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## EXECUTIVE SUMMARY

**Title:** "Forward...From The Sea": Intelligence Support to Naval Expeditionary Forces

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**Thesis:** Is the restructuring of Naval and joint intelligence meeting the challenges of providing timely, accurate, and relevant intelligence support to joint warfighters.

**Background:** With the disintegration of the Soviet Union, the imminent, massive, global threat ended. As a result, naval forces shifted from a Cold War, open ocean, blue water naval strategy designed to fight a force at sea against a high-volume, high speed Soviet threat, to a regional, littoral, expeditionary focus. This shift away from operations on the sea to the projection of power from the sea in order to shape events in the littorals poses distinct challenges to both Naval Forces and the intelligence community. The intelligence support structure needs to be adjusted to provide joint forces and sea-based intelligence personnel with more reliable and flexible access to near-real time intelligence.

**Conclusions:** Intelligence support to the warfighter can be enhanced by expanding cross-training opportunities and interoperability, and by increasing the proficiency of ground analysts afloat. The integration of the Navy and Marine intelligence team is essential for successful operations in the littorals. Naval intelligence must continue to ensure that sensors and collection methods, afloat and ashore intelligence centers, and dissemination systems are highly capable and provide timely and accurate sensor-to-shooter connectivity. Naval intelligence is striving to provide the necessary intelligence support for training, exercise, acquisition, and modernization requirements as well as support real-world contingency operations.

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**FORWARD...FROM THE SEA:**

**INTELLIGENCE SUPPORT TO NAVAL EXPEDITIONARY FORCES**

**CHAPTER 1**

## OLD AND NEW DOCTRINE

"By 'Intelligence' we mean every sort of information about the enemy and his country - the basis, in short, of our plans and operations."

--Karl von Clausewitz, On War

"Nimitz's concept of intelligence was dynamic: Facts were high grade ore to be sifted carefully, the pure metal of knowledge extracted and forged into a weapon to destroy the enemy."

-- Gordon W. Prange, Miracle at Midway

The 1992 Navy and Marine Corps White Paper "...From The Sea" and its follow-on "Forward...From The Sea" in 1995 recognized the dissolution of the U.S.S.R. and the end of the Cold War (1989-91) had ushered in a 'new international order'. These documents signaled "a change in focus and priorities for the Naval Service away from (primarily) operations on the sea to combat in the littoral regions of the world-- those areas adjacent to the oceans and seas that are within direct control of and vulnerable to the striking power of sea-based forces (and the open seas)."<sup>1</sup> This fundamental shift in Naval Service priorities, a result of the changed strategic landscape where regional challenges, not a global maritime threat, guide our operational focus, also required Naval Intelligence to realign its emphasis consistent with new doctrine, training, equipment, and personnel.

Addressed here is whether the restructuring of Naval Intelligence and the joint intelligence community is meeting the challenges of providing timely, accurate, and relevant intelligence support to joint warfighters.

While the dissolution of the former Soviet Union removed the possibility of nuclear conflict between the superpowers, it has not brought peace throughout the world. The fracturing of the bi-polar world of the Cold War has led to the release of a host of old enmities and conflicting aspirations. Naval Doctrine Command lists the threats and challenges to our national security interests as: emergence of hostile regional powers; supra-national religious fundamentalist movements (no state boundaries); nationalistic/ethnic conflict; proliferation of weapons of mass destruction and advanced delivery vehicles; availability of advanced conventional weapons (including submarines, mines, cruise and tactical ballistic missiles); wide commercial availability of advanced information warfare components; and, terrorism.<sup>2</sup> A global economy, international drug cartels, dwindling resources, and increasing populations will provide additional tensions and opportunities for conflict.

With the disintegration of the Soviet Union, the imminent, massive, global threat ended. Naval Forces have shifted from a Cold War, open ocean, blue water naval strategy designed to fight a force at sea against a high-volume, high speed Soviet threat, to a regional, littoral, and expeditionary focus. "...From The Sea" (FTS) advocates "the restructured Naval Force must expand and capitalize upon its traditional expeditionary roles. 'Expeditionary' implies a mindset, a culture, and a commitment to forces that are

designed to operate forward and to respond swiftly. Expeditionary means operating in the littoral or 'near land' areas of the world which are frequently characterized by confined and congested water and air space occupied by friendlies, adversaries, and neutrals, which makes identification extremely difficult."<sup>3</sup>

This shift away from operations on the sea to the projection of power from the sea in order to shape events in littoral regions--on land or near the shore--poses distinct challenges to both Naval Forces and the intelligence community. As a former commandant of the Marine Corps pointed out, "The close-in environment, complicated as it is by a short-range air warfare picture and perhaps by civilian air traffic as well as mine warfare and shallow-water submarine threats, is going to be a tough place to operate."<sup>4</sup>

During the Cold War, the Navy and Marine Corps focused heavily on the Soviet Navy. Much of the Naval Intelligence support came from Fleet Intelligence Centers (FICs), which were dedicated to providing operational intelligence on the Soviet navy to fleet operating forces. With the demise of the Soviet Union and the decline of the blue water naval surface threat, the intelligence community was restructured and the Joint Intelligence Center (JIC) is now the cornerstone of intelligence support to the warfighter. The JIC is designed to provide 'one-stop shopping' for deployed warfighters, who can 'pull' intelligence and information from relevant products and data bases as well as provide tailored all-source, fused products. As will be shown, this process is effective but needs to be adjusted to provide joint forces and sea-based intelligence personnel with more reliable and flexible access to strategic, theater, and tactical assets as well as near-real-time intelligence data.

## **CHAPTER 2**

### **DIFFERENT THREAT, DIFFERENT DIRECTIONS**

"War is the domain of uncertainty. Three-fourths of the things upon which action in war is based are more or less hidden in a mist of uncertainty. A keen and penetrating intelligence is necessary to ascertain the truth."

-- Carl von Clausewitz, On War

"Great advantage is drawn from knowledge of your adversary, and when you know the measure of his intelligence and character you can use it to play on his weaknesses."

-- Frederick the Great, Instructions to his Generals, 1747

"The great military victory we achieved in DESERT STORM and the minimal losses sustained by U.S. and Coalition forces can be directly attributed to the excellent intelligence picture we had on the Iraqis."

-- General H. Norman Schwarzkopf, USA, CINCCENTCOM, 1991

"...From the Sea" (FTS) defined a change of focus for both the Navy and Marine Corps away from blue

water operations and towards power projection and the employment of naval expeditionary forces to influence events from littoral regions. FTS reflects a shift in focus from command of the sea to the new threats evident in the post-Cold War world, such as aggression by regional powers. These threats require the Navy-Marine Corps team, resident in the NEF, to be capable of rapidly projecting decisive military power, maintaining forward-deployed naval forces, and supporting national strategic objectives through strategic deterrence, sea control, maritime supremacy, and strategic sealift.

FTS concluded Naval Forces have changed "in response to the challenges of a new security environment". The previous "emphasis on maritime superiority operations gave way to power projection and the employment of naval forces from the sea to those regions of the world vulnerable to the striking power of sea-based forces."<sup>5</sup> This shift in strategic focus means littoral warfare and operational maneuver from the sea (the tactical equivalent of maneuver warfare on land) will be emphasized. Operational Maneuver From The Sea (OMFTS) is a response to both danger and opportunity. The danger, summarized by the phrase 'chaos in the littorals', consists of a world characterized by the clash of the myriad forces of national aspiration, religious intolerance, and ethnic hatred. The opportunity comes from significant enhancements in information management, battlefield mobility, and the lethality of conventional weapons."<sup>6</sup>

The bipolar world's predictability has given way to one where civil turmoil and unrest are increasing and causing more, not fewer, wars. With close to 200 states today and hundreds of regions and entities without geographic boundaries, intelligence planners must be prepared to make sense of 'fractals' (incongruous bits of information that paint a picture when viewed 'holistically')--patterns of chaos--to do predictive intelligence.<sup>7</sup>

Naval Expeditionary Forces (NEFs; comprised of a Carrier Battle Group (CVBG), Amphibious Ready Group (ARG), and Marine Expeditionary Unit, Special Operations Capable (MEU(SOC)) will be challenged in the confined and congested waters of the littorals. Conflicts are expected to be concentrated in the world's coastal areas and choke points.

The immediate challenge facing the intelligence community is an increasingly prevalent breakdown of order which result in chaotic situations where ethnic groups, street gangs, clans, and other non-state actors wage the war of 'all against all'. Famine, terrorism, civil war, and overt aggression will continue to vex planners and intelligence analysts alike.

Above all, intelligence support to the warfighter involved in these 'chaotic situations' will need to be proactive by anticipating needs (both analytical and resources) based on the commander's mission, intent and the tactical and operational situation. Mission success in the littorals will be determined by intelligence providing the right information and resources at the right time to the commander.

Iran presents the most direct and immediate challenge to our ability to operate in the littorals. Tehran's desire for regional primacy and a growing arsenal could fuel one of Iran's enduring ambitions--control of the Strait of Hormuz and the Arabian Gulf. While Iranian military power constitutes a threat to all Gulf

states except Iraq, Iran's internal difficulties pose the greatest threat to regional stability. These difficulties may serve as a pretext for the mullahs to undertake a campaign of terrorism to divert attention. Additionally, high inflation and the migration of professionals have decreased prospects for economic and social reforms. This situation could lead to domestic upheaval spilling over into neighboring countries.

While operating in the littorals, the NEF will be primarily concerned with activities which can impact operations from the sea. These concerns include: mine laying, particularly in restricted waters and chokepoints; air attacks by low flying aircraft, particularly at night, equipped with air-to-surface missiles, from within their own airspace; attacks by surface ships, particularly at night, equipped with surface-to-surface missiles, from positions along the coastline; attacks by submarine-launched torpedoes; and, missile attacks from coastal missile sites, either fixed or mobile.

### **Anti-Surface Warfare Concerns**

The primary threat posed by potentially hostile submarines is against sea lines of communications (SLOCs), either through covert mining or torpedo attack. The perceived presence of a hostile diesel submarine can significantly impede naval operations, as evidenced during the Falkland Islands conflict. A small number of Third World countries have established conventionally powered diesel submarine forces as relatively cheap and extremely well-suited means of performing anti-surface ship and special warfare combat missions in shallow and restricted waters.

With the recent improvements (such as quieting, automation, computerized combat systems, and air independent propulsion) in diesel-powered submarine (SS) technology, the concern over Russian-produced *Kilo*-class SS' and German-produced *Type-209*-class SS' is growing. But this concern, if kept in perspective, is manageable if we continue to integrate intelligence information with anti-submarine warfare (ASW) planning and tactics, and the research, development, and purchase of ASW equipment.

Of particular concern to U.S. naval forces is Iran's anti-surface warfare (ASUW) capability. Iran's proficiency with its two *Kilo*-class SS' is better than intelligence analysts originally expected. The *Kilo*-class submarine is a major concern to naval intelligence and the fleet because of the difficulty in locating, tracking, and eliminating this modern quiet diesel attack submarine. The combination of Iranian *Kilo*'s, mines, and *Silkworm* and *Seersucker* coastal missile batteries would present a challenge to U.S. forces and merchant traffic operating in the Strait of Hormuz and Arabian Gulf.

Intelligence concerns about the *Kilo*'s is fully justified based on Iranian naval activity. In November and December 1994, both *Kilo*'s test-fired their wake-homing and wire-guided acoustic homing torpedoes. These exercises were intended to demonstrate Iranian capability to interdict regional shipping lanes in the Strait of Hormuz.

On the other side of the globe, North Korea, with its 22 obsolescent *Romeo* SS' and four even older *Whiskey* SS', 10 new *Sang-O* coastal submarines (SSC's) as well as 48 *Yugo* midget submarines (SSM's), presents a challenge to U.S. maritime superiority in the Far East. North Korea possesses the world's fourth largest submarine force and the world's largest midget submarine force. However, despite its numbers and

operational experience, the North Korean submarine force is only modestly proficient in coastal water operations. During a conflict, North Korean submarines could support SOF (special operating forces) insertion into South Korea, offensive and defensive mining, reinforcement interdiction, and coastal defense. Intelligence, surveillance, and reconnaissance and our ability to maneuver naval forces at sea would be essential to minimizing our losses and defeating the North Korean submarine capability.

Iran is also engaged in an ambitious conventional weapons program. China recently provided *Hegu*-class guided-missile patrol boats equipped with C-802 cruise missiles. Tehran recently test-fired the C-802, a new low-flying anti-ship cruise missile with a range of 60 nautical miles. The missile flies low to avoid radar detection and adds a 'new threat dimension' to Iran's capabilities against gulf shipping.

In addition, Beijing has also upgraded Iran's *Silkworm* anti-ship missiles while Russia has supplied SU-24/*Fencer*, missile-equipped, land-based fighter-bombers. Taken as a whole, these developments point to an increasingly advanced Iranian ASUW capability.

To further demonstrate Iran's capability to influence events in the Arabian Gulf, in the fall of 1994, time coincident with Operation Vigilant Warrior against Iraq and following tensions with the United Arab Emirates over three disputed islands (Abu Musa and the Tunbs) in the eastern Arabian Gulf, Iran commenced a major military buildup by stationing tanks, artillery, and surface-to-air and, possibly, anti-ship missiles on the islands. In March 1995, U.S. Secretary of Defense William Perry commented on the possible existence of Iranian chemical weapons on the islands.

Despite recent advances in capabilities and evidence of procurement programs, Iran is not ten-feet tall. "In the next few years, Iran will purchase additional advanced combat aircraft, surface-to-surface missiles, surface-to-air missile (SAM) launchers, and an additional *Kilo*-class submarine. However, Iran's ability to procure spare parts, maintain and operate equipment, field it for prolonged periods, and employ it in an integrated fashion are suspect, calling into question the utility of these acquisitions."<sup>8</sup>

While Iran spends about \$600-800 million a year on imported armaments, what is more worrying is how effectively Iran has been able to master "operations short of war" (i.e.: covert, subversive operations). During the 1987-88 tanker war, Iran gained more military advantage when it laid mines and used armed dhows (small boats) than when it tried to take on the U.S. Navy. Iranian lessons learned from these encounters and from the Gulf War suggest Iranian leaders will not confront the U.S. in a conventional military conflict but will employ lower-level military action (i.e.: mine laying, speed boat attacks, sabotage with Gulf Arab countries).

## **Mine Warfare Concerns**

The detection and disabling of mines remain a serious concern for expeditionary forces operating in shallow waters. Since 1950, more ship casualties have occurred due to mines than missile, submarine, and air attacks combined.<sup>9</sup> During Desert Storm, Iraqi mines--inexpensive leverage for second-rate nations--prevented a Marine amphibious assault on Iraqi forces in Kuwait. Desert Storm demonstrated that mines

do not have to kill to be tactically, strategically, and politically effective. Mines are cheap, available, and, as weapons of `sea denial', constitute a potential "show stopper" during power projection operations.

Every potential adversary has the capability to employ anti-shipping and anti-landing mines as effective weapons of intimidation and as part of an integrated coastal defense. Adversaries realize mines are the most cost effective weapon in the littorals. By using, or threatening to use, mines, opponents can achieve temporary battlespace dominance by shaping the battlespace and restricting the use of the seaward approaches to the littorals.

Excluding the U.S. and Russia, at least 45 countries possess mining capabilities ranging from poor to sophisticated. At least 29 countries other than Russia have demonstrated mine production capability, with 20 attempting to become mine exporters. The demand for mines is increasing due to successful mining campaigns by Libya, Iran, and Iraq.<sup>10</sup>

Using a variety of technologies, modern naval mine designs provide increased threat ranges and improved countermeasures resistance. Mines will continue to be widely available with a number of suppliers offering conversion kits to update older systems with newer, more sensitive, and less countermeasurable exploder systems. An additional concern to the NEF will be the ability of maritime nations with suitable hydrographic conditions to acquire and deploy very shallow water mines to deter power projection ashore.

Lt. Gen. Charles Wilhelm, Commander Marine Corps Forces Atlantic, views mine warfare as the NEF's achilles heel:

[Both land and sea] mines are a vexing problem. Third world countries, some even without a standing navy, have access to `cheap' and `effective' mines. To counter this threat, the Marines need improvements in the detection, avoidance, and breaching of mines. [I do] not expect a `good capability' in mine warfare until after the year 2000.<sup>11</sup>

Intelligence planning, collection, processing, and dissemination and a joint C4I network (JMCIS) will be critical factors in defining success in mine warfare (MIW). Intelligence assets will be indispensable in locating minefields and mine laying platforms, tracking the movement of mine stockpiles, determining enemy mine capabilities, and understanding the enemy's intent. All-source intelligence will play a vital part in any mine counter-measure (MCM) operation. Knowing where and when to look is a recognized force multiplier and will direct reconnaissance and surveillance assets against suspected or identified areas and vulnerabilities.

Realistic MIW and MCM training during recent JTF Exercises is a significant step towards the integration of intelligence assets (national technical means, theater reconnaissance, human intelligence, special warfare, and joint organic forces) that can provide cueing on enemy mine capabilities and disposition. What the Navy is attempting to develop is an "intelligence system organized and framed to collect, analyze, maintain, disseminate, and utilize mine warfare and overall littoral defense data base information, during both peacetime and hostilities."<sup>12</sup> By emphasizing MIW and MCM during JTFEX's,

the Navy can identify and rectify intelligence gaps in mine warfare data bases, analytical products, tactics, doctrine, and C4I connectivity so the mine threat can be reduced to an acceptable risk.

## Missile Systems

The ballistic missile threat is real and increasing with over 8,800 short-range ballistic missiles worldwide. For example, Yemen fired several SCUDs (300 km range) during its 1994 civil war; Iran is actively working at fielding new, more capable systems, with SCUD variants under development that would offer longer ranges and warhead options; China launched CSS-6's in July 1995 and fired four M-9's in March 1996 to demonstrate political leverage over Taiwan and challenge U.S. foreign policy. If Iraq had launched its SCUD missiles with nuclear, biological, or chemical warheads during the Gulf War, it could have created havoc among Coalition forces. As it was, a single conventional SCUD inflicted 21% of all U.S. combat casualties. (The 25 February SCUD attack on Dhahran killed 28 and wounded 97. Total U.S. casualties in the Gulf War were 148 killed and 458 wounded.)

The U.S. is concerned rogue states, such as Iran, Iraq, Libya, and North Korea, may obtain technology from China or Russia to increase the range, accuracy, and lethality of their ballistic missiles. This development would change their ballistic missiles from terrorist weapons to operational weapons that could be targeted against areas used by U.S. and allied forces such as ports, beach heads, airfields, and offshore staging and operating areas.

Iran has an aggressive overt and covert program to steal, buy, produce, and fabricate ballistic and cruise missiles and nuclear, biological, and chemical weapons. North Korea and China are willing to sell advanced weaponry to anyone with hard cash. In its pursuit of ballistic missiles, Iran has acquired the extended-range SCUD C (greater than 300 km) from North Korea and is expected to receive the NO DONG-1 (1,000 km range) from the same source. The situation is made even more worrisome by the ease with which older systems can be improved through purchases of off-the-shelf technology.

Iraq's NBC (Nuclear, Biological, and Chemical) and missile programs were heavily damaged or destroyed by allied airstrikes during Desert Storm. Others have been rendered inoperable through continuous intrusive inspections. However, because the U.N. cease-fire agreement permits Baghdad to develop, test, and produce missiles of ranges up to 150 kilometers, Iraq has held onto missile support equipment and propellant that can be used for longer range missiles. Additionally, a United Nations commission suspects that Iraq has hidden between six and sixteen ballistic missiles capable of striking Israel, Kuwait, or Saudi Arabia with warheads containing nerve or germ agents.

Libya, though possessing less indigenous expertise than Iran or Iraq, has actively sought both chemical weapons and ballistic missiles and may be pursuing biological and nuclear weapons. "In addition to 300-kilometer range SCUD ballistic missiles, Libya has reportedly arranged to buy extended-range SCUD C's and perhaps the NO DONG-1 from North Korea."<sup>13</sup>

Additional ballistic missile concerns are the incorporation of GPS (Global Positioning System)

technology to increase accuracy and the use of commercially available imagery to develop or update potential target listings. U.S. and Israeli aerospace firms are planning to sell high-resolution (one to two meter resolution - meaning objects of that size can be distinguished) digitized satellite images of the Earth by next year. The images are taken by commercial versions of military spy satellites and would be available on a global distribution network. Russia also offers detailed satellite images on a broad scale, but their responsiveness, quality, and resolution are inferior to the U.S. and Israeli products.<sup>14</sup> As a result of intelligence estimates of the worldwide ballistic missile threat, the Pentagon is shoring up the development of the Army's and Navy's anti-missile systems which are intended to defend against short-range missile attacks. The Pentagon is attempting to meet the growing military concerns about the vulnerabilities of U.S. forces to short-range missile attack.

About 30 countries possess shorter-range missiles, yet the U.S. has not fielded a new system to protect its forces since the Army Patriot batteries were introduced during the Persian Gulf War to counter Iraqi Scuds. Senior defense officials have expressed increasing frustration at slippage in development of the Army's Patriot Advanced Capability (PAC-3) and the Navy's Area Defense systems, both designed to provide protection against missile attack within a roughly 25-mile wide area.<sup>15</sup>

The Navy is looking to increase the capability of its Standard missile and AEGIS AN/SPY-1 radar systems on AEGIS cruisers and destroyers to improve our theater ballistic missile defense (TBMD). This capability will require enhanced intelligence inputs, connectivity, and commonality. Intelligence connectivity and interoperability will be essential for joint missile defense (AEGIS/CEC (Cooperative Engagement Capability)/Patriot) against sea-skimming cruise missiles, aircraft, and ballistic missiles. The intelligence systems that will be used to provide ballistic missile defense are operational today. They include: JTIDS, TRAP, TIBS, JMCIS.

In a related development, intelligence initiatives are underway to streamline the sensor-to-shooter loop and enhance our ability to detect, track, target, and destroy mobile missile launchers. These initiatives include: enhancements to JTIDS (Joint Tactical Information Distribution System) which will improve joint attack timelines; acquisition of UAV's with high resolution sensors, long range, and extended loiter time to determine launcher locations; and, transmission of real-time intelligence directly to the shooter from aircraft (i.e.: U-2's) and overhead sensors (i.e.: UAV's) via satellites. These initiatives will provide time-critical target and threat data as well as timely warning dissemination to the trigger pullers.

Currently, ballistic missiles are not considered a threat to naval forces at sea and will not be until terminal-homing sensors are developed and deployed. However, "[t]he threat to maritime forces would significantly increase with the wider availability of such terminally guided ballistic missile payloads but would still be dependent on the threat country's ocean reconnaissance capabilities; its ability to target ships at long ranges; and its command, control, and communications capabilities."<sup>16</sup>

The NEF's requirement to perform power projection operations means a functional defense against a ballistic missile threat will be essential. Only naval systems can provide a ballistic missile defense capability in the crucial, initial stages of a crisis. In addition to the ballistic missile threat, the intelligence community is also faced with the difficult task of reducing the potential threat from modern low-

observable missile systems that are beginning to reach the inventories of a few nations. The number of nations with access to available technology and the ability to apply it in innovative ways is growing. However, the ever-increasing cost of the most lethal and sophisticated equipment is rising faster than the ability of all but a few of the richest Third World countries to pay for it. An additional concern is the still potent threat from older weapons that can be modernized with sophisticated subsystems. Anti-ship cruise missiles, surface-to-air missiles, torpedoes, mines, and short-range ballistic missiles can become more threatening by substituting modern targeting logic systems and sensor technologies.

The potential threat presented by even an old anti-ship cruise missile is thus greatly enhanced if the seeker system is modernized with highly sophisticated jam-resistant or low-probability-of-intercept features. A relatively old surface-to-air missile system may be upgraded by the integration of modern digital fire control system components, thus significantly altering its threat recognition signature and its existing countermeasures considerations.<sup>17</sup>

By the end of the decade, low observable (LO) cruise missiles will present a serious challenge to the NEF. "LO missiles and remotely piloted vehicles are under development in at least eight countries and could be available for export by the year 2000 to the few countries that could afford them."<sup>18</sup> LO retrofits to existing aircraft designs are expected to become more common as signature reduction technologies are simplified and reduced in cost.

Although the threat from the Russian Navy has diminished, the potential threat posed by many state-of-the-art Russian weapons has increased due to the possibility of their proliferation to potential adversaries. For example, Ukraine has offered to sell the Russian-manufactured supersonic sea-skimming SS-N-22 anti-ship cruise missile to Iran. The NEF and its organic intelligence elements must be capable of operating in an increasingly complex threat environment where adversaries may be armed with a combination of Russian, Chinese, Western, or Third World weapons systems. When compared to missile systems available today, future anti-ship cruise missiles will be more capable, easier to use, capable of installation on a wider variety of platforms, potentially more easily available or affordable, and harder to detect and counter.

DESERT STORM dramatically demonstrated the effectiveness of modern airpower. Potential threat nations have surely learned from Iraq's experience, and many are attempting to upgrade air defense capability. High on most of these country's lists are surface-to-air missile (SAM) systems, particularly mobile SAMs. SAM systems available today employ multiple target detection and tracking sensors (radar, optical, and infrared), and are effective both day and night, in addition to being difficult to detect and counter. Many of these new sensors and missiles can be retrofitted into older launch and control systems to improve effectiveness at a relatively low cost.

## **CHAPTER 3**

### **INTELLIGENCE SUPPORT: ADDRESSING THE NEW THREAT**

"A great part of the information obtained in war is contradictory, a still greater part is false, and by far the greatest part is uncertain. "

-- Carl von Clausewitz, On War

"...When the mass of the information has been collected, the art is to sift the wheat from the chaff, and then to lay before the commander a short clear statement."

-- Field Marshal Earl Alexander

"Tell me what you know...tell me what you don't know...tell me what you think...always distinguish which is which."

-- General Colin L. Powell, USA, CJCS, 1990

"In establishing a JIC at each combatant command, we have improved the quality of intelligence support to the warfighter while decreasing the resources required to produce such support."

-- CJCS Report on the Roles, Missions, and Functions of the Armed Forces of the U.S., February 1993

The new threat environment has resulted in a intelligence paradigm shift. Retired General Colin Powell purports:

From the commander's perspective, information received should provide an accurate description of friendly, enemy, and neutral elements in an area of concern-the battlespace. To provide the information detail and quantity required, a distributed data base needs to be created from information provided by all available sources. Intelligence, operational, logistic, and administrative information must be fused and distributed in such a way that it can be pulled from this global `infosphere' on demand.<sup>19</sup>

Warfare today is swift, fluid, and information intensive. The dynamic changes in today's battlespace must be immediately and securely communicated to the affected units. With today's over-reliance on 'systems', the intelligence community cannot lose sight of the fact that only the human can produce a better tailored product to meet the needs of the consumers of intelligence. In light of the community's emphasis on a sophisticated collection network of imagery and electronic intercepts via satellite, aircraft, and ground-based systems supplemented by human intelligence, we must always bear in mind that intelligence remains an 'art' despite the fascination with science.

One intelligence goal should be to provide timely and accurate sensor-to-shooter information direct to the warfighter. Another is to provide the decision maker with an estimate of threat capabilities and limitations and environmental data, specifically an assessment of physical, cultural, economic, and political characteristics and vulnerabilities. Bold, predictive analysis will be required of the intelligence analyst and expected by the commander.

NEF operations in the littorals and Operational Maneuver from the Sea (OMFTS) will require a different intelligence mindset. We will need to perform our intelligence functions in a joint environment. And above all, we will need to provide predictive analysis and 'dare to be wrong'.

The high tempo of operations that is essential to successful Operational Maneuver from the Sea (OMFTS) requires that intelligence be provided to decision-makers with a minimum of delay. Technology that permits the rapid dissemination of intelligence products will play an important role in this effort. The key to effective intelligence support of OMFTS, however, lies in the orientation of intelligence specialists. In particular, intelligence specialists must be capable of rapidly making educated judgments about what the enemy is likely to do.<sup>20</sup>

As a result of this shift in emphasis, Navy and Marine staffs will need to be trained as effective, well-rounded teams, viewing the littoral as a single battlespace. Marine Expeditionary Forces (MEF), employing the Marine Air-Ground Task Force (MAGTF) combined arms doctrine, can respond across the spectrum of military operations. However, the MEF presents demands and requirements that are a challenge to the joint intelligence community. To meet this challenge, the Office of Naval Intelligence (ONI) is improving the jointness of intelligence professionals by exchanging assignments between Navy and Marine Corps intelligence officers. The objective of this initiative is twofold: to provide high-grade, sophisticated, predictive intelligence to naval expeditionary forces and to provide better support to joint warfighting by developing officers who will be better J-2's.

ONI has developed a robust infrastructure to provide timely and responsive intelligence support to the fleet. ONI's Surface Analysis Branch for Evaluation and Reporting (SABER) was established in 1993 to be the focal point for surface-related intelligence support for Expeditionary and Littoral Warfare. SABER's mission is to provide analysis about naval mines, coastal artillery, anti-ship cruise missiles, anti-landing, special operations forces, and unconventional threats in support of expeditionary warfare in the littoral environment. SABER provides intelligence support to the fleet, battle group, Marine Expeditionary Force, Marine Expeditionary Unit, and special operations forces through country-specific threat analysis in message format (SABER-CUTS) and tailored briefing support. SABER's support has evolved into an essential intelligence requirement during pre-deployment work-ups as well as when units are forward-deployed. ONI's Strike Projection Evaluation and Anti-air Research (SPEAR) Division provides threat analysis on organization, operations, tactics, training, and readiness of military and paramilitary forces identified as potential threats to U.S. naval forces. SPEAR provides support for Navy/Marine Corps strike, anti-air, anti-surface, and amphibious warfare disciplines. Specific capabilities analyzed include land and naval air defenses, anti-ship forces, and fixed-wing and helicopter threats to landing forces.

SPEAR provides a tailored briefing to every deploying aircraft carrier battle group (CVBG), Marine Air Group (MAG), Marine amphibious ready group (MARG), and Navy amphibious squadron (PHIBRON) (At pre-deployment seminars, Naval Strike Warfare Center (Strike U) presents targets and the operational orders of battle for the deployment theaters and areas of responsibility). SPEAR analysts also present the latest threat intelligence pertaining to those targets. In addition to CVBGs, Marine Air Groups (MAG),

Marine amphibious ready groups (MARG), and Navy amphibious squadrons (PHIBRONs) also receive pre-deployment briefings from SPEAR.

The Submarine Warfare Operations Research Division (SWORD) transitioned from a Cold War organization focused on the Soviet Navy's submarine component to an organization that monitors: global submarine threats, including worldwide submarine operations, capabilities, and systems; oceanographic issues affecting littoral and amphibious warfare, including the tactical uses of oceanography and the effect of shallow water environments on submarine and sensor systems; and, global environmental issues.

The Marine Corps Intelligence Activity (MCIA) provides intelligence training support, development and acquisition support, and planning and exercise support to the Marine Corps support establishment and to Fleet Marine Force commands. The primary mission of MCIA Quantico is support to the Marine Corps Concept-Based Requirements System, providing intelligence support to the combat development, acquisition, and operational testing processes that support expeditionary warfare. MCIA Suitland focuses on exercise and contingency planning support for pre-deployment Marine Air-Ground Task Forces (MAGTF).

Based on a naval intelligence officer's view of the MAGTF Staff Training Program's (MSTP) Marine Corps Planning procedures, a recommendation would be to incorporate MCIA personnel into the OPT (Operational Planning Team) and IPB (Intelligence Preparation of the Battlefield) workshops. MCIA intelligence specialists could serve as Red Cell members during the OPT process and provide a more realistic training environment, especially during the wargaming phase.

Additionally, MCIA personnel should ensure Marine Corps operators understand the limitations and shortfalls of IPB. "IPB is a process that provides a systematic approach to defining intelligence requirements and integrating information into a comprehensive picture of the battlespace. IPB fails to address the process of ensuring that current intelligence is flowing in from all sources, in the most efficient and use form, to be integrated into the picture. Because of this, IPB has a static feel..."<sup>21</sup> Cross-training with naval intelligence officers and specialists, who have served in the fast-paced environment of an opintel node either ashore or afloat, will quickly lessen that "static feel" and make IPB training more realistic.

ADM Boorda, Chief of Naval Operations, has called for a `Paradigm shift'. "Our goal is to combine strategies and technologies to create a consistent situational awareness where information integration is seamless and warfighters are able to access information on demand. We need to make C4I systems responsive to the warfighter, field them quickly, capitalize on advances in technology, and shape doctrine to reflect changes."<sup>22</sup> His goal can only be accomplished by integrating intelligence into the combat infrastructure and maintaining and enhancing our joint interoperability.

### **C4I Architecture/Sensors/Dissemination**

The Navy is recognized as "the de facto C4I joint architect"<sup>23</sup> based on its experience at providing

comprehensive common picture at sea and over land. JMCIS (Joint Maritime Command Information System) is the backbone of GCCS (Global Command and Control System), the worldwide joint command and control system. Naval intelligence is actively involved in the C4I demands of the joint warfighter and is attempting to take advantage of commercially available, high technology equipment.

C4I demands implementation of state-of-the-art technology with highly trained operators. This is achieved by fielding advanced technology demonstrations like Challenge Athena hardware-which offers high volume data communications afloat-to meet fleet CINC requirements. The deputy Assistant Secretary of Defense for Intelligence and Security, in testimony to congress recognized Challenge Athena as one of the most innovative and successful imagery dissemination efforts.<sup>24</sup>

Challenge Athena dramatically changed the way the Navy produces precision strike plans with short turnaround times, a key element in projecting force. Previously, severely restricted communications capabilities at sea complicated the job for Navy strike mission planners. Strike planners need primary imagery, which contains the support data necessary to perform geolocation and mensuration, to perform their jobs. Challenge Athena II was designed to demonstrate that primary imagery can be delivered to an afloat strike planning cell on an aircraft carrier at sea using commercial satellite communications technology. This capability will increase in importance as APS (Afloat Planning System for TLAM/Tomahawk Land Attack cruise Missile) is introduced into the fleet. APS brings required imagery processing afloat for TLAM planning.

Many of the Pentagon's newly developed precision guided weapons (such as TLAM) are targeted by images and require rapid transmission of ground information (via APS). In the future, national, theater, and organic imagery platforms, their products, and imagery exploitation software packages will be oriented to better support targeting of precision weapons. Future weapon systems will be dependent on imagery and imagery-related products. Accuracy and perspective scenes will be required for PGMs (precision guided munitions) and 'smart' weapons. Intelligence must be actively engaged in this process for it to be successful.

Beginning last year, the Navy component of the Joint Service Imagery Processing System (JSIPS-N; JSIPS-N provides imagery to support TACAIR PGMs)<sup>25</sup> commenced supporting strike mission planning on board *USS George Washington* (CVN-73/East Coast carrier) and *USS Carl Vinson* (CVN-70/West Coast carrier). Primary imagery input in near-real time is provided by a reliable, affordable, wide-band communications system. All the equipment was commercially available and proved to be reliable and easily operated and maintained by ship's company. Challenge Athena has proven the concept that commercial satellite communications are capable of providing the relatively large bandwidths required to disseminate national imagery to deployed units.

An additional display of Navy ingenuity occurred when the *George Washington's* JSAC (Joint Strike Analysis Center)<sup>26</sup>, using a GENSER JDISS (Joint Deployable Intelligence Support System)<sup>27</sup> and a high quality digitizer, sent tactical reconnaissance imagery acquired by F-14 TARPS (Tactical Aerial Reconnaissance Pod System) to recipients in soft copy in near-real time. This capability eliminated the requirement to make multiple hard copies in the photo lab and fly them off to a shore site for further

distribution. At that time, Navy F-14 TARPS provided the only U.S. tactical reconnaissance asset over Bosnia, thus providing an invaluable service to the European Command who were able to show the unclassified TARPS pictures to the international press.

All Navy flagships, aircraft carriers, and large amphibious warfare ships are scheduled to receive wide bandwidth capability. The success of Challenge Athena on *George Washington* reinforced the need to further develop this capability. By employing commercial communication satellites, Challenge Athena II provided afloat commanders with over 12 times the bandwidth normally available. The *George Washington* Battle Group demonstrated unprecedented multimedia capabilities, such as video teleconferencing, and real-time all-source intelligence support. JWICS<sup>28</sup> and Challenge Athena are certain to become cornerstones of naval intelligence communications in the joint environment. This new technology is a far cry from the 75 baud circuits of just a decade ago.

Challenge Athena embodies ADM Boorda's guidance to "...use the fleet as a C4I laboratory. Operators gain valuable experience with equipment as system designers respond to customers. After a demonstration period, the advanced technology becomes a fielded operational system with trained operators to run it."<sup>29</sup>

However, Challenge Athena also highlighted a shortcoming in the Navy's imagery interpretation capabilities: the Navy has very few intelligence specialists trained in ground photo interpretation and ground analysis. The Navy's intelligence specialists who 'read-out' imagery are very proficient at identifying ships and submarines but are not experts at identifying ground and mechanized equipment (i.e.: T-72 tanks). Army and Air Force ground imagery interpreters and analysts were invaluable during Operation Vigilant Warrior as *George Washington's* JSAC compiled target folders and maintained situational awareness.

Based on this experience, a mechanism needs to be established to permit Army or Air Force imagery interpreters and analysts (recommend one of each) to be assigned to the carrier during deployment work-ups so that a team concept can be developed early. This will also allow the Army and Air Force resident experts time to train Navy photo interpreters, build interoperability as well as a organic capability to distinguish, for example, between units of the Iraqi Republican Guards and the Iraqi Army.

Ground analysts and photo interpreters will also assist in the fleet's use of tactical reconnaissance (TACRECCE) assets. The Navy and the intelligence community are attempting to resolve the fleet's TACRECCE shortfall by improving TACRECCE support to the joint warfighter. An immediate solution to the fleet's TACRECCE shortfall is the use of UAV's (Unmanned Aerial Vehicles) to provide near-real time targeting and bomb damage assessment (BDA) to the operational commander. UAV's can provide 8-12 hour endurance, precise target location using GPS/INS, as well as imagery using TV and FLIR payloads. U.S. UAV's were used over Bosnia to provide TACRECCE to U.N. ground forces, but were limited to assessing BDA and watching some ground activity. The Navy will need to ensure UAV's have reliable and direct connectivity to sea-based targeting systems to ensure rapid all-source intelligence fusion and battlespace integration.

The Navy is considering a maritime version of the *Predator* Medium Altitude Endurance (MAE) Unmanned Aerial Vehicle (UAV). PREDATOR uses commercial, off-the-shelf (COTS) technology, high-quality sensors, common ground stations, and an interoperable dissemination system. It is a low cost, highly efficient, near all-weather intelligence collection platform that can remain on-station for over 24 hours, operating at ranges of 500 nm from base. The maritime version of *Predator* would operate from aircraft carriers or large deck amphibious ships and would be capable of data linking real-time electro-optic, infrared, and synthetic aperture radar imagery.

The Marine Corps will not have a TACRECCE capability until the

FA-18D Tactical Aerial Reconnaissance System (ATARS) reaches initial operational capability (IOC) in FY 98. ATARS, with its low-to-medium altitude electro-optical and infrared sensors will provide digital, electronically-recorded imagery which can be viewed in the aircraft, as selected images are data linked to JSIPS tactical input segments. The Joint Service Imagery Processing System (JSIPS) is a mobile, ground-processing facility designed to receive and exploit soft-copy infrared and electro-optical imagery from tactical aerial reconnaissance systems. It will also receive and exploit imagery from national and theater sources. The USMC is planning to procure its first JSIPS Tactical Input Segment in FY 96.<sup>30</sup>

As TACRECCE technology rapidly moves toward near-real time, soft-copy, digital imagery which is data-linked from the sensor platform to a processing facility, the Marines will need increased access to photo reconnaissance. Soft-copy imagery exploitation allows the imagery interpreter to extract more information than is normally attainable from film-based imagery. Until the Marines field a long range TACRECCE capability, F-14 TARPS will remain the fleet's primary organic recce asset and must continue to be responsive to USMC, SOF (Special Operating Forces), and JFACC (Joint Forces Air Component Commander) requirements.

In another reconnaissance initiative, the Navy recently installed GBS (Global Broadcast Service) on some cruisers and amphibious ships. GBS is widely viewed in the fleet as the poor man's Challenge Athena. GBS can send massive amounts of information to dispersed and deployed warfighters by using commercial satellite broadcast capabilities, state-of-the-art, commercially available digital systems, and small portable, inexpensive receive terminals.

GBS has a high capacity data dissemination capability. It can transmit audio, video, imagery and data at almost 23 million bits per second, meaning it can transmit the Air Tasking Order (ATO), imagery, weather, TPFDD (Time-Phased Force and Deployment Data), and command and control updates in a matter of seconds. GBS meets the requirement for fast communications and information dissemination to warfighters, whether they are 200 miles off the coast or deep inland. With its larger throughput and fast dissemination, GBS provides greater service to the warfighter. Smart intelligence `push' from the theater JICs will allow the warrior to `pull' tailored intelligence products. Intelligence imagery and video from aircraft or satellite digital cameras can be quickly transmitted via GBS to the warfighter and analyzed for damage assessment. This information can then be used by the joint warfighting team to confirm target destruction and determine new target selections, or quickly relay restrike instructions to the shooter.

While "GBS' commercial-off-the-shelf (COTS) technology applications meets CINC's and CJTF's requirements for time-sensitive battle damage assessment and provides near-real-time capability for total battlespace management,"<sup>31</sup> once again the issue of the paucity of afloat imagery interpretation resources must be addressed. The Navy will need to `plus' up its intelligence specialist manning on GBS-equipped cruisers and amphibious ships as well as incorporate joint and theater specialists on the large deck/command amphibious ships.

As a result of lessons learned from the Gulf War, operations and intelligence officers are making a greater effort to cooperate. "Military planners running the Bosnia operation scheduled airstrikes, when possible, to coincide with satellites or reconnaissance aircraft passing overhead to provide imagery quickly of the damage done. One senior NATO commander commented: "I didn't see any of the divisive arguments like we had in the Gulf War about how, unless a target was destroyed, it wasn't considered dead."<sup>32</sup>

BDA during the Gulf War resulted in bitter quarrels between intelligence agencies in Washington and military staff members in Riyadh, Saudi Arabia, over how much damage was being done by bombing. "In the Gulf War, we couldn't get unprocessed BDA out of Riyadh and back to the units. The intelligence guys wouldn't release the information until they had put a percentage of destruction on it. Now, it's being pushed down to the units that need them much faster."<sup>33</sup>

"...With more emphasis on providing tactical intelligence and with improved transmission systems, military officers operating out of airfields in Italy and off carrier decks in the Adriatic say they received better information more quickly about the damage they were doing than U.S. forces did during the Gulf War. And there were fewer hassles with Washington."<sup>34</sup>

During the 16-day allied bombing of Bosnian Serb air defense, communications, and logistics networks last summer, U.S. defense officials say "the air campaign showed the greatest strides over the Gulf War experience [by] providing timely intelligence to front-line fighters." This they attribute less to any new generation of spy satellites or aircraft than to better management of the intelligence that was collected.

RADM Dennis Blair, top CIA official responsible for intelligence support to the military, stated, "It has more to do with hooking existing systems up better and faster than with introducing new collection systems"<sup>35</sup>. The dissemination of timely and accurate intelligence to the front-line fighters in Bosnia is a direct result of intelligence being sensitive and responsive to the needs of the consumer (warfighter).

However, one could argue that even with the speedier processing of intelligence, the system is still far from providing the kind of instant, comprehensive view of the battlefield envisioned by some in the Pentagon.

ADM Owens (former Vice Chairman, Joint Chiefs of Staff) contends that if we have real-time, all-weather, continuous knowledge of the battlespace, U.S.'s emerging dominant battlefield awareness could dissipate the 'fog of war'.

... Our increasing capacity to understand a military situation quickly, accurately, and in considerable detail, and to transfer that understanding with dispatch to forces that can deal with the situation with great speed, precision, and effect. ...The U.S. military is moving rapidly to integrate ISR (Intelligence collection, Surveillance, and Reconnaissance), C4I (Command, Control, Communications, and Computer systems, and Intelligence processing) in a new system-of-systems.<sup>36</sup>

But, this could be countered because there still needs to be a human- in-the-loop to pass 'knowledge' through the mind of an individual to insure its accuracy and relevancy. The need is to balance the trend of making intelligence less of an art and more of a science.

Human Intelligence (HUMINT) serves as an example. The profound changes that have occurred in the international security environment since the demise of the Soviet Union have resulted in significant changes in the mission and targets of the intelligence community's collection efforts. HUMINT has become even more essential to successfully executing NEF contingency requirements which cover the spectrum of operations other than war (OOTW) -- from disaster relief, to peacekeeping, to non-combatant evacuation operations (NEO). MAGTF counterintelligence and interrogator-translator team (ITT) assets are particularly important in OOTW where they can obtain significant information about the threat and environment which can prove critical to building an accurate intelligence picture.

As a result of HUMINT providing insights into intangible factors such as tactics, strengths, weaknesses, intentions, morale, and combat effectiveness that is harder to collect by technical means, HUMINT has been re-emphasized and expanded at the tactical, theater, and national levels. HUMINT can not only assist in determining order of battle (composition, disposition, strengths, weaknesses), but its true value is in providing essential insights into enemy intentions. HUMINT was arguably the critical intelligence source during U.S. operations in Somalia. HUMINT "collection priorities in Somalia were focused on indications and warning, and on collecting information on factional intentions, the general feeling of the population, weapons caches, ambush sites, radios and frequencies, mine fields, and Islamic fundamentalism... These operations provided a measure of the human pulse and assisted in defusing volatile or dangerous disputes."<sup>37</sup> Reporting of HUMINT information to processing and production centers (i.e.: JSAC and JIC-afloat), which are often located a considerable distance from the collection site, needs to be addressed. This situation could be remedied by the addition of Marine LNO's on battle group staffs or the integration of Marine intelligence specialists in the JSAC. With today's emphasis on the battle group commander and his staff having situational awareness of events inland, the integration of liaison personnel and the development of a joint intelligence team concept would ensure data flow beyond the beach and the LHA/D. Moving from an open-ocean strategy to a focus on the complex and challenging littorals environment facing expeditionary forces has also resulted in major changes in cryptologic support. New linguistic requirements reflect the emergence of non-Soviet/ Warsaw Pact targets. An additional challenge is the fact that some less-developed countries do not use dedicated military communication systems but instead combine military communications with civilian communications systems.

The NEF provides forward presence and highly mobile exploitation systems that can be sent to exploit

targets in areas where no national sensors are available. For example, the Battle Group Passive Horizon Extension System (BGPHERS) aboard the carrier-based ES-3A extends organic sensor SIGINT (Signals Intelligence) range.

Cryptology is a critical element of the Navy's "...From The Sea" concept. Much discussion has arisen over the potential detrimental effect of the decommissioning of Combat Direction Finding (DF) (OUTBOARD) ships, and their ability to operate close to the shore and utilize their unique SIGINT capabilities. For instance, *USS Kearsarge*'s Combat DF capability provided value added to Capt O'Grady's F-16/BASHER 52 Combat Search And Rescue (CSAR) efforts. A viable solution to this problem is being pursued by the Navy. Portable Radio Direction Finding (RDF), which uses commercial off-the-shelf (COTS) technology, is under evaluation for AEGIS platforms.

The intelligence community is striving to provide a better tailored product to meet the needs of the "consumers" of intelligence. Timely and responsive support to all warfighters is imperative. It is incumbent upon intelligence to ensure a smooth information flow and effective threat data management.

Warfare today is swift, fluid, and information intensive. The dynamic changes in today's battlespace must be immediately and securely communicated to affected units. The sophisticated collection network of imagery, and electronic intercepts via satellite, aircraft, and ground-based systems supplemented by human intelligence, must be sifted through to separate the wheat from the chaff and provide the commander with the information he requires.

## CHAPTER 4

### SOLUTIONS

"Our world without the Cold War confrontation is a safer world, but it is no Garden of Eden... Intelligence remains our basic national instrument for anticipating danger: military, political, economic."

--President George Bush, 1991

"You are supposed to tell us what the Japanese are going to do, and I will then decide whether it is good or bad and act accordingly."

--Admiral Chester W. Nimitz, CINCPACFLT, 1942

"We are out of money...so we must think."

-- LTGEN P.K. Van Riper, USMC, 21 November 1994

In today's multi-polar world, Naval intelligence faces many new and diverse challenges. An unpredictable, unstable, and ambiguous threat environment obliges the intelligence community to

coordinate, prioritize, and synchronize its efforts to permit the unimpeded processing and dissemination of intelligence afloat. This attempt at an intelligence unity of effort can be achieved by expanding cross-training opportunities and interoperability, and by increasing the proficiency of ground analysts afloat.

The NEF operating in littoral areas faces many challenges. Enemy defensive systems, such as shore-based missiles, advanced mines, and direct-fire weapons, increase the complexity of the amphibious operation. To execute operational maneuver from the sea we must use both technology and new doctrinal approaches to meet these challenges... The Battlegroup/NEF commander and his staff must be experts in the operational art, able to integrate Marine, amphibious, and carrier battle capabilities and expertise.<sup>38</sup>

The naval intelligence community can meet ADM Boorda's 'integration' requirement by increasing cross-training with the other services, enhancing our interoperability, and by developing 'in-house' expertise during pipeline and pre-deployment training at the NMITC (Navy and Marine Corps Intelligence Center).

Challenge Athena, NIS, GBS, and APS capabilities and imagery requirements highlight the requirement for experienced ground expertise in the carrier's JSAC (Joint Strike Analysis Center). This will necessitate support and cooperation from the other services as well as the JICs. The 'J' in JSAC stands for joint and the Navy should not hesitate to exact the support essential to successful operations in the littorals.

A supplementary recommendation is to send navy intelligence specialists and navy intelligence officers (recommend carrier intelligence center (CVIC) Multi-Sensor Imagery officers and TARPS squadron intelligence personnel) to Army imagery schools. Additional cross training benefits could be gained from establishing an exchange and training program in the service and joint intelligence centers. The Navy-Marine Corps Intelligence Training Center (NMITC in Dam Neck, VA) has identified the lack of ground expertise inherent in the JSAC as a training shortfall and is attempting to rectify the situation. But, expertise requires time to develop.

By establishing such a cross-training program, the fleet would be able to tap into the expertise resident available at the joint and service intelligence centers. This would increase joint interoperability by incorporating Army MI (Military Intelligence), Marine Corps (MCIA), and Air Force AIA (Air Intelligence Agency) imagery interpreters and analysts into the JSAC. Army MI, MCIA or AIA could provide such expertise during the JTFEX (Joint Task Force EXercise), the final stage of the battle group work-up cycle. By assigning Marine Corps and Army intelligence officers to the afloat JICs, they can interact with their Navy counterparts, share experiences, and add to the data, expertise, and technical assets inherent to deployed carriers. Navy intelligence officers rotating through ashore and deployed Marine, Army, and Air Force intelligence billets would gain as well. The goal of intelligence is to provide the military commander with pertinent information, so quickly that U.S. forces will have 'dominant battlespace awareness'. U.S. forces will know better than their adversary what is happening in the battlespace around them. The goal of the intelligence officer must be to ensure the quality and quantity of information presented to the commander. By understanding the commander's intent, the intelligence officer can provide proactive intelligence support to both the commander and his operating forces based on a keen understanding of the enemy, the commander's vision, and end state.

Proactive and predictive intelligence analysis and support will be crucial to the Marine Corps' successfully implementing the concepts of Operational Maneuver From The Sea (OMFTS) as well as Ship-To-Objective Maneuver Operations (STOM Ops). For example, intelligence preparation of the Battlefield (IPB) will help identify naval and beach mines and obstacles, and 'gaps' in the enemy's alignment. Near-real time intelligence updates, along with a dynamic command and control (C2) structure, will permit the NEF to maneuver at sea and choose the most assailable littoral penetration point.

A timely and accurate picture of the battlespace is essential to success in the littorals. Near-real time intelligence support provides the underpinnings for OMFTS and STOM Ops and provides the NEF an opportunity to exploit our technological and operational advantage by using maneuver and combined arms to "hit the enemy where he ain't". "Knowing where the enemy "ain't" calls for real-time precision intelligence that puts at the commander's disposal the products of everything from overhead satellites to just-before landing reconnaissance by Navy and Marine teams. Going where the enemy "ain't" calls for the commander to decide at the last possible minute, given that intelligence, where the air and beach-assault forces will touch down. Going where the enemy "ain't" is easier when you surprise him".<sup>39</sup>

The granularity of ground analysis needs to be further refined and enhanced in the JSAC. The JSAC needs to have a better understanding of the ground situation facing the MEU. Ground situation awareness and analysis would be significantly improved by better coordination with the MEU and the assigning of a MEU LNO on the battle group staff. Liaison personnel provide the most visible means of exchanging formal and informal information and are essential to the coordination process, and most importantly, erase the 'lanes in the highway' (service parochialism).

Intelligence support to the NEF will have to emphasize flexibility, seamless information transfer, interoperability, coordination, the processing and dissemination of near real-time information, maintaining situational awareness, and sharing surveillance information. The integration of the Navy and Marine (Blue/Green) intelligence team is essential for successful NEF operations in the littorals.

As evident in Bosnia and Iraq, the reliability of intelligence systems and communications is improving. Dramatic improvements in intelligence collection systems have greatly enhanced the availability of battlespace information.

The U.S. military now has the capability to deliver the right intelligence at the right time. The focus is downward, on support to the warfighter at the lowest level possible. Naval intelligence is providing seamless 'PULL' intelligence with an inherent skip echelon capability. The goal is to link joint and multinational intelligence to fill out the entire battlespace picture and provide a common battle space picture to the warfighters.

Can our intelligence analysts handle this volume of information? Yes, if: they understand the commander's mission, intent, objectives, and plans; they comprehend the unfolding conduct of operations; and, the commander clearly delineates his intelligence requirements (using Commander's Critical Information Requirements (CCIRs)). This will require intelligence specialists to develop a synergistic

relationship with both the commander and his key subordinates. By developing this relationship and understanding the commander's intentions and concerns, intelligence analysts can prioritize the processing and requesting of information and data and provide fused intelligence to the commander when and how he needs it.

OMFTS and STOM Ops will rely heavily on a robust intelligence organization to drive planning, option selection, and maneuver execution. Near-real time collection, analysis, and rapid dissemination of information to the decision makers and warfighters will be critical to exploit enemy vulnerabilities and find or create gaps. But, as learned in Somalia, high tech solutions may not always be the answer. The solution may come from the intelligence specialist with a stubby pencil, butcher block paper, and legal pad.

The Marine Corps acknowledges that intelligence will present challenges under the OMFTS and STOM Ops concepts. To meet these intelligence challenges, and for the OMFTS and STOM Ops concepts to be successful, the Marine Corps will need to come to grips with the shortcomings (as identified by the DOD Inspector General in September 1993) within their intelligence functional area. Specifically: operator dissatisfaction with Marine Corps intelligence support; an inadequate Marine Corps intelligence capability; and, a negative attitude toward Marine Corps intelligence personnel among Marine Corps operators.

Integration of Marine Corps intelligence officers with their naval intelligence counterparts will pay dividends across the board and resolve some of the shortfalls noted above. The Marines would gain access to intelligence information systems unavailable onboard most amphibious ships and naval officers would gain an understanding of Marine requirements, limitations, and expectations. An integrated Marine-Navy intelligence team is the foundation to an effective and capable NEF that can operate throughout the operational continuum. This integration must begin as soon as possible.

## CHAPTER 5

### CONCLUSIONS

"The essentials of action by the commander are *knowing* and *seeing*."

-- John Keegan, The Mask of Command

"A key element of our technological superiority is our capability to command the high ground of space for early warning, intelligence, weather, surveillance, navigation, and command, control, and communications."

-- General Colin L. Powell, Chairman, Joint Chiefs of Staff, 1991

Forward-deployed naval forces will continue to be the National Command Authorities' force of choice to

remain engaged overseas. Naval forces operating in the littorals provide a strong and flexible deterrence to aggression and can respond rapidly to crises. But, the proliferation of modern weapons systems, such as missiles and mines and the spread of advanced military technology (such as ballistic missiles), place U.S. naval forces at greater risk.

Intelligence requirements in littoral regions are significantly different from those of open-ocean operations. The proximity of naval forces to the shore will mean less warning and reaction time. The unpredictable nature of future challenges to naval expeditionary forces demands that naval intelligence sensors and collection methods, afloat and ashore intelligence centers, and dissemination systems are highly capable and provide timely and accurate sensor-to-shooter connectivity.

Naval intelligence has pursued the use of COTS technology applications to expand and enhance the intelligence architectural framework. Limited budgets will continue to drive the necessity to adapt commercial software and hardware to military intelligence purposes. As the Presidential advisory commission on intelligence recently pointed out, "[t]heir capabilities are costly. But over the past five years, conflicts have been avoided, wars shortened, agreements reached, costs reduced, and lives saved as a result of the information produced by U.S. intelligence."<sup>40</sup>

In the future, Naval intelligence will be guided by the perennial need to make intelligence more responsive to the decisionmakers and the need to encourage more cooperation between the respective service intelligence agencies. In order to accomplish this, naval intelligence must maintain battlespace awareness and anticipate the commander's requirements by understanding an adversary's capabilities, assessing his intentions, and identifying his centers of gravity and critical vulnerabilities.

Joint intelligence must be integrated into all aspects of operational training and deployments. This will increase the exposure of joint intelligence personnel to operations afloat as well as provide operators with a better understanding of intelligence capabilities and limitations.

Naval intelligence is a force multiplier. It helps the commander cope with uncertainty. Consistently accurate, relevant, and predictive intelligence will ensure that commanders consider intelligence an integral part of their combat power. Naval intelligence is in position to provide the intelligence products and services necessary to support training, exercise, acquisition, and modernization requirements as well as support real-world contingency operations.

Naval intelligence has made the commitment to move forward from the sea and into the 21st Century. As Challenge Athena and GBS demonstrate, Naval intelligence is seizing the opportunities offered by commercial technological advancements. But the resulting vast amount of sensor data and the high speed at which it is processed and displayed, demands superior intelligence analysis, fusion, and dissemination capabilities to gain the best leverage from our information advantage. However, technology is not without its dangers. We must never forget that the quality of intelligence *always* takes precedence over quantity.

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25. JSIPS-N: (Joint Service Imagery Processing System-Navy) Provides TACAIR strike and expeditionary warfare mission planners with the most current imagery/imagery-derived products available, and the ability to precisely and accurately exploit the data. Installed on CVN's, LHA/D's. National Input Segment (NIS) receives national imagery afloat required for TLAM support and TACAIR PGMs; electronic interface between strike planning, strike support, and C4I shipboard systems. Interface to APS. Tactical Input Segment (TIS): Ground station for real-time data link from ATARS, UAVs, U-2. Will permit intelligence exploitation (BDA, OOB, IMINT reporting). Joint interoperability. Increases 'Afloat self-sufficiency' for operations in forward deployed areas.
26. JSAC: (Joint Strike Analysis Center): Task Group level JIC-Afloat. Must be responsive to support required by battle group elements (SOF, USMC, TACAIR, TOMAHAWK). Responsible for target analysis, combat assessment (including BDA process).
27. JDISS: Joint Deployable Intelligence Support System. Provides: on-demand imagery and tactical intelligence on selected areas and targets; real-time information transfer up, down, and across echelons, regardless of service; responsive and secure communications with operational commanders; intelligence "smart push" database updates; intelligence "demand pull" linked to onboard servers. Fully integrated with Navy's afloat command and control system (Joint Maritime Command Information System-JMCIS). JDISS applications within JMCIS allow sending and receiving text, data, imagery.
28. JWICS: Joint Worldwide Intelligence Communications System. Core architecture for wide bandwidth, joint intelligence applications. Provides video-teleconferencing, primary imagery, other broadband applications. Can support policy makers at all levels (CINCs, CJTFs).

29. Boorda, 16.
30. *Commander and Staff Planning Guide*, 2-28, 31.
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34. Graham, A23.
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