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NO "SILVER BULLET" IN MINE COUNTERMEASURES – AT THE OPERATIONAL LEVEL, PLAN ACCORDINGLY

By/par

Commander Chris Deere

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ABSTRACT

The production and proliferation of sea mines in today's world is unprecedented with global mine stocks estimated to be in excess of 350,000 varying in type and complexity. Mines have played a major and influential role in nearly all international Maritime Operations, during and since WWI, and will continue to do so in the future.

Furthermore, mines are becoming more and more a weapon of choice including potential exploitation in an asymmetric domain. Since 1950, three US Navy ships have been damaged by air attacks, missiles or torpedoes; a startling 14 have been damaged or sunk by mines. No other threat denies sea control and freedom of action so cost effectively to maritime combatants, both surface and sub surface, than the threat from sea mines especially in littoral waters.

This paper argues that at the Operational Level in maritime planning, the impact of mines and the realities of modern mine countermeasures are not accurately or appropriately factored into preparing or executing a campaign plan. Using two post Second-World War mining campaigns, the paper examines lessons learned as they pertain to Operational Level joint and maritime campaign planning.

The paper concludes that Mine Countermeasures is a deliberate, prolonged, and complex process, which is not well understood by operational planning staffs, and is often discounted during campaign planning and execution. In order to maintain command of the sea and minimize the threat to shipping from mines, the operational planners need to better understand both offensive and defensive MCM and factor it, realistically, into the overall campaign from the outset.

"The essential point in modern conflict is not how well a handful of mine warfare specialists understand mine warfare, offensive and defensive. The key is how well the general line practitioners of all designators-from the Chairman of the Joint Chiefs of Staff to the action officers, of all services, on staffs and in Command centers-understand and use their knowledge of mine warfare."[1]

Rear Admiral Charles F Horne III USN 1991

This paper is about sea mines and mine countermeasures; it is focused on the realities of mine clearance in operational campaign planning, the loss of sea control through mining and the subsequent consequences to the objectives of maritime and amphibious forces in the face of a mine threat. It argues that at the "Operational Level," in Joint and Maritime campaign planning, mine warfare is not accurately or appropriately factored in to preparing or in the execution of a campaign plan.

In support of this thesis, and preceded by a brief introduction into mine warfare planning deficiencies, the mining campaigns and subsequent consequences of two distinctive post second-world-war conflicts will be studied. The paper will then, by means of the two historical case studies, examine and discuss the mine warfare related lessons learned as they pertain to Operational Level joint and maritime campaign planning and conclude with a requirement for operational planners to factor offensive and defensive mine countermeasures into operational level campaign planning from the outset.

[1] Gregory K. Hartmann with Scott C. Truver, "Weapons that wait" (Annapolis, Maryland: Naval Institute Press, 1991) X.

INTRODUCTION

The presence or absence of sea mines is critical in determining to what degree of sea control the Maritime Commander will have, and thus what courses of action the Joint Force Commander can consider in his or her plans. It is just not good enough to campaign plan with the hope that mines will not be there, and if they are, they will quickly go away once active MCM is engaged.

The production and proliferation of sea mines in today's world is unprecedented with global mine stocks at an estimated total in excess of 350,000.[2] The world arms market is virtually flooded with a variety mines ranging from crude floating or moored contact devices to highly sophisticated weapons that are activated by a multitude of ships influences including each or a combination of magnetic, acoustic, pressure, seismic, electromagnetic differential etc.[3] Since 1950, three US Navy ships have been damaged by air attacks, missiles or torpedoes; a startling 14 have been damaged or sunk by mines.[4]

Furthermore, mines are becoming more and more a weapon of choice.[5] They are cost effective in terms of damage potential, psychological effect, and, are most likely a future weapon of asymmetric consequence. Few other weapons deny sea control and freedom of action to maritime combatants, both surface and sub surface, than the threat from sea mines, especially in littoral waters. They have played a major and influential role in nearly all international Maritime Operations, during and since WWI and will continue to do so in the future.[6] Historically, however, mines have not been realistically or adequately factored into Operational level Maritime Campaign planning but rather relegated to "road bump" status that merely retard the pace of maritime operations and will not impair or detract from mission success. They have been considered a threat that

[2] Paul Ryan, "LCS will Transform Mine Warfare" *Proceedings of the United States Institute*, vol. 130, issue 12, (Dec 2004)
[3] Otto Kreisher, "The Littoral Navy: Seals Dolphins, and other Marine Mammals" Navy League of the United States – Citizens in Support of Sea Services, July 2002, 2
[4] Ibid, 1.
[5] Gregory K. Hartmann with Scott C. Truver, "Weapons that wait" (Maryland: Naval Institute Press Annapolis, 1991) IX.
[6] Ibid, 14

can be dealt with in relatively timely manner with minimal effort – a miscalculation with far reaching consequences.

This deficiency in Maritime Operational Planning remains very relevant in today's campaign planning – including Canadian maritime planning where often Canadian Task Groups or ships deploy in support of coalition operations into potentially mineable waters. With the Canadian navy moving toward expeditionary operations in the littoral including amphibious options, this shortfall in operational planning becomes a significant liability.

One of the causes of the planning deficiency is that in most maritime operational headquarters, where planning staffs focus on other maritime objectives such as Maritime Interdiction Operations (MIO), strategic sea lift, or sea-based power of projection, the threat from mines is invariably not sufficiently evaluated or addressed in terms of overall mission analysis. There exists a complacent arrogance within mainstream naval warfare strategy that cannot contemplate rudimentary tactical weapons such as mines can actually endanger major maritime combatants while in pursuit of higher operational level objectives. As well, as in operations, this is particularly evident in exercises where mine warfare is so often sidelined from the main events plan so that the elite and sensational blue water big ships can train and practice "real" maritime warfare.[7] The glamour of hunting submarines, firing torpedoes, launching missiles, and dodging bullets is considered significantly more exciting than loitering down-threat while small ships in slow time comb the sea bed searching for mines.[8]

The problem is exacerbated by the modern war-gaming and simulation practices at Naval War colleges and warfare schools where, as a matter of practice, the scenarios, real as they may be, do factor in mines but offer an instant solution by allocating MCM assets to Friendly Forces. In the executions of the games, therefore, mines do not really

[7] Electronic Mine Referee report, involving HMCS CHARLOTTETOWN during JMC exercise, delivered to MWWG at NATO Headquarters in 1998.
[8] Robert C Duncan, *"America's Use of Sea Mines"* (Washington, United States Government Printing Office, 1962) 13

need to be considered in developing the operational plan. In some instances, a short term arbitrary delay will be injected to allow for MCM, but inevitably the assumption will be made that the threat from mines will disappear and the potential loss of major surface combatants need not be considered. And more importantly, the overall campaign plan will not address "sea denial" from mines as a possible reality.

CASE STUDIES - POST SECOND WORLD WAR MINING CAMPAIGNS

Maritime Operations during both the Korean War, 1950 and Gulf War, 1991 are classic and relevant yet very different examples of neglecting littoral defensive mining in Maritime Operational Planning such that it became a significant and arguably the most lethal threat to maritime forces. In examining the sequence of events of the MCM battles in both case studies, the challenges and complexity of mine clearance in maritime operations are revealed demonstrating the need to incorporate MCM into current overall campaign planning from the beginning.

Wonsan Korea – 1950

> *"A mine is a fearsome thing. Not only that it's ugly to look at. Packing five hundred pounds of TNT, a mine can blow a 20 foot hole in the hull of a destroyer"9*
>
> *James Edwin Alexander (Korean War Veteran sailor) 1996*

The mining of Korean waters during the 1950 – 53 war, and the lack of MCM assets to counter the threat is a well studied example of a successful mining campaign and it is also well known that it launched the commencement of the US Navy's Mine Countermeasures revitalization and rebuilding initiatives. However, there are more clandestine lessons not so well understood or apparent than just insufficient and

[9] James Edwin Alexander, *"Inchon to Wonsan,"* (Annapolis, Maryland, Naval Institute Press, 1996) 57

inadequate MCM forces in studying the events of 1950 where the US coalition forces essentially were denied freedom of the seas within Korean territorial waters.[10]

Success at Inchon leading to the Wonsan Decision

Despite a significant threat from mines at Inchon, Korea in mid September 1950, an impressive and historical amphibious assault was carried out by the Allied Forces sparking a renewed enthusiasm in the art of amphibious warfare. It was immediately deemed a remarkable success and a decisive turning point in the Korean War. In researching the multitudinous of the Inchon campaign, however, frequently found are such words as "fortunately," "phenomenal," "in spite of," "unique," "unorthodox," and "improvised" concluding that the success at Inchon was not necessarily the product of a sound operational campaign plan but rather by chance. [11]

From a purely mining perspective, it was indeed good fortune that there were no mine casualties at Inchon. As alluded to above, this was not through competent planning or means – simply fate. Mining and Mine Countermeasures did not adequately factor into their maritime operational plan. Deploying a small and aging MCM force was the USN's only course of action as a result of post Second World War cuts to MCM, and its associated fleet due to budgetary limitations. At Inchon, it seemed to have worked.[12]

Despite the recognition by the senior naval staff that "lady luck" was indeed a player in the success at Inchon, the conclusion was drawn: *"The landing demonstrates the great power from sea"* [13] Indeed, the success at Inchon was a factor in the decision to conduct a second Amphibious assault at Wonsan despite controversy over the necessity to take Wonsan from the sea when the same objective was easily achievable by land forces – given a retreating enemy and advancing land forces. Ironically in the

[10] Malcolm W. Cagle and Frank A Manson, *"The Sea War in Korea"* (Annapolis, Maryland, Naval Institute Press, 1957) 142
[11] Ibid 102
[12] Ibid, 126
[13] Ibid, 104

Wonsan decision, there were great lessons learned about both MCM capability and the factoring of mines into the operational planning process.

> *"In retrospect it must be said that the landing (at Wonsan) was to pay dividends for the navy. Had it not been undertaken we might never have become fully alerted to the menace of mine warfare nor profited from the lessons we learned about mine sweeping"*[14]

Facing a Mine Threat – "Sieze Wonsan by Amphibious Assault"

The Wonsan amphibious assault was set for October 20th leaving little time for detailed planning or Mine Sweeping operations in a pre-assault phase. Only 10 days were allocated to clear over 30 miles of approach routes and harbour – a daunting task for a relatively small and primitive MCM force that quickly proved unachievable.[15]

Interestingly, the overall campaign plan at the "operational level" effectively disregarded the magnitude of the mine threat. In a near duplication of the Inchon plan, one of the listed objectives for Wonsan was to "seize Wonsan by amphibious assault" - a very simplistic elucidation of complex multi-dimensional military operation.[16]

Most certainly the initial lack of intelligence regarding the mine threat in Korea, was a contributing aspect to the flawed campaign plan and to the events that subsequently occurred during the Maritime Campaign and Mine Clearance operations at Wonsan.[17] LCdr Shouldice, Commander MCM Division 31, recalled that he *"emphasized to Admiral Joye40 1otives hretelicati*

The fateful mine clearance operation commenced shortly after sunrise on the 10th October 1950, using steel mine sweepers and helicopters for aerial mine spotting. On the same afternoon, several moored mine lines had been spotted within the designated assault channel to the beach. A decision was therefore taken to withdraw the surface assets from the heavily mined waters and to commence clearance on the alternate approach channel in a pathetic hope there would be less mines – "over there." What transpired in the following days would prove them wrong.

Concern for mines was mounting. Navy divers were employed to investigate the possibility of controlled minefields, and an aerial bombing effort on the minefield was attempted but without success.

Mine Sweeping operations recommenced on the 12th October. At approximately mid-day, PIRATE, one of the steel mine sweepers struck a mine and capsized within 4 minutes with the loss of 13 crew members. Twenty minutes later, while engaged in shore battery fire, PLEDGE, a second minesweeper struck a mine a mid-ships and sank. Although the crew of PLEDGE was rescued from the sea, many suffered serious injury from the blast.[19]

The Commander of the Advance Task Force, Rear Admiral E Smith signaled the Chief of Naval Operations in the Pentagon opening his remarks with a distressing message: *"The US Navy has lost control of the sea in Korean waters…"* [20]

It would take the remaining Mine Sweepers six more days with additional support of divers and many small craft to reach the intended landing off the coast at Kalma Pando. Within an hour of declaring the channel safe from mines, the mine sweeper REDHEAD's Captain reported *"the whole ocean started to erupt amongst the sweepers…"*[21] Influence ground mines had been discovered forcing a methodical

[19] Ibid, 138-142
[20] Malcolm W. Cagle and Frank A Manson, *"The Sea War in Korea"* (Annapolis, Maryland, Naval Institute Press, 1957) 142
[21] Ibid, 142

magnetic sweeping operation to be commenced during which two more mine sweepers were lost.

> "*They didn't know what kind of mines they were, they didn't know where they were placed, and they didn't know how many were there…nothing short of a complete re-sweeping could ensure a safe channel for the landing craft"*[22]
>
> *James Alexander*

In total 15 more days were required to clear the approach lanes to Wonsan. A mission initially planned for ten. Of the estimated 3000 mines laid in Wonsan only 225 had bean swept and destroyed. An equal number were guessed to have broken free from their moorings only to become menacing "floaters," leaving over 2000 mines lethally poised - either on the seabed awaiting magnetic influence or ship contact within the water column.[23]

To the tactical MCM Commander, the remaining 2000 mines posed no threat to the operation *"…as we knew where they were and cleared channels to the Wonsan beach had been swept."*[24] To the operational commander, these remaining mines denied him sea control and freedom of manoeuvre options out to the extent of the furthest mine fields.

> *"When you can't go <u>where</u> you want to, <u>when</u> you want to, you haven't got command of the sea. And Command of the sea is a rock bottom foundation of all our war plans"*[25]

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[22] James Edwin Alexander, *"Inchon to wonsan,"* (Annapolis, Maryland, Naval Institute Press, 1996) 72
[23] Malcolm W. Cagle and Frank A Manson, *"The Sea War in Korea"* (Annapolis, Maryland, Naval Institute Press, 1957) 144
[24] Ibid, 144
[25] Malcolm W. Cagle and Frank A Manson, *"The Sea War in Korea"* (Annapolis, Maryland, Naval Institute Press, 1957) 142

Admiral Forest Sherman, United States Navy

The final ship losses and hull damage as a result of the mining at Wonsan were: four US Mine Sweepers and one fleet tug sunk; five US destroyers severely damaged; and several South Korean ships were either sunk or damaged. This is summarized well by Hartmann and Truver:

> *"...the yield to the enemy was quite good for the expenditure of old mine material and three weeks of unskilled labor devoted to mine laying from towed barges"*[26]

The amphibious landing at Wonsan, Korea, was one of many important tactical elements of a much broader and complex joint operational plan. By today's measure, it was, in effect, routinely sequenced into the campaign design to be executed without major difficulty or delay. As a direct result of enemy mining and the lack of planning it in fact de-railed the initiative to be gained by a landing from sea. It *"caught the American's with their pants down. Those damn mines cost us eight days delay in getting the troops ashore..."*[27]

The Arabian Gulf, 1990 – 1991

> *"On the subject of mine clearance, I stressed that I and my MCM force were waiting for planning discussions. In return, I received little clear detail as to the sequence and form of their war plans: I was to be advised"*[28]

Commodore Chris Craig (Commander, British Task Force during the Gulf War) 1995

[26] Gregory K. Hartmann with Scott C. Truver, "Weapons that wait" (Annapolis, Maryland: Naval Institute Press, 1991) 80
[27] Malcolm W. Cagle and Frank A Manson, *"The Sea War in Korea"* (Annapolis, Maryland, Naval Institute Press, 1957) 142
[28] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 198

The mining campaign conducted by Iraq during the Gulf War of 1991 (liberation of Kuwait) was significant - both in terms of magnitude and lethality. In many ways it was comparable to that of Wonsan, Korea some 40 years earlier. Yet, it was a very different scenario which included a modern multi-threat dimension to the MCM Forces engaged in mine clearance operations in support of a potential amphibious assault. The North Arabian Gulf MCM operation (Desert Sword) yielded its own set of lessons - some of which were repeat errors from the past, but many were new and unique to the circumstances surrounding the conflict. The most obvious and concerning of these has shown that in the Gulf War of 1991, despite a quantum leap in modern technology and the availability of adequate sophisticated MCM systems from 1950, MCM Forces were still not able to counter the modern mine threat and secure sea control at a pace and efficiency required to support the maritime component to the campaign plan. Thus, once again a formidable Maritime Task force including a significant amphibious element was, through loss of sea control and potential ship damage, again at the mercy of, and vulnerable to the threat from mines.

Desert Storm – Amphibious Assault within the Campaign Plan

> *"One thing Saddam Hussein got right was that he had a healthy respect for the flexibility of sea power and the threat of an amphibious assault"*[29]

In early August, after their initial invasion of Kuwait, the Iraqis had been reinforcing coastal defenses with an aim to prevent an amphibious landing. They had deployed infantry divisions, tanks and coastal surface-to-surface missile launchers to defend the port of Ash Shuaybah and the surrounding coast. Any planned amphibious operation by the coalition in the vicinity would face formidable resistance from enemy forces and would certainly be a high risk operation unless significant and decisive

[29] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) VIIII

battlefield shaping and preparation were to be carried out in advance.[30] If a campaign plan is considering operating maritime assets, including mine countermeasures, within the littoral waters of an adversary's coast line, it had better plan to neutralize shore based defence systems. This is as fundamental as planning for Air Superiority in the skies over enemy territory.

The Iraqis saw the North Arabian Gulf as their waters and coalition forces were, for the most part, restricted to operating south of the 28th parallel due to a probable but unknown threat from mines. Sophisticated US strategic intelligence had been incapable of tracking Iraqi mine layers which were suspected of having conducted mine laying operations inside Kuwaiti territorial waters and possibly out into international waters. Even with rudimentary minelayers and crafts of opportunity, mine laying can be executed surgically and covertly using innovative and deceptive deployment techniques. The fact that the minelayers were at sea, was telling enough such that the laying of Iraqi mines should not be discounted.

The Iraqis in fact had control of thousands of square miles of the North Arabian Gulf thus successfully denying the coalition of freedom to manoeuver.[31] At the coalition operational level headquarters, however, the picture was not quite as clear. General Schwarzkopf through the numbers of maritime assets operating in the Arabian Gulf erroneously declared his own perspective on sea control:

> *"We have 170 ships out there that have established sea controls in the waters of the Arabian Gulf and Red Sea…I also think it's significant to note the very limited area of operations of the Iraqi naval forces…they really never venture much out beyond the straits here by Bubyan Island up into Um Qazr"*[32]

[30] Ibid, 98
[31] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 198
[32] Richard Pyle, *"Swchwarzkopf: The Man, the Mission, The Triumph"* (New York, Penguin Group 1991) 214

The Iraqi navy did not need to venture out beyond Um Qazr, instead they had laid a minefield and denied the sea room to their enemy.

An overwhelming amphibious landing force, which totaled nearly 17,000 embarked marines and an amphibious force of over 40 ships, was preparing for an assault on the eastern shores of Kuwait. The ground war in Iraq intended to commence on the 15th of February was initially to include an amphibious assault north of the Kuwaiti port of Ash Shuaybah two days after "G" day.[33]

The imposing Iraqi shore based counter maritime threat, coupled with the probable threat from mines became critical factors in the final decision making process as to whether or not to execute an amphibious landing during Desert Storm in which a great risk of loss of life and maritime shipping might have occurred.[34]

In the final analysis, General Schwarzkopf's decision was not to conduct the amphibious assault but, equally, he did not wish to discount it as a possible option should it yield advantages as the tactical situation evolved. He would rather use the assault as a deception and coincide commencing the ground war with a naval gun bombardment on the shores of Kuwait. The threat from the sea was significant and forced Saddam Hussein to keep nine divisions engaged that otherwise would have been positioned for a land offensive. Regardless of his course of action, General Schwarzkopf, by maintaining the amphibious operation even as a deception, meant that penetration of the potential mine fields would be necessary and thus active MCM operations in the North Persian were required.[35]

From a purely mine threat perspective, his reasoning for opting out of the assault was sound and to a certain extent represented a milestone in maritime operational campaign planning in the face of significant personnel or ship casualties. MCM staff's at the operational level provided sound in-theatre guidance and threat evaluation preventing

[33] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 100
[34] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 117
[35] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 125

what could have been catastrophic – none the less he was denied a crucial course of action through the use of sea mines and one that was considered achievable during the initial operational planning phase but was not attended to in the months of pre-battle preparations.

In order to have reduced the threat in a "cleared" channel and amphibious sea-echelon area to an acceptable risk level to effect a landing would have taken the combined British and American MCM Forces an estimated 18 days. Despite lack of intelligence, this was based on reasonable assumptions with respect to likely size and density of mine fields but the period was clearly outside the time constraints required to meet a 15 Feb (initial target) commencement of a ground force offensive.[36]

Although, the decision not to conduct the amphibious assault is deemed a success and a credit to MCM planning staffs, during this campaign, there were many inconsistencies and disconnects in coordinating MCM planning or the lack thereof by operational level campaign planners with the overall maritime goals and objectives. In any event, the final outcome was not insignificant and resulted in the mining of two major US combatants.

[36] Ibid, 125

Active MCM Operations in the North Arabian Gulf – Finally Commence

In early February, the British Maritime Task Force Commander and his MCM staff, who were in command of a very significant MCM Force, were finally briefed in on what was to be the way ahead on the MCM Ops in support of planned "amphibious operations" in the North Arabian Gulf. After months of waiting, speculation, and demanding planning talks, the proposed plan for moving north into a multi threat environment was not well received:

> *"…The plans which followed struck me as so ill-conceived and immature that I could not believe that the USN had been their architect…We were apparently to move north in a combined group ….with my mine hunters leading the way. We were then to advance through Iraqi minefields whose position and density were frankly unknown, at an unrealistic speed for precursor mine detection to within 4 miles of enemy gun, missile and rocket launcher positions. There, the mine hunters were to commence their clearance operations at dead slow speed in full daylight under the admiring gaze of the enemy…"*[37]
>
> *Commodore Chris Craig.*

At 0300 on the 14th of February the decision to commence MCM operations in the North Persian Gulf had finally been taken. Ill conceived or not the spectacular force including USS Missouri, Wisconsin, Tripoli, the US MCM Group and the British MCM force with escorts proceeded and commenced their transit north in support of the raid on Fayklaka Island. In the overall operational plan, this maneuver would strategically and operationally uphold the deception of an imminent threat and amphibious assault on

[37] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 246

Kuwait. Tactically, it would create a rational and colossal diversion prior to G-day that would prevent last minute shifting of the amassed Iraqi forces to the west.[38]

No sooner had the northern-bound maritime "convoy" commenced their transit into harm's way, when a 24-hour delay was ordered. For the "in theatre" operational commanders the reason was unknown, but one theory for the delay was instigated through the political channels in giving Saddam Hussein a final window to comply with the UN resolution to withdraw forces from Kuwait. For the MCM forces at the tactical level, it was another demoralizing 24 hours of delay in commencing mine clearance operations that may require weeks or months but certainly more than days to complete.[39]

In the post war analysis this 24 hour "critical" delay was a function of General Schwarzkopf retaining the authority to cancel the raid, and not put the MCM forces unnecessarily into the minefields and harms way – a theme that had resonated from the beginning of Desert Shield. Risk management is a delicate business at sea – however, to trade off sea control and maritime options with it, in order to protect highly specialized MCM forces dedicated to create them is at best, a poor course of action to choose. To do so in the case of the North Arabian Gulf was a consequence of dysfunctional operational level planning where sea control was critical to the mission. Obviously in the face of a mine threat, at the operational level it is imperative to measure risk of MCM assets or, equally as important, major combatants with that of the necessity of sea control, and then plan accordingly. In a minefield hull attrition of any class may be inevitable or deemed acceptable given exceptional conditions or circumstance, but the rewards must be substantial and justified in terms of strategic mission success. In any event it must be deliberate and not left to chance as it was in Desert Storm.

[38] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 126
[39] Jim Hewitt, *"Desert Sailor – A War of Mine"* (Clemensport, NS. The Canadian Peacekeeping Press, 1998) 60

Regardless of the reason, and in the case the success, this 24 hour stand-down delayed the Faylakah offensive and hence the coordination with G-day. The land offensive was now delayed until about 22 Feb.[40]

After months of delays, active MCM operations finally commenced on the 16 Feb to determine and then reduce the threat of mining in the extensive and sophisticated mine fields in the Northern Gulf that had been laid months earlier - it was guess work at best as the intelligence on Iraqi mining was scarce. Knowledge on enemy mining was obviously of interest to the MCM community, but objective maritime campaign plans cannot be built in isolation of the impact of realistic threats. To plan for amphibious operations or maritime evolutions in the littoral zone demands control of the sea and therefore an understanding of what can seize or eradicate it – Maritime operational planners need to revisit the threat from mining and what can be done, realistically, to counter it.

Barely had the MCM operation commenced when it was suspended from the threat from shore based missile targeting. The MCM mission seemed plagued with delays and distractions. Fortunately this delay, however, was short term and hours later the MCM force was ordered to recommence its enormous task of mine clearance from "point echo" (a point arbitrarily declared the eastern extremity of potential mine threats) to Kuwait.

USS TRIPOLI – Strike one

USS TRIPOLI, the Command MCM vessel, concerned about drifting mines maneuvered most of the night of 17 Feb without any knowledge it was inside one of the Iraqi mine fields.[41]

[40] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 154
[41] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 159

Early in the morning hours of February 18th : *"Boom - ...Silkworm? No it was too deep a shudder and no warning – The ship had hit a mine…"*[42]

LCdr Jim Hewitt (Cdn Navy Mine Warfare specialist embarked in Tripoli)

At 0436 on the 18th of February USS Tripoli struck a moored mine sending a violent shock throughout the ship and she began taking on seawater - over two thousand tons before the flood boundary was established and pumping out could commence. Ironically, the coalition Command MCM flagship had become the first casualty from mining. Alarmingly, she had been operating well east of the predicted extremities of any Iraqi minefields. This in itself was a serious miscalculation by the MCM planning staffs and yet another example of poor quality intelligence and complacency in the operational planning staff's perspective on mining and mine countermeasures.[43] In the preceding months, exploratory MCM operations under the cover of dedicated air defence assets could have mapped out the extremities of the enemy mine fields preventing the "guess work" in determining where maritime traffic could or could not operate – unfortunately for TRIPOLI, MCM was not addressed in the operational plan until much too late.[44]

Fortunately there were no fatalities or serious injury and damage control was rapid and effective such that she would not sink. Regardless, she was crippled and severely mission degraded. *"Tripoli was a powerless hulk drifting through a minefield"* [45] *Jim Hewitt.*

TRIPOLI's mine strike was a major setback both in terms of maritime operations in the Northern Gulf but also in the overall coordinated joint plan to commence the ground offensive. Losing power and thus all electrical systems she had no command and control capability and was unable to move aircraft between decks. The mine strike

[42] Jim Hewitt, *"Desert Sailor – A War of Mine"* (Clemensport, NS. The Canadian Peacekeeping Press, 1998) 87
[43] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 159
[44] Jim Hewitt, E mail to author 5 Oct 05
[45] Jim Hewitt, *"Desert Sailor – A War of Mine"* (Clemensport, NS. The Canadian Peacekeeping Press, 1998) 90

message passed quickly amongst the coalition ships which, with all their power, weapon systems, and technology had, but for the MCM force, all come to a dead stop in the water.[46] It was several hours before the coalition maritime forces began to slowly make way through the mined waters of the Northern Gulf.

PRINCETON – Strike two

Steaming cautiously ten miles to the north, the Aegis cruiser USS PRINCETON, in all its finery, was conducting Force Air Defence sentry when at 0720, just three hours after the TRIPOLI incident, she activated a sophisticated bottom influence mine – ironically only minutes after the Captain had finished making a "general pipe" to the ships company about the dangers of operating in a minefield. The explosion under her stern, which effectively bent the ship's back causing major collateral damage to the superstructure and fitted systems throughout the ship, in an instant terminated her mission. The explosion also sympathetically detonated a second influence ground mine some 350 yards off her starboard bow.[47] Fortunately again there were no fatalities, but *"once again the unspectacular sea mine proved to be a handicap out of all proportion to its cost and complexity."*[48] This was indeed a complex and heavily seeded minefield.

What happened next in the revised MCM plan was significant, not only in terms of further mine risk to shipping or increased loss of sea room, but rather how it impacted on Central Command's plan to launch the ground offensive with a coincident attack from sea on Southern Kuwait.[49] The MCM task force, after searching the immediate areas around the two mine casualty positions led the Force 18 nautical miles to the east where they re-commenced the prolonged advance on Kuwait. The additional delay required to clear a channel to the coast was deemed unacceptable by Central Command, and the plans for a full scale or reduced raid on Faylakah Is. were to be cancelled.[50]

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[46] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 260
[47] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 160
[48] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 261
[49] Jim Hewitt, *"Desert Sailor – A War of Mine"* (Clemensport, NS. The Canadian Peacekeeping Press, 1998) 105
[50] Marvin Pokrant, *"Desert Storm at Sea"* (Westport, CT. Greenwood Press, 1999) 166

It took the MCM forces until 23 Feb to clear the channel into firing range of Faylakah Is and create a Fire Support Area (FSA). Operating 25 nautical miles of the coast of Kuwait and coinciding with the commencement of the Ground war in Iraq on the 24th, the battleship MISSOURI commenced pounding the shoreline of Faylakah Is. with her 16 inch guns. By 0530 the following day, she was firing into Kuwait, thus miraculously sustaining the deception of a full-scale amphibious assault.[51] Unfortunately, the FSA was limited in sea room and the threat from mines prevented the battleship from following the speed of advance of the ground war.[52] Her (MISSOURI's) effectiveness in the war is a matter of debate, but the fact she was restricted from manoeuvre due to mines is not.

After the end of hostilities, and on a declaration of a ceasefire at 1200 on the 27th of Feb, the Coalition MCM forces, joined by many new international MCM forces, would spend another six months clearing the minefields – a massive task. In total, approximately 1300 mines would be cleared from the North Arabian Gulf – over three times the number predicted to be in the Iraqi inventory.[53] As Geoffrey Hill comments, *"mines have always been cost effective in the sense that it costs a good deal more to clear or counter them than it does to deploy them. There is every sign that modern mining continues to call for a disproportionate response"*[54]

THE LESSONS – LOSS OF SEA CONTROL, EFFECTS ON MARITIME OBJECTIVES, AND THE REALITY OF MCM

Despite occurring over forty years apart and in very different technologically developed times, the defensive mining campaigns in these two conflicts have some similar obvious and some not-so obvious lessons that are germane today and will remain so for the foreseeable future. There is nothing revolutionary or new in analyzing these

[51] Ibid, 170
[52] Ibid, 173
[53] Captain Chris Craig, *"Call for Fire"* (London, John Murray (Publishers) Ltd., 1995) 283
[54] Geoffrey Till, *"Modern Sea Power"* (Oxford, Brassey's Defense Publishers Ltd, 1987) 156

case studies where mining played such an important part in what effectively was classic "joint and combined" maritime operations, but there is benefit re-visiting such important mining campaigns with respect to operational level planning where the effects of mining and options to counter them continue to plague operational maritime tacticians - and impact significantly at the operational level of campaign planning today.

Intelligence – vital to success

In both the Korea and Gulf scenarios accurate Naval Intelligence on estimating the quantity and type of in theatre mines and the scale of actual enemy mining was, by modern intelligence gathering technologies, quite unacceptable. In both case studies mine inventories were substantially under estimated in terms of quantity and mine types held. Knowing and understanding enemy orders of battle is fundamental in operational planning and mine stocks are no exception. The intelligence demands in mine warfare go beyond "pre-conflict" knowledge of the enemy. There has to be a consistent and concerted effort in surveillance and reconnaissance in determining what has gone into the water and where. This information forms the baseline for active MCM and is significant in determining where shipping can or cannot go. Perhaps in 1950, technology was limited in this information-gathering evolution but, in the Gulf in 1991, there was no excuse for not knowing where the Iraqi's had sewn their fields of mines – bordering on negligence at the operational level of war it was indeed a failure of in-theatre intelligence.

Active MCM – slow methodical and complex

Mine Warfare is light years ahead of where it was 50 years ago, both in terms mine technology and efficiency in mine countermeasures, and its future is even brighter with the augmentation to dedicated MCM with organic or "in-stride" reconnaissance techniques and improved efficiencies to the MCM Commander. As in other glamorous weapon systems such as missiles and torpedoes, advanced electronics, micro-chip processing, new materials, and even propulsion systems have been applied in the research

and development in mine warfare.[55] However, in actually factoring modern mining and MCM into maritime operational planning, the operational staffs erroneously underestimate the power of mining and over-estimate capabilities in MCM. - Mine clearance is a slow, tactically difficult, and a very environmentally and weather dependent operation even in benign conditions.[56]

> *"In mid 1984, one ship-load of mines (were laid in the approaches to the Red Sea and it took eighteen MCM ships from six different nation, together with eight large helicopters and many support craft weeks to clear the area"*[57]

Add to that the complexity and risks of a multi-threat littoral hostile environment and it becomes even more complicated, dangerous, and time consuming.

In both Wonsan in 1950 and the North Arabian Gulf in 1991, the allies had in fact lost control of the sea from enemy mining. Whether be called sea denial, loss of command of the sea or any other appropriate term, the fact that in both examples, where the Naval plans were only enablers in an overarching "joint" campaign plan in order to achieve strategic mission, the maritime operational campaign plans essentially failed. In neither battle could an amphibious assault be executed when the Commander intended or wanted. Further, the speed of advance in mine clearance in both cases was grossly overestimated and insufficient in order to achieve acceptable risk to maritime forces in time to support the "from sea" landing objectives. Maritime Forces could not go where they wanted to, or needed to, and when they wanted to in order to progress the overall maritime military aims of the coalition.

In the post war analysis, it is fairly clear that the events of Wonsan occurred from a critical shortage of MCM assets and as stated earlier, the only positive MCM outcome,

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[55] Gregory K. Hartmann with Scott C. Truver, "Weapons that wait" (Annapolis, Maryland: Naval Institute Press, 1991) 8
[56] Geoffrey Till, *"Modern Sea Power"* (Oxford, Brassey's Defense Publishers Ltd, 1987) 157
[57] Ibid, 157

was being the catalyst for the rebuilding of US MCM capability where the lack of MCM capability at Wonsan in the face of a massive mine threat proved catastrophic. However, the limited capacity in MCM was not taken into account during the planning of the amphibious assault at Wonsan. The operational planners effectively ignored the mine threat and based their campaign plan on having uninhibited control of the sea. A quick fix mine sweeping mission was to have opened the routes for a safe transit through the cleared channels to Wonsan and the subsequent amphibious assault could have taken place as it had at Inchon.

For coalition forces in the North Persian Gulf the situation was quite different but the outcome very similar. A shortage of MCM assets was not a concern. In fact, a modern, impressive and dedicated MCM Force was deployed in support of Desert Storm. In total it consisted of an MCM Command

"silkworm" missile launch sites with integrated cover of the minefields, the deficiency in early planning and decision making, delayed significantly the commencement of first of all reconnaissance MCM operations to determine the scope of the mine threat, and then subsequent clearance operations to remove it. The combined threat from missiles and mines did not figure into the operational level planning until too late. When it became obvious that MCM was necessary in pursuit of the campaign plan, and MCM force protection was equally paramount to success, the ill- conceived plan was becoming a reality. The air defence cover ships, which included PRINCETON were deployed into potentially mined waters without any MCM effort beforehand – the result was predictable.[59]

Offensive MCM – early planning and execution

Also, in both scenarios the lack of in theatre comprehensive intelligence and the delays in factoring the magnitude of the mine threats into the campaign plan effectively precluded the use of offensive MCM to prevent the laying of mines in the first place. The power of early offensive MCM, in destroying enemy mine stocks, storing and loading facilities, and vessels of all capacity in the act of laying mines, cannot be over emphasized. Despite the strategic implications and possible prohibitive rules of engagement, offensive MCM must be considered as an initial and essential course of action by a Joint Force Commander - worthy of significant resources and effort.

Since 1992, the USN has invested over 2.7 billion dollars in improving its countermining capabilities.[60] A significant percentage of this funding has been spent on progressing organic and in stride MCM as well as efficiency. The current debate on organic in-stride MCM verses dedicated MCM assets continues and advocates of each support one against the other. Both focus on detecting and clearing mines once laid. Neither would have prevented the casualties of Wonsan or Kuwait but, by reducing the mine threat before it was deployed may have. The truth is, both organic and dedicated MCM enhance the

[59] Jim Hewitt, E mail to author 5 Oct 05
[60] Patrick A Molenda, "Don't Forget Dedicated Mine Countermeasures" *Proceedings of the United States Institute*, vol. 127, issue 10, (Oct 2001)

ultimate countermining solution, but a more relevant discussion should target improving offensive MCM and allocate resources, training and priority to it. Despite limited success in sinking of the Iraqi navy's T43 minelayers in the northern gulf by RN Lynx helicopters, neither of the case studies adequately considered offensive MCM in preparing the campaign plan. Pre-emptive offensive MCM is vital in maintaining sea control and must be included in all joint and maritime operational planning.

Operational Planning Staffs – MCM expertise essential

So often operational level maritime planners naively minimize the threat from mines and plan on assuming they will always have sea control when they need it. To compound the tribulations of maritime planning, the MCM specialist planners tend to work at the tactical level in isolation within their MCM command and control unit. As witnessed in both the Wonsan and Kuwait examples, the operational campaign plan, however, is built and executed from a "flag ship" or ashore where the "ultimate tactical MCM solution" is seen as merely a "given" for developing the overall maritime plans. Cooperation between the two planning cells and levels is perpetually divergent and needs to be better coordinated and improved. Mine Warfare specialists must be fully integrated in maritime operational planning.

It is not intentional or through incompetence that this dichotomy evolves during planning phases but rather through complacency. There are so many competing priorities in multi threat maritime warfare, demanding limited resources and attention that often the mine threat and MCM is relegated to "small ship" business that can be dealt with "later" by the MCM staff. It is a function of the way we deal with the mine threat in peace time exercises and simulation. The marginalization of mine warfare is well documented. Regardless, in "big ship" blue water navies the MCM field of expertise is often still regarded as a non glamorous and a somewhat career limiting specialization.[61] This cultural paradigm is unlikely to change, despite improved education and training. Apart from a few broken egos, however, this is not a serious problem and mine warfare

[61] Geoffrey Till, *"Modern Sea Power"* (Oxford, Brassey's Defense Publishers Ltd, 1987) 157

professionals will carry on with the business of countering mines. MCM will remain an enabler for other maritime warfare disciplines – a buy-back plan for sea control.

What does need to change, however, is the understanding of the real threat from mines, their impact on sea control, and the realistic capabilities of MCM in maritime planning at the operational level of war. This is not the job of the mine warfare specialists alone, who know their business well. It is also the responsibility of the navy's leadership and the joint operational planning staffs. They must ensure they have competent and adequate MCM Staff support engaged in preparing and executing a campaign plan.

> *"the effectiveness of the submarine mine has not decreased with the coming of the space age. So long as cargo ships cross the sea, this unspectacular weapon will remain a major factor in control of the approaches to harbours, and the shallow straits between seas"*[62]

[62] Robert C Duncan, *"America's Use of Sea Mines"* (Washington, United States Government Printing Office, 1962) V

CONCLUSION

This paper contends that at "the operational level" of Joint and Maritime campaign planning, mine warfare is not accurately or appropriately factored into the preparation or in the execution of a campaign plan. In order to substantiate this argument and subsequent consequences of not addressing mine warfare, the paper studied the mining campaigns in the Korean war of 1950 and the Gulf war of 1991.

By examining the lessons learned from the two case studies, and in particular those relating to the loss of sea control, the impact mining had on the Commander's operational campaign options, and mine damage warships, it concludes that Operational Level Planning staffs need to better understand and incorporate defensive and offensive mining into Maritime Operational Planning from the beginning so that accurate mining intelligence and realistic Mine Countermeasures, both defensive and offensive will be factored into the overall campaign plan and its execution.

To the operational level commander, mining at sea has the potential to deny him or her sea control on a massive scale. Amphibious landings, sea based to land interdiction such as Naval Gun Fire Support, or other maritime littoral operations are all examples of planning vulnerabilities in the face of a legitimate mine threat. In choosing campaign critical courses of action, an operational commander should not be held hostage to such simple and rudimentary weapons as mines – sea room is fundamental to any maritime plan.

There is no "silver bullet" in MCM. It requires a deliberate, prolonged, and complex response and, it must be factored in to the campaign plan at every stage. If not *" an operational commander may well be denied access or defeated in a region where he expects to dominate"*[63]

[63] Patrick A Molenda, "Don't Forget Dedicated Mine Countermeasures" *Proceedings of the United States Institute*, vol. 127, issue 10, (Oct 2001)

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