

COMOMAGINST 1514.1A
N01T
24 Nov 03

COMOMAG INSTRUCTION 1514.1A

Subj: COMOMAG JOB QUALIFICATION REQUIREMENT (JQR) PROGRAM

Ref: (a) NAVEDTRA 43100-1F, Unit Coordinator's Guide

Encl: (1) List of JQR Equipment and Exercise and Training
(ET) Weapons
(2) List of attachments

1. Purpose. To promulgate COMOMAG policy on Job Qualification Requirements (JQRs) for the Mobile Mine Assembly Units/Detachment (MOMAU/MOMAD) sites per reference (a).

2. Cancellation. COMOMAGINST 1514.1. This instruction is a major revision and should be reviewed in its entirety.

3. Background. The JQR program is a qualification system for enlisted personnel to obtain the knowledge to properly execute certain Mineman rating skills. A JQR is a compilation of minimum knowledge and skills required to qualify for a specific watch station or job or maintain specific equipment. The JQR program is not designed as a training program but provides many training objectives.

Locally produced PQS-type manuals are to be titled "Job Qualification Requirements (JQR) to distinguish them from the fleetwide mandatory PQS and to allow the developing organization greater flexibility in tailoring the format, content, use, and revision to the needs of the user.

4. Objective. The objective of the JQR program is to provide a means to successfully meet continuing professional development requirements.

5. Requirements. Enclosure (1) lists JQR equipment, and exercise and training (ET) weapons used to standardize the level of training required for established safety fundamentals, test equipment, material handling equipment, upgrade forms and underwater mine systems. It is an excellent tool for meeting division, department or command training goals. This enclosure is not all encompassing, as materials are constantly being upgraded.

6. Forms. Enclosure (2) lists the attachments as they are associated with each JQR. The attachments are merely guidelines and may be used to format each commands required JQRs. These attachments are not all inclusive.

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7. Action

a. The Commanding Officer/Officer-in-Charge (CO/OIC) of each Mobile Mine Assembly Unit/Detachment (MOMAU/MOMAD) will establish a local 1514 instruction covering only those JQR's that pertain to their command, and appoint a JQR Program Coordinator, which is usually the Training Petty Officer.

b. The Operations Officer of each MOMAU/MOMAD will set and track completion goals for their department and ensure each member completes the required JQRs on schedule.

c. The Operations Department LCPO/LPO will submit a memorandum to the JQR Coordinator at the completion of each area.

d. The JQR Coordinator/Training Petty Officer will:

(1) Submit a memo to the CO/OIC, via the chain of command, with an updated list of completed JQRs.

(2) Submit a memo to the Administrative Officer.

(3) Review the JQR statistics quarterly and identify any individual shortfalls or additional training needs/requirements.

(4) Update the command JQR tracking board and the electronic training jackets.

e. The Administrative Officer will forward the memorandum to the servicing PERSUPP Detachment (PSD) for the appropriate field service record Page 4 entry.

//s//
T. W. AUBERRY

Distribution: (COMOMAGINST 5216.1T)
List I
List II (Case A, Case B (COMINEWARCOM only))
List III

LIST OF ATTACHMENTS WITH THE ASSOCIATED
JOB QUALIFICATION REQUIREMENT (JQR)

<u>ATTACHMENT</u>	<u>JOB QUALIFICATION REQUIREMENT (JQR)</u>	
1	Water Blaster Operator	501
2	Heat Sealer Operator	502
3	Package Machine Operator	503
4	Radial Arm Saw Operator	504
5	Compressor Operator	505
6	Paint Spray Booth Operator	506
7	Sandblaster (Zero) Operator	507
8	Drill Press Operator	508
9	Gas Welder Operator	509
10	Portable Arc Welder Operator	510
11	Drill Sharpener Operator	511
12	MK 6 Mechanical Sweep Assembly	301
13	MK 65 Laying Mine Assembly	302
14	MK 62/63 Laying Mine Assembly	303
15	MK 91 Exercise Head Assembly	304
16	MK 53 Battery Assembly	305

FINAL QUALIFICATION AS
WATER BLASTER OPERATOR 501

NAME _____ RATE _____

This page is to be used as a record of satisfactory completion of designated sections of the Job Qualification Requirement (JQR). Only specified supervisors may signify completion of applicable sections, either by written or oral examination or by observing the individual's performance. The examination or checkout need not cover every item, however, a sufficient number should be covered to demonstrate the examinee's knowledge.

QUALIFICATION

Having observed satisfactory performance, it is recommended the trainee is designated a qualified Water Blaster.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(CO/OIC)

OPERATING INSTRUCTION FOR THE WATER BLASTER 501

I. Safety procedures

NOTE: Access to the area will be gained only after getting the Pump Operator or the Safety Observer's attention. Do not distract the gun operator.

- a. Ensure the individual is qualified to perform the task assigned.
- b. Ensure hearing protection warnings are posted around the area of operation.
- c. Ensure the water supply has been turned on.
- d. Ensure hardhat, safety shoes, leather gloves, face shield, double hearing protection and rain gear or long sleeves is worn.
- e. Never leave the system unattended while it is under pressure.
- f. Never manually hold the objects that are going to be blasted
- g. Never attempt to tighten or adjust the hose nuts or other connections while they are under pressure.
- h. Never operate the equipment while personnel are working in the area without the proper personal protection equipment.

II. Daily check:

- a. Inspect all hoses before and after each use for leaks.
- b. Check the hose connections.
- c. Check the dump valve for proper operation.
- d. Make sure the shroud is on gun hose connection.
- e. Use the operational checklist.
- f. If any unsafe conditions are found, notify your supervisor immediately.

III. Operating instructions:

- a. Check the controls for proper operations.
- b. The Pump Operator or Safety Observer will not operate the pump until told to do so.
- c. All pressure changes will be made slowly. Before blasting each day, pressure will be brought up from zero to the desired pressure.
- d. After placing the load in the desired location, disconnect the hoisting equipment. If it is not going to be used again, raise it above head striking level.

IV. Shut down procedures:

NOTE: Operations will stop if there are unauthorized personnel in the area and if any safety hazard is detected.

- a. Ensure no pressure left is left in the nozzle.
- b. Secure the power before departing the area.
- c. Clear the pool and deck of water and debris at the end of each day.

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WATER BLASTER OPERATOR 501

1. Understand personnel safety equipment use, e.g., hard hat, safety shoes, leather gloves, face shield, double hearing protection and rain gear. Refer safety procedures, para. I.

Observed _____ Performed _____ Date _____

2. Understands equipment safety features. Refer safety procedures, para. I.

Observed _____ Performed _____ Date _____

3. Understands daily check procedures. Refer daily check, para. II.

Observed _____ Performed _____ Date _____

4. Understands proper water blaster operation. Refer operating instructions, para. III.

Observed _____ Performed _____ Date _____

3. Understands proper water blaster shutdown procedures. Refer shut down procedures, para. IV.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
HEAT SEALER OPERATOR 502

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified HEAT SEALER (DOUGHBOY).

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE HEAT SEALER (DOUGHBOY) 502

I. Safety Requirements:

NOTE: ****WARNING**** Personal injury may result if the following safety precautions are not observed.

- A. Do not operate machine until instruction manual has been read.
- B. Be sure machine is connected to building electrical safety ground.
- C. Be sure power is off before performing machine maintenance or cleaning.
- D. Do not operate machine with guards removed.
- E. Do not operate machine in a manner for which it was not intended.
- F. Do not touch heated surfaces.

II. Preparation:

A. With the thermostat knob set in lowest position, plug the electrical cord into a PROPERLY GROUNDED 3-WIRE RECEPTACLE. As the thermostat is turned up, the pilot light will come on and the sealing bars will begin to heat. When the temperature for which the thermostat has been set is reached, the pilot light will go out. As the sealer is in operation, the pilot light will continue to go on and off. The toggle switch starts and stops the motor only. It is not necessary to turn this switch on to heat the sealing bars.

B. The numbers of the thermostat dial indicate temperature in hundreds of degrees. For example, No. 3 indicates approximately 300 degrees F (Fahrenheit) as indicated on the sealer's dial thermometer.

C. For heavy materials, such as "Scrimback", the temperature will be set approximately between 450 and 550 degrees F; for most coated papers, at about 350 degrees F; for cellophane, at 275 to 300 degrees F, depending on the thickness of the bags; for glassine at about 275 degrees F.

NOTE: ****WARNING**** When operating sealer, keep fingers and loose clothing away from feed-in area of sealer.

III. Operating Instructions:

- A. Cut barrier bag to desired size for item to be packaged.
- B. Put the two cut ends together and run through the packaging machine.
- C. Now seal either of the remaining ends.
- D. Put object inside barrier bag.
- E. Seal remaining end.
- F. Cut small piece of barrier material from one of the corners.
- G. Insert vacuum tube into hole and turn vacuum on. Ensure as much air as possible is extracted from package.
- H. Quickly remove vacuum from package and run through machine again.

- IV. Shut down procedures:
- A. Turn toggle switch off.
 - B. Unplug machine.
 - C. Clean up you mess.
 - D. Stow sealer, scissors, markers, and related gear.

HEAT SEALER OPERATOR

1. Understands equipment requirements.
Ref: Safety Requirements, Para. I.

Observed _____ Performed _____ Date _____

2. Understands preparation requirements.
Ref: preparation, Para. II.

Observed _____ Performed _____ Date _____

3. Understands proper operating procedures.
Ref: Operating Instructions, Para. III.

Observed _____ Performed _____ Date _____

4. Understands proper shutdown procedures.
Ref: Shut Down Procedures, Para. IV.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
PACKAGE MACHINE OPERATOR 503

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PACKAGE MACHINE OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE HEAT SEALER PACKAGE MACHINE

I. Safety Procedures:

- A. Ensure individual is qualified to perform task assigned (JQR).
- B. Ensure all settings are properly adjusted (II-1).
- C. Ensure work pieces are properly secured, i.e. do not stack items to high.
- D. Stay clear of equipment during heating process. Heat is very intense.
- E. In case of an emergency situation, shut down equipment and notify supervisor (III-2).

II. Operating Instructions:

- A. Ensure the settings are as follows:
 - (1) Pre-Heat and Heat Hold are set between 7 & 8.
 - (2) Vac time is set at 3 o'clock position.
 - (3) Vac adjust is set on maximum position.
- B. Turn off/on switch to off position.
- C. Turn black handle located on right side of hinged cellophane loading frame. Lift up on handle.
- D. Run cellophane through opening on left side of frame and pull through so approximately 1/8" hangs over right side of frame.
- E. Close frame and return black handle to left or lock position.
- F. Cut cellophane free from roll as close to left side of bracket as possible.
- G. Turn off/on switch to on and press black "frame up" button and hold for 3 seconds. Frame will rise up.
- H. Place specially designed porous cardboard on porous vacuum surface colored side up.
- I. Place material to be packaged on top of porous cardboard.
- J. Press red cycle start button.
- K. Ensure cooling fans are operational.

III. Shut Down Procedures:

- A. Normal secure.
 - (1) Turn on/off switch to off.
 - (2) Clean entire unit/dust down heating elements.
- B. Emergency situation.
 - (1) Turn all variable settings to zero.
 - (2) Press cycle start. Once frame has returned home, start over at II.

HEAT SEALER PACKAGE MACHINE OPERATOR 503

1. Understands equipment requirements.
Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

2. Understands operating requirements.
Ref: Operating Instructions, Para. II.

Observed _____ Performed _____ Date _____

3. Understands shutdown procedures.
Ref: Shut Down Procedures, Para. III.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
RADIAL ARM SAW OPERATOR 504

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified RADIAL ARM SAW OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

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OPERATING INSTRUCTIONS FOR THE RADIAL ARM SAW 504

I. Safety Instructions:

- A. Understands required safety equipment and practices of the Owners Manual.
- B. Understands Radial Arm Saw operation (II-A).

II. Operating Instructions:

- A. Read the owners manual and demonstrate a comprehensive knowledge of the operation of the Radial Arm Saw, including various settings.
- B. Demonstrate on/off and emergency off procedures.

RADIAL ARM SAW OPERATOR

- 1. Understands personnel and equipment safety features.
Ref: Safety Procedures IAW Owners Manual.

Observed _____ Performed _____ Date _____

- 2. Understands proper operating procedures.
Ref: Operating Instructions IAW Owners Manual.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION FOR
COMPRESSOR OPERATOR 505

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified COMPRESSORS.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

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OPERATING INSTRUCTIONS FOR COMPRESSOR 505

- I. Safety Precautions
 - A. Individual is qualified to perform task assigned, (JQR).
 - B. Individual safety equipment used as required i.e.: ear muffs.
 - C. Electrical circuit breaker operating properly.
 - D. Ensure equipment within prescribed maintenance cycle.

- II. Compressor Operation (start-up):
 - A. Turn on lights located by door.
 - B. Turn compressor LP-1 and LP-2 to AUTO.
 - C. Wait for start up.

- III. Shut-Down Procedures:
 - A. Turn compressor LP-1 and LP-2 to OFF.
 - B. Turn off lights by door.

COMPRESSORS

- 1. Proper personnel safety equipment usage: ear muffs.
Ref: Safety Precautions, Para. I.

Observed _____ Performed _____ Date _____

- 2. Understands start-up procedures.
Ref: Compressor Operation, Para. II.

Observed _____ Performed _____ Date _____

- 3. Understands shutdown procedures.
Ref: Shutdown Procedures, Para. III.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
PAINT SPRAY BOOTH OPERATOR 506

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PAINT SPRAY BOOTH OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE PAINT BOOTH,
PAINT POT, AND SPRAY GUNS 506

I. Safety Precautions:

- A. Individual is qualified to perform task assigned. (JQR).
- B. Personnel safety equipment used as required, i.e.; respirator, goggles, coveralls, and gloves.
- C. Equipment safety devices operating properly, i.e.; automatic shut-off doors. Sprinkler system heads clear of obstructions, and the electrical main breaker box operating properly.
- D. Proper air pressure setting.
- E. Ensure equipment within prescribed maintenance cycle.
- F. Inspect air lines and regulators.

II. Start-up Procedures:

- A. Paint Booth:
 - (1) Ensure all safety precautions are adhered to.
 - (2) Turn on paint booth, press start switch.
 - (3) Close Doors.
- B. Painting Equipment (paint pot).
 - (1) Remove pot cover and install paint container.
 - (2) Replace pot cover and tighten down securely.
 - (3) Regulate air source to manufacturers specifications.
 - (4) Connect regulated air supply to paint pot.
 - (5) Regulate pot pressure to manufacturers specifications.
 - (6) Adjust paint stirring motor to desired speed.
 - (7) Regulate air supply to fun from pot to manufacturer's specifications.
 - (8) Operate/regulate spray for proper spray pattern.
- C. Painting equipment (spray guns, small cup).
 - (1) Regulate air source to manufacturers specifications.
 - (2) Fill paint cup 3/4 full with premixed paint.
 - (3) Securely fasten cup to gun.
 - (4) Connect gun to regulate air supply.
 - (5) Operate/regulate spray gun for proper spray pattern.
- D. Paint Mixing Instructions:
 - (1) EXAMPLE: For black, orange, olive drab, and white colors only.
 - 1/2 gal (one of the above color paints)
 - 1/2 gal thinner
 - (2) Gold paint (use as is).
 - (3) All other colors mix in accordance with manufacturer's instructions.

III. Shut-Down Procedures:

- A. Painting equipment (paint pot/spray guns).
 - (1) Turn air supply to pot off.
 - (2) Bleed air pressure from pot (allow all air to escape).
 - (3) Loosen and remove pot cover.
 - (4) Clean all paint or thinner from inside pot container.
 - (5) Pour fresh thinner into pot container.
 - (6) Replace pot cover and pressurize pot, spray thinner through system by operating spray gun.
 - (7) Repeat steps 2, 3, and 4.
 - (8) Replace pot covering (without securing).

- B. Paint Booth
 - (1) Sweep down walls, ceiling, and deck with fox tail.
 - (2) Return all flammable liquids to proper storage areas.
 - (3) Secure lights and close doors.

PAINT SPRAY BOOTH OPERATOR 506

1. Understands proper personnel safety equipment usage: respirator, goggles, coveralls, and gloves.

Ref: Safety Precautions, Para. I.

Observed _____ Performed _____ Date _____

2. Understands equipment safety features.

Ref: Safety Precautions, Para. I.

Observed _____ Performed _____ Date _____

3. Understands paint booth start-up procedures.

Ref: Start-up Procedures, Para. II Step A.

Observed _____ Performed _____ Date _____

4. Understands paint equipment (paint pot/paint spray-guns) operating procedures.

Ref: Start-up Procedures, Para. II Step B & C.

Observed _____ Performed _____ Date _____

5. Understands proper mixing instructions for paints.

Ref: Start-up Procedures, Para. II Step D.

Observed _____ Performed _____ Date _____

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6. Understands paint equipment (paint pot/paint spray-gun) daily shutdown procedures.

Ref: Shut Down Procedures, Para. III Step A.

Observed _____ Performed _____ Date _____

7. Understands paint booth shutdown procedures.

Ref: Shutdown Procedures, Para. III Step B.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
SANDBLASTER (ZERO) OPERATOR 507

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified SANDBLASTER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTION FOR THE SANDBLASTER (ZERO) 507

I. Individual Safety Requirements:

- A. Operator and personnel within 15 feet must wear ear protection.
- B. Operator must wear a dust respirator, i.e. surgeon's mask.
- C. Never open sandblaster doors when in operation.
- D. Ensure doors are secured when using high-pressure air to remove dust from material.
- E. Never weigh down foot control with anything except your foot.
- F. Add grit only when sandblaster is shut down.

II. Sandblaster Safety Features:

- A. Protective gloves and sleeves.
- B. Foot control for sandblasting grit.
- C. Automatic grit shut-off if door is opened.
- D. Safety glass.

III. Start-Up Procedures:

- A. Ensure blaster is full of grit (visual inspection of container).
- B. Ensure safety features of blaster are in good working condition.
- C. Ensure dust reclaimer is empty.
- D. Ensure individual safety requirements are adhered to.
- E. Ensure blaster has valid ground safety sticker attached.
- F. Ensure grit is dry.
- G. Ensure no small items are caught in reclaimer screen.
- H. Place "on/off" switch to "off" position.
- I. Connect power cord to 110 VAC power source.
- J. Inspect air hose and connectors for damage.
- K. Connect air supply, adjust to 90 PSI.
- L. Place "on/off" switch to "on" position.

IV. Sandblaster Operation:

- A. Small material that could fall through reclaiming screens must be placed in a can during blasting.
- B. All material to be blasted must be free of grease.
- C. Never blast wet material.
- D. Do not sand blast any soft material such as fiberglass or plastic.
- E. Discontinue sandblasting operations if blaster is not operating properly.
- F. Constantly check that the blaster has grit.

V. Shut-Down Procedures:

- A. Place "on/off" switch to "off" position.
- B. Disconnect air supply.
- C. Empty dust reclaimer.
- D. Fill blaster with grit.
- E. Remove all material from inside of blaster.
- F. Ensure no small items are caught in reclaimer screen.
- G. Dust inside and out side of blaster.

SANDBLASTER (ZERO) OPERATOR 507

1. Understands personnel safety requirements.
Ref: Individual Safety Requirements, Para. I.

Observed _____ Performed _____ Date _____

2. Understands equipment safety features.
Ref: Sandblaster Safety Features, Para. II.

Observed _____ Performed _____ Date _____

3. Understands start-up procedures.
Ref: Start-Up Procedures, Para. III.

Observed _____ Performed _____ Date _____

4. Understands proper sandblaster operation.
Ref: Sandblaster Operation, Para. IV.

Observed _____ Performed _____ Date _____

5. Understands proper shutdown procedures.
Ref: Shut Down Procedures, Para. IV.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
DRILL PRESS OPERATOR 508

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified DRILL PRESS OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE DRILL PRESS 508

I. Safety Procedures:

- A. Ensure individual is qualified to perform task assigned.
- B. Ensure individual safety equipment is used.
- C. Ensure equipment safety devices are operating properly.
- D. Ensure work piece is secured properly.
- E. Ensure area around drill press is free of unnecessary material.
- F. In any emergency situation, shut down the equipment and notify the supervisor.

II. Operating Instructions:

- A. Unplug drill press.
- B. Ensure all guards are in place.
- C. Operate drill press and observe all moving parts to ensure proper function.
- D. Position drill head and work plate properly for task to be accomplished.
- E. Select proper drill bit and install in spindle, tighten with chuck key.
- F. Position work piece under drill head and secure properly.
- G. Plug in power cord.
- H. Switch "on/off" switch to "on" (drill spindle begins turning).
- I. Lower spindle by slowly pulling handle located on right side of drill head.
- J. Drill to prescribed depth. Release handle slowly allowing spindle to return to normal position.
- K. Switch "on/of" switch to "off" to stop spindle rotation.
- L. Remove work piece from under drill head.

III. Shut-Down Procedures:

- A. Unplug drill press.
- B. Clean all metal shavings and lubricants from press drill bit, and surrounding area.
- C. Remove drill bit.

DRILL PRESS OPERATOR 508

1. Understands personnel safety requirements.
Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

2. Understands equipment safety features.
Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

3. Understands proper drill press operation.
Ref: Operating Instructions, Para. II.

Observed _____ Performed _____ Date _____

4. Understands proper shutdown procedures.
Ref: Shut Down Procedures, Para. III.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
GAS WELDER OPERATOR 509

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified GAS WELDER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE GAS WELDER (CUTTING TORCH) 509

I. Safety Procedures:

- A. Ensure individual is qualified to perform task assigned.
- B. Fittings and hoses are in good condition.
- C. Personnel safety equipment usage i.e. welding/cutting goggles, apron and gloves properly worn and in good condition.
- D. Adequate ventilation in welding/cutting area.
- E. Proper pressure in oxygen/acetylene tanks.
- F. Tanks are properly contained and will not tip over.
- G. Area is clear of flammable material i.e. rags, paper, thinners, and paints.
- H. Fire watch and fire extinguisher in immediate area of welding/cutting operations.

II. Start Up Procedures:

- A. Ensure all safety precautions are adhered to.
- B. Check welding/cutting tips for slag that will impede gas flow.
- C. Inspect, and then connect hoses to appropriate bottles i.e. green-oxygen, red-acetylene.
- D. Connect torch to proper hose markings.
- E. Turn oxygen bottle valve fully counterclockwise to open. Turn acetylene bottle valve 1/4 turn counterclockwise to open.
- F. Adjust regulators (IN ACCORDANCE Owners Manual).
- G. Adjust acetylene to torch, light with sparker and adjust oxygen so that welding/cutting tip shows approximately 1/4 inch blue flame.

III. Shut Down Procedures:

- A. Close valves on torch.
- B. Close bottle's valves fully clockwise.
- C. Adjust regulators on bottles (turn fully clockwise, then counter-clockwise).
- D. Bleed hoses by opening valves on torch, close after bleeding.
- E. Sweep cart and wipe equipment down.

GAS WELDER OPERATOR 509

1. Understands equipment safety features: welding helmet, apron, and gloves

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

2. Understand duties as fire watch during welding.

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

3. Understands safety precautions.

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

4. Understands proper start up procedures.

Ref: Start Up Procedures, Para. II.

Observed _____ Performed _____ Date _____

5. Understands proper shutdown procedures.

Ref: Shut Down Procedures, Para. III.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
PORTABLE ARC WELDER OPERATOR 510

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified PORTABLE ARC WELDER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE PORTABLE ARC WELDER 510

I. Safety Procedures:

- A. Ensure individual is qualified to perform task assigned.
- B. Cables and electrodes are in good condition.
- C. Personnel safety equipment usage i.e. welding/cutting goggles, apron and gloves properly worn and in good condition.
- D. Adequate ventilation in welding area.
- E. Proper settings made on equipment.
- F. Equipment within prescribed maintenance cycle.
- G. Electrodes are not touching together, prior to starting.
- H. Fire watch and fire extinguisher in immediate area of welding operations.

II. Start Up Procedures:

- A. Ensure all safety precautions are adhered to.
- B. Switch "on/off" switch to "on".
- C. Switch idle/auto-idle" switches to auto-idle".
- D. Pull out choke.
- E. Depress start switch.
- F. Return choke to normal position after warm-up.
- G. Switch "weld/generator" switch to "generator". If generator only is to be used, then disregard steps H through J.
- H. Switch "weld/generator" switch to "weld".
- I. Make proper settings on equipment for material being welded.
- J. Attach ground lead to material being welded.

III. Shut Down Procedures:

- A. Switch "on/off" switch to "off".
- B. Return electrodes to proper storage location on chart.
- C. Clean up welding area and welding cart.
- D. Place equipment out of the weather.
- E. Properly store welding tools and material.

PORTABLE ARC WELDER OPERATOR 510

1. Understands equipment safety features: welding helmet, apron, and gloves

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

2. Understand duties as fire watch during welding.

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

3. Understands safety precautions.

Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

4. Understands proper start up procedures.

Ref: Start Up Procedures, Para. II.

Observed _____ Performed _____ Date _____

5. Understands proper shutdown procedures.

Ref: Shut Down Procedures, Para. III.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
DRILL SHARPENER OPERATOR 511

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified DRILL SHARPENER OPERATOR.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

OPERATING INSTRUCTIONS FOR THE DRILL BIT SHARPENER 511

I. Safety Procedures:

- A. Owners Manual must be read and understood prior to operator performing any task.
- B. Ensure individual is qualified to perform task assigned.
- C. Ensure individual safety equipment is used.
- D. Ensure equipment safety devices are operating properly.
- E. Ensure area around sharpener is free of unnecessary material.
- F. In any emergency situation, shut down the equipment and notify the supervisor.

II. Operating Instruction:

- A. Ensure "on/off" switch is in the "off" position and wheels rotate freely.
- B. Insert plug into receptacle and turn "on/off" switch to the "on" position. Note: Grinder should come up to speed smoothly and without vibration.
- C. Adjust tool rest supports to 1/16" clearance of wheel.
- D. Operate IAW pages 3-6 of the owner's manual.
- E. Upon completion, turn "on/off" switch to "off" position.

DRILL SHARPENER OPERATOR 511

- 2. Understands personnel and equipment safety features.
Ref: Safety Procedures, Para. I.

Observed _____ Performed _____ Date _____

- 4. Understands proper drill sharpener operation.
Ref: Operating Instructions, Para. II.

Observed _____ Performed _____ Date _____

FINAL QUALIFICATION AS
MK 6 MECHANICAL SWEEP MINE ASSEMBLYMAN 301

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 6 MECHANICAL SWEEP MINE ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

COMOMAGINST 1514.1A
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A. Case Preparation (Job Sheet 12-4)

Complete the following tasks:

1. Remove extender and firing mechanism well covers and clean flanges with solvent

Observed _____ Date _____

2. Verify case does not exhibit external damage that would affect fit or function.

Observed _____ Date _____

3. Replace horn plug and torque to 20-25 lb-ft

Observed _____ Date _____

4. Install new gaskets on extender and firing mechanism wells and torque covers to 181 bs. per foot.

Observed _____ Date _____

5. Verify identification markings in accordance with SW550-AE-MMI-010.

Observed _____ Date _____

6. Stencil local mine number in 4-inch characters between lifting eyes and firing mechanism well.

Observed _____ Date _____

B. Plummet Preparation (Job Sheet 12-1)

Complete the following tasks:

1. Referring to mission planning directives, cut wire rope length equal to requested mooring depth plus 4 feet.

Observed _____ Date _____

2. Solder wire rope on plummet spool and install.

Observed _____ Date _____

3. Stencil arrow-indicating direction of spool rotation on upper half of each plummet side plate. Stencil mooring depth on upper half of front and back of plummet.

Observed _____ Date _____

4. Perform plummet brake tension test.

Observed _____ Date _____

C. Plummet Release Test (Job Sheet 12-2)

Complete the following task:

1. Remove side plates and weigh anchor ensuring it falls within 796 and 836 lbs.

Observed _____ Date _____

2. Verify anchor wheels turn freely.

Observed _____ Date _____

3. Raise anchor off deck to allow testing.

Observed _____ Date _____

4. Disassemble dashpot and verify piston orifice is open and strainer is free of dirt.

Observed _____ Date _____

5. Clean interior of dashpot and verify piston orifice is open and strainer is free of dirt.

Observed _____ Date _____

6. Perform plummet release test. (Plummet must release between 6 and 10 seconds.)

Observed _____ Date _____

7. Stencil plummet end of anchor over dashpot as follows:
PTS anti-freeze
PTS water

Observed _____ Date _____

COMOMAGINST 1514.1A
24 Nov 03

8. Enter proportional part of antifreeze and water on master record Sheet.

Observed _____ Date _____

D. Anchor Preparation (Job Sheet 12-3)

Complete the following tasks:

1. Perform pawling adjustment.

Observed _____ Date _____

2. Perform brake tension adjustment.

Observed _____ Date _____

3. Perform plummet installation.

Observed _____ Date _____

4. Perform hold-off gear setting.

Observed _____ Date _____

5. Torque castellated nut to 20-25 lb-ft.

Observed _____ Date _____

Stencil "HOLD-OFF NUT 4 TURNS" on left side of anchor.

6. Observed _____ Date _____

7. Install parachute.

Observed _____ Date _____

E. Case And Anchor Marriage (Job Sheet 12-5)

Complete the following tasks:

1. Inspect link-securing hooks for serviceability.

Observed _____ Date _____

2. Lift case above anchor and attach shackle of mooring line to case mooring eye.

Observed _____ Date _____

3. Marry case and anchor.

Observed _____ Date _____

4. Torque hex body of turnbuckle to 12-18 lb-ft

Observed _____ Date _____

5. Ensure case is securely seated on anchor.

Observed _____ Date _____

F. Final Preparation For Delivery (Job Sheet 12-6)

Complete the following tasks:

1. Ensure slip hook is installed properly on anchor.

Observed _____ Date _____

2. Verify red warning tag are installed on fifth wheel and wood Chock in plummet.

Observed _____ Date _____

3. Verify turnbuckle and case securing links are properly installed.

Observed _____ Date _____

4. Ensure plummet cord will not foul on plummet drag plate.

Observed _____ Date _____

5. Ensure mine is painted and stenciled in accordance with SW550-AE -MMI-010 and applicable ET Request.

Observed _____ Date _____

FINAL QUALIFICATION AS
MK 65 LAYING MINE ASSEMBLER 302

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 65 laying MINE ASSEMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

COMOMAGINST 1514.1A
24 Nov 03

LAYING MINE MK 65 DISASSEMBLY (JOB SHEET 10-2)

Complete the following task:

Remove safety device and shipping & storage cover.

Observed _____ Date _____

Remove access well cover

Observed _____ Date _____

Remove float container.

Observed _____ Date _____

Remove pinger house.

Observed _____ Date _____

5.Remove rear cover plate and connector

Observed _____ Date _____

ASSEMBLY OF LAYING MINE MK 65 (JOB SHEET 10-3)

Complete the following task:

Install feed-through connector and torque to 12 lb-ft.

Observed _____ Date _____

Install rear cover plate and torque 20 lb-ft.

Observed _____ Date _____

Mount sonar transmitter(s) IAW SW550-AE-MMI-020.

Observed _____ Date _____

Install pinger housing and torque to 18 lb-ft.

Observed _____ Date _____

Install float container and torque to 10 lb-ft.

Observed _____ Date _____

Verify hazard stencil on tail section is legible.

Observed _____ Date _____

Place ejector spring in float container.

Observed _____ Date _____

Attach float rapid repair link to float container and install float.

Observed _____ Date _____

Install tail section and torque to 50 lb-ft.

Observed _____ Date _____

Recovered mine by the marine mammal system.

Observed _____ Date _____

Install fairing and torque to 35 lb-ft.

Observed _____ Date _____

SYSTEM TEST OF LAYING MINE MK 65 (JOB SHEET 10-4)

COMPLETE THE FOLLOWING TASK:

Perform self-test on bottom section of MK 595 test set.

Observed _____ Date _____

Conduct systems test, MK 595 test set.

Observed _____ Date _____

Conduct troubleshooting procedures, MK 595 test set.

Observed _____ Date _____

Inspect lanyard assembly and verify proper length.

Observed _____ Date _____

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5. Electrically connect safety device ensuring assembler can hear and feel alignment pins snapping snapping into place.

Observed _____ Date _____

Install safety device and torque to 18 lb-ft.

Observed _____ Date _____

PREPARATION AND TRANSFER OF MINE FROM DOLLY TO SKID (JOB SHEET 10-5)

COMPLETED FOLLOWING TASK:

Install S&A well shipping and storage cover and torque to 70 lb-in.

Observed _____ Date _____

Unfold safety bar streamer and tape to top of tail section ensuring streamer does not cover HI_LO alt switch.

Observed _____ Date _____

Place mine in MK 25 mod 2 skid, torque clamp band nuts to 120 lb-in.

Observed _____ Date _____

FINAL QUALIFICATION AS
MK 62/63 (82/83) LAYING MINE ASSEMBLER 303

NAME _____ RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 62/63(82/83) laying mine assembler.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

COMOMAGINST 1514.1A
24 Nov 03

BOMB PREPARATION (JOB SHEET 4-1)

COMPLETED THE FOLLOWING TASK:

Verify suspension lug (MS3314)

Observed _____ Date _____

Verify suspension lug (MS3314) or (MK 6-1

Observed _____ Date _____

Connect Ordnance Ground to suspension lug on case.

Observed _____ Date _____

Remove AFT shipping cap, tail fuze and cable fuze well shipping plugs and setscrew.

Observed _____ Date _____

Visually inspect cable well, forward and AFT fuze well are free of and foreign matter, moisture, corrosion or dirt.

Observed _____ Date _____

Verify V-groove does not exhibit external damage that will affect fit or function.

Observed _____ Date _____

Verify setscrew is completely threaded.

Observed _____ Date _____

Verify all threaded surface are not fouled or damaged.

Observed _____ Date _____

Verify all preformed packing seating surfaces; NO gashes, grooves, pits or scratches deeper than 1/32 inch.

Observed _____ Date _____

PRESENT PROGRAMMING TARGET DETECTING DEVICE (4-3-1):

Verify TDD Safety pin and Warning tag are in Pop-out pin.

Observed _____ Date _____

Prepare and ESD word area for TDD (shore station only).

Observed _____ Date _____

INSTALLATION OF BATTERY MK 130 INTO TDD (4-3-2):

Place TDD and Battery on antistatic mat. Put on wrist strap and unscrew lower housing from TDD and set a side.

Observed _____ Date _____

Insert battery into base of TDD. Ensuring that molded connector of battery and TDD mates firmly together. Screw lower housing on base of.

Observed _____ Date _____

FINAL QUALIFICATION AS
MK 91 EXERCISE HEAD ASSEMBLER 304

NAME _____ RATE _____

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NAME _____ RANK/RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 91 EXERCISE HEAD ASSMBLER.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

COMOMAGINST 1514.1A
24 Nov 03

MK 91 EXERCISE HEAD PREPARATION (JOB SHEET 4-4)

Remove nose, mechanism well cover, float well cover, aft access cover, and exploder blanking cover.

Observed _____ Date _____

Remove all parts, packages and preformed packing.

Observed _____ Date _____

Rotate head until anchor cutout if facing up.

Observed _____ Date _____

Remove vent screw, discard old perform packing, grease and install new packing. Torque to 5 lb-ft.

Observed _____ Date _____

B. ANCHOR INSTALLATION

Apply 35 PSI air pressure to right manifold port NO. 3 to remove aft release bolt, then apply same air pressure to left manifold port NO.3 to remove forward release bolt.

Observed _____ Date _____

Clean threads of release bolt, heavy grease locking ball end and lightly grease packing on bolt.

Observed _____ Date _____

Reinstall release bolts. And install retaining ring on each bolt.

Observed _____ Date _____

Remove anchor from skid and place on 4x4's.

Observed _____ Date _____

If planting depth less than 100 ft. attach mooring line, 3-4 inches from attaching bolt (bowline knot). More than 100 ft. DO NOT INSTALL MOORING LINE.

Observed _____ Date _____

Install mooring line dispenser box in anchor cavity (as needed).
Secure dispenser box with two 35 inch masking tape.

Observed _____ Date _____

Install anchor using hoist, route mooring line and attach to head if applicable tighten each weight release bolt nut securely (locktite).

Observed _____ Date _____

Install safety strap around anchor/head. Remove hold down plate from gel-cell cavity.

GEL-CELL INSTALLATION

Record battery serial number on master record sheet.

Observed _____ Date _____

Install fully charged battery assembly in gel-cell cavity in actuation system well. Connect battery CA-1392 to CA-1389.

Observed _____ Date _____

Tighten hold down plate, tighten securely.

Observed _____ Date _____

Rotate MK 91 head until exploder well is on top.

Observed _____ Date _____

SIDE RUNNER INSTALLATION

Coat threads of side runner screws with anitseize compound.

Observed _____ Date _____

Install side runner, blunt end forward. Install 1 inch screw in forward screw hole, 7/8 inch screw in aft.

Observed _____ Date _____

Torque screws to 5 lb-ft.

Observed _____ Date _____

FLOAT CLAMP INSTALLATION

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Ensure piston is in the fully down position.

Observed _____ Date _____

Install two float clamps (notched side down) tighten securely.

Observed _____ Date _____

EXERCISE HEAD SYSTEM CHECK (JOB SHEET 4-5)

Ensure pressure release assembly bottles are not installed, and safety strap is installed.

Observed _____ Date _____

Connect Function Simulator MK 94 to the cable assemblies on the aft bulkhead.

Observed _____ Date _____

Perform Functional Test on Control Box MK 59.

Observed _____ Date _____

PRESSURE SWITCHES TEST/ASSEMBLY/INSTALLATION JOB SHEET (4-6)

Install pressure adapter in upper instrument port, secure finger tight.

Observed _____ Date _____

Connect dead weight tester and perform pressure switches test.

Observed _____ Date _____

Disconnect dead weight tester and Function simulator.

Observed _____ Date _____

Make settings on Control Box MK 59.

Observed _____ Date _____

Obtain pressure release Assembly bottles, check for "V" and for expended and non expended bottles.

Observed _____ Date _____

If present remove black conductive silicone gasket surrounding the receptacle pins.

Observed _____ Date _____

Perform hazardous circuit test on pressure release assembly bottles.

Observed _____ Date _____

Install bottles and perform stray voltage check with multimeter on CA-1391.

Observed _____ Date _____

Install aft access port and torque screws 4 plus or minus 1 lb ft.

Observed _____ Date _____

Stencil two 2 inch brown dots adjacent to Float/Flare launcher well.

Observed _____ Date _____

NOSE-EXERCISE HEAD/EXPLOSIVE SECTION MARRIAGE ACTION SYSTEM WEIGHT SIMULATOR INSTALLATION JOB SHEET (4-7)

Install packing on nose and weight simulator.

Observed _____ Date _____

Install weight simulator torque to 60 plus or minus 5 lb ft.

Observed _____ Date _____

Do not connect Flood Valve connector. Coil to 3 inch diameter and tie the coil in 2 places 180 degrees apart.

Observed _____ Date _____

Install nose and joint band, torque screws to 12 lb ft.

Observed _____ Date _____

Install packing on exploder well cover and on blanking cover. Tighten screws securely.

Observed _____ Date _____

GUIDE STUD AND SHIM INSTALLATION JOB SHEET (4-7)

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Lightly coat threads of guide stud screw with anti-seize compound.

Observed _____ Date _____

Install forward guide stud and shim, higher end forward. Install 1 ¼ inch screw in forward hole and 7/8 screw in aft hole.

Observed _____ Date _____

Torque screws to 16 lb ft.

Observed _____ Date _____

EXPLOSIVE SECTION/EXERCISE HEAD LEAK TEST JOB SHEET (4-9)

Remove vent screw and install leak test adapter in exercise head.

Observed _____ Date _____

Set switch S-1 to on, draw 25 inch of vacuum, close V-2 wait two minutes; then record reading. Wait 10 minutes, vacuum must be within 2 inches of original reading.

Observed _____ Date _____

Open nitrogen cylinder valve and adjust R-2 until pressure of 2 psig is indicated. Close V-1 valve.

Observed _____ Date _____

Install new packing and install vent screw. Torque vent screw to 5 lb ft.

Observed _____ Date _____

MAIN MINE ASSEMBLY PREPARATION JOB SHEET (4-10)

Ensure ECI 0168 has been completed on CA-1369.

Observed _____ Date _____

Record Tailcone Reg. No. on master record sheet.

Observed _____ Date _____

Install 19 sponges, two in each section that contains a center stud. Three sponges in each section that does not contain a center stud.

Observed _____ Date _____

OA 06 ONLY Install shorting plug in ACU.

Observed _____ Date _____

Install new performed packing.

Observed _____ Date _____

Perform hazardous circuit test to fuse ejector meter must indicate between 1-3 ohms.

Observed _____ Date _____

Set dive switch on ACU as specified on mine master record sheet.

Observed _____ Date _____

Install joint band. Torque to 12 lb ft.

Observed _____ Date _____

BATTERY INSTALLATION

Grease threads of battery screws.

Observed _____ Date _____

Install two flat washers per screw.

Observed _____ Date _____

Torque battery screws progressively (5lbft) up to 20 lbft.

Observed _____ Date _____

EXPLOSIVE/EXERCISE HEAD MARRIAGE JOB SHEET (4-11)

Install preformed packing on explosive section/exercise head.

Observed _____ Date _____

Exercise Head Only Connect CA 1367 S2840 connector to receptacle P2840.

Observed _____ Date _____

Explosive Section Only Tuck CA 1367 into battery compartment below starboard battery rail.

Observed _____ Date _____

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Install joint bands, torque to 12 lbft.

GUIDE STUD INSTALLATION

Coat guide stud screw with antiseize compound.

Observed _____ Date _____

Install guide stud with large end forward on battery section.

Observed _____ Date _____

Install 1 ½ inch screw in forward hole and 1 inch screw in aft hole.
Torque to 16 lbft.

Observed _____ Date _____

SIDE RUNNER INSTALLATION

Coat side runner screws with antizeize compound.

Observed _____ Date _____

Install blunt end of side runner forward, in second (aftermost set of
holes on battery compartment.

Observed _____ Date _____

Install 1 inch screw in forward hole and 7/8 inch screw in aft hole.
Torque to 5 lbft.

Observed _____ Date _____

FORWARD/AFT BATTERY VENT LEAK TEST JOB SHEET (4-13)

Remove vent screw and install leak test adapter in exercise head.

Observed _____ Date _____

Set switch S-1 to on, draw 25 inch of vacuum, close V-2 wait two
minutes; then record reading. Wait 10 minutes, vacuum must be with in
2 inches of original reading.

Observed _____ Date _____

Open nitrogen cylinder valve and adjust R-2 until pressure of 2 psig
is indicated. Close V-1 valve.

Observed _____ Date _____

Install new packing and install vent screw. Torque vent crew to 5 lbft.

Observed _____ Date _____

Repeat steps 1-4 for aft battery section.

Observed _____ Date _____

BOTTOM RUNNER INSTALLATION

Coat screw of bottom runner with antiseize compound. Aluminum coated screws are used on forward runner of explosive section.

Observed _____ Date _____

Install transition block and bottom runner assembly (aft, middle, forward).

Observed _____ Date _____

OA-06 Ensure safety strap fits into cutout of forward bottom runner. Torque forward bottom runner screws to 24 lbin.

Observed _____ Date _____

Torque all bottom runner screws to 7 lbft.

Observed _____ Date _____

R. SONAR TRANSMITTER MK 87 INSTALLATION JOB SHEET (4-13)

Apply loctite to threads of screws and secure transmitter assembly to top starboard vane.

Observed _____ Date _____

Torque screws to 7 lbft.

Observed _____ Date _____

S. FINAL PREPARATION FOR DELIVERY JOB SHEET (4-14)

Check external opening ensure free from obstruction.

Observed _____ Date _____

OA-06 Ensure safety strap is tightly secured around exercise head/anchor and float/flare launcher signal tube cape.

Observed _____ Date _____

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Stencil minefield number in ½ inch characters.

Observed _____ Date _____

Ensure a Control Assembly Cable MK 1 (A-cable) and cutter assembly is ready for delivery.

Observed _____ Date _____

Ensure Propeller guard is installed.

Observed _____ Date _____

FINAL QUALIFICATION AS
MK 53 BATTERY ASSEMBLER 305

NAME _____ RATE _____

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NAME _____ RANK/RATE _____

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QUALIFICATION

Having observe satisfactory performance, it is recommended the trainee be designated a qualified MK 53 Battery assembler.

RECOMMENDED _____ DATE _____
(Supervisor)

RECOMMENDED _____ DATE _____
(Department Head)

RECOMMENDED _____ DATE _____
(Readiness Officer)

TRAINING RECORD ENTRY _____ DATE _____
(Training Petty Officer)

APPROVED _____ DATE _____
(Commanding Officer)

COMOMAGINST 1514.1A
24 Nov 03

MK 53 BATTERY ACTIVATION (APPENDIX E)

Verify shipping container does not show signs of electrolyte leakage.

Observed _____ Date _____

Remove cells, vent plugs, battery lifting handles and miscellaneous parts. Set aside.

Observed _____ Date _____

Remove battery tray subassembly and place on MK 21 Dolly.

Observed _____ Date _____

BATTERY PARTIAL ASSEMBLY

Lower cell bank assembly. Install block spacer located on terminal block end and forward and aft shims.

Observed _____ Date _____

Install 22 propulsion cells.

Observed _____ Date _____

Install 10 inter-cell connectors and nuts. Torque nuts to 62 lb-in.
Install 11 inter-row connectors and nuts. Torque to 62 lb-in.

Observed _____ Date _____

Install port and starboard wire harness and route wires.

Observed _____ Date _____

Port and starboard cell bank assembly. Install shim, on port and starboard trays. Install side spacing pieces between starboard and port cell banks and the lower cell bank. Cut out toward forward end of battery.

Observed _____ Date _____

Install 16 propulsion cells, 8 cells per side.

Observed _____ Date _____

Install tray spacers along free side of propulsion cells.

Observed _____ Date _____

Install 18 control cells, 9 cells per side.

Observed _____ Date _____
Install 7 inter-cell connectors and nuts. On port and starboard propulsion cells. Torque nuts to 62 lb-in. Install 7 inter-row connectors and nuts. Torque to 62 lb-in. On port and starboard propulsion cells.

Observed _____ Date _____

Install 8 inter-row connectors and nuts on port and starboard control cells and torque to 37 lb-in.

Observed _____ Date _____

Install side flexible connector onto propulsion cell 1. Install nuts on positive terminals and torque to 62 lb-in.

Observed _____ Date _____

Connect inter-unit connector No. 1 between negative terminal on cell 9 and positive terminal on cell 10 of control cells. Connect inter-unit connector No. 2 between positive terminal on control cell 1 and positive terminal on propulsion cell 1.

Observed _____ Date _____

Install side flexible connector onto propulsion cell 31. Install nuts on positive terminals and torque nuts to 62 lb-in.

Install step connector No. 1 and nuts between positive terminal of cell 9 on lower bank to negative terminal of cell 8 on port cell bank. Torque nuts to 62 lb-in.

Observed _____ Date _____

Install two spacers rails over middle of two rows of vent caps on the lower cell bank to support upper cell bank when installed.

Observed _____ Date _____

UPPER CELL BANK ASSEMBLY

Install shim and spacers into upper tray.

Observed _____ Date _____

Install 22 propulsion cells into upper tray.

Observed _____ Date _____

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Install 10 inter-cell connectors and nuts. Install 11 inter-row connectors and nuts. Torque nuts to 62 lb-in.

Observed _____ Date _____

BATTERY ACTIVATION (FILLING)

Adjust vacuum pump so gage draws 12 plus or minus 2 inch of mercury.

Observed _____ Date _____

Remove and retain vent valves. Draw a vacuum for two seconds. Pour one half of electrolyte into cell. Draw vacuum until bubbles appear. Repeat step.

Observed _____ Date _____

Check each cell for open circuit. Any voltage reading indicates cell has been filled. Allow cells to stand one to four hours after filling.

Observed _____ Date _____

After 4 hours, draw a vacuum 12 plus or minus 2 inch mercury to remove residual gas, install vent valves and torque to 4-5 lb-in.

Observed _____ Date _____

Fill Control cell the same as previous step, except the 4 oz. Bottles are used.

Observed _____ Date _____

Record filling date on battery nameplate and permanent battery record card.

Observed _____ Date _____

Install control cells on battery, connect upper tray connector to negative terminal posts of cell 38 an to positive terminal post of cell 39. Install 4 nuts, two at each cell.

Observed _____ Date _____

Connect step connector No. 2 to negative terminal posts of cell 38 an to positive terminal post of cell 39. Install 4 nuts, two at each cell. Torque nuts to 62 lb-in.

Observed _____ Date _____

Install hold down rails and nuts, torque to 10 lb-in.

Observed _____ Date _____

Soak all cells a minimum of 48 hours and a max of 7 days prior to charging.

Observed _____ Date _____

Perform voltage check, replace any cell that is below 1.58 volts.

Observed _____ Date _____

Rinse empty bottles three times with tap water. Cut bottles to prevent reuse.

Observed _____ Date _____

Dispose of bottles as normal industrial waste (non-hazardous).

Observed _____ Date _____

BATTERY CHARGING (APPENDIX F)

Perform charger preparation.

Observed _____ Date _____

Connect charging cable to terminal block on battery.

Observed _____ Date _____

Turn Current switch of control section to on adjust until ammeter indicates approximately 2 amps.

Observed _____ Date _____

Turn Current switch of propulsion section to on adjust until ammeter indicates approximately 5 amps.

Observed _____ Date _____

Ensure voltages indicated on voltmeters are less than 46vdc (control) 130vdc (propulsion).

Observed _____ Date _____

Record terminal voltage hourly, after one cell reaches 2.00 volts monitor charging every 5 minutes.

Observed _____ Date _____

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Stop charging individual sections (control/propulsion) when one cell reaches 2.00 volts and remaining cells read 1.93 volts. Record terminal voltage at end of charge for each cell in affected bank.

Observed _____ Date _____

Allow battery to stand until next work day, measure individual cell voltages. Replace any cell that is under 1.80 volts.

Observed _____ Date _____

Measure open-circuit voltages of control section and each half of propulsion section. Add readings of each propulsion section to obtain total voltage for propulsion. Record readings.

Observed _____ Date _____

BATTERY CELL ELECTROLYTE CLEANUP

Remove affected cell from battery.

Observed _____ Date _____

Clean cell with 20% vinegar and 80% water. Rinse entire cell with fresh water.

Observed _____ Date _____

Using solution remove electrolyte and potassium carbonate residue from vent and rubber ring. Reassemble rubber ring and vent valve, and install inter-cell connectors, nuts and torque.

Observed _____ Date _____