

EXECUTIVE SUMMARY

COMMANDER'S OVERVIEW

- **Discusses the Types and Characteristics of Amphibious Operations**
 - **Covers Command Relationships for Amphibious Operations**
 - **Discusses Air Command and Control Arrangements**
 - **Covers Amphibious Operations Planning and Execution Considerations**
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General Concepts

An amphibious operation is a military operation launched from the sea by an amphibious force embarked in ships or craft with the primary purpose of introducing a landing force (LF) ashore to accomplish the assigned mission.

Amphibious operations apply maneuver principles to expeditionary power projection in joint and multinational operations.

Clarification of terms.

Types of amphibious operations include assaults, withdrawals, demonstrations, raids, and other operations in a permissive, uncertain, or hostile environment.

An amphibious force conducts amphibious operations. An **amphibious force is defined as** an amphibious task force (ATF) and a landing force (LF) together with other forces that are trained, organized, and equipped for amphibious operations.

Amphibious operations seek to **exploit the element of surprise and capitalize on enemy weakness** by projecting and applying combat power precisely at the most advantageous location and time. Amphibious forces provide the joint force commander (JFC) with a balanced, mobile force flexible enough to provide the required capability at the right time and place with sufficient endurance to accomplish the mission.

The terms “commander, amphibious task force” (CATF) and “commander, landing force” (CLF) have been used doctrinally in the past to signify the commanders assigned to spearhead amphibious operations. This doctrine disassociates (from previous doctrine) any historical implications of the terms “CATF” and “CLF” from command relations. The terms “CATF” and “CLF” do not connote titles or command relationships. Rather, they refer to those commanders who are instrumental to the conduct of amphibious operations in a

joint environment. Under Joint Publication (JP) 0-2, *Unified Action Armed Forces (UNAAF)*, the establishing authority may choose from a variety of command relationship options between the CATF, CLF, and other designated commanders involved in amphibious operations.

Applications

Amphibious operations can be used in many ways to support the joint force commander's (JFC's) campaign or operation plan.

Conducted alone, or in conjunction with other military operations, amphibious operations can be designed for the following purposes.

Achieve campaign objectives in one swift stroke by capitalizing on surprise and simultaneous execution of supporting operations to strike directly at enemy critical vulnerabilities and decisive points in order to defeat operational or tactical centers of gravity (COGs).

Comprise the initial phase of a campaign or major operation where the objective is to establish a military lodgment to support subsequent phases.

Serve as a supporting operation in a campaign in order to deny use of an area or facilities to the enemy, or to fix enemy forces and attention in support of other combat operations.

Support military operations other than war in order to deter war, resolve conflict, promote peace and stability, and support civil authorities in response to domestic crises.

Types of Amphibious Operations

Amphibious operations can generally be broken down into five major types: assaults, withdrawals, demonstrations, raids, and other amphibious operations.

Amphibious Assault. The establishment of an LF on a hostile or potentially hostile shore.

Amphibious Withdrawal. The extraction of forces by sea in ships or craft from a hostile or potentially hostile shore.

Amphibious Demonstration. A show of force conducted to deceive with the expectation of deluding the enemy into a course of action unfavorable to it.

Amphibious Raid. A swift incursion into, or a temporary occupation of, an objective, followed by a planned withdrawal.

Other Amphibious Operations. The capabilities of amphibious forces may be especially suited to conduct other

types of operations, such as noncombatant evacuation operations and foreign humanitarian assistance.

Characteristics of Amphibious Operations

Amphibious operations have four key characteristics.

Integration between the Navy and landing forces. The key characteristic of an amphibious operation is close coordination and cooperation between the ATF, LF, and other designated forces.

Rapid buildup of combat power from the sea to shore. The salient requirement of an amphibious assault is the necessity for swift, uninterrupted buildup of sufficient combat power ashore from an initial zero capability to full coordinated striking power as the attack progresses toward amphibious force objectives.

Task-organized forces, capable of multiple missions across the full range of military operations to enable joint, allied, and coalition operations. Amphibious forces are task-organized based on the mission.

Unity of Effort and Operational Coherence. The complexity of amphibious operations and the vulnerability of forces engaged in amphibious operations require an exceptional degree of unity of effort and operational coherence.

Command and Control of Amphibious Operations

Amphibious operations are normally part of a joint operation.

The command relationships established within the amphibious force are in accordance with the concepts and principles delineated in JP 0-2, *Unified Action Armed Forces (UNAAF)*.

The JFC ensures unity of effort in achieving amphibious objectives by establishing unity of command over amphibious forces.

The JFC may establish unity of command over amphibious forces by **retaining operational control (OPCON)** over the Service or functional component commands executing the amphibious operation, or by **delegating OPCON or tactical control (TACON)** of the amphibious force to a Service or functional component commander.

The JFC will organize the amphibious force in such a way as to best accomplish the mission based on the concept of operations.

If organizing forces along Service components, the JFC may establish a support relationship between the Navy component commander and the Service component commander of the LF, or delegate OPCON or TACON of the assigned or attached amphibious forces to a Service component.

If organizing the joint force with a combination of Service and functional component commands with operational responsibilities, the JFC may establish a support relationship between the functional components, Service components, or other appropriate commanders, or delegate OPCON or TACON of the assigned or attached amphibious forces to a functional component or Service component commander.

Typically, a support relationship is established between the commanders and is based on the complementary rather than similar nature of the amphibious task force and LF.

The command relationships established among the CATF, CLF, and other designated commanders of the amphibious force is important. The type of relationship chosen by the common superior commander (or establishing authority) for the amphibious force should be based on mission, nature and duration of the operation, force capabilities, command and control (C2) capabilities, battlespace assigned, and recommendations from subordinate commanders.

Regardless of the command relationships, when the order initiating the amphibious operation is received, unique relationships are observed during the planning phase.

The commanders designated in the order initiating the amphibious operation are **coequal in planning matters and decisions**. All decisions must be reached on a basis of common understanding of the mission, objectives, and procedures and on a free exchange of information. Any differences between commanders that cannot be resolved are referred to the establishing authority.

Amphibious operations normally encompass a three-dimensional geographic area, within which is located the amphibious objective(s).

The amphibious operational area must be of sufficient size to conduct necessary sea, land, and air operations required to execute the mission of the amphibious force. The operational areas that may be assigned to an amphibious force in an order initiating the amphibious operation are an **amphibious objective area (AOA)** or an **area of operations** normally in conjunction with a high-density airspace control zone.

Air Command and Control

Assignment of airspace allows the commander to exercise command and control of forces, deconflict high volumes of different types of aircraft and missiles, and defend forces.

During maritime operations such as amphibious operations, **the airspace control authority will normally designate the maritime commander as the control authority** for a specific airspace control area during the conduct of the amphibious operation (JP 3-52, *Doctrine for Joint Airspace Control in the Combat Zone*). The complexity and size of an amphibious operation directly affects the amount of airspace allocated.

The joint counterair mission is used to gain and maintain air superiority through mutually supporting offensive and defensive measures.

The **area air defense commander** (AADC) bears overall responsibility for air defense activities of the joint force. The regional air defense commander is normally established within the ATF organization and is responsible for the airspace allocated for amphibious operations, including but not limited to the AOA (if established). **The CATF will coordinate active defense plans and procedures with the AADC** and attack operations with the joint force air component commander unless otherwise specified in the order initiating the amphibious operation or the establishing directive. The designated commander assigns an air warfare commander, normally on the most capable air defense platform, to actually carry out air defense operations.

During amphibious operations, airspace control and counterair responsibilities in the operational area may be transferred ashore.

For transfer of airspace control and counterair responsibilities ashore to occur, **an appropriate agency must be established that is responsible for air operations planning, air control, and counterair**. This agency is either tactical air command center (ashore) when the LF is Marine Corps, or an air operations center when the LF is an Army task organization. It is phased ashore as part of the LF. To facilitate an orderly transfer of control, specific control functions may be incrementally passed as facilities ashore become operational.

Tenets of Amphibious Planning

The tenets of successful amphibious planning are top-down planning, unity of effort (within the designated operational area), and an integrated planning effort.

Top-Down Planning. Planning is a fundamental responsibility of commanders. The complexity of amphibious operations requires amphibious force commanders to drive the planning process. Their guidance and intent are central to planning and must be translated into a design for action by subordinates.

Unity of Effort. Unity of effort in the operational area allows the CATF and CLF to effectively focus the amphibious force on mission accomplishment. They must view their battlespace as an indivisible entity, for operations or events in one area may have profound and often unintended effects on other areas and events.

Integrated Planning. Integrated planning in amphibious operations has two parts. The first part is the assembly of the amphibious force commanders and their staffs in the same locality. When such arrangements are not practicable, the exchange of liaison officers qualified to perform planning functions and the use of advanced technology, collaborative

planning aids, and video teleconferencing are necessary. The second part of integrated planning occurs across functional areas. The use of functional areas, such as maneuver, supporting arms and fires, intelligence, C2, logistics, and force protection enable amphibious force planners to integrate the planning effort and supervise the plan. The use of functional areas helps the planners to consider all relevant factors and minimize omissions.

Fire Support During Amphibious Operations

Fire support planning and coordination in amphibious operations are continuous processes seeking timely and appropriate application of force to achieve the desired effects within the operational area.

Fire support planning integrates and synchronizes the amphibious force organic fires with non-organic supporting fires to achieve the commander's intent. Maneuver and fires are complementary functions. Fires in support of amphibious operations (amphibious fire support) is **the synergistic product of three subsystems: target acquisition (TA), C2, and attack resources**. **TA systems** and equipment perform the key tasks of target detection, location, tracking, identification, and classification in sufficient detail to permit the effective attack of the target. **C2 systems** bring all information together for collation and decision making. Vertical and horizontal coordination is essential, requiring a hierarchy of mutually supporting fire support coordinators and agencies. **Attack systems** include fires delivered from air, surface, land, and subsurface attack systems. Navy, Marine Corps, Army, and Air Force aircraft may perform air-to-surface attack and electronic warfare within the operational area. Land-based attack systems typically include Marine Corps and Army artillery, mortars, rockets, missiles, and electronic warfare systems. Sea-based attack systems include Navy guns, missiles, and electronic warfare systems.

Fire support planning is the continuous and concurrent process of analyzing, allocating, and scheduling of fire support to integrate it with the forces to maximize combat power.

Effective fire support depends on planning for the successful performance of the following four basic tasks.

Support forces in contact. The amphibious force provides responsive fire support that protects and ensures freedom of maneuver to forces in contact with the enemy throughout the operational area.

Support the concept of operations. Shaping the battlespace and setting the conditions for decisive action are successfully accomplished by achieving the commander's stated effects and attacking high-payoff targets to exploit critical vulnerabilities, the destruction or neutralization of which significantly contributes to the success of the amphibious operation by defeating the enemy's COGs.

Synchronize fire support. Fire support is synchronized through fire support coordination, beginning with the commanders' estimate and concept of operations. Fire support must be planned for continuously and concurrently with the development of the scheme of maneuver.

Sustain fire support operations. Fire support planners formulate realistic and achievable fire support plans to achieve the commander's stated effects by exploiting logistic capabilities to overcome logistic limitations.

Logistic Planning During Amphibious Operations

Logistic planning for an amphibious operation includes all facets of logistics.

The amphibious force logistic systems must be responsive, simple, flexible, economical, attainable, sustainable, and survivable.

The CATF is normally responsible for determining overall logistic requirements for the amphibious force. Those requirements that cannot be supported from resources available within the ATF are directed to the applicable Service component through the chain of command as established in the order initiating the amphibious operation.

Development of effective logistic systems must take into account the planning considerations and factors listed below.

Orderly assembly and embarkation of personnel and material based on anticipated requirements of the LF scheme of maneuver ashore.

Establishment and maintenance of a logistic system in the operational area that will ensure adequate support to all elements of the amphibious force, and subsequent support of base development and garrison forces as directed.

Impetus of logistic support from sea, or the rear, and directed forward to the point of application at the using unit.

Preservation of tactical security during logistic planning. Nonsecure logistic planning can compromise tactical surprise and landing location.

CONCLUSION

This publication provides fundamental principles that guide the Armed Forces of the United States in the conduct of amphibious operations. It covers all aspects of amphibious operations.

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CHAPTER IX

AMPHIBIOUS OPERATIONS AGAINST COASTAL DEFENSES

“A comparison of the several landings leads to the inescapable conclusion that landings should not be attempted in the face of organized resistance if, by any combination of march or maneuver, it is possible to land unopposed within striking distance of the objective.”

**MajGen A.A. Vandegrift, USMC
CG, 1st Marine Division, 1 July 1943**

1. General

Coastal defenses against amphibious operations have become a military necessity for a number of countries considered a threat to regional stability and national interests. **An integrated anti-landing doctrine has evolved incorporating the use of land, sea, air and, in some cases, space assets.** The doctrine involves integration of reconnaissance, long range interdiction by air and sea forces, and a combined arms ground force at the beach. **Central to most anti-landing defenses is the use of littoral mine warfare.** In addition, some countries may base their coastal defense on the threatened employment of nuclear, biological, and chemical (NBC) weapons or may integrate NBC weapons into their existing coastal defense. **The preferred tactic for amphibious forces operating against countries or organizations employing coastal defenses is to avoid, bypass, or exploit gaps in these defenses whenever possible.** However, operational limitations may preclude this tactic and a breach of these defenses may be required.

2. Anti-landing Doctrine

Coastal defenses depend on the hydrography, terrain, resources, development time available, and ingenuity of the antagonists. **Anti-landing doctrine usually focuses on the development of four layered barriers within the littorals.** These barriers are under observation and covered by shore

based fires. Due to the littoral nature of these barriers, they generally fall within the hydrographic description of shallow water (up to 200 feet in depth). The four barriers from the littorals to land are perimeter, main, engineer, and beach.

a. **Perimeter Barrier.** The first littoral barrier encountered is the perimeter minefield. **This minefield, located at the maximum range of ground-based covering fires, has a mission to delay and break up the ATF.** Delay at the perimeter minefield could allow coastal defenses time for final preparation and movement of reserves to potential landing beaches. Antiship cruise missiles and coastal artillery may provide covering fires. Electric and diesel submarines and aircraft may attempt to attack the amphibious force.

b. **Main Barrier.** **The main barrier holds the primary minefield.** The minefield may be four (4) to six (6) kilometers off the coast and is intended to deny the maneuver of ATF ships and landing craft during ship-to-shore movement. Land-based artillery, air-defense systems, and potentially small boats and aircraft cover the main barrier.

c. **Engineer Barrier.** **The engineer barrier is located at or near the shoreline and contains both minefields and obstacles.** The engineer barrier is often laid in very shallow water (VSW) from 40 to 10 feet of water and the surf zone (SZ) from 10 feet of water to the high water mark. Installed by ground force engineers, the barrier targets



Minefields and obstacles are placed along avenues of egress off the beach and in front of defended positions.

landing craft and amphibious vehicles and attempts to deny access to the beach. Land-based artillery, air-defense systems, and crew-served weapons cover the engineer barrier.

d. **Beach Barrier.** The beach barrier canalizes the landing force for counterattacks by tactical reserve forces. Minefields and obstacles are placed along avenues of egress off the beach and in front of defended positions. Land-based artillery, air-defense systems, and crew-served weapons all provide support to a counterattack by the reserve.

3. Amphibious Breach of Coastal Defenses

a. Amphibious forces should request national and theater collection assets to conduct reconnaissance and surveillance of the defended coastal area to determine the best landing area to conduct the breach. The collection request should focus on location of mines, obstacles, and enemy locations in the area, to include air, naval, and ground forces.

b. **Mine Threat.** Because mines continue to proliferate and incorporate new technology,

current information on a potential adversary's **mine resources** is crucial to planning. The types, characteristics, numbers, and storage locations of mines as well as the transportation assets and at-sea delivery capability are vital information.

c. **Operational Area Characteristics.** Efforts required to clear, remove, or sweep a minefield **depend significantly on the mined area's physical environment.** Water depth and beach characteristics are key factors. Significant ocean currents increase the difficulty of sweeping moored mines. Tidal ranges expose mines in VSW, making them easy to detect but placing a burden on clearing teams to finish their task within a prescribed time limit. Natural and manmade obstacles also hinder breaching operations. High densities of mine-like objects on the bottom complicate operations. Once the landing area is chosen, the coastal defenses in the vicinity are degraded to the desired level through supporting operations conducted by forces other than the amphibious force, to include mine countermeasure (MCM) forces (if not part of advance forces) and the advance force.

Refer to Chapter XIII, "Supporting, Advance Force, and Preassault Operations," for

information on supporting and advance force operations.

d. Local air and maritime superiority in the operational area is required in order for the MCM forces to commence operations. Supporting operations may also be conducted for offensive MCM and to wear down land forces.

e. **Offensive MCM.** If ROE permit, MCM is best accomplished by destruction of mines prior to their deployment. **Proactive MCM include attacks on production and storage facilities, transportation assets, and forces used to plant mines.** A key consideration in any potential littoral conflict is the establishment of ROE that allow for early, aggressive, and proactive MCM operations.

f. **MCM Forces.** The time required for MCM operations will usually require MCM forces to commence operations prior to the arrival of the amphibious force and, potentially, the advance force. **MCM forces are extremely vulnerable and will require constant protection from hostile forces.** Due to the limited assets available for an MCM operation, the CATF will need to prioritize the MCM effort in the operational area. There should also be an awareness that MCM operations have the potential to compromise the OPSEC of the impending amphibious operation. Appropriate consideration or measures should be implemented to minimize the operational impact. Two primary MCM techniques are mine hunting and mine sweeping.

- **Mine Hunting.** Mine hunting is a time-consuming operation. During mine hunting, the MCM platform uses its available assets to locate, classify, and mark all mine-like contacts. Generally, surface or airborne platforms mark possible mine contacts and then explosive ordnance disposal MCM units positively identify, dispose of, or remove them for further exploitation.

- **Mine Sweeping.** Mine sweeping is performed at slightly faster speeds than hunting, which allows for a larger area of coverage. Surface or airborne platforms accomplish sweeping against either bottom influence or moored mines.

Advance force assets will operate in support of breaching operations in accordance with Chapter XIII, "Supporting, Advance Force, and Preassault Operations."

4. Integrated Mine Countermeasures and Amphibious Breaching Operations

a. **The responsibility for breaching coastal mine barriers may be phased.** The MCM commander, who is usually subordinate to the CATF upon the arrival of the amphibious force in the operational area, is responsible for the breach of the outer mine barriers up to the SZ. The CATF is responsible for the breach of any mines and obstacles from the SZ to the high water mark. The CLF is responsible for the breach of any mines and obstacles from the high water mark inland. **MCM and amphibious breaching operations must be synchronized.** Lane requirements of the landing force and mine or obstacle construction will dictate size and composition of the amphibious breach force.

b. **Fundamentals.** Suppression, obscuration, security, and reduction are fundamentals that must be applied to amphibious breaching operations to ensure success.

- **Suppression.** Effective suppression is the mission-critical task during any breaching operation. Suppression protects forces reducing and maneuvering through the obstacle and fixes the enemy in position. Suppressive fires include the full range of lethal and

nonlethal fires, from NSFS and CAS to EA.

- **Obscuration.** Obscuration hampers enemy observation and TA, and conceals friendly activities and movement. EA prevents the enemy use of radar and radio signals to observe and report the operation.
- **Security.** Support forces prevent the enemy from interfering with obstacle reduction and the passage of the assault waves through the breach lanes. Security must be effective against coastal defenses and counterattack forces. Vertical assault forces may seize and deny routes of ingress into the landing area to prevent the counterattack of the landing beaches.
- **Reduction.** Reduction forces, normally composed of ATF and LF elements, create lanes through the mines and obstacles, allowing the assault waves to pass. The location of lanes depends largely on identified weaknesses in the mine and obstacle belt. If the amphibious force cannot find gaps or weak coverage in the obstacles, they will apply concentrated force at a designated point to rupture the defense and create a gap. Units reducing the obstacle mark the lane and report the obstacle type, location, and lane locations to higher headquarters. Lanes are handed over to follow-on forces who further reduce or clear the obstacles, if required.

5. Operations in Nuclear, Biological, and Chemical Environments

The employment or threat of NBC weapons and other toxic materials poses unique challenges when conducting amphibious operations. NBC-capable nations, including many developing nations, may use these weapons to achieve political and military

objectives. The NBC threat occurs across the full range of military operations, including MOOTW. Improvements in missile technology that increases the range and precision of NBC weapons and the use of mines and barriers to canalize or impede the amphibious forces may make it vulnerable to attack. These trends require amphibious force commanders to consider the challenges posed by NBC weapons when conducting amphibious operations. There should be a clear understanding of the potential NBC threats, and planning should include plans to minimize amphibious force vulnerabilities.

Refer to JP 3-11, Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments.

a. **Responsibilities.** Combatant commanders must be able to execute campaigns under NBC threats and environments through unified action at the theater level. Unified action encompasses not only NBC-related actions but also all other actions that permit continuation of theater operations and focus on attaining the single theater military objective in line with the JFC's intent. **The amphibious force must be capable of operating in an NBC environment to attain the amphibious force objectives, which are a part of the JFC's overall objectives.** Within the amphibious force, the CATF is responsible for NBC defense of the assigned amphibious force afloat, including the LF while embarked. The CLF is responsible for NBC defense of the landing force once ashore.

b. **Planning Considerations.** Amphibious force commanders must address potential NBC threats during the planning phase.

- NBC defense plans must include provisions for the following.
 - Requesting supporting operations to eliminate or reduce an adversary's NBC

capabilities within the operational area prior to the arrival of the amphibious force.

- Planning advance force operations to further degrade an adversary's NBC capabilities and to detect contaminated areas that may interfere with the concept of operations.
- Planning offensive and defensive actions taken by the amphibious force to minimize the vulnerability to and mitigate the effects of NBC attacks that may impact on the operational area, to include the development of branches and sequels.
- The amphibious force's IPB process must address the capabilities and limitations of an adversary's NBC weapons and delivery systems; their C2 and release procedures; and indicators of intent to employ NBC weapons. The amphibious force commanders should provide target planning and execution guidance using the full extent of actions allowed by the ROE based on the effects needed to be achieved against the adversary's NBC weapons, delivery means, and C2 capabilities.
- The principles of NBC defense must be factored into planning and specifically address the hazards created by NBC weapons: avoidance of NBC hazards, particularly contamination; protection of individuals and units from unavoidable NBC hazards; and decontamination in order to restore operational capability. Application of these principles (see Figure IX-1), helps to minimize vulnerabilities, protect the amphibious force, and maintain the operational tempo in order to achieve the amphibious force objectives.
- **Contamination Avoidance.** Contamination avoidance prevents the

disruption of the amphibious operation by eliminating unnecessary time in cumbersome protective postures that have the potential to degrade the force and minimizing decontamination requirements. Avoiding contamination requires the ability to recognize the presence or absence of NBC hazards in the air, on water, land, personnel, equipment, and facilities, at both long- and short-range. Supporting and advance force operations should provide for long-range surveillance and detection capabilities focusing on such areas as the landing beaches, helicopter landing zones, and the amphibious force objectives. Preassault operations and actions taken throughout the remainder of the amphibious operation should provide for short-range surveillance and detection capabilities in support of the landing force units operating ashore and ATF ships within the sea echelon area.

- **NBC Protection.** Specific actions required of the ATF and LF before, during, and after NBC attacks should be clearly communicated and rehearsed. NBC protection conserves the force by providing individual and collective protection capabilities.
 - **Individual Protection.** Commanders must adopt a mission-oriented protective posture (MOPP) to establish flexible force readiness levels for individual NBC protection. MOPP analysis (the process of determining a recommended MOPP) integrates NBC protection requirements — derived from NBC threat assessments — with mission requirements in light of the performance degradation caused by wearing protective equipment. The LF and ATF personnel manning flight decks, well decks, and landing craft as well as operating ashore (such as beachmaster units) require individual protective equipment and must be capable of

NUCLEAR, BIOLOGICAL, AND CHEMICAL DEFENSE PRIORITIES

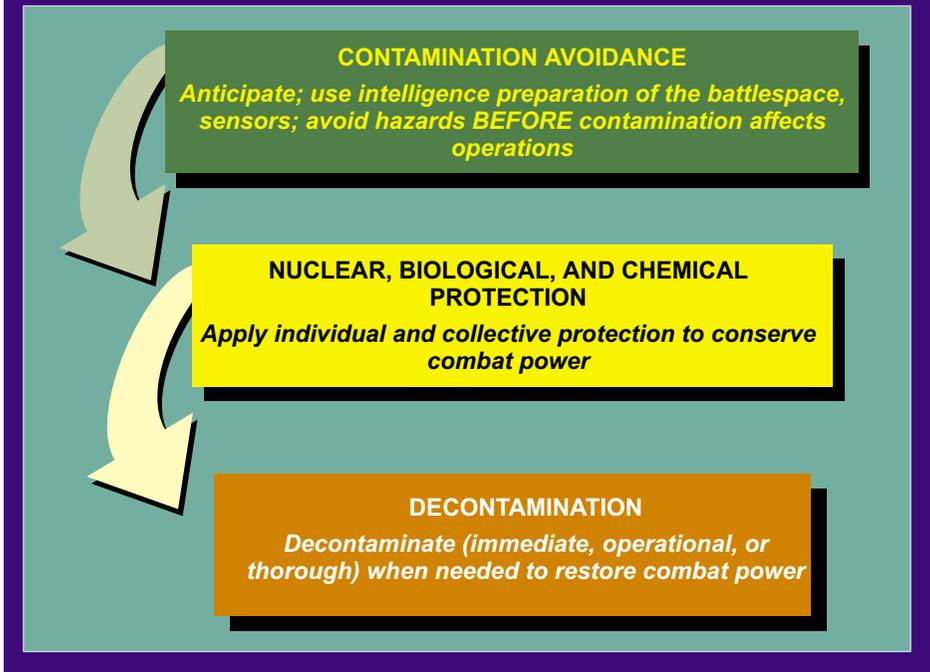


Figure IX-1. Nuclear, Biological, and Chemical Defense Priorities

operating in MOPP-levels commensurate with the threat.

- **Collective Protection.** Sustaining operations in NBC environments may require collective protection equipment, which provides a toxic-free area for conducting operations and performing life support functions such as rest, relief, and medical treatment. When collective protection is not available ashore, plans must be developed, exercised, and evaluated to move personnel to alternative toxic free areas afloat that are well away from contaminated areas ashore.
- **Decontamination.** When contamination avoidance is not possible, decontamination

supports the post-attack restoration of the amphibious force and the resumption of operations to a near-normal capability. Decontamination is intended to minimize the time required to return personnel and mission-essential equipment to a mission-capable state. Because decontamination may be labor and logistically intensive and assets are limited, the amphibious force commanders must prioritize requirements and decontaminate only what is necessary. Commanders may choose to defer decontamination of some items and, depending on agent type and weather conditions, opt to either defer use of equipment or allow natural weathering effects (temperature, wind, salt water, and sunlight) to reduce hazards.

Decontamination is organized into three categories that reflect operational urgency: immediate, operational, and thorough. In order to maintain the operational tempo, the amphibious force uses immediate and operational decontamination to the maximum extent possible until the amphibious force objectives are secured. During an operational pause, thorough decontamination is conducted. Service publications provide detailed tactics, techniques, and procedures for the technical aspects of decontamination.

•• **Immediate Decontamination.** The goal of immediate decontamination is to minimize casualties, save lives, and help to limit contamination exposure and spread. Upon becoming contaminated, individuals should carry out immediate decontamination, which includes three tasks: skin decontamination, personal wipedown (hood, mask, gloves, and individual equipment), and operator spraydown of frequently touched equipment surfaces using on-site decontamination equipment.

•• **Operational Decontamination.** Operational decontamination limits contamination exposure and spread, and helps to sustain operations by providing temporary and, in some cases, long-term relief from wearing protective equipment. Operational decontamination includes two techniques: MOPP gear exchange for personnel, and operator washdown for mission-essential equipment.

•• **Thorough Decontamination.** Thorough decontamination reduces or eliminates the need for wearing of protective equipment. Specialized decontamination units and personnel support thorough decontamination. There are three thorough decontamination techniques: detailed personnel decontamination, detailed equipment decontamination, and detailed aircraft decontamination. Thorough decontamination is required for total reconstitution of the amphibious force and the return to unrestricted embarkation of personnel, equipment, and materiel.