

USAWC STRATEGY RESEARCH PROJECT

THE EFFECTIVENESS OF THE SEABEES IN  
EMPLOYING NEW CONCEPTS DURING  
OPERATION IRAQI FREEDOM

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## ABSTRACT

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In 2003 the First Naval Construction Division (1st NCD) and its various Construction Battalions (Seabees) participated in Operation Iraqi Freedom (OIF). In this war, the 1st NCD and the Seabees were able to use for the first time in a war situation two new concepts - the Marine Expeditionary Force (MEF) Engineer Group (MEG) and Seabee Engineer Reconnaissance Teams (SERTs). The Seabees used these new concepts in fulfilling its mission both during the war and afterwards in post-conflict reconstruction efforts in Iraq. This paper will examine the use of these new concepts and their resulting effectiveness.



## TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS .....	vii
THE EFFECTIVENESS OF THE SEABEES IN EMPLOYING NEW CONCEPTS DURING OPERATION	
IRAQI FREEDOM.....	1
<b>MARINE EXPEDITIONARY FORCE ENGINEER GROUP .....</b>	<b>1</b>
“WE BUILD” .....	2
“WE FIGHT” .....	4
<b>SERTS – BACKGROUND AND MISSION .....</b>	<b>6</b>
COMBAT OPERATIONS .....	8
LOGISTICS .....	9
COMMUNICATIONS.....	9
TRAINING.....	10
ORGANIZATION.....	12
<b>RECOMMENDATIONS .....</b>	<b>13</b>
<b>CONCLUSION .....</b>	<b>14</b>
ENDNOTES .....	17
BIBLIOGRAPHY .....	23



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## THE EFFECTIVENESS OF THE SEABEES IN EMPLOYING NEW CONCEPTS DURING OPERATION IRAQI FREEDOM

During Operation Iraqi Freedom, the Navy Seabees meshed their engineering, construction, and military skills with compassion in aiding other military units in rapidly maneuvering across the battlespace while also completing reconstruction and humanitarian projects for the Iraqis.<sup>1</sup> The Navy created the Seabees on March 5, 1942 to build and fight as promoted by their motto “Construimus, Batuimus” (“We Build, We Fight”).<sup>2</sup> This motto has been a daily reminder in post-conflict Iraq as insurgency attacks and bombings have become the norm rather than the exception. In fact, for the first time since the Vietnam War, Seabees completed their mission in harm’s way and some were killed in action (KIA), with most of the casualties taking place during the post-conflict reconstruction phase. Seven Seabees from NMCB 14, a reserve battalion from Florida, were (KIA) during an April 30, 2004 convoy attack and from mortar attacks on their Seabee camp two days later.<sup>3</sup>

Despite these setbacks, the Seabees performed brilliantly during Operation Iraqi Freedom (OIF) providing significant construction management and engineering skills to the Marine Corps during combat operations and to humanitarian assistance and construction projects after combat operations were over. The Seabees once again proved their value as an effective military asset in the areas of combat construction, humanitarian assistance, and civil military operations.

In OIF the First Naval Construction Division (1<sup>st</sup> NCD) and its various Seabee units were able to use, for the first time in a war situation, two new concepts – the Marine Expeditionary Force (MEF) Engineer Group (MEG) and Seabee Engineer Reconnaissance Teams (SERTs). The 1<sup>st</sup> NCD used these new concepts in fulfilling its mission both during the combat offensive while maneuvering with combat forces across the battlespace and during the post-conflict reconstruction of Iraq. This paper will examine the employment of these new concepts, effectiveness and efficiency of the concepts employment during OIF and recommend further refinements.

### **MARINE EXPEDITIONARY FORCE ENGINEER GROUP**

The Seabees are “the premier combat ready construction force for Combatant and Component Commanders in joint contingency operations.”<sup>4</sup> They have a long history of concurrently carrying out combat operations, humanitarian assistance and reconstruction work. Prior to Operation Enduring Freedom and OIF, the Seabees organized for war under a Marine Air-Ground Task Force (MAGTF) as one of seven primary engineer units spread out among the

MAGTF subordinate commands.<sup>5</sup> For large wars such as OIF, the MAGTF organization uses a Marine Expeditionary Force (MEF) concept for its main command element. Under the MEF, all engineer assets are assigned to its MEF Engineer Group (MEG). The MEG is a joint engineering force organization that combines assets from Marine Corps, Navy, Army, and coalition forces into one task organization.<sup>6</sup> "I MEG provides combat construction and general engineering support to complement and expand the capabilities of I MEF organic engineers. I MEG is task organized to command and control assigned engineer units."<sup>7</sup>

During OIF, the bulk of a MEG's engineers (mostly non-combat engineering units) were Seabees – "four Seabee battalions, three reserve Seabee air detachments, a Naval Construction Force Support Unit, a Construction Battalion Maintenance Unit detachment, and an Underwater Construction Team"<sup>8</sup>, and Seabee command and control elements. However, the MEG also consisted of Marine Corps and Army engineer battalions. Additionally, during Phase IV post-conflict operations, it contained a Republic of Korea engineer battalion that performed construction operations. The MEG's objectives were to provide combat construction and general engineering support to the MEF.<sup>9</sup> The Seabees had the largest U.S. Navy role ashore with over 3000 Seabees deployed in Iraq and Kuwait<sup>10</sup> supporting the MEF in its combat role. The Seabees moved out alongside the Marines on their march to Baghdad in the spring of 2003 constructing and repairing bridges, roads, runways, and prisoner of war camps. "With the 'Can Do' spirit of the Seabees, bridges went up practically overnight, roads were created and maintained, runways were repaired, water and electricity was restored, camps were made and re-supply lines were sustained."<sup>11</sup>

#### "WE BUILD"

The MEG concept assisted the MEF in that it provided combat forces with the ability to speed towards Baghdad at a pace that many did not believe was possible. In fact, the MEG Commander, Rear Admiral Chuck Kubic felt that one of the keys to winning the war in Iraq would be engineer speed.<sup>12</sup> The Seabees tasking included bridge construction and repairs for the many rivers between Kuwait and Baghdad. The use of these bridges was necessary to keep the logistics line flowing to frontline forces. This followed along nicely with the MEG Commander's intent, which was, "The focus of effort is 1st MARDIV and Task Force Tarawa mobility. The MEG will ensure sustained flow of the attack via upgraded main supply routes, lines of communication, and bridges. MEG units will complete infrastructure improvement and provide general engineering support throughout the entire I MEF battlespace."<sup>13</sup>

The MEG task organization allowed assignment of engineer resources where the Marines needed them the most to continue their offensive towards Baghdad.<sup>14</sup> To support the Marines, the Seabees maneuvered with Marine combat forces across 400 miles of battle space for the first time in Seabee history.<sup>15</sup> The Seabees focused on bridge and road construction ensuring clear and open logistics routes for the many troops and supply vehicles necessary to sustain the war effort. They built various types of bridges but the decision on the primary bridge type used, a Mabey-Johnson Bridge, occurred just prior to the war. Due to its flexibility and ability for use in a combination of configurations, the Mabey-Johnson Bridge was a good choice, and because of these characteristics, it decisively contributed to the speed of the maneuver forces. In addition, each Mabey-Johnson Bridge supports 70 tons – enough support to handle the load of an M-1 Abrams tank. Even though some of the rivers that the maneuver forces came upon were wider than these bridges could fit, Seabee engineers made the river fit the bridge by conceiving and constructing an innovative substructure underpinning, using culvert pipe instead of normal sheet piles, to extend earthen mole piers where necessary to ensure that these bridges could span the rivers.<sup>16</sup>

Bridge construction was important to the campaign because of history. Rear Admiral Kubic had read about the British invasion of Iraq during World War I, 1914-1918, where Britain lost close to 29,000 troops due to three main factors --- their military leadership stayed in India, their field logisticians did not maneuver with the forces, and they were unable to cross rivers with ease.<sup>17</sup> Since re-supply of forces is one of the keys to sustaining a combat force, bridge construction was necessary for OIF to ensure the constant flow of supplies from Kuwait to front line forces. The MEG organization gave bridge construction a high priority in the Seabee's tasking. The Marines were so impressed with the Seabees that the MEF Commander, Lieutenant General James T. Conway, stated, "You joined forces with us in Operation Iraqi Freedom and, through your landmark mobility and construction engineering efforts enabled I MEF to move farther and faster than any MAGTF in history."<sup>18</sup>

Not only was the MEG highly effective during combat operations, it was also effective after combat operations ended by ensuring the Seabees worked on Iraqi infrastructure projects that promoted civil-military operations between coalition forces and the Iraqi people. In fact, "the Seabees wasted no time in winning the hearts and minds of the Iraqi people."<sup>19</sup> With the MEG concept, the MEF was able to use the synergy of all its engineer units fully integrated and working together to "execute a highly innovative interoperability doctrine."<sup>20</sup> The MEG was able to put together a comprehensive humanitarian plan and effectively start the rebuilding of Iraq from the lowest levels up. The Seabees performed a variety of humanitarian projects in order to

help stabilize Iraq. During the first few months of post-conflict operations, the Seabees completed 158 construction projects valued at more than \$7 million.<sup>21</sup> Seabees renovated 74 schools, 13 government buildings, 16 police and fire stations, 6 health and medical buildings, 4 airfield runways, and 20 utility systems.<sup>22</sup>

Among the vital projects, the Seabees performed was repairing the main runway for the Al Kut airport. During the early part of the war, Iraq's Republican Guard destroyed the runway in order to prevent its use by coalition forces. In fact, the Republican Guard put eleven craters in the runway through use of explosives. Despite the extensive damage to the runway, the Seabees expeditiously made repairs, and in doing so, allowed the use of the runway for humanitarian aid flights that helped the Iraqi people.<sup>23</sup>

In conjunction with their civil-military operations (CMO) work, the Seabees established a program where coalition forces (mostly Seabees) and local citizens worked together on civic projects.<sup>24</sup> The Seabees role in CMO projects was perfectly suited for them since they train and perform civic projects, like those completed in Iraq, in communities around the world during their normal peacetime training regimen.

Another humanitarian assistance project the Seabees completed was a training camp for Iraqi Civil Defense Corps (ICDC) – the ICDC provides civil protection to various communities. While they were constructing the training camp, the Seabees used the opportunity to teach the ICDC trainees construction skills. In addition, the Seabees set up an Iraqi Construction Apprentice Program as part of their CMO efforts.<sup>25</sup> This apprentice program allowed Iraqis to learn a construction trade that in turn helped them obtain employment while also stimulating the Iraqi economy again. One added benefit of this apprentice program is that Iraqis and Seabees were able to develop personal friendships through their daily contact on the construction site. This in itself had a soft power effect on winning the hearts and minds of the Iraqis.

Besides public works projects of roads, water, electricity, and sewage, the MEG focused its efforts on other civic projects such as schools, playgrounds, and soccer fields. These projects helped the Iraqis feel a sense of community and stability and helped rebuild Iraq from the lowest levels up.<sup>26</sup>

#### “WE FIGHT”

The term “post-conflict operations” does not necessarily mean that there is peace in the area --- there still may be some fighting ongoing in the form of terrorism or insurgency by factions against the winning side.<sup>27</sup> Such fighting has been the case in Iraq since the U.S. and its coalition allies triumphed there in the spring of 2003. Furthermore, Secretary of State, Colin

Powell, stated, "reconstruction and security are two sides of the same coin."<sup>28</sup> In fact, security and governance operations (like reconstruction and humanitarian assistance) are both integral to war and not easily separated from one another.<sup>29</sup> Coalition forces have come to realize this is particularly true in Iraq where CMO in post-conflict Iraq require a very high level of security to accomplish even the smallest of tasks --- reinforcing the fact that combat operations and stability operations need to be accomplished together.<sup>30</sup>

Instead of being able to concentrate solely on reconstruction efforts during Phase IV post-conflict operations, the Seabees had to put their motto of "We Build, We Fight" to full use by providing a fighting security force while they performed construction projects. Insurgency did not stop reconstruction efforts<sup>31</sup> --- rather, it caused only temporary delays to the projects. Without the MEG concept, Seabee reconstruction efforts during this insurgency would have been uncoordinated and limited at best. The MEG concept helped provide overall command and control of engineering and security so that the mission continued despite the insurgency.

One alternative to having military construction forces like Seabees perform reconstruction projects in Iraq is to use global construction contractors to perform the construction. This option has been utilized in OIF, albeit at a very slow pace. In November 2003, President Bush committed \$18.4 billion in supplemental funds to reconstruct Iraq, of which \$13 billion was for infrastructure.<sup>32</sup> However, by August 2004, nine months later, only \$600 million of the \$18.4 billion had been paid out.<sup>33</sup> Reconstruction efforts through global contractors proved to be tougher than anticipated. This again was mainly due to heightened security issues raised by increased insurgency efforts. A statement in November 2003 by Andy Bearpark, director of reconstruction for the Coalition Provisional Authority (CPA), emphasized the need to address the security problem when he said that many relief groups and contractors left Iraq due to security concerns.<sup>34</sup>

Although many of the global construction contractors were slow to get started on reconstruction efforts due to the safety situation for their personnel on the ground in Iraq,<sup>35</sup> the MEG was able to show quick progress in infrastructure improvements through the immediate use of its engineer forces. In addition, the MEG showed progress by using its Seabee contracting office to hire local Iraqi contractors to assist where needed. As the MEG found out early on its reconstruction projects, the Iraqi contractors were eager to bid on projects and were capable of performing the work. Thus, another alternative to only having military construction forces is to award smaller construction projects that the Iraqi contractors can bid on. Lieutenant General Robert B. Flowers, Chief of the Army Corps of Engineers, stated, "The Iraqis have tremendous capability --- the professionalism of their engineers and scientists. The work ethic

already here can really be leveraged to make the country come together.”<sup>36</sup> The number of bidders increased from just a few bidders early in the contracting phase to over a hundred bidders during the short time the Seabee contracting office was awarding contracts there.<sup>37</sup>

#### **SERTS – BACKGROUND AND MISSION**

Besides the MEG organization, another new concept that the Seabees used for the first time in a combat situation during OIF was Seabee Engineer Reconnaissance Teams (SERTs). The Seabees developed SERTs in the couple of years leading up to OIF to provide more engineering capability on the battlefield in support of the Marine Corps.<sup>38</sup> SERTs are comprised of ten member teams – made up of two Civil Engineer Corps (CEC) officers and eight enlisted Seabees,<sup>39</sup> but augmented with additional personnel, as missions require. Two elements make up the SERTs – a liaison element and a reconnaissance element. The liaison (LNO) element has a CEC officer and two petty officers that are communications specialists. The LNO element is responsible for communications with higher echelons – both in transferring engineering assessments and intelligence and in receiving engineering reach-back solutions. The reconnaissance element has a CEC officer, who is the SERT Officer-in-Charge (OIC), a Builder or Steel Worker chief petty officer that has some bridge construction experience, and five petty officers of varying Seabee ratings.<sup>40</sup> The OIC is normally a licensed professional engineer with civil/structural engineering background. All members are hand picked from among the top Seabees in their battalions and are qualified as Seabee Combat Warfare Specialists.<sup>41</sup>

Since the Seabees formed during World War II, they have had to rely on other military forces in the area to provide them with intelligence of the forward area of the battlespace. This intelligence was often not accurate by the time it was received by the Seabees nor did it provide enough engineering and construction detail to be of the best use in planning for construction repairs. The need for the capability to provide real-time engineer intelligence and assessments on key infrastructure was one of the main reasons SERTs were developed.<sup>42</sup> “The SERT’s primary mission is to collect and assess engineering intelligence and project information for the supported or parent unit for design and tasking of construction work. The team must be able to perform this mission in a hostile environment, mounted or dismounted, during day or night, in the full range of projected operational environments, and must possess long-range voice and data communications capability.”<sup>43</sup> In other words, SERTs provide combat evaluations and gather intelligence on key infrastructure such as roads and bridges. SERTs transfer this intelligence via radio and digital communications to engineers in the rear area of the

battlespace. Rear echelon units then relay the information to Naval Facilities Engineering Command (NAVFAC) engineers in the United States, who determine how to make repairs to the infrastructure.<sup>44</sup> Making expedient repairs to key infrastructure helps SERTs meet another one of their purposes – keeping heavy combat Marine Corps and Army units moving on the battlefield. SERTs help maneuver commanders know what is ahead of them so they can keep their units on a fast-paced move in the battlespace.<sup>45</sup>

SERTs are hand picked from the top Seabees in their battalions and must undergo rigorous small unit training. Besides the normal combat training all Seabees undergo, SERTs receive training in specialties that most Seabees will not encounter in the battlespace. In addition to their engineering and construction skills, SERTs train in a variety of military skills including mounted tactics, vehicle maintenance and repair, use of camouflage gear, security, night maneuvers, weapons systems, communications, and navigation techniques.<sup>46</sup> Another area that SERTs receive specialty training for is explosives --- both in the use of them to remove obstacles in their path and in the identification and safe removal of improvised explosive devices (IEDs). SERTs also possess the ability to test for weapons of mass destruction (WMD) --- nuclear, biological, and chemical. SERTs train to maintain a low profile and to be stealth in carrying out their missions.<sup>47</sup> These specialized skills help the SERTs remain highly mobile and extremely flexible. SERTs must be able to deploy to remote areas at the forward area of the battlespace on a routine basis. In order for them to be successful, they have to possess these specialized combat skills while still providing for their own security.

The mounted movements of a SERT are very similar to how small recon units move in the forward edge of the battle area (FEBA) – very independent and stealth. Since the military does not necessarily know what the next current world crisis will dictate, SERTs train to travel on any type of terrain anywhere in the world. They have the ability to travel unassisted up to 300 miles, which gives the Joint Force Commander a highly effective engineering perspective in the FEBA.<sup>48</sup>

A typical Seabee battalion possesses weapons that are more powerful than most rear area units because Seabees must have the ability to provide for their own security. This powerful weapons cache provides the basis for the weapons on the SERTs gun mounted vehicles (GMVs). SERTs normally have three HMMWVs (Humvees) as their GMVs, and have two all-terrain vehicles (ATVs) that are stored aboard two of the GMVs. Mounted on and distributed among the GMVs are two M2 machine guns, three M60E machine guns, four radios, and four Global Positioning Satellite (GPS) units. In addition, SERTs possess up to twelve

night-vision goggles.<sup>49</sup> The ATVs help ensure that the SERTs can travel to very remote locations that are hard to reach.

## COMBAT OPERATIONS

During OIF, the Seabees were able to test this new concept of SERTs in combat operations. SERTs “performed advanced route surveys to assess bridges, road conditions, and maneuver obstacles, and provided real-time digital pictures, information, and analysis directly from the forward edge of the battlespace.”<sup>50</sup> SERTs did all of this while following directly behind the Marines as they attacked north into Iraq from Kuwait.<sup>51</sup> SERTs were highly mobile and self-contained throughout combat operations. They successfully provided real-time digital links back to the MEG who relayed them to NAVFAC Atlantic and Pacific engineering experts for evaluation.<sup>52</sup>

One of the best examples of how well the SERTs performed during OIF was in their evaluation of a key bridge on a main supply route that received damage by insurgents using explosives. Within twelve hours of the explosion, the SERT's damage assessment had been sent to the MEG and relayed further to NAVFAC Atlantic in Norfolk, Virginia, who then transmitted back detailed repair schematics to the Seabees. The bridge received repairs within forty-eight hours of the insurgents' attack. During the repair of the bridge, the 1<sup>st</sup> Marine Division augmented the Seabee security detail due to the insurgents taking sniper shots at the Seabees while they worked.<sup>53</sup>

One of the many confidences Seabee leadership showed in the ability of individual SERTs was allowing turnover to occur between two SERTs in the FEBA during the height of combat operations. SERT 4 from NMCB FOUR relieved SERT 5 from NMCB FIVE on 29 March 2003 near Qilat Sikkar, Iraq.<sup>54</sup> Despite the fact that SERT 5 had been the leading SERT team in the battlespace up to that date in the war and the fact that SERT 4 did not have any combat experience up to that point, Seabee leadership did not hesitate in allowing the turnover of combat operations to SERT 4.

Not only did they provide recon during combat operations, SERTs performed engineering assessments on Iraqi public infrastructure after post-conflict operations began. They assessed power plants, water and wastewater distribution systems, schoolhouses, bridges, highways, military airfields, and other key facilities. While doing this they coordinated infrastructure repairs with local Iraqi government officials, helping the MEG prioritize projects repairs during rebuilding.<sup>55</sup>

This new Seabee SERT capability, in conjunction with the MEG concept, also integrated quite efficiently with joint and coalition forces. The MEG effectively used the infrastructure assessments and intelligence gathered by the SERTs to ensure that infrastructure repairs were prioritized between Army, Marine, Seabee, and coalition engineering forces.

#### LOGISTICS

Despite the Seabees successful employment of SERTs in combat and post-conflict operations, the SERTs did encounter some obstacles along the way – one of which was logistics. Since the concept of SERTs was so new during OIF, the Seabees did not fully develop the logistics to support SERTs before their employment in combat. The Seabees did not plan effectively for the equipping of SERTs during simultaneous high operation tempo tasking for the rest of the battalion while fulfilling construction projects and security requirements during the war. SERTs require a heavy amount of communications equipment, weaponry, and vehicles for the small number of people in each SERT. The Seabees took the gear required to outfit the SERTs from each battalion's main Table of Allowances (TOA), which left each battalion with less than an ideal amount of assets for the rest of its tasking.<sup>56</sup> This problem would have been compounded if each battalion was required to outfit more than one SERT – fortunately, for OIF this was not the case. To solve this problem in the future, each Seabee battalion's TOA should include a separate listing of equipment needed by each SERT. Outfitting SERTs requires increasing the TOA to support this new requirement – this will be particularly true for weapons, communications equipment, and vehicles. This separate gear list within the TOA would also help SERTs draw their gear more expeditiously during their continuous maneuver requirements.<sup>57</sup>

#### COMMUNICATIONS

Another problem SERTs encountered during OIF was in communications. One of the main purposes in creating SERTs was quick communication of engineering assessments and intelligence from the FEBA back to higher echelons in real-time. However, successful communication in real-time requires SERTs to use the best communications equipment available. HF data transmission was the communications equipment supplied for the SERTs during OIF. To test the SERT communications equipment and to help ensure that the SERTs were combat ready, the MEG executed a communications exercise in-theater just prior to OIF.<sup>58</sup> During this exercise, the SERTs found out that their equipment was not as effective as it should be. In addition, the SERTs found that during combat operations they completed many of their forward mission reconnaissance assessments in three hours or less. However, they found that

their HF data transmission to higher echelons took up to eighteen hours to complete which was not the timely information that they had hoped.<sup>59</sup> The HF communications equipment they were using was so slow for data transfer that it was ineffective as a means of communications for a fast moving team like a SERT. Because of their slow communications equipment, some SERTs waited until they got drove back to their battalion camps before transferring their intelligence data to higher echelons. The SERTs simply found it easier to go back to their units and use computers there to transfer data. To improve SERTs for the future, a better means of data transfer needs to be established.<sup>60</sup> In conjunction with the military's transformation, the Seabees should research network centric operations technology to determine how to implement it into the SERTs communications capabilities.

In addition to their HF communications capability, SERTs had VHF voice communications. However, SERTs often operated outside of the VHF range of their higher echelon commands. Even within the individual SERTs, the Recon element often operated outside of VHF voice communications with the LNO element. IRIDIUM satellite phones provided good communication while moving when VHF voice communications could not be used which helped the SERTs maintain their mobility. However, secure communication on the IRIDIUM phones was limited. Because communication is the key to the successful use of SERTs – particularly during war – the Seabees need to update the communications equipment in the TOA for the SERTs.<sup>61</sup> Since they go to war with the Marines, the Seabees should explore the use of the MEF communications system that allows NIPRnet and SIPRnet capability.<sup>62</sup> One necessary requirement that SERTs need to make them effective is the most modern communications equipment – this allows them to transfer digital pictures and other data successfully, expediently, and in real-time.

## TRAINING

Based on the numerous lessons learned from SERT operations in OIF, another very important issue for the Seabees to address is SERT training. SERTs trained extensively prior to OIF, but they improvised most of their training instead of using a formalized and comprehensive training program. In fact, individual Seabee battalions took it upon themselves to develop and execute their own SERT training programs. However, this type of ad hoc training normally leaves gaping holes in the overall skill set of a particular unit as the SERTs found out during OIF.

To overcome some of their lack of experience and training, SERTs completed various military skills training in-theater just prior to the start of the combat offensive during OIF. One of

these in-theater training session the SERTs completed was weapons training which helped get them familiar with their weapons in a desert situation particularly while mounted on vehicles. For many of them, this was also their first exposure to firing crew-served weapons while the vehicle was moving. In addition, the SERTs conducted this training adjacent to an Army unit that was conducting live indirect-fire artillery weapons training. This was advantageous in that the SERTs got first hand experience of hearing heavy weaponry firing while the SERTs were also firing their crew-served weapons – simulating the noise of a combat operation.<sup>63</sup>

A three-day SERT exercise was also employed in-theater to culminate their military skills training and to help ensure that the SERTs were combat ready. This exercise was very extensive in that it involved many of the elements that a SERT would face in the upcoming OIF offensive --- convoys, vehicle maintenance, camouflage concealment, working with Marine Corps units, engineering assessments, communicating with higher echelons, and navigation.<sup>64</sup>

One area in particular that the SERTs lacked training in was maneuvering with a combat unit.<sup>65</sup> As Seabees support Marines during war, so do SERTs support Marines in the FEBA. This makes it necessary for the SERTs to train with the Marines in order for SERTs to understand Marine Corps tactics and terminology. The Marine Corps adviser assigned to each Seabee battalion can help train the SERTs in Marine Corps maneuver warfare.<sup>66</sup>

Another area that the Seabees found that more extensive training was required was in reconnaissance training. SERTs were not as proficient at engineering recon as the Army and Marine Corps units were that the SERTs often maneuvered with during OIF.<sup>67</sup> The SERTs should rely on existing training programs like those used by the Navy SEAL, Army and Marine Corps Recon units in developing the recon part of their training program.

Navigation skills are also of utmost importance to the SERTs since some of them traveled over 5000 miles in a two-month period during the combat offensive of the OIF campaign.<sup>68</sup> The in-theater training in navigation skills received just prior to OIF was helpful for those SERTs that received that training.<sup>69</sup> However, the lack of knowledge of navigation skills like the Global Positioning Satellite (GPS) system and the grid coordinate system could have hampered the SERTs if they had not received that just-in-time training. As the Seabees upgrade their vehicles in the future, the battalion TOA needs to include modern, easy to use GPS navigation equipment installed in their vehicles.

Another training area that the Seabees need to provide additional training for is expertise in construction and repair of bridging for members of SERTs. The Seabees need to develop formalized training programs to increase the knowledge of bridging. One of the items that SERTs found out during their engineering assessments of bridges in OIF is that the bridge

design engineers at NAVFAC Atlantic and Pacific normally have more questions than a SERT can answer about a bridge. Bridge assessment training given by the NAVFAC engineers to the SERTs would help them anticipate some of these questions.<sup>70</sup> Another training method that could be helpful is to have reserves with this skill set teach it to the active members. This can easily be set up since integration of reserves into active battalions already exists.

Seabees have in the past only trained on crew serve weapons from a stationary position. With convoys playing a significant part of Seabee operations in OIF, use of crew serve weapons from a moving vehicle is necessary. Formal SERT training programs should incorporate crew serve weapons training into convoy and urban training.<sup>71</sup>

In addition, SERTs need to train together in small unit tactics. Some SERTs did not have the opportunity to do a three-day small unit tactics exercise as other SERTs did just prior to OIF. Consequently, they were not as comfortable operating in a small unit without the support of the rest of their battalion.<sup>72</sup> Security is one of the areas SERTs need training for during small unit tactics training. One SERT found that providing security during a recon mission in OIF with less than ten people was not easy without assistance.<sup>73</sup>

Recently formed before OIF, neither formalized doctrine nor a formal concept of operations had been developed for them when they were used in OIF.<sup>74</sup> However, since OIF the Seabees have begun formalizing their doctrine and concept of operations.<sup>75</sup> These items are necessary to help establish proper training plans and future combat exercises for SERTs. Although the Seabees have not developed an extensive training program for SERTs,<sup>76</sup> since OIF the Seabees have been quick to develop a Marine Corps/Seabee combined course for SERTs. This course provides advanced infantry, reconnaissance, and engineering skills training.<sup>77</sup> Another training program the Seabees could consider when developing the SERTs training program is the Army's Sapper training courses. Again, the Seabees must implement formalized training for them if SERTs are going to develop a comprehensive set of military skills that make them an effective tool in future Seabee warfare.

## ORGANIZATION

SERTs differed in their after action reports on whether they were organized effectively or not. One SERT felt that there were too many senior personnel on its team because the composition did not match up well with other military units with which the SERT was performing recon missions. The SERT also felt that it seldom used its LNO element because communication with another combat unit was normally not necessary.<sup>78</sup> However, another SERT felt the opposite of this. It felt that the senior personnel – the CEC Officers and Chief

Petty Officer – on the SERT were invaluable to the mission as they spent a great deal of liaison time with their Marine Corps counterparts while maneuvering. This interaction helped create a dialogue on potential Seabee construction projects, which the SERT was able to relay back to higher echelons.<sup>79</sup> This interaction created by the SERTs presence is one of the reasons the SERTs were effective in helping the MEG anticipate future projects so it could prioritize bridge repairs and keep the maneuver forces moving towards Baghdad. This helps confirm the need and use of SERTs in the Seabees.

Another SERT found that since SERTs were such a new concept, many of the combat units operating with them in the FEBA had no idea about the SERTs mission and as a result did not know how to use SERTs as effectively as they could. The SERTs felt that they needed to coordinate earlier with those combat units in order for the SERTs to be more effective in supporting those units.<sup>80</sup> Senior SERT members must address this coordination issue in future reconnaissance operations.

## **RECOMMENDATIONS**

Recapping the recommendations discussed above, the Seabees need to review the following items in order to make the MEG organization and SERTs more effective in future warfare:

1. The MEG organization needs to train together to become more interdependent with the joint force. The majority of the literature about the MEG's operations in OIF only discusses the Seabees successes and not the accomplishments of the Army, Marine Corps, or ROK engineer forces also assigned to the MEG. The MEG needs to be able to bring the synergy of its different types of units together to harvest the full potential of them working jointly.
2. The Seabees should institute additional convoy training for counterinsurgency operations within MEG units. As OIF demonstrated, the MEG units are no longer just operating in the rear area and their convoys will encounter insurgents or will become targets of insurgents.
3. The Seabees should develop a separate listing of equipment needed by each SERT within a Seabee battalion's TOA. The TOA needs to include modern communications equipment, weaponry, and vehicles specifically designated for SERTs.
4. Formalize SERT doctrine.
5. Formalize a Concept of Operations for SERTs based on their employment during OIF.
6. Improve communications equipment and provide a better means of remote data transfer.

7. Since the military as a whole is implementing network-centric warfare operations technology into the equipment for its units, the Seabees should explore this technology to determine how to implement it into the SERTs capabilities.
8. Address the lack of knowledge of SERT employment by combat units that SERTs are maneuvering with during future operations.
9. Formalize and improve the SERT training program. Utilize Army Sapper, Navy SEAL, and Marine Corps Recon units to advise the SERTs in developing the reconnaissance part of their training program.

## **CONCLUSION**

The Seabees were highly successful in employing two new concepts during OIF – the MEG organization and SERTs. The MEG's objectives were to provide combat construction and general engineering support to the MEF. The MEG accomplished these objectives as well as defended their Seabee legacy "We Build, We Fight." The MEG's command and control of its engineer forces was evident as shown in its ability to coordinate and prioritize bridge construction repairs, ensuring that maneuver forces remained mobile throughout the combat offensive in Iraq.

Not only did the MEG help the MEF maneuver in the battlespace by constructing and repairing roads, bridges, runways, but it also helped the MEF assist the Iraqis rebuild their communities by repairing schools, government buildings, playgrounds, and public works utility systems. In addition, the MEG was able to show rapid progress in infrastructure improvements through the immediate employment of its engineer forces after combat operations despite the risks presented by the insurgency. The MEG efficiently hired local Iraqi contractors to assist where possible.

One item that OIF demonstrated for the Seabees was that the battlefield is a dynamic, changing environment. The Seabees will need to continue to be flexible and highly mobile during combat operations to support the Marine Corps maneuver units in future conflicts. Therefore, the Seabees will need to continue to transform and develop a "more mobile, more decisive force"<sup>81</sup> while also being more self-reliant on providing their own defensive security.<sup>82</sup>

Because SERTs are able to gather real-time engineering intelligence on the battlefield and then transfer it digitally to higher echelons for assessment, they proved during OIF that they are a powerful force multiplier for the Joint Force Commander.<sup>83</sup> This new SERT unit is "a small group of Seabees [who] performed an unconventional mission applying a unique combination of construction and combat skills, showing initiative and creativity, using high-tech specialized

equipment. They leveraged advanced communication gear to deliver crucial recon intelligence and then tap optimal human expertise provided electronically from thousands of miles away. 'Can do!' says it all.'<sup>84</sup>

Even though the makeup of each SERT is normally only ten personnel, SERTs do offer sufficient flexibility in that as tasking requires, other personnel with mission critical skills can augment a SERT. One of the success stories of OIF occurred when four Seabee divers from Underwater Construction Team TWO augmented the NMCB-74 SERT. The divers were invaluable in performing an underwater bridge evaluation.<sup>85</sup> In addition to this augmentation adaptability, SERTs are also flexible in their missions. During OIF, they performed recon missions during combat offensive maneuvers in support of Marine Corps units and during post-conflict operations in support of humanitarian aid and CMO projects. The use of SERTs during Phase IV post-conflict operations was important to the Seabees in evaluating which critical infrastructure needed repair projects.<sup>86</sup> For these reasons, SERTs showed their adaptability for missions in combat operations and in post-conflict operations.

With the creation of SERTs, the Seabees have developed a type of recon unit in their own ranks. Just as recon units do, SERTs act on their own in small units while in the forward area and do so while providing for their own security. They are also force multipliers, providing leveraging capabilities that are out of proportion to their size. In addition, they possess a multitude of combat skills,<sup>87</sup> making them extremely valuable on the battlefield.

Again, the employment of the MEG organization and SERTs by the Seabees was highly effective in Operation Iraqi Freedom. The Seabees proved once again that they "are the premier combat ready construction force for Combatant and Component Commanders in joint and coalition contingency operations."<sup>88</sup> Mobility and speed are two trademarks that the Seabees constantly strive for,<sup>89</sup> and the Seabees enhanced these trademarks with the employment of SERTs during OIF. The SERTs maneuvered with the Marine Corps units and provided support to SOF units. The Seabees proved their effectiveness in the offensive phase of the campaign, not just in the rear area in a defensive mode. During the maneuvering process, the Seabees supported themselves with their own logistics pipeline throughout the 400 miles from Kuwait to Baghdad.<sup>90</sup> Seabees truly have demonstrated an effective combat offensive capability that goes far beyond their legacy of "defend what we build".<sup>91</sup>

WORD COUNT = 6392



## ENDNOTES

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<sup>2</sup> Patrick J. Essinger, ed., *Seabee Combat Handbook*, (Washington, D.C.: Naval Education and Training Program Management Support Activity, 1989), 1-2 through 1-3.

<sup>3</sup> Jennifer Valdivia, "NMCB 14 Seabees Receive Purple Heart," *Navy NewsStand*, 14 July 2004; available from <[http://www.news.navy.mil/search/display.asp?story\\_id=14267](http://www.news.navy.mil/search/display.asp?story_id=14267)>; Internet; accessed 11 October 2004.

<sup>4</sup> First Naval Construction Division, *Campaign Plan 2003-2006*, (Norfolk, VA: First Naval Construction Division, 2003), 2.

<sup>5</sup> R. C. Blackman, ed., *Seabee Combat Handbook, Volume 1* (Pensacola, FL: Naval Education and Training Professional Development and Technology Center, 1993), 1-1.

<sup>6</sup> Charles R. Kubic, "Kubic Sends," *Seabee* 1 and 2 (2003): 8.

<sup>7</sup> Charles R. Kubic, "The MEG at War," briefing slides with scripted commentary, First Naval Construction Division, Norfolk, VA: May 13, 2003, 101.

<sup>8</sup> Kubic, "Kubic Sends," 8.

<sup>9</sup> Charles R. Kubic, "The MEG Story: I MEF Engineer Group (I MEG) Operation Iraqi Freedom," briefing slides with scripted commentary, First Naval Construction Division, Norfolk, VA: July 2003. 98-102.

<sup>10</sup> Andrew G. Wright, "Seabees are Advancing Plans for Postwar Rehab Work," 21 April 2003; available from <<http://www.enr.com/news/front2003/archives/030421a.asp>>; Internet; accessed 24 September 2004.

<sup>11</sup> Kubic, "The MEG at War," 1-2.

<sup>12</sup> Kubic, "Kubic Sends," 8.

<sup>13</sup> Kubic, "The MEG at War," 107

<sup>14</sup> Kubic, "Kubic Sends," 9.

<sup>15</sup> Kevin C. Timmons, "1NCD CMDCM", *Seabee* 1 and 2 (2003): 11.

<sup>16</sup> Andrew G. Wright, "Return of the Seabee Jedi," *Seabee*, 1 and 2 (2003): 53-54.

<sup>17</sup> Andrew G. Wright, "With Baghdad Largely Secured, Seabees Shifted Into Overdrive," *Seabee* 1 and 2 (2003): 57.

<sup>18</sup> Commandant of the Marine Corps, General M. W. Hagee, "62<sup>nd</sup> Anniversary of the Naval Construction Forces," message to the Naval Construction Forces, Washington, D.C., March 2004.

<sup>19</sup> Timmons, 11.

<sup>20</sup> Kubic, "Kubic Sends," 8.

<sup>21</sup> Tom Sawyer and Andrew G. Wright, "Battlefield Commanders Review Lesson From Iraq," 22 September 2003; available from <<http://enr.construction.com/features/bizlabor/archives/030922.asp>>; Internet; accessed 24 September 2004.

<sup>22</sup> Seabee/CEC Officers' Spouses Association, *Can Do Cookbook* (Lenexa, Kansas: Cookbook Publishers, Inc., 2003), vii.

<sup>23</sup> Jacob Johnson. "Seabees Repair Major Iraqi Airfield, Make Humanitarian Aid Possible," *Navy NewsStand*, 7 May 2003; available from <[http://www.news.navy.mil/search/display.asp?story\\_id=7305](http://www.news.navy.mil/search/display.asp?story_id=7305)>; Internet; accessed 24 September 2004.

<sup>24</sup> Meg Reed. "MEF Engineer Group Seabees Helping to Rebuild Iraq," *Navy NewsStand*, 29 May 2003; available from <[http://www.news.navy.mil/search/print.asp?story\\_id=7608](http://www.news.navy.mil/search/print.asp?story_id=7608)>; Internet; accessed 11 October 2004.

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<sup>26</sup> Kubic. "The MEG Story," 82.

<sup>27</sup> William Flavin. "Planning for Conflict Termination and Post-Conflict Success," *Parameters* 33 (Autumn 2003): 96.

<sup>28</sup> Tom Ichniowski. "Powell, Strock Seek Faster Reconstruction Pace in Iraq," *ENR*, 9 August 2004, 15.

<sup>29</sup> Nadia Schadow. "War and the Art of Governance," *Parameters* 33 (Autumn 2003): 86.

<sup>30</sup> *Ibid.*, 85-94.

<sup>31</sup> Kenneth M. Pollack, "After Saddam: Assessing the Reconstruction of Iraq." *The Brookings Institute: Sabin Center Analysis Paper*, no. 1, (January 2004).

<sup>32</sup> Ichniowski, 15.

<sup>33</sup> "The Iraq Reconstruction Fiasco," *New York Times*, 9 August 2004, sec. A, p. 14.

<sup>34</sup> Dexter Filkins. "Militants Are Holding Back Recovery in Central Iraq," *New York Times*, 16 November 2003, sec. A, pp. 1, 17.

<sup>35</sup> "Military Construction Units Can Help Win the Peace," *ENR*, 19 May 2003, 152.

<sup>36</sup> Sherie Winston, Tom Sawyer, and Thomas F. Armistead, "Nation-Building is Hard Work," *ENR*, 9 June 2003, 14.

<sup>37</sup> Patrick Peterson, "Transfer of Authority Changes Seabee Role in Iraqi Contracts," *Biloxi Sun Herald*, available from <<http://www.sunherald.com/mld/thesunherald/9052190.htm>>; Internet; accessed 26 September 2004.

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<sup>40</sup> Kevin Elliott and Lamel Hinton, "Seabee Engineer Reconnaissance Team," *Seabee* 3 (2003): 52.

<sup>41</sup> First Naval Construction Division Commander, 1.

<sup>42</sup> Elliott and Hinton, 43-53.

<sup>43</sup> First Naval Construction Division Commander, 1.

<sup>44</sup> Andrew G. Wright, "Team of Seabees Draws Fire in Iraq," *ENR*, 11 April 2003; available from <<http://www.ENR.Construction.com>>; Internet; accessed 21 November 2004.

<sup>45</sup> Joe Buff, "Seabee Shadow Warriors," 1 November 2004; available from <<http://www.Military.com>>; Internet; accessed 23 November 2004.

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<sup>48</sup> Elliott and Hinton, "SERT, Part II," 42-50.

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<sup>54</sup> NMCB-4, *After Action Report, Operation Enduring Freedom, Operation Iraqi Freedom* (Port Hueneme, CA: Naval Mobile Construction Battalion FOUR, 6 October 2003), C-1.

<sup>55</sup> *Ibid.*, C-2 through C-4.

<sup>56</sup> NMCB-133, *Southwest Asia Deployment Completion Report* (Gulfport, MS: Naval Mobile Construction Battalion ONE THREE THREE, August 2003), 127-130.

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<sup>58</sup> NMCB-133, 122.

<sup>59</sup> NMCB-74, *After Action Report, Operation Enduring Freedom, Operation Iraqi Freedom, 2002-2003* (Gulfport, MS: Naval Mobile Construction Battalion SEVENTY-FOUR, June 2003), 115.

<sup>60</sup> *Ibid.*, 126-129.

<sup>61</sup> *Ibid.*, 115.

<sup>62</sup> NMCB-133, 127-130.

<sup>63</sup> *Ibid.*, 121-122.

<sup>64</sup> *Ibid.*, 122-123.

<sup>65</sup> *Ibid.*, 127-130.

<sup>66</sup> NMCB-4, D-9 through D-18.

<sup>67</sup> NMCB-74, 126-129.

<sup>68</sup> NMCB-4, D-9 through D-18.

<sup>69</sup> NMCB-133, 127-130.

<sup>70</sup> NMCB-4, D-9 through D-18.

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<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

<sup>75</sup> First Naval Construction Division, *Campaign Plan 2003-2006*, 17.

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<sup>77</sup> William Whitmire, "Seabee Warrior Training Presentation," briefing slides with scripted commentary, Port Hueneme, CA, 31<sup>st</sup> Seabee Readiness Group, 4 June 2004, 7.

<sup>78</sup> NMCB-4, D-9 through D-18.

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<sup>80</sup> NMCB-133, 127-130.

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<sup>83</sup> Joe Buff, Norman Dupuis, and David Meadows, "Operation : Seabees Knowledge," 8 November 2004; available from <SeabeesInfoHQ.org>; Internet; accessed 24 November 2004.

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<sup>87</sup> Buff, 2.

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