



NAVAL DIVING

OPERATIONAL

CONCEPT OF EMPLOYMENT

(OCE)

27 January 2004

TABLE OF CONTENTS

INTRODUCTION	1
General	1
Threats to National Interests	2
The Occupations	3
BACKGROUND	4
National Strategic Guidance	4
Maritime Strategic Guidance	4
Capabilities and Roles.....	5
Operational Environment.....	10
Warfare Environment.....	11
EMPLOYMENT POLICY	11
Overview.....	11
Allocation of Forces.....	11
Mission Assignments and Readiness	12
Naval Diving Team Readiness Levels.....	13
Execution	15
A) Mine Countermeasures Team.....	15
B) Maritime Explosive Ordnance Disposal Team.....	17
C) Battle Damage Repair Team.....	21
D) Force Protection Support Team.....	23
E) Port Inspection Dive Teams	23
F) Ship’s Dive Teams	25
G) MOG Dive teams.....	25
Deployability – Factors and Limitations.....	26
Task Cycles.....	27
Training for War	28
Command and Control.....	28
Capability Elements for Naval Diving Teams	29
Other Government Department Support (OGD) Support.....	29
Operational Priorities	30
Special Force (Mobilization)	31
SUPPORT POLICY.....	32
Supporting Structures.....	32
Safety	32
FUTURE.....	33
Operational Concept of Employment Review	34
CONCLUSION.....	35
ANNEX A (Naval Diving Team Tasking Against Capability Elements).....	A-1/5
ANNEX B (Definitions).....	B-1/3
ANNEX C (Acronyms).....	C-1/2

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INTRODUCTION

1. **Terminology.** In general, it is policy that all maritime Diving, EOD and Mine Warfare related documents adhere to NATO standard terms and definitions as per reference A whenever possible. For the purposes of this document, a short glossary of terms used in this document is provided at Annex B, which should be read before proceeding further. It is essential that confusion or misunderstanding of terminology be minimized when specialists and general staff discuss matters relating to this document.

General

2. Naval diving teams are required to conduct a wide range of operations in peace, crisis, war, and post conflict operations, undertaking both national and international tasks for collective security as required by reference B and as amplified at references C to G. The effective integration of Clearance Diving Teams, Port Inspection Diving Teams and

Ship's Diving Teams into fleet operations will continue to provide the core warfare capabilities of Mine Counter-Measures (MCM) diving & Remotely Controlled MCM Systems, Maritime Explosive Ordnance Disposal (MEOD), Battle Damage Repair (BDR) and Force Protection (FP) Support capabilities. Naval diving teams contribute significantly to the operational readiness of Maritime Command ships and units by providing, in addition to these core capabilities, many other essential capabilities including but not limited to SUBSAR response, underwater engineering, and deep seabed intervention. Support to other government departments (OGD) is an important aspect where, in recent times, naval diving teams have been capable of providing unique services allowing seabed access over most of Canadian offshore areas.

Threats to National Interests

3. Military and Asymmetric Threats. The world has become more turbulent since the end of the Cold War, which has been followed by rising tensions and lack of stability as evidenced during the 1990s by the Gulf War, the violent break-up of Yugoslavia, vicious civil wars in Africa and the oppression of East Timor in the Far east, all conflicts involving operations by Canadian maritime forces. There is currently no immediate direct threat to Canada itself, yet Canada has embraced the concept of cooperative security with our allies on a global scale. This means that maritime forces, with their inherent flexibility and mobility, are being deployed to potentially hostile theatres in support of Canadian foreign policy and self-defence. A variety of non-military threats also exist where naval diving occupations will play a fundamental role. These include, but are not limited to:

- a. Terrorism. There is a possibility that Canada could be threatened by attempts at terrorist activities, as evidenced by the events of the terrorist attacks to the United States on 11 September 2001, against Canadian vessels or offshore facilities. Since warning time could be minimal, this factor is being incorporated into MARCOM plans and procedures;
- b. Challenges to Sovereignty. Challenges to Canadian sovereignty are most likely to be tested through international negotiation and courts, but they could also be made by periodic encroachments into disputed areas. Maintaining a Canadian maritime presence is essential to reinforce Canadian claims;
- c. Economic. Threats to free movement of goods, or to the safety and security of Canadian off-shore resources, may require intervention by maritime forces, under the guidance of and in cooperation with, the relevant OGD;
- d. Violation of Canadian Law. Maritime forces may be requested to assist in the enforcement of Canadian law when the resources or capabilities of civil authorities are insufficient, or the use of graduated force beyond the capability of OGD is required. Maritime forces must therefore maintain the skills necessary to deter and deal with violators in the Canadian ocean approaches;

- e. Environmental. The ecology of our continental shelf oceans is fragile and accidental or purposeful damage to the ecosystem, especially by spills of petroleum or toxic matter, could be disastrous. Additionally, long dormant military ordnance (found on former military ranges, explosive dumping grounds or at combat sites) may require clearance. Maritime forces must be prepared to contribute, both by assisting in prevention of such incidents, and by contributing disciplined personnel and general purpose resources to assist in response;
- f. Natural. Threats can be posed by nature, (earthquakes, storms, eruptions) without warning anywhere in the world. The general-purpose capability of maritime forces is a key element in response; and,
- g. Manmade Accidents/Disasters: This covers the wide range of man related events such as plane crashes, chemical spills, shipwrecks, bridge collapses, mine floods etc. As with natural disasters marine forces can play a key role in such events.

The Occupations

4. This Operational Concept of Employment (OCE) for the Naval Diving Occupations provides strategic guidance, general doctrine, and CMS intentions to guide all levels of leadership in the generation and employment of Clearance Diving Officers (CLDO), Clearance Divers (CD) and Port Inspection Divers (PID). This OCE also provides the framework within which informed decisions can be made concerning the training, employment and equipment requirements for the Naval Diving Occupations. Ships Team Diving is also addressed within the confines of this OCE. It is designed to be a standing document which will be updated over time and remain as a reference document for naval diving at a fundamental level. This document replaces the guidance promulgated at reference G, the Future of Naval Diving – Master Implementation Plan.
5. The naval diving occupations have been adjusted over the course of several years in response to overlapping processes to include FOND-MIP and the Cost and Capability study that preceded it. Some of these processes have been initiated within CMS while others at the NDHQ Staff level. Throughout these courses of action, it has been acknowledged by all levels of leadership that a naval diving capability must be maintained. Despite the move forward by Canada and other nations towards remotely operated vehicles, the current assessment is that the diver will not be taken entirely out of the Mine Warfare (MW) loop in the foreseeable future. It will however remain a long-term goal. Canadian and NATO doctrine for MW confirms and recognizes that Clearance Diving is a necessity. There will always be certain areas and tasks in MW, which will require a diver, as is the case of un-sweepable and un-huntable mines due to a myriad of factors. Clearance diving remains one of Canada's primary defence capabilities against underwater mines.
6. Modern naval diving was most recently reorganized in accordance with the 1995 Future of Naval Diving – Master Implementation Plan (FOND-MIP) at reference G. Its purpose was to concentrate the available diving and underwater intervention resources of

the time into what was deemed to be the most important operational and support roles for Naval Divers. This OCE will therefore modernize the broad and general policies with respect to the Clearance Diving and Reserve Diving Occupations and will provide a blueprint for future capabilities in naval diving. The Clearance Diving Occupations will, as a recommendation of the recently completed Occupational Analysis (OA), be amalgamated into a single Clearance Diver occupation. A capability based planning approach has been determined as the best method of capturing the future direction of Naval Diving and will therefore be reflected in this document.

7. The core naval diving warfare areas defined in the FOND-MIP will continue to be the cornerstone of Naval Diving in Canadian waters and abroad. There is a need however to add to these capabilities based on the rising threats and the current focus on the collective defence of North America and the worldwide terrorist threat. Force Protection has become a day-to-day reality within the CF and the diving occupations will play a more important part in the future. Force Protection Support will now be included as a new core capability of naval diving.

BACKGROUND

National Strategic Guidance

8. The Department of National Defence provides strategic level guidance for the future in Defence Strategy for 2020 at reference B, which states that the defence mission is to *Defend Canada and Canadian Interests and values while contributing to International Peace and Security*. Strategy 2020 also identifies areas of importance to be pursued in developing capabilities of the future. Naval Diving is an intrinsic part of the maritime defence capability for key areas such as Mine Warfare, Maritime Explosive Ordnance Disposal, Force Protection Support and Battle Damage Repair preparedness.

Maritime Strategic Guidance

9. Leadmark 2020 at reference D is the guiding document through which future and present guidelines for maritime operations are anticipated. The Maritime Command Operational Planning Guidance at references R and S identifies and analyzes the individual capability elements necessary to enable Maritime Command to meet the assigned mission and tasks. They describe the missions and tasks assigned to Maritime Command and articulate the concept of operations in peace, crisis and war. Capability elements not only include requirements for ships, aircraft and equipment, but also the entire range of administrative, material and training infrastructure necessary for the effective support of modern maritime forces. Flowing from the 1994 White Paper (reference B), through Leadmark 2020 (reference D) and the direction provided for maritime forces as expressed in the Maritime Commander's Planning Guidance (reference F), the stated mission is to generate and maintain combat-capable, multi-purpose Maritime Forces to meet Canada's defence objectives.

10. The Mine Warfare Blue Print to 2010 (reference E) provides guidance concerning MW in Canada with an eye to the future. Specifically it states that:

*The Canadian MCM capability will be **credible** in countering the mines most likely to be laid in littoral waters, but **limited** in the amount of equipment and personnel provided. MCM equipment will be designed to be transportable between platforms, whenever possible. MCM personnel shall be provided under the Total Force concept and be of modest numbers, but capable of expansion to larger size in the future, if necessary.*

11. The current national Mine Warfare Plan (reference I), details the collective CMS instructions for the conduct of all MW related tasks (including Maritime EOD) by Canadian Maritime Forces under national, allied or coalition command. The Clearance Diving and Reserve Port Inspection diving occupations are fundamental resources to the execution of this plan and within the architecture of the planned way ahead for MW defence in Canada.

12. CMS is the lead agency for diving in the CF, and references N and P describes the organization, responsibilities and instructions for all CF diving. At reference Q, a KINGSTON Class Concept of Operations was promulgated by CMS. That document states the operational components of the capability elements required for the KINGSTON class vessels in which Clearance Diving and MW roles are clearly defined.

Capabilities and Roles

13. Maritime operations span the entire spectrum of activities carried out by Maritime Command. There are four basic roles for naval diving:

- a. Warfare Role. The primary role for naval diving will consist of the “core capability” elements of Mine Counter-Measures (MCM), Explosive Ordnance Disposal (EOD), Battle Damage Repair (BDR) and Force Protection (FP) support. These four capability elements are principally conducted by CLDOs and CDs. Clearance Diving teams may be augmented by PID Teams (MOC R345) and Ship’s Diving Teams (of various MOCs) where the situation and tasks are warranted. Port Inspection Divers employed in the Standing PID Teams within FDUs are required to be trained in Explosive Ordnance Identification (EOI) to support these roles;
- b. Support Role. The secondary role of naval diving includes support to the Fleet, other Environmental Commanders (ECs) and other government departments (OGD). The ability to conduct engineering diving results in a significant increase in the flexibility and availability of the Fleet and is generally more cost-effective than contracting out the work. The addition of the surface supplied diving techniques to the engineering diving capability results in a measurable benefit by extending the underwater maintenance, SUBSAR and seabed intervention

capability to 100 MSW (330 FSW) depth. Surface supplied diving is also considered to be a fundamental skill within the core warfare role of BDR. Training divers within naval diving schools on behalf of all Environments realizes additional measurable benefits to the CF.

- c. Maintenance Role. The FDUs are responsible for the quality assurance and maintenance of all in-service diving and support equipment. Recompression Chamber (RCC) and support equipment maintenance will be directed by DMSS. Life support diving equipment repair and maintenance remains a fundamental role within the CD occupation.; and
- d. National Capability. With the disposal of HMCS CORMORANT it was recognized that a national seabed intervention asset would be required as a replacement. DSIS was procured as such a replacement, which gives the CF a limited capability to operate on the continental shelf for general seabed intervention. Examples of such a requirement in the past include Operation Jaggy (support to RCMP in the Atlantic), the Irving Whale incident and Operation Persistence (the Swiss Air disaster).

14. Unexpected events may require the deployment of Canadian naval divers and EOD operators to assist in national or international contingency operations as specialists or general duty personnel. Recent examples of this included the Winnipeg floods and the Swiss Air disaster where naval divers were called upon to respond in times of crisis.

15. CLDOs and CDs will continue to prepare and train for operations on three fronts:
- a. operations in support of national policies and objectives and in support of Canadian security;
 - b. operations in support of national policies and objectives in support of North American Defence; and
 - c. joint or combined deployed operations in support of National objectives and policies overseas and beyond the boundaries of North America.

16. Leadmark and the Naval Board give clear direction on the employment of reserves. The policy is that they will not be employed in an expeditionary capacity. PID Teams will continue to train and prepare for Para 15 a. and 15 b. scenarios above. The Standing Port Inspection Dive Teams may however be called upon to support Clearance Divers in sub-Para 15 c. operations where required. As a standing team they are more capable and can be better utilized as a force multiplier in certain limited task areas.

17. Stated concisely, the fundamental core warfare (as per Para 13 a.) capabilities of the CD are:

- a. Mine Countermeasures (MCM) Diving & Operation of Remotely Mine Countermeasures Systems;
 - b. Maritime Explosive Ordnance Disposal (MEOD);
 - c. Battle Damage Repair (BDR); and
 - d. Force Protection (FP) Support.
18. CDs will provide a Ready Response capability for:
- a. Improvised Explosive Device Disposal (IEDD) for devices found in military establishments within defined areas of responsibility in Canada;
 - b. Submarine Search and Rescue (SUBSAR) first line response (RCC and light-weight SSS equipment) and second line response (ROVs and/or diving); and
 - c. provision of a minimum six-person 45 metre CABA diving team on each coast.
19. Diving Support Roles (which amplifies Para 13 b.) consist of:
- a. underwater ship and infrastructure maintenance;
 - b. light salvage (defined as raising up to and including the weight of an operational Canadian maritime helicopter);
 - c. seabed search, survey and recovery to the limits of in-service seabed intervention and diving systems (continental shelf);
 - d. underwater demolitions;
 - e. inspection, maintenance and repair of critical diver life support equipment;
 - f. operation of Working Class Remote Operated Vehicle (ROV) , Inspection Class ROV, ROV Simulator, Diver Evaluation Systems, and Side Scan Sonar (SSS); ;
 - g. support for medical treatment in hyperbaric chamber;
 - h. support to JTF2; and
 - i. operate the Experimental Diving Unit (EDU) at DRDC (Toronto) in support of R&D efforts related to CF diving activities.

20. Clearance Divers will administer and operate CF diving schools at each FDU, conducting training to include:
- a. career diving courses for 71D and CD occupations;
 - b. non-career diving courses for CMS, CLS, CAS, VCDS and miscellaneous personnel as required; and
 - c. support to CFNOS, CFNES, CFFS(E), CFFS(Q), CFMWC and other agencies as required to conduct lectures, demonstrations and exercises.
21. The above listed roles and capabilities of CD will remain as the principle roles and responsibilities of the CD occupations however it is recognized that the use of highly trained clearance diving personnel alone could be wasteful of resources. Accordingly it is planned to continue with the practice of augmenting Clearance Diving Teams with Standing PID Teams, PID Teams and Ship's Team Divers (STD) wherever possible. These three types of teams provide a measurable increase in operational flexibility and cost-effectiveness in the conduct of assigned mission areas. Port Inspection Divers from the Naval Reserve Divisions will normally be employed as part of Port Security Units or within their respective regions when PSUs are not formed.
22. Inspection and Working Class ROVs (and simulators) including allocated SSS as tools for seabed intervention, search and survey will continue to be operated and supported by FDU personnel for the foreseeable future. The BOIV, which is an inspection class ROV, but may in future be upgraded to working class, will remain a PID responsibility as an OSS. Second and third level maintenance is to be conducted by maintenance contract for Working Class ROVs and where possible for Inspection Class ROVs. MCM training and assessment capability to be provided under future equipment projects will require FDUs to training and assessment equipment for evaluation purposes. It is projected that a future user-friendly diver evaluation system will remain as an "operated" system for diver training. CLDO and CD personnel must be trained in the interpretation of the results not only for diver training, but for MCM assessment of other systems, in MOGs, Formations and in deployed operations. The diver evaluation systems will be supported by FMFs directly or through a support contract as required.
23. The MW Blueprint (at reference F) provides a way ahead for Canadian Mine Warfare capabilities. The Naval Diving occupations are best suited to assume some capabilities within this specialty area. Specifically the expertise they gain in underwater remotely operating vehicles (ROVs) and their inherent underwater 3D awareness in everyday operations makes them ideally suited for manning and operating future Remote Mine-hunting and Disposal Systems (RMDS). The future mandate of the diving community has the potential to change with the recent Underwater Defence Project and the RMDS with planned ancillary systems (i.e. Remote Identification and Disposal Vehicle Subsystem - RIDV).

24. Port Inspection Divers will retain their current capabilities and tasks as listed in Annex A - Naval Diving Tasking tables. A PIDT normally consists of 10 divers and is capable of diving to 45 metres using compressed air breathing apparatus (CABA) equipment. Their roles remain essentially that of supporting the various port security missions to include:

- a. hull and jetty searches;
- b. bottom searches and limited recovery;
- c. limpet mine disposal with LMDE;
- d. beach Survey and reconnaissance;
- e. operate and maintain u/w lifting equipment;
- f. explosive Ordnance Identification (EOI); and
- g. limited Battle Damage Repair.

25. It is foreseen that the Standing PID Teams will continue to support Regular Force Clearance Divers in limited underwater engineering tasks at Fleet Diving Units. The mandate for Standing PID Teams to support underwater engineering tasks at Fleet Diving Units was previously detailed in reference G and will not change. In the event of a national emergency or crisis, Standing PIDT may be directed to support a PSU until such time as they are relieved by PID tradesmen who have been mobilized to support the PSU. The Standing PID team positions have been established as an OSS within the PID occupation. This approach will give the Standing PID more latitude while employed at a diving unit only. An On the Job Training (OJT) package will provide them with the necessary training to make them employable within the confines of underwater engineering tasks being lead and supervised by Clearance Divers. The OSS for Standing PIDT reflects the following tasks based on the principle that they will augment CD Teams:

- a. installation, removal, maintenance of underwater (u/w) patches, cofferdams;
- b. aid in dome maintenance and repair;
- c. flash up and shut down of fixed RCC;
- d. duties of RCC recorder;
- e. assist lift, tow, beach of UXO operations;
- f. basic u/w husbandry and repair;

- g. use of u/w hand tools and techniques;
 - h. maintenance of underwater facilities and seabed installations; and
 - i. as otherwise directed by FDU CO.
26. Port Inspection Divers will conduct training to include:
- a. career diving courses for the PID occupation;
 - b. support to CFFS(Q), NAVRESHQ and other agencies as required to conduct lectures, demonstrations and exercises, and
 - c. inspection class ROVs.
27. Naval Divers will continue to provide support to OGDs as tasked by higher authority. These taskings can include:
- a. support of regulatory actions of those OGDs;
 - b. aid of the Civil Power when ordered; and
 - c. general Support to OGD.

Operational Environment

28. Canadian Clearance Diving Teams must be capable of deploying globally for operations, either independently, or as part of a Canadian or allied task group. Operations can range from deep ocean operations, coastal zone operations or inland waters. They are capable of operating from ashore, from seagoing platforms and in a land environment. Clearance Divers require the ability to operate in the full range of the world's weather, climatic, oceanographic and hydrographic conditions to the limits of rules and regulations in force.

29. Port Inspection Divers must be capable of independently deploying in support of harbour defence, domestic operations and training exercises. Port Inspection Divers when worked up are capable of operating from land or from seagoing platforms. They require the ability to operate in the full range of North American weather, climatic, oceanographic and hydrographic conditions to the limits of rules and regulations in force.

30. The CD and PID occupations will maintain a limited capability to operate under ice given Canada's northern climate and long winters.

Warfare Environment

31. The Naval Diving occupations are warfare oriented but will not normally be involved with engaging hostile forces directly or independently. They are, however, to operate in areas with a Canadian or allied task group and forward operating areas (such as in a Forward Support Unit) where significant threat from hostile forces might exist. In particular, significant threats to the diving occupations exist from aircraft, missiles, small arms, torpedoes, NBC weapons, unexploded ordnance and in particular influence and non-influence sea-mines or limpet mines. In general, naval diving will only occur in areas where threat of direct attack has been reduced to a manageable/acceptable level.

32. Naval diving warfare capabilities are based on the assumption that some measure of protection is afforded the divers during the conduct of their assigned missions. Clearance Diving and Port Inspection Diving teams are relatively small in size and have a no capability for self-protection, other than small arms, while conducting their tasks. They will normally be deployed such that Canadian or allied forces can provide protection. Support to forces ashore will normally only be considered for unopposed or permissive scenarios. Planning for the conduct of naval diving operations must include the defence of such teams while exposed on land or sea.

EMPLOYMENT POLICY

Overview

33. Naval diving is a “Total Force” activity. Close cooperation between Clearance Diving, Port Inspection Diving and Ship’s Diving Teams is essential for cost-effective and safe diving operations.

Allocation of Forces

34. Naval diving teams will be deployed in accordance with current naval doctrine. The Atlantic and Pacific coastal formations will have roughly equal numbers of diving teams assigned to major ships. MOG Dive Teams (for submarine and KINGSTON Class operational diving requirements) will be maintained in Esquimalt and Halifax. Clearance divers will also continue to support the R&D effort at DRDC Toronto and in a VCDS support role for JTF2 Teams. They will also continue to be employed at MARPAC, MARLANT, MAROPSGRU 4 &5, DMRS, DMTE, DMPOR, D Dive S, and CFSAL (CFB Borden to support EOD training).

35. A Standing PID Team is made up of Standing PIDs (now an OSS as per reference Z) and will be maintained at each Fleet Diving Unit in addition to the PIDs employed at reserve units throughout the Canadian regions. PID Teams in Class A Service will be organized into four regional dive centres under the Port Security Units assigned to MAROPSGRUs Four or Five. There is a planned allocation of a ten-person team for each PSU (4 in total).

36. Training schools will continue to operate on both coasts within their specified mandates. Fleet Diving Unit (Atlantic) will continue to function as the home for the dive training standards section.

Mission Assignments and Readiness

37. Naval diving teams will conform to Table 1 below, which sets out the interim readiness levels for naval diving teams pending a new CMS readiness and Sustainment policy. Readiness definitions are:

- a. High Readiness (HR) – a completely manned and equipped team that is worked up to its full operational capability:
 - (1) H1hr and H4hr: ready response teams which are trained and equipped to respond to emergency call out at one and four hours notice respectively (team fully manned);
 - (2) H10: a completely manned and equipped warfare team which can be worked up to full operational capability within 10 days;
 - (3) H30: a completely equipped warfare team which can be worked up to full operational capability within 30 days;
- b. Normal Readiness (NR) – a team trained and equipped to conduct non-warfare diving operations:
 - (1) N30: a completely equipped support diving team which can be fully manned and worked up for a scheduled task in 30 days;
- c. Reduced Readiness (R) – a team at a reduced operational readiness level requiring in excess of 30 days notice to mobilize for operations.

Note: A new CMS Readiness and Sustainment (R&S) Policy is being staffed at the time of this writing and is expected to supersede some or all of the readiness direction contained herein. When the R&S becomes extant, a thorough change review will be conducted.

Naval Diving Team Readiness Levels		<u>LEVEL</u> (See Note 2)
This table does not signify that all teams can deploy simultaneously as there is considerable overlap in the capabilities presented and in most cases are mission dependent.		
Teams Allocated to each Fleet Diving Unit		
1. READY RESPONSE (All teams are drawn from the same duty watch. When a team is dispatched another duty watch must be called forward to assume response posture for other activities).	a) a two person domestic MEOD/IEDD team within AOR	H 1 hour (working) and H 4 hour (silent hours)
	b) a five person CABA response team; and	H 1 hour (working) and H 4 hour (silent hours)
	c) a five person SUBSAR operating team	H 1 hour (working) and H 4 hour (silent hours)
	d) a three-five person domestic MEOD Teams capable of deploying outside the AOR	H 48 hour
	f) 5 Person RCC Operator Response Team	Immediate (working) and H 4 hour (silent hours)
2. WARFARE	a) a two to six person MEOD team for EOD and/or FP Support roles; and	H 10 days ⁴
	b) an eight person 140 fsw (42msw) MCM CCDA CDT or an eight person 270 fsw (81msw) MCM CUMA CDT (see note 1 below)	H10 days ⁴
	c) Battle Damage Repair Team – Size dependent on mission (minimum 5 person up to 18+ divers when deep SSBA is required)	N 30 days ⁴
3. Standing PIDT	a) 7 person Class C or B service	H 10 days ⁴
4. EDS	a) PHANTOM	H 24 hour ⁴
	b) DSIS	N 30 day ⁴
	c) BOIV (PID Operators)	N 30 day ⁴
Regional PID Team/PSU PID Team (When activated)		
5. Regional PIDT	a) 10 person PIDT in Class A Service	R ⁴
Ship's & MOG Dive Teams		
Ship's Teams in operational warships will be required to maintain CFCD 102 standards of proficiency under the overall readiness requirements for their ship or MOG.		-
NRD Dive Team		
6. NRD Dive Team	a) minimum PIDT dive team in Class A, B or C	R ⁴

TABLE 1 - Naval Diving Team Readiness Levels

Note 1: Dependent on which MCM equipment the team is worked up in (CCDA or CUMA). The team will be at H10 in the gear they are worked up in and will be at N30 in the alternate equipment.

Note 2: Readiness notice can be accelerated in an emergency if personnel and resources are available and not otherwise tasked.

Note 3: High readiness teams should have completed an annual DAG where possible to ensure advertised readiness levels.

Note 4: Interim guidance is provided a expected new CMS R&S Policy is implemented.

Naval Diving Team Tasking Against Capability Elements

38. Tables outlining “Taskings against Capability Elements” for naval diving teams are located at Annex A.

Sustainment

39. Stocks of diving gases, spares and consumable stores kept on hand should be the minimum consistent with achieving the sustainment of teams for following general tempo of operations:

a. Ready Response by EOD Section and the six-person Diving Team:

(1) to support up to five EOD or 150fsw (45 msw) ready response actions (within the local operating area) per week;

(2) to allow for simultaneous operation of the Domestic MEOD Team and the six-person CABA diving team to a remote area anywhere in Canada for a 14 day period;

(3) to support SUBSAR operations in accordance with the Submarine Rescue Manual at reference U; and

Note: All teams are drawn from the same duty watch. When a team is dispatched another duty watch must be called forward to assume response posture for other activities.

b. Warfare Teams:

(1) to support a 30 days deployment anywhere in Canada or worldwide;

(2) under national contingency OPLANS (i.e. OPLAN NOMAD) for deployment in the EOD, MCM BDR, FP Support roles as part of a contingency task group/unit with sustainment as required by those plans, and

(3) to support a 10 day underwater engineering diving operation down to 300 fsw (91msw) from a diving tender, in the coastal operating areas.

c. Electronic Diving Systems: To support EDS Ops for 15 – 20 Days within Canadian territorial waters;

d. Standing PIDT Diving: to support a five day operation using Diving Support Vehicles and associated equipment for a 5 day operation anywhere in Canada;

e. Regional PIDT Diving: to support a five day operation using Diving Support Vehicles and associated equipment for a 5 day operation anywhere in Canada or for 30 days in support of a PSU organization; and

f. Ship's Team Diving: as required by parent ship requirements.

Note: A new CMS Readiness and Sustainment (R&S) Policy is being staffed at the time of this writing and is expected to supersede some or all of the readiness direction contained herein. When the R&S becomes extant, a thorough change review will be conducted.

40. Restocking of breathing gases, consumable stores and spares must be capable of completion within 30 days of expenditure.

41. Nothing in the detail of the readiness and sustainment levels may be used as a reason to degrade standards of safe diving practice.

Execution

A) Mine Countermeasures Team

42. The primary role of the Mine Countermeasures team is to maintain assigned states of readiness for deployment on Mine Countermeasures diving operations. The team will be at a minimum high readiness level for either CCDA or CUMA (depending on which set they are worked up in) and will maintain a lower posture with the alternate set. The CCDA rebreather is capable to 140 fsw (42 msw) and the CUMA rebreather can reach 270 fsw (81 msw). Additionally this team is to maintain an explosive render safe and disposal and a limited IEDD capability. The secondary (support) role of the MW Dept is to conduct Underwater Maintenance and seabed intervention to a depth of 140 fsw (42 msw).

43. Primary Function. In support of a Canadian or Allied Task Group, MCMTA, or as an element supporting Coastal Defence operations, an eight-person MCM Diving Team can perform the following operational mission:

a. Locate, identify and neutralize or recover for exploitation, sea mines and underwater ordnance in accordance with the risk directive tables in reference I;

44. Secondary Functions. In support of a Canadian or Allied Task Group, MCMTA, or as an element supporting Coastal Defence operations, an eight-person MCM Diving Team can perform the following secondary missions:

a. limpet mine disposal capability with LMDE;

b. provision of SME to advise command on MCM related issues;

c. underwater demolitions;

d. limited beach reconnaissance and survey;

- e. operation of the Containerized Dive System recompression facilities to include response in the event of a submarine disaster within Canadian waters;
 - f. provision of an exercise attack team for force protection exercises with MARCOM units;
 - g. provision of limited EOD capabilities and EOD expertise;
 - h. ship's bottom searches when required;
 - i. provision of diving support for RS operations
 - j. provision of assistance as necessary to aid other government departments and civil authorities with undersea projects; and
 - k. operation of remotely controlled mine countermeasures systems.
45. This capability includes:
- a. the operation of underwater hand held sonar, lifting systems, photographic and video equipment to complete tasks as necessary;
 - b. the use of underwater explosives and demolitions materiel;
 - c. the provision of support in the form of SME and maintenance for CUMA/CCDA/Support equipment; and
 - d. the maintenance and operation of Breathing Gas Transfer pumps for established Pump rooms and Gas Field including establishing SOPs for that equipment and ensuring the Gas Field is maintained in an appropriate condition.

NOTE: Any HA (EOD Basic) qualified CD/CLDO who has received formal instruction in the placement of over pressurization charges may do so under the overall control of a HB (EOD Advanced) qualified Dive Supervisor. This acknowledges that an OP Shot while technically a RSP in accordance with EOD doctrine, must be capable of being performed by the journeyman MCM/EOD Diver.

46. Limitations. The MCM Team:
- a. has no capability to defend itself as small arms are not normally carried in small inflatable boats. A security force may be required to support the team for protection when operating from the shore or close to shore;
 - b. is not capable of nuclear ordnance disposal and has no chemical/biological disposal capability.

- c. will require an RCC on site when diving deeper than 150 fsw (45 msw) for decompression. It is highly recommended that if a chamber is not on site then one be within 4 hours transit time for emergencies;
- d. since there is no requirement to support amphibious operations the MCM CDT will have a limited Very Shallow Water MCM capability (VSW defined as 0 – 30 fsw (0-10 msw)), and
- e. is not capable of clandestine VSW operations.

47. As the Containerized Dive System is primarily intended for use in support of YDT diving operations or on a Vessel of Opportunity, the MW Team will control the use of the CDS modules. The workshop module is to be held in the MW mode capable of rapid deployment.

B) Maritime Explosive Ordnance Disposal Team

48. Primary Function (Domestic). The MEOD Department at a Fleet Diving Unit shall maintain a capability to perform the following primary operational roles:

- a. detect, identify, field evaluate, render-safe, recover and dispose of EO and UXO which constitute a hazard to the public, and which constitute a hazard to HMC Ships or military assets, or an impediment to domestic operations, and
- b. clear, under and above the water, harbours, ships, dockyards, jetties, canals and locks of UXO in order that these may be returned to normal use as quickly as possible and in reasonable safety in accordance with references I – N.

49. Secondary Function (Domestic)

- a. surface and underwater demolitions;
- b. participate with other EOD agencies in CF information exchange programs concerning EOD intelligence, techniques, procedures, training, equipment, research and development;
- c. conduct Joint EOD operations with other CF Elements;
- d. dispose of damaged, deteriorated, obsolete, surplus or time expired items of explosive ordnance when beyond the capabilities of personnel normally assigned to operate or maintain such ordnance;

- e. support Force Protection operations when Port Security Units expect UXO, a mine threat or a terrorist threat;
 - f. provide an EOD/IEDD response capability at shore facilities used by HMC ships for replenishment, maintenance and repairs when the threat warrants such precautions;
 - g. conduct limited EOD of biological and chemical ordnance (BC), namely identification, containment, leak sealing and packaging, after which such ordnance will be referred to BC trained and equipped specialists –
Note: Disposal may be undertaken in emergencies, if personnel are trained and equipped.
 - h. assist in the evaluation of new EOD equipment and techniques or to initiate research and development projects;
 - i. scheduling and maintaining a record of the quarterly and annual IED, EOD, and demolitions training for FDU personnel, including support to the conduct of Clearance Diving and PID Team trades training courses. All CD personnel must be current in accordance with references N and T in standard EOD and demolition techniques, and
 - j. provision of assistance as necessary to aid other government departments and civil authorities with disposal of dangerous explosives, completion of various underwater tasks, and training personnel in UXO/IED incident operations.
50. This capability includes:
- a. diving to a maximum depth of 150 fsw (45 msw) with CABA;
 - b. the use of underwater explosives and demolitions materiel;
 - c. operation of remote operated EOD vehicles/inspectors, metal locators;
 - d. photographic cameras, and all ancillary MEOD equipment provided;
 - e. operation of in-service CF EOD equipment;
 - f. operation of DND service vehicles or small craft in support of MEOD surface or sub-surface activities, and
 - g. disposal operations at non-DND ranges and lands within Canada.

51. Primary Function (Deployed). In support of a Canadian or allied task Group, Forward Support Unit, or as an element for Coastal Defence, a two to six person MEOD Team (ideally includes one CLDO) depending on the mission can:

- a. render-safe and/or dispose of Improvised Explosive Devices (IED) above and under the water;
- b. advise command on the threat and methods required to deal with the threat from underwater swimmer attack;
- c. detect, identify, field evaluate, render-safe, recover, and dispose of unexploded explosive ordnance (UXO) that jeopardize Task Group objectives and Maritime Operations;
- d. support boarding operations by advising boarding teams when ordnance, explosives, ammunition or booby traps are expected;
- e. clear, under and above the water, harbours, ships, dockyards, jetties, canals, locks and ashore of UXO in order that these may be returned to normal use as quickly as possible and in reasonable safety in accordance with references I – N; and
- f. augment Ship's Diving Teams as necessary for the conduct of underwater hull, bottom or jetty searches.

52. Secondary Functions.

- a. assist in ordnance exploitation or disposal (ordnance, tools and equipment dependant);
- b. assist and advise in post conflict cleanup operations;
- c. carry out underwater ships inspections, husbandry and limited repair to vessels hulls and underwater fittings as required;
- d. provide EOD in support of Naval Evacuation Operations when ordnance, explosives, ammunition or booby traps are expected in accordance with references I, N, O and X, and
- e. advise command on Mine Countermeasures operations.

53. Limitations. The MEOD Team:

- a. has very limited capability to defend itself. A security force may be required to support the team for protection and for evacuation of areas as necessary to deal with UXO located away from the ship;

- b. is not capable of nuclear ordnance disposal and has limited chemical/biological disposal capability, namely identification, containment, leak sealing and packaging, after which such ordnance will be referred to BC equipped and trained specialists. Disposal may be undertaken in emergencies, if personnel are trained and adequately equipped.
- c. is not capable of clandestine operations; and
- d. will have limited remote vehicle capability.

54. Concept of Employment. The MEOD team can be deployed within a Task Group and/or employed ashore as follows:

- a. Embarked in HMC Ships or allied ships as TG asset and detached as directed by TACOM to conduct MEOD taskings or training necessary to meet the mission as detailed above;
- b. Deployed ashore when authorized or to allied/coalition units via rapid transport (e.g. helicopter/RHIB) to conduct MEOD taskings as detailed above;
- c. Provide support in the capacity of Subject Matter Experts or Umpires for bomb threat, underwater swimmer attack or diving exercises, and
- d. The Commander with TACON of the MEOD TE must ensure that:
 - (1) a designated disposal area is assigned;
 - (2) restrictions on disposal in situ are addressed;
 - (3) a designated area for items awaiting disposal is assigned;
 - (4) marking of abandoned by-passed UXO and IEDs is addressed;
 - (5) communication channels for MEOD Ops are assigned;
 - (6) EOD intelligence is disseminated and accessible to the MEOD team;
 - (7) the production and dissemination of EOD technical data is addressed;
 - (8) facilities for team training during extended deployments are assigned;

- (9) responsibilities for Allied Forces in support are established; and
- (10) the team is employed in accordance with their operational Task Cycle.

55. Conduct of Operations at Sea. While underway, the MEOD team will normally be at 1 hour notice for deployment 24/7. The team will normally be integrated within the ship's company of the unit having TACON and their daily routine is to include EOD continuation training, physical fitness training and participation in ship initiated drills.

56. When heightened threat levels, the MEOD Team will operate in accordance with their operational task cycle.

57. Conduct of Operations Alongside/Anchor. In Force Protection State Yellow the MEOD Team will provide a two-person 24/7 EOD response team to support the TG/ship duty watch unless heightened threat levels dictate otherwise. In Force Protection State White where IED threat levels are assessed low, the MEOD team will provide one EOD member to the TG/ship Harbour duty watch. This EOD tech may be employed in assisting the TG/ship during Duty Watch exercise bomb threat incidents and responses.

58. Conduct of Operations for Land Based EOD Ops. The MEOD Team can provide Land Based EOD support to PSU, FLS, NCU, and naval shore establishments for extended periods of time provided that basic accommodation, rations and transport is available. The Commander with TACON of the MEOD TE while deployed ashore must ensure that all items in sub-Para 52d. are addressed.

C) Battle Damage Repair Team

59. The primary role of the BDR Team shall be to maintain the prescribed state of readiness for Battle Damage Assessment and Repair. BDR Teams shall also maintain the secondary (support) role of conducting underwater maintenance and manned seabed intervention to 300 fsw (91 msw). This includes a surface supplied diving capability to 100 msw, with a sustainment of 5 days from a diving tender in coastal operating areas.

60. Primary Functions. In support of a Canadian or Allied Task Group, MCMTA, or as an element supporting Coastal Defence operations, a BDR Team shall be prepared to perform the following operational roles:

- a. search operations pertaining to the recovery of objects from the seabed;
- b. light salvage (defined as raising up to and including the weight of an operational Canadian maritime helicopter);

- c. underwater inspection, maintenance, repair and replacement operations concerning:
 - (1) HMC Ships, HMC Submarines and Fleet Auxiliary vessels, underwater hull fittings including sonar, propellers, etc,
 - (2) marine railways, wharves and jetties, and
 - (3) harbour and offshore seabed installations.
- d. SUBSAR operations as directed, and
- e. EOD response capability.
- 61. Secondary Functions. BDR Teams are also prepared to carry out the following secondary missions:
 - a. provision of emergency underwater EOD services including ships bottom searches and mine disposal for the Fleet;
 - b. underwater demolitions;
 - c. provision of assistance as available to aid other government departments and civil authorities with their undersea requirements, and
 - d. the provision of support in the form of SME and maintenance for SSBA and ice diving equipment and techniques.
- 62. This capability includes:
 - a. diving to a maximum depth of 150 fsw (45 msw) with self contained gear using compressed air, and to a depth of 300 fsw (91 msw) using surface supplied mixed gas;
 - b. diving to maximum authorized depth limits with LWSS Equipment;
 - c. the operation of underwater welding, cutting, photographic, u/w television and video equipment to complete tasks as necessary;
 - d. the use and mobilization of a recompression chamber (RCC);
 - e. crewing and operating (with appropriate engineering staff) a YDT for local operations;
 - f. the use of underwater explosives and demolitions materiel;; and

- g. operations in contaminated waters (waters which contamination level is in excess of the accepted levels promulgated for Moderately Contaminated Waters (MCW).

D) Force Protection Support Team

63. Recent operations have highlighted the requirement for Naval Divers to be prepared for defence against terrorist attack. The primary role of CD FP Support Teams will be to provide a versatile combined diving and MEOD response capability and expertise. However the supported unit/CTG must be prepared to augment it's own defence. Surface search is not normally a role of CD Teams because of their small size. Specific tasks include:

- a. employment of established four to six-person CABA/MEOD team with a minimum of one advanced EOD (HB) member, two Advanced IED (HC/HL) members, and two EOD basic (HA) member with underwater EOD capability;
- b. underwater search of jetties and hulls of vessels alongside and in Controlled Access Zones (Annex X). Prepare to search hulls of HMC ships if requested;
- c. advise and provide response capability UXO/IEDD responses and preparedness;
- d. advise on diving and EOD related asymmetric threat responses and preparedness;
- e. advise on defence against u/w attack;
- f. provide exercise swimmers to practice train for defence against u/w attack;
- g. support boarding operations, when ordnance, explosives, ammunition, IEDs or booby traps may be encountered
- h. surface EOD/IEDD response capability; and
- i. support to Formation HAZMAT teams (or equivalent) responding to a suspect Chem/Bio IED threat.

E) Port Inspection Dive Teams

64. Port Inspection Dive Teams are responsible for conducting training and operations using CABA only. Within the naval reserve formation, the teams are spread across the country at designated NRDs and are manned by reserve personnel. For the purposes of diving, the country is divided into four regions in

which there is a designated Regional Dive Centre (RDC). The RDC in each region is administratively responsible for the readiness of all dive teams in the region. Because these personnel are not normally on full time contracts the NRD Teams are not assigned a readiness status and require the standard notices for activation to duty status with an operational unit. As well, within each coastal formation, there is a 7 person Standing PID Team that is attached to each Fleet Diving Unit. These personnel are on full time contracts and as an occupation specialty specification (OSS) to the PID occupation specifications (OS) they are tasked to assist FDUs with fleet support work and operations that fall within their OSS and OS capabilities.

65. Primary Function: The NRD PID Teams are designated as integral components of the PSU organization. Their tasks include:

- a. performing underwater inspections of port and harbour facilities;
- b. performing underwater search and recovery operations;
- c. providing dive support to RS operations; and
- d. neutralizing underwater anti-ship limpet mines with LMDE as well as providing assistance to civil authorities when authorized.

66. Secondary Functions.

- a. assisting in MCM operations such as lift, tow and beaching;
- b. raise objects from the seafloor;
- c. provide support to OGD when requested and authorized
- d. carry out minor underwater ships husbandry tasks and limited repair to vessels hulls and underwater fittings as required, and
- e. performing limited EOI duties

67. Limitations. The PID Team:

- a. has no capability to defend itself as small arms are not normally carried in small inflatable boats. A security force may be required to support the team for protection when operating from the shore or close to shore;
- b. is not capable of operating RCC equipment;
- c. may require RCC support in accordance with reference Y regulations;

- d. cannot conduct EOD or EOR;
- e. is not capable of conducting clandestine or MCM operations (other than a support role), and
- f. is limited to depth of 150 fsw (45 msw).

F) Ship's Dive Teams

68. Ship's Dive Teams conduct training and operations using CABA only. The teams are organic to major HMC Ship's and are comprised of regular force personnel who serve voluntarily as STDs.

69. Primary Function. Ship's Diving teams are organic dive teams to HMC Ships that are capable of carrying out the following primary functions:

- a. minor underwater ship's husbandry and maintenance;
- b. underwater ship's hull inspections;
- c. underwater search and recovery, and
- d. Force Protection Support to include locating, identifying and ultimately neutralizing clandestinely placed underwater anti-ship limpet mines and/or underwater sabotage devices with LMDE.

70. Secondary Function.

- a. conduct STD proficiency training;
- b. provide support to OGD when requested and authorized, and
- c. performing limited EOI duties.

71. Limitations. Team sizes are promulgated at reference AA and diving is normally limited to 50 fsw (15 msw) and shallower. They have a maximum operational depth of 100 fsw (30 msw) with CO permission and are not permitted to conduct planned decompression diving. A Ship's Diving Team is considered an organic diving capability to a ship and is not normally an operationally detachable asset.

G) MOG Dive teams

72. MOG Dive Teams conduct training and operations using CABA only and are comprised of regular force STDs (normally submariners), reserve force STDs or reserve force PIDs employed within a MOG.

73. Primary Functions: The primary functions of a MOG Dive Team include:
- a. support submarine diving requirements within the MOG;
 - b. minor underwater submarine and ship's husbandry and maintenance;
 - c. underwater ship's and submarine hull inspections; and
 - e. Force Protection Support to include locating, identifying and ultimately neutralizing clandestinely placed underwater anti-ship/submarine limpet mines and/or underwater sabotage devices with LMDE.

74. Secondary Functions.

- a. provide limited diving capability to KINGSTON Class when required for deployments;
- b. underwater search and recovery;
- c. provide proficiency training opportunities for shore based personnel;
- b. provide support to OGD when requested and authorized, and
- c. performing limited EOI duties.

75. Limitations. A MOG Dive Team is limited to 50 fsw (15 msw) and shallower. They have a maximum operational depth of 100 fsw (30 msw) with MOG Commander or CO permission (depending on detached status) and are not permitted to conduct planned decompression diving. A MOG Dive Team is designed to be flexible to accommodate the special requirements of the MOG and the submarine community. The team may be separated into detachments to deploy on the submarines or KINGSTON Class as deemed appropriate by the MOG Commander and will serve under the Command of the CO when detached to a ship or submarine. Otherwise the dive team operates under the control of the MOG Commander.

Note: Reserve STDs are only employable as part of a MOG Dive Team to support the requirements of the KIN Class when required.

Deployability – Factors and Limitations

76. The various naval diving teams available are based on a modular concept and can be surged to variable manning levels dependent on the warfare tasks assigned. An example of this is deep surface supplied diving operations in support of BDR which has a minimum manning requirement of 18 divers as opposed to LWSS Diving which can require as few as five persons (task dependent). Not all capability packages can be

deployed concurrently. Where this occurs priorities must be set and maintained whenever possible.

77. CD, PID and Standing PID Teams require combat service support and landward security commensurate with the threat. The dive teams may also require intelligence, communications (location dependent) and other operational support, dependent on the threat and mission. Dive teams (including the short term augmentation of PSU by Standing PID Team/CDT) shall not normally stand sentry or search team duties. Their primary role must be understood to be the response to a search requirement or an emergency situation.

Task Cycles

78. BDR Team. For extended deployment periods the team will operate from either a Yard Diving Tender (in coastal waters only) or from a craft of opportunity.

- a. normally operate during daylight hours but can operate at night, on a 5 day on – 1 day off cycle. Continuous diving operations should never exceed a 12 hour period because of the intensity of the work and fatigue to divers and support personnel/supervisors. Operating periods are also based on operational breathing gas stocks available and sustainability. During the stand-down period the team must rest and conduct maintenance/equipment checks and staff work. They will respond to emergency diving situations only, and
- b. the 5 day on – 1 day off cycle can be repeated for up to three cycles at which time a two-day “stand-down” period should be imposed from non-emergency taskings to prevent operator fatigue/burnout. This routine may be modified/amended by the officer exercising TACON depending on the tactical situation. The OIC of the team shall indicate when a stand-down situation becomes mandatory.

79. MEOD Team. For operational cycles while deployed and underway or while providing Land Based EOD, the MEOD Team will operate as follows:

- a. normally operate in daylight hours, on a 12 hours on -12 hours off cycle for a period of four days, at which time a one-day of “stand-down” will be taken where proficiency / continuation training, EOD exercises will not be conducted. During the stand-down period the team will conduct maintenance / equipment checks and staff work and respond to emergency EOD taskings only;
- b. the 4-day cycle can be repeated for up to three cycles at which time a two-day “stand-down” period should be imposed from non-emergency taskings to prevent operator fatigue/burnout. This routine may be modified/amended by the officer exercising TACON depending on the

tactical situation. The OIC of the team shall indicate when a stand-down situation becomes mandatory, and

- c. in addition to maintaining equipment, exercising EOD procedures and training, a period of at least one hour shall be set aside daily for physical fitness training to ensure a satisfactory level of fitness is maintained by a team (reference P). Diving proficiency training and Diving Operations will be coordinated as required and conducted as part of the work cycles as the operational situation permits.

80. MCM Team. For extended deployment periods the team will operate on a 5 day on – 1 day off cycle during daylight hours only as per standard procedure.

- a. normally operate during daylight hours only, on a 5 day on – 1 day off cycle. Diving operations shall not exceed a 12 hour period due to the small team size and the fact they operate out of small inflatable boats. During the stand-down period the team will rest and conduct maintenance/equipment checks and staff work. They will respond to emergency diving situations only, and
- b. the 5 day on – 1 day off cycle can be repeated indefinitely but a two-day “stand-down” period should be imposed whenever possible for non-emergency taskings to prevent operator fatigue/burnout. This routine may be modified/amended by the officer exercising TACON depending on the tactical situation and mission priorities. The OIC of the team shall indicate when a stand-down situation becomes mandatory.

81. PIDT & Standing PIDT. As per the MCM Team Task Cycle except the teams can operate at night when required.

Training for War

82. In common with all other Maritime Command units, naval diving teams must train for operations in crisis and war. Operational training for naval diving teams assigned to MAROPSGRUs Four and Five will commence with sea readiness inspections (SRIs) or operational evaluation as required, and proceed through work ups (WUPs) (as appropriate) to national/international exercises in formations or task organizations.

Command and Control

83. Naval diving teams will be assigned to MAROPSGRUs Four and Five and allocated to subordinate units as required. Ship’s Diving Teams will operate as part of their ship’s company, except when detached by the Commanding officer for a specific task. The MOG diving teams will operate under the authority of their respective Commander Maritime Operations Group. When a MOG Team is detached to a submarine or KINGSTON Class vessel/vessels the detached team will operate under the Command

of the submarine CO or the assigned KINGSTON Class CO. Port Inspection Diving Teams (other than Standing PIDT) will operate under the authority of the Commanding Officers of their assigned PSU or home units depending on the circumstances. Coordinating activities with the relevant MAROPSGRUs and Naval Reserve Divisions shall be conducted as required.

84. Defence Plans. More specific operating contingency plans for naval diving teams are included in the following Maritime Command Defence Plans (MADPs):

- a. MADP 321 - Plan for Mine Warfare;
- b. MADP 322 - Coastal Defence operations; and,
- c. The 510 Series MADPs - Contingency Plans

Capability Elements for Naval Diving Teams

85. Flexibility of response is an essential requirement for naval diving teams during peace, crisis and war. This will require prioritization of activities taking into consideration the capabilities and limitations of the teams, their equipment outfits, training and operational readiness. Priority for, and thus employment of, naval diving teams will alter during transition from peace through crisis to war; however, the capabilities and limitations of the teams will not change, unless specific equipment, training and personnel changes are made. As such changes often require a long time to effect significant improvement. The standing naval diving teams will have to accomplish tasks within the existing Regular and Reserve personnel establishment and equipment outfits.

86. Future procurement of equipment that has the potential for significant impact on the naval diving occupations will have to involve consideration for the manning and training implications before acceptance into service. Specifically new equipment and capabilities have the potential to adversely affect readiness levels as has been the case in the past where new and complex equipments are obtained without the proper training and establishment changes.

Other Government Department Support (OGD) Support.

87. Maritime Command provides both independent and joint assistance to OGD, as tasked by the Chief of Defence Staff in response to requests from Ministers of the Crown or as authorized by Memoranda of Understanding. OGD support operations may require naval diving teams to assist in the search for, surveillance or retrieval of items/materials from the water in support of criminal or accident investigations. In addition, support may be provided for scientific research and protection of the environment. An enduring OGD tasking is support to Search and Rescue activities.

Operational Priorities

88. Peace

The operational priorities in peace will normally be:

Primary

- a. conducting and exercising maritime operations as tasked by operational commanders;
- b. supporting other government departments;

Secondary

- c. supporting diver and operational readiness training, and
- d. training for war.

89. Crisis

The operational priorities during a crisis will be:

Primary

- a. conducting maritime operations as tasked by operational commanders; and,
- b. training for war.

Secondary

- c. supporting diver and operational readiness training, and
- d. supporting other government departments.

Other Operations. Other peacetime operations will continue to be conducted during the crisis, subject to the requirements of the two primary tasks.

Manning. During a crisis, the manning of the naval diving teams will continue as for peacetime unless specifically ordered otherwise.

90. War

The operational priorities in war are:

Primary

- a. conducting maritime operations as tasked by operational commanders;

Secondary

- b. supporting diver and operational readiness training, and
- c. supporting other government departments.

91. Post Conflict

The operational priorities for post conflict are:

Primary

- a. conducting maritime operations as tasked by operational commanders;

Secondary

- b. supporting OGDs, and
- c. supporting diver training and operational readiness training.

Special Force (Mobilization)

92. In a state of war or other national emergency, concerns for career and job variety are replaced with the necessity to quickly mobilize, train to a minimum acceptable standard and otherwise prepare large numbers of people to a state of readiness for their active military service roles during that crisis. To satisfy this requirement, a CF mobilization military occupational structure (MOB MOS) was established in the early 1980s. In principle, this structure is designed to serve as the basic reference for developing war establishments, facilitating wartime recruiting and training schemes, and most importantly, as the template for developing the Total Force (Reg F and P Res) Military Occupational Structure.

93. The Special Force (Mobilization) draws its members by enrolment from the civilian population, and Component Transfer from the Reserve and Regular Forces. Depending on their previous military and/or occupational experience, members could be assigned to any job at the appropriate rank level.

94. The CD Special Force component comprises three occupations: Maritime EOD, Mine Warfare, and Battle Damage Repair. The PID has one Special Force occupation: Harbour Defence.

SUPPORT POLICY

Supporting Structures

95. While CD and PIDT Divers are attached to a TG or shore based organization, the following services will be provided by the support organization:

- a. berthing and messing;
- b. explosives and ammunition shall be provided where possible from TG or support organization resources;
- c. secure storage for equipment and CSDs when not using containerized workshop;
- d. suitable workshop and training area;
- e. consumable stores not related to Diving, EOD and Mine Countermeasures;
- f. administrative support;
- g. personnel security;
- h. operational communications;
- i. engineering support for corrective maintenance of non-specialized equipment, and
- j. medical.

Safety

96. Diving operations of all types are fraught with potential hazard and fatal accidents can result from even minor failures in procedures or equipment, but the overwhelming majority of diving accidents are caused by human error on the part of supervisors and divers themselves. Stringent training in the diving schools must be backed up by thorough continuation training and effective inspection. Operational readiness evaluations shall be conducted on a regular basis and wherever possible prior to a deployment.

97. To ensure that standards of diving safety are enforced, a Directorate of Diving Safety (D Dive S) has been established by the Chief of Maritime Staff (CMS). D Dive S staff is located in Ottawa and reports to the CDS through CMS, and is responsive to all levels of diving within the Navy. D Dive S is also responsible for all aspects of diving safety within the CF including the supervision of the investigation into all serious diving accidents, and any other diving incident where safety has been compromised. Under D

Dive S, an Inspector of Diving from each environment is responsible for the safety inspection of all diving units and teams in the CF. D Dive S is the authority for carrying out assessments or validations of foreign diving units using Canadian diving equipment and/or procedures when so requested by the nation concerned.

98. A significant factor in diving safety within the Naval Reserve is provision of sufficient opportunity for reserve divers to obtain practical experience in order to consolidate training and develop supervisory skills.

Note: Diving accidents requiring RCC treatment can bring operations to a standstill if not managed correctly

FUTURE

99. The trend over the last 3 decades of increased diversification in CF diving systems and underwater intervention technology is expected to continue. New Equipment is being considered as part of the natural process of the military striving to improve and gain the best overall effectiveness within the limited assigned resources. On the horizon, based on the way ahead papers discussed previously, there are a number of new systems being considered and actively pursued which will have a direct impact on the naval diving occupations. They include but are not limited to:

- a. Remote Mine-hunting and Disposal System (RMDS);
- b. CUMA V2/CCDA Mk 2 Upgrade;
- c. diver VEMs;
- d. new CABA Ensemble (protecting against Moderately Contaminated Waters);
- e. EOD Remote Operated Vehicle to replace the RMI;
- f. light-weight EOD Robot;
- g. Radio Firing Device (RFD) for EOD;
- h. secure portable Radios;
- i. new non-magnetic mine-lifting bags and hand tools;
- j. new lightweight and regular bomb suits competed with cooling and communication systems
- k.
- l. ROV rationalization and next generation procurement;
- m. underwater ROV Simulator;

- n. Transportable Recompression Chambers for SUBSAR, and
- o. YDT 11 Class replacements.

100. Many lessons have been learned and numerous deficiencies have been noted concerning shortcomings within the occupations relating to equipment and capabilities. The existing vehicle to identify, prioritize and track these shortcomings remains within the scope of the Maritime Operational Deficiency List (MODL) under the MW/COPS SEG. It is very important that stakeholders within the Diving, Mine Warfare and EOD communities contribute to the MODL through the available SEGs. In particular each proposed new MODL item must be supported by a Statement of Capability Deficiency (SOCD) or Unsatisfactory Condition Report (UCR) where applicable. A Draft Statement of Requirement (SOR) staffed through the appropriate chain of command supporting the SOCD (if this option is merited) will go a long way towards speeding up the requirement process. The Coastal Warfare Committee (CWC) and Maritime Warfare Authority (MWA) depend heavily on their experience and the MODL to present their concerns and priorities to CMS through the Naval Board. DMPOR in conjunction with DMRS, DMSS and DMCM-MWS also utilize the MODL, SOCDs and Statements of Requirements when considering procurements.

101. The direction for the future will include the consideration that employment of military divers at maximum depth for “work-horse” tasks, such as extensive seabed area search operations, will be avoided and replaced with technologies better able to handle the tasks and minimize or eliminate the risks to manned divers. These tasks will be conducted by modern equipment such as SSS, ROVs, mini-submersibles etc, thus leaving divers to be used with precision on specific pre-identified targets and tasks. STS Columbia and the Swiss Air accidents are two prime examples of two very different tasks yet both requiring this very complimentary mode of employment. The first tool out of the bag in these cases is not the diver, but the sensors, searchers and locators.

Operational Concept of Employment Review

102. This OCE shall be reviewed and recommendations made for updates to DMPOR at least during the following occasions:

- a. every two years by the MW SEG with input from the CFDPC and CF EODPC;
- b. any major new equipment that affects the diving occupations is procured;
- c. after the realignment of any of the naval diving occupations; and
- d. when deemed necessary by CMS at the recommendation of the appropriate staff.

103. DMPOR is the lead directorate for such reviews and for amendments concerning Naval Diving, Maritime EOD and Mine Warfare policies. DMRS and D Dive S are the Directorates responsible for diving equipment requirements and safety respectively. ADM (IE) J3 Eng is responsible for CF EOD Policy. ADM (Mat) DAPM is responsible for CF EOD ECLs and requirements and, in conjunction with DMRS, for Maritime EOD Equipment requirements . DAPM is also the authorizing directorate for new EOD tools and equipment.

CONCLUSION

104. This Operational Concept of Employment provides background information and guidance for those directing the employment of Canadian Clearance Divers, Port Inspection Divers and Ship's Divers. It is viewed as a living document that will change and grow as a result of the ongoing Occupational Analysis for the naval diving occupations. It will, nevertheless, be validated by the contribution of naval diving to the security of Canada.

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Annex A

To: Naval Diving OCE

Dated: 27 January 2004

Naval Diving Team Tasking Against Capability Elements

Notes applicable to the table are:

(1) When interpreting the table, the priority assessment under each of the type of diving team is the peacetime definition drawn from MCOPG Vol 1, Chap 4 Annex A, and does not indicate the actual priority which may be assigned by Formation Commanders.

(2) The Clearance Diving Teams (CD Teams) include the core capability teams for MCM/EOD/BDR/FP Support.

(3) The Engineering Support Teams (Eng Support) include the Surface Supplied Diving option.

(4) The Diving Training column refers to both diving schools, and includes R345 diving training cells.

(5) The PIDT refers to PIDs employd at NRDs and in PSUs

(5) Designators: P= Primary Task, S= Secondary Task, 1= Limited Capability, 2= Moderate Capability, 3= Full Capability

CAPABILITY ELEMENTS (CFCD 117 Vol 2)	CD Teams	Eng Support	Standing PIDT	PIDT	Ship/MOG Teams	Div Trng
<u>104 COMMAND AND CONTROL</u> <u>104.1 COMMUNICATIONS</u>						
a. Conduct tactical communications	P2	P1	P1	P1	P1	-
<u>201 NATIONAL ROLES</u> <u>201.2 Other Government Department, (OGD) Support (Roles)</u>						
a. Gathering and preservation of evidence;	P2	P2	P1	P1	P1	-
b. Support for environmental incident control;	P1	P2	P1	-	-	-
c. Assistance following natural disaster; and	P1	P2	P1	P1	P1	-
<u>201.3 SEARCH AND RESCUE</u> Conduct of SAR operations as tasked.	P2	P2	P1	P1	P1	-
<u>202.1 BOARDING AND INSPECTION</u> Support naval boarding and inspection ops.	P2	-	-	-	-	-

Annex A

To: Naval Diving OCE

Dated: 27 January 2004

CAPABILITY ELEMENTS (CFCD 117 Vol 2)	CD Teams	Eng Support	Standing PIDT	PIDT	Ship/MOG Teams	Div Trng
<p>202 <u>SOVEREIGNTY</u> 202.2 <u>SURVEILLANCE/RECONNAISSANCE</u> Assist in reconnaissance of Canadian maritime areas of responsibility to demonstrate sovereignty.</p>	P2	P1	P1	P1	S1	-
<p>301 <u>PEACEKEEPING</u> Participate as an element of a composite unit formed for peacekeeping operations.</p>	P2	-	P1	-	-	-
<p>304 <u>ALLIANCE/COALITION OPERATIONS</u> 304.1 <u>CANADIAN TASK GROUP DEPLOYMENT</u> and 304.3 <u>MINOR WARSHIP TASK UNIT DEPLOYMENT</u> Major warships and submarines, and or Minor warships* may be required to deploy to a distant area and engage in hostilities. (1) FP Support, EOD, BDR and limited MCM capabilities. (2) Defence of ships from underwater attack by swimmers. <i>Note: Defence of North America only.</i></p>	<p>P3 P3</p>	<p>- P1</p>	<p>- P3</p>	<p>- P3</p>	<p>- P3</p>	<p>- -</p>

Annex A

To: Naval Diving OCE

Dated: 27 January 2004

CAPABILITY ELEMENTS (CFCD 117 Vol 2)	CD Teams	Eng Support	Standing PIDT	PIDT	Ship/MOG Teams	Div Trng
402 <u>UNDERWATER WARFARE</u>						
402.2 <u>SUBMARINE OPERATIONS</u> Participate in SUBSAR operations as required.	P1	P3	-	-	-	-
402.3 <u>MINE WARFARE</u>						
a. Passive mine countermeasures: (1) Route survey support (in conjunction with other MCM assets);	P3	-	-	-	-	-
b. Active mine countermeasures; (1) Mine Investigation Recovery and Exploitation;	P3	-	-	-	-	-
(2) Mine hunting in conjunction with other MCM assets,	P3	-	-	-	-	-
(3) Mine disposal.	P3	-	-	-	-	-
(4) Explosive Ordnance Reconnaissance	P3	S2	-	-	-	-
(5) Explosive Ordnance Identification	P3	S2	P2	P2	S1	-

Annex A

To: Naval Diving OCE

Dated: 27 January 2004

CAPABILITY ELEMENTS (CFCD 117 Vol 2)	CD Teams	Eng Support	Standing PIDT	PIDT	Ship/MOG Teams	Div Trng
405.3 HARBOUR DEFENCE						
a. Underwater search of Controlled Access Zones, vital marine infrastructure & ship berths;	P3	P2	P3	P2	P2	-
b. Explosive ordnance reconnaissance;	P3	S2	-	-	-	-
c Explosive Ordnance Identification	P3	S2	P2	P2	S1	-
d. neutralization of limpet mines with LMDE.	P3	S2	P3	P3	P3	-
500 OPERATIONAL READINESS CAPABILITIES						
503 INDIVIDUAL TRAINING Conduct training for diver MOC trades and Ship's Team Divers.	-	-	-	-	-	S3
504 GROUP TRAINING						
a. 504.1 Combat Team Training (support of team training such as PIDT Teams and Ship's Diver Teams).	-	-	-	-	-	S3
b. 504.2 Unit training (support of unit training such as WUPS ships and Port Security Unit diving exercises).	S3	S1	S3	-	-	-

Annex A

To: Naval Diving OCE

Dated: 27 January 2004

CAPABILITY ELEMENTS (CFCD 117 Vol 2)	CD Teams	Eng Support	Standing PIDT	PIDT	Ship/MOG Teams	Div Trng
606.1 UNDERWATER DIVING SUPPORT						
Conduct of operations in support of military requirements;						
(1) Fixed seabed installation and marine infrastructure technical survey, repair and maintenance.	S2-	S3	S2	-	-	-
(2) Maintenance of ships and submarines afloat.	S1	S3	S1	-	S1	-
(3) Emergency underwater repairs.	S2	S3	S2-	-	S1	-
(4) Light salvage of small items (data recorders, valuable equipment and classified items from wrecks or lost overboard).	S1	S3	S1	S1	S1	-
(5) Hyperbaric treatment (other than that required for Sur D and treatments during diving or SUBSAR operations).	S1	S1	-	-	-	S3
(6) Diving Equipment maintenance (except first line maintenance).	-	S3	-	-	-	-
(7) Support to scientific investigation.	S2	S3	S2	-	-	-

Annex A
To: Naval Diving OCE
Dated: 27 January 2004

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Annex B
To: Naval Diving OCE
Dated: 27 January 2004

DEFINITIONS

Except for the specific terms below, all EOD terms used in this DAOD are in accordance with the definitions contained in AAP-6 (V) *NATO Glossary of Terms and Definitions*.

Bomb Disposal The act of disposing of UXO and IED. (AAP-6)

Defence Explosive Ordnance (Def EO) Any military explosive ordnance, currently or formerly the property of a Canadian, Visiting Force or other military force when located on or over Canadian sovereign land territory or water, or a Canadian or NATO allied warship. Defence explosive ordnance (Def EO) is a term developed and used solely in the context of EOD within Canada as a domestic operation. It is used to help define domestic operations policy and the difference between a piece of military ordnance and a civilian explosive (accessory) and thus the DND responsibility for disposal.

Explosive A substance or mixture of substances which, under external influences, is capable of rapidly releasing energy in the form of gases and heat. (AAP-6)

Explosive Ordnance (EO) All munitions containing explosives, nuclear fission or fusion materials and biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rockets, and small arms ammunition; all mines, torpedoes and depth charges; pyrotechnics; clusters and dispensers; cartridges and propellant actuated devices; electro-explosive devices, clandestine and improvised explosive devices and all similar or related items or components explosive in nature. (AAP-6)

Explosive Ordnance Disposal (EOD) The detection, identification, on-site evaluation, rendering safe, recovery and final disposal of unexploded explosive ordnance. It may also include explosive ordnance which has become hazardous by damage or deterioration. (AAP-6). *Note: in the context of EOD operations, only trained EOD operators carry out identification, since this requires detailed knowledge of ordnance features and functions in order to select safe courses of action. Non-EOD personnel however may provide assistance by searching areas, detecting objects that appear to be ordnance or IEDs, and provisionally 'identifying' them as such for subsequent EOD by qualified personnel.*

EOD Incident The suspected or detected presence of unexploded explosive ordnance, or damaged explosive ordnance, which constitutes a hazard to operations, installations, personnel or material. Not included in this definition are the accidental arming or other conditions that develop during the manufacture of high explosive material, technical service assembly operations or the laying of mines and demolition charges. (AAP-6)

EOD Procedures Those particular courses or modes of action taken by explosive ordnance disposal personnel for access to, diagnosis, rendering safe, recovery and final disposal of explosive ordnance or any hazardous material associated with an explosive ordnance disposal incident.

- a. access procedures. Those actions taken to locate exactly and to gain access to unexploded explosive ordnance.

Annex B

To: Naval Diving OCE

Dated: 27 January 2004

- b. diagnostic procedures. Those actions taken to identify and evaluate unexploded explosive ordnance.
- c. render safe procedures. The portion of the explosive ordnance disposal procedures involving the application of special explosive ordnance disposal methods and tools to provide for the interruption of functions or separation of essential components of unexploded explosive ordnance to prevent an unacceptable detonation.
- d. recovery procedures. Those actions taken to recover unexploded explosive ordnance.
- e. final disposal procedures. The final disposal of explosive ordnance which may include demolition or burning in place, removal to a disposal area or other appropriate means. (AAP-6)

Explosive Ordnance Identification (EOI) The identification of an item as being either conventional explosive ordnance or non-ordnance.

Explosive Ordnance Reconnaissance (EOR) Reconnaissance involving the investigation, detection, location, marking, initial identification and reporting of suspected unexploded explosive ordnance, by explosive ordnance reconnaissance agents, in order to determine further action. (AAP-6)

Improvised Explosive Device (IED) A device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic or incendiary chemicals and designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military components. (AAP-6). An IED may also be a commercial product in whole or in part.

Improvised Explosive Device Disposal (IEDDD) Those actions taken to neutralize / disrupt an IED.

Maritime EOD EOD and IEDDD which is conducted under the authority of the Commander Maritime Command.

Non-Defence Explosive Ordnance (non-Def EO) means all non-military explosives, ammunition, pyrotechnics or substances such as commercial explosives, hazardous chemicals and IEDs.

Render Safe Procedure (RSP) Render Safe Procedures are the procedures that enable the neutralisation and/or disarming of mines and munitions to occur in a recognised and safe manner. (AAP-6)

Underwater EOD EOD conducted where the operator must work submerged or awash in water.

Annex B

To: Naval Diving OCE

Dated: 27 January 2004

Unexploded Explosive Ordnance (UXO) EO which has been primed, fused, armed or otherwise prepared for action, and which has been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installations, personnel or material and remains unexploded either by malfunction or design or for any other cause. (AAP-6)

Note: Where indicated, definitions are taken from NATO AAP(6). Other non-NATO definitions, or amplifying text have been included to meet the requirements of this document.

Annex B
To: Naval Diving OCE
Dated: 27 January 2004

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Annex C
To: Naval Diving OCE
Dated: 27 January 2004

ACRONYMS

The following definitions and acronyms are applicable within this document:

BOIV - Bottom Object Intervention Vehicle (FDUP Only)
CAS - Chief of Air Staff CD – Clearance Diver
CCDA – Canadian Clearance Diving Apparatus
CDS – Chief of Defence Staff
CFNES - CF Naval Engineering School
CFNOS - CF Naval Operations School
CFFS(E) - CF Fleet School (Esquimalt)
CFFS(Q) - CF Fleet School (Quebec)
CFMWC - CF Maritime Warfare Centre
CLDO – Clearance Diving Officer
CLS - Chief of Land Staff
CMS - Chief of Maritime Staff
CUMA – Canadian Underwater Mine Apparatus
DMCM-MWS – Directorate Maritime Class Management – Minor Warships
DMPOR – Directorate Maritime Policy, Operations and Readiness
DMRS - Directorate Maritime Requirements Sea
DMSS - Director Maritime Ship Support
DRDC(T) - Defence Research and Development Canada (Toronto)
DSIS - Deep Seabed Intervention System (FDU A only)
EOD – Explosive Ordnance Disposal
EOI - Explosive Ordnance Identification
EOR - Explosive Ordnance Reconnaissance
EDU - Experimental Diving Unit (located within DRDC (T))
FDU(A) - Fleet Diving Unit (Atlantic)
FDU(P) - Fleet Diving Unit (Pacific)
HA - Basic EOD assistant
HB - Advanced EOD Surface (& Subsurface for CI Div 71D/341 pers only)
HC - Basic IED Disposal (Domestic Ops)
FDU – Fleet Diving Unit
HD - Harbour Defence
HF - Advanced NATO EOD
HL - Advanced IEDD NATO
IEDD – Improvised Explosive Device Disposal
JTF2 – Joint Task Force 2
LMDE – Limpet Mine Disposal Equipment
LWSS – Light –Weight Surface Supply
MCMTA – Mine Countermeasures Tasking Authority
MIRE – Mine Investigation, Render-Safe and Exploitation
MOB MOS - Mobilization Military Occupational Structure
MOC – Military Occupation Code
MW – Mine Warfare
MWBP – Mine Warfare Blueprint

Annex C

To: Naval Diving OCE

Dated: 27 January 2004

OS – Occupation Specification
OSS – Occupation Specialty Specification
PID – Port Inspection Diver
PIDT – Port Inspection Dive Team
R & D – Research and Development
PSU - Port Security Unit
R&S – Readiness and Sustainment
RCC – Recompression Chamber
RMDS - Remote Mine-hunting and Disposal System
RMI – Remote manipulator Investigator
ROV – Remote Operated Vehicle
SEG – Systems Evaluation Group
SME – Subject Matter Expert
SSS – Side Scan Sonar
SUBSAR - Submarine Search and Rescue
YDT – Yard Diving Tender