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14. ABSTRACT
There are significant parallels between the 1982 Falklands War and future conflicts the U.S. military will face. Leading up to the Falklands War, the U.K.'s military was slowly ending a protracted counterinsurgency conflict, facing budget and force reductions, and focusing on preventing the Soviet Union from invading NATO territory. Today, the focus for the U.S. military is a slow withdrawal from counterinsurgency, reduction in forces and budgets, and a renewed focus against potential Chinese and Russian threats. For both the near and long term, U.S. Naval forces face A2AD environments not only within the South China and Baltic Seas, but also within the Arc of Instability. Amphibious Task Forces (ATF), ESG/MEBs and ARG/MEUs, are more likely to continue crisis response in the Arc of Instability during the near term, next five to ten years. Considering the future operating environment, and the proliferation of A2AD weapon systems to U.S. adversaries, it is likely an ATF will end up in a Falklands type of scenario.

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FIGHTING WITHIN THE A2AD BUBBLE: APPLYING LESSONS LEARNED FROM THE
1982 FALKLANDS WAR FOR THE FUTURE AMPHIBIOUS TASK FORCE

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Executive Summary

Title: Fighting within the A2AD Bubble: Applying Lessons Learned from the 1982 Falklands War for the Future Amphibious Task Force

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Thesis: Despite advancements in today's anti-access/area denial weapons technology, the 1982 Falklands war offers critical insights to how US naval forces can counter modern-day threats to an amphibious force.

Discussion: There are significant parallels between the 1982 Falklands War and the future conflicts the U.S. military will face. Although thirty years have passed and technology has changed, this conflict provides critical insight to the US military as they develop ways to counter the A2AD threat. Leading up to the Falklands War, Great Britain's military was slowly ending a protracted counterinsurgency conflict, facing budget and force reductions, and focusing on preventing the Soviet Union from invading NATO territory. In April, with little warning to Northwood, Argentina invaded the Falklands Islands. Great Britain was caught off guard and unprepared to face a near peer threat without assistance from NATO. Argentina possessed a sizeable force with modern air and ground systems, which presented a modern A2AD threat for British forces.

Fast forward to today, the focus for the United States military is a slow withdrawal from counterinsurgency, reduction in forces and budgets, and a renewed focus against potential Chinese and Russian threats. The focus today for the United States, as it was for Great Britain in 1982, is the most dangerous course of action, a course of action that places its military power against another superpower. Although probable, China and Russia are not the most likely. The United States will continue to face conflicts in the Arch of Instability with adversaries that pose formidable A2AD threats to smaller units such as an ESG/MEB and ARG/MEU. Despite advancements in today's A2AD weapons technology, the 1982 Falklands war offers critical insights to how US naval forces can counter modern-day, and future threats to an amphibious force.

Conclusion: The United States Marine Corps and Navy must find creative ways to fight within the A2AD bubble. A2AD systems are growing in complexity, size, and proliferation. Even after Phase 0 through 2 (Shaping, Deter, Seize Initiative) A2AD threats will still exist. As the Department of the Navy looks to the future, it can gain critical insight by looking to the past. The 1982 Falklands War provides critical lessons for how a force can fight in a degraded A2AD environment and survive to win the campaign.

There are significant parallels between the 1982 Falklands War and future conflicts the U.S. military will face. Although thirty years have passed and technology has changed, the Falklands War provides critical insight to the U.S. military as they develop ways to counter the anti-access/area denial (A2AD) threat. Leading up to Operation CORPORATE, Great Britain's military was slowly ending a protracted counterinsurgency conflict in Ireland, facing budget and force reductions, and focused on defending the North Atlantic Treaty Organization (NATO) from a potential Soviet invasion. In April, with little warning to the British military headquarters, Northwood, Argentina invaded the Falklands Islands.¹ Great Britain was caught off guard and unprepared to face a near peer threat 8,000 miles from the British Isles and without assistance from NATO. Argentina, with a sizeable force that included modern air and ground systems, opposed British forces with a modern A2AD threat.¹

Fast forward to today, the focus for the United States military is a withdrawal from counterinsurgency, reduction in forces and budgets, and a renewed focus against potential Chinese and Russian threats. The United States' focus today, just as it was for Great Britain in 1982, is preparing for the most dangerous course of action. While China and Russia do pose a threat to U.S. interests, a war with either of them is not the most likely course of action in the near term. The United States will continue to face conflicts in the Arch of Instability with adversaries that pose formidable A2AD threats to smaller units such as an Expeditionary Strike Group/Marine Expeditionary Brigade (ESG/MEB) and Amphibious Ready Group/Marine

¹ The Falklands invasion was nearly two centuries in the making. The Malvinas, as the Falklands are called by Argentina, were once claimed by not only Britain, but also France, Spain, and Argentina. It was not until 1833 that ownership was solidified by Great Britain. Over the course of the 1970s, the Falklands were in a diplomatic game of being held by Great Britain while at the same time being "offered" to Argentina. As diplomacy faltered, Argentina developed plans to seize the islands at a date between July to October 1982, all manpower, equipment, and weather dependent. In late March 1982, scrap metal workers on South Georgia Island raised an Argentinian flag over their work site. This move prompted Great Britain to send the HMS *Endurance* with 22 Royal Marines to South Georgia to remove the flag and observe the workers. Using the South Georgia incident as cause to regain Argentinian honor, Argentina bumped up their invasion timeline and set-sail for the Malvinas. The U.K. received various signals an invasion was underway, but little could be done from 8,000 miles to stop the invasion.

Expeditionary Unit (ARG/MEU). Despite advancements in today's A2AD weapons technology, the 1982 Falklands war offers critical insights to how US naval forces can counter modern-day, and prepare for future threats to an amphibious force.

The Dawn of Modern A2AD Warfare – *Establishment of the A2AD Environment*

By the early 1980s, Argentina, as compared to the rest of Latin America, was a modern, well equipped, and trained military force. The U.S. and other NATO countries, to include the U.K., supplied Argentina with some of the most modern equipment for the late 1970s and early 1980s.² In the context of A2AD, Argentina possessed excessive amounts of anti-personnel, anti-tank and anti-ship mines, modern night vision optics, anti-tank missile systems, anti-aircraft missile and gun systems, and heavy towed howitzers. Furthermore, their air and naval components possessed a variety modern fast attack aircraft, with one of those platforms capable of carrying the AM-39 Exocet air-to-surface anti-ship cruise missile systems.³ Lastly, Argentina was a strong ally to the United States against the Soviet Union. For a Latin America country, this was a strong bargaining piece. Leading up to the spring of 1982, Argentina held a strong position, militarily, in the south Atlantic.

Argentinian military forces invaded the Falkland Islands, situated 300 miles east of Argentina and 8,000 miles south from Great Britain, on 2 April 1982 with an invasion force of 2000 soldiers and marines.⁴ The invasion was a strategic move by the Argentinian government to gain national solidarity and instill popularity in Argentina's president and leader of military junta, General Leopoldo Galtieri.⁵ The Argentinians focused their invasion at the population center of Port Stanley on East Falkland. They faced little opposition from a small garrison of 70 Royal Marines and a small contingent of local defenders.⁶ Over the course of April, the

Argentinian force grew to around 13,000 military personnel with a majority placed in a defensive posture around Port Stanley.⁷ (*See Figure 1.*)

Argentina placed eight infantry regiments on East and West Falkland; two regiments on West Falkland, and six regiments on East Falkland with five of those centered around Port Stanley and supported by an artillery regiment.⁸ Protecting the skies with anti-aircraft weapon systems around Port Stanley, the Argentine army and air force defended with twelve 30mm Hispano Suiza guns, six Tiger Cat missile launchers, eight 35mm Oerlikons, eleven 20mm Rheinmetall guns, and one Roland twin missile launcher.⁹ Additionally, the Argentinians possessed TPS-43 and TP-44 radar units, vital in their ability to see beyond the horizon.¹⁰ Ground anti-air units alone presented a formidable protective shield against British air and naval forces.

In addition to the ground forces on the Falklands, Argentina possessed one of the most sizeable naval fleets and air forces in Latin America.¹¹ Their naval forces included not only cruisers, corvettes, amphibious shipping, and a battleship, but also submarines and an aircraft carrier. In total Argentina possessed 17 combatant ships and three submarines to maintain maritime superiority.¹² Although relatively large, the Argentinian fleet was an aging fleet with World War II era or at best ships built in the 1960s without modernization besides the MM-38 Exocet.¹³

Due to the close proximity of the Falklands to Argentina, Argentinian air components stationed modern day fighter-attack and fighter-bomber aircraft on the Falklands or placed near the coast of Argentina well within range of the Falklands. From the Argentinian mainland, Argentine air elements could strike targets in and around the Falklands with their assortment of Mirages, Daggers, and Skyhawks and extend their range and time on station via aerial refueling

provided by C-130s.¹⁴ Positioned on the Falklands, Argentina placed 34 Pucara, Turbo-Mentor and Macchi light attack aircraft.¹⁵ (See *Figure 2A/2B.*) While these aircraft may have been small and not nearly as fast as other aircraft, the British still considered them a viable threat. Lastly, the most dangerous of their aircraft to British task force was the French made Super Etendrada with the AM-39 Exocet air-to-surface anti-ship cruise missile. In total, Argentina possessed 130 operational fixed wing attack aircraft for the defense of the Falklands.¹⁶

By the end of April 1982, Argentina constructed a defense at the water's edge with an air-mobile reserve, supported by a navy and air force to maintain superiority of the Falklands. Argentina had a well-established A2AD environment that extended from the Argentinian coast to about 150 miles east of East Falkland. If Gallipoli is considered the dawn of modern amphibious warfare, Argentina's occupation of the Falkland Islands can be considered the dawn of the modern A2AD warfare.

Movement to the Amphibious Objective Area – The Task Force Sets Sail

From the British standpoint, the 1982 Falklands War was not only unexpected, it was “unplanned”.¹⁷ No operational plan (OPLAN) existed in the event of war over the Falklands, nor were there substantial forces in the South Atlantic to provide any swift nor effective response.¹⁸ From the start of the scrap metal incident on South Georgia Island in mid-March to pre-invasion on 1 April, the British government and military commanders held planning meetings to discuss and debate diplomatic and military responses to a possible Argentinian invasion, but these were only discussions with very little detail nor guidance provided to commanders.¹⁹ With the invasion underway and news arriving to the British public on 2 April, Prime Minister Thatcher

announced the following day before the House of Commons, “a large task force will sail as soon as preparations are complete.”²⁰

With her public statement, Admiral Sir Henry Leach, First Sea Lord, designated Admiral Sir John Fieldhouse, Command-in-Chief Fleet (CINCFLEET), Commander Task Force (CTF) 317/CTF 324.²¹ (See *Figure 3.*) The Royal Navy was no longer planning but instead embarking a force that had not been seen in scope and size since the Suez Crisis of 1956.²² Joint Publication 3-02, Amphibious Operations dictates the five phases of an amphibious operation as Planning, Embarkation, Rehearsal, Movement, and Action (PERMA).²³ These phases can be looked at as “sub-phases” within the Joint Phasing Model.²⁴ Due to the relative surprise of the Argentine invasion, and the political and strategic need to show British resolve, the British task force used the “non-standard” phases of an amphibious operation; Embarkation, Movement, Planning, Rehearsal, and Action (EMPRA).²⁵ Typically, a U.S. amphibious force will execute PERMA or EMPRA during Phases 0 – III under the Geographic Combatant Commander’s (GCC) or Joint Force Commander’s (JFC) operational plan.²⁶ EMPRA played a large role in the many difficulties the British faced in the coming weeks. By choosing to use EMPRA, the first problem British planners faced was what units to assigned CTF 317.

Outside of supporting NATO within Europe, the British military headquarters at Northwood did not possess plans that encompassed a brigade size deployment. Thus, the embarkation plans used for Operation CORPORATE were based off the Norway contingency plans.²⁷ This would account for the supplies needed for a cold weather environment, but not the ships and anti-air systems needed to oppose Argentinian forces in the air and on the seas 8,000 miles from the British homeland. Additionally, due to the diverse threat posed by Argentina, the

task force was assembled with ships and grounds units not typically accustomed to operating with each other.

A larger force, than that assigned to the Norway plan, was required due to the growing Argentinean ground force in early April. The Royal Marines' 3 Commando Brigade (3CDO), commanded by Brigadier General Julian Thompson, was the assigned force for the Norway contingency plan. 3CDO's yearly training in Norway, combined with their Arctic Warfare Cadre, made 3CDO the ideal choice for the austere cold weather environment of the Falklands. Although 3CDO was the premier British ground force, it was not enough in the face of a modern and larger force.

Royal Marine Commandos, by their nature, are extremely fit, agile, and above all, expeditionary. Any unit assigned directly to 3CDO needed to fit this model. The best option were the British army's paratroop battalions. Thus, 3 PARA and 2 PARA reinforced 3CDO.²⁸ Furthermore, 3CDO received an artillery battalion, an Rapier anti-aircraft battery, additional communications and signals equipment and personnel, and 3 Commando Logistics Regiment. This brought the initial landing force, 3CDO, to around 5,500 Marines and Paratroopers.²⁹ This was a substantial size force to have penetrate the A2AD bubble and land successfully.

In order to fracture the A2AD bubble, the task group was comprised of over one hundred ships and submarines with the majority of them embarking from Great Britain and Gibraltar or already underway from the mid-Atlantic. Operational control was placed in the hands of Rear Admiral John "Sandy" Woodward, designated Commander Task Group (CTG) 317.8.³⁰ Of the one hundred plus ships, warships were the smaller percentage of the task force as compared to support ships.² These included two aircraft carriers, eight guided missile destroyers, fifteen frigates, one diesel and five nuclear powered submarines, two amphibious assault ships, three

² Royal Navy "warships" v. Support ships from the RFA and STUFT: 40% v. 60%

mine sweepers, and five small vessels.³¹ Supporting the carrier group and the amphibious task force, the Royal Fleet Auxiliary (RFA) provided 23 ships, and the British commercial merchant fleet provided an additional 40, classified as Ships-Taken-Up-From-Trade (STUFT).³²

Gaining and maintaining control of the sea by Royal Navy combatants was only half of the solution to the maritime problem. As with any operation, aircraft conducted not only combat air patrols (CAP) in order to maintain air superiority, but also to conduct anti-surface and anti-subsurface operations. By using just about any ship that had a helicopter landing pad, the task force embarked seventy-four aircraft, both rotary wing and fixed wing. The most decisive of these aircraft were the 33 Harriers embarked.³³ These Harriers, both from the Royal Navy and Royal Air Force (RAF), were used for protecting the fleet against air and surface threats, and for close and deep air support (CAS/DAS) provided to the landing force and special operations. Additionally, in protecting the fleet against the Argentine submarine threat, the task force embarked 25 anti-submarine helicopters.³⁴ Lastly, the task force possessed 28 helicopters for assault support.³⁵

As for landing force logistics, the task force loaded its one hundred plus ships as items appeared at their ports of embarkation. In order to meet the Prime Minister's intent, the majority of combatants sailed within 72 hours with the last few underway by 7 April.³⁶ Due to the impromptu loading of ships, identification and reorganization of cargo for debarkation took nearly three weeks.³⁷ This reorganization was done while underway and at Ascension Island, Ascension Island, the intermediate staging base for the task force halfway between Great Britain and the Falklands. Re-stow of supplies and equipment became the priority for the task force, at the cost of more effective planning and rehearsals, in order to have a timely off-load in the Falklands.³⁸ This haphazard means of embarkation was another problem caused by EMPRA.

Concurrent with identification of supplies, British commanders turned to detailed planning for the operation.

Lesson Learned: EMRPA vs. PERMA – Plan for the Unimagined

“Expand the practice of employing adaptive force packages, which tailor naval capabilities to specific regional environments, thereby ensuring that our assets are located where they are most needed.”

- Cooperative Strategy 2021³⁹

Due to political necessity, the task force made ready and set sail in 72 hours with various support ships following over the coming weeks. Considering that deployment plans for the Falklands crisis did not exist and that gear was strung out across Great Britain, Norway, and Europe, the task force embarked 38,000 tons of cargo within 72 hours.⁴⁰ Although the task force made its deadline and set sail with a substantial amount of cargo, EMPRA caused great difficulties during transit and at Ascension Island. Admiral Woodard made the comment that the task force should have stayed in their ports in Great Britain and Gibraltar, for up to two weeks after the invasion to conduct proper embarkation of personnel, equipment, and supplies, thus avoiding the mess that occurred while underway and at Ascension Island.⁴¹ It can be assumed that during that two weeks, deliberate planning would have occurred thus, the task force would have expected PERMA vice EMPRA. Although a departure two weeks later could have been more effective, political pressures did not allow this to happen.

In the future, the U.S. Navy, Marine Corps, and the Joint Force may not have the two weeks Woodard wished. In a moment of crisis, rarely do U.S. forces have two weeks to spare. The most recent example is Operation ODDESY DAWN, the March 2011 U.S. operation in

support of U.N. Security Council Resolution 1973 against Libya.³ During this operation, the Bataan ARG/22 MEU successfully deployed within a few days' notice from Virginia and North Carolina in support of the operation.⁴ In the future, the national command authority (NCA) will place political pressure on an ESG/MEB in the same ways the Prime Minister and Parliament pressed the the British task force in 1982, and the NCA ordered the Bataan ARG/22 MEU in 2011. Although the concept of EMPRA is somewhat second nature to ARGs and MEUs, as proven by the effective and timely deployment of the Bataan ARG/22MEU, EMPRA becomes quite complicated and even more complex when assembling an ESG with a MEB size force.

It is imperative that operational plans (OPLANS) are up to date not only for the tactical formations, but also more importantly, for the logistical concerns to support such plans. The fact that the British task force used EMPRA crushed logistical efficiency. Time that should have been spent conducting detailed planning and rehearsals while underway and at Ascension Island, was spent on the restow of equipment and supplies. Additionally, this delayed the task force's arrival into the Amphibious Objective Area (AOA) of San Carlos Bay.

Lastly, in 1981 the Ministry of Defense (MoD) and the Foreign Commonwealth Office (FCO) evaluated the potential of an Argentinian invasion, what could be done to stop it, and, if need be, military options in the repossession of the islands. The planning group's outcome was that nothing could be done with the limited resources available in both finances and military power.⁴² Diplomacy would continue, and if the problem worsened, MoD would potentially reinforce the island with a company of Royal Marines. Once those efforts failed and the Argentinians invaded, the islands would not be repossessed by British forces. In other words, the

³ Gertler, Jeremiah. "Operation Odyssey Dawn (Libya): Background and Issues for Congress". Congressional Research Service, 30 March 2011. Washington, D.C., p.13 <https://fas.org/sgp/crs/natsec/R41725.pdf>

⁴ Commander, U.S. 2nd Fleet Public Affairs, U.S. Navy press releases, Release Date: 23 March 2011. http://www.navy.mil/submit/display.asp?story_id=59272

islands would be handed over to Argentina without a military confrontation. The planning stopped with the MoD/FCO recommendations.⁴³

MoD requested a plan only after the invasion was underway. The question here being, what if the FCO and MoD planners had planned for a military response to the Argentinian invasion? Would this have prevented many of the difficulties encountered during and after embarkation? The answers to these questions are not known, but it can be safe to assume that it would not have made things worse. The Falklands should stand as an example for MAGTF and Joint Planners to consider all options regardless of the political will and assumed military capabilities. Politics change, and so too will military plans. To not have a plan is unacceptable and only delays the process for deployment and degrades the efficiency of force deployment.

In the case of 1982, British forces made do with their best deployment practices. 3CDO with their arctic warfare training, combined with their expeditionary nature, and that of 2PARA and 3PARA's expeditionary expertise, was the best choice for the ground campaign. Secondly, in order to prevent the further degradation of their honor, the U.K. pushed forward with a national spirit not seen in decades. For that reason, the U.K. was able to rapidly assemble the trucks needed to move freight from all parts of Great Britain and even parts of Europe. Ships were gladly handed over by the merchant fleet, and the ports made every effort to refit the STUFT for war. In this case, the British had the national backing to support the task force setting sail in 72 hours. In the future, the United States cannot, nor should it, count on such national support to pull the effort through when a plan does not exist.

Shaping the Amphibious Operations Area

Rather than conducting shaping operations for months or multiple weeks, only twenty days of shaping operations were available in support of Operation CORPORATE. The task force was under a very tight time line because of the coming South Atlantic winter, and the carriers were expected to operate until the fall before they were needed to conduct critical maintenance in port. Operationally, the task force accomplished little in the immediate weeks following the Argentinian invasion due to the 8,000 miles of separation between the two opposing forces. At midnight on 12/13 April, the British government announced a Maritime Exclusion Zone (MEZ) of 200 nautical miles around the Falkland Islands and enforced by three Royal Navy nuclear submarines.⁴⁴ (See Figure 4.) Drawing first blood at this point could have prevented a diplomatic solution to the crisis. Instead of attacking the Argentinian navy, the British submarines observed the opposing naval forces. Not only were the submarines able to gather accurate intelligence concerning the movement and locations of the Argentinian navy, but they were also able to ascertain that sea-mines were in fact being placed off the coast of Port Stanley and coastal defenses were in place.⁴⁵ With British submarines providing real time intelligence, the task force could turn to more detailed planning.

As the task force gathered around Ascension Island, Admiral Fieldhouse flew to the intermediate staging base and transferred to the HMS *Hermes*, Woodward's flagship, to meet with his commanders on 17 April.⁴⁶ Fieldhouse had two main points for this meeting. One was the need to close in on the Falklands before popular support was lost. The other was to look at the possible landing plan and present recommendations. The Commander, Amphibious Task Force (CATF), Commodore Michael C. Clapp, designated Commander Task Unit (CTU) 317.0, and the Commander, Landing Force (CLF), Brigadier General Julian H. A. Thompson,

designated CTU 317.1, could not provide a definitive answer for a landing site at this time, but they were able to determine the following requirements for shaping operations in order to successfully land the landing force regardless of the location:

- a. The Total Exclusion Zone must be effective and remain so throughout Operation CORPORATE.
- b. The threat of the Argentine aircraft carrier must be removed.
- c. Air and Sea superiority must be established and held over East and West Falkland and the surrounding area.
- d. Port Stanley airfield must be neutralized (including air defense weapons) and the Argentine air assets (both fixed wing and helicopter) stationed on the East and West Falkland must be destroyed.
- e. Accurate intelligence of beaches, terrain and enemy positions is essential.
- f. Argentine logistic dumps must be harassed and their effectiveness reduced.⁴⁷

Out of the six requirements for shaping operations, four of those pertained to gaining and maintain access. The need to control the air and sea prior to ATF's arrival was not lost on Woodward, Clapp, or Thompson.

With political pressure gathering by the day, and regardless of task force readiness, it was time to sail south.⁴⁸ Woodward's carrier battle group departed Ascension Island on 18 April, arriving in range of the MEZ for the group's Harriers by 30 April, thus turning the MEZ into a Total Exclusion Zone (TEZ).⁴⁹ Concurrent with CTG 317.8 commencing operations to gain access, Clapp's amphibious force (CTU 317.0) with Thompson's reinforced 3CDO (CTU 317.1) started its 4,000-mile movement from Ascension Island to the Falklands.⁵⁰

Gain and Maintain Access – Enforcing the TEZ

Woodward's battle group had a multitude of objectives to accomplish before the amphibious landing, with the most important of those being to gain air and sea superiority. With South Georgia Island secured and some of the ships from the South Georgia Group returning to

Woodward, CTG 317.8 consisted of twelve combatant ships, the majority of the helicopters for Anti-Submarine Warfare (ASW), assault support for special operations, and the Harriers for Combat Air Patrol (CAP) and CAS/DAS.⁵¹ Additionally, submarine forces (CTG 324.3) possessed six submarines in the South Atlantic with some of those submarines responsible for enforcing the TEZ.⁵²

Securing the sea and air were simultaneous missions, but it was securing the air that proved most difficult throughout the operation. Identifying the route from Ascension to the Falklands was not hard considering the British task force was under political pressure to make their presence known in the South Atlantic as soon as possible, and the Argentinians were well aware of this pressure. The task force had only one choice, to travel the fastest possible route to the Falklands, a straight line.

On 21 April, well before the task force arrived at the exclusion zone, an Argentinian Air Force Boeing 707 located Woodward's carrier battle group. These sighting of 707s would continue over the following days as the task force moved south. Considering the Argentinian Boeing 707s were unarmed and well north of the TEZ, there was little the task force could do besides launch Harriers to intercept and observe.⁵³ After such actions became daily occurrences, the British government released a statement declaring that the British task force would engage any Argentinian military aircraft coming within 25 nautical miles of British ships. Encountering "non-hostile" Argentinian aircraft at 25,000' and non-combatant shipping outside of the TEZ raised issues for the task force's rules of engagement (ROEs).

ROEs were a continuous topic of discussion with very open ended answers during the conflict. Within the TEZ, ROE were not an issue. It was outside of the TEZ where issues arose as soon as the task force started to arrive at Ascension Island. As with any military operation,

the element of surprise is a must. Although the task force went to great lengths to disguise the force's movement, it was still extremely difficult to conceal over one hundred ships relatively massed together in the South Atlantic. Throughout the operation, commanders debated whether the task force could and should engage Argentinian forces outside of the TEZ.

Lesson Learned: Rules of Engagement – We are in the age of Limited Warfare.

As with the 1982 Falklands War and even more so today, technology allows friendly and enemy forces to see well beyond the “objective area.” ROE were an issue in two circumstances during the Falklands War; submarine warfare and unarmed reconnaissance aircraft outside of the TEZ. The TEZ created a definitive location where no aircraft, ship, nor submarine were allowed entry to the Falklands. (See Figure 3.) Although this helped the task force gain access into the Falklands, it did not prevent surface ships, submarines, and aircraft from navigating around the TEZ.

In the future and due to the nature of limited warfare, political pressures and public outcry may not allow kinetic strikes outside a TEZ. This is where non-kinetic means may solve the issue. Electronic warfare in 1982 was relatively new and limited, but today it is a readily available critical capability for the Joint Force. Both ships and aircraft need the means to disable enemy ISR platforms, both manned and unmanned, via either electronic warfare or cyber means, to prevent enemy ISR from locating and reporting friendly force movement.

As advertised by Lockheed Martin, the Joint Strike Fighter (JSF-35) has this capability. Assuming that the JSF-35 may be required to conduct air-defense and prosecute ground targets simultaneously, this may be asking too much for the platform in a given moment.⁵ This could be especially true in a “Falklands type” of scenario, where the ESG/MEB has limited assets, well

⁵ Lockheed Martin, F-35 Lighting II, Retrieved January 16, 2017: <https://www.f35.com/about/capabilities>

away from friendly territory. The MV-22 with its range, speed, and EW payload options, may be the answer in defending the amphibious task force during shaping operations well outside of a future TEZ.⁶

Today, U.S. adversaries have the means to view the movement of U.S. naval fleets via satellites, their own naval ships, merchant fleets, and by reporting either by the associated press or social media. Hiding the movement of ships will be extremely difficult in the future. Although true, every means possible must be explored to maintain the surprise.

Gain and Maintain Maritime Superiority – The Unseen Power of the Submarine Force

Woodward's carrier battle group entering the TEZ was the forcing function to apply more liberal action within the ROE constraints. On 2 May, the Argentinian cruiser, the *General Belgrano*, escorted by two destroyers, was underway 40 nautical miles southwest of the TEZ. Although the cruiser was well outside of the TEZ, it was declared an imminent threat to the British task force and sunk by the British nuclear submarine *HMS Conqueror*. (See Figure 4.) This action was controversial because the Argentinian cruiser was outside of the TEZ, on the opposite side of the Falklands from the British task force, and the fact that 368 Argentinian lives were lost at sea.⁵⁴ On the same day, Woodward's CTG 317.8, via anti-surface/subsurface helicopters, attacked two Argentinean small naval vessels resulting in one vessel being sunk and the other permanently disabled.⁵⁵ With the sinking of the *General Belgrano*, and two vessels neutralized, the task force had their needed effect.⁵⁶ Argentinian leadership pulled back nearly all surface combatants, to include the Argentinian aircraft carrier *Vientecinco de Mayo*. With one move, the British obtained maritime supremacy.⁵⁷

⁶ United States Marine Corps, MV-22 Guidebook 2010.
http://www.boeing.com/ospreynews/2011/issue_01/final_8jun2010_179638.pdf

Lesson Learned: *Submarine and Anti-Submarine Warfare*

If Operation CORPORATE proved anything, it is that the submarine is the most vital asset in penetrating the A2AD shield and also in gaining maritime superiority. The Argentinian navy feared British submarines and by sinking just one Argentinian ship, the British won the maritime domain. Outside of China, Russia, and America's strongest allies, submarine fleets of other nations are aging and inept compared to the United States. The versatility of modern day submarines is renowned. Besides anti-ship and anti-submarine warfare, their role extends to nuclear strike and deterrence, the insertion of reconnaissance forces, and intelligence gathering through signals and visual means. With today's submarine technology, it is extremely difficult for enemy forces to locate U.S. submarines. For these reasons, submarines are both a physical and mental threat to opposing forces.

Today, the U.S. maintains a superior edge in submarine warfare. However, the technological gap is closing between the U.S. and its foes. Over the past decade, Chinese submarines have surfaced within U.S. carrier battle groups during training exercises in the Pacific.⁷ Due to the secretive nature of submarine warfare, it is not known if the U.S. 7th Fleet knew of the Chinese actions prior to the surfacing of the submarine. Allowing the Chinese submarine to approach a U.S. carrier battle group can be beneficial to the U.S. Navy. This allows anti-submarine technology to gather information on the Chinese submarine, and later exploit identified gaps in the Chinese submarine. That is hopeful analysis, but it still proves submarine warfare can be just as deadly, if not more so than, surface and air warfare. In many

⁷ Mizokami, Kyle. "A Chinese Submarine Stalked an American Aircraft Carrier: But the USS Ronald Regan Wasn't in Any Danger," 6 Nov 2015. <http://www.popularmechanics.com/military/navy-ships/news/a18094/a-chinese-submarine-stalked-an-american-aircraft-carrier/>

ways, submarine warfare is the deadly unknown of the seas. Combined with cyber and EW, submarine warfare could be the means to gain maritime superiority.

Gain and Maintain Air Superiority – The Unattainable Goal

During the Falklands campaign, neither side maintained air supremacy but considering that the British task force lost 10% of its shipping due to air threats, it was the task force that paid the highest price.⁵⁸ From the start, the Argentinians possessed a 1 to 4 advantage over British Harriers. For the Argentinians, they chose to use their aircraft in a CAS/DAS role, vice the British task force who used their two models of Harriers, the Sea Harrier and GR. Mk 3, for DAS, CAS, and CAP, with the majority of aircraft tasked to defend the task force.⁵⁹

Additionally, the RAF had the Vulcan B.Mk 2A bomber. The Vulcan bomber, like much of the British military's weapon systems, was a Cold War era aircraft meant to conduct bombing missions from home bases in England and Europe. Thus, the Vulcan bomber did not have the range needed for deep strategic bombing. Regardless of this short coming, on 1 May, one Vulcan bomber at 10,000' attacked the Stanley airfield with twenty-one 1,000 lbs bombs.⁶⁰ Although Operation BLACK BUCK had little effect and the Stanley airfield was operational shortly after the bombing, the "Vulcan Air Raid" was a strategic move for British forces. The raid proved that if worse came to worst, the RAF could strike targets on the Argentinian mainland.⁶¹ This may have been unlikely due to the British political statements, the diplomatic relations with allied nations and the United Nations, but it did prove the point. Lastly, the Vulcan bombing gave yet another win to the British people back home, the first being South Georgia Island, and the next being the sinking of the *General Belgrano*. With three consecutive wins by the British, it was Argentina's turn at the score board.

The AM-39 Exocet was new to the Argentinian military and the world. The year prior to their invasion, Argentinians started fielding the French built anti-ship cruise missile along with the aircraft to carry it, the Dassault Super Etendard. Originally, the Falklands invasion was to occur in the South Atlantic's late winter early spring. One reason for the later invasion date was the need to properly train crews, and fit the Super Etendard for the Exocet. Unfortunately for the Argentinian Naval Aviation Command (*Comando de la Aviacion Naval Argentina*), General Galtieri, after the South Georgia incident bumped up the invasion by nearly six months without the Super Etendard crews and aircraft being fully operational.⁶²

By April, the 2nd Naval Fighter and Attack *Escuadrilla* had four operational Super Etendards and ten trained pilots for that aircraft.⁶³ Furthermore, Argentina possessed just five AM-39 Exocet air to surface anti-ship cruise missiles.⁶⁴ The odds were not in favor of the Super Etendards pilots, but they just needed one missile to strike in order to make an impact on the British task force. As true as it is today, in 1982 the ultimate target for the Super Etendard pilots was always a task force aircraft carrier.⁶⁵ Although a British aircraft carrier could "win the war," this was a far-reaching possibility considering how few Exocets the Argentinians possessed, and with the limited number of Super Etendards, any ship within the task force could be a potential target. On May 4th, after the Super Etendard squadron aborted two previous attempts, an Argentinian Super Etendard launched an AM-39 Exocet at the British task force. This was the first combat test for the Exocet, a textbook maneuver, and it went quite well.

The British destroyer HMS *Sheffield* was hit and suffered significant damage with 24 wounded and 20 killed.⁶⁶ If there was ever a time that diplomacy would have stopped the coming British assault, it had just passed. Strategically, all cards were on the table from this

point forward, and the British were not backing down. Tactically, the attack showed that the task force was not impregnable, and that gaining air supremacy was more vital than ever before.

Over the course of the next six weeks, Argentinean Air Force and Naval fighter attack and bomber aircraft made runs at the task force, and later on 3 Commando Brigade, with considerable success. The majority of attacks occurred from aircraft stationed within Argentina. British intelligence knew the Argentinians would attack from both the mainland and from the Falklands. (*Refer back to Figure 3A/3B.*) Their two biggest concerns were with the Exocet and positioning of aircraft on the Falklands.

These were two separate problems with different solutions. For aircraft departing Argentina, the British assumed that Argentina did not have a reliable air-to-air refueling system. This was a mistake. By making this assumption, the task force discounted the amount of on station time aircraft would have to loiter and attack a target or group of targets of choice. Initially CAPs defended around Woodward's carrier group, and then later the limited number of Harriers was split between defending the carrier group, the amphibious task force, and the landing force. The Argentinians made their land based runs on the ATF and LF, while the air-to-air refueled aircraft focused on the carrier group at sea. Thus, there was a gap in the CAP, and the Argentinians exploited this gap.

The second concern was the Argentinian aircraft positioned on the Falklands. This was dealt with by the use of Harriers and Special Operations. Most notable of these actions was the Special Air Service (SAS) raid on Pebble Island. Pebble Island, located on the northern edge of West Falkland, possessed a 1,600' grass airfield. (*See Figure 3B.*) Grass airfields were not uncommon on the Falkland Islands. The islands lacked a road network connecting the many villages on the island. Also, considering that the islands are around 100 miles by 160 miles,

covering such distances from settlement to settlement takes a considerable amount of time by vehicle. The various villages across the islands possessed these grass airstrips for postal services and delivery of supplies via small privately owned aircraft.

Argentinian planners were well aware of the multitude of grass airstrips available. The Argentinian Air Force forward deployed light-attack aircraft to Stanley, Goose Green, and Pebble Island. (See Figure 5B.) The British believed that Argentinian air elements would use Stanley and other airfields, specifically that they would try to use Stanley for fast attack aircraft like the Skyhawks, Mirages, or worst, the Super Etendard.⁶⁷ Although fast attack aircraft never deployed to the Falklands, light attack aircraft did.

Pebble Island was vital to the Argentinians for two reasons. First was early warning radar coverage. TPS-44 and TP-43 radar sets were positioned near the homes on the outskirts of Stanley.⁶⁸ These positions were not ideal, but still effective for identifying the incoming British task force, both air and sea. The only down side was that Stanley is surrounded by mountains except in one direction, therefore radar coverage was looking east and east alone. Thus, the Argentinians needed to fill this gap in coverage. The logical choice was Pebble Island, to be named *Base Aerea Militar (BAM) Borbon*.⁶⁹

Additionally, the Argentinian Air Force needed to spread their forces to cover East Falkland from the north, south, and east. To fill this gap, Pebble Island was the logical choice to prevent a northern approach by the task force. For reasons unknown, over the course of April and into May, the additional TPS-44 and TP-43 radar sets available never made their way to *BAM Borbon* to fill in the radar gap. Possible reasons for never filling this gap are the establishment of MEZ/TEZ, or a radar set disabled in Stanley due to high winds and replaced with the remaining spare TPS set.⁷⁰ Although a radar system never made its way to *BAM*

Borbon, the aircraft and troops to protect it did. Positioned on Pebble Island were around 100 troops armed with small arms, anti-tank weapons, 60mm and 81mm mortars.⁷¹ Just as important as the reinforced company on the island were the light attack aircraft. *BAM Borbon* maintained six Pucarás, four Mentors, and one Skyvan, a personnel and cargo transport aircraft.⁷²

Just like the Argentinians, British planners identified Pebble Island as a good choice for both radar and aircraft positioning. This was later confirmed in May when British ships and aircraft picked up Argentinian aircraft departing and landing in the vicinity of Pebble Island. Harriers were focused on bombing Stanley and Goose Green, while Vulcan raids focused at Stanley. Pebble Island would be reduced by the SAS.

In a daring raid on the night of 15 – 16 May, forty-five men from D Squadron SAS were inserted via Sea Kings from the *HMS Hermes* and supported by the *HMS Broadsword* and *Glamorgan*. Over the course of five hours, from insert to extraction, the SAS element was able to destroy eleven aircraft, crater the airfield, and confirm that a radar station was not located on Pebble Island.⁷³ This limited short duration raid opened the gate for Clapp's amphibious task force.

Lesson Learned: Air Craft and Weapon Ranges

The Argentinians had an advantage in fixed wing quantity over the British task force of four to one. Additionally, having land based aircraft proved more effective in the launch and recovery of aircraft. The failure for Argentinian aircraft was range and selection of targets. The Falklands were at the maximum range for Argentinian aircraft. Aircraft were limited to about 15 minutes once on station over the Falklands. During these 10 to 15 minutes, pilots had to acquire and strike a target. Their main goal during all attacks was to have the “big win,” strike an

aircraft carrier. Although a successful attack on a carrier never occurred, the British task force still suffered 10% loss in shipping.

In 1982, the Royal Navy and Royal Air Force were trained and equipped to support NATO, thus any and all systems were meant to support a landing in Norway and/or Europe, and neutralize Soviet ships and submarines in the Greenland-Iceland-United Kingdom Gap, more commonly referred to as the “GIUK gap”, via the use of ships and land based radar and aircraft, not fight a campaign 8,000 miles away. The task force lacked a long-range early warning air system similar to today’s Airborne Early Warning (AWE) provided by the U.S. Air Force’s Boeing E3 Sentry and the U.S. Navy’s Northrup Grumman E-2 Hawkeye.

Today, the reach of the amphibious task force’s must go beyond that of the adversary. The goal for the adversary, much like Argentina, will be to destroy an aircraft carrier and/or an amphibious assault ship. Carrier Strike Groups (CSG) must maintain early warning capabilities, and an ESG or ARG must be prepared to request these assets when needed. The JSF-35s may have this capability, but considering how the British Task Force needed all 33 Harriers to provide CAP and CAS, it is hard to imagine that the ESG or ARG can afford to provide one or two JSF-35s in this role while supporting the CAP and CAS missions. Additionally, once the ESG or ARG is within the A2AD bubble, it must continue to fight using defensive tactics and long range stealth technology capable of providing early warning.

The 1982 Falklands War provides a warning to the ESG/MEB. Although, the ESG/MEB may be sent ahead of the Joint Task Force in amphibious advance force operations, there are assets within the JTF that are still needed, in this case the AWE provided by the CSG or the Air Component Commander.⁷⁴ Although the JSF-35 is a multifunction aircraft, it may become overtaken during a high intensity conflict. Understanding that if either CAS or AWE has to be

gapped, for whatever reason, the ESG/MEB must be ready to request AWE support from the JTF. Not doing this may prove even more devastating than what was seen in 1982.

Lesson Learned: *Special Operations*

The missions carried out by SAS and SBS in 1982 were well within the scope of current day United States Marine Corps' reconnaissance units and battalion landing teams (BLT). Much like the Marine Corps' Force and Division Reconnaissance, SBS' primary role was beach survey. San Carlos Bay was not ideal, nor was any beach in the Falklands ideal. SBS scanned and surveyed almost every inch of San Carlos Bay in order to identify beach-landing sites that could fit not a squadron of Utility, Landing Crafts (LCU), but a beach or multiple beaches that could support at least one LCU.

SAS pushed deep into East Falkland in very small teams, ahead of the 3CDO. Their mission was to gather intelligence on enemy positions and high value targets such as anti-air systems, headquarters, and possible land based Exocet missiles. Both SAS and SBS were not in a "direct action" role; rather they conducted the purest form of reconnaissance, ground intelligence. For SAS, this mission placed them far ahead of 3CDO in the brigade security area. Again, this a prime example of the type of mission trained to by Force Reconnaissance today. ARG/MEUs and ESG/MEBs cannot become reliant upon special operations for all reconnaissance tasks. Risk has to be accepted, and mitigated through training and support provided by conventional forces such as BLTs. While Force and Division Reconnaissance are high demand-low density units, special operations units are even fewer.

Additionally, the mission carried out by SAS on Pebble Island is well within the scope of a qualified company within a BLT supported by Marine reconnaissance forces. Although

Argentinian forces were well armed and equipped, it was evident through SBS that the forces on Pebble Island were ill-trained and complacent in their defense of the grass airstrip. SBS informed SAS, and with this information, SAS exploited the gaps in the Argentinian defense. The means of destroying the aircraft were quite simple, C4, small arms, and 60mm mortars. All skills held in an infantry company and reconnaissance units today.

Commanders must enforce the training, and place the trust, and confidence back in the reconnaissance community in order to accomplish tasks like those that were accomplished by SAS and SBS in the Falklands War. Risk is inherent with any operation, and commanders must mitigate that risk. Although special operations forces execute tasks similar to those in the Falklands War, so too is the reconnaissance community and BLTs. Mitigate the risk by ensuring that their training is realistic and complex, and promote their capabilities to Joint Force Commanders.

Lastly, the raid on Pebble Island is a text-book example of amphibious advance force operations. SAS served as a “support force assigned to the amphibious force” that conducted “shaping operations in the amphibious objective area ... prior to the arrival of the amphibious force”.⁷⁵ Future ARG/MEUs and ESG/MEBs should study Pebble Island in order to understand how small units temporally organized, i.e. infantry companies reinforced with Marine reconnaissance forces, within the amphibious task force can support the larger objective of the ATF without pulling resources from the JTF.

Landing Site Selection – The Best of Bad Options

The amphibious landing of 3CDO, Operation SUTTON, was set for 21 May. Thompson and Clapp Beach narrowed down the beach selection from fifty beaches to a possible three, and then finally, San Carlos Bay.⁷⁶ Not a single beach on East nor West Falkland was ideal for an amphibious landing. Each beach had its problems with either being too close to the enemy's defensive positions, too narrow, too shallow, or too far away from the objective area. Although San Carlos had its draw backs, it was the best landing site for fighting within the A2AD bubble.

San Carlos Bay sits on the western side of East Falkland with the only access point coming from the Falkland Sound that splits the two main islands. The task force would have to approach the island from either the north or from the south, thus closing some of the distance between the British ships and Argentinian aircraft stationed on the mainland. An approach into San Carlos Bay via the sound would be slow regardless of a movement from the north or the south. Additionally, an approach from the north pushed the ships into radar range of land based radar units around Stanley. Although Pebble Island had been neutralized, the threat of an unidentified radar unit was still there, especially around the northeastern portion of East Falkland near the Argentinian defensive positions. Although there were drawbacks with movement to and the location of the bay, the bay itself made up for them.

At San Carlos Bay's opening, ships have to pass through a gap no larger than one and half kilometers. Then the bay opens up to three and half kilometers and then narrows down from there. Although San Carlos Bay is an extremely tight fit for a group of ships, it has calm waters, and multiple beaches. Surrounded by high hills and mountains, San Carlos Bay is relatively ideal for defense of the landing force and the amphibious task force. Having such high terrain surrounding the area, negates the use of surface-to-air missiles, i.e. the Exocet, and forces

attacking aircraft into a very short target identification to engagement timeline. San Carlos was not the ideal beach, but the best one offered to the amphibious task force.⁷⁷

As the task force crept closer to the landing date, it was obvious that air superiority could not be obtained in time. The best Woodward could do was mitigate the threat. Deception operations are a must in warfare, and Operation CORPORATE was no different. (See Figure 5.) Woodward and Clapp devised a deception plan, named Operation TORNADO, to draw attention away from San Carlos Bay landing. At 0400Z, the same time the actual landing at San Carlos Bay commenced, the Cruisers HMS *Ardent*, and *Galmorgan* positioned themselves off the coasts of Goose Green and Stanley, respectively.⁷⁸ Under naval gun fire provided by the cruisers, SAS forces raided Darwin – Goose Green. Off the coast of Stanley, the *Galmorgan* conducted radio transmissions simulating a coming invasion, additionally, SBS were inserted near the town and made contact with locals in order to spread the word that the task force was about to land. Operation TORNADO, a seemingly small act, drew enough attention away from San Carlos Bay and bought sufficient time for the task force to start their landing unimpeded.⁷⁹

Deception operations, an early morning nautical twilight landing, and SBS securing the landing site prior to 3CDO's landing enabled the initial waves to land unopposed. If there was a significant delay in their movement, or any other factor not in favor of landing force, this could have turned Operation SUTTON into an opposed landing.⁸⁰ Through detailed planning, intelligence, and sheer will, Commodore Clapp was able to fit the majority of his Amphibious Task Force in and around San Carlos Bay by the early daylight hours of 21 May.⁸¹ Although the day started off without incident, it was only a matter of time before Argentina's fixed wing assets attacked the amphibious task force.

Defending the Landing Force – Fighting within the Bubble

Clapp and Thompson knew that the worst spot for the landing force to be during an air attack would be on the ships in San Carlos Bay or in transit to the shore. Getting the landing force ashore during the early hours of 21 May was paramount to mitigate the air threat's potential. Additionally, the 3CDO's defensive posture had to be set in the event that enemy forces counter-attacked from Goose Green or Stanley, via the regimental air-assault reserve. With 3CDO's battalions set, 40, 42, 45 Commando with 2 Para and 3 Para, the chances of stopping or pushing the landing force back into the sea were slim.⁸² Although Argentinian ground forces could do little harm to the landing force at San Carlos Bay, the Argentinians could strike hard at the landing force with their air components.

The Amphibious Task Force and 3CDO were well inside the A2AD bubble with aircraft attacking from the Argentinian mainland and Stanley. The coming days were referred to as "Bomb Alley" for the amount of ordinance delivered from Argentinian aircraft.⁸³ From 21 to 25 May, the Argentinian air force and navy produced 180 sorties with about 80 operational fast attack aircraft.⁸⁴ Out of the 180 sorties, 117 sorties reached their targets with 19 Argentinian aircraft being destroyed, a loss rate of 1 in 4. Compared to the British task force with 33 Harriers, both Sea Harriers and the Harrier GR3's, produced 300 sorties, about two sorties per day per Harrier.⁸⁵ Although sortie generation and sustainment of aircraft were higher for the Harriers, their part in the defense of the ATF could only do so much. Defense of the ATF also fell upon the ships within the ATF, the anti-air battery, and man-portable air-defense systems (MANPADS) within 3CDO.

Although the high surrounding terrain mitigated the air-to-surface threat, it also hampered the ATF's surface-to-air weapon systems. Some of the ships within the ATF had the latest anti-

air missile systems. Due to the surrounding hills and bluffs of San Carlos Bay, those systems were unable to acquire, identify, and prosecute targets in an effective manner. By choosing the terrain, the ATF took a risk in being unable to use their anti-air missile systems.

Meant to aid in anti-air defense, 3CDO had two Rapier anti-aircraft batteries attached. These units were not organic to the landing force, nor was it a system/unit 3CDO was accustomed to operating with in training. Unfamiliarity and misuse of the weapon system led to its ineffective use during “Bomb Alley” and follow-on point defenses during the campaign.

The first problem occurred during embarkation. The Rapier systems were organic to the RAF and Army, thus not meant for travel via amphibious ships, where exposure to saltwater and rough seas are common. In order to protect the sensitive components to the missile system, they were placed below deck, well away from exposure to the sea. Additionally, these components were never reorganized for immediate debarkation as the ATF closed on San Carlos Bay. Considering the air threat, these items should have been in wave two or three, vice some of the last waves on the afternoon of 21 May. Thus, the Rapier systems were out of commission for most of 21 May.⁸⁶

The second problem with the Rapier was its misuse around San Carlos Bay. The Rapier was intended for a point defense, i.e. a bridge, headquarters, a small sensitive site, etc. San Carlos Bay was an area defense spread out over nearly 60 square miles. Thus, instead of preparing to engage aircraft aimed at one small area, aircraft were attacking multiple areas, flying low and fast, spread over a large surface preventing the Rapiers from being used effectively. Compounding this problem, the Rapier was extremely difficult to move, requiring helicopter support to lift each system and reset or reposition it. Even after 21 May, systems were continuously reset by Sea King helicopters. Logistically, the Rapier was a burden. For each day

of use during the ground campaign, the Rapier air-defense battery required one Sea King helicopter, out of the eleven dedicated to 3CDO, in order to refuel and conduct maintenance on the systems.⁸⁷ This taxed 3CDO's helicopter support, exposed these helicopters to aircraft attacks, and again, meant that Rapier systems were out of commission during the resetting.⁸⁸ Additionally, the key radar for the system was left in the U.K., thus each system had to rely on sight to identify an incoming target, vice having warning and preparing to engage once the enemy aircraft was in range of one of the systems.⁸⁹

The only air defense weapon organic and attached to 3CDO were their Blowpipe MANPADS provided by 3CDO Air Defense Troop and 43 Battery, 32nd Guided Weapons Regiment (Royal Army). The Blowpipe was a 42 lbs shoulder fired anti-aircraft missile with a range of 1.5 nautical miles. Out of 95 missiles fired during the ground assault, nearly half malfunctioned, and downed just one enemy aircraft.⁹⁰ For the time, the Blowpipe was the best 3CDO had for their own internal defense against the low fast flying Argentinian aircraft.

Separate from Clapp's ATF, on 25 May, the SS *Atlantic Conveyor* was struck by an Exocet. As with every attack upon Woodward's CTG 317.8, the intended target was an aircraft carrier, either HMS *Invincible* or *Hermes*. Soon after the missile strike, the Atlantic Conveyor sunk, and with it not only supplies for 3CDO, but more importantly, 3CDO's heavy lift helicopters. With the loss of four CH-47 Chinooks, 3CDO was forced to make their movement across the Falklands by foot.⁹¹ Although not directly a part of the ATF, this sinking proved how complex and interconnected the A2AD environment is for both the attacker and defender.

By the end of "Bomb Alley," Clapp's ATF suffered damage to six ships and lost three.⁹² Considering Clapp's CTU-317.0 consisted of twenty ships, 45% of his ATF suffered from attacks within San Carlos Bay. (See *Figure 6.*) Due to ordnance malfunctions and survivability

of the ships, those damaged continued to fight. Considering ships lost, Clapp's ATF lost 15% of its fleet. Thompson's landing force suffered less casualties due to their twilight landing, and digging in around the areas surrounding San Carlos Bay. Operation SUTTON ended with the movement of 3CDO to their objectives at Stanley and Darwin-Goose Green. Essentially, 3CDO fought within the A2AD bubble and successfully fought out of it. Although 3CDO was making their movement towards their objectives inland and Argentinian air had been significantly reduced, the A2AD fight was not over.

Over the next two weeks, but not as intense as "Bomb Alley", attacks occurred against British naval and ground forces. The next attack, and most significant of all air attacks in terms of lives lost, was against the RFA *Sir Tristram* and *Sir Galahad* at Fitzroy. During the off load of 5th Infantry Brigade units on the early afternoon of June 8th, two Mirages and two Skyhawks attacked in broad day light.⁹³ Although the beach at Fitzroy was undefended, the Argentinians held Mount Harriet ten miles due east with a clear view of the landing site.⁹⁴ In this attack, the British lost two men on the *Sir Tristram*, with 48 killed and 57 wounded aboard the *Sir Galahad*.⁹⁵ Once again, neither the Rapiers, which were in the process of being emplaced nor the CAPs were able to prevent this attack

Additionally, on 8 June, LCU-4 "Foxtrot 4" from the HMS Fearless was sunk while in Choiseul Sound near Darwin – Goose Green resulting in the loss of six crew members. Although minor, it proves that any target, regardless of size and task, is considered a threat to a defending force. Lastly, sections of Daggers and Skyhawks attacked the HMS *Plymouth* positioned north of Falkland Sound within the radar picket for CTU 317.0, resulting in five wounded and the ship suffering limited damage. Due to the over taxing of Argentinian aircraft,

weather, and a change to conducting night attacks by British ground forces, June 8th was the end of air attacks, but threats still remained to the task force.

In the early hours of 11 June, a land based MM-38 Exocet struck the HMS *Glamorgan*. At the time, the *Glamorgan* was providing fire support to 45 Commando in the attack of Mount Harriet and Two Sisters.⁹⁶ As the sun started to rise, the *Glamorgan* stayed on station for as long as possible supporting the commandos before turning seaward. With the *Glamorgan* crossing in front of the modified trailer mounted MM-38's danger zone, this sea surface-to-surface Exocet launched and detonated above the stern of the ship. The *Glamorgan* suffered severe damage with 13 killed, but continued to fight a few days later on 13-14 June, just in time to see the end of the war.⁸

The Falklands campaign came to an end on 14 June 1982 with all objectives secured by ground forces, and the subsequent Argentinian surrender. (See Figure 8.) The recapture of the islands came at a very high price. For CTF 317, it suffered a total of 253 KIA. Of those, 131 were killed on ship or at sea.⁹⁷ Where the focus in the beginning was providing as many ground forces as possible, this paid off, as British ground forces in action suffered 80 KIA and 269 WIA.⁹⁸ 3CDO being reinforced by 5th Infantry Brigade helped in many ways, but what enabled the KIA list to be so low was the medical team placed at Ajax Bay. "The Big Green Machine," as it was termed by the hospital staff, was able to keep alive every single British casualty that was received.⁹⁹ This was a time before the "one hour golden rule," and proved how effective self-aid/buddy-aid can be in such a conflict. Lastly, not classified as WIA but rather, Injured in Action (IIA) were a total of 147 paratroopers and commandos, the majority of those injuries being cold weather injuries, i.e. hypothermia, trench foot, or frostbite.¹⁰⁰ The A2AD

⁸ Clapp, 263; The *HMS Glamorgan* survived this Exocet attack, the only ship suffer an Exocet strike and survive. Despite the damage from the Exocet, the *Glamorgan* would provide future fire support to the Scots Guards in their attack on Mount Tumbledown, 13-14 June., Fremont-Barnes, 106.

environment can be deadly not only in the desert, but just as bad, if not worse, in a cold weather environment.

Lesson Learned: Anti-Ship Cruise Missiles

“Increased competition across the air and maritime domains. Some states will assert their own divergent views about access to and use of the air and maritime commons. This will most likely occur within 12 to 200 nautical miles of coastlines as some competitors establish new Air Defense Identification Zones (ADIZ) and continue to obstruct the innocent passage of reconnaissance and military patrols through their Exclusive Economic Zones (EEZ).”

- *Joint Operating Environment 2035*

In 1982, the world saw the destructive force of anti-ship cruise missiles against a modern day naval force. Two ships were hit by AM-39s, and one was hit by an MM-38. In all three cases, strikes were conducted by forces that were ill-trained and for unit ill-suited for the task of launching the Exocet. Even with this lack of training, and proper employment, the Argentinians were able to significantly damage two of those ships and sink a third. The Royal Navy’s casualties in the Falklands War due to anti-ship missiles were not a fluke, and such technology would strike again in warfare. In 1987 during the Iran-Iraq War, a US Navy frigate, *USS Starke*, was struck by two Iraqi air launched cruise missiles.⁹ Many factors, each compounding upon the other, led to these two missiles hitting the *Starke*.¹⁰¹ Regardless, this was a new warship, with the newest systems, that was successfully attacked by using two Exocets.

Fast-forward to 1 October 2016 when a UAE ship, the former HSV *Swift*, was attacked by Houthi rebels using what was suspected to be a C-802 anti-ship missile.¹⁰ Originally built for and leased to the U.S. Navy by Australian shipbuilder Incat/Bollinger in 2003, the *Swift* was a “wave-piercing, aluminum-hulled, commercial catamaran” intended for the high speed transit of

⁹ Chairman, Joint Chiefs of Staff, “Formal Investigation into the Circumstances Surrounding the Attack on the USS Stark (FFG 31) on 17 May 1987”, Naval Library, 3 September 1987.

<http://www.jag.navy.mil/library/investigations/USS%20STARK%20BASIC.pdf>

¹⁰ Al Jazeera, “Yemen: Houthis claim attack on UAE military vessel”, 2 October 2016.

<http://www.aljazeera.com/news/2016/10/yemen-houthis-claim-attack-uae-military-vessel-161001212236896.html>

personnel and cargo.¹¹ The *Swift* was used by the U.S. Navy originally as a mine-countermeasure and sea basing test platform from 2003 to 2013 before being sold to the UAE.¹² In response to the attack on the former *Swift*, the U.S. Navy deployed two destroyers and one afloat forward staging base, formerly classified as an Austin class amphibious transport dock, “to ensure the free flow of commerce” within the Bab el-Mandeb strait.¹³ While off the coast of Yemen, Houthi rebels fired four more missiles at the USS *Mason*, but were unsuccessful in their attack.¹⁴

In 1982, the Exocets were effective due to various technical problems on the part of the British, and in the case of the SS *Atlantic Conveyor*, just pure bad luck. The *Atlantic Conveyor* was “in the wrong place, at the wrong time.” Or from the view point of Admiral Woodard, the ship was in the exact place he needed a ship at that time to protect the aircraft carriers. (See *Figure 7*.) Taking into consideration their capabilities and for some regardless of anti-air capabilities, Admiral Woodward intentionally placed other ships in positions to protect the task force’s greatest assets, the aircraft carriers.

Although the task force possessed over 100 ships, the number of frigates and destroyers was quite small. First, Woodward applied standoff from Argentinian aircraft at their greatest range while still able to support operations occurring on the Falklands to fill this void in fleet defense. Knowing that this would not be enough, he picketed his task force with frigates and

¹¹ Johnson, Grant. “Hampton Roads Welcomes HSV 2 Swift”, 20 December 2003, U.S. Atlantic Fleet Public Affairs. http://www.navy.mil/submit/display.asp?story_id=11055

¹² *Ibid.*

¹³ US Navy ships deployed in response to the attack on the former *HSV Swift*: USS *Nitze* (DDG-94), USS *Mason* (DDG-87), USS *Mason* (DDG-87) and USS *Ponce* (AFSG(I)-15); LaGrone, Sam. “Officials: 3 U.S. Warships Off Yemen Following Attack on UAE Ship”, USNI, October 4, 2016. <https://news.usni.org/2016/10/04/official-3-u-s-warships-off-yemen-following-attack-uae-ship>

¹⁴ Lagrone, Sam. “Pentagon Pledges to Respond in ‘Appropriate Manner’ After New Yemen Missile Attack on USS *Mason*”, USNI, October 12, 2016. <https://news.usni.org/2016/10/12/pentagon-respond-appropriate-manner-new-missile-attack-uss-mason-yemen>

destroyers up front screening to the west, and then placing anything available between the screen and the aircraft carriers.

There are two ways to look at the sinking of the *Atlantic Conveyor*, both good and bad. Loss of assets and forcing a drastic change to the land campaign, the *Atlantic Conveyor* was one of the most catastrophic attacks during the Falklands War. Although true, the placement of additional ships in the defensive line proved its purpose in potentially protecting the aircraft carriers.

In 1982, the British task force adapted to the war they were in, not the war they wished they were in. In this case, the adaptation was how to protect its most vital asset with a very limited number of frigates and destroyers in order to continue and win the fight. This was not an easy choice at the time, and it is a realization for future warfare. Williamson Murray, one of the foremost military historians today, regards adaptation to war as a vital concept in not only how past wars were won, but how wars will be won in the future. Murray states "... the truly competent and effective militaries adapt to the reality that they confront rather than attempting to make reality fit their prewar assumptions".¹⁰²

The assumption going in was that the British task force would gain air superiority, but this never happened. Vice waiting out the Argentinians, which they knew did not exist logistically or politically, the British task force closed in on the Falkland Islands. Woodward took a bold risk in placing his non-combatant ships, those like the *Atlantic Conveyor*, in between the Exocets and the aircraft carriers. This bold move was costly, but it may well have saved his vital assets. Additionally, once the assets were lost on the *Atlantic Conveyor*, 3CDO adapted to the situation and pushed across East Falkland in one of most famous maneuvers in the 20th Century, the 60-mile "yomp" from San Carlos Bay to the Argentinian forces outside of Port

Stanley. The adaptation mentioned by Murray in *America and the Future of War* may have been more in a strategic sense, but one can see how this is extremely vital at the operational and tactical levels.

Today, Russia, China, North Korea, and Iran are producing A2AD capabilities with one focus in mind, stopping the U.S. Navy. Their moves are defensive in nature, but in the future, they will improve their offensive capabilities to a near peer level that will enhance their defensive capabilities. For China, it believes it is at an offensive capability that can rival U.S. forces. For China, a future that rivals the U.S. is upon the world today. In 2015, the Peoples Liberation Army (PLA) stated is no longer a defensive nation, but one that is both offensive and defensive.¹⁵

Today, and in the future, these countries will continue to provide their technological advancements to those that oppose the United States.¹⁰³ Instances like Yemen in 2016 are not a black swan event, but rather a continuation of the norm. U.S. Navy Vice Admiral Joseph Mulloy, deputy chief of naval operations for integration of capabilities and resources, warned in late October of 2016 that the threat posed by anti-ship missiles is not isolated to Russia and China, but that these weapon systems will continue to be supplied to the third world countries and pose a continued and growing threat to the U.S. Navy.¹⁶ The 1982 Falklands War offers not only examples of the effectiveness of anti-ship cruise missiles, but also possible solutions to mitigate that threat.

Lesson Learned: Organic Protection of the Landing Force

¹⁵ Holmes, James. "The Two Words That Explain China's Assertive Naval Strategy: 'Active defense' was a favorite tactic of Mao Zedong. How will China use it to harry U.S. ships in the Pacific?" Foreign Policy Magazine: <http://foreignpolicy.com/2015/06/03/the-two-words-that-explain-chinas-naval-strategy-active-defense/>

¹⁶ Eckstein, Megan, Sam LaGrone. "Admiral: Attacks Like Those on USS Mason Will Become More Common", 27 October 2016, USNI. <https://news.usni.org/2016/10/27/22246>

“Peer and near-peer state adversaries have and will continue to refine sophisticated anti-access/area denial (A2AD) capabilities that threaten our strategic reach and operational freedom of maneuver. Technology proliferation will ensure numerous non-state adversaries and individuals gain at least some capability at the tactical level. Many will be able to gain access to engineering knowledge for specialized weapons, commercially available unmanned systems, ... Stand-off weapons such as anti-ship cruise missiles, precision-guided munitions, armed and persistent unmanned aerial systems (UAS), networked ISR and targeting systems, and surface-to-air missiles – all once the province of only the most modern militaries – are becoming commonplace. Increasingly lethal counter-air weapons and their growing availability even to non-state actors will further challenge our use of low-altitude airspace for maneuver, supply, and fire support.”

- Marine Corps Operating Concept

During the ground campaign, 3CDO's options for engaging Argentinian aircraft were limited. Outside of Commando and Paratrooper direct fire weapon systems, 3CDO possessed the Blowpipe MANPADS. The success rate for the Blowpipe was dismal, just as poor as the Rapier. Considering the amount of aircraft present during “Bomb Alley,” Blowpipe gunners failed to hit a single Argentinian aircraft over the six-day period. Their only successful attack during the entire campaign was against an Argentinian aircraft over Goose Green.¹⁰⁴

There were many problems with the Blowpipe, but in 1982, it was the best and most advanced option for British ground forces. Thus, the problems with the Blowpipe cannot be discounted. Of the 95 missiles fired, only half functioned properly. Of the half that did function properly, one must consider the target and training as reasons for their unsuccessful engagement. Due to the limited options for training and logistical constraints placed on the task force, the Blowpipe weaponeers did not receive the time for increasing or maintaining proficiency during the long movement from Great Britain to the Falklands. Lastly, the Blowpipe was a poor option for engaging low fast-flying aircraft. Just like the Rapier, British forces had a system intended for point defense vice area air defense. Failures aside, the use of the Rapier and the Blowpipe offers a discussion for forces today and in the future.

Aircraft identification by ground forces was as uncommon then, as it is today. Considering the high number of Argentinian aircraft available, combined with the sortie generation of the British task force, 3CDO had to recognize if they were tracking an Argentinian aircraft or a British Harrier. The classic example being that if an Argentinian aircraft was attacking, it may have had a British Harrier in pursuit. Seeing enemy aircraft above was foreign to 3CDO; when combined with a British aircraft it only compounded the problem.

In order to mitigate the potential for “blue-on-blue,” Woodward established a friendly fixed-wing no fly zone over San Carlos Bay. Thus, if the CAP or responding Harriers were in pursuit of an enemy aircraft, they had to break off their flight if the Argentinian aircraft flew into the friendly no fly zone. This may have prevented Harriers from downing more Argentinian aircraft, but this was a risk Woodward was willing to take, especially considering the limited number of Harriers the task force had in the Falklands. Losing just one to blue-on-blue could have proved detrimental to the task force.

Not if, but when U.S. forces face a near-peer threat, similar problems will occur. Additionally, U.S. ground forces will need to not only identify between friendly and enemy aircraft, but also unmanned aerial systems. In the near term, according to Marine Corps Intelligence Activity’s *2015-2025 Future Operating Environment*, state and non-state actors will use unmanned aerial systems on the battlefield.¹⁰⁵

Today, the U.S. maintains air superiority. A fact commonly referenced is that the last successful attack on ground forces was in the Korean War.¹⁷ Although true for the past 60 years, will the U.S. have that same superiority in ten years? Additionally, as the U.S. Navy operates beyond the reach of land-based aircraft of the U.S. Air Force, can that same edge be maintained?

¹⁷ Grier, Peter. “No US ground troop has been killed in an enemy aircraft attack since the Korean War: April 15, 1953”, Air Force Magazine, June 2011.
<http://www.airforcemag.com/MagazineArchive/Documents/2011/June%202011/0611april.pdf>

Understanding that low altitude air defense (LAAD) has been drastically cut from the Marine Corps, what can or will replace LAAD in a future environment where air superiority is not maintained? The Falklands offers a warning for maintaining a LAAD capability. At the present moment, the downsizing of LAAD has stopped because of the current UAS threat. This is positive, but not the best solution considering that LAAD could become a high-demand, low-density military occupational skill in a distributed environment. Will LAAD go forward with units at the tip of the spear, or remain behind the forward line of troops protecting airfields and command operations centers? At the present time, this is not an urgent issue, but understanding the growth of adversarial forces, combined with the Marine Corps and Navy's Operational Maneuver from the Sea (OMFTS), there could be a time where BLTs or Expeditionary Landing Teams are deep within an enemy environment that possesses a significant air threat. This proposed operating environment is not much different from what the British faced in 1982.

Considering the downsizing of LAAD, there are warnings and possible solutions for the future. Although not slated to be completely taken away, losing LAAD entirely loses not only a capability, but also the knowledge behind a critical skill set. LAAD Marines are experts in not only engaging enemy aircraft, but also in the identification of aircraft. This capability is crucial to the ACE, and in many ways more important to the GCE.

If LAAD continues to be minimized, how long would it take to rebuild this population within the Marine Corps? Understanding recruitment, training, and assignment, this process at best could take up to a year to field LAAD qualified Marines. Thus, perhaps the near-term answer is in cross training. Marine infantrymen cross train within their battalions today. Thus, knowing that the potential of a future enemy air threat exists, could the current LAAD weapon

system be placed organically within an Infantry battalion? Although not the best option for a specialized skill, it could prove to be a near term benefit during a time of austerity.

Lesson Learned: *Landing Area Selection – The Best of Bad Choices ... And Making It Work.*

“Maneuver warfare is a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope.”

- MCDP-1, *Warfighting*

The 1982 Falklands War provided a near text book example of maneuver warfare for the 21st Century. Although an “iron mountain” of supplies was established at Ajax Bay, other aspects of maneuver warfare doctrine were seen, one of those being the landing area selection of San Carlos Bay. Over fifty beaches were available, and many outside of Port Stanley would have “worked,” but it was the selection of San Carlos Bay that best unbalanced the overwhelming man and firepower of the Argentinian ground forces. Additionally, by choosing this site, the ATF and LF were able to fight within the Argentinian’s A2AD bubble.

Well known to both forces, was the overwhelming ratio of Argentinian fixed-wing aircraft to fixed-wing aircraft possessed by the task force. The surrounding land masses of the bay helped mitigate this overwhelming force in the fact that it shortened target acquisition time for attacking aircraft. Due to this short timeline, Argentinian pilots delivered ordnance on targets regardless of ship type, thus saving the most vital assets within the bay, troop, and logistic transports.

There were failures at San Carlos Bay to be learned. Those frigates and destroyers placed in the bay were unable to effectively use their anti-air weapon systems because of those same hills that were helping mitigate the threat. This was not a surprise to the ATF, but rather, a calculated risk. Clapp saw that his frigates and destroyers were more susceptible to the Exocet

outside of the bay, and more likely to successfully defend against a conventional attack within the bay. This application worked, and provides a great example of risk versus gain. Lastly, the Rapier was a complete failure at not only San Carlos Bay, but for the entire campaign. After learning how to support and employ the system, the Rapier just proved ineffective in area defense. It was never intended for the area defense, and considering the scheme of maneuver – layout of 3CDO around San Carlos Bay, it would have not worked regardless of its malfunctions.

Limited failures aside, San Carlos Bay allowed 3CDO to fight within the A2AD bubble, and then punch out of the bay in multiple directions. 3CDO's movement across East Falkland sent forces on three different courses, with the ultimate goal of reaching their objectives outside of Port Stanley and attacking at the same time. 3CDO avoided the Stanley defense, the surface, and attacked from west, where it was virtually unguarded, the gap. In their movement across the island, the Argentinians had enough time to turn around, but could little in preparing their defensive positions. With 3CDO's rapid foot movement, combined with the demoralized state of the Argentinian soldiers, the attacks following Goose Green were over within hours.

In the future, the U.S. has the potential to lose allies that can provide intermediate staging bases or adjacent terrain for maritime prepositioning force (MPF) offload. Additionally, the amphibious task force lacks a high-speed over-the-horizon surface assault platform. Thus, the only high-speed over-the-horizon platform at this time is the CH-53 or the MV-22.¹⁸ This is nothing new, and the Marine Corps has been dealing with the challenge of replacing its amphibious assault vehicle (AAV) for nearing 20 years. Understanding the current equipment

¹⁸ ARGs and ESGs do possess over-the-horizon capabilities via Light Air Cushioned Craft (LCAC) and Landing, Utility Craft (LCU). Although these assets are over-the-horizon, they lack the "high speed" capability. For the LCU, it travels at a high speed of 11+ knots. For the LCAC, although it travels at speeds up 40+ knots, the offload of the system takes a considerable amount of time. For forcible entry, understanding these limitations are paramount.; Navy Fact File, U.S. Navy, updated 10 January 2017: http://www.navy.mil/navydata/fact_display.asp?cid=4200&tid=1500&ct=4 ; Navy Fact File, U.S. Navy, updated 9 January 2017: http://www.navy.mil/navydata/fact_display.asp?cid=4200&tid=1600&ct=4

limitations coupled with the lack of a safe and secured MPF offload location in the future, the amphibious task force can look to San Carlos Bay as a possible solution for future forcible entry operations.

Lesson Learned: Physical Endurance – The ESG/MEB will lose assets...

“Set the mental and physical standards for Marine infantry through a mission-driven perspective that fully recognizes the demands on foot-mobile forces conducting operations in austere environments – *because superior infantry is a Marine Corps asymmetric advantage.*”
– *Marine Operating Concept, 2016*

3CDO’s plan of attack drastically changed due to the sinking of the *Atlantic Conveyor*.

The plan once called for Commando and Paratrooper battalions to fly across the island to the west side of Mt. Kent. With the loss of heavy-lift helicopter support, 3CDO conducted a 60 plus mile movement by foot, yomping and tabbing, across East Falkland. Commandos and Paratroopers conducted their movement under loads in excess of 100 lbs. Not only was this an unexpected long movement over three days, but it was also a movement in an extremely cold and wet environment. Could U.S. Marines make the same movement today? Could U.S. Marines make that movement, and go immediately into battle?

In the future when the ESG/MEB is faced with a contested environment, assets will be lost. Assets that must not only support BLTs but also the large assortment of support personnel and equipment. Losing four CH-53s or multiple MV-22s will be detrimental to flying to or near the objective for an assault. Add that loss to an environment that negates the use of tracked and wheeled vehicles, i.e. mountainous terrain, densely packed urbanized areas, and the jungle, and problems only multiply. Regardless of losing assets, forces assigned to the regimental combat team must and will make movement to the enemy. It is imperative that our forces train to a standard that anticipates losing assets.

Conclusion – The Falklands War as a Blueprint for today’s Amphibious Force.

According to the recently published *Marine Corps Operating Concept*, the key drivers of change influencing the future operating environment are complex terrain, technology proliferation, information as a weapon, battle signatures, and an increasingly contested maritime domain.¹⁰⁶ Excluding information as a weapon, the 1982 Falklands War offers potential solutions or starting points in minimizing the effects of these key drivers.¹⁰⁷ Technology has significantly improved over the past three decades for not only the United States but also its adversaries. The same can be said for the opposing forces in 1982. Each side had strengths and weaknesses, but the consensus going in was that this would not be a costly war due to the slight technological advances held by and overall better conditioning of British forces. However, Argentina was grossly underestimated and proved to be a near peer competitor to the United Kingdom.

British forces held a slight edge, very similar to that held by the United States today. Many of our foes already have or will have near peer capabilities that counter our offensive and defensive capabilities. Additionally, the Falklands campaign provides an example where you have a force comparable in size to today’s ESG/MEB. Some, if not all, of the problems seen by the British task force will be seen by our ESG/MEBs in future conflicts.

There is never a perfect solution to any problem, especially those involving military operations. The “fog of war” combined with political end-states will cause unforeseen consequences to any plan. The 1982 Falklands War is as close to a perfect campaign to study, more than any other, concerning amphibious operations in the A2AD environment.

It is not beyond belief that the United States could end up in a “Falklands” type of situation. In the future, the U.S. could alone into a high-intensity conflict. A conflict that takes the ESG/MEB into an area where there are few allies, and increasing logistical burdens. China, Russia, and Iran supply U.S. adversaries with technologies that will test our forces to their limits. These technological advances in A2AD, coupled with an amphibious task force that lacks allies and safe havens, will sound all too familiar to the 1982 Falklands War.

The U.S. military’s focus today, just as it was for the U.K. in 1982, is preparing for the most dangerous course of action. Preparing for the most dangerous course of action is a requirement that cannot be over looked. However, thinking that the A2AD environment only exists around China and Russia creates a false sense of security. While China and Russia do pose a threat to U.S. interests, a war with either of them is not the most likely course of action in the near term. The United States will continue to face conflicts in the Arch of Instability with adversaries that pose formidable A2AD threats to smaller units such as an ESG/MEB and ARG/MEU. Despite advancements in today’s A2AD weapons technology, the 1982 Falklands war offers critical insights to how US naval forces can counter modern-day, and prepare for future threats to an amphibious force.

¹ John O’Sullivan, *The President, the Pope, and the Prime Minister: Three Who Changed the World*. (Washington: Regnery, 2008), 144-147.; Freedman, Lawrence Freedman, *The Official History of the Falklands Campaign, Volume II: War and Diplomacy* (New York: Routledge, 2005), 3, 15.

² Freedman, *Vol. II*, 80-84.

³ Sandy Woodward, *One Hundred Days: The Memoirs of the Falklands Battle Group Commander* (Annapolis: Naval Institute Press, 1997), 201-203.

⁴ Freedman, *Vol. II*, 5-11.

⁵ Max Hastings and Simon Jenkins, *The Battle for the Falklands*, (New York: Norton and Company, 1984), 45-49.

⁶ The Royal Marines assigned to the Falkland Islands were there to protect the Governor, provide assistance to the local population, and limited defense of the Falklands and its territories. In total, there were 69 Royal Marines, and another, that lived in the Falklands, re-enlisted upon hearing of the coming invasion. Additionally, the HMS Endurance had 11 Royal Navy Sailors and the islands was able to provide 23 men from the Falkland Island Defense Force (FIDF)., Freedman, *Vol. II*, 4-11.

⁷ “During April C-130 Hercules transports of Air Force, Electras and Fokker Fellowships of the Navy, Fokker Friendship and Fellowship airliners of the semi-military airline LADE, and Skyvan light transports of the Coast

Guard, flew in more than 9,000 service and civilian personnel and 5,000 tons of equipment and supplies.”, Jeffery Ethell and Alfred Price. *Air War South Atlantic*, (New York: Berkley Publishing Group, 1983), 30.

⁸ Argentine Army artillery units are organized into Groups or “Grupos”, with three batteries per group. As stated by Martin Middlebrook, the Argentine Army did not have artillery “regiments” but the set up see in the 1982 Falklands War, a group is the equivalent of a regiment., Middlebrook, *Malvinas*, 56-60.

⁹ The large majority of anti-aircraft weapon systems were centered around Port Stanley, with two 35mm Oerlikon each placed at Goose Green and Moodybrook., Martin Middlebrook, *The Fight for the Malvinas: The Argentine Forces in the Falklands War*, (London: Viking Adult, 1989), 60-61.

¹⁰ Ethell, 31.

¹¹ Freedman, *Vol. II*, 75.

¹² Argentina conducted their amphibious landing with 31 total ships; one aircraft carrier, one cruiser, six destroyers, three submarines, three corvettes, five patrol crafts, one LST, one oiler, four naval and three merchant transports, and three “spy” trawlers., David Brown, *The Royal Navy and the Falklands War*, (New York: Pen and Sword Ltd., 1987), 371-374.

¹³ Freedman, *Vol. II*, 75.

¹⁴ Ethell, 26.

¹⁵ *Ibid.*

¹⁶ In total Argentina possessed 247 fixed wing aircraft, but only about 130 were able to support due to maintenance readiness or not yet operational due to lack of parts or qualified pilots and ground crews., *Ibid.*

¹⁷ It was no surprise to the British that Argentina wanted to claim or reclaim the Falkland Islands. Also, the British were not only ambivalent to the Falklands but very much focused on domestic issues and the Cold War in 1982. Indications and warnings of pending aggression were first realized in mid-March 1982. Even though small indications were there, it was never believed that an invasion would actually occur. Although small planning meetings were held, nothing substantial was produced to put into action the acquisition of manpower, ships, heavy equipment and gear. On March 31st, 1982, Admiral Sir Henry Leach, the First Sea Lord and Chief of the Navy Staff, told the Prime Minister that he could mobilize a task force by the weekend. With this proclamation and approval by the Prime Minister, the Royal Navy and Royal Marines had their orders., Hastings, 67.

¹⁷ Michael Clapp, *Amphibious Assault, Falklands*, (Annapolis: Naval Institute Press, 1996), 35; The only units available to respond to the Argentinian invasion were the Royal Marines stationed on the Falklands, the Antarctic Patrol Vessel *HMS Endurance*, and two nuclear powered submarines (SSN) located within the South Atlantic, Freedman, 3; The *HMS Endurance*, underway at the time, could do little after supporting operations on South Georgia Island, thus the ship turned north to Ascension Island and away from Argentinian navy and air power, .. Add notes from Royal Navy book.; As for the two SSNs, they were given the order to move south and observe the area until given further instructions, Freedman, *Vol. II*, 11-14; Lack of a contingency plan for the Falklands, Freedman, *Vol. II*, 54-55.

¹⁸ Clapp, 35; The only units available to respond to the Argentinian invasion were the Royal Marines stationed on the Falklands, the Antarctic Patrol Vessel *HMS Endurance*, and two nuclear powered submarines (SSN) located within the South Atlantic, Freedman, 3; The *HMS Endurance*, underway at the time, could do little after supporting operations on South Georgia Island, thus the ship turned north to Ascension Island and away from Argentinian navy and air power.; As for the two SSNs, they were given the order to move south and observe the area until given further instructions, Freedman, 11-14; Lack of a contingency plan for the Falklands, Freedman, *Vol. II*, 54-55.

¹⁹ O’Sullivan, 144-147.

²⁰ Hastings, 78.

²¹ Freedman, *Vol. II*, 29-31.

²² Freedman, *Vol. II*, 29; O’Sullivan, 148.

²³ US Department of Defense, *Joint Publication 3-02: Amphibious Operations*, (Washington, DC: Joint Chiefs of Staff, 18 July 2014), I-7.

²⁴ Joint Phasing Model: Phasing an Operation Based on Predominate Military Activities; Phase 0-Shape, Phase I-Deter, Phase II-Seize the Initiative, Phase III-Dominate, Phase IV-Stabilize, and Phase V-Enable Civil Authority, US Department of Defense, *Joint Publication 3-0: Joint Operations*, (Washington, DC: Joint Chiefs of Staff, 17 January 2017), V-13.

²⁵ Freedman, *Vol. II*, 15-20.; “EMPRA” is a non-standard doctrine for Marine Expeditionary Units taught by the Expeditionary Warfare School, and Expeditionary Warfare Training Groups Atlantic and Pacific. Over the past thirty plus years, MEUs have been forced to embark at a moment’s notice and with little warning where planning

must be conducted while underway to the objective area and well after embarkation has been completed; US Department of Defense, *Joint Publication 3-18, Joint Forcible Entry*, (Washington, DC: Joint Chiefs of Staff, 27 November 2012), I-5 – I-6.

²⁶ *Joint Forcible Entry*, I-5 – I-6.

²⁷ Freedman, *Vol. II*, 54-55.

²⁸ Julian Thompson, *3 Commando Brigade in The Falklands: No Picnic*. (London: Pen and Sword, 2009), 1-16, 27.

²⁹ 3CDO reinforced was around 5,500 troops. Later during the land campaign 3CDO would be joined with the 5th Infantry Brigade, bringing the total landing force to around 9,000 troops. For the purposes of this paper, the focus is placing the initial 5,000 troops in San Carlos Bay at the height of fighting within the A2AD bubble., Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict*, (Brassey's (UK): London, 1991), 284.

³⁰ Hastings, 62-62,83-84; Freedman, *Vol. II*, 29.

³¹ Brown, 358-362.

³² Brown, 365-370.

³³ Freedman, *Vol. II*, 773.

³⁴ Ethell, 233.

³⁵ Ethell, 233.

³⁶ Kenneth Privratsky, *Logistics in the Falklands War: A Case Study in Expeditionary Warfare*, (London: Pen and Sword, 2015), 40-42.

³⁷ Privratsky, 76-77.

³⁸ Freedman, *Vol. II*, 54.

³⁹ US Department of the Navy, *A Cooperative Strategy for 21st Century Seapower*. (Washington, DC: Chief of Naval Operations, March 2015), 11.

⁴⁰ Privratsky, 35.

⁴¹ Hellberg, 28 March 2017.

⁴² Lawrence Freedman. *The Official History of the Falklands Campaign, Volume I: The Origins of the Falklands War*. (New York: Routledge, 2005), 143-152.

⁴³ *Ibid.*, 153-167.

⁴⁴ The zone was “defined as a circle of 200 nautical miles from latitude 51° 41’ South and longitude 59° 39’ West, approximately the center of the [Falkland] Islands”, Freedman, 88.; The first forces to arrive at the Falklands were three of the RN’s nuclear submarines, HMS Spartan, Splendid, and Conqueror., Brown, 84.

⁴⁵ Sea-mines were seen being placed within Cape Pembroke, and 105mm howitzers placed near the shores to prevent naval fires and an amphibious landing., Brown, 84-85.

⁴⁶ Freedman, *Vol. II*, 203.

⁴⁷ Clapp, 86.

⁴⁸ Freedman, *Vol. II*, 210-211.

⁴⁹ Brown, 107-112.

⁵⁰ Freedman, *Vol. II*, 203.

⁵¹ Middlebrook, *The Falklands War*, 113.

⁵² Freedman, *Vol. II*, 89-91.

⁵³ Freedman, *Vol. II*, 220-221.

⁵⁴ Hastings, 146-150.

⁵⁵ Adrian English and Anthony Watts, *Men-at-Arms: Battle for the Falklands (2) Naval Forces*, (Oxford: Osprey Publishing, 1982), 22.

⁵⁶ Middlebrook, “The Falklands War” 150-153.

⁵⁷ English, 21-22.

⁵⁸ One ship was not stuck by air ordnance. It was a MM-38 delivered via air transport into Stanley Airport during Operation CORPORATE. Although the airstrip had been attacked by Vulcan bombers and Harriers, the airstrip stayed open to most transport aircraft, one of those being one that delivered MM-38s to the Argentinian battlefield. In directly, it was a lack of the British Task Force to gain air supremacy that led to this successful attack., Freedman, *Vol. II*, 550.

⁵⁹ There were two types of Harriers used in the 1982 Falklands War, the Sea Harrier and the GR Mk 3 Harrier. The Sea Harrier was flown by the Royal Navy’s Fleet Air Arm Squadrons 800, 801, 809. The Sea Harrier was both air-to-air and air-to-ground capable. The Fleet Air Arm provided the majority of Harriers to the Task Force. Adding to the total number of Harriers were those provided by the Royal Air Force Squadron Number 1 who flew the GR Mk

- 3 in a air-to-ground role for both CAS and DAS., Christopher Chant, *Air War in the Falklands 1982*, Osprey *Combat Aircraft #28*, (Oxford: Osprey, 2001), 86.
- ⁶⁰ Chant, 40-41.
- ⁶¹ Operation BLACK BUCK was followed up with Harrier bombing runs on the airfield and six more Vulcan bombings BLACK BUCK 2 – 7, Gregory Fremont-Barnes, *A Companion to the Falklands War*. (Gloucestershire: The History Press, 2017), 48-51.
- ⁶² Middlebrook, *The Falklands War*, 36; Chant, 51.
- ⁶³ Ethell, 26-29, 41; Chant, 53.
- ⁶⁴ Although Argentina bought more than five AM-39s from France, once the invasion was underway France stopped the delivery of the additional Exocets., Chant, 55-56.
- ⁶⁵ Chant, 51-56.
- ⁶⁶ English, 23.
- ⁶⁷ The Argentinian Air Force never used Stanley for fast attack aircraft for two reasons. One was that the airfield was too short in a wet environment. The Falklands sees high winds and rain quite often, thus the wet air strip could not support fast flying aircraft. Secondly, the Argentinians had considered extending the airfield. The British knew Argentinian engineers had the matting for this extension. Argentinian Air Force planners chose not to extend the airfield because Stanley did not have the facilities, both hangers and fuel storage, for their fast attack aircraft., Ethell, 2.
- ⁶⁸ *Ibid.*, 30-31.
- ⁶⁹ Pebble Island was known to the Argentinians as Isle Borbon. Thus, the name for the Pebble Island forward airfield was *BAM Borbon*.
- ⁷⁰ Ethell, 31, 50, 221-222.
- ⁷¹ Francis MacKay with Jon Cooksey, *Special Air Service: Pebble Island, The Falklands War 1982*. (South Yorkshire: Pen & Sword Military, 2007), 40,47.
- ⁷² *Ibid.*, 84.
- ⁷³ HMS *Broadsword* was assigned as the anti-air defense ship for HMS *Hermes*. HMS *Glamorgan* was to provide fire support to the SAS during their raid on Pebble Island. HMS *Glamorgan* went within seven miles of Pebble Island.; Middlebrook, *The Falklands War*, 190-191.; Varying accounts exist concerning how many aircraft were destroyed. Some accounts state eleven and other state ten. Due to a hard landing, one Pucara down for maintenance. Thus, the British did destroy eleven aircraft, and one those was already disabled., *Ibid.*, 84.
- ⁷⁴ JP 3-02, II-10.
- ⁷⁵ JP 3-02, GL-6.
- ⁷⁶ Freedman, *Vol. II.*, 201-202.
- ⁷⁷ Woodward, 189.
- ⁷⁸ Middlebrook, *The Falklands War*, 208; Freedman, *Vol. II.*, 467-469.
- ⁷⁹ Woodward, 244-245; Freedman, *Vol. II.*, 469.
- ⁸⁰ The landing was delayed by one hour due to a malfunction in the satellite navigation system for the Fearless, but this was minor as stated by Thompson.; Freedman, *Vol. II.*, 470.
- ⁸¹ Clapp, 132-143.
- ⁸² Freedman, *Vol. II.*, 463-474.
- ⁸³ Fremont-Barnes, *A Companion to the Falklands War*, 58.
- ⁸⁴ 180 sorties flown by Skyhawks, Daggers, and Super Etendards. Operational aircraft at the start of the conflict were 6 Canberras, 11 Mirages, 46 air force Skyhawks and 11 navy Skyhawks, and 34 Daggers. Argentina had lost some aircraft by 21 May, but their losses were minimal., Ethell, 152-156, 234-236.
- ⁸⁵ Ethell, 152-156.
- ⁸⁶ Fremont-Barnes, *A Companion to the Falklands War*, 204-206; Privratsky, 75.
- ⁸⁷ Thompson, *3 Commando Brigade*, 88.
- ⁸⁸ Thomspson, *3 Commando Brigade*, 68-70.
- ⁸⁹ "... the DN181 Blindfire radar trackers were left in the UK, obliging the crews to depend on the organic surveillance systems or in many cases to resort to optical tracking.", Fremont-Barnes, 204.
- ⁹⁰ Fredmont-Barnes, *A Companion to the Falklands War*, 52.
- ⁹¹ Julian Thompson, Lecture on 28 March 2017, Given at the Expeditionary Warfare School, Quantico, VA.
- ⁹² Ship Damaged: *Broadsword*, *Argonaut*, *Antrim*, *Sir Lancelot*, *Sir Tristram*, and *Sir Galahad*. Ships Sunk: *Ardent*, *Antelope*, and *Coventry*.; Fremont-Barnes, *A Companion to the Falklands War*, 58-59; Clapp, 172.
- ⁹³ Hastings, 279-284.

⁹⁴ Middlebrook, *The Falklands War*, 304.

⁹⁵ English, 30.

⁹⁶ Thompson, *3 Commando Brigade*, 160-162; Fremont-Barnes, *A Companion to the Falklands War*, 106.

⁹⁷ Freedman, *Vol. II.*, 781.

⁹⁸ Freedman, *Vol. II.*, 782-783.

⁹⁹ Freedman, *Vol. II.*, 615-617.

¹⁰⁰ Freedman, *Vol. II.*, 616, 782, 783.

¹⁰¹ In the case of *USS Starke*, this was a U.S. naval frigate in international waters during the Iran-Iraq War. The Combat Information Center (CIC) was tracking an aircraft prior to the engagement. The aircraft kept making moves that shortened the distance between the *Starke* and aircraft, and at 30 nautical miles, it launched two Exocets. Within the CIC, multiple seats were not manned at the time, and once it was obvious to the CIC watch officer that missiles were inbound, it was too late. This was a case where human actions, i.e. the “fog of war”, negated the use of the technology at hand. Technology that could have prevented the two Exocets from hitting the *USS Starke.*, *ibid.*

¹⁰² Williamson Murray, *America and the Future of War: The Past as Prologue*. (Stanford: Hoover Institution Press, 2017), 128.

¹⁰³ US Marine Corps, *Future Operating Environment 2015-2025: Implications for Marines*, (Quantico, VA: Marine Corps Intelligence Activity, 2015), 31.

¹⁰⁴ Fremont-Barnes, *A Companion to the Falklands War*, 52.

¹⁰⁵ MCIA, 37.

¹⁰⁶ US Marine Corps, *Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century*, (Washington, DC: Commandant of the Marine Corps, September 2016), 5.

¹⁰⁷ Information operations (IO), as with most 20th century warfare, was present in the 1982 Falklands War, but contained to limited press releases, and via statements at the United Nations. IO was held at the strategic level and its effects on operations were minimal during the campaign.

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