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Enforcement of Overland No-Fly Zones by Joint Forces using Sea Based Surface to Air Missiles

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

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3 February 2003

Abstract

The Navy can be a force multiplier assisting in the enforcement of overland no fly zones from littoral waters around the world. The Navy has improved the weapons and sensors in surface combatants. Their overland capabilities coupled with the increased focus on littoral operations provide the basis for bringing naval power projection into a new arena. There are significant challenges to overcome in command and control and positive identification of no fly zone violators but these challenges pale in comparison to the value this concept adds to the resources at the command of the Joint Force Commander.

Enforcement of Overland No-Fly Zones by Joint Forces using Sea Based Surface to Air Missiles

In 1992, the US Navy published "…From the Sea" to begin a paradigm shift from the blue waters of the oceans into the littorals as the Cold War came to an end. This was followed in 1994 by a continued push into the littorals with "Forward… From the Sea". Both of these documents started a transformational thinking for the world's greatest blue water Navy. With the promulgation of "Sea Power 21" in 2002, we see a continued emphasis on power projection from the sea in a joint warfighting environment.[1]

The focus on transformation to the littoral environment shifted some research and development to both improve existing systems and create new systems to allow the Navy to function more effectively in the littoral environment. As the changes continue, the Navy will serve as a force multiplier for the Joint Force Commander by innovatively applying existing combat power to missions not normally associated with naval power. *The Navy, with the improving capabilities of the surface fleet, can act as a force multiplier assisting in the enforcement of overland no fly zones from littoral waters around the world.*

No Fly Zones

The United Nations Security Council has passed a number of resolutions over the past twelve years to limit the ability of dictatorial leaders to oppress minority ethnic groups in their countries. In 1991, Resolution 688 was passed to provide humanitarian relief to minority groups in the northern and southern regions of Iraq.[2] The purpose of the resolution was to stop the Iraqi leadership from conducting offensive operations against the civilian population, but did not specify a methodology for ensuring that the offensive operations were ceased. The United States, France, Britain and Russia interpreted this resolution to require the establishment of the two Iraqi No Fly Zones in the northern and southern portions of the country and their corresponding monitoring campaigns, Operation Northern Watch and Operation Southern Watch. These operations continue today. In 1993, Resolution 816 amplified previous resolutions establishing a no fly zone over the land areas of Bosnia and Herzegovina.[3] Again, the purpose was to provide relief to the civilian populations. While each of these resolutions was different in terms of specificity of mission and restrictions, both resulted in monitoring specific geographic areas for flights

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[1] Admiral Vern Clark, "Sea Power 21: Projecting Decisive Joint Capabilities", Proceeedings, October 2002
[2] John Pike, "Operation Southern Watch", 26 Jan 2003, <http://www.globalsecurity.org/military/ops/southern_watch.htm> [28 Jan 2003]

by both rotary and fixed wing aircraft. The current interpretation of each resolution allows for engagement and destruction of forces violating the restrictions established by the United Nations Security Council.

The monitoring of these zones has typically been an United States Air Force mission occasionally supplemented by naval aviation from a carrier battle group. Deploying Air Force units to monitor no fly zones carries substantial cost both in the strategic lift required to move the units to a forward location and in flying the aircraft to conduct the monitoring and enforcement. These costs could be cut in part or in whole if the United States Navy could conduct the monitoring and enforcement.

What the Navy brings to the fight

With the accelerated decommissioning of the Spruance class destroyers, deploying battegroups are becoming predominantly Aegis cruisers and destroyers. In a typical carrier battle group, there will be two Aegis cruisers and up to four Aegis destroyers. This provides multiple platforms capable of not only overland surveillance of the airspace, but also an offensive capability in the Standard Missile. The latest variant of the Aegis radar system, the AN/SPY-1D, has been upgraded over the previous versions to provide better

[3] "Resolution 816 (1993)", <http://www.nato.int/ifor/un/u930331a.htm> [28 Jan 2003]

surveillance of overland airspace and work continues to be done to improve this capability.[4]

The offensive capability of the Aegis platform comes in the form of a Standard Missile (RIM-67). There are two main variants of Standard Missiles in the fleet today, SM-2 Block III and SM-2 Block IV. The Block IV variant came into service in 1998 and has a range of 100-200 nautical miles. The Block III variant, introduced in 1981, has a range of 40-90 nautical miles.[5] These weapons, when coupled with the Aegis radar system provide a strong offensive reach from the littoral to the airspace being monitored.

Future No Fly Zones

With the vast coastlines of larger nations and many peninsular and archipelagic nations in the world, there are many countries whose geographies would lend themselves to the monitoring of no fly zones from the sea. The demilitarized zone between North and South Korea, for example, could be fully monitored from the Sea of Japan and the Yellow Sea. Operation Northern Watch would not provide the access from the sea necessary to enforce the no fly zone but portions of the airspace monitored by Operation Southern Watch are within the engagement range of ships in the Northern Arabian Gulf.

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[4] "AN/SPY-1 Radar", 16 June 2000, <http://www.fas.org/man/dod-101/sys/ship/weaps/an-spy-1.htm> [28 Jan 2003]

Organizing the Enforcement

When the Joint Forces Commander (JFC) is established for a region or contingency, he will establish a Joint Forces Air Component Commander (JFACC) who will normally be the Service component (i.e. Air Force, Navy, Marine Corps or Army) with the "preponderance of air assets and the capability to plan, task and conduct joint air operations."[6] Historically, the Air Force service component commander is assigned to the role of JFACC. Establishing the JFACC ashore is the desirable configuration due to enhanced facilities that can be established for logistics and communications.[7] During the enforcement in Bosnia-Herzegovina, the JFACC was stationed at Aviano Air Base in Italy. For the 12 years that Operations Northern and Southern Watch have been in force, the JFACC has been stationed at Prince Sultan Air Base in Saudi Arabia. In both cases the establishment of the JFACC required basing rights overseas.

There are four conditions during which the JFACC should be sea based. These are:

- When maritime forces provide the preponderance of air forces.

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[5] "United States Navy Fact File – Standard Missile", <http://www.chinfo.navy.mil/navpalib/factfile/missiles/wep-stnd.html> [28 Jan 2003]

[6] Joint Chiefs of Staff, Joint Doctrine for Countering Air and Missile Threats, Joint Pub 3-01 (Washington, DC: 19 October 1999), II-4.

- When land-based facilities do not exist or are insufficient
- When a secure land base is not available
- Ground support forces are required to withdraw.[8]

When cruisers and destroyers are added in support of a carrier battle group in support of a no fly zone, the preponderance of forces may well come from the maritime forces and establishment of a JFACC afloat would be logical. The impact of this decision on command and control will be addressed.

Categorizing No Fly Zone Enforcement in Joint Air Operations

Joint air operations consist of two primary mission areas, Offensive Counter Air and Defensive Counter Air. Offensive Counter Air operations typically include:

- Offensive Counter Air Attack Operations
- Fighter Sweep
- Fighter Escort
- Suppression of Enemy Air Defenses (SEAD)[9]

In the no fly zone enforcement mission, SEAD becomes a primary mission area to ensure the safety of any monitoring aircraft that will fly in the no fly zone. Fighter sweep and attack

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[7] Joint Chiefs of Staff, Command and Control for Joint Air Operations, Joint Pub 3-56.1 (Washington, DC: 14 November 1994), II-8.
[8] Ibid., II-8 – II-9.
[9] Joint Chiefs of Staff, Joint Doctrine for Countering Air and Missile Threats, Joint Pub 3-01 (Washington, DC: 19 October 1999), IV-3.

operations may be conducted if violations occur but typically are not going to be authorized until such violations occur.

On the Defensive Counter Air mission, there are the subcategories of passive and active air defenses.[10] Within these, the mission areas that are relevant to the enforcement of the no fly zone include detection and warning systems and the area air defenses to protect the units enforcing the no fly zone.

Command and Control for Naval Units at Sea

Having provided some background for the mission and traditional organization, the traditional view of operations in the maritime environment must be discussed. Naval units patrolling the high seas in a battle group or surface action group operate under a Composite Warfare Commander (CWC) concept that has served the Navy/Marine Corps team well for many years. The CWC "wages combat operations to counter threats to the force and to maintain tactical sea control with assets assigned, while the officer in tactical command retains close control of power projection and strategic sea control operations."[11] Assigned under the CWC are warfare area commanders who direct and control operations in their functional area. The Sea Combat Commander typically maintains

[10] Ibid., V-1.
[11] Chief of Naval Operations, Composite Warfare Commander's Manual, NWP 3-56 (Rev. A), August 2001, 28.

the screen assignments and water space management. The Air Defense Commander handles all defensive counterair measures for the battle group and the Strike Warfare Commander will control the offensive power projection ashore.[12] As indicated by the names, the Air Defense Commander is focused on defensive measures and has traditionally not focused on offensive counter air measures.

Theater Ballistic Missile Defense

Employment of naval surface forces in a non-traditional role such as no fly zone enforcement is not unprecedented. The Theater Ballistic Missile Defense program has as one of its pillars the use of Aegis cruisers and destroyers for high altitude destruction of ballistic missiles. Some of the Command and Control concepts applied to TBMD can carry over to no fly zone enforcement. The main issue becomes one of tactical control of the units at sea. Because Navy ships are multi-mission, TBMD or no fly zone enforcement would be only one of many missions to which the unit might be tasked. Under the CWC concept, the ship reports to a number of warfare area commanders. The command and control solution for the TBMD situation is a Theater Ballistic Missile Defense Commander (TBMDC) to whom each unit in the TBMD collective reports. The TBMDC reports to the JFC but must also maintain a close

[12] Ibid., 4-3 through 4-4.

liaison with USSTRATCOM for early warning and engagement coordination.[13] Without a separate TBMDC assigned, the JFACC will normally be the supported commander and will coordinate TBMD operations as required. [14]

Integration of Naval Surface Forces into No Fly Zone Enforcement

Naval surface forces have the capability to provide for no fly zone enforcement either in support of Air Forces or as a standalone force. Each of these situations has its own challenges and each will be addressed as a separate case. The cases will address; 1) support of a land based JFACC which assumes a preponderance of Air Force assets deployed to the area in question, and 2) support of a sea based JFACC which assumes a preponderance of Naval aviation assets. Both scenarios provide the JFC an added capability that will reduce the number of sorties required for enforcement and reduce the number of airmen whose lives must be put at risk over a potentially hostile territory.

Naval Forces in support of a sea-based JFACC

Support of a sea-based JFACC will be addressed first because it presents a much simpler command and control architecture. Deployment of a carrier battle group in support

[13] Daniel Brintzinghoffer, Naval Theater Ballistic Missile Defense (TBMD) – Development of the Information Exchange Requirements, (Washington DC: DTIC 1996), 38-40.
[14] Joint Chiefs of Staff, Doctrine for Joint Theater Missile Defense, Joint Pub 3-01.5, 2 February 1996, II-7.

of United Nations Security Council resolutions is entirely possible and provides for rapid establishment of flight operations in support of no fly zone enforcement. There are limitations to this concept. A carrier cannot be expected to provide continuous air coverage for an extended duration. The surface units assigned as escorts to the carrier battle group would be able to provide an enforcement capability while the carrier is not conducting flight operations.

In this scenario, the JFACC would likely reside with the battle group commander who would also function as the CWC. Within the CWC concept inside the battle group, the Air Defense Commander would assume the additional role of the offensive counter air operations and would be able to provide. The Aegis units would report to the Air Defense Commander and would receive any attack orders from within the battle group. The JFACC/CWC would report to the JFC.

Naval Forces in support of a land-based JFACC

This scenario presents a much greater challenge in command and control. Integrating carrier-based aviation with land-based air forces has been occurring for many years and through liaison elements, functions very well. Integrating naval surface units with a JFACC has not been employed for any real world operations and is still in developmental stage in the TBMD environment.

The first issue to be dealt with in this scenario is ship stationing. The Sea Combat Commander, under the direction of the CWC, typically provides direction on stationing to the ships of the battle group. These assignments are made based on assigned missions provided by the Joint Force Maritime Component Commander (JFMCC). There must be coordination between the JFACC and the JFMCC to ensure that ships are stationed in a manner that would allow for monitoring and enforcement of the no fly zone. Once stationed in a position to monitor, there are more challenges.

As indicated earlier, the Air Defense Commander in the battle group functions as the primary agent for the CWC in monitoring the airspace around the battle group and providing guidance to the surface units stationed in defense of that airspace. With a land-based JFACC exercising control of the land-based airspace, there would have to be coordination between the two functions. The surface units would be tasked to conduct overland radar surveillance and report any contacts to the JFACC via the Air Defense Commander. In the event engagements must be conducted, the surface units would still have to take their direction from the Air Defense Commander who would take direction either from the JFACC directly or from the JFACC through the JFMCC and CWC. There are advantages to each concept of command and control.

There is a distinct advantage in time to having the JFACC provide direction to the CWC or Air Defense Commander. This kind of communication link would also provide for a greater interchange of information and coordination. The disadvantage would be taking JFMCC out of the control function for one mission area of units under his command. JFMCC would likely be called on to provide information to media or higher authority for any action taken by one of the units under his command. The JFMCC would also be aware of any other missions being conducted by the units assigned to no fly zone enforcement. There are often economic sanctions applied in conjunction with no fly zones and the maritime operations that are conducted in support of the sanctions would be concurrent with the no fly zone enforcement.

Keeping the JFMCC in the command chain is the preferable method of command and control for any engagements that must happen under this concept. This ensures that the JFMCC is aware of any actions being taken before they are taken and that the operations do not conflict with any other actions being taken by surface units at the time.

Deconfliction of operations

Naval surface units are multi-mission platforms and there must be coordination at all echelons of the chain of command to ensure that tasking to engage and destroy a violator of a

no fly zone does not result in the launch of a standard missile while the launch unit is engaged in escorting a merchant in support of Maritime Interception operations. The JFACC, JFMCC, and CWC must liaise routinely to ensure that redundancy exists in support of all assigned missions.

Positive Identification

A challenge to enforcement of no fly zones from a maritime position is the positive identification of the aircraft violating the no fly zone. There are often caveats in the Security Council resolutions that allow for specific aircraft to fly in the no fly zone.[15] Assumptions cannot be made that the aircraft is hostile merely because it does not transmit proper Identification Friend or Foe (IFF) codes or do not answer radio queries for identity.

When the desired action is the engagement of aircraft suspected of violating the no fly zone, positive identification must be a visual identification of the violator. In the conventional no fly zone enforcement by aircraft; the pilot who is going to engage the target conducts this positive identification. In the concept of engaging from the sea, this positive identification must come from an off-ship asset. Among the options for visual identification are:

[15] Resolution 816 (1993)", <http://www.nato.int/ifor/un/u930331a.htm> [28 Jan 2003]. Resolution 816 allowed for flights by UNPROFOR aircraft to provide humanitarian relief to the civilian populations.

- o Identification by unmanned aircraft like Predator
- o Identification by reconnaissance aircraft
- o Identification by fighter aircraft not able or willing to engage the target

Each of these options for positive identification can apply to either support of a land-based or sea-based JFACC. Unmanned aircraft can be deployed from both sea and land and provide real-time identification. Reconnaissance aircraft are generally easier to forward base provided they are not doing any offensive operations themselves. Fighter aircraft can be either naval aviation or air force.

The difficulty in the positive identification process is timely reporting of information. The identification information would be passed to the JFACC who, depending on Rules of Engagement (ROE), would report the violator to the JFC. If the violator is to be engaged, the JFC would pass the order to the JFACC who would then pass the order to the firing unit via the JFMCC, CWC and Air Defense Commander.

Suppression of Enemy Air Defense

The naval surface units that are stationed in support of no fly zone enforcement also bring a strike capability with them. In the event SEAD is necessary in the no fly zone to ensure the safety of allied aircraft flying overhead, Tomahawk

missiles from the naval surface units would be able to assist in the SEAD mission.

Advantages of Sea-Based No Fly Zone Enforcement

While there are some challenges to overcome in enforcing a no fly zone from the sea, further exploration of the concept is worthwhile. There are many advantages to the concept including:

- Fewer aircraft sorties over potentially hostile territory
- Reduced need for forward basing multiple Air Force units to conduct no fly zone enforcement
- Naval surface forces are typically already stationed in the littoral areas conducting maritime surveillance
- Carrier battle groups can bring all the forces necessary for continuous coverage of no fly zone enforcement without the need for costly and limited strategic lift and diplomatic efforts to obtain forward basing

Conclusion

As indicated in Sea Power 21 by Admiral Clark, the Navy is going to look for more ways to project power in a joint environment. The Navy is building ships and weapons systems with an increasing reach ashore while enhancing its ability to operate in the littoral. These advances in technology can provide the Joint Force Commander with a new tool for no fly enforcement, Aegis cruisers and destroyers. These ships are

able to project power to the airspace over land up to 200 nautical miles inland, a distance that gives them reach enough to be a factor in no fly zones that have existed in the past. With the majority of the countries in the world being littoral in nature, these ships will be a factor in no fly zones that may be invoked in the future.

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