



GUARD
NG

ENCLOSURE (130)

HYPERBARIC MEDICINE TODAY Online

Hyperbaric Chamber Database Listing

Facility: OxyBioTech, Inc.
Address: 2038 NW Aloclek Drive
Suite 205
Hillsboro, Oregon, 97124
Phone: 503.466.1452
Fax: 503.466.1353
Email: oxybiotech@yahoo.com
Country: USA
Type: Free Standing Clinic
Treatment: Research
Chamber 1: Multiplace
Qty 1: 1

Website: www.oxybiotech.com
Submitted By: ~~Robert Wagner~~
Safety Director: ~~Robert Wagner~~
Castillo, CHT
Comments:

Facility: Providence Medical Center
Address: Hyperbarics
4805 NE Glisan Street
Portland, Oregon, 97213
Phone: 503-215-6061
Email: N/A
Country: USA
Type: Hospital
Treatment: Wound Care
Chamber 1: Monoplace
Chamber 2: Monoplace
Chamber 3: Monoplace

Submitted By: HMT Staff
Comments:

Keyword Search

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1140 Cheryl Road, West Palm Beach, FL 33417
1-(561)-640-4546
Fax-1-(561)-640-4457
info@hbomedtoday.com
Webmaster

130

PAGE 1 OF 9 PAGES.

front pocket

MAPQUEST.

Start: 1519 Alaskan Way S
Seattle, WA 98134-1102, US

End: 925 Sw Naterlin Dr
Newport, OR 97365-5208, US

Notes:

HOME LOANS LoanWeb

START HERE

- [Pre-Qualify For a Loan](#)
- [How Much Can I Borrow?](#)
- [What Will My Payments Be?](#)
- [15 or 30 Year Term](#)

Loan Types

Loan Amounts

Area Codes



- [Refinance](#)
- [Home Equity](#)
- [Consolidate Debts](#)
- [Home Improvement](#)

Directions

Distance

Total Est. Time: 5 hours, 26 minutes **Total Est. Distance:** 302.82 miles

- | | | |
|---|---|-------------|
|  | 1: Start out going NORTH on ALASKAN WAY S toward S ATLANTIC ST. | <0.1 miles |
|  | 2: Turn RIGHT onto S ATLANTIC ST. | 0.3 miles |
|  | 3: Keep RIGHT at the fork in the ramp. | 0.2 miles |
|  | 4: Merge onto I-5 S via EXIT 2A toward PORTLAND. | 213.0 miles |
|  | 5: Take the SALEM PARKWAY / OR-99E BUSINESS exit- EXIT 260A. | 0.4 miles |
|  | 6: Merge onto OR-99E BR S. | 4.3 miles |
|  | 7: Stay STRAIGHT to go onto COMMERCIAL ST NE. | 0.1 miles |
|  | 8: Turn RIGHT onto MARION ST NE. | 0.1 miles |
|  | 9: MARION ST NE becomes OR-22 W. | 30.0 miles |
|  | 10: OR-22 W becomes OR-18 / SALMON RIVER HWY. | 22.9 miles |
|  | 11: Merge onto US-101. | 30.8 miles |
|  | 12: Turn SLIGHT LEFT onto SW NATERLIN DR. | 0.2 miles |

from pocket

**13: End at 925 Sw Naterlin Dr
Newport, OR 97365-5208, US**

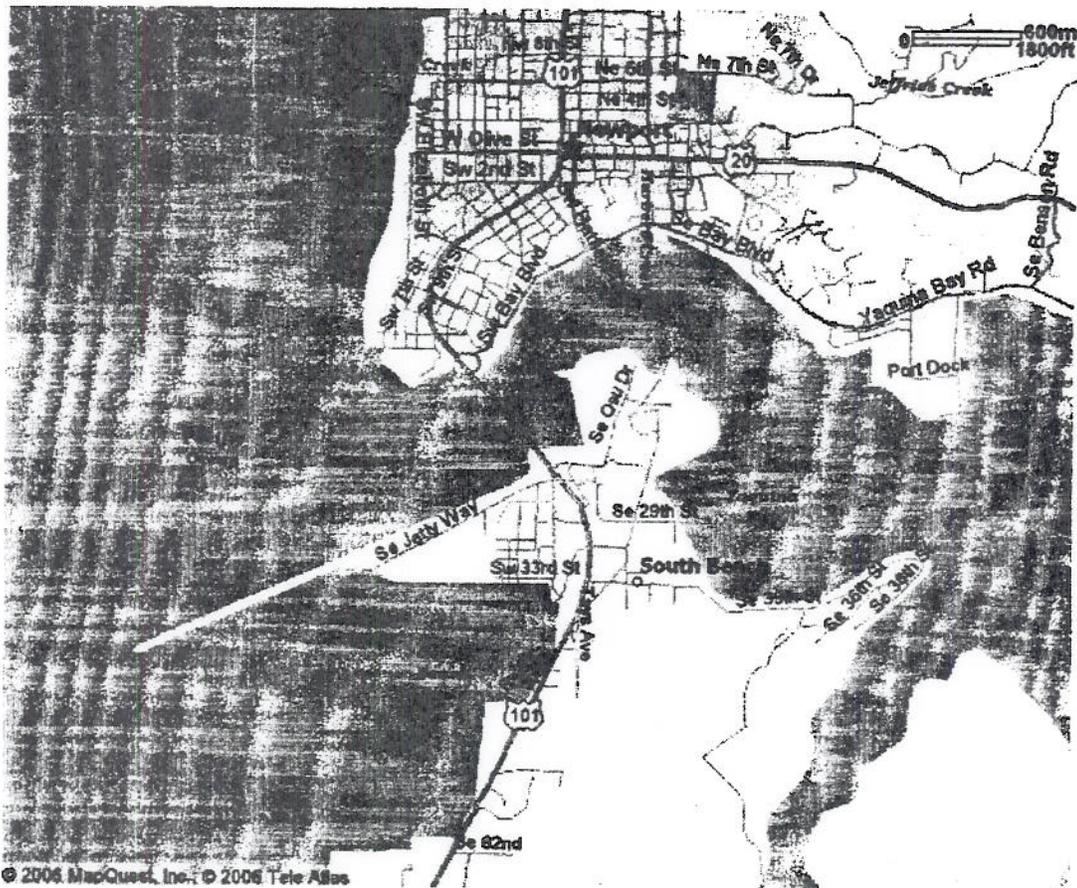
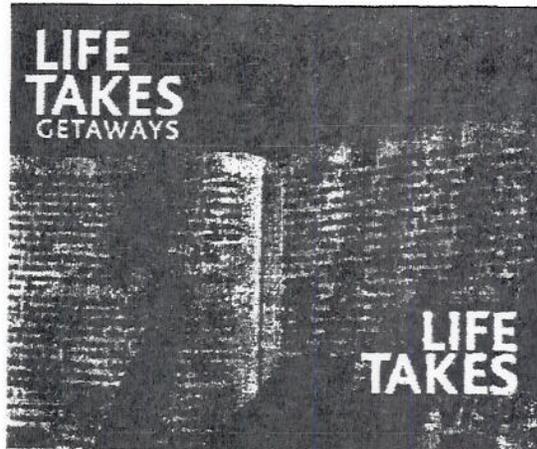
Total Est. Time: 5 hours, 26 minutes Total Est. Distance: 302.82 miles

130
front pocket

MAPQUEST.

Newport OR
US

Notes:



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front pocket

Noel, Jessica LT

From: [REDACTED] LTJG
Sent: Tuesday, February 21, 2006 11:05 AM
To: Noel, Jessica LT
Cc: [REDACTED] LTJG
Subject: RE: dive op

b(6) + 7(c)

Jessica,

Awesome, I'm so glad you guys are willing to come down and give it a shot. I've been finding it really helpful talking to STA Yaquina Bay about the weather down there, because they know the bar so well and they can tell you the wave activity at the exact location of the buoy. Their number is 541-[REDACTED]

Anyway, let me know if there's anything at all I can do for you in planning this.

Thanks so much,

[REDACTED]
P.S. I am CC'ing [REDACTED] on these e-mails because when I go TAD next week he'll be your POC.

From: Noel, Jessica LT
Sent: Tuesday, February 21, 2006 10:20 AM
To: [REDACTED] LTJG
Subject: RE: dive op

Hi, [REDACTED] Well, this would certainly be a different kind of dive for us, but we'd love the challenge! Let me assemble the team, look at our schedules, forecast the weather, & we'll set a date. Sometime in the next couple weeks should work out just fine, provided the weather is good. We can schedule to be there for a couple days & cut it short if the wx is good the first day. We'll also go over to the ANT here & look at what we're dealing with since we're not familiar with buoys.

Thanks for contacting me (I'll thank [REDACTED] too) & I'll be in touch again shortly.
Jessica

From: [REDACTED] LTJG
Sent: Tuesday, February 21, 2006 10:02 AM
To: Noel, Jessica LT
Subject: dive op

LT Noel,

Good morning and happy Tuesday. [REDACTED] gave me your name as a dive-o who might be interested in helping us out...Here's what we have going on.

We (CGC FIR) have a buoy whose mooring is fouled on a reef adjacent to the north jetty in Yaquina Bay, Oregon. Since it is so close to the jetty (and in 9 feet of water) we can't pull our cutter in close enough to lift it. We need to disconnect the buoy from the mooring so that we can tow it into Yaquina Bay - this just involves using a hammer and wedge type device to undo a split key shackle. It's something pretty simple but we don't have a dive team; hence, our pickle.

We were wondering if your team would consider coming down and doing this. My XO will provide a TONO, and we can provide everything you would need. The weather makes this a little bit tricky, because if there's a decent swell at all this area is covered by breakers. So, anything we do down there would be dependent upon very good weather (this weekend I talked to the station down there and it was really calm, but the rest of this week isn't looking quite as good). Anyway, what do you think? Is this something your team might be able to do? If so, how far in advance would you need to have a date set in stone? I was thinking that if the offshore weather calms down next week (it's supposed to pick up a little this weekend) that would be a good time to do it.

b (6) + 7 (<)

Noel, Jessica LT

From: [REDACTED] M LTJG
Sent: Friday, February 24, 2006 11:51 AM
To: Noel, Jessica LT
Subject: RE: dive op

Jessica,

As for the buoy mooring and chain, you can go ahead and dump everything where it is. There's really no way that we can recover that since it's so heavy.

Here are directions from I-5 south to Tongue Point (they should probably be the same as the ones to Astoria - Tongue Point is on the road leading to Astoria (30 West) just a few miles outside of town). Take exit 36 for Longview (route 432), and proceed on that highway for about 1.5 to 2 miles. Get off the exit for the Longview Industrial Exit (there will be signs saying truck route). Follow that all the way until you hit an intersection by the Lewis and Clark bridge, and you'll see signs for Oregon Route 30 West. Take that left, go over the bridge, and go straight on route 30 for about 50 miles. You'll see the signs for Tongue Point off of 30, and the exit you'll want is right at mile post 95. Follow that road straight, say hi to the guards and tell them you're coasties, and continue following the road down...You'll see a buoy yard on your left, as well as our ship a little further back, and the road will veer to the left...You can park anywhere on the pier right next to the ship...

Any idea what time you think you'll be in Astoria on Wednesday?

I don't know who the coxswains will be, but as soon as I do I'll let you know. I had a hard time arranging things with the Station this morning because most of their people were underway...As soon as I run that plan by them and get some names, I'll let you know.

Thanks,

[REDACTED]

From: Noel, Jessica LT
Sent: Friday, February 24, 2006 11:32 AM
To: [REDACTED] M LTJG
Subject: FW: dive op

[REDACTED] - [REDACTED] brings up a good question below regarding the buoy anchor: are we just leaving it there or moving it?

Also, can you provide me directions to Tongue Point? I have the directions to Astoria & to Newport.
Thanks.

LT Jessica Noel (Hill)
USCGC HEALY
206-217-[REDACTED]

2/24/2006

Bc PAGE 7 OF 7 PAGES.
Front Pocket

RED DIVER: _____ BP: _____ PSIG MEDS: _____ PAIN: _____
 GREEN DIVER: _____ BP: _____ PSIG MEDS: _____ PAIN: _____
 STANDBY DIVER: _____ BP: _____ PSIG MEDS: _____ PAIN: _____
 DEPTH: _____ TABLE: _____ SCHEDULE: _____ REP GROUP: _____

SCUBA SUPERVISOR BRIEF

1. **PRE-DIVE CHECKS/INSPECT DIVE STATION**
 - DIVE FLAG, PERSONNEL GEAR, EMT KIT, LOGS, TOOLS
2. **DIVE BRIEF**
 - ASSUME THE SIDE
3. **ADDRESS THE JOB**
 - A. **HAS EVERYONE READ THE DIVE BILL (POSITIONS)?**
 - JOB/DIVE IS: _____
 - DEPTH: _____
 - BOTTOM TYPE: SAND SILT MUD ROCK
 - VISIBILITY: 1-3 4-6 7-10 11-14 15-30 > 31
 - CURRENT: _____
 - WATER TEMP: _____
 - SEA STATE: _____
 - HAZARDS: _____
 - TIDES: _____
 - B. **MEDICAL GEAR LOCATION:** _____
 - C. **EMERGENCY ASSIGNMENTS FOR DIVE STATION**
4. **ADDRESS THE ASSIGNMENTS**
 - A. **DIVERS/STANDBY**
 - DO YOU WANT TO MAKE THIS DIVE, CAN YOU CLEAR ?
 - ANY DIVES IN THE PAST 12 HOURS. ANYONE CANT DIVE?
 - ANYONE ON MEDS, ACHES, PAINS, FALSE TEETH, CONTACTS, NUMB SPOTS
 - ANYTHING I SHOULD KNOW ABOUT, TAKE A MENTAL PICTURE OF HOW YOU FEEL, TELL ME IF YOU FEEL DIFFERENT AFTER THE DIVE.
 - YOU WILL ENTER THE WATER USING: _____
 - STAY TOGETHER WHILE IN THE WATER.
 - GO NO DEEPER THAN: _____
 - STAY NO LONGER THAN: _____
 - IF ONE DIVER HITS 500 PSI BOTH DIVERS SURFACE.
 - DIVING EMERGENCY PROCEDURES / DIVER RECALL.
 - **QUESTIONS?**
 - B. **STANDBY**
 - PAY ATTENTION DURING THE DIVE.
 - I WILL BRIEF YOU BEFORE YOU ENTER THE WATER.
 - DON'T BECOME PART OF THE PROBLEM.
 - **QUESTIONS?**
 - C. **TENDERS / STANDBY TENDER**
 - POSITIVE CONTROLS OF DIVERS ON DECK.
 - RESPOND TO ALL LINE PULLS.
 - WATCH FOR BUBBLES THROUGHOUT THE DIVE.
 - STAY WITH YOUR DIVER FOR AT LEAST 10 MINUTES AFTER THE DIVE. (HANDS ON!)
 - **QUESTIONS?**
 - D. **LOGS**
 - DO YOU HAVE EVERYTHING YOU NEED?
 - USE COMMON SENSE REPEAT ALL ORDER TO AND FROM
 - FLAG ALL HOLDS/ RECORD REASONS
 - LOG BOTTOM REPORT
 - **QUESTIONS?**
5. **QUESTIONS**
6. **MAN YOUR STATIONS**
7. **RED TENDER LET ME KNOW WHEN YOU ARE READY I SUPERVISOR CHECKS**

DIVING EMERGENCY PROCEDURES

- A. **LOSS OF AIR:**
 - NOTIFY YOUR BUDDY
 - BUDDY BREATHE
 - ASCEND TO THE SURFACE
 - BLOW AND GO LAST RESORT
- B. **TRAPPED DIVER**
 - CHECK AIR SUPPLY
 - ATTACH TENDING LINE TO TRAPPED DIVER
 - TOOLS REQUIRED TO FREE DIVER
 - FOLLOW BUBBLES TO THE SURFACE
- C. **LOST DIVER:**
 - 360 LOOK UP AND DOWN, TAP TANKS
 - SURFACE AND INFORM ME
 - SOUND RECALL LOOK FOR BUBBLES
 - LAUNCH STANDBY WITH CIRCLING LINES AND LOST DIVE BUOY
 - NOTIFY CHAMBER
 - NOTIFY COMMAND AND GROUP
- D. **UNCONSCIOUS DIVER:**
 - CHECK VITAL SIGNS
 - REGULATOR IN THE MOUTH
 - TILT THE HEAD BACK AND MAINTAIN THE AIRWAY
 - BRING THE DIVER TO THE SURFACE

LINE PULL SIGNALS

- TENDER TO DIVER**
- 1 PULL "ARE YOU ALL RIGHT?" WHEN DIVER IS DESCENDING, ONE PULL MEANS "STOP"
 - 2 PULLS "GOING DOWN" DURING ASCENT, DURING ASCENT 2 PULLS MEAN "YOU HAVE COME UP TOO FAR; GO BACK DOWN UNTIL WE STOP YOU"
 - 3 PULLS "STAND BY TO COME UP"
 - 4 PULLS "COME UP"
 - 2-1 PULLS "I UNDERSTAND" OR "TALK TO ME"
- DIVER TO TENDER**
- 1 PULL "I AM ALRIGHT". WHEN DESCENDING, ONE PULL MEANS "STOP" OR "I AM ON THE BOTTOM"
 - 2 PULLS "LOWER" OR "GIVE ME SLACK"
 - 3 PULLS "TAKE UP MY SLACK"
 - 4 PULLS "HAUL ME UP"
 - 2-1 PULLS "I UNDERSTAND" OR "TALK TO ME"
 - 5 PULLS "I NEED A LINE"
- EMERGENCY SIGNALS FROM THE DIVER**
- 2-2-2 PULLS "I AM FOULED AND NEED HELP"
 - 3-3-3 PULLS "I AM FOULED BUT CAN CLEAR MYSELF"
 - 4-4-4 PULLS "HAUL ME UP IMMEDIATELY"

front pocket

PRE-DIVE CHECK LIST

- _____ CHECK PRESSURE GAUGES FOR SUFFICIENT AIR PRESSURE
- _____ ANY DIVERS TAKING ANY MEDS, ACHES OR PAINS?
- _____ ANY DIVES IN THE PAST 12 HOURS?
- _____ CAN ALL DIVERS CLEAR?
- _____ DIVERS HAVE MINIMUM EQUIPMENT (MASK, BC, WEIGHTS, KNIFE, FINS, WATCH, DEPTH GAUGE, DIVE COMPUTERS).
- _____ ZERO DEPTH GAUGES OR ENSURE DIVE COMPUTER IS ON.
- _____ ENSURE ALL QUICK RELEASES CAN BE REACHED AND PROPERLY RIGGED.
- _____ CHECK POSITION OF KNIFE TO ENSURE IT WILL NOT BE LOST IF OTHER EQUIPMENT IS JETTISONED.
- _____ CYLINDER VALVES ARE OPEN AND BACKED OFF ¼ TURN.
- _____ EACH DIVER PURGE AND BREATHE BOTH REGULATORS.
- _____ TEST POWER INFLATOR(S) CONNECTION AND OPERATION.
- _____ IF ONE DIVER SURFACES, BOTH WILL. IF YOU LOSE YOUR BUDDY, LOOK AROUND 360 DEGREES BANGING ON TANK WITH KNIFE, THEN SURFACE.
- _____ REITERATE EMERGENCY PROCEDURES, CHAMBERS LOCATION, AND MODE OF TRANSPORTATION.
- _____ VERIFY ALFA FLAG IS FLYING.
- _____ RECALL WILL BE: _____
- _____ ENSURE DIVERS KNOW THEIR DECOMPRESSION LIMITS.
- _____ GIVE PERMISSION FOR DIVERS TO ENTER THE WATER.
- _____ ENSURE DIVERS COMPLETE IN WATER CHECKS.

NEUROLOGICAL EXAMINATION

1. WHAT IS THE PAIN OR NUMBNESS?
2. WHEN WAS THE SYMPTOM NOTICED?
3. HAS THE SYMPTOM INCREASED/DECREASED SINCE ONSET?
4. HAS THE PATIENT HAD THIS BEFORE?

MENTAL STATUS (COGNITIVE FUNCTION)

- ASK THE PATIENT TO REMEMBER "RED BALL, GREEN TREE AND COUCH"
- COUNT BACKWARDS FROM 100 BY SEVEN
- SPELL WORLD BACKWARDS

COORDINATION

- WALK
- ROMBERG TEST
- HEEL SHIN SLIDE
- HEEL-TO-TOE
- FINGER-TO-NOSE
- RAPID MOVEMT

CRANIAL NERVE

- VISION (BLURRING, SPOTS, TUNNEL, GAZE)
- EYE MOVEMENTS, PUPILS
- FACIAL EXPRESSION MUSCLES
- HEARING
- VOICE (HOARSENESS, "AAH" TEST)
- SHOULDER SHRUG
- TONGUE (TWISTING WHEN OUT)

MOTOR

- UPPER BODY (GRADED 0-5, 0-PARALYSIS, 5-NORMAL)
- DELT, LATS, BL TRI, FOREARM, HAND
- LOWER BODY (GRADED 0-5, 0-PARALYSIS, 5-NORMAL)
- DUCK WALK
- SYMMETRY, TONE, JERKY
- FLEXION, EXTENSION, ADDUCTION

SENSORY

- SHARP/DULL FEELING (SAFETY PIN)
- NOT MEANT TO CAUSE PAIN
- TRUNK-AROUND LEGS AND ARMS-LENGTHWISE
- MARK AREAS WITH PEN

DEEP TENDON REFLEXES

- RESPONSES SHOULD BE EQUAL BILATERALLY
- BICEPS, TRICEPS, KNEE, AND ANKLE

SCUBA OPERATIONS

WORK LIMITS:

- NORMAL 130 FSW
- MAX 190 FSW WITH CO OR OINC PERMISSION
- 100 FSW USING SINGLE SCUBA CYLINDER WITH LESS THAN 100 SCF
- STANDBY DIVER WITH AT LEAST 100 SCF
- CYLINDER CAPACITY BELOW 60 FSW
- WITHIN NO-DECOMPRESSION LIMITS
- CURRENT LESS THAN 1 KNOT MAXIMUM
- DIVING TEAM- MINIMUM 4 PERSONS

STANDBY DIVER AS WORKING DIVER

THE STANDBY DIVER MAY BE DEPLOYED AS A WORKING DIVER PROVIDED ALL OF THE FOLLOWING CONDITIONS ARE MET:

1. SURFACE-SUPPLIED NO-DECOMPRESSION DIVE OF 60 FSW OR LESS.
2. SAME JOB/LOCATION (PORT/STRB PROPS).
3. PRIOR TO DEPLOYING THE STANDBY DIVER, THE WORK AREA SHALL BE DETERMINED TO BE FREE OF HAZARDS BY THE FIRST DIVER ON THE JOB SITE.
4. WORKING IN BALLAST TANKS OR CONFINED SPACES, BOTH DIVERS MUST BE TENDED BY A THIRD DIVER OUTSIDE THE CONFINED SPACE

Table 7-3. No-Decompression Limits and Repetitive Group Designation Table for No-Decompression Air Dives.

Depth (feet/meters)	No-Decompression Limits (min)	Group Designation															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
15	4.6	35	70	110	160	225	350										
25	7.6	20	35	55	75	100	125	160	195	245	315						
35	10.7	310	5	15	25	40	50	60	80	100	120	140	160	190	220	270	310
50	15.2	100	10	15	25	30	40	50	60	70	80	90	100				
70	21.3	50	5	10	15	20	30	35	40	45	50						
90	27.4	30	5	10	12	15	20	25	30								
110	33.5	20		5	10	13	15	20									
130	39.6	10		5	8	10											
150	45.7	5		5													
170	51.8	5															
190	59.9	5															

Table 7-4. Residual Nitrogen Timetable for Repetitive Air Dives.

Locate the diver's repetitive group designation from his previous dive along the diagonal line above the table. Read horizontally to the interval in which the diver's surface interval lies.

Next read vertically downward to the new repetitive group designation. Continue downward in this same column to the row which represents the depth of the repetitive dive. The time given at the intersection is residual nitrogen time, in minutes, to be applied to the repetitive dive.

* Dives following surface intervals of more than 12 hours are not repetitive dives. Use actual bottom times in the Standard Air Decompression Tables to compute decompression for such dives.

** If no Residual Nitrogen Time is given, then the repetitive group does not change.

Changes based on NEDU Report 13-83

Repetitive Dive-Depth (feet/meters)	NEW GROUP DESIGNATION																	
	Z	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A		
20	6.1	..	..	..	..	..	..	..	..	399	279	208	159	120	88	62	39	18
30	12.2	257	241	213	187	161	138	116	101	87	73	61	49	37	25	17	7	5
40	18.2	122	117	107	97	88	79	70	61	52	44	36	30	24	17	11	5	3
50	24.4	84	80	73	68	61	54	48	43	38	32	28	23	18	13	8	4	2
60	30.5	64	62	57	52	48	43	38	34	30	26	22	18	14	10	7	3	1
70	36.6	52	50	46	43	39	35	32	28	25	21	18	15	12	9	6	3	1
80	42.7	42	40	38	35	32	29	26	23	20	18	15	12	10	7	5	2	1
90	48.8	37	36	33	31	28	26	23	20	18	15	13	11	9	6	4	2	1
100	54.8	32	31	29	27	25	22	20	18	16	14	11	10	8	6	4	2	1

Times (Minutes)

REPETITIVE DIVE WORKSHEET

DATE



1. PREVIOUS DIVE:

_____ minutes Standard Air Table No-Decompression Table
 _____ + _____ = _____ feet Surface Table Using Oxygen Surface Table Using Air
 _____ repetitive group letter designation

2. SURFACE INTERVAL:

_____ hours _____ minutes on surface
 _____ repetitive group from item 1 above
 _____ new repetitive group letter designation from Residual Nitrogen Timetable

3. RESIDUAL NITROGEN TIME:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ new repetitive group letter designation from item 2 above
 _____ minutes, residual nitrogen time from Residual Nitrogen Timetable or bottom time of previous Sur D dive

4. EQUIVALENT SINGLE DIVE TIME:

_____ minutes, residual nitrogen time from item 3 above or bottom time of previous Sur D dive
 + _____ minutes, actual bottom time of repetitive dive
 = _____ minutes, equivalent single dive time

5. DECOMPRESSION FOR REPETITIVE DIVE:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ minutes, equivalent single dive time from Item 4 above
 Decompression from (check one):

Standard Air Table No-Decompression Table
 Surface Table Using Oxygen Surface Table Using Air

	<u>Depth</u>	<u>Water</u>	<u>Chamber</u>
Decompression Stops:	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes

_____ schedule used (depth/time)
 _____ repetitive group letter designation

Figure 7-8. Repetitive Dive Wor:

REPETITIVE DIVE WORKSHEET

DATE



1. PREVIOUS DIVE:

_____ minutes Standard Air Table No-Decompression Table
 _____ + _____ = _____ feet Surface Table Using Oxygen Surface Table Using Air
 _____ repetitive group letter designation

2. SURFACE INTERVAL:

_____ hours _____ minutes on surface
 _____ repetitive group from item 1 above
 _____ new repetitive group letter designation from Residual Nitrogen Timetable

3. RESIDUAL NITROGEN TIME:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ new repetitive group letter designation from item 2 above
 _____ minutes, residual nitrogen time from Residual Nitrogen Timetable or bottom time of previous Sur D dive

4. EQUIVALENT SINGLE DIVE TIME:

_____ minutes, residual nitrogen time from item 3 above or bottom time of previous Sur D dive
 + _____ minutes, actual bottom time of repetitive dive
 = _____ minutes, equivalent single dive time

5. DECOMPRESSION FOR REPETITIVE DIVE:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ minutes, equivalent single dive time from item 4 above
 Decompression from (check one):

Standard Air Table No-Decompression Table
 Surface Table Using Oxygen Surface Table Using Air

	<u>Depth</u>	<u>Water</u>	<u>Chamber</u>
Decompression Stops:	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes

_____ schedule used (depth/time)
 _____ repetitive group letter designation

Figure 7-8. Repetitive Dive Work

REPETITIVE DIVE WORKSHEET

DATE



1. PREVIOUS DIVE:

_____ minutes Standard Air Table No-Decompression Table
 _____ + _____ = _____ feet Surface Table Using Oxygen Surface Table Using Air
 _____ repetitive group letter designation

2. SURFACE INTERVAL:

_____ hours _____ minutes on surface
 _____ repetitive group from item 1 above
 _____ new repetitive group letter designation from Residual Nitrogen Timetable

3. RESIDUAL NITROGEN TIME:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ new repetitive group letter designation from item 2 above
 _____ minutes, residual nitrogen time from Residual Nitrogen Timetable or bottom time of previous Sur D dive

4. EQUIVALENT SINGLE DIVE TIME:

_____ minutes, residual nitrogen time from item 3 above or bottom time of previous Sur D dive
 + _____ minutes, actual bottom time of repetitive dive
 = _____ minutes, equivalent single dive time

5. DECOMPRESSION FOR REPETITIVE DIVE:

_____ + _____ = _____ feet, depth of repetitive dive
 _____ minutes, equivalent single dive time from item 4 above
 Decompression from (check one):

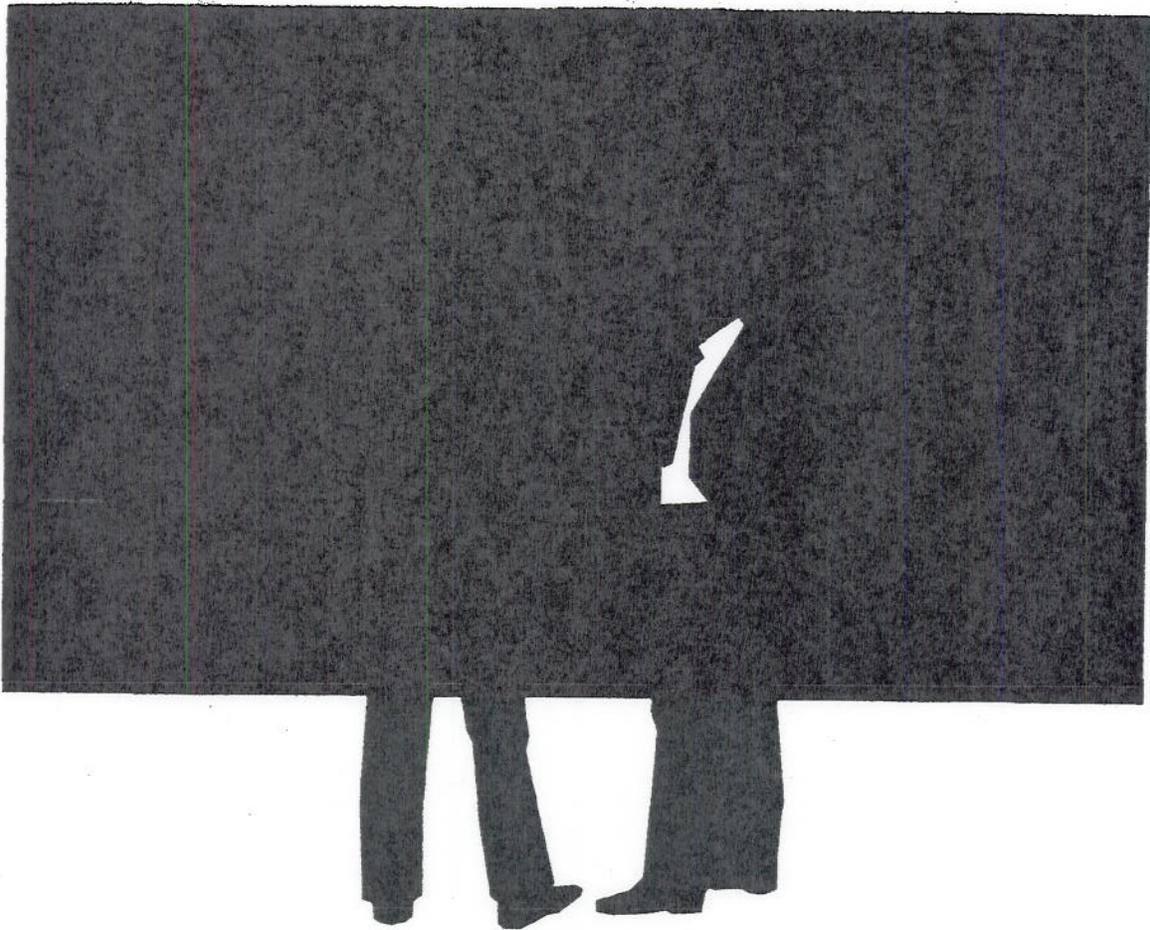
Standard Air Table No-Decompression Table
 Surface Table Using Oxygen Surface Table Using Air

Decompression Stops:	Depth	Water	Chamber
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes
	_____ feet	_____ minutes	_____ minutes

_____ schedule used (depth/time)
 _____ repetitive group letter designation

Figure 7-8. Repetitive Dive Work:

Supervisor Info



HEALYINST 1000.1

Enclosure (2)

DIVING SAFETY CHECK-OFF SHEET

Ref: (a) U.S. Navy Diving Manual

1. At approximately _____ this date, HEALY divers will conduct underwater work in the vicinity of the ship, the nature of which will be:

Estimated time for completion of this work is _____.

2. In accordance with Reference (a) the following precautions will be completed prior to the commencement of diving operations. Diving operations will not commence until all required signatures are received and the form is returned to the diving supervisor: _____. This form will be kept on the Quarterdeck (Bridge if underway) until the conclusion of diving operations.

____ DIVE SUPERVISOR (DS)

- ____ DS a. Nearest Operational Recompression/Treatment Facility contacted:
_____. Phone Number: _____.
- ____ DS b. Notify other units in the area of dive plans and how Sonar and vessel traffic will affect diving safety.
- ____ DS c. Complete emergency assistance checklist.
- ____ EOW d. Lock and tag out shafts and pitch setters (if applicable).
- ____ EOW e. Tag out rudder.
- ____ EOW f. Tag out sea suction and discharges in the proximity of diving operations.
- ____ EOW g. Tag out boiler bottom blow valve if divers will be working in the area.
- ____ EOW h. List all equipment and machinery presently in operation:

- ____ EOW i. Ensure no machinery is started or secured without the permission of the OOD and notification of the diving supervisor.
- ____ OOD j. Secure and tag out all SONAR, Fathometers, and underwater electrical equipment.
- ____ OOD k. Hoist CODE ALFA on the outboard yard or where best seen.
- ____ OOD l. List any safety hazards aboard this ship or in the vicinity of the ship that may affect the safety of the divers.

HEALYINST 1000.1

___ OOD m. Prior to commencing the diving operations and every 15 minutes thereafter until the completion of diving operations pass the following word over the 1MC (omit inapplicable parts):

"There are divers working over the side, do not operate any underwater equipment, rotate screws, cycle rudder(s), take suction from or discharge to the sea, blow or vent any tanks, activate sonar, fathometer or other underwater electronic equipment, open or close any valve before checking with the diving supervisor _____."

___ OOD n. Upon completion of diving operations pass the following word over the 1MC. "Diving operations are complete, normal and routine work may be carried out in accordance with previous instructions."

3. This certifies that the above precautions have been taken, except as noted:

OOD: _____ DATE/TIME: _____

Diving Supervisor _____

___ OOD o. Notified that diving operations are complete.

___ EOW p. Notified that diving operations are complete.

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Enclosure (2)

DIVING SAFETY CHECK-OFF SHEET

Ref: (a) U.S. Navy Diving Manual

1. At approximately _____ this date, HEALY divers will conduct underwater work in the vicinity of the ship, the nature of which will be:

Estimated time for completion of this work is _____.

2. In accordance with Reference (a) the following precautions will be completed prior to the commencement of diving operations. Diving operations will not commence until all required signatures are received and the form is returned to the diving supervisor: _____ This form will be kept on the Quarterdeck (Bridge if underway) until the conclusion of diving operations.

____ DIVE SUPERVISOR (DS)

____ DS a. Nearest Operational Recompression/Treatment Facility contacted:
____ Phone Number: _____

____ DS b. Notify other units in the area of dive plans and how Sonar and vessel traffic will affect diving safety.

____ DS c. Complete emergency assistance checklist.

____ EOW d. Lock and tag out shafts and pitch setters (if applicable).

____ EOW e. Tag out rudder.

____ EOW f. Tag out sea suction and discharges in the proximity of diving operations.

____ EOW g. Tag out boiler bottom blow valve if divers will be working in the area.

____ EOW h. List all equipment and machinery presently in operation:

____ EOW i. Ensure no machinery is started or secured without the permission of the OOD and ~~to~~ notification of the diving supervisor.

____ OOD j. Secure and tag out all SONAR, Fathometers, and underwater electrical equipment.

____ OOD k. Hoist CODE ALFA on the outboard yard or where best seen.

____ OOD l. List any safety hazards aboard this ship or in the vicinity of the ship that may affect the safety of the divers.

HEALYINST 1000.1

____ OOD m. Prior to commencing the diving operations and every 15 minutes thereafter until the completion of diving operations pass the following word over the IMC (omit inapplicable parts):

"There are divers working over the side, do not operate any underwater equipment, rotate screws, cycle rudder(s), take suction from or discharge to the sea, blow or vent any tanks, activate sonar, fathometer or other underwater electronic equipment, open or close any valve before checking with the diving supervisor _____."

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OOD: _____ DATE/TIME: _____

Diving Supervisor _____

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Diving Supervisor _____

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____ EOW p. Notified that diving operations are complete.

HEALYINST 1000.1

Enclosure (2)

DIVING SAFETY CHECK-OFF SHEET

Ref: (a) U.S. Navy Diving Manual

1. At approximately _____ this date, HEALY divers will conduct underwater work in the vicinity of the ship, the nature of which will be:

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2. In accordance with Reference (a) the following precautions will be completed prior to the commencement of diving operations. Diving operations will not commence until all required signatures are received and the form is returned to the diving supervisor: _____. This form will be kept on the Quarterdeck (Bridge if underway) until the conclusion of diving operations.

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____ DS a. Nearest Operational Recompression/Treatment Facility contacted:
____ Phone Number: _____

____ DS b. Notify other units in the area of dive plans and how Sonar and vessel traffic will affect diving safety.

____ DS c. Complete emergency assistance checklist.

____ EOW d. Lock and tag out shafts and pitch setters (if applicable).

____ EOW e. Tag out rudder.

____ EOW f. Tag out sea suction and discharges in the proximity of diving operations.

____ EOW g. Tag out boiler bottom blow valve if divers will be working in the area.

____ EOW h. List all equipment and machinery presently in operation:

____ EOW i. Ensure no machinery is started or secured without the permission of the OOD and ~~to~~ notification of the diving supervisor.

____ OOD j. Secure and tag out all SONAR, Fathometers, and underwater electrical equipment.

____ OOD k. Hoist CODE ALFA on the outboard yard or where best seen.

____ OOD l. List any safety hazards aboard this ship or in the vicinity of the ship that may affect the safety of the divers.

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____ OOD n. Upon completion of diving operations pass the following word over the IMC. "Diving operations are complete, normal and routine work may be carried out in accordance with previous instructions."

3. This certifies that the above precautions have been taken, except as noted:

OOD: _____ DATE/TIME: _____

Diving Supervisor _____

____ OOD o. Notified that diving operations are complete.

____ EOW p. Notified that diving operations are complete.

PHONE NUMBERS

VTS Seattle 217-6050

Group Seattle 217-~~6000~~ 6001

Station Seattle 217-6750

SUPRTCEN Seattle 217-6408

USCGC POLAR STAR 217-6260

USCGC BAYBERRY 217-6540

USCGC MARIPOSA 217-~~700~~ 6850

USCGC MIDGETT 217-6280

USCGC MELLON 217-6290

Virginia Mason (206)583-6543 for hyperbaric chamber
(206)583-6433 for the emergency room

Bangor COMSUBGRU9 Diving Medical Officer (360)396-6530
24-hour number for DMC (360)396-7541

Keyport Dive Locker (Chamber manned 24hrs) (360)396-2522/2563

NOAA Hazmat Department (206)526-6317 for technical advice on
diving in contaminated water.

EMERGENCY CONSULTATION (24 HOURS A DAY)

1. Divers Alert Network (919) 684-8111
2. Navy Experimental Dive Unit (904) 230-3100
3. Naval Medical Research Institute (202) 295-1839
4. Naval Safety Center (804) 444-1292

5. LT ~~██████████~~ 850-~~██████████~~ 527-~~██████████~~

6. ~~Senior Chief~~ ~~██████████~~ 850-527-~~██████████~~

b(6) + 7(c)

ENCLOSURE

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5/07/96

DIVING SUPERVISOR CHECKLIST

1. _____ Notify divers' dept/div heads of dive ASAP.
2. _____ Notify all divers of pre-dive tasks and duties.
3. _____ Complete the Emergency Action Checklist.
4. _____ Diving Officer and supervisor plan the dive.
5. _____ Diving Officer briefs CO and gets okay to dive.
6. _____ Notify all applicable units and facilities.
7. _____ Verify Ship Safety Check-Off Sheet complete.
8. _____ ~~Inspect the dive station and diving area. Ensure that water entry and exit procedures are in place.~~
9. _____ Ensure O2 Kit, AmbuBag and stretcher are available.
10. _____ Verify PMS Pre-dive/Post-dive Checklist complete.
11. _____ Ensure all equipment is checked, loaded or staged.
12. _____ Ensure QOD has been briefed, comco is at the quarterdeck/bridge, and Alpha is ready to fly.

13. _____

brief

237-446

DIVING CHECK OFF LIST

- 1. Determine and contact closest chamber.
- 2. Set up cones with nearest CG station.
- 3. Set up transportation mode/route to chamber.
- 4. Brief team meeting to discuss upcoming job, gear needed, departure time, and personal responsibilities.
- 5. Load boat with needed gear.
 - A. Personal dive gear (including Viking suits)
 - B. SCUBA tanks
 - C. Regulator Repair Kit
 - D. Supervisor's Kit

Dive log

SCUBA charts

Supplies

USN Navy Dive Manual Volume 1

Code Alpha/Spart diver flags

Information binder

Knife kit

E. Medical kit

Comms equipment kit

Flare kit

Boat log

F. Dinner

G. ...

H. ...

I. ...

J. ...

PRE-DIVE CHECKLIST

1. _____ Any dives in the last 12 hours?
2. _____ Any divers on medication or have pain?
3. _____ Can all divers clear?
4. _____ Ensure CO2 Cartridges are properly installed and that BC and CO2 puller are not constrained.
5. _____ Ensure quick releases secure and can be reached.
6. _____ Ensure cylinder valve is opened and backed off 1/4.
7. _____ Ensure reserve valve is in the up position.
8. _____ Check BC/Drysuit power inflators for air/secure.
9. _____ Breathe primary/octopus and check mouthpieces.
*Don't breath regulators if icing conditions.
10. _____ Check pressure gauges for sufficient air.
11. _____ Zero out depth gauges. Ensure divers have watch.
12. _____ Check position of knife ensuring it will not be lost if other equipment jettisoned.
13. _____ Ensure weight belt is outside all other straps.
14. _____ Don SCUBA mask. Ensure defog solution has been used. Ensure that hair is free from inside of seal and that all divers have a good tight seal.
15. _____ Don ASA. Ensure pressure equalizer pad is adjusted and secure. Ensure defog solution has been used. Ensure hair is free from inside of seal. Tighten straps starting with bottom 2 and work up. Ensure harness is as low as possible on head so that the two lower straps of the harness put pressure on base of diver's skull
16. _____ Eng ASA. Have diver inhale deeply to activate positive pressure. Ensure breathing air is set. Have diver hold breath and listen for air leakage. Insert two fingers between sealing edge and face. A strong air flow should be heard.
17. _____ Comm check with quarterdeck/bridge. Hoist Alpha.
18. _____ Ensure divers are physically and mentally ready for the dive. Ask for any last questions from anyone.
19. _____ Verify alpha flag is flying. Launch dive buoy.
20. _____ Give instructions for divers to enter the water.
21. _____ Ensure that divers are in their in water clearing.
22. _____ Monitor divers if needed.

ENCLOSURE(3)

SCUBA PRE-DIVE CHECKS

MINIMUM EQUIPMENT: TANKS, REGS, BC/DRYSUIT, COMMS/TENDING LINES, DIVE SUP KIT, CODE ALFA, O₂, AMBU KIT, STRETCHER, WEIGHTS, DIVER RECALL, RADIO, PREMISSION/PREDIVE PMS COMPLETE.

STATION SETUP: DIVERS GET DRESSED, TENDERS STAGE GEAR, REVIEW THE FOL: TAGOUTS, CODE ALPHA, PORT OPS NOTIFIED, CHASE BOAT, WATER ENTRY & EXIT, MEDEVAC PLAN, SHIP MOVEMENTS.

DIVE BRIEF: ASSUME THE SIDE, EXPLAIN JOB, MAX D & BT, EP'S.

DIVER CHECKS: OK TO MAKE DIVE, ANY DIVES IN PAST 12 HOURS, CAN CLEAR, ON MEDS, ANYTHING I SHOULD KNOW ABOUT, MAKE A MENTAL NOTE, STAY TOGETHER, TRACK YOUR MAX D & BT, SURFACE AT 500 PSI OR ON RESERVE, LOSE SIGHT DO A 360 & SURFACE, TRAPPED DIVER ATTEMPT TO FREE, TIE TENDING LINE, CHECK BOTTLE PSI, MAX D & BT, SURFACE, DEPLOY STBY WITH TOOLS.

STBY DIVER: STAY ALERT, IF NEEDED WILL BRIEF PRIOR TO DEPLOYING, WATER ENTRY, FOLLOW TENDING LINE.

FOR UNCONSCIOUS DIVER: REG IN MOUTH, DO NOT PURGE, USE OWN BC, DUMP WEIGHTS IF NEC, CONTROLLED ASCENT, HEAD BACK, CHECK VITALS.

COXSWAIN: FUEL, PADDLES, ANCHOR, PFD, LOST DIVER BUOY WITH CIRCLING LINE, BOAT CHECKS COMPLETE, COMMS WITH SHIP, TEST DRS.

DIVE SIDE: CRANE OPERATOR & SUPERVISOR STAY AT CRANE, EYES ON ME, VOICE OVERRIDES MY HAND, CRANE READY TO TRAVEL, STAGE TENDERS STANDBY TO PUSH OUT STAGE & KEEP TIGHT TEND.

DIVER INSPECTION

	RED	GREEN	STANDBY
CYLINDER PRESSURE	_____	_____	_____
ZERO OUT DEPTH GAUGE	_____	_____	_____
QUICK RELEASES CORRECT	_____	_____	_____
BC INFLATOR ATTACHED	_____	_____	_____
WEIGHT BELT OUTSIDE STRAPS	_____	_____	_____
KNIFE POSITION SAT	_____	_____	_____
WATCH	_____	_____	_____
CYLINDER OPEN AND BACK ¼	_____	_____	_____
CYCLE RESERVE AND LEAVE UP	_____	_____	_____
PURGE REGULATOR	_____	_____	_____
BREATHE PRIMARY REGULATOR	_____	_____	_____
BREATHE OCTOPUS	_____	_____	_____
ATTACH TENDING LINE	_____	_____	_____
COMMS CHECK	_____	_____	_____

NOTIFY OOD P

SHIP SAFETY CHECKLIST FOR DIVING
PROPELLERS AFT

DATE

The following precautions and sign-offs will be completed prior to commencement of diving operations in close proximity to HEALY's Propellers.

THE FOLLOWING TAG-OUTS WILL BE COMPLETED FOR ALL DIVES ON HEALY:

PROPULSION / STEERING:

____ Disable Port and Starboard shaft start propulsion motor field switches.

____ Disable Steering Pumps

- a. STBD Rudder HPU 1A
- b. STBD Rudder HPU 1B
- c. PORT Rudder HPU 2A
- d. PORT Rudder HPU 2B

____ STBD Shaft Turning Gear

- a. Breaker 3-112-1 (Delta)

____ PORT Shaft Turning Gear

- b. Breaker 3-112-1 (Charlie)

UNDERWATER ACCOUSTICS:

____ ADCP XCDR VM-150

ADCP XDCR VM-300

- a. IC ROOM RACK #18

____ BATHY 2000 XCDR

- a. IC ROOM RACK #18

____ BATHY 1500 DEPTH FINDER

- a. 05-52-1 (Breaker #6) - Bridge

____ SEABEAM XCDR

- a. Elec/Comp. Lab Seabeam Rack

____ CATHODIC PROTECTION AFT

- a. 3-113-1 (Foxtrot)

____ SPERRY DOPPLER SPEED LOG

- a. Master Unit - ECC

All Tag-outs will remain in place until the completion of Diving Operations.

EOW

ENCLOSURE 130

DIVING EMERGENCY ASSISTANCE CHECKLIST

Recompression chamber

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Air Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Sea Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Surface Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Hospital (if different from chamber)

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Communications Assistance

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Other diving units in the area

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Navy Experimental Diving Unit (NEDU) emergency consult: (850)234-4351
Naval Diving and Salvage Training Center (NDSTC): (850)234-4651
Naval Medical Research Institute (NMRI): (202)295-1839
Diver Alert Network (DAN): (919)684-8111

DIVE OFFICER: _____ **DATE:** _____

DIVING EMERGENCY ASSISTANCE CHECKLIST

Recompression chamber

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Air Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Sea Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Surface Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Hospital (if different from chamber)

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Communications Assistance

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Other diving units in the area

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Navy Experimental Diving Unit (NEDU) emergency consult: (850)234-4351
Naval Diving and Salvage Training Center (NDSTC): (850)234-4651
Naval Medical Research Institute (NMRI): (202)295-1839
Diver Alert Network (DAN): (919)684-8111

DIVE OFFICER: _____ **DATE:** _____

ENCLOSURE 00

DIVING EMERGENCY ASSISTANCE CHECKLIST

Recompression chamber

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Air Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Sea Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Surface Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Hospital (if different from chamber)

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Communications Assistance

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Other diving units in the area

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Navy Experimental Diving Unit (NEDU) emergency consult: (850)234-4351
Naval Diving and Salvage Training Center (NDSTC): (850)234-4651
Naval Medical Research Institute (NMRI): (202)295-1839
Diver Alert Network (DAN): (919)684-8111

DIVE OFFICER: _____ **DATE:** _____

3150
HEALYINST 4000.1

b(6) + 7(c)

Enclosure (1)

DIVING EMERGENCY ASSISTANCE CHECKLIST

Recompression chamber

Name MEMORIAL UNIVERSITY - MEDICORP - ST. JOHN'S POC: DR. [REDACTED]
Phone Number: (709) 737-[REDACTED] Radio freq / Call Sign: _____
Response Time: ONLINE

Air Transportation

Name RESUE COORDINATION CENTRE POC: _____
Phone Number: 1-800-565-1582 Radio freq / Call Sign: _____
Response Time: 30 MINUTES + DISTANCE

Sea Transportation

Name HEALY POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Surface Transportation

Name N/A POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Hospital (if different from chamber)

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Communications Assistance

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Other diving units in the area

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Navy Experimental Diving Unit (NEDU) emergency consult: (850)234-4351
Naval Diving and Salvage Training Center (NDSTC): (850)234-4651
Naval Medical Research Institute (NMRI): (202)295-1839
Diver Alert Network (DAN): (919)684-8111

DIVE OFFICER: [REDACTED], SSDO

FFGL

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HEALYINST 1000.1

Enclosure (1)

DIVING EMERGENCY ASSISTANCE CHECKLIST

Recompression chamber

Name MEMORIAL UNIVERSITY - MEDICAL FACILITY POC: _____
Phone Number: 737-6433 Radio freq / Call Sign: _____
Response Time: _____

Air Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Sea Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Surface Transportation

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Hospital (if different from chamber)

Name ST JOHN'S GENERAL HOSPITAL POC: _____
Phone Number: 737-6300 Radio freq / Call Sign: _____
Response Time: _____

Communications Assistance

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Other diving units in the area

Name _____ POC: _____
Phone Number: _____ Radio freq / Call Sign: _____
Response Time: _____

Navy Experimental Diving Unit (NEDU) emergency consult: (850)234-4351
Naval Diving and Salvage Training Center (NDSTC): (850)234-4651
Naval Medical Research Institute (NMRI): (202)295-1839
Diver Alert Network (DAN): (919)684-8111

DIVE OFFICER: LTJG [REDACTED]

DATE: 2 JUN 00

b (6) + 7 (c)

PRE-DIVE BRIEF

Assume the side

No joking around. Nobody leaves side without supervisor knowing.

Identify all members roles

Supervisor, divers, tenders, stage handlers, comms.

Analyze dive operation plan

Purpose, gear, tools, max depth, bottom time, conditions, temps, current/tide, hazards, deployment/retrieval, special instruction.

Physical state of divers

Healthy? Medications? Alcohol? Clear? Contacts? Any aches/pains? Hydrated? Rested? Has any one been diving in the last 12 hours? Any problems at all?

Winch Operator

Ensure up and down speeds understood. Voice overrules hand signals. Listen only to the supervisor.

Stage Handlers/Tenders

Good firm grip on divers. Proper tension in tending line. Line signals will be used. Ensure line signals are understood. Do not get complacent/sloppy with line signals.

Extra Personnel

Comms

Comms with quarterdeck and/or divers. Repeat Verbatim. Make certain you acknowledge/are acknowledged.

Safety

Both on bottom/on deck, pay attention and keep thinking. Keep the supervisor informed. Avoid sections of hull that are not tagged out and which must be avoided. Slow ascent (less than 30fpm). Three minute stop at 15 feet on last ascent. 500psi abort.

Lost Diver Procedures

Don't let it happen! If one diver needs to surface both will. If you lose buddy, look for buddy and if you don't see buddy immediately, surface while looking in all directions. The standby diver will be launched if buddy doesn't surface.

Other Emergency Procedures

Equipment malfunction, removing diver (cold, injured, fatigued) from the water, lost comms, lost tending line, deployment of standby, abort dive parameters, notifying other units (911), closest chamber, etc.

ARE THERE ANY QUESTIONS OR COMMENTS FROM ANYONE?

3706-416

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DIVE SYSTEM READINESS: VERIFY OP'S, TAGOUTS COMPLETED; CHECK EMERGENCY BILL, STATUS BOARD, CHAMBER, MOOR, SEAS, DAY SHAPES, CODE ALPHA, RADIO, STAGE, AND DESCENT LINE.

ASSUME THE SIDE: GATHER TEAM FOR BRIEF; INTRODUCE D/O, DMO, & DMT.
EXPLAIN: JOB TO BE ACCOMPLISHED, EQUIPMENT, DEPTH, CONDITIONS

***NO SMOKING, EATING, JOKING; IF YOU NEED WATER ASK, DON'T LEAVE ***
STATION, KEEP A TIGHT SIDE, DIVES IN LAST 12 HOURS YELLOW OUT.

DIVERS: FEEL OK ABOUT THE DIVE / CLEAN / CLEAR / SEEN CORPS / MEDICAL
THINK HOW YOU FEEL NOW / GUM / TOBACCO / CONTACTS / EP'S / OK'S
HOLDS (ANSWER UP) / GOOD GRIP ON STAGE / "BOTH DIVERS" RED 1st
THEN-BUDDY / LET ME KNOW BOTTOM IN SIGHT / STAGE CLEAR / ON
BOTTOM / LEFT BOTTOM / LOSE COMMS RETURN TO STAGE / UMBILICAL
THRU BAIL / CAUTION ON THE BOTTOM / 40' O2 STOP IF STAGE MOVES
WITHOUT WARNING & YOUR OK WATCH YOUR BUDDY HE'S NOT

TENDERS: LISTEN UP & #1 ANSWER UP / KEEP AT SHORT STAY UP & OVER /
RESPOND TO ALL LINE PULLS / REPORT HOSE OVER THE SIDE / PAY
ATTENTION TO DETAIL.

STBY: STAY ALERT / ALWAYS KNOW WHERE & WHAT DIVERS ARE DOING / IF
NEEDED QUICK BRIEF, ENTER ON LADDER, PUT YOU ON UMBILICAL OR
DECENT LINE / GO THRU BAIL / VENT THE DIVER ?

PHONES: REPEAT VERBATIM / I ACKNOWLEDGE / VOICE CHANGES / NOISES /
KEEP VOLUME TURNED UP

CHARTS: KNOW CHARTS / FORMULAS / HAVE EVERYTHING NEEDED / WATCH /
I GIVE MAX D - BT - % - STAGE D, YOU GIVE ? (TAB/SCH, 1st STOP,
TRAVEL TIME, RATE, 1st EMER AIR STOP)

CONSOLE: QALED / SHIFTS / BYPASS / O2 VENTS PSI DROP / HE02 BYPASS /
PNEUMOS PURGE ON DESCENT / TRACK ON ASCENT / DEPTHS EVERY 10'

WINCH: FAMILIAR WITH OP'S / EYES ON ME / STAY AT WINCH / VOICE
OVERRIDES HAND

RACK/COMP: STATUS BOARD UP TO DATE / BLEEDS EVERY :15 / ROUNDS EVERY :30
COMP ON LINE ? / STAY ON STATION / ALL COND. NORM ON ROUNDS.

CHAMBER CREW: WINCH INSIDE TENDER / CLEAN / CLEAR / NEURO / CPR / AMBU
CONSOLE CHAMBER OPERATOR / COMMS TO COMMS / LOGS TO LOGS

EXTRAS: STAGE HANDLERS- GOOD CONTROL- LOOSE CLOTHING- WATCH HANDS/FEET
HELP SUR "D" UNDRRESSING-
BACKUP HOSE TENDERS / DESCENT LINE MAN / STBY PNEUMO / RELAY
MAN.

*** SAFETY IS PARAMOUNT- THINK BEFORE YOU ACT- ANYONE CAN SAY ***
STOP- IF YOU SEE ANYTHING WRONG SAY STOP- WE'LL STOP, MAKE
FIX AND CONTINUE ON. ANY QUESTIONS ?

DIVING OFFICER ANY THING

BRIEF D/O : KEEP TIME ON
COMPARE WATCH

Neurological Examination Checklist

(sheet 1 of 2)

(see text of Appendix H for examination procedures and definitions of terms).

Patient's Name: _____ Date/Time: _____

Describe pain/numbness: Sharp, dull, or throbbing.

Localized or hard to pinpoint.

HISTORY

Type of dive last performed: Anything unusual? Depth: _____ How long: _____

Number of dives in last 24 hours: _____

Was symptom noticed before, during, or after the dive? _____

If during, was it while descending, on the bottom, or ascending? _____

Has symptom increased or decreased since it was first noticed? _____

Have any other symptoms occurred since the first one was noticed? _____

Describe: _____

Has patient ever had a similar symptom before? Any explanation? When: _____

Has patient ever had decompression sickness or an air embolism before? _____ When: _____

MENTAL STATUS/STATE OF CONSCIOUSNESS

Handwriting, Spelling, Numerical Calculations, Memory, Behavior, Orientation

COORDINATION

Walk: _____
 Heel-to-Toe: _____
 Romberg: _____
 Finger-to-Nose: _____
 Heel Shin Slide: _____
 Rapid Movement: _____

STRENGTH (Grade 0 to 5)

Upper Body

Deltoids	L _____	R _____
Latissimus	L _____	R _____
Biceps	L _____	R _____
Triceps	L _____	R _____
Forearms	L _____	R _____
Hands	L _____	R _____

CRANIAL NERVES

Sense of Smell (I) _____
 Vision/Visual Fld (II) _____
 Eye Movements, Pupils (III, IV, VI) _____
 Facial Sensation, Chewing (V) _____
 Facial Expression Muscles (VII) _____
 Hearing (VIII) _____
 Upper Mouth, Throat Sensation (IX) _____
 Gag & Voice (X) _____
 Shoulder Shrug (XI) _____
 Tongue (XII) _____

Lower Body Toe, heel, & duck walk.

Hips

Flexion	L _____	R _____
Extension	L _____	R _____
Abduction	L _____	R _____
Adduction	L _____	R _____

Knees

Flexion	L _____	R _____
Extension	L _____	R _____

Strength: (0) Paralysis. No motion possible.

(1) Profound Weakness. Flicker or trace of muscle contraction.

(2) Severe Weakness. Able to contract muscle but cannot move joint against gravity.

(3) Moderate Weakness. Able to overcome the force of gravity but not the resistance of examiner.

(4) Mild Weakness. Able to resist slight force of examiner.

(5) Normal. Equal strength bilaterally (both sides), and able to resist examiner.

Figure H-1. Neurological Examination Checklist (sheet 1 of 2).

H-4

Neurological Examination Checklist

(sheet 2 of 2)

REFLEXES

(Grade: Normal, Hypoactive, Hyperactive, Absent)

Biceps	L _____	R _____
Triceps	L _____	R _____
Knees	L _____	R _____
Ankles	L _____	R _____

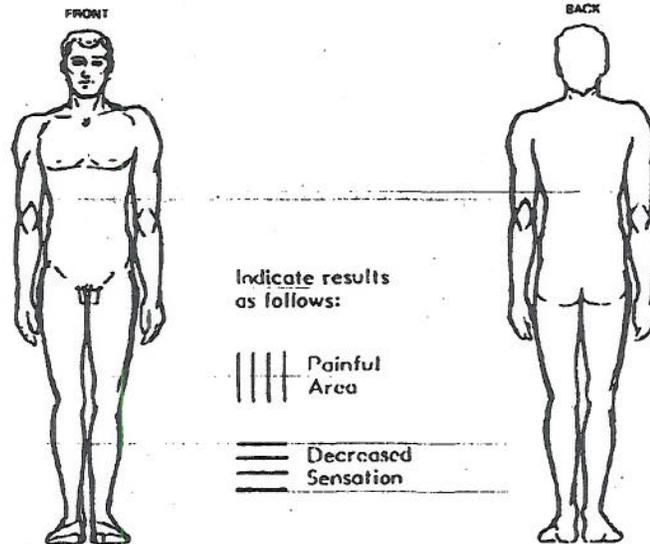
STRENGTH (cont.)

<u>Ankles</u>			
Dorsiflexion	L _____	R _____	
Plantarflexion	L _____	R _____	
<u>Toes</u>	L _____	R _____	

Sensory Examination for Skin Sensation

(Use diagram to record location of sensory abnormalities - numbness, tingling, etc.)

LOCATION



COMMENTS

Examination Performed By: _____

Figure H-1. Neurological I

SCUBA Hand Signals

Signal	Meaning	Comment	
1.	Clenched fist.	STOP	
2.	Hand flat, fingers together, palm out thumb down then hand rocking back and forth on axis of forearm.	SOMETHING IS WRONG	This is the opposite of Okay. The signal does not indicate an emergency.
3a/b.	Thumb and forefinger making a circle with three remaining fingers extended (if possible).	I AM OKAY. ARE YOU OKAY?	Divers wearing mittens may not be able to extend three remaining fingers distinctly (see 3a/b drawings of signal). Short range use.
4a.	Right hand raised overhead giving Okay signal with fingers.	OKAY ON THE SURFACE (CLOSE)	Given when diver is close to pickup boat.
4b.	Both hands touching overhead with both arms bent at 45° angle.	OKAY ON THE SURFACE (DISTANT)	Given when diver is at a distance from the pickup boat.
5.	Hand waving overhead (diver may also thrash hand in water).	DISTRESS, HELP. PICK ME UP.	Indicates immediate aid is required.
6.	Diver points to either watch or depth gauge.	WHAT TIME? or WHAT DEPTH?	When indicating time, this signal is commonly used for bottom time remaining.
7.	Two fingers up, two fingers and thumb against palm.	GO DOWN, GOING DOWN.	
8.	Four fingers pointing up, thumb against palm.	GO UP, GOING UP.	
9a.	Hand slashing or chopping at throat.	I'M OUT OF AIR.	Indicates the signaler cannot breathe.
9b.	Fingers pointing to mouth or regulator.	I NEED TO BUDDY BREATHE.	Signaler's regulator may be in or out of mouth.
10.	Hand to chest, repeated.	COME HERE.	
11.	Finger to chest, repeated.	ME or WATCH ME.	
12.	Fingers together and arm moving in an over, under, or around movement.	OVER, UNDER, or AROUND	Diver signals intention to move over, under, or around an object.
13.	Fingers and thumb spread out and hand moving back and forth in a level position.	LEVEL OFF or HOW DEEP?	
14.	Fist clenched with thumb pointing up, down, right, or left.	GO THAT WAY.	Indicates which direction to swim.
15.	Fingers clenched, thumb and hand rotating right and left.	WHICH DIRECTION?	
16.	Diver pointing to either ear.	EAR TROUBLE	Divers should ascend a few feet. If problem continues, both divers must surface.
17.	Both arms crossed over chest.	I AM COLD.	
18.	Hand extended, palm down, in short up and down motion.	TAKE IT EASY or SLOW DOWN.	
19.	Index fingers extended, one hand forward of the other.	YOU LEAD, I'LL FOLLOW.	

ENCLOSURE (130)

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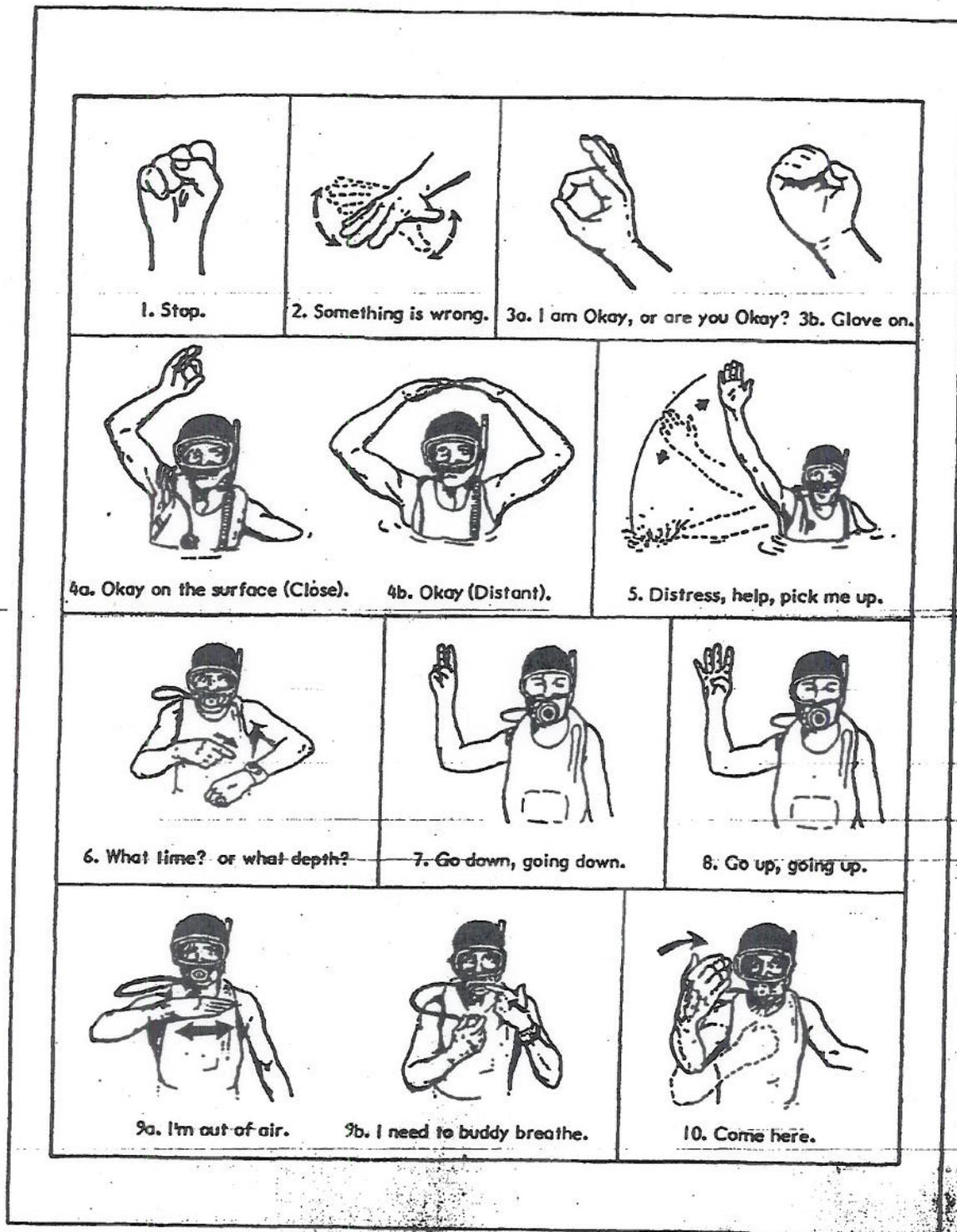


Figure 5-17. SCUBA Hand Signals

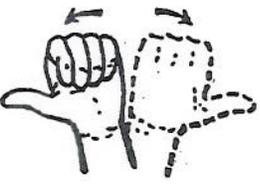
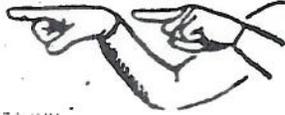
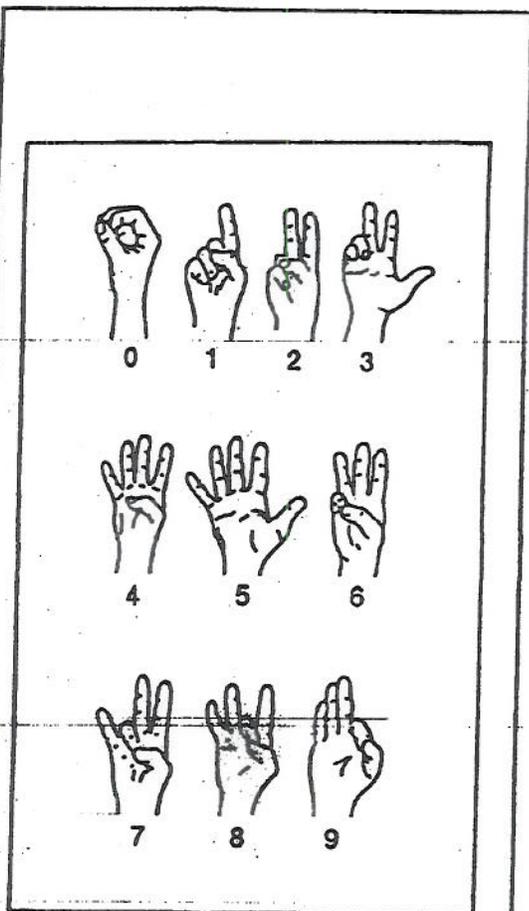
 <p>11. Me or watch me.</p>	 <p>12. Over, under, or around.</p>	 <p>13. Level off or how deep?</p>
 <p>14. Go that way.</p>	 <p>15. Which direction?</p>	 <p>16. Ear trouble.</p>
 <p>17. I am cold.</p>	 <p>18. Take it easy or slow down.</p>	 <p>19. You lead, I'll follow.</p>

Figure 5-17. SCUBA Hand Signals (sheet 3 of 4).



NIGHT DIVING SIGNALS
(Buddy at Distance)

When buddy is near, use regular hand signals in front of light.

 Something is wrong.
I require assistance.
(Large, rapid up-and-down motions with arm extended.)

 I am Okay,
Are you Okay?
(Large, slow circles with light.)

Figure 5-17. SCUBA Hand Signals:

16

SUBJECT: DIVING SIGNALS

REF: U.S. NAVY DIVE MANUAL VOL I

1. Introduction

- A. Introduce Yourself and Your topic
- B. Explain the importance of your material

2. Line-Pull Signals

A. From tender to diver

- 1 pull - "ARE YOU ALL RIGHT?"
When diver is descending, 1 pull means "STOP!"
- 2 pulls - "GOING DOWN."
During ascent, 2 pulls mean "YOU HAVE COME UP TOO FAR, GO BACK DOWN UNTIL WE STOP YOU."
- 3 pulls - "GET READY TO COME UP."
- 4 pulls - "COME UP."
- 2-1 pulls - "I UNDERSTAND." or "ANSWER THE TELEPHONE."
- 3-2 pulls - "VENTILATE."
- 4-3 pulls - "CIRCULATE."

B. From diver to tender

- 1 pull - "I AM ALL RIGHT."
When descending, 1 pull means "STOP!" or "I AM ON THE BOTTOM."
- 2 pulls - "LOWER." or "GIVE ME SLACK."
- 3 pulls - "TAKE UP MY SLACK."
- 4 pulls - "HAUL ME UP."
- 2-1 pulls - "I UNDERSTAND." or "ANSWER THE TELEPHONE."
- 3-2 pulls - "MORE AIR."
- 4-3 pulls - "LESS AIR."

C. Special signals

- 1-2-3 pulls - "SEND ME A SQUARE MARK."
- 5 pulls - "SEND ME A LINE."
- 2-1-2 pulls - "SEND ME A :

ENCLOSURE (130)

D. Emergency signals from the diver

- 2-2-2 pulls - "I AM FOULED AND NEED THE ASSISTANCE OF ANOTHER DIVER"
- 3-3-3 pulls - "I AM FOULED BUT CAN CLEAR MYSELF"
- 4-4-4 pulls - "HAUL ME UP IMMEDIATELY"

E. Searching signals (without circling line)

- 7 pulls - "GO ON OR OFF SEARCHING SIGNALS"
- 1 pull - "STOP AND SEARCH WHERE YOU ARE"
- 2 pulls - "MOVE DIRECTLY AWAY FROM THE TENDER IF GIVEN SLACK, MOVE TOWARD THE TENDER IF STRAIN IS TAKEN ON THE LIFE LINE"
- 3 pulls - "FACE YOUR UMBILICAL, TAKE A STRAIN, MOVE RIGHT"
- 4 pulls - "FACE YOUR UMBILICAL, TAKE A STRAIN, MOVE LEFT"

F. Searching signals (with circling line)

- 7 pulls - SAME
- 1 pull - SAME
- 2 pulls - "MOVE AWAY FROM THE WEIGHT"
- 3 pulls - "FACE THE WEIGHT AND GO RIGHT"
- 4 pulls - "FACE THE WEIGHT AND GO LEFT"

1) Remember when working with a circling line each subsequent circle must be in the opposite direction to avoid fouling your tending line on the buoy line.

G. Line pulls can be performed using a tending line, buddy line, umbilical or by hand contact.

1. Signals should be delivered in a forceful, exaggerated manner so there is no doubt as to the signal
2. All line pulls should be answered with the exception of 4-4-4 from diver to tender, 3 from diver to tender and 4 from tender to diver.
 - a. 4-4-4 is not answered because the tender needs to immediately start hauling in the diver.
 - b. 3 is also answered by taking in slack or hauling the diver up.
 - b. 4 from tender to diver should not be returned until the diver is actually leaving the bottom. If there is going to be a delay the diver can send 2-1 (I UNDERSTAND) followed by a 4 when he actually leaves. If the diver was fouled he would send 2-1 followed by the appropriate emergency signal.

3. Never send cross signals

ENCLOSURE(00)

3. Scuba hand signals

A. Scuba hand signals developed by the U.S. Navy are a standard for the diving world. Try to stay with established signals to avoid confusion. Under certain conditions special signals applicable to a specific mission may be devised and approved by the diving supervisor. In these cases insure a good pre-dive brief to insure all dive team members understand the signals.

SIGNAL	MEANING	COMMENT
1. Clenched fist.	STOP.	
2. Hand flat, fingers together, palm out thumb down. then hand rocking back and forth on axis of forearm.	SOMETHING IS WRONG.	This is opposite of Okay. The signal does not indicate an emergency.
3a/b. Thumb and forefinger making a circle with 3 remaining fingers extended (if possible)	I AM OKAY, ARE YOU OKAY?	Divers wearing mittens may not be able to extend 3 remaining fingers distinctly. (see 3a/b drawings of signal). Short range use.
4a. Right hand raised overhead giving Okay Signal with fingers.	OKAY ON THE SURFACE (CLOSE)	Given when diver is close to pickup boat.
4b. Both hands touching overhead with both arms bent at 45° angle.	OKAY ON THE SURFACE. (DISTANT)	Given when diver is at a distance from the pickup boat.
5. Hand waving overhead. (Diver may also thrash hand in water.)	DISTRESS, HELP, PICK ME UP.	Indicates immediate aid required.
6. Diver points to either watch or depth gauge.	WHAT TIME? or WHAT DEPTH?	When indicating time this signal is commonly used for bottom time remaining.
7. Two fingers up, two fingers and thumb against palm.	GO DOWN, GOING DOWN.	
8. Four fingers pointing up, thumb against palm.	GO UP, GOING UP.	
9a. Hand slashing or chopping at throat.	I'M OUT OF AIR.	Indicates that signaler cannot breathe.
9b. Fingers pointing to mouth or regulator.	I NEED TO BUDDY BREATHE.	Signaler's regulator may be in or out of the mouth.
10. Hand to chest, repeated.	COME HERE.	
11. Finger to chest, repeated.	ME or WATCH ME.	
12. Fingers together and arm moving in an over, under, or around movement.	OVER, UNDER, or AROUND.	Diver signals intention to move over, under, or around an object.
13. Fingers and thumb spread out and hand moving back and forth in a level position.	LEVEL OFF or HOW DEEP?	
14. Fist clenched with thumb pointing up, down, right, or left.	GO THAT WAY.	Indicates which direction to swim.
15. Fingers clinched, thumb out. hand rotating right and left.	WHICH DIRECTION?	
16. Diver pointing to either ear.	EAR TROUBLE	Divers should ascend a few feet. If problem continues both divers must surface.
17. Both arms crossed over chest.	I AM COLD.	
18. Hand extended, palm down, in short up and down motion.	TAKE IT EASY SLOW DOWN.	
19. Index fingers extended, one hand forward of the other,	YOU LEAD, ILL	

SCUBA HAND SIGNALS

 <p>1. Stop.</p>	 <p>2. Something is wrong.</p>	 <p>3a. I am Okay, or are you Okay?</p>	 <p>3b. Glove on.</p>
 <p>4a. Okay on the surface (Close).</p>  <p>4b. Okay (Distant).</p>		 <p>5. Distress, help, pick me up.</p>	
 <p>6. What time? or what depth?</p>	 <p>7. Go down, going down.</p>	 <p>8. Go up, going up.</p>	
 <p>9a. I'm out of air.</p>  <p>9b. I need to buddy breathe.</p>		 <p>10. Come here.</p>	

Figure 5-20 SCUBA Hand Signals - Continued.

SCUBA HAND SIGNALS



11. Me or watch me.



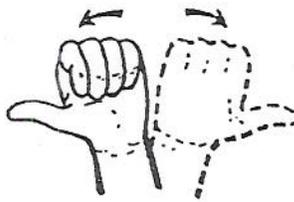
12. Over, under, or around.



13. Level off or how deep?



14. Go that way.



15. Which direction?



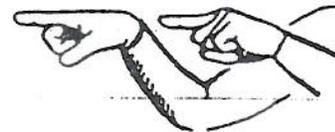
16. Ear trouble.



17. I am cold.

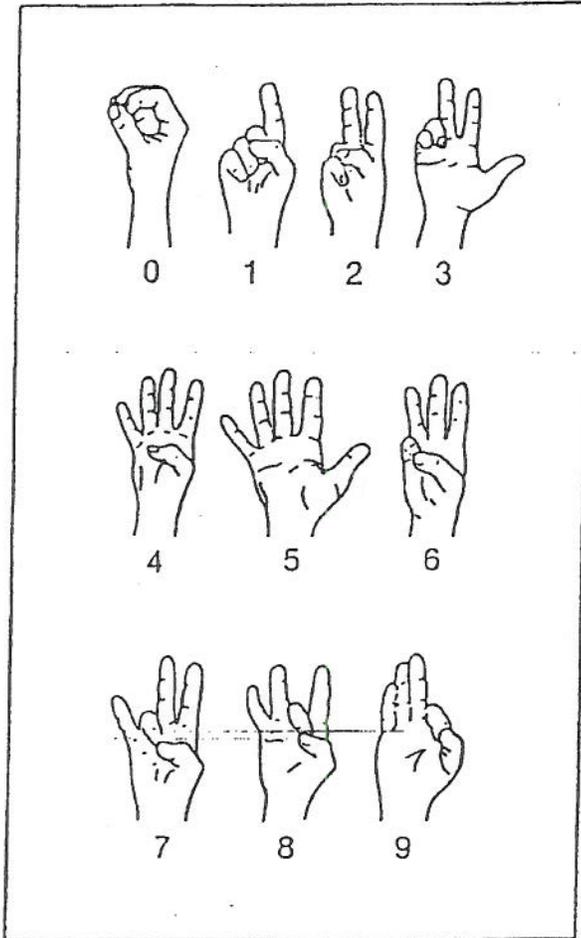


18. Take it easy or slow down.



19. You lead, I'll follow.

ENCLOSURE (00)



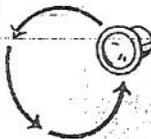
NIGHT DIVING SIGNALS

(Buddy at Distance)

When buddy is near, use regular hand signals in front of light.



Something is wrong.
I require assistance.
(Large, rapid up-and-down motions with arm extended.)



I am Okay,
Are you Okay?
(Large, slow circles with light.)

130

SUBJECT: BAROTRAUMA

REF: USN DIVE MANUAL REV.4

BACKGROUND: Divers are at risk for physical damage resulting from changes in pressure. It is important that divers understand the methods for preventing and dealing with these problems.

DEFINITION: Barotrauma is tissue damage caused by an ambient pressure change. A squeeze is barotrauma that results on descent, a reverse-squeeze is barotrauma that occurs on ascent.

REQUIRED FACTORS: The following ingredients are required for Barotrauma to occur (GRAVE):

- Gas Filled Space
- Rigid Walls
- Ambient Pressure Change
- Vascular Penetration
- Enclosed Space

TYPES OF SQUEEZES: Middle Ear Squeeze, Sinus Squeeze, Face Mask Squeeze, Inner Ear Barotrauma, External Auditory Canal Squeeze, Tooth Squeeze, Suit Squeeze...

INNER EAR BAROTRAUMA (IEB): Sudden violent inner fluid shift causing a round or oval window rupture.

- More common on descent following a forceful valsalva
- Symptom onset may be immediate or latent
- ** - Symptoms are persistent

Symptoms:

- General Vertigo Symptoms
- Neurosensory hearing loss
- Roaring tinnitus
- Evidence of Middle Ear barotrauma

Treatment:

- No Diving Ever
- Avoid Straining (muscle relaxants, decongestants)
- Strict bed-rest

MIDDLE EAR SQUEEZE:

- Most common type of squeeze
- More common in inexperienced divers
- Caused by blocked Eustacian Tube
- Predisposing factors include:
 - Common Cold
 - Abnormal Anatomy

ENCLOSURE 130

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- Runny Nose / Congestion

Symptoms:

- Pain and fullness
- Occasional bloody post nasal drip
- Mild conductive hearing loss

Treatment:

- No Diving for period of time
- Decongestants

EXTERNAL AUDITORY CANAL SQUEEZE: Occurs when the external ear canal is closed or blocked. May result from:

- Wax impaction
- Ear Infection
- Tight fitting wetsuit hood
- Ear plugs

Symptoms:

- Pain

Treatment:

- Clear blockage or closure.

SINUS SQUEEZE: Blocked passage of any sinus.

Symptoms:

- Pain

Treatment:

- No Diving
- Decongestants

TOOTH SQUEEZE: Caused by air trapped under a cavity.

Symptom:

- Pain

Treatment:

- No Diving
- Refill cavity

FACE MASK/SUIT SQUEEZE: Caused by pressure change. Remedied by adding air to mask (breathing into) or suit (inflation).

REPLACEMENT

130

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SUBJECT: VERTIGO

REF: USN DIVE MANUAL REV.4

BACKGROUND: Divers sometimes experience transient vertigo symptoms as a result of pressure and temperature changes.

DEFINITION: Vertigo is the illusion of angular motion and is usually indicative of an inner ear problem.

GENERAL SYMPTOMS:

- Nystagmus- Involuntary left/right movement of the eye.
- Nausea/Vomiting
- Imbalance
- Tinnitus (Ringing of the ears)

TYPES OF SQUEEZES: Caloric Vertigo and Alternobaric Vertigo.

CALORIC VERTIGO: An unmatched vestibular stimulation to the brain caused by a temperature change. Usually caused by a blockage in one ear (wax, hood, earplug).

- Most common on descent
- Symptoms are transient

Symptoms: General Vertigo Sx

Treatment:

- Stop descent
- Notify buddy
- Abort dive is necessary

ALTERNOBARIC VERTIGO (ABV): An unmatched vestibular stimulation caused by a pressure change.

- Most common type of vertigo in diving
- More common on ascent
- If occurs on descent, usually due to a forceful valsalva.
- Symptoms are transient

Symptoms:

- General Vertigo Sx
- Ear Pain / Fullness in the Ear

Treatment:

- Stop Ascent/Descent
- Notify Buddy
- Abort dive if necessary

DIVING CHART - AIR				Date		
NAME OF DIVER 1		DIVING APPARATUS		TYPE DRESS		
NAME OF DIVER 2		DIVING APPARATUS		TYPE DRESS		
TENDERS (DIVER 1)		TENDERS (DIVER 2)				
LEFT SURFACE (LS)	AND DEPTH (fsw)	REACHED BOTTOM (RB)	AND DESCENT TIME			
LEFT BOTTOM (LB)	TOTAL BOTTOM TIME (TBT)	TABLE & SCHEDULE USED	TIME TO FIRST STOP			
REACHED SURFACE (RS)	TOTAL DECOMPRESSION TIME (TDT)	TOTAL TIME OF DIVE (TTD)	REPETITIVE GROUP			
DESCENT	ASCENT	DEPTH OF STOPS	DECOMPRESSION TIME		TIME	
			WATER	CHAMBER	WATER	CHAMBER
	↑	10			L	
	↑	20			R	
	↑	30			L	
	↑	40			R	
	↑	50			L	
	↑	60			R	
	↑	70			L	
	↑	80			R	
	↑	90			L	
	↑	100			R	
	↑	110			L	
	↑	120			R	
	↑	130			L	
PURPOSE OF DIVE			REMARKS			
DIVER'S CONDITION			DIVING SUPERVISOR			

Figure 9-1. Air Diving Chart.

DIVING CHART - AIR

Date _____

NAME OF DIVER 1		DIVING APPARATUS	TYPE DRESS		EGS (PSIG)
NAME OF DIVER 2		DIVING APPARATUS	TYPE DRESS		EGS (PSIG)
TENDERS (DIVER 1)			TENDERS (DIVER 2)		
LEFT SURFACE (LS)	AND DEPTH (ftw)	REACHED BOTTOM (RB)	AND DESCENT TIME		
LEFT BOTTOM (LB)	TOTAL BOTTOM TIME (TBT)	TABLE & SCHEDULE USED	TIME TO FIRST STOP		
REACHED SURFACE (RS)	TOTAL DECOMPRESSION TIME (TDT)	TOTAL TIME OF DIVE (TTD)	REPETITIVE GROUP		

DESCENT	ASCENT	DEPTH OF STOPS	DECOMPRESSION TIME		TIME	
			WATER	CHAMBER	WATER	CHAMBER
	↑	10			L	
	↑	20			R	
	↑	30			L	
		40			R	
		50			L	
		60			R	
		70			L	
		80			R	
		90			L	
		100			R	
		110			L	
		120			R	
		130			L	
	↓				R	

PURPOSE OF DIVE	REMARKS
DIVER'S CONDITION	DIVING SUPERVISOR

Figure 9-1. Air Diving Chart.

Table 9-8. U.S. Navy Standard Air Decompression Table.

Depth
feet/meters

40
12.1

Bottom time (min)	Time first stop (min:sec)	Decompression stops (feet/meters)					Total decompression time (min:sec)	Repetitive group
		50 15.2	40 12.1	30 9.1	20 6.0	10 3.0		
210	1:00					2	3:20	N
250	1:00					11	12:20	O
300	1:00					19	20:20	Z

Exceptional Exposure

480	1:00					41	42:20	--
-----	------	--	--	--	--	----	-------	----

50
15.2

110	1:20					3	4:40	L
140	1:20					10	11:40	M
180	1:20					29	30:40	O
220	1:20					40	41:40	Z

60
18.2

70	1:40					2	4:00	K
100	1:40					14	16:00	M
140	1:40					39	41:00	O
180	1:40					56	58:00	Z

Exceptional Exposure

240	1:20					2	79	83:00	--
480	1:20					44	148	194:00	--

70
21.3

60	2:00					8	10:20	K	
80	2:00					18	20:20	M	
100	2:00					33	35:20	N	
120	1:40					4	47	53:20	O
140	1:40					8	56	66:20	Z
160	1:40					13	72	87:20	--

* See No Decompression Table for repetitive groups
 ** Repetitive dives may not follow exceptional exposure dives

Table 9-8. U.S. Navy Standard Air Decompression Table (Continued).

80
24.3

Bottom time (min)	Time first stop (min:sec)	Decompression stops (feet/meters)					Total decompression time (min:sec)	Repetitive group
		50 15.2	40 12.1	30 9.1	20 6.0	10 3.0		
50	2:20					10	12:40	K
60	2:20					23	25:40	M
70	2:00				7	39	48:40	N
80	2:00				13	53	68:40	O
90	2:00				19	63	83:40	Z
100	2:00				32	77	111:40	Z

Exceptional Exposure

240	1:40			6	52	120	180:40	**
480	1:40			59	107	187	355:40	**

90
28.7

40	2:40					7	10:00	J
50	2:40					25	28:00	M
60	2:20				13	40	56:00	N
70	2:20				21	54	78:00	Z
80	2:20				32	68	103:00	Z

100
30.4

30	3:00					3	6:20	I
40	2:40					2	24	29:20
50	2:40				17	39	59:20	O
60	2:20			3	23	57	86:20	Z
70	2:20			10	34	72	119:20	Z

Exceptional Exposure

180	2:00		1	29	53	118	204:20	**
360	1:40	2	42	73	111	187	418:20	**
720	1:40	55	106	122	142	178	509:20	**

* See No Decompression Table for repetitive groups
 ** Repetitive dives may not follow exceptional exposure dives

Table 9-8. U.S. Navy Standard Air Decompression Table (Continued).

Depth
feet/meters
110
33.1

Bottom time (min)	Time first stop (min:sec)	Decompression stops (feet/meters)					Total decompression time (min:sec)	Repetitive group
		50	40	30	20	10		
20							3:11	
25	3:20					3	6:40	H
30	3:20						10:40	
40	3:00				2	21	26:40	L
50	3:00						30:40	
60	3:00				18	36	57:40	N
70	2:40				33	46	75:40	O
80	2:40			7	23	57	90:40	Z
90	2:40						109:40	
100	2:40			15	37	72	127:40	Z

Depth
feet/meters
120
36.5

Bottom time (min)	Time first stop (min:sec)	Decompression stops (feet/meters)							Total decompression time (min:sec)	Repetitive group
		70	60	50	40	30	20	10		
10									1:00	
20	3:40							2	6:00	H
25	3:40								10:00	
30	3:40							14	18:00	J
40	3:20							25	31:00	
50	3:20						15	31	50:00	N
60	3:00						22	45	76:00	O
70	3:00					9	23	55	91:00	O
80	3:00							63	109:00	Z
90	3:00					19	37	74	134:00	Z
100	3:00							80	152:00	Z

Exceptional Exposure

120	2:40				10	19	47	98	178:00	**
180	2:20					37	78	137	286:00	**
240	2:20			23	35	60	97	179	398:00	**
360	2:00			41	64	93	142	187	553:00	**
480	1:40	3	41	64	93	122	142	187	656:00	**
720	1:40	3	41	64	93	122	142	187	770:00	**

Depth
feet/meters
130
39.6

10									1:00	
15	4:00							1	5:20	F
20	4:00							4	7:20	H
25	4:00							10	14:20	J
30	3:40							18	23:20	M
40	3:40						10	25	39:20	N
50	3:20							17	52:20	O
60	3:20					9	23	52	88:20	Z
70	3:20						16	62	105:20	Z
80	3:00				3	19	35	72	133:20	Z
90	3:00							80	156:20	Z

* See No Decompression Table for repetitive groups
** Repetitive dives may not follow exceptional exposure dives