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14. ABSTRACT Operational infrastructure development is the construction and establishment of roads, airfields, ports, installations, and communications systems by operational-level military commands. For several reasons, it has become a decisive operational concept in the global war on terrorism (GWOT). As the US confronts failed states, quasi-failed states, and rogue dictatorships that threaten our national security, there is a requirement for operational commanders to focus on operational infrastructure development. In the first two years of the GWOT, three models of operational infrastructure development have blossomed: the <i>facilitative</i> , <i>creative</i> , and <i>reconstructive</i> models. The first is the <i>facilitative</i> model employed by Joint Task Force (JTF) 510 on Basilan Island in the Republic of the Philippines. The second is the <i>creative</i> model led by Combined Joint Task Force (CJTF) 180 in Afghanistan. The third is the <i>reconstructive</i> model now ongoing in Iraq, commanded by CJTF-7 and the Coalition Provisional Authority (CPA). This paper argues that these campaigns show that operational infrastructure development is a critical factor in the GWOT, and should be planned for by operational commanders and integrated into joint doctrine.					
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**Operational Infrastructure Development:
A Critical Factor in the Global War on Terrorism**

By

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

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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9 February 2004

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Abstract

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In the first two years of the GWOT, three models of operational infrastructure development have blossomed: the *facilitative*, *creative*, and *reconstructive* models. The first is the *facilitative* model employed by Joint Task Force (JTF) 510 on Basilan Island in the Republic of the Philippines. The second is the *creative* model led by Combined Joint Task Force (CJTF) 180 in Afghanistan. The third is the *reconstructive* model now ongoing in Iraq, commanded by CJTF-7 and the Coalition Provisional Authority (CPA). This paper argues that these campaigns show that operational infrastructure development is a critical factor in the GWOT, and should be planned for by operational commanders and integrated into joint doctrine.

Table of Contents

Introduction	1
<i>Facilitative</i> Operational Infrastructure Development	2
<i>Creative</i> Operational Infrastructure Development	7
<i>Reconstructive</i> Operational Infrastructure Development	13
Conclusion	18
Notes	23

List of Illustrations

Figure	Title	Page
1.	Map of Philippine Islands and Basilan	3
2.	US Pacific Command Framework for Combating Terrorism	6
3.	Map of Afghanistan	8
4.	Map of Iraq	14

Operational Infrastructure Development: A Critical Factor in the Global War on Terrorism

This paper examines operational infrastructure development in the global war on terrorism (GWOT). Operational infrastructure development is the construction and establishment of roads, airfields, ports, installations, and communications systems by operational-level military commands. For several reasons, it has become a decisive operational concept in the GWOT. As the US confronts failed states, quasi-failed states, and rogue dictatorships that threaten our national security, there is a requirement for operational commanders to focus on operational infrastructure development.

In the 2002 *National Security Strategy*, President George W. Bush included “building the infrastructure of democracy” as one of the goals of US foreign policy.ⁱ This goal has broad implications for operational commanders. Operational infrastructure development precedes democracy because it enables people to have the most basic elements of civilized life and hope for a better future. Hope is often the most important characteristic of a nation’s populace, because it can detach their support for terrorist groups. Moreover, governments with developed infrastructures can be important strategic partners in the GWOT as they are better able to capture and bring terrorists to justice, becoming respected members of the international community.

On the other hand, rogue dictatorships present an operational infrastructure challenge as well. Many tyrants have robbed their populations for years and neglected their nation’s infrastructure. As these dictators are deposed and leave chaos in their wake, it will be incumbent on those present to provide humanitarian assistance and create the conditions for stable governments – both of which involve operational infrastructure development.

But operational infrastructure development – termed nation building -- has not been fully embraced by the US armed forces, and many questions persist. Should the United States' military be involved in these types of missions? If so, does the Joint Task Force Commander have the responsibility for planning them and the resources to execute them? Should the US armed forces designate or create specific units for these types of operations? What is the proper method of employment in operational infrastructure development missions that best matches means, ways, and ends? Does joint doctrine adequately address operational infrastructure development and its responsibilities for operational-level staffs? This paper attempts to answer these questions through an analysis of recent campaigns.

In the first two years of the GWOT, three models of operational infrastructure development have blossomed: the *facilitative*, *creative*, and *reconstructive* models. The first is the *facilitative* model employed by Joint Task Force (JTF) 510 on Basilan Island in the Republic of the Philippines. The second is the *creative* model led by Combined Joint Task Force (CJTF) 180 in Afghanistan. The third is the *reconstructive* model now ongoing in Iraq, commanded by CJTF-7 and the Coalition Provisional Authority (CPA). These models exhibit strengths and weaknesses that help to provide answers to the questions posed above and offer insight from which operational commanders can benefit in planning future operations.

Facilitative Operational Infrastructure Development

In January 2002, the Government of the Republic of the Philippines (GRP) declared war on the Abu Sayyaf Group (ASG) which had found sanctuary on the southern Philippine Island of Basilan.ⁱⁱ The ASG was a radical, Islamic terrorist group that posed a significant threat to the GRP and US interests in the Asia-Pacific region, and had known ties to al-

Qaida.ⁱⁱⁱ After the GRP requested assistance from the US, Admiral Dennis Blair, the Commander of US Pacific Command, was tasked to deploy JTF-510, a crisis-response joint task force, to the Philippines.^{iv} The operation was called Operation ENDURING FREEDOM –PHILIPPINES (OEF-P) to associate it with the GWOT. Brigadier General Donald Wurster, the Commander of Special Operations Command, Pacific, served as the commander of JTF-510.^v



Figure 1: Map of the Philippine Islands and Basilan^{vi}

Basilan presented unique challenges to JTF-510 (see figure 1). The island possessed about 350,000 inhabitants who largely viewed the GRP as ineffective. Basilan's infrastructure was terribly dilapidated with no operational ports or airfields.^{vii} The roads were barely trafficable. The island had minimal economic activity and its inhabitants lived in poverty and constant fear of the ASG, who had committed every type of crime and atrocity against them. The people of Basilan had little reason for hope.^{viii}

General Wurster understood this when members of JTF-510 arrived on Basilan in January 2002. After JTF-510 forces arrived, Wurster conducted an extensive survey of the island's population to gather intelligence and ensure that the islanders knew that JTF-510 forces were not occupiers.^{ix} JTF-510's task organization included soldiers from the 1st Special Forces Group, Marine Corps engineers and infantrymen from the III Marine Expeditionary Force, Navy Seabees from the 30th Naval Construction Regiment, army helicopter crews from the 160th Special Operations Aviation Regiment, and Air Force search and rescue personnel from the 33d Expeditionary Recovery Squadron, eventually totaling approximately 1,200 members.^x

With a truly joint task force, Wurster's operational scheme envisioned "severing the links" between the people and the ASG by providing advisory assistance to the Armed Forces of the Philippines (AFP) as they tracked down the ASG terrorists.^{xi} At the same time, Wurster planned to use his construction forces to improve the island's infrastructure, which would help the AFP in their mission.^{xii} Wurster's operational scheme engendered a *facilitative* approach of operational infrastructure development.

JTF-510 sequenced its operations so that the AFP, advised by JTF special forces, took advantage of the improvements made to Basilan's infrastructure to catch ASG terrorists

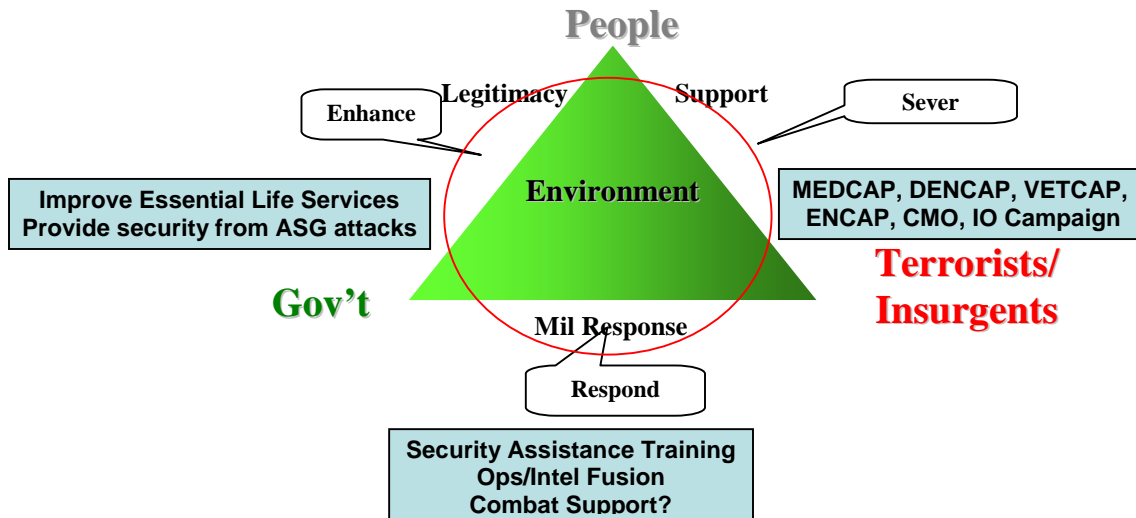
while winning over the island's inhabitants.^{xiii} Wurster's comment that, "The idea of this plan wasn't to get the people to like American soldiers, it's to have the people of Basilan like the government in Manila," illustrates that he saw the people's confidence in the GRP as his operational *center of gravity*.^{xiv} He also saw Basilan's poor infrastructure as his *critical vulnerability*.

By June 2002, after the completion of several infrastructure improvement projects, JTF-510 had facilitated the GRP gaining considerable credibility with the residents of Basilan, while the AFP turned the tide in its campaign against the ASG. Admiral Thomas B. Fargo, who had replaced Admiral Blair as the Commander of Pacific Command, testified to the Senate Armed Services Committee on what JTF-510 accomplished:

"Operation Enduring Freedom-Philippines (OEF-P) serves as the ideal vehicle for U.S. forces to advise and assist the AFP in the development of skills necessary to fight terrorists. Additionally, the infrastructure improvements to roads, hospitals, and schools and the construction of water wells on Basilan Island under DoD's humanitarian and civic assistance program provide positive impacts on local communities – highlighting America's positive role while assisting the Philippines in dealing with socio-economic causes that disenfranchised Filipinos to support terrorist activities. As a result of this well-integrated operation, the ASG is on the run on Basilan and its influence with the local populace there has been dampened."^{xv}

JTF-510's efforts on Basilan illustrate how operational infrastructure development can play a critical role when synchronized with other elements of combat power. JTF-510 employed *facilitative* operational infrastructure development to achieve continuity, simultaneity, and depth in their operations across Basilan, having a powerful effect on the ASG and the residents of the island (see figure 2). As the operational commander, General Wurster used limited means in imaginative ways to achieve impressive ends, underscoring the enduring importance of operational art and operational leadership in the GWOT.^{xvi}

Conceptual Framework For Combating Terrorism and Insurgency



- Enhance the government's ability to provide services to the people, thereby increasing peoples' faith in the legitimacy of the government.
- Sever popular support to the terrorists by assisting in improving the quality of life and intensifying Information Operations.

Figure 2: US Pacific Command Framework for Combating Terrorism^{xvii}

Creative Operational Infrastructure Development

In 1999, Martin Blumenson wrote “that the availability of infrastructure cannot be taken for granted, especially in an age when short-notice expeditionary interventions anywhere on the globe may be contemplated by policymakers.”^{xviii} The aftermath of the terrorist attacks of 11 September 2001 and US Central Command’s planning for a military campaign against al-Qaida and its supportive Taliban government in Afghanistan showed the wisdom of Blumenson’s comment. Afghanistan had been the “graveyard of empires” for much of recorded history and had one of the least developed infrastructures in the world.

In 1980, a twenty-three year old Saudi Islamic radical named Osama bin Laden took advantage of Afghanistan’s lack of infrastructure by funneling money and technical expertise there from his family’s billion-dollar construction business.^{xix} Bin Laden’s efforts at building caves and training camps provided a base in eastern Afghanistan for mujahideen fighters then engaged in combat against the Soviet Union.^{xx} In 1990, after defeating the Soviet Union’s invasion with US assistance, a portion of bin Laden’s network of 35,000 Arab-Afghan veterans became a global terrorist organization known as al-Qaida, which means literally “the base.”^{xxi}

Afghanistan’s lack of infrastructure and harsh terrain made it an ideal sanctuary for al-Qaida. Afghanistan is a land-locked, oval-shaped country split down the center by the Hindu-Kush mountain range. It consists of four “strategically crucial cities” with tenuous infrastructural links between them: Herat is in the west, Mazar-i-Sharif in the north, Kabul in the east, and Kandahar in the south (see figure 3).^{xxii}



Figure 3: Map of Afghanistan^{xxiii}

As the Combatant Commander for US Central Command, General Tommy Franks decided to capitalize on advances in teleconferencing technology to exercise operational leadership of combat operations in Afghanistan from his headquarters in Tampa, Florida.^{xxiv} Franks' operational scheme envisioned employment of carrier- and land-based aircraft to attack targets identified by US special forces inserted to operate with anti-Taliban, "Northern Alliance" fighters then north of Mazar-i-Sharif.^{xxv} C-17 aircraft would also provide humanitarian assistance to the Afghan people by dropping food rations.^{xxvi} Not wanting to

bog down in an attritional-style campaign in the difficult terrain of Afghanistan, General Franks deliberately kept his conventional footprint light and did not initially plan for extensive operational infrastructure development.

Operation ENDURING FREEDOM – AFGHANISTAN (OEF-AF) began on 7 October 2001 and by 13 November, Mazar-i-Sharif, Herat, and the capital city of Kabul had fallen.^{xxvii} On 25 November 2001, US Marines organized into “Task Force 58” established a forward operating base at Camp Rhino in the vicinity of Kandahar airfield, making it the first conventional force in Afghanistan.^{xxviii} With the four major cities of Afghanistan secured, by 22 December 2001, the coalition had overthrown the Taliban government and installed Hamid Karzai as the Prime Minister of the Interim Afghan Government. Operationally, OEF-AF appeared to be an incredible success.

But Karzai’s new government had neither an infrastructural base to effectively influence the country nor enough support from US forces to help establish one. Simply put, Karzai’s *critical vulnerability* was the lack of infrastructure in Afghanistan. Moreover, the United States did not have an on-scene operational commander to synchronize the efforts of US forces with the coalition forces from over 20 countries who made up the International Security Assistance Force (ISAF). General Franks soon realized he needed an operational commander to exercise operational leadership and to plan to create the infrastructure that Afghanistan required to become a stable state.

In late May 2002, Franks established Combined Joint Task Force (CJTF) 180 from the headquarters of the XVIIIth Airborne Corps, with Lieutenant General Daniel K. McNeil as CJTF-180’s commander.^{xxix} Lieutenant General McNeil was an infantryman with a wide range of operational experience, including assignment as CJTF-180’s Chief of Staff during

Operation UPHOLD DEMOCRACY in Haiti in 1994. Every inch the warrior, McNeil also had experience with complex military operations. CJTF-180 began the *creative* model of operational infrastructure development, assisting with, facilitating, and supervising the *creation* of an infrastructure that would enable the new Afghan government to exert its influence throughout the country.

CJTF-180 consisted of more than 9,000 US troops and immediately began several infrastructure improvement projects, to include the creation and repair of major roads, bridges, airfields, schools, and government buildings, as well as area mine clearance.^{xxx} Contractors and military units from other countries also began projects to bolster Afghanistan's infrastructure. Secretary of Defense Donald Rumsfeld, who had been resistant to operational infrastructure development, weighed in with his assessment of CJTF-180's efforts:

“We have to help the Afghan people build the infrastructure that will allow them to achieve true self-government and self reliance... They need roads and bridges to facilitate commerce between the different regions and to make the country hospitable to foreign investment. They need irrigation so their farmers can earn a living and feed the Afghan people. And they need clean water and hospitals to prevent the outbreak of disease.”^{xxxix}

CJTF-180 subsequently deployed eight Provincial Reconstruction Teams (PRT's) of between 50-70 people each throughout Afghanistan to focus on operational infrastructure development.^{xxxii} General John P. Abizaid, who assumed command of US Central Command from General Franks in the summer of 2003, testified to the Senate Appropriations Committee in the fall of 2003 on his three top priorities for Afghanistan:

“We must [1] simultaneously defeat our enemies, [2] support the effort to establish representative government and [3] set the conditions for economic growth and long-term stability.”^{xxxiii}

Operational infrastructure development provided the CJTF-180 commander with *decisive points* along *lines of operations* to achieve General Abizaid's strategic objectives.

Three examples of operational infrastructural *decisive points* along *lines of operations* are (1) the planned Silk Road, (2) the Kabul-Kandahar-Herat Highway, and (3) the Salang Tunnel. Operation SILK ROAD was modeled on the US National Guard engineer deployments to Latin America under the State Partnership Program (SPP). Operation SILK ROAD intends to use US National Guard units in an international effort to re-establish trade links between Europe and Asia by constructing roads through Afghanistan. These roads will create a transportation network that will eventually enable the delivery of relief and humanitarian supplies to the people of Afghanistan during all weather conditions. Assisted by engineers from Russia, Uzbekistan, Tajikistan, and Turkey, Operation SILK ROAD will also establish positive relations for the US with neighboring countries in the region.^{xxxiv}

The Kabul-Kandahar-Herat Highway intends to provide a critical road link for the interim Afghan government to influence its population beyond Kabul and facilitate stimulation of the national economy. President Bush made construction of the Kabul-Kandahar-Herat Highway a personal priority of his, as well as a matter of international prestige, by announcing the project in a joint press statement with the Prime Minister of Japan and the Foreign Minister of Saudi Arabia.^{xxxv} The President not only pledged 80 million US dollars to fund this project, while Japan and Saudi Arabia pledged 50 million dollars apiece, but also promised that it would be completed within three years.^{xxxvi}

The Salang Tunnel is an infrastructural *decisive point* high in the Hindu-Kush mountains that links the northern and southern parts of the country with a two-lane road. The Taliban destroyed the tunnel in 1998 to break the country apart. In coordination with CJTF-

180 engineers, Norwegian and Turkish contractors reopened the tunnel, cutting the travel time from northern Afghanistan to Kabul from 72 hours to 10.^{xxxvii} The reopened Salang Tunnel significantly extends the *operational reach* of Karzai's government. These tactical missions – when planned, phased, and sequenced properly – significantly contribute to the eventual achievement of the combatant commander's strategic objectives in Afghanistan.

On 21 December 2003, the new CJTF-180 Commander, Lieutenant General David W. Barno, announced that he planned to increase the number of PRT's to 12 by March 2004 and expand their mission to include teaching the Afghan militia and local police security tactics, techniques, and procedures.^{xxxviii} Like General Wurster on Basilan, General Barno is integrating combat-related tasks with operational infrastructure development.

The establishment of CJTF-180 in May 2002 and its rapid incorporation of operational infrastructure development into the overall campaign design for Afghanistan again highlights this concept's importance for the GWOT. Still, OEF-AF offers valuable lessons for operational commanders and their staffs. First, operational infrastructure development should be planned, integrated, and sequenced into all phases of the operational scheme. It cannot be an afterthought, or simply relegated to the post-hostilities phase. As shown above, infrastructural *decisive points* along *lines of operations* can be crucial to the attainment of strategic and operational objectives.

Second, operational infrastructure development is a critical enabler of all six operational functions: command and control, operational intelligence, movement and maneuver, operational logistics, operational fires, and operational protection. It should also play a key role in any information campaign. As operational planners sequence and synchronize the operational functions in pursuit of their commander's objectives, they should

consider operational infrastructure development as a way to achieve “effects-based operations” and as a *simultaneously* occurring activity with potentially decisive impact.

Third, an on-scene operational-level commander is required to synchronize operational infrastructure development with the other elements of combat and national power. Between the defeat of the Taliban in December 2001 and the establishment of CJTF-180 in May 2002, momentum and tempo in Afghanistan might have been lost. Finally, if we accept that the GWOT is a war of ideas with the allegiance of resident populations as the strategic *center of gravity*, then operational infrastructure development offers an appealing *line of operations* to their “hearts and minds,” as JTF-510 showed on Basilan.

Reconstructive Operational Infrastructure Development

Operation IRAQI FREEDOM (OIF) represents the *reconstructive* model of operational infrastructural development. Saddam Hussein led a rogue state in Iraq that had been a consistent threat to US interests in the Arabian Gulf region and had used weapons of mass destruction (WMD). In the “post 9-11 world,” President Bush decided that Hussein’s removal from power was a vital step in the US’s GWOT. The president ordered his combatant commander, General Tommy Franks, to plan for the invasion of Iraq and subsequent elimination of Hussein’s Baath Regime (see map in figure 4). After deploying more than 151,000 coalition combat forces into the region, General Franks launched an offensive operation to remove the Iraqi dictator on 19 March 2003.^{xxxix} General Franks’ coalition forces took Baghdad by 9 April 2003 in a lightning-quick military campaign that tactically -- similar to OEF-AF -- appeared to be very successful.



Figure 4: Map of Iraq^{xi}

In his masterpiece *On War*, Carl von Clausewitz introduced the concept of the culminating point of victory. Clausewitz found that a “reduction in strength on one side can be considered as an increase on the other,” and that the concept of the culminating point was “particularly important in military theory and forms the keystone for most plans of campaign.”^{xli} According to Clausewitz, inadequate or incomplete campaign plans cause a “reduction in strength.” After the fall of Baghdad, it became clear that coalition forces did not have a coherent plan to *reconstruct* Iraq’s decayed infrastructure. US Central Command’s campaign culminated on 9 April 2003.^{xlii}

US Central Command quickly got its operational footing, and the reconstruction of Iraq’s infrastructure is currently proceeding apace under the leadership of CJTF-7 and the

Coalition Provisional Authority, commanded by Lieutenant General Ricardo Sanchez and L. Paul “Jerry” Bremer respectively. As of November 2003, CJTF-7 and the CPA had more than 2,000 infrastructure reconstruction projects in progress between them.^{xliii} Despite the flurry of current activity though, US Central Command had not planned on significant operational infrastructure development prior to the commencement of OIF, and US military forces were not prepared for Iraq’s chaotic post-hostilities environment.^{xliv} The reasons for this failure bear closer examination.

Two primary reasons caused the lack of detailed infrastructural planning for Iraq. The first problem was political. As James Fallows has argued in a recent article:

“Because detailed thought about the postwar situation meant facing costs and potential problems, and thus weakened the case for launching a “war of choice” (the Washington term for a war not waged in immediate self-defense), it [postwar planning] could be seen as an ‘antiwar’ undertaking.”^{xlv}

The second problem was the military’s. Joint Doctrine prescribes that operational campaigns occur linearly in four distinct if over-lapping phases: Phase I – Deterrence and Engagement; Phase II – Seize the Initiative; Phase III – Conduct Decisive Operations; and Phase IV – Transition to Post-Hostilities Operations.^{xlvi} Military planners followed this doctrine for OIF, and allocated few resources for operational infrastructure development and other activities that they perceived as occurring in Phase IV. In many quarters of the military, there was a resistance to operational infrastructure development.

Throughout the military interventions of the 1990’s, a large number of senior military officers proclaimed that the US military should not be used for “nation-building” activities. Citing the “Powell Doctrine,” these officers asserted that military forces should be used only for those crises that involved high-intensity combat and vital US interests. Many political

leaders supported this view. On the other hand, operationally brilliant leaders like Marine General Anthony Zinni argued that:

“You can no longer be only the pure, narrow, military thinker and worry about fires and maneuver. Fires and maneuver are just two relatively simple battlefield activities that underlie a vast, ever-increasing number of *other* battlefield activities.”^{xlvi}

General Zinni’s *other* battlefield activities included tasks such as civil affairs, psychological operations, information operations, and operational infrastructure development. According to General Zinni, operational military units would be required to execute these tasks in the frequent military interventions of a new period of international disorder which he foresaw.^{xlvi}

By 1999, General Zinni had become the Commander of US Central Command – General Franks’ immediate predecessor – and had developed a plan for a post-Saddam Iraq termed “Desert Crossing.”^{xlvi} General Zinni’s plan called for the establishment of civil occupation offices in each of Iraq’s 18 provinces, as well as a significantly larger ground force to handle the precarious security situation and the task of reconstructing Iraq’s infrastructure.¹ As General Zinni recently explained:

“The central aim of this plan was to quickly reestablish security to fill the power vacuum and prevent an insurgency or the rise of criminals and foreign terrorists. To meet this end, we added U.S. ground forces to our military plan and nonresistant Iraqi army units to the reconstruction plan.”^{li}

General Zinni’s plan for 18 occupation offices seems very similar, in concept, to General Barno’s plan for establishing 12 PRT’s in Afghanistan. Iraq’s current ambassador to the United States, Rend Rahim Francke, would seem to have supported General Zinni’s post-Saddam, Iraq plan:

“The infrastructure of vital sectors will have to be restored. An adequate police force must be trained and equipped as quickly as possible. And the economy will have to be jump-started from not only stagnation but devastation.”^{lii}

General Franks, under strong guidance from the Office of the Secretary of Defense (OSD), chose not to follow General Zinni's plan.^{liii} At the operational level, planners never got very far beyond Phase III, causing one OIF planner to state: "All the A-Team guys wanted to be in on Phase III, and the B-Team guys were put on Phase IV."^{liv} Continuity, simultaneity, depth, and unity of effort all suffered at the operational level because of the failure to plan for operational infrastructure development.

At the operational-tactical level however, two units within US Central Command integrated operational infrastructure development into their campaign plans and achieved positive results. These units were the 101st Airborne Division (Air Assault), under the command of Major General David Petraeus, and the I Marine Expeditionary Force, commanded by Lieutenant General James T. Conway. General Petraeus, whose command operated in the northern Iraqi city of Mosul, used his discretionary funds to hire unemployed Iraqi soldiers and university professors to repair homes, schools, and factories in his area of operations.^{lv} The effects not only improved the city's infrastructure and the local economy, but also helped create bonds with the Iraqi people.

Lieutenant General Conway's "Commander's Intent" for OIF included securing the oil infrastructure and road networks within I MEF's area of operations, which was in the southern portion of Iraq, as well as the "restoration of Iraqi civil administration/infrastructure IOT [in order to] mitigate human suffering and enable a rapid transition to follow-on coalition forces."^{lvi} General Conway described his approach to operational infrastructure development in a recent interview:

"We're issuing commander's intent. We're describing the desired end-states and applying what resources we can to them...Let's get the schools cleaned out and the

weapons removed from them. Let's rebuild them and regenerate what used to be a highly literate society.”^{lvii}

As General Conway has acknowledged, the Marine Corps has traditionally excelled in small wars operations, dating back to its frequent interventions in Latin American countries in the 1920's and 1930's.

The Marine Corps' *Small Wars Manual*, published in 1940 and cataloging the many lessons learned from these operations, specifically calls attention to the benefits of operational infrastructure development:

“Experience has demonstrated that the construction, improvement, and maintenance of routes of communication, including railroads, is one of the most important factors in a small wars campaign. This is the function of the engineers.”^{lviii}

As operations in the Philippines, Afghanistan, and Iraq have shown, this excerpt from the Marine Corps' *Small Wars Manual* of 1940 is extremely relevant for the GWOT.

Conclusion

This paper has examined three models of operational infrastructure development – the *facilitative*, *creative*, and *reconstructive* models – in three different campaigns, to show that this concept is critical for the GWOT. In each operational campaign that the US has executed since 11 September 2001, operational infrastructure development has played a vital role. It will continue to do so in the campaigns ahead. All branches of the armed forces must embrace operational infrastructure development and grow the appropriate core competencies to support Joint Task Force Commanders world-wide as they plan for more operations in the GWOT. Operational commanders not only have the responsibility for planning operational infrastructure development missions, but also for integrating them with the other elements of combat and national power, and synchronizing them within their *operational schemes*. As

we have seen, integration and synchronization of operational infrastructure development can be decisive in attainment of strategic and operational objectives.

The US should expect all of its military forces to perform their respective missions in expeditionary environments that blend high-intensity combat with operational infrastructure development, or what former Marine Corps Commandant General Charles Krulak has labeled as “the three block war.” Every operational command must have some operational infrastructure development capability embedded within it to complete these missions. To isolate operational infrastructure development from the other essential combat tasks ignores the expeditionary environments that our forces are deploying to in the GWOT, and the ultimate nature of the war.

Operational commanders can use operational infrastructure development to create *decisive points* along *lines of operations* for “effects-based operations,” as shown by General Wurster on Basilan, General McNeil in Afghanistan, and Generals Petraeus and Conway in Iraq. Operational planning that considers operational infrastructure development as a simultaneously occurring battlefield activity is an imaginative way to achieve ambitious ends with limited means. Finally, joint doctrine should mature to reflect the non-linear nature of operations in the GWOT. As a guide, joint doctrine should become more closely aligned to the operational approach articulated by the Marine Corps’ *Small Wars Manual*, which advocates integration of combat tasks with civil affairs, information operations, psychological operations, and operational infrastructure development.

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