Certification Inspections (Technical Assist)
4. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.

SUPPORT SERVICES REQUIRED: Shipboard personnel knowledgeable in the areas of: Visual Landing Aids, Communications, Fire Protection, Personnel Safety, JP-5 System, Electrical Power, Pneumatic Services, and Aircraft Launch and Recovery Equipment (ALRE).

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of alterations to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification is valid for a maximum of 3 years. However, this may be rescinded upon installation of subsequent ship modifications which impact the certification requirements.
3. Certification inspection/testing may be conducted dockside or at-sea and requires 5 days for certification and 5 days for recertification. The NAWCAD effort required is approximately 20 man-days for certifi- cation and 20 man-days for recertification. Assistance by the shipyard or ship's force is required.
4. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Shipboard Wind Measuring System

PURPOSE: To validate that the system meets safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Inspection Activity Designated by Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-91-8050 (Latest Revision) Shipboard Wind Measuring System Certification Test Procedure

PREREQUISITES: None

SUPPORT SERVICES REQUIRED: Assistance by Ship's Force

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.

2. Certification testing will be conducted dockside by NAWCAD personnel in conjunction with the installing activity and ship's force. Time required for certification will be approximately 3 to 5 days.

3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA 251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Horizon Reference Set (HRS)

PURPOSE: To validate that the HRS meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, or ship's force under direction from Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See notes 1 and 2

APPLICABLE TEST PROCEDURES: NAEC-91-7972 (Latest Revision) Certification Test Procedure Horizon Reference Set, A/W37A-1

PREREQUISITES:
1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification

SUPPORT SERVICES REQUIRED: Refer to NAEC-91-7972 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification testing for new construction is conducted dockside and is to be completed approximately 1 months prior to ship delivery.
3. Certification may be conducted dockside or at sea and requires 2 days for certification. The NAWCAD effort required is approximately 2 man-days for certification. Assistance by the shipyard or ship's force (2 man-days for certification and 1 man-day for recertification) is required for taking measurements and readings.
4. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Stabilized Glide Slope Indicator and Wave-Off System MK 1 MOD 0

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, or ship's force under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1.

APPLICABLE TEST PROCEDURES:
NAEC-91-7949 (Latest Revision), Certification Test Procedure, Mk 1 Mod 0 Stabilized Glide Slope Indicator System with Gyro Failure Alarm (Service Change No. 6)
NAEC-91-7950 (Latest Revision), Certification Test Procedure, Mk 1 Mod 0 Wave-Off System

PREREQUISITES: 1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (technical assist)

SUPPORT SERVICES REQUIRED: Refer to applicable certification test procedure

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.

2. Certification testing may be conducted dockside or at sea, but dockside is preferred. The initial certification requires 4 days, and recertification requires 2 days. The NAWCAD cost is approximately 4 man-days for certification and 2 man-days for recertification. The shipyard or ship's force cost (for taking measurements and readings) is 2 man-days for certification and 1 man-day for recertification.

3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Recovery Assist, Securing and Traversing (RAST) System

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, or ship's force under direction from Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC 91-8064 (Latest Revision), Recovery Assist, Securing and Traversing System Recertification/Final Checkout Procedure

PREREQUISITES:
1. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification
2. Pre-Overhaul Advisory Inspection
3. Pre-Certification Advisory Inspection (Technical Assist)

SUPPORT SERVICES REQUIRED: Refer to NAEC 91-8064 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.

2. Certification inspection and testing may be conducted dockside or at-sea and requires 4 days for certification and 1 day for recertification. The NAWCAD effort required is approximately 4 man-days for certification and 1 man-day for recertification. Assistance by the shipyard or ship's force is 8 man-days for certification and 2 man-days for recertification.

3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Hover Position Indicator (HPI) and Wave-Off/Cut System MK 2 MOD 1.

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, or ship's force under direction from Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-91-8045 (Latest Revision) Certification Test Procedure for Horizontal Approach Path Indicator and Hover Position Indicator Systems
NAEC-91-7951 (Latest Revision) Certification Test Procedure, Wave-Off/Cut System Mk 2 Mod 1

PREREQUISITES:
1. For ship overhauls, the Type Commander provides tasking for the repair work to make the equipment ready for certification
2. Pre-Overhaul Advisory Inspection
3. Pre-Certification Advisory Inspection (Technical Assist)

SUPPORT SERVICES REQUIRED: Refer to applicable certification test procedure

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification inspection and testing may be conducted dockside or at sea and requires 1/2 day for certification and 1/4 day for recertification. The NAWCAD effort required is approximately 1/2 man-day for certification and 1/2 man-day for recertification. Assistance by the shipyard or ship's force is 1/2 man-day for certification and 1/2 man-day for recertification.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Flight Deck Status and Signaling System (FDSSS)

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility or ship's force under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1.

APPLICABLE TEST PROCEDURES: NAEC-91-7989 (Latest Revision) Certification Test Procedure, Flight Deck Status and Signaling System A/W24A-1

PREREQUISITES:
1. Operational Wave-off Light System and Operational Deck Status Light
2. Pre-Overhaul and Pre-Certification Advisory/Inspections (technical Assist)
3. For Ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.

SUPPORT SERVICES REQUIRED: Refer to NAEC-91-7989 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders or operational commanders.
2. Certification testing may be conducted dockside or at-sea, and requires approximately 2 days for certification and 1 day for recertification. The NAWCAD effort requires approximately 2 man-days for certification and 1 man-day for recertification. Assistance by the shipyard or ship's force (2 man-days for certification and 1 man-day for recertification) is required.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Vertical and Short Takeoff and Landing Optical Landing System (VSTOL OLS) MK 2 MOD 0

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, or ship's force under direction from Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAWCADLKE-MISC-05-PD-0027 (Latest Revision) Certification Test Procedure for Vertical and Short Takeoff and Landing Optical Landing System (VSTOL OLS) Mk 2 Mod 0

PREREQUISITES:
1. For ship overhauls, the Type Commander provides tasking for the repair work to make the equipment ready for certification
2. Pre-Overhaul Advisory Inspection
3. Pre-Certification Advisory Inspection (Technical Assist)

SUPPORT SERVICES REQUIRED: Refer to NAWCADLKE-MISC-05-PD-0027 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Level II (day/night visual operations) certification inspection and testing is conducted dockside and requires 4 days for certification and 1 day for recertification. The NAWCAD effort required is approximately 4 man-days for certification and 2 man-days for recertification. Assistance by the shipyard or ship's force is 8 man-days for certification and 2 man-days for recertification. When a successful flight test verifies a VSTOL OLS/SPN35 (or latest approach radar system) correlation, the certification is upgraded to Level I (day/night instrumented operations) for Harrier aircraft operations.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Precision Approach and Landing System (PALS), AN/SPN-41 or AN/SPN-46

PURPOSE: To validate that the PALS installation meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991 - NAVAIRINST 13800.11C dtd 14 Apr 1992 - NAVAIRINST 3120.1C dtd 1 Nov 1995 - NAVSEAINST 9091.1A dtd 3 Oct 1986 - NAVMATINST 5400.20 dtd 24 Jul 1979 (now under NAVAIR cognizance)

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Air Warfare Center, Aircraft Division, Patuxent River, MD Code 4.5.X.1 and 4.11.4

CERTIFYING AUTHORITY: NAWCAD Code 4.11.4

CERTIFICATION IS MADE TO: TYCOM, (Copy to: Ship's CO, NAVAIR, CNO & Airwing)

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: Carrier Suitability Testing Manual SA F7M-01, Rev 2 of 30 Sep 94; NAWCAD Project Test Plan No. 1417, PALS Verification/Certification of 6 May 93; NAWCAD Standard Operating Procedure 3710.1, PALS Standing Operating Procedure of 7 Oct 94; AN/SPN-46(V) Certification procedures, Categories I and IIA, NESEA No. 2120-134 dtd Oct 89: Automatic Carrier Landing System (ACLS) Category III Certification Manual, of Jul 82: AN/SPN-41 Category I Certification Procedures, of 1 Nov 87 NESEA No. 2120-106C.

PREREQUISITES: 1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.

SUPPORT SERVICES REQUIRED: Shipboard personnel knowledgeable in the areas of: Visual and Electronics Landing Aids, Communications, Fire Protection, Personnel Safety, JP-5 System, Electrical Power, Pneumatic Services, and Aircraft Launch and Recovery Equipment (ALRE). Aircraft services are also required.

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of a major alteration overhaul or update to the PALS related system.
   c. At the close of a shipyard overhaul or extended availability but prior to deployment.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM (NAVSEA), or Type Commanders.
2. Certification testing requires 10-20 days dockside and 5-7 days at sea. The certification test team cost is approximately 10-40 man-days at sea. Cost for aircraft services is additional.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251 & 213.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Aircraft Launch and Recovery Equipment

PURPOSE: To validate that the equipment meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, or repair facility under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10)	**CERTIFICATION IS MADE TO:** TYCOM, Ship/Shore Facility, NAVAIR, Ship's CO

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-94-1142 (Latest Revision), Mk 7 Mod 2 and Mod 3 Arresting Gear Certification Test Procedure
NAEC-94-1143 Vol I & II , Nose Gear Launch, Bridle Arrestors, Jet Blast Deflectors, Catapults, Rotary Retraction Engine

PREREQUISITES:
1. Pre-Overhaul Advisory Inspection.
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification

SUPPORT SERVICES REQUIRED: Refer to NAEC-94-1142 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification testing may be conducted dockside or at-sea, and requires 15 days for the initial certification and 6 days for recertification. The NAWCAD cost is 15 man-days for certification and 6 man-days for recertification. The shipyard or ship's force cost is 115 man-days for certification and 40 man-days for recertification.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Marking and Lighting Visual Landing Aids on CV and CVN Ships

PURPOSE: To validate that the Aids meet operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.3)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-ENG-7034 (Latest Revision), Shipboard Inspection and Test Procedures for Certification CV/CVN Visual Landing Aids and Lighting
NAVAIR Visual Landing Aids General Services Bulletin No. 8 (Latest Revision)

PREREQUISITES:
1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification

SUPPORT SERVICES REQUIRED: Refer to NAEC-ENG-7034 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification inspection and testing may be conducted dockside or at sea, and requires approximately 5 days for certification and 1 day for recertification. The NAWCAD effort requires approximately 5 man-days for certification and 1 man-day for recertification. Assistance by the shipyard or ship's force (5 man-days for certification and 1 man-day for recertification) is required.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Fresnel Lens Optical Landing System (FLOLS) MK 6 MOD 3

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, or repair facility under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.3)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-ENG-7912 (Latest Revision), Shipboard Test Procedure for Mk 6 Mod 3 Fresnel Lens Optical Landing System.

PREREQUISITES: 1. Pre-Overhaul Advisory Inspection.
2. Pre-Overhaul Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.

SUPPORT SERVICES REQUIRED: Refer to NAEC-ENG-7912 (Latest Revision)

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard aviation facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification testing may be conducted dockside or at sea, and requires 5 days for the initial certification and 2 days for recertification. The shipyard or ship's force cost (for taking measurement and readings) is approximately 2 man-days for certification and 1 man-day for recertification.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Integrated Launch and Recovery Television Surveillance (ILARTS) System

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, or repair facility under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.3)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1.

APPLICABLE TEST PROCEDURES: NAEC-51-8097 (Latest Revision), Shipboard Test Procedure for Integrated Launch and Recovery Television Surveillance (ILARTS) System

PREREQUISITES:
1. Pre-Overhaul Advisory Inspection
2. Pre-Certification Advisory Inspection (Technical Assist)
3. For ship overhauls, the Type Commander provides tasking for repair work to make the equipment ready for certification

SUPPORT SERVICES REQUIRED: Refer to NAEC-51-8097 (Latest Revision)

NOTES:
1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.
2. Certification testing may be conducted dockside or at-sea, and requires approximately 3 days for the initial certification and 1.5 days for recertification. The NAWCAD cost is 3 man-days for certification and 1.5 man-days for recertification. The shipyard cost is 3 man-days for certification and 1.5 man-days for recertification.
3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Landing Signal Officer (LSO) Work Station/Heads Up Display (HUD) MK 1 MOD 0

PURPOSE: To validate that the station meets operational and safety criteria and to verify functional integrity of LSO HUD console and ancillary equipment

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, repair facility, under direction from Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.3)	**CERTIFICATION IS MADE TO:** Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC-91-7993 (Latest Revision) Certification Test Procedures for LSO Heads Up Display Console System MK 1 MOD 0 and Complementing LSO Work Station Equipment

PREREQUISITES:

1. For ship overhauls, the Type Commander provides tasking for the repair work to make the equipment ready for certification
2. Pre-Overhaul Advisory Inspection
3. Pre-Certification Advisory Inspection (Technical Assist)
4. Inputs from various sources, see note 3, are verified operational

SUPPORT SERVICES REQUIRED: Refer to NAEC-91-7993 (Latest Revision)

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type commanders, or operational commanders.

2. Certification testing may be conducted dockside or at sea and requires 2 days for the initial certification and 1 day for recertification. The NAWCAD cost is approximately 2 man-days for certification and 1 man-day for recertification. The shipyard cost is 2 man-days for certification and 1 man-day for recertification.

3. Inputs required from PALS, FLOLS, ILARTS, MOVLAS, Wind Measuring and Indicating System, communications, flight deck status & rotary beacon.

4. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is provided by NAVAIR PMA251.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Manually Operated Visual Landing Aid System (MOVLAS) MK 1 MOD 2

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: OPNAVINST 3120.28B dtd 21 Oct 1991
NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard, SUPSHIP, or repair facility under direction of Naval Air Warfare Center, Aircraft Division (NAWCAD), Lakehurst, NJ. (Code 4.8.11)

CERTIFYING AUTHORITY: NAWCAD Lakehurst, NJ (Code 4.8.10.3)

CERTIFICATION IS MADE TO: Ship with copy to TYCOM and other appropriate commands

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: NAEC ENG-7549 (Latest Revision), Shipboard Inspection and Test Procedures for Mk 1 Mod 2, Manually Operated Visual Landing Aid System

PREREQUISITES:

1. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.
2. Pre-overhaul advisory inspection
3. Pre-certification advisory inspection (Technical Assist)

SUPPORT SERVICES REQUIRED: Refer to NAEC-ENG-7589 (Latest Revision)

NOTES:

1. Certification is required:
   a. After initial installation.
   b. After completion of an alteration to the shipboard facility.
   c. At the close of a shipyard overhaul or extended availability but prior to departure of the ship from the shipyard.
   d. When specified by COMNAVAIRSYSCOM (NAVAIR), COMNAVSEASYSCOM, Type Commanders, or operational commanders.

2. Certification testing may be conducted dockside or at sea, and requires 1 day. The NAWCAD cost is approximately 1 man-day. The shipyard or ship's force cost (for taking measurements and readings) is 1 man-day.

3. Certification funding for new construction ships is provided by the SPM. For in-service ships, funding is coordinated between NAVAIR PMA251 and the Type Commander.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: JP-5 Aviation Fuel Facilities for Aircraft Carriers

PURPOSE: To verify that all system components are installed correctly, operate safely and efficiently and that overall material conditions will support mission requirements

SOURCE OF REQUIREMENTS: NAVAIRINST 3120.1C dtd 1 Nov 1995
NAVSEAINST 9091.1A dtd 3 Oct 1986
Aircraft Carrier Aviation Fuel Facilities Bulletin No. 1B as amended
CNAL/CNAP Instructions 3500 Series

CERTIFICATION TESTING (INSPECTION) IS DONE BY: TYCOM Fuels Officer; Naval Surface Warfare Center, Carderock Division Representative; and Naval Air Warfare Center, Aircraft Division (NAWCAD) Lakehurst NJ Catapult and Arresting Gear Field Service Unit Fuels Representative (Atlantic or Pacific)

CERTIFYING AUTHORITY: NAWCAD LAKEHURST, NJ	**CERTIFICATION IS MADE TO:** NAVAIR PMA251, NAVSEA PMS 312, TYCOM, Ship's CO

TIME FRAME RELATIVE TO OTHER EVENTS: After initial installation, major modification, or extended non-flying periods exceeding 110 days. Otherwise, every two (2) years.

APPLICABLE TEST PROCEDURES: NAEC-AWS-51-870, Aircraft Carrier Aviation Fuel Facilities Certification Checklist.

PREREQUISITES: Completion of applicable shipyard and ship's force test procedures. Availability of current Ship Information Book (SIB) and Aviation Fuels Operational Sequencing System (AFOSS).

SUPPORT SERVICES REQUIRED: Assistance by ship's force.

NOTES:

1. Time required for certification is ten days.

2. Certification funding for new construction and in-service (FMP) ships is provided by the SPM. For recertification, funding is provided by NAVAIR PMA251.

SECTION 3

IFF/RADAR SYSTEM

Identification Friend or Foe (IFF)
MK XII System 3-2

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Identification Friend or Foe (IFF) MK XII System

PURPOSE: To ensure that the proper system performance when the IFF systems are integrated with Combat Weapons Systems and their associated radars

SOURCE OF REQUIREMENTS: NAVAIR ltr 13800 Ser Air-5511B2/028 of 16 Jun 89

CERTIFICATION TESTING (INSPECTION) IS DONE BY:
Naval Air Warfare Center Aircraft Division, St. Inigoes, MD, Code 4.5.8.2.1

CERTIFYING AUTHORITY: NAVAIR PMA213

CERTIFICATION IS MADE TO: Ship's CO, TYCOM, NAVAIR PMA213, SPM, Installing Activity,

TIME FRAME RELATIVE TO OTHER EVENTS: For new construction, just before Acceptance Trials. For other industrial periods, upon completion of the installation but before the end of the industrial period.

APPLICABLE TEST PROCEDURES: Certification document for MK XII IFF and Central IFF AN/UPX-29 System

PREREQUISITES: Completion of installation and checkout of equipment by installing activity or shipyard. All associated interfaces must be operational.

SUPPORT SERVICES REQUIRED: Aircraft services are not required since targets of opportunity are used.

NOTES:
1. Certification testing is conducted dockside and requires 5 to 10 days. The duration of the certification depends on the number of IFF systems and associated interfaces.

SECTION 4

NAVIGATION SYSTEMS

Ship's Navigational and Aircraft Inertial Alignment System (SNAIAS) aboard CVs and CVNs 4-2

Navigation Lights 4-3

Navigation Systems with AN/WSN-5 Inertial Navigation Set or AN/WSN-7 Ring Laser Gyro Navigator installed in Surface Combatants and Amphibious Assault Ships 4-4

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Ship's Navigation and Aircraft Inertial Alignment System (SNAIAS) aboard CVs and CVNs

PURPOSE: To validate that the system meets operational and safety criteria

SOURCE OF REQUIREMENTS: NAVSEAINST 9420.3 series

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Ship's force, witnessed by Space and Naval Warfare System Center Charleston Detachment Norfolk (SPAWARSYSCEN CHARLESTON DET NORFOLK) Code 343 representatives.

CERTIFYING AUTHORITY: SPAWARSYSCEN CHARLESTON DET NORFOLK, Code 343	**CERTIFICATION IS MADE TO:** NAVSEA PMS 312, SEA91W1, TYCOM, SUPSHIP, NAVSHIPYD, Ship's CO, NAVAIR, and CNO

TIME FRAME RELATIVE TO OTHER EVENTS: See note 1

APPLICABLE TEST PROCEDURES: Procedure to Certify Proper Operation of the SNAIAS Aboard CV Class Aircraft Carriers (NAVSEA 9427-BA-PRO-010), 1 Oct 1991

PREREQUISITES: 1. SNAIAS grooming must be completed prior to final certification testing. Inertial navigation systems aboard aircraft used for alignment check must have been calibrated within seven days before the check.
2. For ship overhauls, the Type Commander provides tasking for work to make the equipment ready for certification.

SUPPORT SERVICES REQUIRED: One of the following aircraft: F/A18, EA6, F14, S3A or E2C

NOTES:

1. Certification is required:
   a. After installation on the ship for new construction or Refueling Complex Overhaul (RCOH).
   b. After modification by SHIPALT or major repair to the system during regular overhaul or restricted availability.
   c. When requested by the Type Commander.

2. Certification testing is conducted dockside (14-20 days) and at sea (4-7 days). Two SPAWARSYSCEN CHARLESTON DET NORFOLK representatives are required to witness the tests, with support from shipboard personnel and industrial activities.

3. Funding for 1.a. is provided by PMS 312. Funding for 1.b. and 1.c. is provided by NAVSEA 91W1.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Navigation Lights

PURPOSE: To validate either full compliance or non-compliance with the regulations for navigation lights and to document variances from the regulations.

SOURCE OF REQUIREMENTS: Executive Order 11964 dtd 19 Jan 1977, Implementation of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS 72)

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Shipyard or Supervisor of Shipbuilding or Naval Ship Repair Facility

CERTIFYING AUTHORITY: Judge Advocate General (JAG), see note 1.	**CERTIFICATION IS MADE TO:** NAVSEA 03Z1, International Maritime Community, Ship's CO & TYCOM

TIME FRAME RELATIVE TO OTHER EVENTS: Prior to first sea trials

APPLICABLE TEST PROCEDURES: Navigation Light Verification Report. This report records fixture locations, types, measured locations, measurements of arc of visibility and the degree of obstruction, if any.

PREREQUISITES: Data is required six months before first sea trials for new construction, three months before sea trials for overhauls.

SUPPORT SERVICES REQUIRED: None

NOTES:

1. Under the authority of 33 USC 1605, SECNAV certifies the necessity for and the extent of variances from the lights requirements of the regulations. His certificate lists the range of variances by individual ships. The certification is published in the Federal Register and summarized in the Code of Federal Regulations. By a SECNAV memo dtd 6 Mar 89, SECNAV authority, contained in 33 USC 1605, is delegated to the Navy JAG.

2. A letter attesting to compliance with requirements, or stating variances, is issued to the ship by the activity performing certification testing (inspection). The activity performing the certification testing (inspection) provides the letter and verification report to NAVSEA 03Z6 who initiates a request for a SECNAV certification of non-compliance when navigation lights cannot conform to the requirements of the Rules of the Road. This request is reviewed by the SPM and then sent to JAG via CNO.

3. This certification test is conducted dockside during ship construction or overhaul. The cost for this certification is approximately 4 man-days.

4. Funding for this certification is provided by the SPM.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Navigation Systems with AN/WSN-5 Inertial Navigation Set or AN/WSN-7 Ring Laser Gyro Navigator installed in Surface Combatants and Amphibious Assault Ships

PURPOSE: To ensure that the system is installed and operates properly

SOURCE OF REQUIREMENTS: NAVSEA ltr 9420 Ser 06D/61 of 25 Aug 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: The industrial activity or ship's force, witnessed by Space and Naval Warfare System Center Charleston Detachment Norfolk (SPAWARSYSCEN CHARLESTON DET NORFOLK) Code (343)

CERTIFYING AUTHORITY: SPAWARSYSCEN CHARLESTON DET NORFOLK, Code (343)	**CERTIFICATION IS MADE TO:** NAVSEA 91W, INSURV, SUPSHIP, TYCOM, NAVSHIPYD, Ship's CO

TIME FRAME RELATIVE TO OTHER EVENTS: After installation during new construction or modernization, modification by SHIPALT, or major repair to the system during regular overhaul or restricted availability.

APPLICABLE TEST PROCEDURES: Navigation System Certification (Dockside and At-Sea), see notes 1 through 3

PREREQUISITES: Completion of navigation system grooming

SUPPORT SERVICES REQUIRED: None

NOTES:

1. On Amphibious Assault Ships, the Aircraft Inertial Alignment System (AIAS) will also be certified during Navigation System testing.
2. Navigation system certification test procedures for each ship configuration are developed by SPAWARSYSCEN CHARLESTON DET NORFOLK, based on the requirements of NAVSEA S9427-AC-PRO-010, Certification Test Procedures for Surface Ship Navigation System.
3. Only those dockside certification tests that have not been previously conducted by the industrial activity shall be performed. The test reports and test data for previously conducted tests shall be made available to the SPAWARSYSCEN CHARLESTON DET NORFOLK representative.
4. Certification testing requires 8-10 days dockside and 4-7 days at sea. The SPAWARSYSCEN CHARLESTON DET NORFOLK representative cost is approximately 24-34 man-days. Certification requires 12-17 man-days support by shipyard or ship's force personnel.
5. Certification funding for new construction ships is provided by the SPM. For certification incidental to modification by SHIPALT, funding is provided by the SPM. The TYCOM provides funding for verification when required because of system repair.

SECTION 5

SONAR SYSTEM

Sonar Dome Rubber Window and Pressurization System 5-2

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Sonar Dome Rubber Window and Pressurization System	
PURPOSE: To ensure proper system performance and personnel safety when working in a pressurized dome	
SOURCE OF REQUIREMENTS: NAVSEAINST 9460.5A dtd 10 Sep 1986	
CERTIFICATION TESTING (INSPECTION) IS DONE BY: PMS411 appointed Test Activity representatives	
CERTIFYING AUTHORITY: PMS411E	**CERTIFICATION IS MADE TO:** CNO, INSURV, TYCOM, Ship's CO, Installing Activity
TIME FRAME RELATIVE TO OTHER EVENTS: Prior to Acceptance Trials.	
APPLICABLE TEST PROCEDURES: Certification Manual for Sonar Dome Rubber Window and Pressurization Systems for DDG-51 Class, SE313-TC-MAN-010/SDRW	
PREREQUISITES: See note 2	
SUPPORT SERVICES REQUIRED: Minimum of five hyperbarically qualified personnel from the ship and 12 personnel from the shipbuilder or installing activity.	

NOTES:

1. This certification requirement is only applicable to new construction ships with sonar dome rubber windows.

2. Inspection requirements for drydock, dockside, and at-sea are listed in Chapters 1-5 of the Certification Manual for SDRW, SE313-TC-MAN-010.

3. Certification testing requires one day (8 daylight hours) in drydock, three consecutive days dockside (12 hours per day) and 10 hours at-sea.

4. Certification funding is provided by the SPM.

SECTION 6

WEAPON SYSTEMS

Vertical Launching System (VLS) MK 41 6-2

Weapon System Pointing and Firing Cutout Zones 6-3

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Vertical Launching System (VLS) MK 41

PURPOSE: To certify that the Vertical Launching System is constructed and installed in accordance with applicable requirements and that maintenance, material readiness and safety are satisfactory prior to load-out of missiles

SOURCE OF REQUIREMENTS: OPNAVINST 3600.3A dtd 2 Dec 1992 and OPNAVINST 8023.2C dtd 29 Jan 1986

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Naval Surface Warfare Center, Port Hueneme Division (NSWC PHD)

CERTIFYING AUTHORITY: PMS410	**CERTIFICATION IS MADE TO:** Ship's CO, TYCOM, SPM, SUPSHIP

TIME FRAME RELATIVE TO OTHER EVENTS: Following initial installation prior to trials. Verification of certification is required after industrial availabilities 180 days or longer, or when significant changes are made to the system or when deemed necessary by proper authority. Recertification is required upon launcher decertification by proper authority.

APPLICABLE TEST PROCEDURES: TW394-JO-ECI-010/VLS MK 41 dtd 1 Apr 1996

PREREQUISITES: Applicable ship class VLS MK 41 Installation and Checkout (INCO) Test Procedures (TPs).

SUPPORT SERVICES REQUIRED: None

NOTES:

1. Certification testing is conducted dockside for about 5 days.

2. This certification is applicable to DDG 51, CG 47 and DD 963 class ships.

3. Funding information for certification, verification or recertification can be obtained from PMS410.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Weapon System Pointing and Firing Cutout Zones

PURPOSE: To verify and provide safe and optimum Pointing and Firing Cutout (P&FCO) zones

SOURCE OF REQUIREMENTS: NAVSEAINST 9700.1A dtd 2 Jan 1990

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Fleet Technical Support Centers (FTSCs) and Naval Surface Warfare Center, Dahlgren Division, VA (NSWC DD)

CERTIFYING AUTHORITY: NSWC DD

CERTIFICATION IS MADE TO: Ship's CO or PCO, NAVSEA 03K24, TYCOM

TIME FRAME RELATIVE TO OTHER EVENTS: New construction/modernization: Before Bravo trial or before weapons are fired. Commissioned ships: After industrial period before weapons are fired. See note 1.

APPLICABLE TEST PROCEDURES: Provided by NSWC DD.

PREREQUISITES: None

SUPPORT SERVICES REQUIRED: None

NOTES:

1. For commissioned ship industrial periods, a certification will be completed if:
   a. a SHIPALT has been accomplished which affects the firing cutout zones, or
   b. more than three years have elapsed since the last certification. In this case, certification test procedures may be abbreviated at the discretion of NSWC DD.

2. Certification requirements apply to missile launcher and gun mount zones.

3. Certification funding for new construction and in-service ships is provided by the SPM.

SECTION 7

COMBAT SYSTEMS

Radio Frequency Radiation (RFR) Hazards (RADHAZ) Abatement 7-2

Electromagnetic Interference (EMI) Abatement 7-3

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Radio Frequency Radiation (RFR) Hazards (RADHAZ) Abatement

PURPOSE: To certify surface ship compliance with DoD policy for hazardous RF Electromagnetic Fields (EMF) and other dangers associated with DoD electronic equipment (Note 1).

SOURCE OF REQUIREMENTS: DODINST 6055.11A, Protection of DoD Personnel from Exposure to Radio Frequency Radiation and Military Exempt Lasers dtd 21 Feb 1995

CERTIFICATION TESTING (INSPECTION) IS DONE BY: Instrumented testing by NAVSEA designated test team and visual inspection by Naval Supervising Authority (NSA)

CERTIFYING AUTHORITY: NAVSEA 03K2B or NSA	**CERTIFICATION IS MADE TO:** Ship's C.O. (copy to TYCOM, Ship Program Manager (SPM) and NAVSEA 03K2B)

TIME FRAME RELATIVE TO OTHER EVENTS: For SCN lead ship, it is prior to PSA completion. For SCN follow ships, it is prior to Acceptance Trials. For in-service ships, it is prior to the end of the warranty period.

APPLICABLE TEST PROCEDURES: NAVSEA Drawing STD-407-5291780, Standard EMI Survey Procedures. Procedures and baseline drawings are available through the SEMCIP Technical Assistance Network (STAN).

PREREQUISITES: Topside installations must be complete. For instrumented RADHAZ at sea testing, all communications, radar and weapon system transmitters and associated antenna systems must be operational.

SUPPORT SERVICES REQUIRED: For at sea testing, systems must be manned and operated by ship's force or shipyard personnel under the direction of the RADHAZ test team leader.

NOTES:

1. RADHAZ certification is required for: SCN ships; in-service ships undergoing industrial availabilities exceeding 120 days, or where changes to topside emitters or surrounding superstructure, made by Engineering Change Proposal (ECP), SHIPALT, or other authorized procedures, might endanger personnel.
2. At sea instrumented RADHAZ testing and a dockside visual inspection are conducted on the lead SCN ship of each class from each yard to obtain baseline data and to validate the EM Control Topside Arrangement drawing. A dockside visual inspection is conducted on all SCN follow ships and active ship availabilities when the ship/class EM Control Topside Arrangement drawing has been validated through instrumented testing.
3. At sea instrumented RADHAZ testing may be required on SCN follow ships or ships undergoing industrial availabilities where class upgrade or first installation of an approved class change requires RADHAZ baseline revalidation.
4. Certification funding for new construction and in-service (FMP) ships is provided by the SPM. For other certification, such as following repairs, funding is provided by the sponsoring activity.

CERTIFICATION REQUIREMENT DATA SHEET

TO BE CERTIFIED: Electromagnetic Interference (EMI) Abatement

PURPOSE: To certify surface ship compliance with OPNAV policy for EMI affecting fleet and battleforce operations (Note 1).

SOURCE OF REQUIREMENTS: OPNAVINST 2450.2, Electromagnetic Compatibility Program Within the Department of the Navy dtd 8 Jan 1990

CERTIFICATION TESTING (INSPECTION) IS DONE BY: NAVSEA designated test team, Naval Supervising Authority (NSA) or contractor witnessed by NSA

CERTIFYING AUTHORITY: NAVSEA 03K23 or by NSA	**CERTIFICATION IS MADE TO:** Ship's C. O. (copy to TYCOM, Ship Program Manager (SPM) and NAVSEA 03K23)

TIME FRAME RELATIVE TO OTHER EVENTS: For SCN lead ship, it is prior to PSA. For SCN follow ships, it is prior to Acceptance Trials. For in-service ship availabilities, it is prior to the end of the warranty.

APPLICABLE TEST PROCEDURES: NAVSEA Drawing STD 407-5291780, Standard EMI Survey Procedures. Procedures and baseline drawings are available through the Shipboard Electromagnetic Compatibility Improvement Program (SEMCIP) Technical Assistance Network (STAN).

PREREQUISITES: The topside installations must be complete and be inspected for conformance with the EM Control Topside Arrangement drawing. For system-to-system testing, both potential EMI source and EMI victim system(s) and, when applicable, their associated antennas must be at operational specifications.

SUPPORT SERVICES REQUIRED: Systems must be manned and operated by ship's force or shipyard personnel under the direction of the test team leader.

NOTES:

1. EMI Certification is required on SCN ships and on ships undergoing industrial availabilities when: (a) the availability period exceeds 120 days, or (b) major topside structural changes or changes to topside emitters or sensors are made by SHIPALT, Engineering Change Proposal (ECP), or other authorized procedures.
2. EMI certification testing by NAVSEA is applicable to the SCN lead ship of each class from each yard and may be applicable to SCN follow ship or ships undergoing industrial availabilities where class upgrade or first installation of an approved class SHIPALT requires EMI baseline revalidation. Changes warranting revalidation include (1) an increase or decrease in the number of installed emitters or their output power, or (2) significant topside antenna or superstructure reconfiguration.
3. EMI certification testing by NSA is applicable to SCN ships and to ships undergoing availabilities other than those identified in Note 2. When appropriate, testing will be assigned for contractor execution and Government witnessing.
4. Certification funding for new construction and in-service (FMP) ships is provided by the SPM. For other certification, such as following repairs, funding is provided by the sponsoring activity.

APPENDIX A

CERTIFICATION DEFINITIONS

The following definitions apply to certifications:

CERTIFICATION. The act of attesting by report, letter, certificate, or message, that the performance of an equipment or system meets prescribed criteria. The word carries the connotation of a guarantee.

CERTIFICATION REQUIREMENT. A requirement, imposed by Flag-level authority and approved by NAVSEA, that a surface ship equipment or system be certified to meet prescribed criteria as established in the certification test procedures. If the formal acceptance of a system requires involvement of government or government-sponsored personnel from an organization outside the on-site Supervising Authority or shipyard; and that organization has the authority to accept or reject the system, to direct a correction order, or to prevent operation of the system, the requirement shall be considered a CERTIFICATION for the purposes of this policy and must be reviewed and approved accordingly.

CERTIFYING AUTHORITY. The activity responsible for issuing the certificate which states an equipment or system meets the prescribed criteria established in the certification test procedures.

CERTIFICATION TEST PROCEDURE. The test procedure or other formally approved and authorized documentation which provides the prescribed criteria standards for conducting certification testing or inspection.

APPENDIX B

ACRONYMS

ACLS	Automatic Carrier Landing System
AFOSS	Aviation Fuels Operational Sequencing System
AIAS	Aircraft Inertial Alignment System
ALRE	Aircraft Launch & Recovery Equipment
BUMED	Bureau of Medicine
CAGFSU	Catapult and Arresting Gear Field Service Unit
CG	Cruiser, Guided Missile
CNAL	Commander Naval Air, Atlantic
CNAP	Commander Naval Air, Pacific
CNO	Chief of Naval Operations
CO	Commanding Officer
COLREGS	Convention on the International Regulations for Preventing Collision at Sea
CV	Aircraft Carrier
CVN	Aircraft Carrier, Nuclear
DD	Destroyer
DDG	Destroyer, Guided Missile
DET	Detachment
DoD	Department of Defense
EAB	Emergency Air Breathing
ECP	Engineering Change Proposal
EM	ElectroMagnetic
EMF	ElectroMagnetic Field

EMI	ElectroMagnetic Interference
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FDSSS	Flight Deck Status & Signalling System
FLOLS	Fresnel Lens Optical Landing System
FMP	Fleet Modernization Program
FTSC	Fleet Technical Support Center
FTSCLANT	Fleet Technical Support Center, Atlantic
FTSCPAC	Fleet Technical Support Center, Pacific
HPI	Hover Position Indicator
HRS	Horizontal Reference Set
HRT	Halogen Residual Test
HUD	Heads Up Display
IAW	In Accordance With
IFF	Identification Friend or Foe
ILARTS	Integrated Launch & Recovery Television Surveillance
INCO	Installation and CheckOut
INSURV	Board of Inspection and Survey
JAG	Judge Advocate General
JP	Jet Propulsion Aviation Fuel
LSO	Landing Signal Officer
MK	Mark
MOD	Modification
MOVLAS	Manually Operated Visual Landing Aid System
NAEC	Naval Air Engineering Center

NAVAIR	Naval Air Systems Command
NAVMAT	Naval Materiel Command
NAVMED	Bureau of Naval Medicine
NAVSEA	Naval Sea Systems Command
NAVSHIPYD	Naval Shipyard
NAWCAD	Naval Air Warfare Center, Aircraft Division
NAWCADLKE	Naval Air Warfare Center, Aircraft Division Lakehurst
NESEA	Naval Electronics System Engineering Agent
NSA	Naval Supervising Authority
NSWC	Naval Surface Warfare Center
NSWC CD	Naval Surface Warfare Center, Carderock Division
NSWC DD	Naval Surface Warfare Center, Dahlgren Division
NSWC PHD	Naval Surface Warfare Center, Port Hueneme Division
OPA	Oil Pollution Abatement
OPNAV	Operational Navy
PALS	Precision Approach & Landing System
PCO	Prospective Commanding Officer
PERA	Planning and Engineering for Repairs and Alterations
P&FCO	Pointing and Firing CutOut
PMA	Program Manager Air
PMS	Program Manager Ship
PSA	Post Shakedown Availability
RADAR	Radio Detection and Ranging
RADHAZ	Radio Frequency Radiation (RFR) Hazards
RAST	Recovery Assist, Securing & Traversing

RCOH	Refueling Complex Overhaul
RF	Radio Frequency
RFR	Radio Frequency Radiation
SCN	Ship Construction, Navy
SDRW	Sonar Dome Rubber Window
SECNAV	Secretary of the Navy
SEMCIP	Shipboard ElectroMagnetic Compatability Improvement Program
SESEF	Shipboard Electronic System Evaluation Facility
SHIPALT	Ship Alteration
SIB	Ship Information Book
SNAIAS	Ships Navigational & Aircraft Inertial Alignment System
SONAR	Sounding, Navigation and Ranging
SPAWARSYSCEN	Space and Naval Warfare System Center
SPM	Ship Program Manager
STAN	SEMCIP Technical Assistance Network
SUPSHIP	Supervisor of Ship Building
TACAN	Tactical Air Navigation
TCBCA	Total Coliform Bacterial Content Analysis
TP	Test Procedure
TYCOM	Type Commander
USC	Unites States Code
VLS	Vertical Launch System
VSTOL OLS System	Vertical & Short TakeOff & Landing Optical Landing
SUPSHIP	Supervisor of Shipbuilding