

LESSON PLAN

January 2007

COURSE TITLE: Surface Rescue Swimmer
Courses, A-050-0500

TERMINAL OBJECTIVE:
Partially supported by this lesson topic:

CLASSIFICATION: Unclassified

LESSON TOPIC NUMBER: 4.11

LESSON TOPIC: Dry Suit

ALLOTTED LESSON TIME: 0.5 Classroom
2.5 Laboratory

INSTRUCTIONAL SUPPORT:

1 Classroom Instructor
1 Laboratory Instructor
Safety personnel and additional instructors
as required per Annex E, Staffing
Requirements, of Curriculum Outline

INSTRUCTIONAL REFERENCE:

1. NAVAIR 13-1-6 Series Manuals
2. NTTP 3-50.1, Naval Search and Rescue Manual

INSTRUCTIONAL AID:

1. Trainee Guide
2. Classroom

3.0 Upon completion of this unit of instruction, the student will demonstrate the proper rescue techniques of military and civilian personnel, day or night, utilizing appropriate SAR equipment for at-sea, as outlined in NTTP 3-50.1 and OPNAVINST 3130.6 series, without injury to personnel or damage to equipment.

Enabling Objectives:
Completely supported by this lesson topic:

- 3.48 Describe the functional operation of the dry suit per the NTTP 3-50.1.
- 3.49 Demonstrate procedures for donning and doffing dry suit.
- 3.50 Perform Crawl stroke while wearing dry suit.

- 3. Overhead Projector
- 4. Dry Suit (MSD 565)
- 5. 12 Foot Deep Pool

CRITERION TEST:
Performance Test.
HOMEWORK: None

DISCUSSION POINT

RELATED INSTRUCTOR ACTIVITY

INTRODUCTION:

Display name and lesson topic.

A. Establish Contact

1. Introduce self, give rank, current job.
2. State background, schools, duty stations, etc..
3. State question and answer policy.
4. Reiterate the training time out policy.
5. (Lab only) Ask the following questions:
 - a. Has anyone gone to the hospital/branch clinic for treatment within 24 hours, and are you taking any medications?
 - b. Has anyone taken over-the-counter medications within 24 hours?
 - c. Are there any potentially disqualifying illnesses/conditions for which you are currently being evaluated?

Refer questionable cases to a department medical representative for disposition.

B. State Lesson Objectives

Turn to cover page of Lesson Plan and paraphrase

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C. Establish Readiness

objectives.

1. Motivating Statements

Establish importance and relevance of lesson material using personal experience or anecdote.

2. Lesson Overview

Briefly outline material to be covered.

a. Lesson Topic:

b. Major Teaching Points:

- (1) Dry Suit Ensemble
- (2) Dry Suit Undergarments
- (3) Dry Suit Donning
- (4) Dry Suit Doffing
- (5) Storage
- (6) Cleaning

DISCUSSION POINT

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PRESENTATION:

- A. Dry Suit Ensemble (MSD) 565
1. Provides protection to rescue swimmers in adverse weather and water conditions.
2. Available in four different sizes small, medium, large, and extra large. The dry suit shall be properly sized based on height and chest measurements as per the NAVAIR 13-1-6.7-2 reference table 5-16B.
3. Worn as an alternate to the wet suit.
4. All required rescue swimmer gear shall be worn when using the dry suit.
5. Consists of the following pieces:
- (a) Body is composed of a lightweight and flexible nylon Gortex laminate.
- (b) Heavy duty neoprene entry zipper with bronze teeth. Extends diagonally down the front and provides a watertight

Display

Display

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seal when closed.

- (c) One-size-fits-all factory installed anti-exposure socks.

- (d) Cushioning in the knee, chest, and underside of the forearm provide durability.

- (e) Abrasion protection is provided at the underside of the arm, top of the boot to the knee, seat area, upper thigh, shoulders, and lower leg behind the knee.

- (f) Reflective tape is located on each arm from the shoulder to the upper arm to assist in locating the rescue swimmer.

- (g) Internal suspenders consist of two elastic straps worn over the shoulders. They can be quickly secured by release buckles to fit the rescue swimmer.

- (h) Seals: designed to be watertight.
 - 1. Neck and wrists: Consists of latex, which stretches to fit each of the four sizes.

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Caution

Use extreme care when donning the dry suit. Prior to donning the dry suit, remove items such as rings, watches, etc. A torn dry suit will leak, severely degrading its immersion protection. Avoid putting fingernail pressure on the wrist and neck seals to prevent cutting the seals.

2. All seals have small ribs around the circumference, near the opening, to permit trimming to fit the swimmer.

Caution

Only qualified maintainers following the manufacturers maintenance instructions may trim the neck and wrist seals.

3. An exhaust valve is located on the top of the lower right arm. The exhaust valve is non-adjustable and will vent air from the suit.
6. A dry suit shall be worn as per NTPP 3-50.1, specifically:
 - (a) When water temperature is below 60° F, a dry suit ensemble is required.
 - (b) When water temperatures are 60° F

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to 70° F, a dry suit is worn at the CO's discretion.

- (c) When the water temperature is above 70° F, a dry suit ensemble is not required.
- (d) The outside air temperature is 32° (wind chill factor corrected) or below IAW NAVAIR 13-1-6.7-2.
- (e) A wet suit or dry suit ensemble shall be worn on all rescues.

Warning

Dry suits provide no inherent buoyancy.

B. Dry Suit Undergarments

Note

Maintenance is limited to a place-in-service special inspection. If any defects are found, return the undergarment to the manufacturer. The user maintains the responsibility for maintenance of the undergarment, which is limited to pre/post flight inspection and cleaning of the garment. Clean the undergarment IAW the manufacturer's instructions.

1. CWU-43/P Drawers

- (a) Full length (long-john) with elastic waist and the ankles are of tight-knit

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weave to fit securely.

2. CWU-44/P Undershirt

- (b) Full sleeve (long-john) with tight-knit weave cuffs and neckband to fit securely.

3. Dry Suit CWU-72/P Liner

- (a) One piece, green mesh, garment that provides a layer of thermal protection.
- (b) Worn directly under the dry suit and over the recommended undergarments.
- (c) Required minimum protective equipment and undergarments for use with the dry suit refer to Table 5-6 per the NTTP 3-50.1.

4. Exotherm Jumpsuits I, II, and III

Note

The Exotherm I and II are the same thickness, and rated at the same temperatures. The Exotherm II includes wind protection.

- (a) Exotherm is a fleece jumpsuit that can be utilized with the CWU-43/P drawers

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and the CWU-44/P undershirt, or by itself underneath the SAR swimmer's dry suit.

(b) The Exotherm jumpsuit is available in three models:

(1) Exotherm I and II: Air Temp. 90-50°F / Water Temp. 77-55°F

(2) Exotherm III: Air Temp. 65-35°F / Water Temp. 55-40°F.

C. Dry Suit Donning

Demonstrate

1. Remove shoes/boots. Don the MSD-565 series coverall by first inserting your feet into anti-exposure socks, then pull coverall up past your waist. Then don the suspenders and adjust them to your personal comfort.
2. Insert arms into sleeves and wrap the protective Velcro wrist covers over the wrist seals. Grasp upper part of the coverall behind the head and pull the neck seal over your head. Adjust the neck seal so it is comfortable and seam tapes are aligned with shoulders.
3. Grasp the slide fastener pull-tab in your

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right hand and completely close the entrance slide fastener. Ensure the pull-tab is firmly butted against the end block.

4. Ensure the relief portal slide fastener is closed. Ensure the pull-tab is butted against the end block.
5. Manually vent (burp) air from the suit by squatting at the knees and bending forward while pulling the neck seal away from the neck.

D. Dry Suit Doffing

Demonstrate

Caution

Ensure the entry zipper is completely opened prior to removal of the dry suit. If not entirely opened, damage could result to the entry seal.

Caution

Avoid putting fingernail pressure on the wrist and neck seals to prevent cutting the seal.

1. Remove all personal rescue equipment. If the outside of the dry suit was exposed to salt spray, dirt, or foreign material during the mission, wash the suit down prior to removing it, paying particular attention to

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the entry zipper.

2. Grasp the entrance slide fastener pull-tab in your left hand and open the slide fastener diagonally across the chest.
3. Grasp the upper portion of coverall and pull up over your head.
4. Release the Velcro wrist coverings and remove the dry suit from your arms, legs and feet.

E. Storage

Caution

Coveralls should be stored in a cool, dark place as prolonged exposure to the sun's ultra-violet rays or other sources of ozone will degrade the adhesives and all types of rubber. Keep coveralls away from gasoline, oil, and other petroleum products as they dissolve adhesives.

1. Short Term Storage
 - (a) The dry suit shall be hung on a heavy-duty plastic or wooden hanger or folded in accordance with NAVAIR 13-1-6.7-2, and stored in a clean, well ventilated,

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protected area.

Caution

Do not insert hanger through the neck seal opening when preparing coveralls for short-term storage. Ends of hangers could puncture and damage the neck seal. Insert hanger through entry zipper and push hanger head from below through the neck seal opening.

2. Seasonal Storage

- (a) Storage that occurs during the warmer months when anti-exposure protection is not required.
- (b) Storage shall be maintained on the normal 180/360 day inspection cycle.
- (c) Ensure dry suit is clean and completely dry.

Caution

The dry suit needs to be thoroughly cleaned and dried prior to storing. Failure to adequately clean the suit after use may result in failure of the zipper seals.

- (d) Loosely pack dry suit in individual plastic bag IAW NAVAIR 13-1-6.7-2.
- (e) Place bagged dry suits in storage bins, cruise boxes, or other appropriate storage containers.

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(f) Store closed containers in a cool, dry area.

3. Long Term Storage

(a) Dry suit is not being maintained on a 180-day or 360-day inspection cycle.

(b) Must be documented.

(c) Ensure dry suit is clean and completely dry.

(d) Loosely pack dry suit in individual plastic bag IAW NAVAIR 13-1-6.7-2.

(e) Place bagged dry suits in storage bins, cruise boxes, or other appropriate storage containers.

(f) Store closed containers in a cool, dry area.

(g) Dry suits removed from long-term storage shall have a Place-In-Service Inspection completed and documented.

F. Cleaning

Caution

Ensure that slide fasteners are closed prior to laundering/cleaning. Do not dry-clean dry suit

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coveralls. Do not use bleaches or similar additives for cleaning. Do not use commercial laundry facilities.

1. Pull sleeves inside out while pulling arms from sleeves. Peel coverall down turning it inside out down below the waist. Pull legs and feet inside out from coverall. Close slide fastener.
2. Hand launder, or use automatic washer that has a delicate cycle. Ensure water that is used is cold.
3. Follow detergent manufacturer's recommendations for amount of detergent to use. Wash cycle shall not exceed three minutes.
4. Rinse garment three times. Use clean, fresh water for each rinse. Each rinse cycle shall be a minimum of one minute.
5. Coveralls may be dried using a clothes dryer, using the lowest heat setting, for 20 minutes.
6. Hang coverall by shoulders on a wooden or plastic hanger in a well ventilated area until dry, or tumble dry with low heat.
7. When outside is dry turn legs and socks

DISCUSSION POINT

inside out to dry.

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SUMMARY:

A. State Lesson Objectives.

Turn to cover page for objectives.

B. Review Major Teaching Points.

Briefly summarize.

APPLICATION:

Instructor will demonstrate procedures for donning and doffing on land and Venting (burping) on land and in the water.

Students will complete dry suit donning, doffing and venting with a 50 yard familiarization swim under instruction while observing safety precautions.

EVALUATION: In Water Familiarization

ASSIGNMENT: None