Center for Army Analysis

Deployed Analyst History Report–Volume I

Analytic Support to Combat Operations in Iraq (2002–2011)

MARCH 2012

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DEPLOYED ANALYST HISTORY REPORT–VOLUME I

ANALYTIC SUPPORT TO COMBAT OPERATIONS IN IRAQ (2002-2011)

SUMMARY

PROJECT PURPOSE: To capture the experience of analysts deployed from the Center for Army Analysis to Iraq for Operation Iraqi Freedom and Operation New Dawn.

PROJECT SPONSOR: The Center for Army Analysis.

PROJECT OBJECTIVE: To document theater experience/lessons learned in order to provide information to and prepare deploying operation research analysts for their assignments.

PROJECT SCOPE: To examine the roles, requirements, methods, tools, and lessons learned of deployed analysts.

COMMENTS AND QUESTIONS: Director, Center for Army Analysis, Attn: CSCA-OA-R3, 6001 Goethals Road, Suite 102, Fort Belvoir, VA 22060-5230.

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PREFACE

The Center for Army Analysis (CAA) has supported ongoing operations in Iraq and Afghanistan from their initial planning phase. This support has enhanced planning, execution, assessment and refinement of missions past and present.

In order to develop the military Functional Area 49 and civilian Career Field 1515, comprised of Operations Research/Systems Analysis (ORSA) analysts, and to advance and shape future support to the Operations Research Community, CAA provides this document as a historical reference.

The military developed the ORSA career field in order to provide the warfighter with direct analytic support. Peacetime analyses will continue to evolve and retain high importance; however, support to warfighting commanders and their Soldiers will always remain the main effort. This volume is the first edition of the summary work of CAA deployed ORSA analysts, and covers the combat operations in Iraq from November 2002 through May 2011. CAA will publish future editions as operations continue and the ORSA Community matures in structure and capacity. A classified version of this document, "History of the Center for Army Analysis Support to Operations Iraqi Freedom and New Dawn" is available to credentialed persons by contacting the Center for Army Analysis**.**

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FIGURES

1 THE CENTER FOR ARMY ANALYSIS MISSION AND PRIORITIES

The Center for Army Analysis (CAA) mission is to conduct analyses of Army forces and systems in the context of joint and combined warfighting. CAA is a Field Operating Agency of the Deputy Chief of Staff (DCS), G-8. The functions of CAA are to:

- Analyze strategic concepts and military options.
- Estimate Force requirements for the Army's input into the Planning, Programming, Budgeting, and Execution System (PPBES).
- Evaluate the Army's ability to mobilize and deploy forces.
- Evaluate Army force capabilities.
- Design Army forces and force alternatives.
- Develop theater force-level scenarios.
- Conduct resource analyses.

CAA supports current operations by: a) forward-deploying CAA Operations Research/Systems Analysis (ORSA) analysts, who are military functional area (FA) 49s and civilian General Schedule (GS) 1515s; b) conducting analyses at CAA through reachback support; and c) providing ORSA Institutional Development to prepare and support deployed and reachback personnel.

Since 2002, CAA's military and civilian ORSA analysts have supported Operational Commanders (OCs) in both Iraq and Afghanistan, and contingency operations around the globe. CAA continues to support Operation New Dawn (OND) and Operation Enduring Freedom (OEF) Commanders at the operational and strategic levels, primarily through deployed analysts, whose analyses encompass significant activity trending and forecasting, force-sizing and structuring recommendations, economic forecasting, capability-gap identification, materiel fielding and utilization assessments, and medical asset allocation recommendations. Additionally, CAA has provided several enduring instructional resources, including a deployed analyst Handbook; an ORSA Handbook for the Senior Commander; a Toolkit that includes hardware and specialized software for deployed analysts; and a two-week Program of Instruction (POI) focused on preparing ORSA analysts for their deployments. These proactive efforts enable OCs and their staffs to combine Institutional and Operational planning into strategic recommendations for senior leaders.

In addition, through reachback support and highly skilled supplemental deployable teams, CAA performs analysis functions for the Department of the Army (DA) and supports deployed analysts at the United States Forces - Iraq (USF-I), the Combined Security Transition Command Afghanistan (CSTC-A), and the North Atlantic Treaty Organization's International Security Assistance Force (NATO-ISAF).

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2 PURPOSE

2.1 Purpose of Project

The purpose of this project is to chronicle the experiences and studies of deployed ORSA analysts in an effort to inform future analysts and the Department of Defense (DOD) of methods and means for enhancing operational and strategic plans for combat missions.

2.2 Purpose of Deploying Analysts

From the beginning of the Global War on Terrorism (GWOT; renamed "Overseas Contingency Operation" by the U.S. Obama Administration), CAA realized the importance of supporting the Operational Commander (OC) and voluntarily deploying analysts to Afghanistan and Iraq. The United States (U.S.) DOD Chairman of the Joint Chiefs of Staff (CJCS) soon recognized the need for direct analytic support to the warfighter, documenting such in the Organizational Command's Joint Manning Document (JMD). By June 2009, DOD was slotting the majority of deployed analysts against validated positions in the JMD. All deployed CAA analysts, whether military or civilian, volunteer for their assignments.

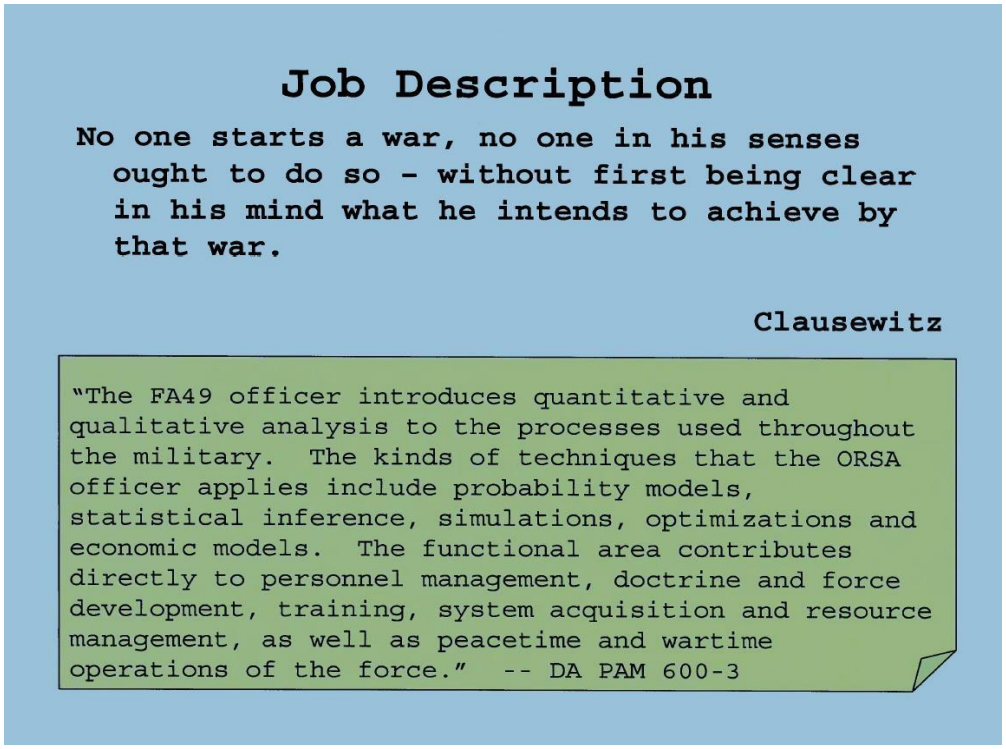


Figure 2 Quote from "On War" by Clausewitz and DA PAM 600-3

Figure 2 summarizes the basic job description of FA 49/ORSA analysts. DA Pamphlet (PAM) 600-3 describes the duties of an ORSA analyst at analytic agencies such as CAA, across DOD, and in the military organizations of other nations. During wartime, an ORSA analyst must

provide timely analytic products. These products provide commanders with critical information used to make operational decisions.

The duties of the CAA analyst have remained virtually the same since the first deployment, regardless of the theater. The deployed analyst's overall responsibility is to provide commanders and their staffs with operational and system-effective analyses, accomplished through:

- Collecting and analyzing information.
- Analyzing friendly and enemy operational patterns and trends.
- Briefing on weekly attack and casualty trends.
- Assessing campaigns and plans.
- Analyzing baselines and statistics.
- Measuring effectiveness.
- Analyzing geospatial and temporal patterns.
- Conducting predictive analysis.
- Prioritizing requirements estimates and equipment-fielding.
- Modeling military systems and processes.

Deploying analysts into the combat zone has proven beneficial for the entire Army, providing commanders and their staffs with immediate analytic support. Furthermore, through reachback support, CAA provides commanders with access to the expertise and capabilities of the entire CAA organization, for both short- and long-term analysis. Several long-term efforts conducted by CAA have influenced procurement decisions and reshaped Army doctrine.

In addition, CAA itself has benefited in numerous ways. Combat experience provides analysts with capabilities-development not possible through simulation or modeling alone. CAA analysts in the continental United States (CONUS) also benefit from deployments through the Deployed Analyst Reachback Program. CAA is now better equipped to provide relevant analyses to strategic military planners (e.g., risk analysis, course of action (COA) analysis, requirements analysis, resource planning, and materiel development and acquisition analysis).

3 AREAS OF OPERATIONS COMPARING AFGHANISTAN AND IRAQ

3.1 General

Afghanistan and Iraq are very different operational environments. There is no "one size fits all" analytic solution for success in either arena.

COMPARISON	AFGHANISTAN	IRAQ
Area	652,230 sq km	438,317 sq km
Elevation	258 – 7,485 m	0 – 3,611 m
Population	29,835,392	30,399,572
$ Per Capita	$900	$3,800
Revenues	$1.0 B	$ 52.8 B
Expenditures	$3.3 B	$72.4 B
Electricity	285.5 M KwH	46.4 B KwH
Telephone Lines	129,300	1,108,000
Telephones Mobile	12 M	19.722 M
Highways	42,150 km/12,350 km/29,800 km (total/paved/unpaved)	44,900 km/37,851 km/7,049 km (total/paved/unpaved)
Railways	0 km	2,272 km
Paved Airports	19	75

Figure 3-1 Afghanistan and Iraq, Demographics Data Comparison, July 2011

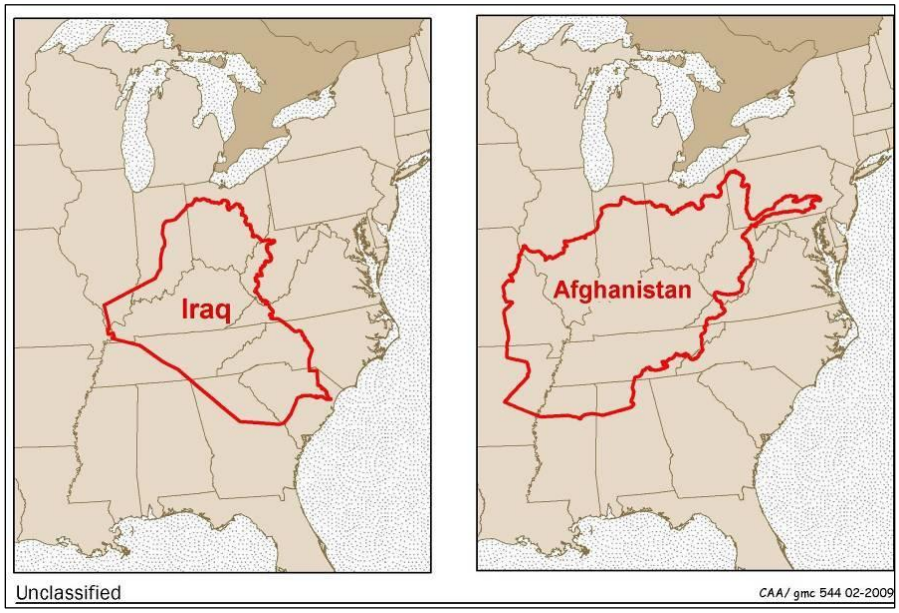


Figure 3-2 Iraq and Afghanistan Areas of Comparison

Figure 3-3 Map of Afghanistan with Major Cities and Neighboring Countries

Figure 3-4 Map of Iraq with Major Cities and Neighboring Countries

3.2 Topography

3.2.1 Topography – Afghanistan

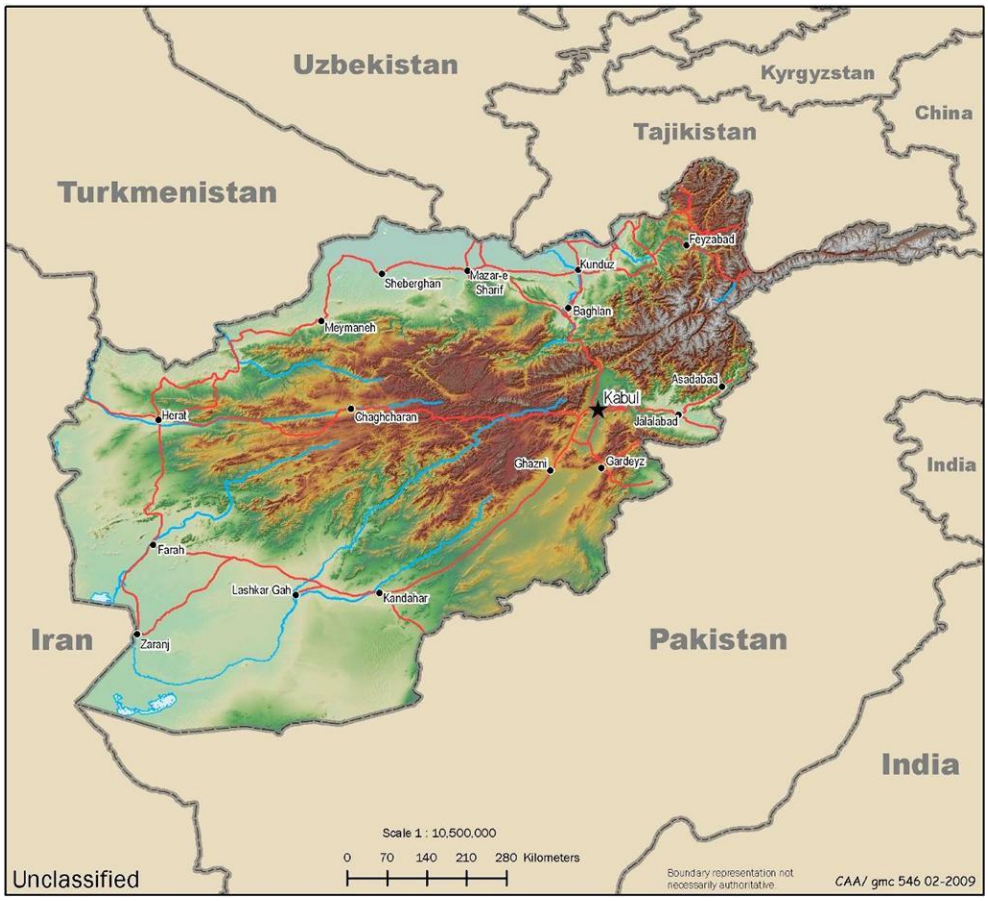


Figure 3-5 Afghanistan Topography

Afghanistan is one third larger than Iraq, having 652,230 square kilometers of territory. The Hindu Kush Mountains, dividing Afghanistan, are part of the Himalayas. These mountains reach heights of nearly 7,620 meters (Figure 3-5). For comparison, the highest mountain in the United States (U.S.) is Mt. McKinley at 6,166 meters high.

The topography in Afghanistan separates the country, north and south. With limited road access and even more limited air transportation, the Government of Afghanistan (GoA), within the Islamic Republic of Afghanistan (IRoA), has the monumental task of extending its reach throughout the country. During Afghanistan's winter months and periods of inclement weather, traveling through mountain passes between the north and south is extremely treacherous. Projecting government influence over the entire population remains challenging and critical.

Figure 3-6 Iraq Topography

3.2.2 Topography – Iraq

The topography in Iraq has no negative effect on its population. Iraq is primarily flat with broad plains. Reedy marshes with large flood zones exist along its southern border. As shown in Figure 3-6, Iraq's mountainous terrain is concentrated along the northern border. These mountains have only a local effect and do not interfere with transportation between communities. The highest point in Iraq is an unnamed peak at 3,611 meters high.

A modern network of highways and roads connects the major cities, towns, and villages in Iraq. In the 1970s, expressways and bypasses reshaped Iraq's capital, Baghdad. By 2008, Iraq had constructed 2,272 kilometers of railway and 75 airports with paved runways. While badly damaged from years of conflict and poor maintenance, a significant infrastructure remains.

3.3 Population

3.3.1 Population - Afghanistan

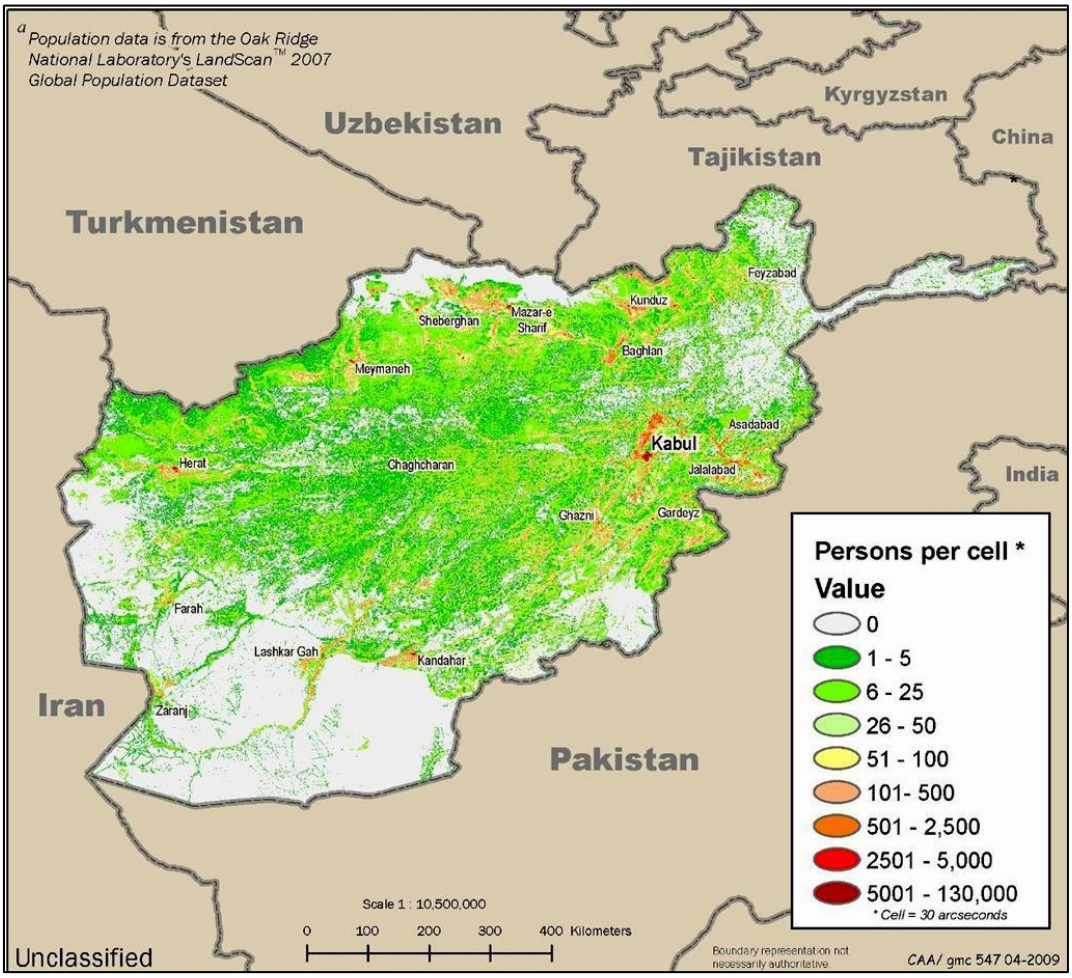


Figure 3-7 Population Distribution in Afghanistan, 2007

Afghanistan initiated a census in 1979 but never completed it, due to the outbreak of war and civil unrest. Since 1979, millions of Afghans have moved from their original province within Afghanistan or have left Afghanistan altogether, making it difficult to accurately determine the current population figure. The United Nations (UN) planned a population census for June 2008, yet postponed it for reasons of voter registration confusion and poor security. In July 2011, the U.S. Bureau of the Census estimated Afghanistan's population at 29,835,392 based on statistics from population censuses, vital statistics, and registration systems. Population centers in Afghanistan exist sporadically throughout the country and most lack infrastructure, communications and transportation networks. Figure 3-7 depicts the population distribution in 2007.

The topography in Afghanistan determines the location of major population centers. Reaching the general population remains difficult for both the GoA and the Coalition. The center of the country is virtually uninhabited. The western portions of the country are sparsely populated, and the settlements that do exist are along the Ring Road. The main transportation artery running

from Kabul to Kunduz circumscribes the entire country. The major population centers are typically provincial capitals. In 2011, Afghanistan had 34 provinces and over 400 districts. Connecting the provincial capitals to the Ring Road is one of the Government's top priorities.

3.3.2 Population-Iraq

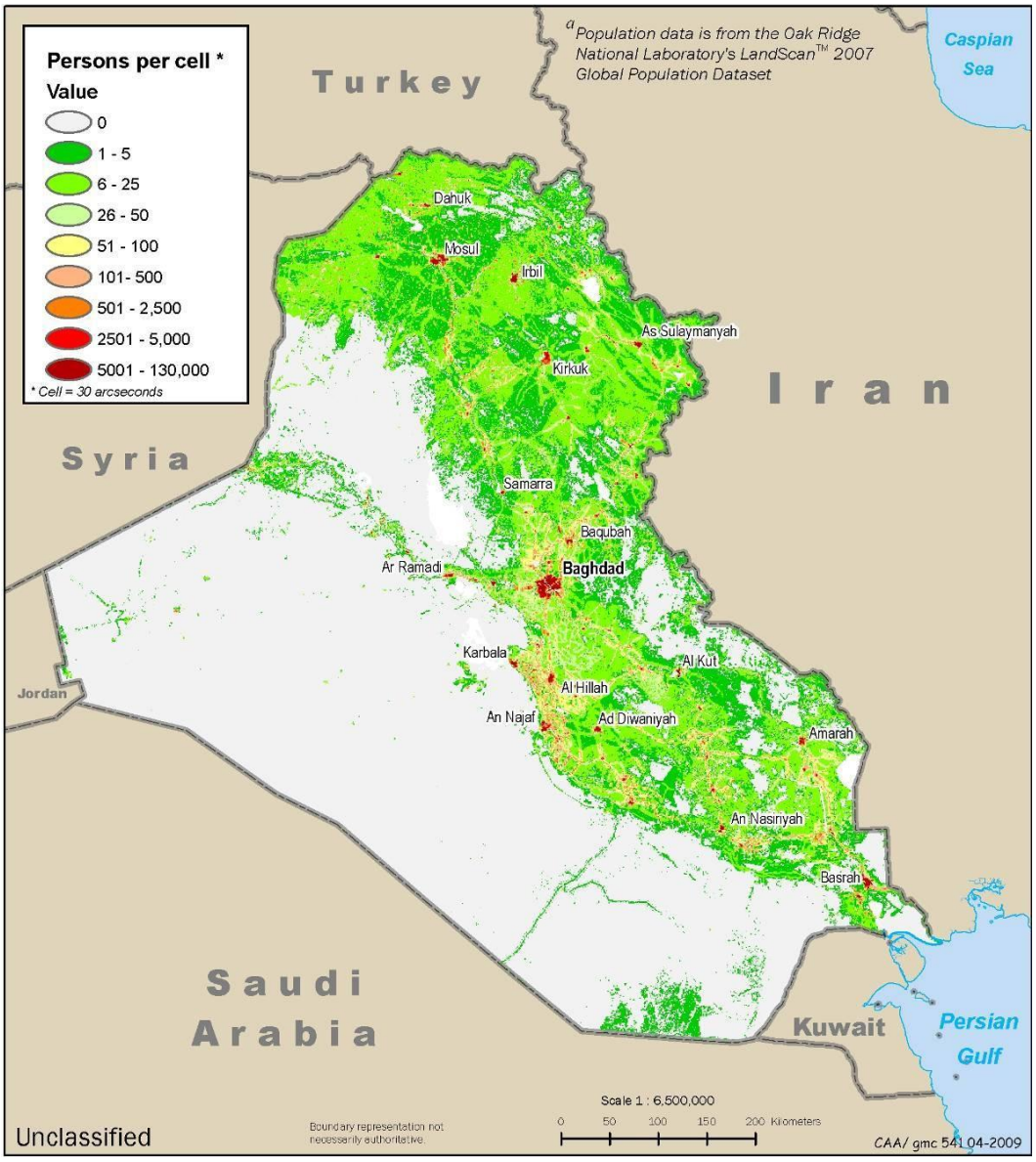


Figure 3-8 Population Distribution in Iraq, 2007

Formerly part of the Ottoman Empire, Britain occupied Iraq during the course of World War I. In 1920, Iraq transitioned to a League of Nations mandate under the United Kingdom administration. Iraq attained its independence as a kingdom in 1932. Although Iraq became a republic in 1958, a series of strongmen ruled the country until 2003. The last was Saddam Hussein. Iraq and Iran engaged in a costly war from 1980-1988. In August 1990, Saddam Hussein seized Kuwait, and a U.S.-led UN coalition of forces expelled Iraqi forces during the Gulf War of January-February 1991. Following Kuwait's liberation, the UN Security Council

required Iraq to scrap all weapons of mass destruction and long-range missiles and allow UN verified inspections. Continual Iraqi noncompliance with UN Security Council (UNSC) resolutions over a period of 12 years led to the U.S.-led invasion of Iraq in March 2003 and the ouster of the Saddam Hussein regime. U.S. Forces remained in Iraq, under a UNSC mandate through 2009 and under a Status of Forces Agreement (SOFA) thereafter, helping to provide security and train and mentor Iraqi Security Forces (ISF). In October 2005, Iraqis approved a constitution in a national referendum and, pursuant to this document, elected a 275-member Council of Representatives (CoR) in December 2005. The CoR approved most cabinet ministers in May 2006, marking the transition to Iraq's first constitutional government in nearly a half century. In January 2009, Iraq held elections for provincial councils in all provinces except for the three provinces comprising the Kurdistan Regional Government and Kirkuk province. Iraq held a national legislative election in March 2010; after nine months of deadlock, the CoR approved the new government in December 2010.

In July 2011, the U.S. Census Bureau estimated Iraq's population at 30,399,572. Between 75-80 percent of Iraq's population is Arab; Kurds make up between 15-20 percent. The Assyrians, Iraqi Turkmen, Persians and Armenians, living in the north and northeastern part of the country make up the other 5 percent. Approximately 20,000 Marsh Arabs live in southern Iraq. Approximately 300,000 Iraqis are of African descent.

3.4 Infrastructure and Economy Comparison

3.4.1 Infrastructure and Economy - Iraq

Iraq produces almost 160 times the electrical power of Afghanistan, approximately 46.4 billion kilowatts per hour compared with Afghanistan's 285.5 million kilowatts per hour. Iraq has a small functioning rail system, while Afghanistan has none whatsoever. Iraq has over eight times the telephone lines of Afghanistan (1.1 million vs. 0.13 million).

In 2011, the per capita income in Afghanistan was a mere $900 compared with $3,800 in Iraq. Iraq has an exportable natural resource—oil—and the necessary infrastructure to support it. For years, Afghanistan has relied on illegal drug cultivation, specifically opium, to fund its economy. The recent discovery of over a billion dollars worth of untapped mineral deposits — including huge veins of iron, copper, cobalt, gold and critical industrial metals like lithium—may radically change Afghanistan's economic future. One of the biggest reconstruction hurdles in Afghanistan is its illegal drug trade. Eradicating and interdicting drugs is the easier part. Developing transportation, trade, and economic support systems is more challenging. In today's environment, Afghan farmers who produce legitimate crops cannot compete with their criminal counterparts.

Warfare has plagued Afghanistan for over 20 years. Saddam Hussein tyrannized Iraq for a similar period.

3.4.2 Infrastructure and Economy - Afghanistan

Afghanistan started with virtually nothing, and warfare destroyed what little it had. Road construction is one of the primary efforts in Afghanistan. In 2003, Afghanistan had merely 3,000 kilometers of paved roads. By 2011, that number had quadrupled to 12,350 kilometers. Figure 3-9 shows the Main Supply Routes (MSRs) and the Alternative Supply Routes (ASRs) which existed in Afghanistan in the spring of 2009.

Figure 3-9 Afghanistan MSRs and ASRs

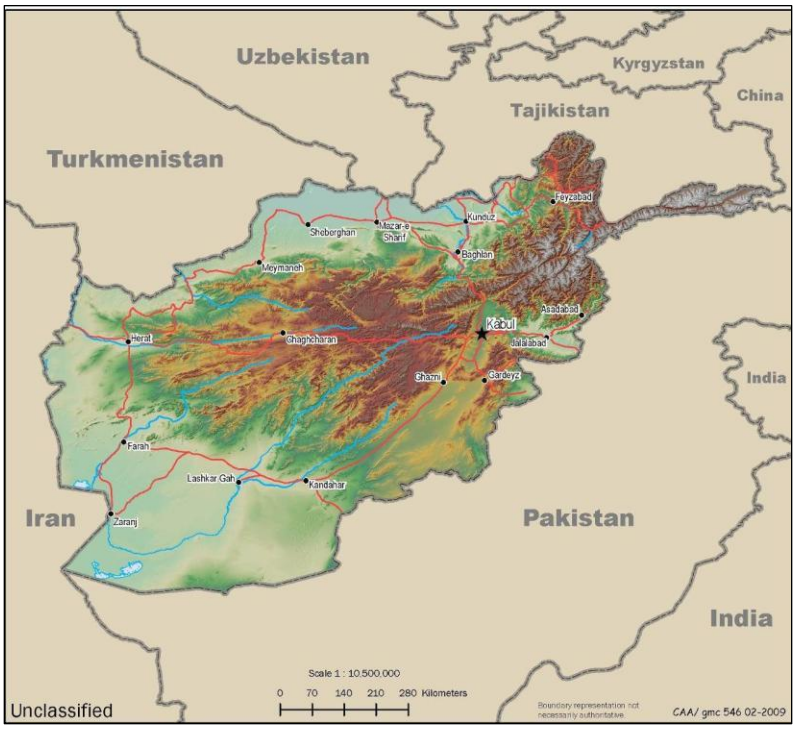


Figure 3-10 Afghanistan MSRs and ASRs with Topography

Figure 3-10 shows the MSRs and ASRs overlaid on a topographic map to highlight the issues presented by the topography. The Ring Road–funded by the International Community–is the primary road throughout Afghanistan. Connecting all provincial capitals to the Ring Road is a key construction objective. The sections connecting Kabul-Kandahar, Kabul-Pakistan, and

Herat-Iran are now complete. The section between Kabul and Kandahar helps support the Coalition, which is located across the east/southeast portions of Afghanistan. In addition, Afghanistan needs roads to Pakistan and Iran for international commerce and improved relations. Although significant resources are committed to the Ring Road, funding for provincial and secondary roads is not available. Until the transportation network is complete, Afghanistan will struggle, both politically and economically.

3.4.3 Infrastructure and Economy - Iraq

In 2011, Iraq's oil revenue accounted for 90 percent of its foreign exchange. The Government of Iraq (GoI) is investing in other sources of revenue for the country's future economic growth. Iraq's agricultural products currently include wheat, barley, rice, and vegetables. Its industrial base includes petroleum, chemicals, textiles, leather, and construction materiel.

The Tigris and Euphrates rivers, both historically used for transportation, run the length of Iraq. In addition, Iraqis have created a third river, which they use for transportation. Figures 3-11 and 3-12 show the Major Supply Routes and the Alternate Supply Routes (MSRs and ASRs) used in the spring of 2009.

Figure 3-11 Iraq MSRs and ASRs

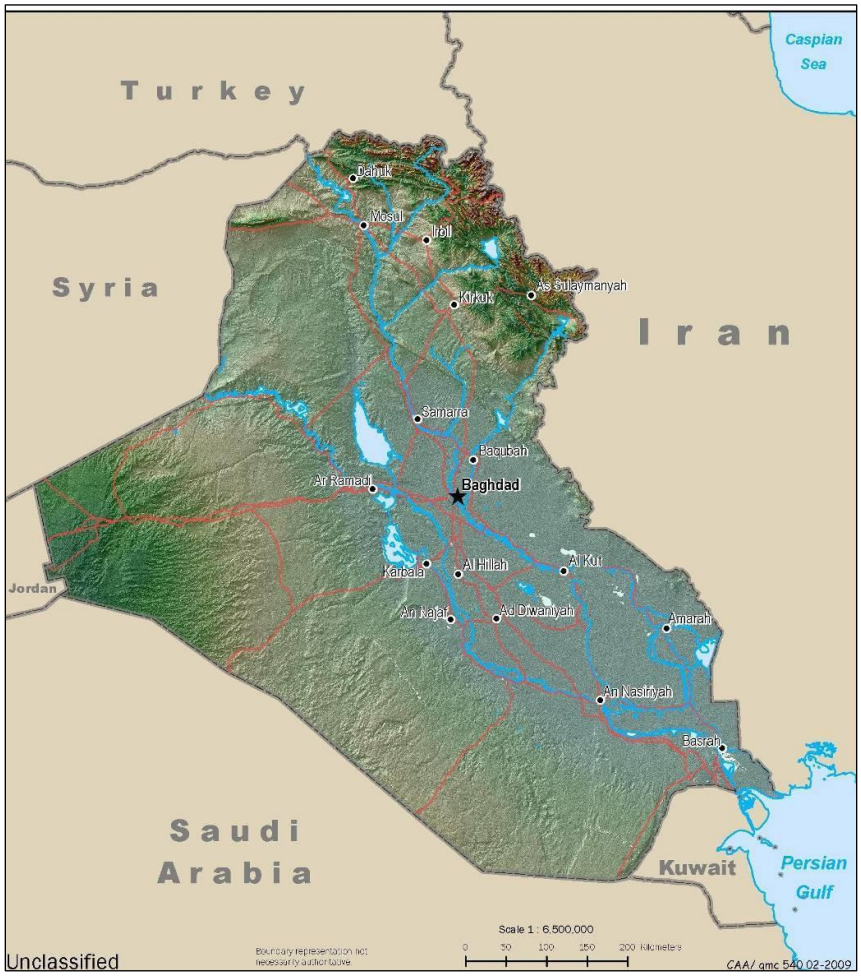


Figure 3-12 Iraq MSRs and ASRs with Topography

3.5 Cultural Issues

3.5.1 Cultural Issues - Afghanistan

Figure 3-13 Distribution of Ethnic Groups in Afghanistan, 2009

Afghans display pride in their country, their ancestry (Figure 3-13), their religion, and their independence. Like other highlanders, Afghans have high regard for personal honor, clan loyalty, and their tradition to carry and use arms. Since time immemorial, Afghans have participated in clan warfare and internecine feuding, making it difficult for foreign invaders to hold land.

The tribal system requires tribesmen to be loyal to their tribal chiefs and local clan leaders (Khans). The GoA's political success rests in its ability to overcome these tribal challenges and achieve popular support for a national government.

Nearly all of Afghanistan's population, 99 percent, is Muslim. Approximately 80 percent are Sunni, 19 percent are Shi'a, and 1 percent other. Before the mid-1980s, about 30,000 to 150,000 Hindus and Sikhs lived in Jalalabad, Kabul, and Kandahar. A small Jewish community fled the country after the 1979 Soviet Invasion.

3.5.2 Cultural Issues - Iraq

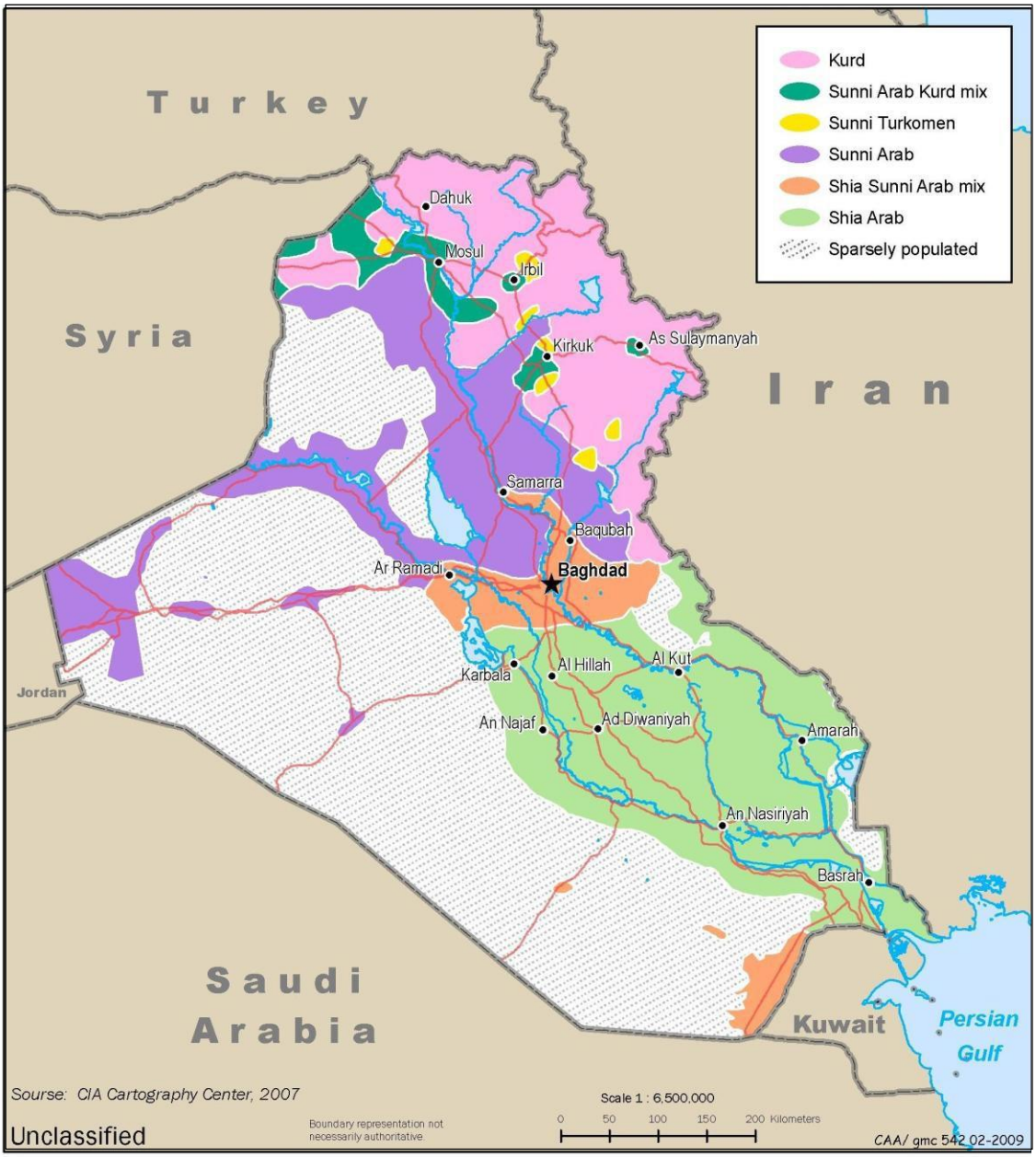


Figure 3-14 Distribution of Ethnic Groups in Iraq, 2007

Figure 3-15 Distribution of Tribes in Iraq, 2003

Iraq is home to many different ethnic groups (Figure 3-15). Arabs are the most numerous, followed by Kurds, Iraqi Turkmen and Assyrians. Other distinct groups are Armenians, Persians, Shabaks and Lurs. Iraqis consider Kurdish and Arabic their official languages. The

commonly spoken language of Iraq is Arabic. In the north, Iraqis speak Kurdish and Syriac. English is the most commonly spoken Western language.

Both Sunni and Shi'a Muslims share the most fundamental Islamic beliefs and articles of faith. The differences between these two main sub-groups are political, not spiritual. However, over the centuries, these political differences have spawned a number of varying practices and positions that carry spiritual significance. Christians are the largest religious minority in Iraq (most descend from those who did not convert to Islam after the 7th century). Chaldeans (linked to Catholicism), Nestorians (also called Assyrians), Aconites and Eastern Orthodox are the sub-sects of Christianity. Small communities of Baha'is, Mandaeans, and Yezidis also exist. Until 1948, Jews formed a community of approximately 150,000; as of this writing, only a small community remains. Most Iraqis, 97 to 99 percent, are Muslim (two-thirds Shi'a and one-third Sunni). Christians and others make up 1 to 3 percent.

4 COMMAND STRUCTURE FOR OPERATIONS IRAQI FREEDOM (OIF) / NEW DAWN (OND)

4.1 Operation Iraqi Freedom (OIF)

Before describing the evolving command structure of OIF, the term CFLCC (Coalition Forces Land Component Command) warrants explanation. CFLCC's mission is to conduct successful military land operations. It is usually subordinate to a Combatant Command (CC), and can consist of any combination of forces from Army, Navy, Marine, Air Force and Special Forces.

On 4 September 2002, Lieutenant General David D. McKiernan assumed command of Third U.S. Army/U.S. Army Forces USCENTCOM and CFLCC. He oversaw the March 2003 ground war invasion against Saddam Hussein and his regime. Lieutenant General McKiernan directed both corps-sized formations involved in the initial 2003 Iraq invasion, the 1st Marine Expeditionary Force (I MEF) and U.S. V Corps.

On 14 June 2003, Combined Joint Task Force-Seven (CJTF-7), under the command of Lieutenant General William S. Wallace, replaced CFLCC as the operational headquarters (HQ) for all ground units in the USCENTCOM Theater of Operations and began reporting directly to USCENTCOM. CFLCC became the primary logistics hub in theater, retained charge of logistics for all land forces and continued as the forward element of USCENTCOM. CFLCC managed all Army service component issues in theater. Lieutenant General McKiernan served as the CFLCC Commander until 15 October 2004.

In July 2003, Lieutenant General Ricardo Sanchez assumed command of CJTF-7. He had operational control of all forces within Iraq, including Multi-National Forces from the United Kingdom (UK), Spain, Australia and other countries.

The CJTF-7 conducted offensive operations to neutralize the enemy and secure the area for the establishment of the Coalition Provisional Authority (CPA). Additionally, CJTF-7 organized, trained and certified the Iraqi Armed Forces (IAF). With the support of 130,000 troops from more than 36 countries around the world, CJTF-7 led the international effort. V Corps Soldiers filled CJTF-7 Command Staff positions until the U.S. allocated sufficient troop strength. On 15 May 2004, the four-star strategic HQ, Multi-National Forces - Iraq (MNF-I), and the three-star operational headquarters, Multi-National Corps - Iraq (MNC-I) replaced CJTF-7. Six months prior to the event, senior leaders made the decision to disband CJTF-7 and to distribute its mission with the intent that strategic vs. day-to-day responsibilities would receive more focused attention under separate commands.

Multi-National Security Transition Command - Iraq (MNSTC-I) was a branch of the Multi-National Forces - Iraq (MNF-I) and held responsibility for developing, organizing, training, equipping, and sustaining the Iraqi Security Ministries (MoD and MoI) and their associated Iraqi Security Forces (ISF), the Iraqi Army (IA) and the Iraqi Police (IP).

Commanding Generals of MNSTC-I:

- Lieutenant General David H. Petraeus, June 2004 to September 2005
- Lieutenant General Martin E. Dempsey, September 2005 to June 2007
- Lieutenant General James M. Dubik, June 2007 to July 2008

- Lieutenant General Frank G. Hemlock, July 2008 to October 2009
- Lieutenant General Michael D. Barber, October 2009 to January 2010

Multi-National Corps - Iraq, headquartered at Camp Victory, Baghdad, was the tactical unit responsible for command and control of operations throughout Iraq.

Commanding Generals of MNC-I:

- Lieutenant General Thomas F. Metz May 2004 to January 2005
- Lieutenant General John R. Vines, January 2005 to January 2006
- Lieutenant General Peter W. Chiarelli, January 2006 to December 2006
- Lieutenant General Raymond T. Odierno, December 2006 to February 2008
- Lieutenant General Lloyd J. Austin III, February 2008 to April 2009
- Lieutenant General Charles H. Jacoby Jr., April 2009 to January 2010

Commanding Generals of MNF-I:

- General George W. Casey Jr., July 2004 to February 2007
- General David H. Petraeus, February 2007 to September 2008
- General Raymond T. Odierno, September 2008 to January 2010

On 1 January 2010, with more than 112,000 American troops deployed to Iraq, CF reached another milestone in the evolution of OIF, the merger of all major commands into one. Multi-National Security Transition Command – Iraq (MNSTC-I), Multi-National Corp – Iraq (MNC-I), and Multi-National Forces – Iraq (MNF-I) became United States Forces – Iraq (USF-I). United States Division – North (USD-N) replaced Multi-National Division – North (MND-N), United States Division – Center (USD-C) replaced United States Forces – West (USF-W) and Multi-National Division – Baghdad (MND-B), and United States Division – South (USD-S) replaced Multi-National Division – South (MND-S). "This ceremony marks another significant transition here in Iraq....It represents another important milestone in the continued drawdown of American Forces" (General Petraeus, USCENTCOM Commanding General).

Commanding Generals of USF-I:

- General Raymond T. Odierno, January 2010 to September 2010
- General Lloyd J. Austin III, September 2010 to Present

4.2 Operation New Dawn (OND)

On 31 August 2010, U.S. President, Barack Obama, delivered a National White House Speech declaring an end to Combat Operations in Iraq, fulfilling his campaign pledge to stop a war he opposed from its inception. He stated, "Tonight, I am announcing that the American combat mission in Iraq has ended." He heralded his belief "that out of the ashes of war, a new beginning could be born in this cradle of civilization." He said that the U.S. had met its responsibility. On 1 September 2010, the United States transitioned from Operation Iraqi Freedom (OIF) to Operation New Dawn (OND) and declared an end to combat operations in Iraq. By year's end, President Obama had withdrawn all American forces from Iraq. By year's end, President Barack Obama had withdrawn all United States forces from Iraq.

5 DEPLOYED ANALYSTS TO OPERATIONS IRAQI FREEDOM (OIF) / NEW DAWN (OND)

5.1 Chronological Order of CAA OIF/OND Deployments (2002-2011)

CAA DEPLOYED ORSA	SECTION	COMMAND	DEPLOYED	RETURNED
Captain Max Moore	5.2.1	CFLCC	Nov-02	Apr-03
Major Michael Pannell	5.2.1	CFLCC	Nov-02	Dec-02
Captain Allison Stewart	5.2.2	CFLCC	Jun-03	Sep-03
Major Rob Kewley	5.2.3	CJTF-7	Sep-03	Feb-04
Dr Karsten Englemann	5.2.4	CJTF-7	Dec-03	Mar-04
Major Andy Farnsler	5.2.5	MNC-I	Jan-04	Jul-04
Mr. Stewart Smith	5.2.6	MNC-I	Feb-04	May-04
Mr. John Bott	5.2.7	MNC-I	May-04	Oct-04
Major Stephanie Tutton	5.2.8	MNC-I	Jun-04	Dec-04
Major Eric Hansen	5.2.9	MNC-I	Oct-04	Apr-05
Major Loren Eggen	5.2.10	MNC-I	Dec-04	Jun-05
Lieutenant Colonel Dennis Day	5.2.11	MNC-I	Mar-05	Sep-05
Lieutenant Colonel Tom Rothwell	5.2.11	MNC-I	May-05	Nov-05
Major Nathan Dietrich	5.2.12	MNC-I	Aug-05	Feb-06
Lieutenant Colonel Dan Mahoney	5.2.12	MNC-I	Oct-05	Apr-06
Major Mike Corson	5.2.13	MNC-I	Feb-06	Jul-06
Major Andy Farnsler	5.2.14	MNC-I	Mar-06	Dec-06
Ms. Heather Brownfield	5.2.15	MNC-I	Jul-06	Dec-06
Lieutenant Colonel Steven Stoddard	5.2.16	MNC-I	Nov-06	Mar-07
Mr. Scott Sanborn	5.2.17	MNC-I	Dec-06	May-07
Major Rich Bell	5.2.18	MNC-I	Feb-07	Sep-07
Ms. Belinda Scheber	5.2.19	MNC-I	Feb-07	Apr-07
Major Pierre Jutras	5.2.20	MNC-I	May-07	Nov-07
Lieutenant Colonel Kirk Benson	5.2.21	MNSTC-I	May-07	Jun-07
Lieutenant Colonel Todd Henry	5.2.22	MNC-I	Jul-07	Jan-08
Lieutenant Colonel Carlos Lizardi	5.2.23	MNF-I	Sep-07	Mar-08
Lieutenant Colonel Wade Yamada	5.2.24	MNC-I	Oct-07	Apr-08
Lieutenant Colonel Rob Shearer	5.2.25	MNC-I	Jan-08	Jun-08
Ms. Heather Brownfield	5.2.26	MNC-I	Mar-08	Oct-08
Lieutenant Colonel David Sanders	5.2.27	MNF-I	Mar-08	Sep-08
Major Marvin King	5.2.28	MNC-I	May-08	Nov-08
Lieutenant Colonel Rob Kolb	5.2.29	MNF-I	Aug-08	Mar-09
Mr. Stuart Wilkes	5.2.30	MNC-I	Sep-08	Mar-09
Lieutenant Colonel Dave Smith	5.2.31	MNSTC-I	Jul-08	Jul-09
Lieutenant Colonel James Ware	5.2.32	MNC-I	Nov-08	Apr-09
Lieutenant Colonel Bob Bradford	5.2.33	MNF-I	Jan-09	Jul-09
Mr. Ron Kollhoff	5.2.34	MNFI	Feb-09	Aug-09
Lieutenant Colonel John Schotzko	5.2.35	MNC-I	Apr-09	Oct-09
Major Ryan Squires	5.2.36	MNF-I	Jul-09	Jan-10
Mr. Jason Southerland	5.2.37	MNF-I	Jul-09	Jan-10
Lieutenant Colonel John Dinges	5.2.38	USF-I	Dec-09	Jul-10

CAA DEPLOYED ORSA	SECTION	COMMAND	DEPLOYED	RETURNED
Major Matt Dorsey	5.2.39	USF-I	May-10	Nov-10
Ms. Renee Carlucci	5.2.40	USF-I	Nov-10	May-11

5.2 Deployed Analyst Reports

5.2.1 CAA deployed ORSA Analysts in OIF - Major Michael Pannell and Captain Max Moore (CFLCC)

On 25 November 2002, CAA deployed Major Pannell and Captain Moore to Kuwait and Qatar to provide analytic Support to Kuwait for Internal Look (SKIL) '03, the last major rehearsal prior to OIF. Based on a mutual agreement between Colonel Bertha—the Operational Capability Assessments (OCA) Southwest Asia (SWA) Division Chief—and the CFLCC C5, Captain Moore remained at Camp Doha, Kuwait with the CLFCC CJ5 throughout initial combat operations (he redeployed on 15 April 2003), while Major Pannel returned to CAA on 22 December 2002 to provide reachback support. Captain Moore and Major Pannell performed their work jointly, Major Pannell in reachback and Captain Moore from Kuwait. Their work will be presented here as one deployment.

As the first CAA analysts to deploy in support of OIF, Major Pannell and Captain Moore assembled a sufficient set of tools. Their hardware consisted of laptops, Sun workstations, external hard drives, and hubs for secure data sharing, printers, hand scanners, zip drives, compact disk (CD) writers and a projector. Their software consisted of Microsoft (MS) Office Suite, Falcon View, cartographic software, JAVA programming language, and multiple operating systems. They also took existing combat simulations, the Joint Integrated Contingency Model (JICM), the Concepts Evaluation Model (CEM), the Tactical Warfare (TACWAR) Simulation Model, the Discrete Event Simulations model, the AWESIM^{TM} (general-purpose simulation system), Arena, Promodel, the Joint Military Art of the Command Environment (JMACE) model, and visualization tools and other existing simulation tools.

In 2002, the CFLCC organizational structure was evolving, and CAA did not deploy Major Pannell and Captain Moore against specific JMD positions. Their duties were not well defined. Initially, no position description for the CFLCC ORSA analyst existed. Major Pannell and Captain Moore developed the following position description based on the duties they performed:

- Conduct strategic, operational and tactical campaign analysis in support of major theater operations and contingency plans for Third U.S. Army in the USCENTCOM Area of Responsibility (AOR).
- Plan and conduct research efforts employing appropriate analytic methods, tools, and computer simulations.
- Produce and present logical analytic products to assist the CFLCC commander and his planning staff.
- Represent CAA as an embedded and forward-deployed analyst.
- Provide analytic support to the Global War on Terrorism (GWOT) as part of Operations Enduring Freedom and Iraqi Freedom.

The C5 battle rhythm began at 0830 with a C5 morning update. At 0930, C5 held an Operational Planning Group (OPG) meeting. C5 ended each day with a 2000 Phase IV planning update. Additionally, there were impromptu meetings to address requests from USCENTCOM. Major Pannell and Captain Moore did not have defined shifts. They were available all of the time.

Major Pannell and Captain Moore initiated approximately 70 percent of their projects. They listened to issues and participated in discussions. They imparted their insights and provided analytic assistance. Another 20 percent of projects came from direct taskings, either from the C5 or from the Chief of Commander's Initiative Group (CIG). The final ten percent came from social interactions and planning meetings.

Major Pannell and Captain Moore participated in 10 projects that began either prior to their deployments, during their deployments, or in combination with reachback after Major Pannell returned to CAA. One of the first projects Major Pannell and Captain Moore were involved in was the Military Operations on Urban Terrain (MOUT) Analysis, which began in September 2002. The CFLCC staff was interested in an analytic worst-case perspective of forces required to conduct MOUT operations in Baghdad. Estimated number of casualties was a related concern and this certainly was a function of how many U.S. Brigade Combat Teams (BCTs) were actually committed to such operations. To address the question "What is the minimum force size needed to conduct a successful MOUT operation?" Captain Moore used the Java programming language to construct a simulation based on a series of events. The simulation started with receipt of the mission and ended with force recovery and force availability for the next mission. The simulation also considered other possibilities for force depletion. The results provided an estimate of forces required, friendly and enemy casualties, and length of campaign. The Command conducted multiple iterations, and the project continued until March 2003.

Another project began in September 2002 and extended until March 2003. During Phase III, Decisive Operations, the operational Center of Gravity (COG) involved seizing Baghdad. The CFLCC staff recognized the vulnerability of ground Lines of Communication. In an attempt to provide the commander with an estimate of how many Military Police (MP) (or equivalent combat troops) were required to conduct all types of Rear Area Operations (RAOs) during the attack on Baghdad, Captain Moore developed a Simple Worksheet-Based Analysis Graphical User Interface (SWAG). CAA's Southwest Asia Division calculated a RAO work force requirement estimate based on operational factors determined through interface with the CFLCC staff. SWAG was essentially an electronic version of Field Manual (FM) 3-19's Military Police (MP) Operations, with adjustments for population densities CFLCC would encounter along its attack to Baghdad. Later, Captain Moore conducted SWAG II (Post Hostility Requirements) and provided the combatant commander with an estimate of forces required during post-hostility operations. He began with the RAO staffing requirements from SWAG and incorporated other required missions and corresponding troop requirements.

As part of their support for SKIL, Major Pannell and Captain Moore employed the JMACE model, a visualization tool developed by the National Simulation Center (NSC) on behalf of USCENTCOM, to create a depiction of the ground scheme of maneuver across the entire theater for the CFLCC CG and staff. Between December 2002 and April 2003, Captain Moore conducted a series of JMACE runs and prepared 15 briefs of current and proposed Courses of Action (COAs) for the CFLCC Operations Planning Group (OPG) and staff.

In December 2002, CFLCC was considering a branch plan to conduct a joint forced-entry operation early in the campaign. The CFLCC C5 and Commander were concerned with the risk of executing this operation. Major Pannell and Captain Moore conducted an analysis to determine the expected number of aircraft that could be lost to enemy air defenses during such an operation. They named their effort the SWA Air Vulnerability Analysis (SAVA). Initially, CFLCC C5 gave Major Pannell and Captain Moore three days to provide an answer. Using the

Naval Postgraduate School's SIMKIT, a Java-based application, they constructed a discrete event simulation of a parachute drop over the proposed objective area to calculate expected losses as a factor of shots fired and Single Shot Probability of Kill (SSPK). Major Pannell and Captain Moore gathered the needed information through interviews with various CFLCC Subject Matter Experts (SMEs). Major Pannell and Captain Moore both noted in their end-of-deployment reports that another division within CAA conducted a similar analysis two months later that validated the answer Major Pannell and Captain Moore had provided in only 72 hours. The CFLCC C5 stated that this timely analytic work confirmed the utility of having forward-deployed analysts.

In January 2003, Captain Moore conducted an analysis known as the CFLCC Combatant Footprint Estimate. This effort projected troop strengths in Iraq between the months of January to June 2003. Captain Moore prepared a briefing to display both the current and projected troop strengths. Captain Moore presented this briefing at the CFLCC's meeting with Iraqi Ministry of Interior (MoI).

Between January and March of 2003, Captain Moore estimated the time needed to linkup ground and Special Operations units given various conditions. This project became a series of briefings entitled Early Regime Collapse. In response to the Chairman of the Joint Chiefs of Staff (CJCS) Planning Directive issued in January 2003, Captain Moore conducted a macro mission analysis on post-hostilities. This effort supported the Deputy Commanding General (DCG) C5, and the CFLCC OPG.

Between January and April 2003, Major Pannell and Captain Moore participated in Operational Plans (OPLANS) development. Captain Moore authored annexes for two CFLCC OPLANS, co-authored several other annexes and edited the final CFLCC OPLANS. Furthermore, he oversaw production of 200 CD copies and created two secure web areas to facilitate information dissemination.

During this period, CFLCC needed a way to capture Joint Reception, Staging, Onward-movement and Integration (J-RSOI) deployment status of all units deploying to theater. Recognizing the need, Captain Moore developed a method to capture information from multiple data sources and estimates for all phases of J-RSOI by unit types. The results of this effort provided a graphical depiction of force closings over time. Briefers used this information in the Commander's daily briefings, the Army's daily briefings and the Secretary of Defense's briefings as well.

During February 2003, Major Pannell and Captain Moore performed three analyses. The first provided support to the 4th ID's (4th Infantry Division's) local operations briefing. They calculated an estimated combat-available date for each Brigade Combat Team (BCT) over two deployment cycles. Major Pannell and Captain Moore created a second product entitled OPG Force Flow Visualization, using an automated tool to extract Time-phased Force Deployment Data from spreadsheets and display it graphically. The CFLCC OPG used this product. Major Pannell and Captain Moore also developed the Commanding Officer (CO) Casualty Worksheet for the Coalition Forces Land Component Command Commanding Officer (CFLCC-CO). This was a spreadsheet-based tracking tool for tracking casualty data. This effort spawned a request for a post-hostilities casualty estimator that evolved into a formal study conducted at CAA by Lieutenant Colonel Jack Zeto.

Major Pannell and Captain Moore provided two additional projects, beginning in February 2003 and ending later that year. The first was the Combined Forces Special Operations Component Command (CFSOCC) Estimate Validation. Captain Moore developed a process to vet selected CFSOCC deployment planning assumptions; created estimated unit response times given various conditions; and assessed the impact of supporting 173rd Airborne Brigade Combat Team (ABCT) at various employment locations. The C5 and the CFLCC OPG asked for this information. The other project started in February and ended in April of 2003. Major Pannell and Captain Moore provided cartographic support to the CFLCC OPG, created planning maps for wargaming, and provided logical frameworks for other projects.

In March 2003, Captain Moore conducted an OIF rear area security analysis. He examined the mission requirements associated with securing the CFLCC rear area and projected casualties to stress the need for rear area security. He also performed a network interdiction analysis and provided lift estimates for unit deployments considered by CFLCC. Captain Moore presented his results to the C3 Deputy CG, the C5, and the CFLCC OPG.

The following four efforts occurred March through April 2003. First, Captain Moore performed a mission analysis associated with Coalition Forces (CF) integration. He authored a draft of every order associated with integrating CF into CFLCC. He presented the Coalition Integration Orders effort to the CF sponsoring nations and to CFLCC's direct reporting units (also known as down-trace units).

Captain Moore next conducted a post-hostilities analysis. He also conducted a troop-to-task (T2T) mission analysis associated with forces required for a secure and stable Iraq. CAA sent two additional analysts from their Conflict Analysis division to assist in this effort by collecting necessary geopolitical information. As part of a three-person team sent from theater, Captain Moore returned to CONUS on temporary duty to present the results of this analysis to the Army G3, Army Deputy G3, and USCENTCOM staff.

Additionally, between March and April 2003, Captain Moore supported the Defense Threat Reduction Agency (DTRA) mission analysis and data collection effort associated with the Weapons of Mass Destruction (WMD) Disablement and Elimination Task Force (DETF) augmentation. The analysis provided a projection of support requirements based on DETF consumption. Captain Moore presented the results to the CFLCC C3 and OPG.

Finally, Captain Moore performed a redeployment analysis. He examined CFLCC redeployment and prepositioned equipment set reconstitution. This effort spawned the Redeployment Model created by Captain Allison Stewart during her deployment. Captain Moore briefed his work to the CFLCC CG and Deputy CG, the CFLCC C3, the USCENTCOM Staff, the Army G3 and Deputy G3.

Captain Moore made the following observations concerning reachback. In most cases, short suspenses required analysts to conduct analyses in theater. When time did permit reachback support, it required the use of the Secret Internet Protocol Router Network (SIPRNET) and a file transfer protocol (FTP) site as a way to transmit and receive large data files. While Captain Moore did not think creating a 24-hours-a-day, 7-days-a-week reachback capability at CAA was necessary, he did see the importance of establishing procedures for the activation of urgent reachback capabilities, should the need arise.

Major Pannell and Captain Moore offered the following lessons learned from their deployment. Regarding computer software, deployed analysts should have additional training in Microsoft tools and ORSA-specific Excel training. They should have original copies of all software issued. They need streamlined software procurement processes to purchase software tools that meet customer requirements. Finally, they need a flexible simulation tool that works in a time-constrained environment.

With regard to hardware and peripheral devices, Major Pannell and Captain Moore thought a data projector, a facsimile machine, and a printer were key pieces of equipment for a deployment. Having international phones would assist analysts in their efforts to communicate with CAA. Analysts needed an Non-secure Internet Protocol Router Network proxy server—for access to sites other than .mil—and a permanent SIPRNET/NIPRNET video teleconference area. Analysts needed a centralized, secure and cooled area where they could store and use associated software and hardware.

Major Pannell and Captain Moore learned that having good social skills was vitally important. Extroverts did better than introverts did. Successful communication with many different groups was essential. Finally, both Major Pannell and Captain Moore suggested that the deployed analyst team bring a variety of skills to theater, to complement each other's strengths.

Because they were the first two CAA analysts to deploy in support of OIF, they encountered general stereotypes (e.g., ORSA analysts are only familiar with combat modeling and do not know doctrine; they ask a bunch of questions and do not produce; they cannot do predictive analysis). Because the Command did not assign Major Pannell and Captain Moore against specific positions within the organization, the analysts had to "sell" themselves and their ORSA capabilities. They found that the words "analysis" and "estimate" meant different things to different people, and often the customer defined them by the time available. Over time, and through daily face-to-face contact, staff members accepted Major Pannell and Captain Moore as part of the team.

5.2.2 CAA deployed ORSA Analyst in OIF - Captain Allison Stewart (CFLCC)

Captain Allison Stewart deployed from 3 June 2003 until 17 September 2003. Initially she deployed to support the CFLCC-C5 in Kuwait, but prior to her departure USCENTCOM redirected her to Baghdad. As the Iraq mission was new, the CAA deployed analyst effort was also evolving. In an effort to maximize analyst deployments, CAA sent Captain Stewart for only a three-month deployment. CJTF-7 headquarters at Camp Victory, Baghdad assigned her to work in the C5 Plans section. She arrived days before the official CJTF-7 designation ceremony where Lieutenant General Ricardo Sanchez assumed command of the organization. Serving as the military headquarters in Iraq, CJTF-7 had a support role to the Coalition Provisional Authority (CPA) serving as the government in Iraq. Interestingly, Lieutenant General Sanchez was a trained ORSA analyst and understood the value of having analysts on his staff.

Through discussions with C3 and C5 senior officers and personnel, as well as through observing Update briefings, Captain Stewart identified a growing interest in developing MOEs to rate Iraqi campaign success. Planners were already determining Campaign Plan effects, so Captain Stewart became involved in an Effects Working Group in late June 2003. CJTF-7 made the first attempt at creating MOEs without regard for data availability to encourage an unconstrained process for identifying future data requirements. In August 2003, the U.S. published a new Campaign Plan. Since CJTF-7 conducted the MOE effort concurrently with the planning

process, the MOEs aligned with the final plan; still the collection plan was undetermined. As Captain Stewart neared the end of her deployment, she passed the MOE effort to her replacement, Major Rob Kewley.

Captain Stewart's data collection and reporting was a major contribution during her deployment. Prior to her arrival, data collection was extremely limited. Where data did exist, the reporter used it for a specific and immediate purpose and did not save it for later retrieval. Staffers buried data within their staff sections, only later to stumble upon it during paper clearing or an intense need for a specific piece of information. Initially, staffers used Microsoft PowerPoint slides, and then later daily Microsoft Word documents, to report and collect SIGACTS. Type of event, location, unit, or any other organized retrieval system did not separate these reports. In addition, neither PowerPoint nor Microsoft Word formats were conducive to analysis.

Although not a database designer, Captain Stewart knew what data she needed to collect and organize for future retrieval and analysis. She discussed data limitations with the O-6 Chief of Operations (CHOPS) and described the importance of organizing a database. The CHOPS tasked his information technology (IT) personnel as well as his battle captains to work closely with Captain Stewart to design, develop and implement a database structure. The IT personnel were familiar with Microsoft Access software, so they chose that platform for the new SIGACTS database. Captain Stewart worked closely with the team to ensure records linked to a specific event or unit. Records would have field requirements during data entry for easy data retrieval; dropdowns would ensure common nomenclature and terms. The final database was user-friendly and provided the capability to view event data via a Graphical User Interface (GUI) over SIPRNET. This database set a standard for activity reporting in Iraq and has since evolved into larger database structures using increasingly complex IT platforms.

Lieutenant General Sanchez invited Captain Stewart into a discussion regarding a recent increase in Improvised Explosive Devices (IEDs). The C2 had already provided an analysis but Lieutenant General Sanchez was looking for additional insights. He tasked Captain Stewart to conduct an analysis of the emerging threat.

Captain Stewart began with the Essential Elements of Analysis shown here:

How can we defeat the enemy?

- Where are they getting supplies?
- How well trained are they?
- When and where are they attacking?

How can we avoid IEDs?

- What trigger mechanisms are used?
- What is the most common look?
- What way are they employed (e.g. thrown, pre-set, command-detonated)?

Captain Stewart conducted her analysis using MS Office products and her newly developed SIGACTS database. The Command used her work in their weekly updates to the Theater Command and higher levels of government.

After accepting Captain Stewart's IED threat analysis, Lieutenant General Sanchez tasked her to develop an unclassified graphical product to show progress in many areas of the campaign. She developed a two-page briefing with graphs indicating attack trends, growth of security forces,

and power and oil production. The CG was pleased with her work and used it as a reference when briefing senior personnel.

Captain Stewart offers the following lessons learned from her deployment:

Useful Analyst Skills

- Advanced Microsoft Excel & Access database skills
- Assertiveness and pro-active/self-starter skills
- Qualitative and quantitative analysis skills

Projects

- Campaign Plan MOEs should be quantitative when feasible.
- Coordination with Joint and Coalition partners is required.

Support

- Use models that are quick, easy to use, and, most importantly, adaptable.
- Be familiar with the reachback capabilities of CAA.

Captain Stewart recommended that analysts not assume that analysis is the only answer. Analysis is a tool in the decision-making process. A deployed analyst should not wait for work. He or she should search for opportunities to add value to the fight. Finally, analysts should develop close relationships with other staff sections, especially the Intelligence staff section. Relationships can make or break the analyst's inclusion in the major decision process.

5.2.3 CAA deployed ORSA Analyst in OIF – Major Rob Kewley (CJTF-7)

By September 2003, CAA had developed a structure for deploying CAA analysts in support of OIF. Major Rob Kewley deployed on 3 September 2003 to replace Captain Stewart from CJTF-5. They had a two-week working overlap. Major Kewley worked for the CJTF-7 C5 plans section. While Major Kewley remained officially assigned to CAA, he received an Officer Evaluation Report (OER) from the CJTF-7 C5-Plans.

The following is CJTF-7's mission statement:

> **Conduct offensive operations to defeat remaining non-compliant forces and neutralize destabilizing influences in the AO in order to create a secure environment in direct support of the CPA, and concurrently to conduct stability operations to support the establishment of government and economic development in order to set the conditions for a transfer of operations to designated follow-on military or civilian authorities.**

The CJTF-7 mission became Captain Stewart's mission and then became Major Kewley's mission. Major Kewley summarized his work as being divided into either analysis or planning. The analytic tasks were: 1) Campaign Plan MOEs, 2) trends in enemy activity, 3) analytic enemy template, 4) analytic support to operational planning and 5) simulation of OIF 1 and OIF 2 transition. CJTF-7 Planners, Commander's Planning Group (CPG) and the OPLANS Division also tasked him to assist them in their plans.

Major Kewley continued the work begun by Captain Stewart on developing Campaign Plan MOEs. He developed MOEs for each key task in the Campaign Plan. Major Kewley used a combination of objective and subjective measures. He developed a strategy to direct data

reporting to support measuring the progress of CJTF-7 operations. Where possible, he utilized data already available in the staff. When the necessary data was late, Major Kewley determined the task proponent and requested that the Current Operations (CUOPS) section issue a Fragmentary Order (FRAGO) directing them to report the data. The FRAGO provided the necessary command emphasis for his strategy to be successful. He developed a data structure to collect and store data monthly, separated by region. The result of this work provided CJTF-7 planners with the information needed to adjust the Campaign Plan where necessary.

Field Manual (FM) 6-0 Mission Command: Command and Control of Army Forces provides doctrine for assessments and evaluations. Major Kewley was confident that ORSA analysts have the right mix of operational and analytic skills to perform campaign assessments in a Command HQ. The analysis he performed on assessments provided data to support Campaign Plan decisions. He provided progress reports to higher and external headquarters (e.g., CPA, USCENTCOM, Office of Secretary of Defense (OSD), and Government Accounting Office (GAO)). Major Kewley observed that development of the Campaign Plan and associated MOEs was a continuous process, evolving over time.

At the CPG weekly meeting, Major Kewley briefed trends in enemy activity to the CJTF-7 Commander and his staff. To avoid using only new data, and briefing the same topics each week, he focused on answering specific questions from the CG or his staff. Major Kewley also manipulated data in different ways in order to present relevant observations to the CPG. He employed analysis for estimating changes in enemy strength, capabilities, and tactics. The primary analytic skills he used were spreadsheet and database manipulation, graphing, and Geospatial Information System (GIS).

Based on a requirement to support operational planning, Major Kewley developed a template for the C2 organization to begin its Intelligence Preparation of the Battlefield (IPB) process. The templates he developed combined various data sources in order to select target areas for operations. Using information in SIGACTS, he estimated enemy strength and composition based upon attacks and assumptions about personnel required to support attacks. These templates were the starting point for developing operational plans. His collocation with C5 Plans personnel provided additional opportunities to use his skills. By combining ORSA and software skills, Major Kewley correlated effects of friendly operations and enemy activity. He determined locations, strength and type of enemy activity. Then he employed his skills using geospatial software to provide maps of friendly or enemy activity.

Major Kewley developed computer simulations for analysis related to OIF 1 and OIF 2 Force rotation issues. Major Kewley developed a discrete-event simulation model of the Force rotation process in Pro-Model, a commercial discrete-event simulation package. The simulation supported the analytic requirement to estimate demand on key transportation hubs and MSRs during the transition of forces in and out of theater. The model considered Heavy Equipment Transporters (HETs) and flatbeds (FBs) required, overnight rest space required at convoy support centers, refueling requirements at convoy support centers, and sufficiency of Main Supply Route (MSR) throughput capability. The results of this analysis supported CJTF-7 planning focused on Iraq, and CFLCC planning focused on theater nodes in Kuwait.

Major Kewley employed his staff skills on a variety of tasks to support the CJTF-7 C5 organization. He conducted statistical analysis of friendly and enemy activity. He volunteered to produce and assist others in producing slides for the CPG. This provided Major Kewley with

tremendous insights and contacts from meetings, increasing his opportunities to perform analysis for the entire organization. Major Kewley initiated a variety of small reachback projects. Two examples are geospatial IED analysis and an analysis of a counter-mortar radar placement. Major Kewley did not produce "formal" reports; however, he did provide very important information and products.

Major Kewley's experience taught him that the "bread and butter" of a deployed analyst is his or her development of MOEs to support Campaign Plan progression. He also stated that Military Education Level 4 (MEL4) skills are very useful in a deployed HQ. If possible, analysts identified for operational assignments should also attend the Joint Forces Command (JFCOM) Joint Planner's course. A working knowledge of Microsoft Office and Geographic Information software is essential for deploying analysts. Staff coordination skills are critical. Finally, every military analyst should have a top-secret clearance; without it, they do not have necessary access to key information.

5.2.4 CAA deployed ORSA Analyst in OIF - Dr Karsten Engelmann (CJTF-7)

On 1 December 2003, Dr Engelmann deployed to Iraq and was the first civilian to participate in CAA's support to OIF. He provided ORSA support to CJTF-7 and MNC-I. Dr Engelmann joined Major Kewley in the CJTF-7 C5 Plans section. Major Kewley departed Camp Victory on 13 February 2004, providing an overlap of more than two months. This overlap created a synergy of ideas that enabled better solutions to key problems.

In Dr Engelmann's final report, he stated that he spent the majority of his time addressing areas of high interest with short suspenses. As a result, many of the analyses were broad and superficial. Yet, in a deployed combat environment, information is needed now, more is better, but later is too late.

Deployed CAA analysts responded to many different customers, from the Combatant Commander, Lieutenant General Ricardo Sanchez, to the Deputy Commanding General, Lieutenant General Thomas Metz, to various staff section chiefs. The "modus operandi" of the analytic cell was to tackle all analytic tasks. Some tasks required longer periods of analysis and were more suitable for CAA reachback support.

Dr Engelmann's report covered activities generated from the end of OIF I to the beginning of OIF II, during the period of December 2003 to March 2004. In December 2003, the CF Phase III of the operations order 1003-V was in effect. While some units were transitioning to Security and Stability Operations (SASO), other Major Subordinate Commands (MSCs) were conducting offensive operations. The majority of Dr Engelmann's work supported U.S.-led operations in the most troublesome sectors.

During his deployment, Dr Engelmann presented a representative sampling of his analytic efforts in Baghdad. He reported on numerous methodologies, all sharing a common theme –short suspense Requests for Information (RFIs). He found spatial analysis to be the most critical. The majority of his analytic efforts included an element of spatial analysis.

The first example pertained to an analysis of insurgent attacks on CF. He examined bi-weekly attack trends, attacks by city, and attacks by location. All of his analytic efforts focused on the SIGACTS database, and most involved spatial analysis. A standard weekly presentation provided the number of attacks by week. Every Monday, Dr Engelmann presented his analysis to Lieutenant General Sanchez, the CJTF-7 CG.

No matter the particular RFI requested, the basic concept of Dr Engelmann's trend analysis remained the same. For example, several items of information were calculated and then presented in a manner that enabled the senior staff to visualize what was occurring. The brevity and clarity of the analysis was critical. Over time, Dr Engelmann added bullets to the bottom of the chart to emphasize the latest trends. He also added colored arrows that gave a quick interpretation of the information. He used green upward arrows for positive trends, red downward arrows for negative trends, and side-to-side arrows for unchanged trends.

Dr Engelmann employed visual display of data in a micro-plot. This methodology allowed him to represent numerous samples on the same chart. Although each RFI was unique, the presentation format was the same, enabling the RFI requestor to understand what was happening in a given sample city and to make comparisons among various cities. Analysis using micro-plot allowed the commander to visualize attack trends, both spatially and temporally.

In January 2004, the CJTF-7 CG decided to turn over operations at Baghdad International Airport (BIAP) to the Iraqis. Dr Engelmann provided him with a geospatial presentation of attacks on BIAP.

The CJTF-7 assisted in facilitating transfer of local control from CF to Iraqi Forces. Dr Engelmann's report contains an excellent example of how CAA analysts created charts for the simultaneous examination of variables in all 43 reporting localities. Each "spoke" of an individual star represented the interpretation of a "bubble" from bubble charts created during the local control assessment by the MSCs. A green bubble carried the value of five; an amber bubble carried the value of three; a red the value of one; and, a black the value of zero. Bubbles with shading carried the intermediate value. Each star allowed the quick analysis of variables by group. Dr Engelmann color-coded each section for easy reference.

Dr Engelmann used a technique called the Exploratory Data Analysis (EDA). The EDA is a graphic data display that helps the user to determine patterns. In one example, Dr Engelmann examined the number of Coalition Wounded in Action (WIA). He developed four different charts: a histogram, a box-plot, a density graph, and quantiles, which are points taken at regular intervals from the cumulative distribution function of a random variable. His display highlighted aberrant trends.

Dr Engelmann concluded his report by saying that the analysis of all attacks, the analysis of casualties, and the analysis of IEDs made up the bulk of his analyses.

5.2.5 CAA deployed ORSA Analyst in OIF - Major Andrew Farnsler (MNC-I)

From 29 January 2004 when Major Andrew F. Farnsler arrived in theater until 13 February 2004, when Major Kewley departed, there were three CAA analysts deployed to OIF. The overlap among them facilitated a smooth transition of functions.

Major Farnsler found that ORSA support to MNC-I during combat operations consisted of five general categories:

- Support to planning
- Pattern and trend analysis
- Assessments and effectiveness
- Forecasting
- Requirements and fielding priority analyses

The CAA conducted category five through reachback due to the complexity of the problems and the longer deadlines given for results. Three examples of these more complex requirements and fielding priority studies conducted during OIF 2 are Lightweight Counter-Mortar Radar (LCMR), Gun Truck Analysis (GTA), and Gamera documentation. The CAA conducted the Gamera study to support a procurement decision regarding the number and type of counter IED devices required to protect convoys in theater.

The CAA developed the High Density Attack Pattern (HDAP) Visual Basic for Applications (VBA) algorithm based on a theater reachback request. This tool allowed quick analysis of multiple types of enemy activity. With HDAP, Major Farnsler developed Tier 1 and Tier 2 Named Areas of Interest (NAI) for convoy security. The HDAP analysis used a nearest neighbor search algorithm to detect cluster events based on user-defined parameters. The tool established quantitative criteria to select NAI for targeting or observation. Furthermore, this automated methodology took the guesswork and human error out of cluster analysis quickly. The HDAP defines quantifiable metrics for further target development and collection at the tactical level. The Corps Terrain Team subsequently produced this intelligence product weekly for many years as an aid to planning.

Other support to planning involved decision-making at very senior levels of International Coalition cooperation. Trend analysis products examined the area scheduled for the Republic of Korea (ROK) Forces to occupy during OIF II in late March 2004. Based on this analysis and other factors, the Koreans decided to examine other areas of Iraq for their deployment to support the Multi-National Coalition.

Most ORSA support to MNC-I involved trend analysis. This analysis typically received high visibility and leaders briefed it weekly to the Commanding Generals of MNF-I and MNC-I. Throughout the first three months of 2004, IED attacks continued to increase significantly. Major Farnsler combined Geospatial analysis with trend and pattern analysis to highlight problem areas and point out localized trends. The HDAP served as the catalyst for advanced geotemporal analysis. The United States Police Departments have routinely employed these techniques in major cities since the mid-1990s.

In early April, the Mahdi uprising doubled the number of attacks overnight throughout the entire theater. This changed operations, intelligence, and analysis considerably. The timing and severity of the change in enemy posture produced a major analytic problem – the Corps Campaign Plan Assessment proved to be incapable of handling rapid changes. This and other events highlighted the need for routine forecasting work.

The CJTF-7 SIGACTS database was inaccurate due to reporting discrepancies and poor relationship design. Data errors would continue to confound analysis throughout the war. When considering this error, it is important to remember that in an open system as complex and dynamic as combat operations, perfect reporting is impossible to obtain. Commanders have discretion to report what is significant to them in accordance with the higher Commander’s intent. Commanders at all levels vetted SIGACTS reports to reduce error. While Commander's Critical Information Requirements (CCIR) specified what commanders would report, subordinate unit interpretation varied greatly in reporting less substantive activities. Other factors included latency, administrative errors, and language. Deployed analysts sought to improve reporting and reduce errors without placing a significant burden on subordinate units.

The OIF team created simple error-checking routines for the SIGACTS entries. This provided increased rigor to the system.

Assessments were some of the most useful products the deployed analysts produced. The deployed analysts determined that statistical comparison over time was useful for determining the effects of events or operations. The Corps leaders asked for comparison of metrics by week. This allowed the establishment of a baseline for comparison. Deployed analysts quickly determined trends in enemy and friendly operations. These trends varied by region and proved useful for comparing enemy activities. Typically, these assessments served the intelligence community by reflecting relative changes in effectiveness. Briefers could not use charts alone to convey the complete picture but had to accompany them with analysis to communicate the trends effectively. These reports showed three ratios. The first was the Battle Damage Assessment (BDA) ratio or the number of enemy casualties (wounded and killed) per attack (aggregate). The second was the number of attacks for the week as a percent of the highest number seen during the period of interest. Thirdly, the casualty ratio showed the number of Coalition WIA and Killed in Action (KIA) per attack.

While conducting trend analyses, the First Cavalry Division G2 Sergeant Major discovered decreases in attacks for some areas of the battlefield. After consulting with the battalion commanders on the ground, the Sergeant Major discovered that the battalions were all conducting "constructive engagement" with local tribal and religious leaders. Constructive Engagement (CE) denied popular support to insurgents through empowerment of the local leaders, community improvement, and strict non-lethal and lethal targeted effects on individuals and groups. Deployed analysts visited battalions throughout the area to determine the Tactics, Techniques, and Procedures (TTPs) of constructive engagement. Analysts wanted to evaluate leader claims that the number of attacks decreased in a sector after implementation of constructive engagement. The U.S. Army published this study as Association of the United States Army (AUSA) Land Warfare Paper # 07-1.

On 1 July 2004, Operation Lion's Partnership established MNC-I support to Iraqi Transition to Sovereignty. This operation covered the period from mid-June to September 2004. The Operation served as a bridge from the CJTF-7 Campaign Plan to the start of the MNC-I Campaign Plan. Deployed analysts helped construct the plan assessment. This served as a tool to determine whether the plan would achieve the Commander's desired end state.

Based on Major Farnsler's experience, there was little standardization of assessment doctrine. Analysis provided a way ahead for reorienting the Corps Campaign Plan assessment. The deployed analysts gathered assessments from all levels of OIF including USCENTCOM, MSCs, and CJTF-76. They provided conclusions and recommendations based on current and past assessments. Doctrine from FM 6.0, Mission Command: Command and Control of Army Forces and emerging guidance from MNF-I and MNC-I Commanding Generals helped in constructing goals and the milestones to achieve them.

Major Farnsler stated that the CAA reachback program was a "force multiplier" and provided commanders with outstanding capabilities and greatly enhanced analytic products.

In conclusion, Major Farnsler noted that the HDAP geographic pattern analysis methods he used in OIF were similar to civilian law enforcement agencies hotspot analysis used to allocate resources. Major Farnsler recommended that in order to develop new and more effective tools,

methods, and metrics, ORSA analysts should work with U.S. agencies who practice real-world crime mapping.

5.2.6 CAA deployed ORSA Analyst in OIF - Mr. Stewart Smith (MNC-I)

On 29 February 2004, Mr. Stewart A. Smith deployed. He had a two-week overlap with Dr Engelmann. Because Major Farnsler's deployment was longer than six months and Mr. Smith's was only three months, they served together the entire time. Mr. Smith's deployment ended on 28 May 2004.

Mr. Smith's report was unclassified and disseminated findings from a deployed civilian analyst's perspective. It served as a supplement to the classified report prepared by Major Farnsler. Mr. Smith pointed out that his report was largely a personal assessment of his individual experience.

The deployment was a positive experience for Mr. Smith both personally and professionally. His participation in this environment as a deployed analyst was the most rewarding professional development experience possible for a civilian. It surpassed any formal civilian education or military school equivalent.

Mr. Smith made the following observations on ORSA analysts who served at the operational decision-making level. The analysts must see the problem first-hand to fully investigate and provide appropriate solutions. Integrating analysts into staff organizations increased the credibility of analytic products. It established trust as analysts shared in the daily staff work. The CAA analysts provided both their own individual talents and the resources of their agency through reachback efforts. Mr. Smith believed these deployments support FA 49 and Civilian GS 1515 career programs. As a bonus, the individual analyst grows in experience and expertise.

During Mr. Smith's deployment, he saw multiple command transitions. One such transition took place on 15 May 2004 when MNF-I and MNC-I replaced CJTF-7. In support of both MNF-I and MNC-I, Mr. Smith focused on the development and analysis of MOEs. Out of necessity, he spent much of his time gathering data and conducting assessments based on current MOEs.

Mr. Smith used strategic analysis to assist the U.S. III Corps with their weekly CJTF-7 briefings (later MNC-I CPG briefings). Mr. Smith also answered RFIs. These RFIs concerned the distribution of attacks on MSRs and convoys, traffic vulnerabilities, and interdictions at key bridges. In addition, Mr. Smith and Major Farnsler examined the status of demilitarization efforts, IED and cache location patterns.

The Corps Analysis Coordination Element (CACE), and the personnel who prepared the C2 Intelligence Summaries (INTSUMs), relied heavily on methodologies similar to the IPB. Because he was using GIS software products to display analysis results and track attack patterns, Mr. Smith coordinated with the Corps C2 Terrain Detachment. He used shapefiles to format battlefield-display information for routes, bases, boundaries, and zones.

Combined Joint Task Force-7 was a large and complex organization. Mr. Smith quickly learned how the organization operated. He wanted to pass along the following lessons to future deploying analysts:

Doctrine:

- If you think you know it… it is probably broken in Iraq.
- It is emerging… and the enemy has a vote.

- Planning is everything…and the plan changes…usually right up to execution.
- What looks easy in theory is extremely difficult in a complex environment.
- Use Brigade (Bde)/Task Force (TF)/training manual (TM) Focus:
  - Bde/TF/TMs do not look like nor do they conduct missions in accordance with field manuals (FMs).
- Staff Barriers
  - Sometimes "politics" take precedent over policy.
  - Sometimes the Command needs a "nudge" in order to insert analysis into decision-making.
  - Sometimes the Joint Staff (JSTAFF) values wargaming and simulations over operations research and systems analysis.
- How do deployments enhance the professional development and training of an ORSA analyst?
  - Deployments offer irreplaceable professional experience.
  - Deployments offer "muddy boots" experience in all its glory.
  - Deployments provide "on the job" experience in an extremely complex environment.
  - Deployments provide the analyst with insight into Coalition Provisional Authority Guidance and Policy and Iraqi Governing Council (IGC) Diplomatic Operations.
  - Deployments provide operational experience with Iraqi Survey Groups (ISGs) at the strategic level.
  - The analyst will gain an appreciation for Combined Joint Special Operations Task Forces (CJSOTFs).
  - The analyst will forge lasting relationships with military officers and governmental/non-governmental officials at the highest levels.

5.2.7 CAA deployed ORSA Analyst in OIF - Mr. John Bott (MNC-I C3 Plans)

On 12 May 2004, Mr. John M. Bott arrived at Camp Victory, Iraq. Major Farnsler and Mr. Smith were still in theater. Mr. Bott and Mr. Smith conducted their "right-seat/left-seat ride" for two weeks before Mr. Smith departed theater to return to CAA. The purpose of Mr. Bott's deployment was two-fold. First, he provided analytic support to MNF-I and MNC-I by applying Operations Research (OR) techniques to solve problems and provide insight into various data sets. Secondly, he served as a liaison between CAA and MNF-I and MNC-I in order to capitalize on CAA's analytic capabilities through reachback.

The deployed CAA ORSA team worked in the MNC-I C3 Plans office, though it provided analytic support to a wide array of organizations and staff sections throughout MNC-I, MNF-I, and MNSTC-I.

Upon Mr. Bott's arrival in theater, there were six MSCs. The United Kingdom administered Multi-National Division – Southeast (MND-SE) around Basrah while the Polish Army administered MND – Center South (MND-CS) around Karbala (a truly Multi-National division.) The I MEF controlled MNF-West (MNF-W), which expanded in August 2004 when the area around Najaf re-aligned from MND-CS to MNF-W. The MNF-W was the largest MSC in terms of geographic area. First Cavalry Division controlled MND – Baghdad (MND-B); the Stryker Brigade controlled MNB – North (MNB-N); and the First Infantry Division controlled MND –

Center (MND-C). In September, MNB-N split into MNB – Northwest (MNB-NW), retained by the Stryker Brigade) and MND – Northeast (MND-NE), controlled by the Republic of Korea (ROK). The formation of MND-NE brought the total number of MSCs to seven.

The deployed CAA analysts divided their responsibilities into four categories: theater analysis, campaign plan assessment, reachback, and training and database support. Most work performed by the deployed analysts was short-term, theater analysis. Because the suspense for many of the taskers was less than a few days, and often only several hours, reachback was not an option. Therefore, the analysts would use all tools at their disposal to provide decision makers with answers quickly. Theater analysis included trend analysis, effectiveness studies, troop-to-task ratio analysis, and a constructive engagement study.

The CAA analysts supported the Campaign Plan assessment process. They regularly briefed the MNC-I CG and his staff principals on reconstruction progress and war analysis. In addition, analysts supplied analyses from Action Officers (AOs) and SMEs for the Campaign Plan assessment briefing. Major Stephanie Tutton, who replaced Major Farnsler in late June, led analyst support to the Campaign Plan assessment process.

The fourth analytic responsibility was training and database support. In this role, the CAA analysts served as trainers for several AOs and SMEs who had limited knowledge of Microsoft Office applications. Other staff sections called upon the analysts to give briefings on culling data from the SIGACTS database, the primary database used by the CF to track major events. In addition to training others in the use of SIGACTS, the CAA analysts played a vital role in database enhancement and improvement by working closely with programmers. Due to the extensive use of SIGACTS by the deployed analysts, their insights were significant.

Mr. Bott centered much of his work on trend analysis. Over time, numerous staff sections tasked CAA analysts with developing periodic updates that met the various needs and requirements of different staff principals. Mr. Bott merged several of these requirements into what became the "Combined Weekly Update." The Combined Weekly Update (CWU) initially consisted of approximately 15 slides prepared for distribution to about five staff sections throughout Iraq. Over time, this requirement grew to include more than 30 slides sent to over 20 staff sections. Every Monday, General Casey, the MNF-I Commander, received portions of the CWU. The focus of the CWU and its important issues evolved as the War evolved. The CAA ORSA analysts laid the foundation. They had six other requirements to generate weekly, semi-weekly, or monthly.

In 2004, General Casey established three periods for trend analysis and activity analysis comparison: Period 1 – baseline, from 1 January to 31 March (13 weeks); Period 2 – pre-sovereignty, from 1 April to 28 June (12 weeks); and Period 3 – sovereignty, from 29 June to 8 October (15 weeks). After Mr. Bott's departure from theater, they added the pre-election period, (Iraq's first elections took place in January 2005). Each period was approximately 13 weeks and centered around major points on the Iraqi timeline.

During Mr. Bott's deployment, in addition to trend analysis, analysts conducted a brief "Constructive Engagement (CE) Study." The term CE described operations undertaken by CF whose aim was to win the "hearts and minds" of the local populace. While every unit in theater did this to some degree, several units formalized the process by making it a named operation with specific objectives. The G-2 Sergeant Major of the First Cavalry Division approached the analysts for assistance. He first noticed a steep decline in IED activity in one particular

battalion's Area of Operation (AO), and when he looked into the matter, he realized that they attributed the decline in IED attacks to the success of their CE campaign. The analysts, along with the G-2 Sergeant Major, interviewed the Commander of the 2/12 Cavalry Squadron about their CE campaign. The analysts and the G-2 Sergeant Major then conducted an analysis of attacks before and after the campaign. The analysts realized there was indeed a steep decline in attacks once the CE campaign took effect. After completing analysis of 2/12 Cavalry's CE campaign, the deployed analyst and the G-2 Sergeant Major interviewed the Commander of the 4/5 Air Defense Artillery (ADA) Battalion, who had also initiated a CE campaign. The 4/5 ADA Commander reported a similar outcome from his CE campaign to that reported by the 2/12 Cavalry Commander.

Among various reachback projects, CAA analysts conducted an Air Ambulance Analysis (AAA) study. The MNC-I Surgeon General requested the study, which analyzed the stationing of Medical Evacuation (MEDEVAC) helicopters in theater. Lieutenant Colonel Jack Zeto led the AAA study, assisted by civilian analysts Belinda Scheber, Linda Coblentz and Jeff Bassichis. They received the Payne Award for their work. Furthermore, CAA conducted: 1) a counter-IED study for the theater IED Task Force, 2) a suspected weapons and ammunitions caches study, and 3) a SIGACTS events delay study that identified how long it was taking to enter SIGACTS events into the database. Mr. Bott utilized the CAA Reachback program for quick-turn requests. In addition to providing specific analytic products, CAA also supported basic software and application requests, such as macros for use in Microsoft Excel, which aided in the analysis of SIGACTS data.

Mr. Bott made the following observations:

- CAA analysts worked very long days, often 12 to 16 hours, seven days a week, and still maintained a high morale.
- Workstations were adequate to house three laptop computers, reference material, and additional workspace.
- There were periodic system failures but, overall, the C-6 shop did a commendable job in keeping the systems on-line and functioning.
- CAA analysts had sufficient internet access to allow them contact with CAA and the rest of the outside world; this was also useful in conducting research for various ORSA-related problems.
- CAA analysts received excellent cross training (unmatched in a CONUS environment) from working with the C3 Plans shop.

Mr. Bott asserted that his deployment to Baghdad in support of OIF was the highlight of his professional career. Analysts seeking to develop their skills and abilities should enthusiastically request to work for organizations such as MNF-I and MNC-I, where they can apply their training to real-world requirements. Mr. Bott applied a variety of analytic techniques and software applications in order to update Coalition leadership on the continuously evolving situation in Iraq. Every day, staffers used his products to brief V.I.P.s, to include the U.S. Secretary of Defense, the U.K. Minister of Defense, the President of Iraq, and the President of the United States.

Despite the overwhelming success of CAA analysts, they had to contend with elements of frustration. First, there were several shortcomings with the SIGACTS database. This report addresses this issue in a separate chapter. An additional issue identified by Mr. Bott was the lack

of an existing database besides SIGACTS, or an accessible knowledge network. The intelligence shop had a variety of intelligence-related databases they could tap into, but there was no overarching database or network for relevant intra-theater data. Mr. Bott recommended expending efforts and resources to establish a flexible, expandable knowledge network for all potential threat areas. This could be married with a SIGACTS-like database once operations commenced.

5.2.8 CAA deployed ORSA Analyst in OIF - Major Stephanie Tutton (MNC-I C3 Plans)

As previously stated, Major Stephanie Tutton deployed to MNC-I in support of OIF on 29 June 2004. Throughout Major Tutton's deployment, she observed that the roles and value of the ORSA analysts continued to evolve. For her, it was an on-going educational process to promote and illustrate the capabilities and expertise of an ORSA analyst. This was especially true during times of command structure change.

Decision-makers continually repeated a cycle of gathering data, assimilating information and intelligence, conducting operational assessments, making a decision and providing guidance to subordinates and staff. The ability of an ORSA analyst to assist in the warfighter's decision-making process during the rapid pace of combat operations, with a series of decision-support tools, in the least obtrusive manner, was an art form in and of itself.

ORSA analysts improve information and data quality through collection methods, data mining, an understanding of correlation versus causation and, most importantly, the ability to interpret data and understand its limitations. These capabilities, coupled with the ability to relate operational objectives to desired effects and goals, and to develop consistent and relevant metrics with which to conduct assessments, greatly enhance the decision-making process.

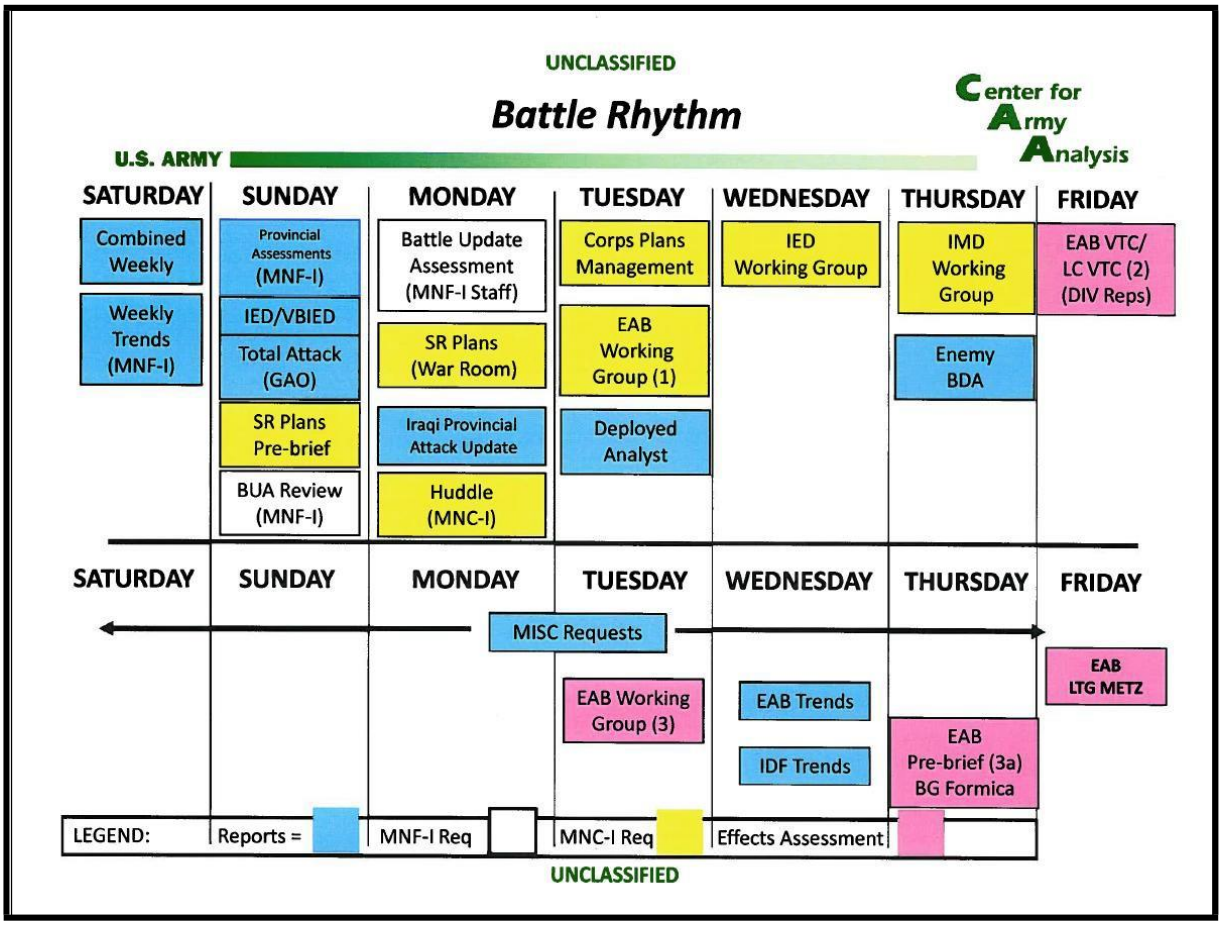


Figure 5-1 Battle Rhythm

Figure 5-1 depicts the normal battle rhythm in theater, which was a two-week cycle, starting on Saturday. This cycle coincided directly with the MNC-I C3 Plans and MNF-I battle rhythms.

For CAA analysts, the Battle Update Assessment (BUA) required a Sunday evening preparation period with MNF-I Strategic Operations (STRATOPS) where they reviewed their portion of the briefing, followed by the actual Monday morning briefing to General Casey. General Casey (MNF-I CG) attended the MNF-I BUA, as did Lieutenant General Metz (MNC-I CG), the MNF-I and MNC-I primary staffs, the Joint Operations Center (JOC), and U.S. Embassy representatives in the International Zone (IZ) via Information Workspace (IWS) from the Al Faw Palace at Camp Victory.

Blue boxes indicate the bi-monthly troop-to-task reports and monthly Commander's Assessment and Synchronization Board (CASB) significant requirements. All reports colored in blue are weekly requirements, although not listed in both weeks for clarity purposes on the slide. Yellow boxes indicate additional MNC-I requirements, such as working groups, planning meetings, and briefing preparation. Pink boxes highlight the main components of the Effects Assessment Board (EAB) process.

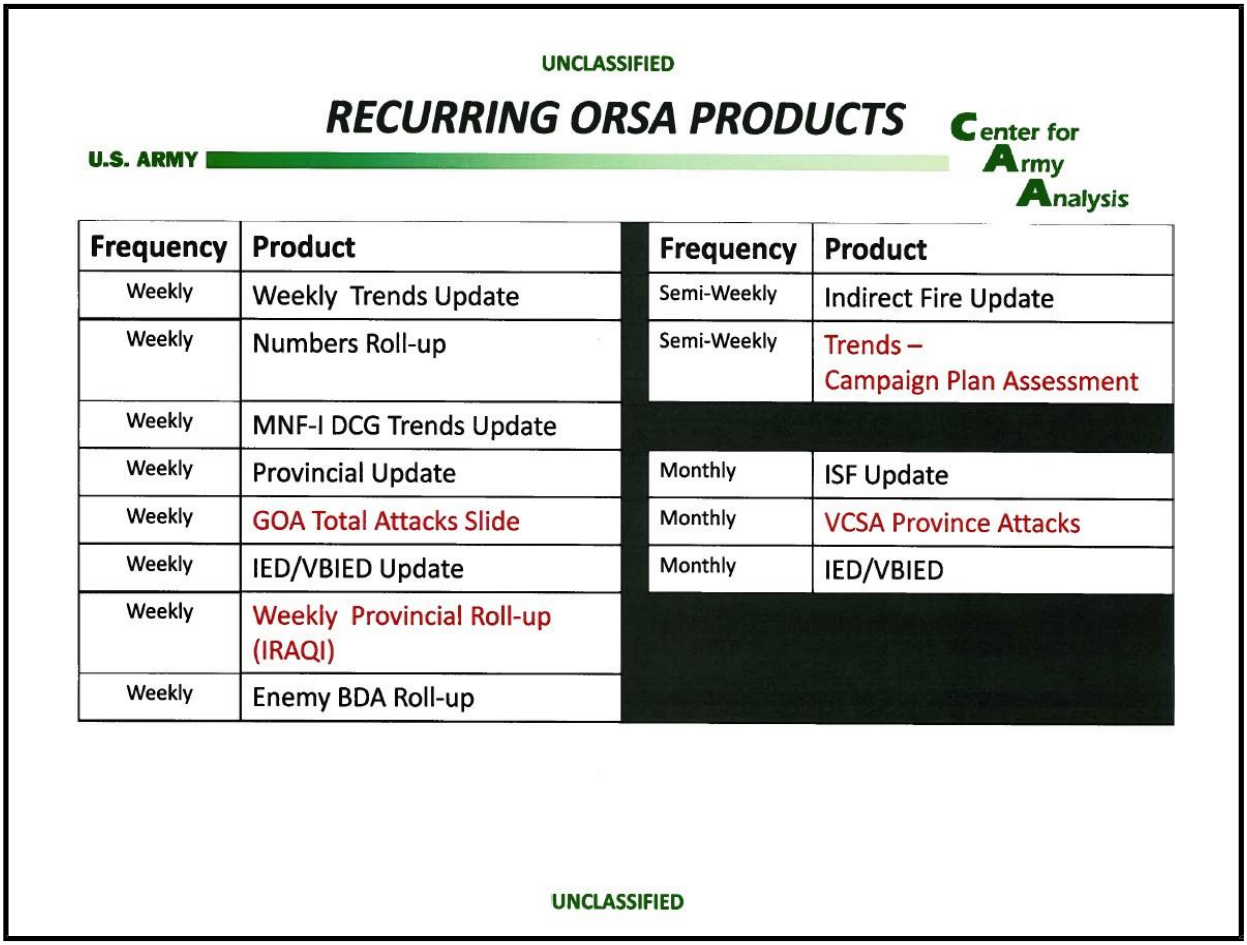


Figure 5-2 Recurring ORSA Products

The chart in Figure 5-2 shows the breakdown of recurring ORSA reports developed and used in theater. Analysts compiled an extensive distribution list. Staffers distributed these reports to a majority of the MNC-I staff sections and MNF-I functional departments.

The analyses Major Tutton conducted in support of OIF were generally in four main categories. The first category was trend analysis, which included extensive work with the SIGACTS database, the main operational database of significant activities in the Iraqi Theater of Operations (ITO). Using Excel, VBA macros, pivot tables, ArcView, and Falcon Lite, CAA analysts developed weekly and monthly trends that included weapon type, target type, casualty, attack, and provincial data. Their temporal and geospatial analysis provided an alternative view of the data, providing additional insights.

The second category of analyses, the requirements for theater analysis, ranged greatly in scope from preparing responses to media queries regarding current trends or a specific incident to current operations and Battle Damage Assessment (BDA) reports. This type of analysis generally had a short suspense of less than four hours. The constructive-engagement study was a major initiative that presented analysis of non-kinetic operations used by on-the-ground commanders. A troop-to-task report required interaction on a bi-monthly basis with each of the MSCs.

The third category focused on the EAB process support and was a joint effort between the CAA analysts and the MNC-I Effects Cell. A secondary effort for both the MNC-I Effects cell and the deployed analyst was to assist MNF-I in metrics, objectives and CASB process development. Analysts conducted additional assessments of operation planning with the MNC-I C3 Planners.

CAA also analyzed Weapon Systems Effectiveness, Employment Capabilities Optimization, and decisions to continue fielding/funding specific capabilities. For example, the Integrated Forward Operating Base (IFOB) study reviewed a set of capabilities to determine which assets should be collocated at a particular location. The Monitoring and Forecasting Regional Stability in the Context of War (FOREWARN) Model dealt with factors of stability and instability in countries. Strategy, Policy and Assessments (SPA) Division at the MNF-I level praised this work in every way.

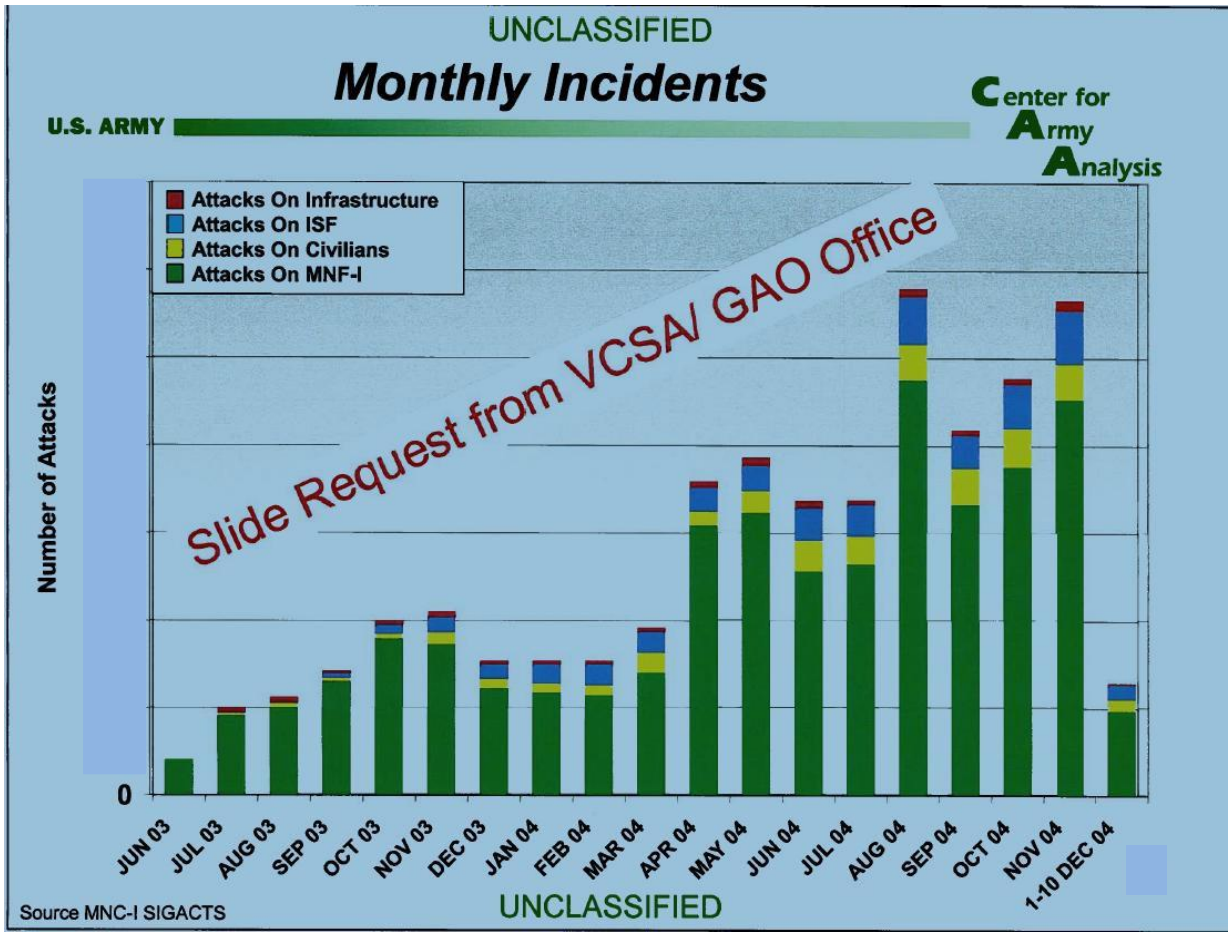


Figure 5-3 Monthly Incidents

Figure 5-3 is an example of the type of trend and data analysis used to analyze monthly incident reports over time; the raw data came from the SIGACTS database, June 2003 through December 2004. This chart shows a count of monthly incidents broken down by category. The Y-axis represents the number of total attacks and the X-axis is time (in months). Categories include attacks on U.S. and Coalition troops, attacks on Iraqi civilians, attacks on Iraqi Security Forces (ISF), and attacks on infrastructure.

An example that Major Tutton documented was a quick-turnaround study dealing with convoy operations. The MNC-I C4 approached the CAA analysts saying, "Our convoys are being hit, we need to fix it. Can you help us?" This was difficult due to time limitations. The CAA analysts were constrained to information contained in the SIGACTS database and information they transferred manually to a secondary database that resided within the C4.

In the course of the analysis, the analysts formulated several additional questions to address potential TTPs and mitigating effects. Unfortunately, data sources were limited and the information contained in the available sources did not sufficiently answer all questions. The C4 AO provided as much information to Major General Gerald P. Minetti (MNC-I C4) as was available within the 30-minute briefing preparation. The secondary questions provided a starting point for future focused data collection efforts.

The MNC-I CG asked CAA analysts to prepare a troop–to–task report. This report continued as a bi-monthly inclusion in the CG's morning briefing book. The analysts also designed the Troop-to-Task report to inform the MNC-I CG where Division Commanders were accepting risk. Analysts created the original report on an Excel spreadsheet and allowed for weighting mission categories based on an individual commander's prioritization within the AO. The MSCs used these categories to determine actual and required troop numbers needed to accomplish the mission within their respective AOs. The small number of mission categories, vague descriptions, differing interpretations of categories, individual MSC priorities, made it extremely difficult to weight categories in a standardized manner. Commanders also disagreed as to which categories should be included, which were missing, and whether the descriptions were accurate or not. This report proved to be a major point of contention and was constantly under revision.

The MNC-I Effects Cell managed the EAB process under the direction of Brigadier General Richard P. Formica, Chief, III Corps Artillery. III Corps did not have organic ORSA analysts assigned to them; however, they did have an Individual Military Augmentee (IMA) Air Force Lieutenant authorized on the JMD. CAA analysts provided additional analytic support to the EAB process at the request of Brigadier General Formica. The EAB process had general officer oversight to advocate for the effects process. This guaranteed primary staff involvement.

The MNC-I Effects cell, in conjunction with the analysts, continuously developed and modified metrics to provide a comprehensive assessment to the Corps Commander. The EAB was the central conduit for data collection and assessment for each staff element. Included were members from MSCs, Civil-Military Operations (CMO), IED, Intelligence Officers (IOs), MNC- I Targeting, and CACE. On a bi-weekly basis, the MNC-I Effects Cell and the CAA analysts compiled data and the information provided to prepare EAB briefing charts for the Corps Commander. The primary MNC-I staff personnel briefed Lieutenant General Metz. The EAB provided input to the CASB at the MNF-I level.

The three classified areas of Major Tutton's work, not included here because of security classification, were Campaign Plan Lines of Operations (LOOs), Civil-Military Operations (CMO), Civil Affairs (CA) assessments, and the assessment of ISF.

MNF-I conducted The Campaign Plan Assessment (CPA) through the CASB process, and SPA managed it. Similar in structure to the EAB process at the MNC-I level, MNF-I conducted assessments based on strategic effects. At the time of Major Tutton's deployment the MNC-I Effects "owned" the CPA process, later transitioned to the MNF-I level. The CAA analysts continued to work closely with MNF-I to provide added expertise on development of MOEs and

effects objectives. Analysts leveraged communication links with the division-level Analysis and Assessment cells, and links to the USCENTCOM and the Joint Task Force (JTF) levels.

CAA deployed analysts were honest brokers. They provided the MNC-I CG with an objective look at the available data/information. Having analysts collocated with the MNC-I C3 Plans section provided current operations Situational Awareness (SA). Analysts provided expertise for the continuous review of effects and MOEs at the correct point in the decision cycle. Additionally, ORSA development of data collection tools enhanced MNC-I's ability to conduct future analysis and provide direct insight to decision makers.

The CAA Current Operations cell conducted the following list of reachback projects. These studies included equipment-fielding issues, stability and Phase IV SASO factors, capabilities and effectiveness, medical asset allocations, and assistance with the development of macros and geospatial tools.

- Equipment Fielding
  - LCMR
  - Persistent Threat Detection System (PTDS)
- Artillery Assets
- IFOB – Integrated Forward Operating Base
- FOREWARN / FORECITE
- Effectiveness Studies
- Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) System Effectiveness
- Close Air Support (CAS) Effectiveness
- Counter-IED (C-IED)
- Counter-Mortar
- Weapon Caches
- Unit Interaction
- Neurosurgical Team Location Study (NTLAS)
- Macro Development
- Shapefiles (update maps and overlays)

Major Tutton identified the following areas to assist future deploying analysts. First, since the JMD did not list CAA analysts, no one knew who "owned" them. CAA analysts attempted to support all OR requests.

The primary issue Major Tutton encountered was data collection procedures, or lack of data and a methodology for data collection. Limited tools were available to collect data or to change current procedures. Major Tutton expended a great deal of effort to improve SIGACTS and upgrade the database to fuse with several individual data sources. Combining objective and subjective measurements in a logical and coherent manner remained a difficult task. The Command wanted to include effectiveness measures and leadership, both difficult to measure.

In conclusion, Major Tutton shared several humorous comments she heard during her deployment: "Well Sir, I don't know what they mean; these are the ORSA numbers." When the CG requested that the C4 provide him with the number of supply convoys attacked over the last week, the C4 stated, "We can't do that, the Corps ORSA analysts are the only ones that can."

5.2.9 CAA deployed ORSA Analyst in OIF - Major Eric Hansen (MNC-I C3 Plans)

Major Eric Hansen deployed to Camp Victory, Iraq on 18 October 2004 to replace Mr. John Bott as part of the CAA deployed analyst team. During his six-month deployment, Major Hansen worked with two other CAA analysts--Major Stephanie Tutton and her replacement, Major Loren Eggen. Major Hansen's mission as a deployed analyst was two-fold. First, he was to provide immediate, on-site analytic support to the MNF-I and MNC-I staffs by applying OR techniques to support decision-making requirements. Second, by capitalizing on CAA's analytic capabilities for reachback support, he was to serve as a liaison between CAA and the staffs of MNF-I and MNC-I.

The deployed analyst team worked within the MNC-I C3 Plans Shop, yet still provided analytic support to a wide variety of organizations and staff sections throughout the MNF-I and MNC-I staffs. For example, within MNC-I Major Hansen provided timely analytic support to C1 (Personnel), C2 (Intelligence), C4 (Logistics), the Corps Assessment Cell, and others. Within MNF-I, Major Hansen supported the MNF-I Commanding General directly, as well as the CIG, SPA, and others.

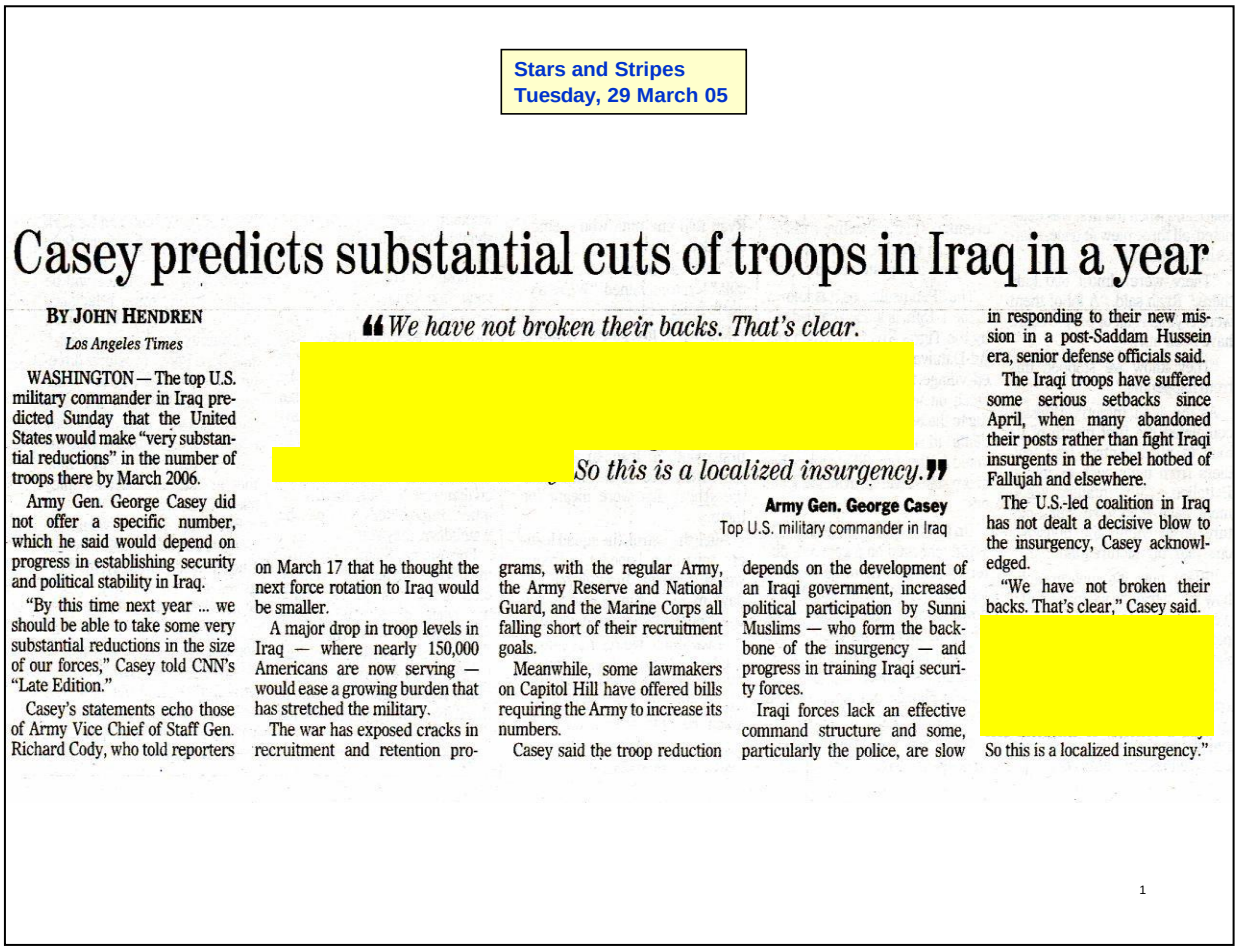
By the time Major Hansen assumed his duties as a deployed analyst, his predecessors had established a system to rapidly utilize and leverage the data contained in the SIGACTS database. SIGACTS was the primary archive used by MNC-I to record major incidents and events throughout the ITO. Major Hansen enhanced this capability, further establishing the cell's reputation as a source for quick and accurate decision support analysts. Central to this effort was Major Hansen's work in two broad areas: theater quantitative analysis and theater trend analysis.

Theater quantitative analysis required innovation, adaptability and a desire to help and support. Analytic requirements came from a wide range of sources and encompassed a broad scope of topics. Major Hansen found much of the work loosely defined and poorly supported by available data. Decision makers often sought a quantitative basis to reinforce "gut feeling" judgments made from military experience and expertise. Timeliness of analytic insights was a critical component of success – analysis was useless if not received in time to make a decision. Major Hansen's theater analysis successes included casualty analysis, Indirect Fire (IDF) point of origin analysis, troop-to-task ratio analysis, reporting latency analysis, and operations effectiveness studies.

Each Monday morning, Major Hansen briefed the MNF-I Commander, General George Casey, the MNF-I and MNC-I staffs, and a total of twenty generals, through his broadcast. The brief covered emerging trends across the Iraq Theater. This presentation was a subset of the roughly 45 slides produced each week as part of the CAA analysts weekly trends packet, entitled the Combined Weekly Update. Planners completed the Combined Weekly Update each Saturday morning and provided temporal trends in many subject areas including attack quantities and types, casualties by attack type and victim, attacks by type and geospatial region.

As a component of the weekly trends brief to the MNF-I CG, Major Hansen pioneered the use of geospatial density plots to display attack trend data by period. Using Environmental Systems Research Institute's (ESRI's) ArcGIS program, Major Hansen aggregated individual attack events and created a visual display useful to theater commanders. General Casey showed an immediate appetite for information, and used the products to inform military leaders and elected officials including the United States Central Command (USCENTCOM) CG, the Secretary of Defense, the Prime Minister of Iraq, and the President of the United States.

Major Hansen lists his deployment to Iraq and the analysis he conducted there as high points in his career as a military analyst. To provide analytic insights critical to decisions made by senior military and government officials was a rewarding accomplishment of his career. In this vein, Major Hansen counted occurrences when General Casey requested the script from his weekly trends brief as indicative of a mission well done. Figures 5-4 and 5-5 are two examples where the MNF-I Commander directly quoted from the weekly trends briefs conducted by Major Hansen.



Stars and Stripes
Tuesday, 29 March 05

Casey predicts substantial cuts of troops in Iraq in a year

BY JOHN HENDREN
Los Angeles Times

WASHINGTON — The top U.S. military commander in Iraq predicted Sunday that the United States would make "very substantial reductions" in the number of troops there by March 2006.

Army Gen. George Casey did not offer a specific number, which he said would depend on progress in establishing security and political stability in Iraq.

"By this time next year ... we should be able to take some very substantial reductions in the size of our forces," Casey told CNN's "Late Edition."

Casey's statements echo those of Army Vice Chief of Staff Gen. Richard Cody, who told reporters on March 17 that he thought the next force rotation to Iraq would be smaller.

A major drop in troop levels in Iraq — where nearly 150,000 Americans are now serving — would ease a growing burden that has stretched the military.

The war has exposed cracks in recruitment and retention programs, with the regular Army, the Army Reserve and National Guard, and the Marine Corps all falling short of their recruitment goals.

Meanwhile, some lawmakers on Capitol Hill have offered bills requiring the Army to increase its numbers.

Casey said the troop reduction depends on the development of an Iraqi government, increased political participation by Sunni Muslims — who form the backbone of the insurgency — and progress in training Iraqi security forces.

Iraqi forces lack an effective command structure and some, particularly the police, are slow in responding to their new mission in a post-Saddam Hussein era, senior defense officials said.

The Iraqi troops have suffered some serious setbacks since April, when many abandoned their posts rather than fight Iraqi insurgents in the rebel hotbed of Fallujah and elsewhere.

The U.S.-led coalition in Iraq has not dealt a decisive blow to the insurgency, Casey acknowledged.

"We have not broken their backs. That's clear," Casey said.

"We have not broken their backs. That's clear. So this is a localized insurgency."

Army Gen. George Casey
Top U.S. military commander in Iraq

So this is a localized insurgency."

1

Figure 5-4 General Casey 'Cutting Troops' New Article

· STARS AND STRIPES · MIDEAST EDITION ·

Stars and Stripes
Wednesday, 9 March 05

PAGE 5

General: U.S. troop level in Iraq to remain steady

BY LISA BURGESS
Stars and Stripes

ARLINGTON, Va. — U.S. troop levels in Iraq will remain steady at about 135,000 troops for "the next several months," according to the top U.S. military leader in Iraq.

Once the last of the units held over for Iraqi elections returns home at the end of March, "I don't necessarily anticipate [troop levels] changing much for the next several months," Army Gen. George W. Casey Jr., commanding general of the Multi-National Force-Iraq, told Pentagon reporters Tuesday.

"We're in a good position following the (January) elections, but we have a lot of work ahead to get to our final objective in Iraq," Casey said.

"We're actually further along than I thought we'd be at this point," Casey said. "The level of violence, the level of attacks (against coalition forces), have dropped off significantly."

However, Casey said he was "not ready to say" that the elections marked a "tipping point" that will spell a rapid end to the insurgency.

Despite progress in capturing many bombmakers and other foes of coalition forces and the new Iraqi government, "We are (still) dealing with an insurgency that has sufficient weapons, ammunition

3/9/2

seen that."

Even though attacks against U.S. forces have dropped, attacks continue against Iraqis, in particular the fledgling Iraqi security forces, which are losing members to suicide bombers and other insurgent weapons almost daily.

Casey

The insurgents are "clearly going after Iraqi security forces more, that's kind of a steady thing," Casey said.

The election gave the Iraqi people a much-needed psychological boost, Casey said, leaving Iraqi civilians less vulnerable to the demoralizing effect of daily bloodshed.

Casey said, "So you get a lot of noise. Before the election, that noise really affected the people, because they had a perception of insecurity," he said. "After the election, [it's] not having the same effect."

But stabilizing Iraq is an effort that could take many more years, Casey said, although he did not specifically say that U.S. troops would be required for the duration.

"Defeating insurgency takes time," Casey said. "The average counterinsurgency in the 20th century took nine years."

E-mail Lisa Burgess at: burgessl@stripes.osd.mil

Figure 5-5 News Article: General Casey Keeps Troop Levels Steady

5.2.10 CAA deployed ORSA Analyst in OIF - Major Loren Eggen (MNC-I C3 Plans)

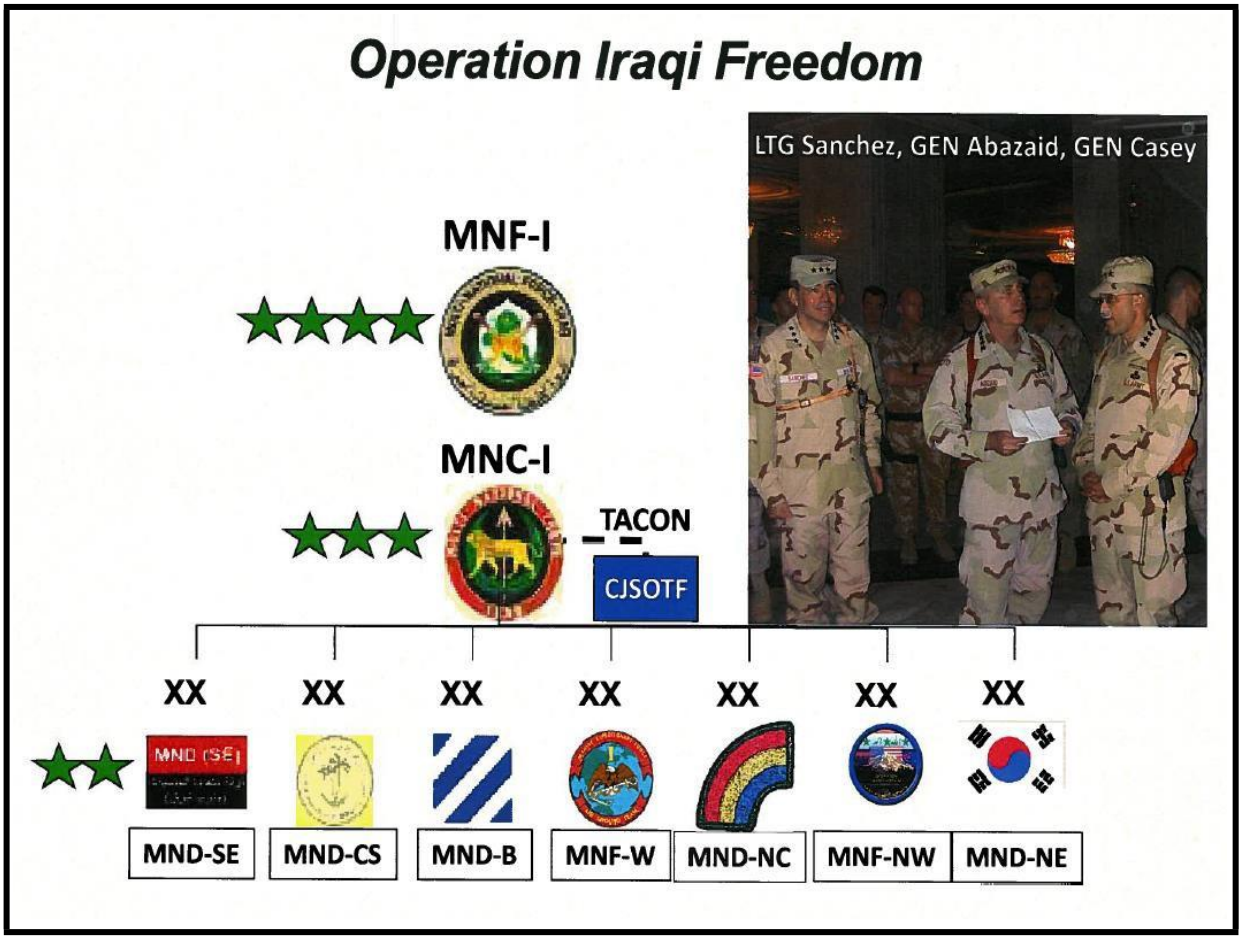


Figure 5-6 MNC-I C3 Plans and Policy Division Structure

On 6 December 2004, Major Loren Eggen deployed and had a two-week overlap with Major Stephanie Tutton, who returned to CAA on 20 December 2004. Major Eggen worked for MNC-I C3 Plans and Policy division (Figure 5-6).

At the time of Major Eggen's deployment the U.S. had nearly 133,000 Soldiers in the Iraqi Theater, which included over 11,000 Soldiers supporting operations from Kuwait. In July 2004, Combined Joint Task Force-7 (CJTF-7) separated into MNF-I, and its subordinate command, MNC-I. MNC-I conducted a transfer of authority from III Corps to XVIII Airborne Corps on 10 February 2005.

Multi-National Corps - Iraq was further divided into seven MSCs. At the end of February 2005, the 3rd ID assumed control of operations of MND-B from the 1st Cavalry, and the 42nd ID HQ from New York assumed control of operations of MND-NC from the 1st Armored Division (AD) Command. In March 2005, II MEF assumed control of operations for the MNF-W sector from the I MEF and the 11th Armored Cavalry Regiment (ACR) HQ assumed control of operations in MND-NW. A Polish Army Division Headquarters was in control of MND-CS, a British Army Division was in control of MND-SE, and a South Korean Army Division in control of MND-NE.

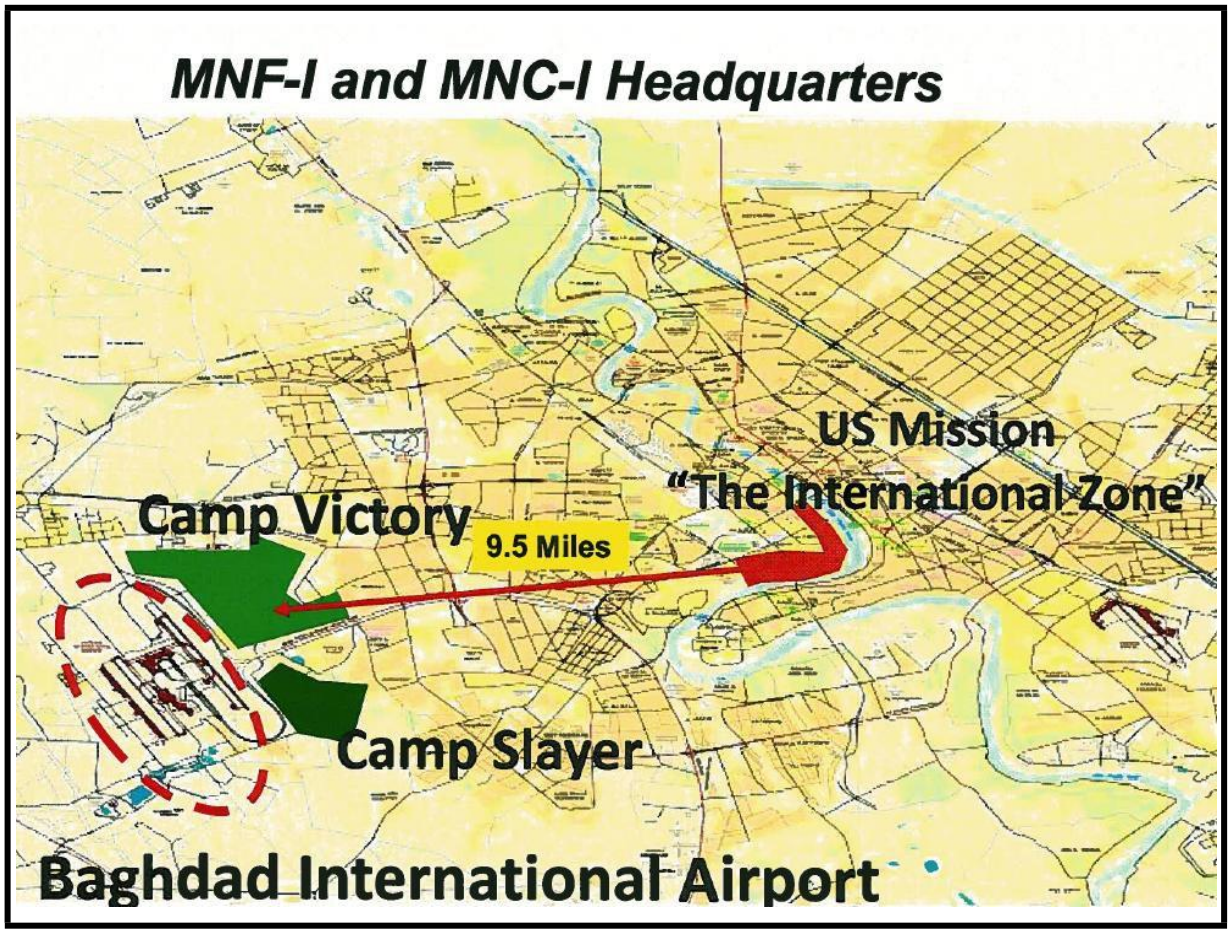


Figure 5-7 MNF-I and MNC-I Headquarters

The MNF-I Commander was located at Camp Victory, and the staff elements were located in the International Zone, Camp Slayer and Victory Base (Figure 5-7). III Corps did not have ORSA analysts in their force structure. When CJTF-7 separated into MNF-I and MNC-I, the Command decided that a CAA analyst would attach to MNC-I, yet still support MNF-I with operational analyses.

When Lieutenant Colonel Eggen deployed, the tasks of CAA analysts began to follow a predictable pattern. The analysts worked under the Chief of Plans & Policy Branch, part of the C3 Operations staff section of the MNC-I. Analysts continued to support each of the commanders and staff sections with weekly and periodic analytic products (Figure 5-8).

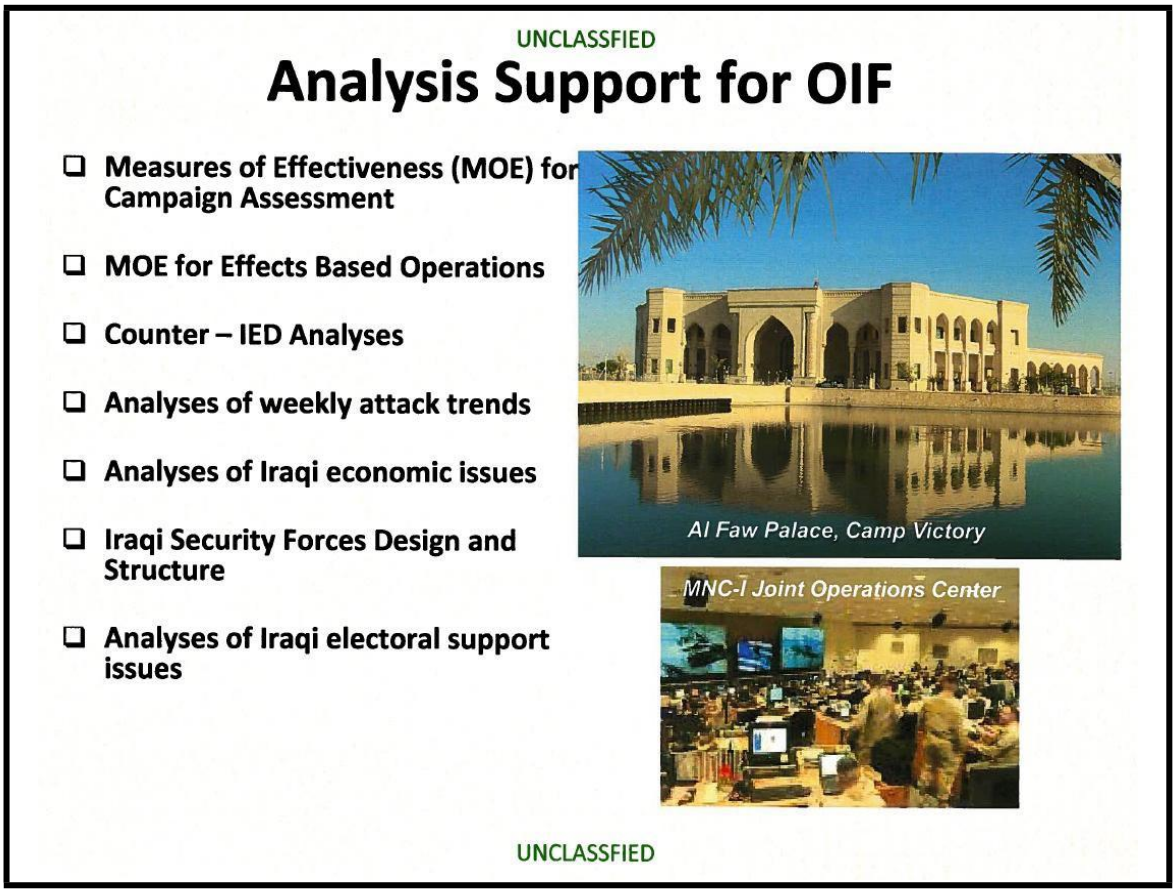


Figure 5-8 Analysis Support to OIF

The following are the ORSA Cell functions performed by Lieutenant Colonel Eggen:

- Create, evaluate and report critical measures of effectiveness to assess Campaign Plan progress.
- Develop detailed plans to quantitatively and qualitatively evaluate and solve complex problems.
- Create, refine and manage multi-functional databases/data collection-tools and techniques.
- Liaise between the combatant commander and Army analytic agencies to provide full analytic modeling and simulation capabilities.
- Assist staff elements in creating data gathering, tracking and synthesis procedures.
- Apply relevant models to inform the deliberate planning process of the Future Plans division.
- Enable the commander to focus resources and assets.
- Provide analytic products to assist the commander in operational decision-making.

The reporting week ended each Friday at midnight. Early Saturday morning the analysts downloaded several weeks of data from the MNC-I SIGACTS database, populated by a web-based system with no automated capacity to screen for errors. Analysts developed several macros that enabled data error-identification. They spent Saturday and most of Sunday correcting errors and updating analytic products, to include the Combined Weekly Update, IED

trend analysis, casualty information, and both base and provincial attacks. Monday morning, analysts briefed selected slides during the MNF-I BUA for General Casey.

CAA analysts attended the CASB Working Group with the Chief of Assessment in the Strategy, Plans, and Assessment Directorate of MNF-I. General Casey received a CASB briefing once monthly. CAA's analysts were also part of the EAB Working Group, chaired by Brigadier General Formica and then Brigadier General Peter M. Vangjel, which met weekly and presented an EAB briefing to Lieutenant General Vines twice a month. In addition, CAA analysts participated in the Senior Plans Meeting conducted weekly for the Chief of Plans and Policy, who later would present this information to Lieutenant General Vines.

In addition, CAA analysts attended the weekly Joint IED Defeat Task Force Working Group and weekly Knowledge Management Working Group (KMWG). The KMWG was responsible for coordinating the various databases which were being populated by several sections within the MNF-I and MNC-I and for improving and activating Fusion Net and CIDNE. Fusion Net was XVIII Airborne Corps' replacement for the web-based SIGACTS database and originated during the Corps deployment to Afghanistan from the beginning of OEF. CIDNE was originally developed by III Corps and then adopted by MNF-I. CIDNE was a collaboration of many different databases into one exchange for all to share.

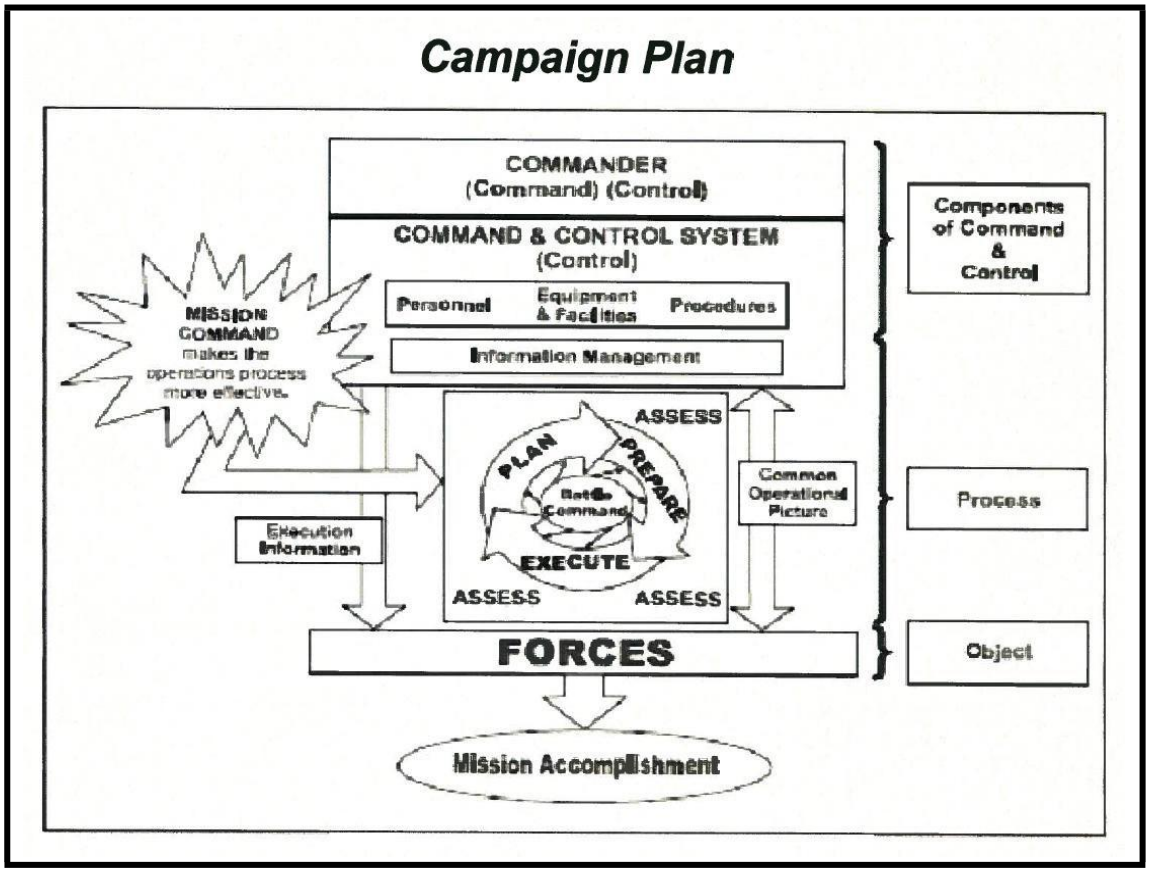


Figure 5-9 Campaign Plan

The best Command and Control (C2) cannot foresee the future. To counter human imperfection, planners continually provided the Commander with Intelligence updates during the planning, preparation, and execution phases of theater campaign assessments (Figure 5-9).

Assessments began with an information and intelligence collection plan and continued throughout the preparation and execution phases. Lieutenant Colonel Eggen concluded that analysts should collocate with the planners who defined the MOEs and ensured "actions planned" led to "desired effects". Analysts measured effects indirectly when quantitative information was not available. Moreover, because of time and labor limitations, analysts could not measure all known effects. Analysts prioritized measurements whenever possible. Often, MOEs would change as the plan matured (Figure 5-10).

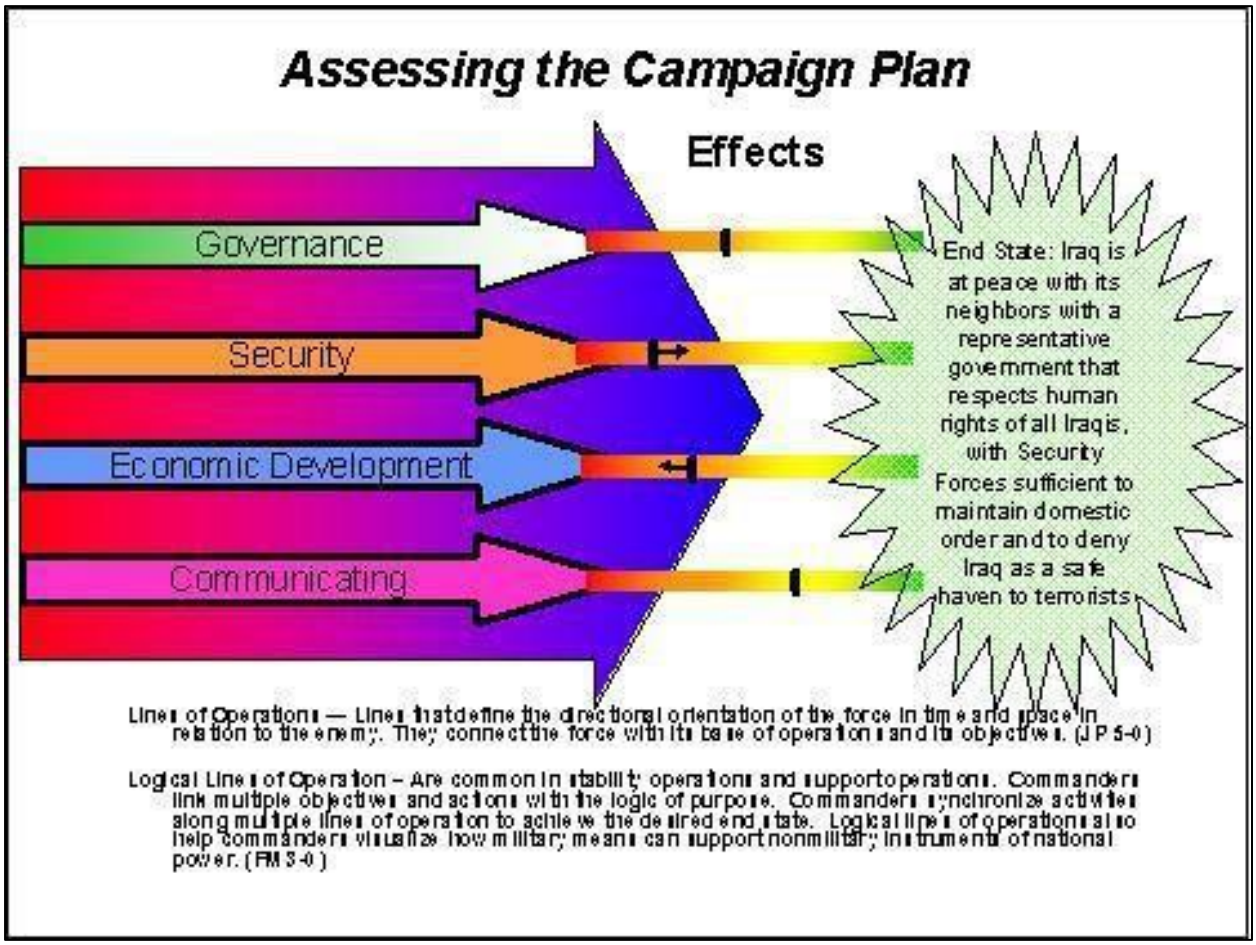


Figure 5-10 Effects of the Campaign Plan

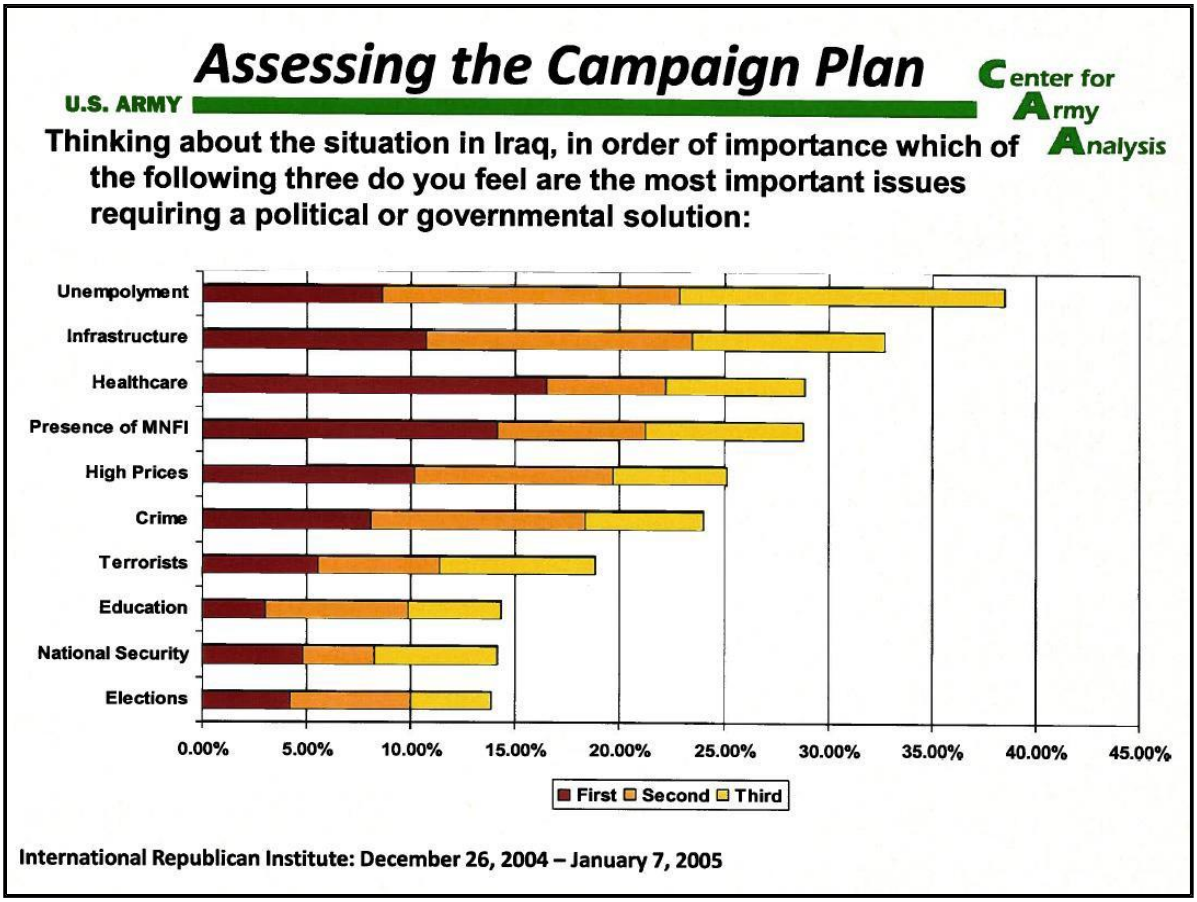


Figure 5-11 Assessing the Campaign Plan

Figure 5-11 illustrates the Lines of Operations and MOEs used to assess the Campaign Plan's desired end state.

The following are actual MNF-I BUA slides declassified by the MNF-I foreign disclosure office so General Casey could present them to the Secretary of Defense, the U.S. Ambassador, and the Iraq President. Every Monday morning, analysts briefed similar slides to the MNF-I Commander, General Casey, during his daily BUA.

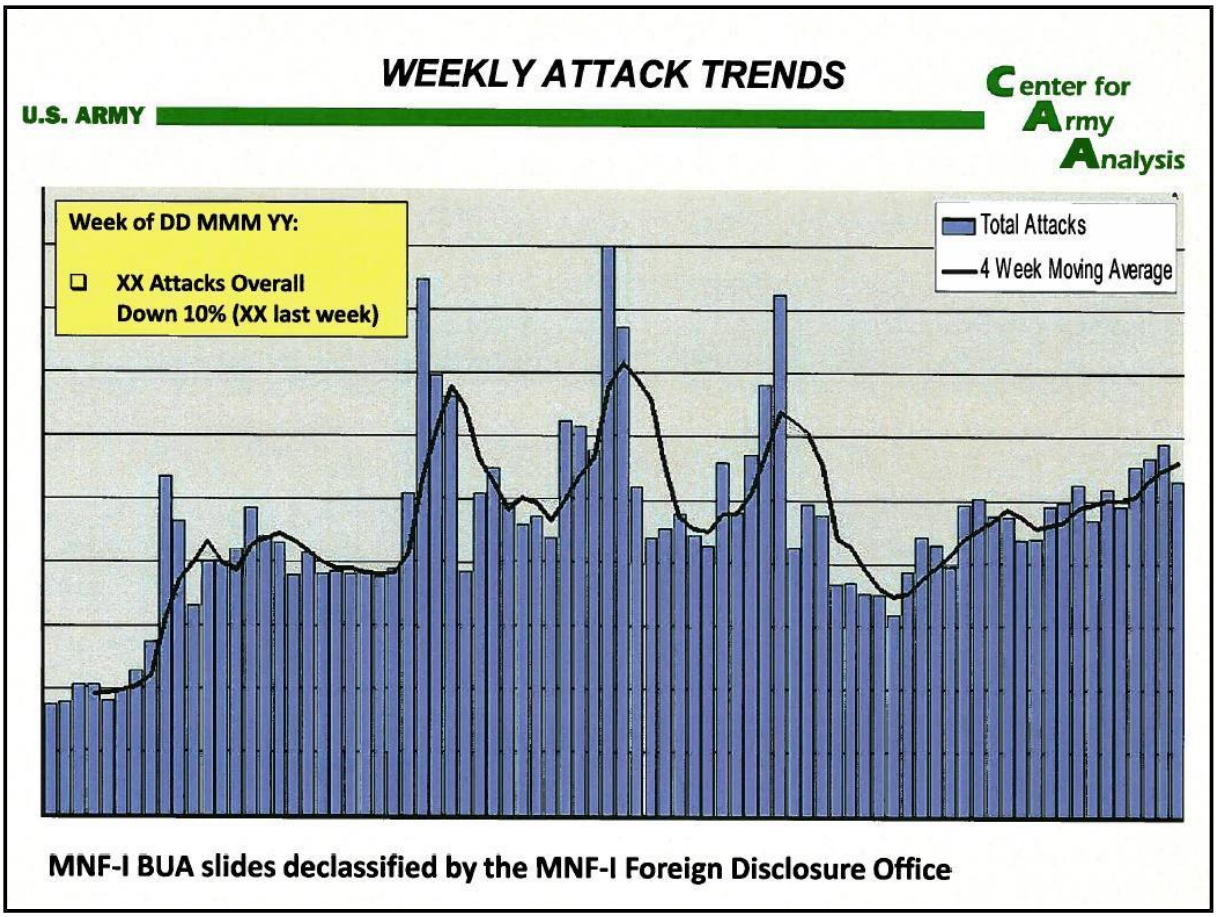


Figure 5-12 Weekly Attack Trends

The Weekly Attack Trends analysis was General Casey's most significant MOE for his Campaign Plan. Figure 5-12 is an example of a Weekly Attack Trends slide, briefed by analysts during the BUA. Attack Trends were significant, with the following caveat: it was important not to forecast or predict future events solely from trend analysis; briefers could only provide a reasoned analysis of peaks and valleys in conjunction with detailed knowledge of the particular weekly events of the past week.

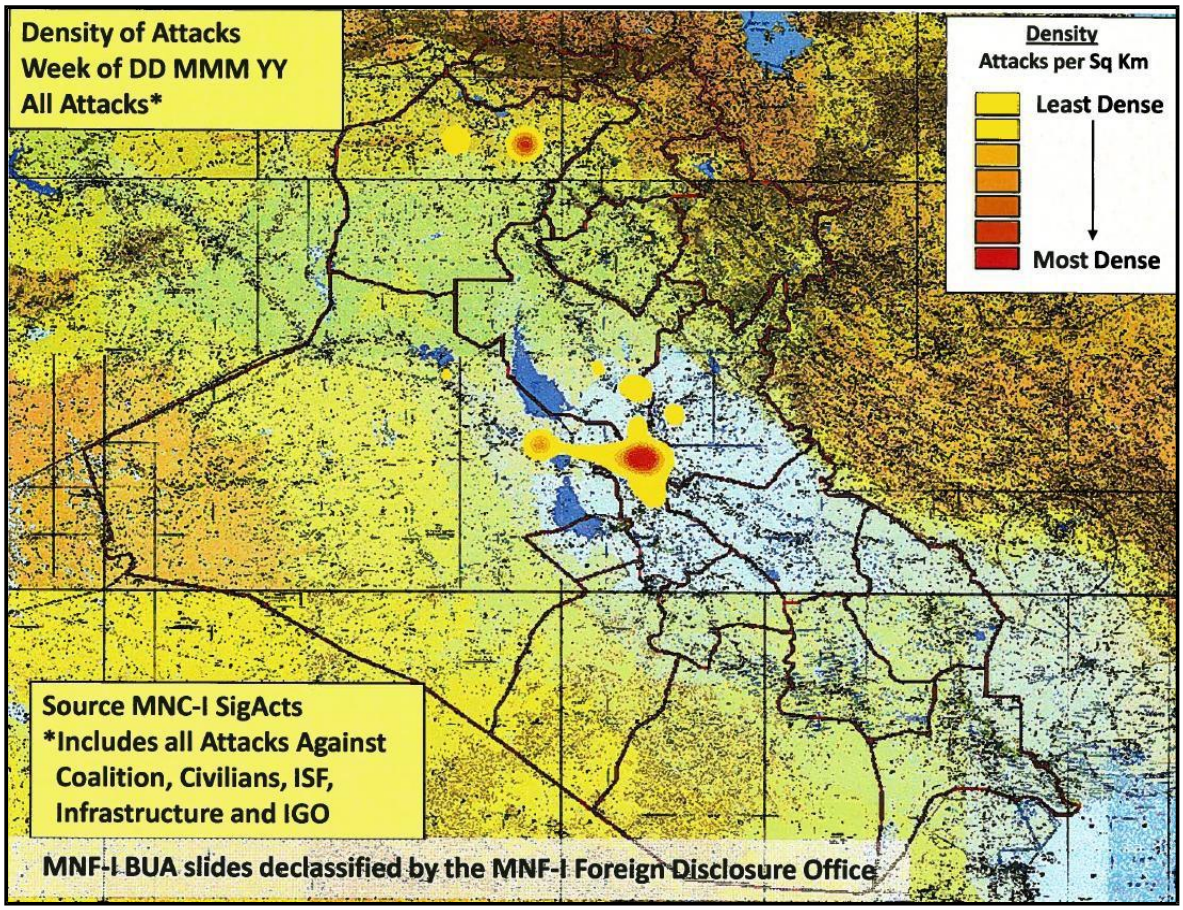


Figure 5-13 Density of Attacks

Figure 5-13 represents the density of attacks in Iraq, with provincial borders, for a given time period. The MNF-I and MNC-I Commanding Generals routinely requested this slide. The commanders presented them to special dignitaries and visitors to the ITO. CAA analysts used ArcView 3.3 with a spatial analysis tool add-on to produce this particular graphic.

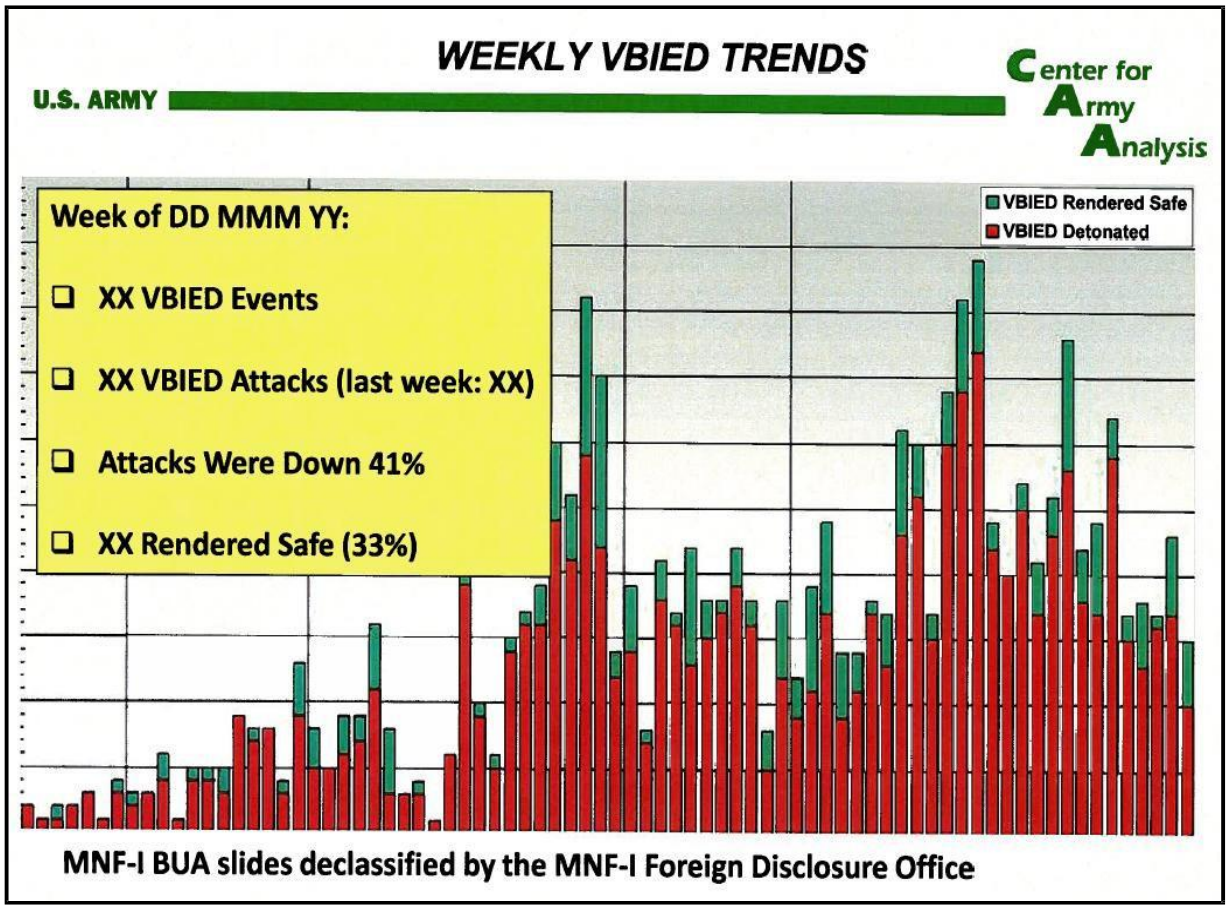


Figure 5-14 Weekly VIEB Attack Trends

Vehicle borne IEDs (VBIEDs) along with IEDs were a major concern in Iraq (Figure 5-14). Like the other slides described in this section, analysts updated this slide weekly and posted it to the MNC-I C3 Plans and Policy ORSA Products web page. Many staff sections from MNF-I and MNC-I used these slides in their own presentations.

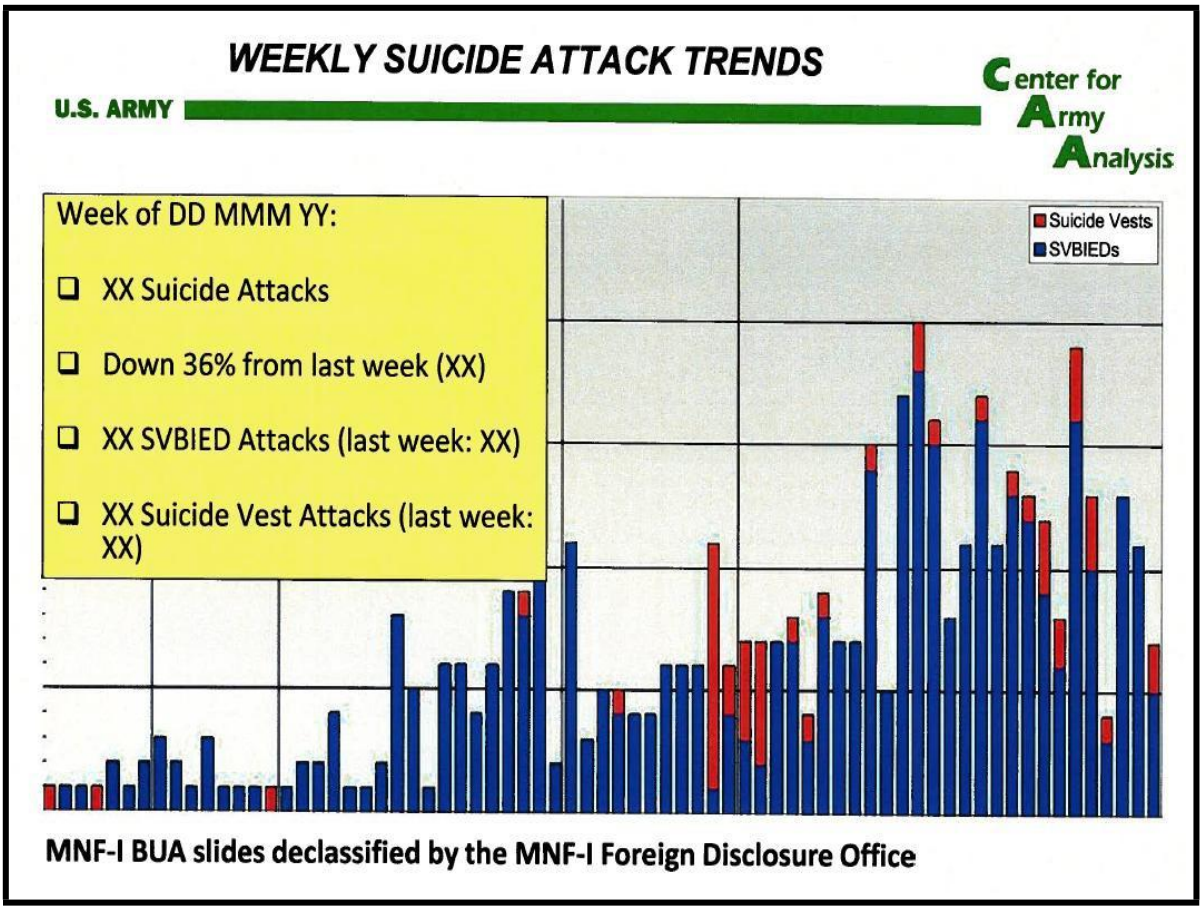


Figure 5-15 Weekly Suicide Attack Trends

Commanders were greatly concerned about Suicide IED attacks (Figure 5-15). Using complex search functions in the MNC-I SIGACTS database, CAA analysts identified IED attacks from attacks by insurgents who used themselves as human IEDs.

5.2.11 CAA deployed ORSA Analysts in OIF - Lieutenant Colonel Dennis Day and Lieutenant Colonel Tom Rothwell (MNC-I C3 Plans)

The next two analysts to deploy to Iraq in support of MNF-I and MNC-I were Lieutenant Colonel Dennis Day on 27 March 2005 and Lieutenant Colonel Thomas Rothwell on 15 May 2005. They worked for the C3 Plans section. Since they had considerable overlap in theater, Lieutenant Colonel Day and Lieutenant Colonel Rothwell rolled their deployment reports into one. The total overlap of the two deployments was roughly four and one-half months.

Multi-National Corps - Iraq was the controlling headquarters for all ground combat forces within Iraq, except for those with the express purpose of training Iraqi Army and security forces. Lieutenant Colonels Day and Rothwell technically worked for the CG of MNC-I, Lieutenant General Vines. However, they completed an equal amount of work for the MNF-I Commanding General, General Casey, and his staff. Most of their RFIs came directly by e-mail or phone without coordination with their supervisor, the Director of MNC-I C3 Plans. During their deployment, they were summoned by name directly to visit and brief each of the general officers within the staff of MNF-I and MNC-I.

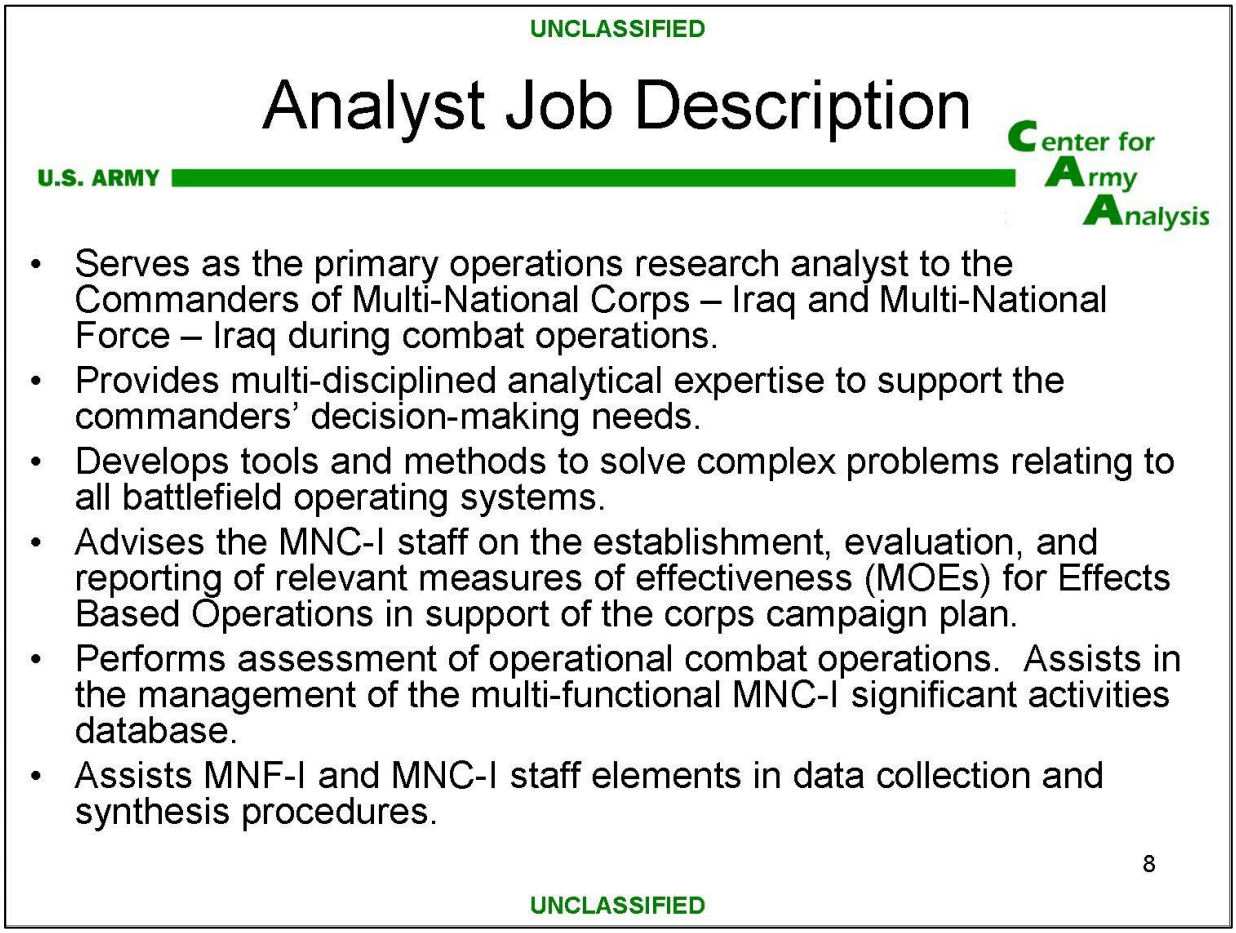


Figure 5-16 Analyst Job Description

Figure 5-16 shows their job description. They felt bold using the word "primary" in the first bullet for the MNF-I commander, but when he needed analysis quickly he called Lieutenant Colonel Day or Lieutenant Colonel Rothwell. Most of their work centered on data mining and database management. This was a common theme among deployed analysts. Planners frequently contacted them to interpret entries in the MNC-I SIGACTS database.

During their deployment Lieutenant Colonel Day and Lieutenant Colonel Rothwell were involved in developing MOEs to support assessments the MNC-I Campaign Plan and associated operations. They served as consultants to the MNF-I and MNC-I Effects cell on the proper use and selection of various MOEs. Lieutenant Colonel Day and Lieutenant Colonel Rothwell conducted statistical analyses of friendly and enemy activities. Because most of the RFIs they fulfilled had short suspenses, Lieutenant Colonel Day and Lieutenant Colonel Rothwell did not use CAA reachback capabilities.

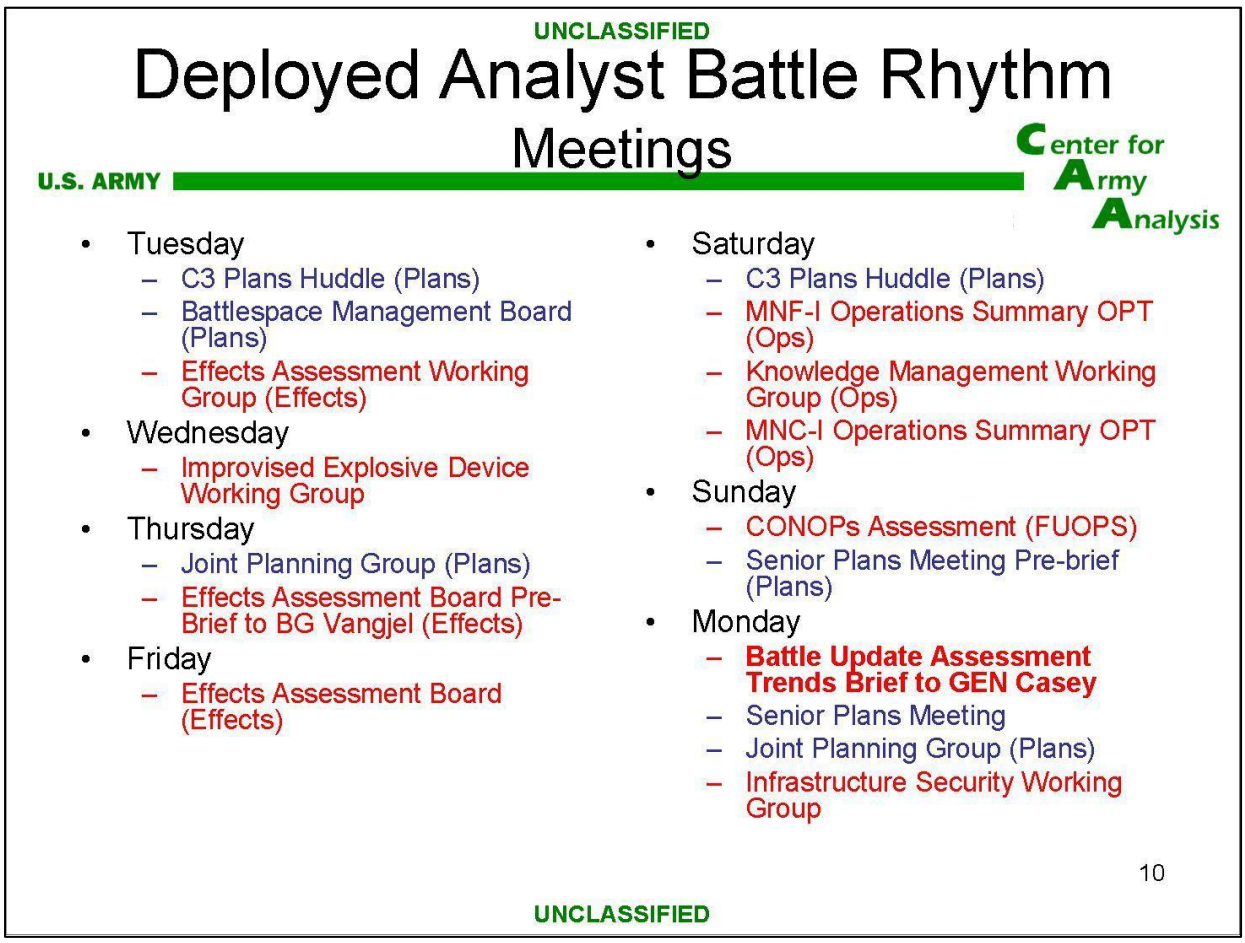


Figure 5-17 Deployed Analyst Battle Rhythm

Figure 5-17 depicts the typical weekly battle rhythm. It shows the meetings that either or both Lieutenant Colonel Day or Lieutenant Colonel Rothwell attended. Those shown in red were meetings in which they were required to provide a product. They attended the meetings shown in blue to maintain their situational awareness. The battle rhythm began on Tuesday and ended on Monday. This coincided with their preparations for a weekly briefing they presented to General Casey each Monday morning. The one function that took priority was the Monday morning Battlefield Update Assessment. In addition to their briefings to General Casey, Lieutenant Colonel Day and Lieutenant Colonel Rothwell assisted the MNF-I and MNC-I Operation Planning Teams (OPTs) in preparing weekly operations summaries for General Casey. Their involvement in Effects Based Operations (EBO) was through attendance at the EABs and assorted pre-briefs. Lieutenant Colonel Day and Lieutenant Colonel Rothwell also assisted the Future Operations (FUOPS) section in determining Concept of Operations (CONOPS) effectiveness on a weekly basis. The KMWG was the vehicle through which they could make suggestions on changes to the SIGACTS database.

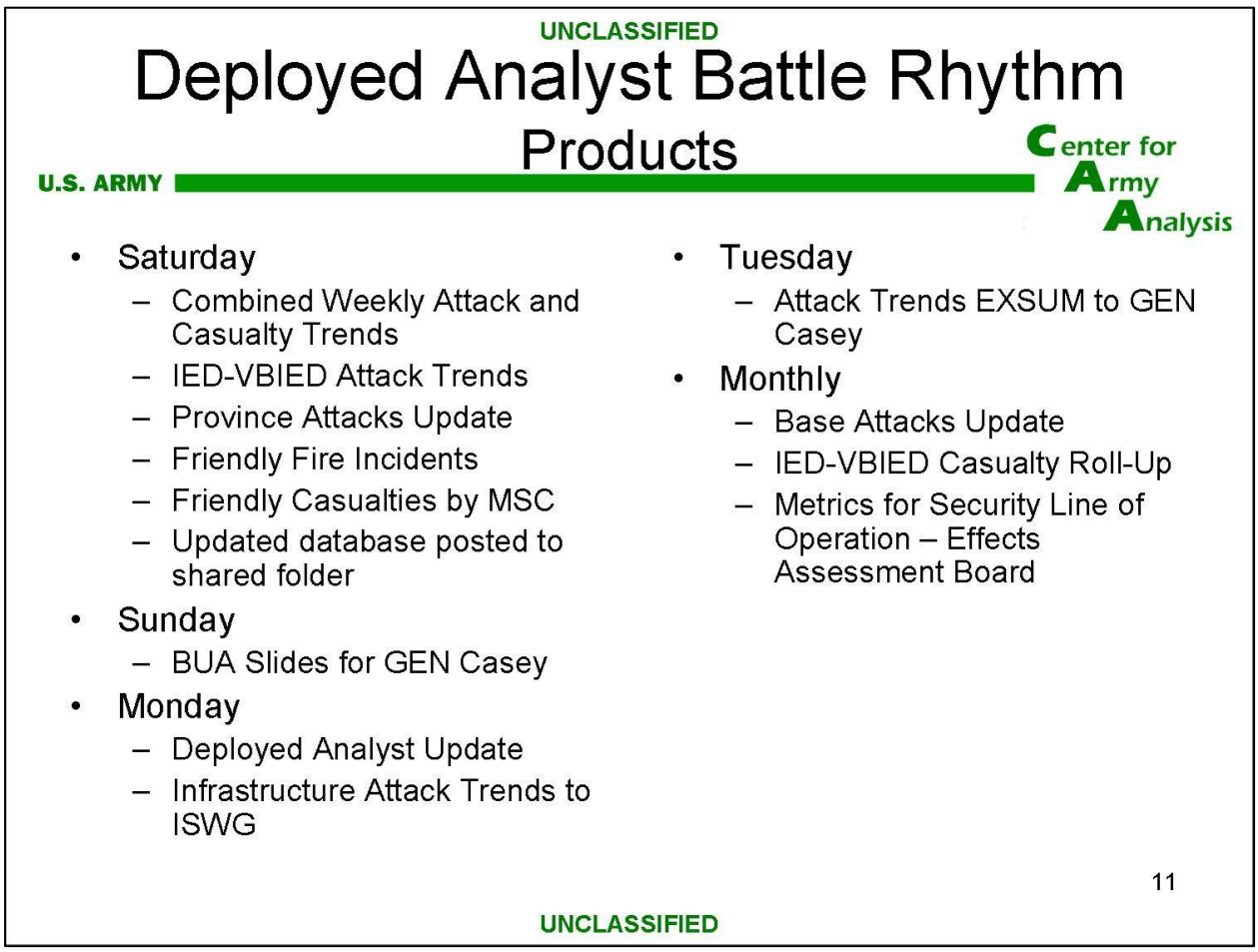


Figure 5-18 Deployed Analyst Battle Rhythm, Products

Figure 5-18 provides a list of products Lieutenant Colonel Day and Lieutenant Colonel Rothwell produced on a routine basis. They produced most of them on Saturday in preparation for the Monday morning briefing to General Casey. Routine products typically were not due between Tuesday and Saturday. However, RFIs were the heaviest during this time. CAA analysts invested a significant amount of time Wednesday and Thursday updating the database, or making changes to their automated processes in preparation for the next data download on Saturday.

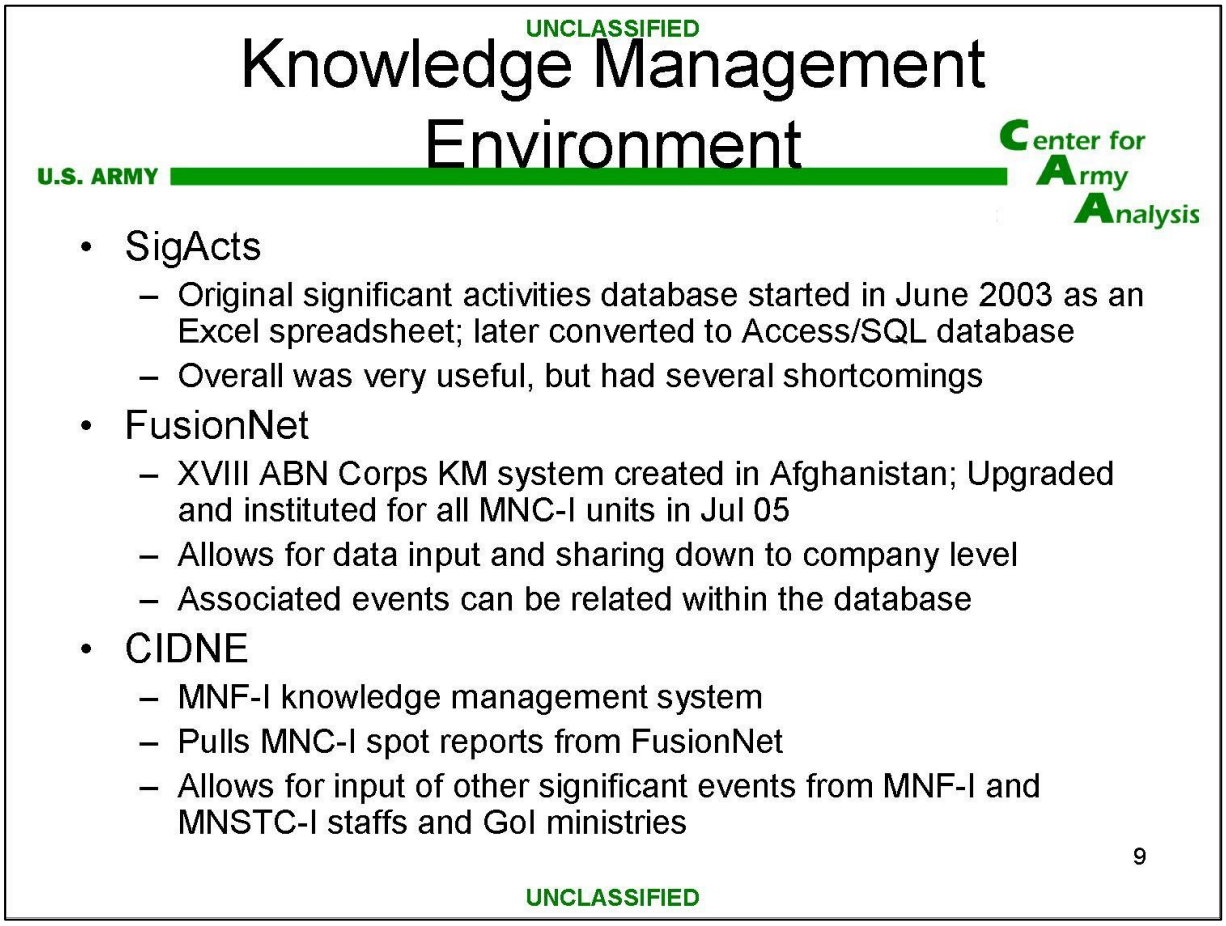


Figure 5-19 Knowledge Management Environment

Figure 5-19 contains two acronyms not previously used in this document, Executive Summary (EXSUM) and Infrastructure Security Working Group (ISWG).

When Lieutenant Colonel Day and Lieutenant Colonel Rothwell arrived, the SIGACTS database was the only Knowledge Management (KM) operating system. Analysts initially maintained the MNC-I SIGACTS on an Excel spreadsheet. The spreadsheet approach limited the number of lines. Lieutenant Colonel Day and Lieutenant Colonel Rothwell chose to save the CAA SIGACTS database to a Microsoft Access format. This required them to convert the downloaded data to an alternate format. They developed automated procedures to download data from Excel spreadsheets, detect and correct errors, and convert data into the format required for appending to an Access database.

During their tour, XVIII Airborne Corps transitioned all information in the MNC-I SIGACTS database from Access to FusionNet as its primary KM tool. Concurrently, MNF-I instituted CIDNE as its KM platform, which used FusionNet as its primary data source. Designers engineered CIDNE to incorporate data from the ministries of MNSTC-I and the Government of Iraq (GoI).

Once FusionNet came on line Lieutenant Colonel Day and Lieutenant Colonel Rothwell developed new downloading procedures and performed the process of verifying and validating entries. They assisted the MNC-I Effects cell in the establishment, data collection and reporting

of Counterinsurgency (COIN) MOEs in support of the MNC-I Campaign Assessment. As with other deployed analysts, Lieutenant Colonel Day and Lieutenant Colonel Rothwell trained planners from the MNF-I Effects Cell on the use of Microsoft products. Lieutenant Colonel Day and Lieutenant Colonel Rothwell instructed and mentored the staff on uses of Excel pivot tables and database management techniques.

Lieutenant Colonel Day and Lieutenant Colonel Rothwell created a database in response to questions from General Casey concerning attacks against Iraqi infrastructure. They assisted the MNF-I CMO/C9 in developing new measurement standards to determine if an attack was effective or ineffective, direct or indirect. This database provided General Casey's CMO/C9 valuable information on attacks against oil, water, electrical, and bridge infrastructures. Lieutenant Colonel Day and Lieutenant Colonel Rothwell also assisted the MNF-I Strategic Operations Cell and the MNC-I C3 by providing relevant enemy attack and friendly operations trend summaries for use in the preparation of weekly Operations Summaries (OPSUMs) for General Casey.

Over the course of their six-month deployments, Lieutenant Colonel Day and Lieutenant Colonel Rothwell answered over 250 RFIs from the MNF-I, MNC-I, and DA staffs. The most memorable and challenging RFIs came from General Casey. General Casey requested an update on the progress of the ISF, in preparation for his visit to Washington D.C. in early October 2005. General Casey's goal was to show the press and the Senate how well the Iraqi Army was progressing by taking the lead in military operations. It was difficult for Lieutenant Colonel Day and Lieutenant Colonel Rothwell to convince MNF-I and MNC-I staff officers that an increase in combined operations would provide more accurate reporting and decrease coalition involvement with the Iraqi Army.

General Casey also asked how many operations U.S. Forces conducted alone. The only data available from the MNC-I JOC was the number of effective U.S. operations, defined as an attack or contact that occurred during an operation. While this helped frame the issue, it was not the entire answer to General Casey. The available data made the involvement of the Iraqi Army seem questionably high. With further analysis, it became necessary for analysts to explain to General Casey's staff that Iraqi Army involvement was lower than previously reported. This demonstrates differences in the reports of MNF-I and MNC-I Commanding Generals. The MNC-I commander, Lieutenant General Vines, did not need the data in his assessments; hence, it was not tracked.

In addition to answering RFIs, Lieutenant Colonel Day and Lieutenant Colonel Rothwell conducted analyses of a longer duration. The following is a list of those additional efforts:

- Clustering analysis of Explosively-Formed Penetrator (EFP) attacks for the Counter-IED Targeting Program (CITP) manager
- Analysis of the distribution of up-armored High Mobility Multipurpose Wheeled Vehicle (HMMWVs) for the MNF-I Chief of Staff
- Initial analysis for employment of an Aerial Intelligence, Surveillance, and Reconnaissance (ISR) platform for the CITP
- Doctrinal templating of VBIED Attacks for the Combined Operations Intelligence Center (COIC)
- Analytic support to Escalation of Force (EOF) 15-6 investigation for the MNC-I effects coordinator

- Analysis of Iraqi Army unit effectiveness in Baghdad for the CG, MNC-I

Based on their deployment experiences, Lieutenant Colonel Day and Lieutenant Colonel Rothwell offered the following recommendations for future deployed analysts:

- Analysts should work for MNC-I C3 Chief of Operations rather than C3 Plans.
- Transfer the Monday morning BUA task to MNF-I C2.
- The team should have at least one Lieutenant Colonel.
- Future deployments should return to a three-month overlap schedule.
- Three weeks for travel and overlap is excessive; two weeks (two Saturdays) would suffice.
- Understand pivot tables prior to deployment. It makes the transition easier.
- Look, listen, and learn during your first two weeks.
- It takes a week to get your groove on.
- Beware of egos!
- Cut-and-Paste and plagiarism are ways of life. Mark your territory.
- Beware of an analyst with no knowledge of Operations Research/Systems Analysis.
- The biggest danger to CF at Camp Victory is vehicle traffic.
- Never underestimate the power of clean data.
- Be prepared to help define/describe the question/query back to the customer.

Lieutenant Colonel Day concluded his deployment on 25 September 2005 and Major Nathan Dietrich replaced him. Major Dietrich arrived on 30 August 2005, which provided a one-month overlap with Lieutenant Colonel Day. Lieutenant Colonel Rothwell concluded his deployment on 6 November 2005 and Lieutenant Colonel Daniel Mahoney, who arrived on 20 October 2005, replaced him. Despite the recommendation that ORSA analysts work for C3 CHOPS, the Command assigned Major Dietrich and Lieutenant Colonel Mahoney to MNC-I C3 Plans.

5.2.12 CAA deployed ORSA Analysts in OIF - Lieutenant Colonel Dan Mahoney and Major Nathan Dietrich (MNC-I C3 Plans)

The five primary functions performed by Lieutenant Colonel Mahoney and Major Dietrich follow:

- Commander's Action Group (CAG) Duties
- Data Mining and RFIs
- Quick-Turn and Decision Support Analysis
- Staff training on data collection
- Polling

The battlefield was dynamic, with unit boundaries changing as missions changed, Forward Operating Bases closing, and OPLANS changing to meet the new missions. Lieutenant Colonel Mahoney and Major Dietrich found it necessary to adapt the database to reflect the current situation. One example of how the analysis situation changed was the method of data collection for ISF. The Command originally rolled ISF casualties into one category that included Iraqi Army, Iraqi Police, and the Ministry of Justice forces. Over time, as ISF began to take the lead in certain areas of the country, it became important to track casualties by sub-categories. Analysts added these fields to the SIGACTS database to track separate casualties. Other fields they added to the SIGACTS database were cities, provinces, time of day intervals, and data

pertaining to MSRs and alternate supply routes (ASRs). As briefing requirements increased, it was necessary to populate the SIGACTS database twice a week.

A second function performed by Lieutenant Colonel Mahoney and Major Dietrich was data mining and RFIs analysis. RFIs usually fit into one of three categories: basic data mining and trend plotting, geospatial analysis, and statistical analysis.

During their tours, Lieutenant Colonel Mahoney and Major Dietrich performed analyses on the following data-mining RFIs: determine the percentage of all effective enemy attacks conducted against logistics convoys; summarize trends in Iraqi Army battlespace to show the effectiveness of the Iraqi brigades; determine the significant activities occurring in the Iraqi Army battlespace.

Geospatial analysis RFIs required Lieutenant Colonel Mahoney and Major Dietrich to have analytic skills and software tools for visualization, pattern recognition and operations planning. Typically, planners requested these RFIs to pinpoint enemy activity in space and time in a certain area of operation to see if any patterns of enemy activity were detectable. Geospatial analysis was often instrumental in planning successful missions.

Lieutenant Colonel Mahoney and Major Dietrich conducted several types of geospatial analyses to answer RFIs. The most basic kind of graphical analysis involved simple plotting of SIGACTS events on a map over time as a visualization and pattern recognition aid. Analysts created such products for the MNF-I Commander's Liaison Element (CLE), a team that went out into Baghdad every day to conduct polling functions. Another example of geospatial analysis involved simple plotting of densities of enemy attacks on a map and attacks over time. A third geospatial analysis led to elimination of an EFP IED production and emplacement cell in Baghdad. This success was very rewarding for Lieutenant Colonel Mahoney and Major Dietrich.

Operations Research/Systems Analysis analysts conducted statistical analysis to determine the relationship between events. These RFIs came from MSCs, MNC-I or MNF-I staff officers, commanders, and even the Secretary of Defense. General Casey requested one such analysis; he wanted to know if there was a correlation between the number of Suicide Vest IED (SVIED) attacks and EOF incidents. The complete analysis is located in Lieutenant Colonel Mahoney and Major Dietrich's individual reports.

Lieutenant Colonel Mahoney and Major Dietrich also worked on data management and decision support tools development. Commanders in war zones have to make multiple decisions daily. Their decisions are often politically charged and usually have life-and-death consequences:

- When and where can we withdraw forces?
- How should we best distribute scarce electronic warfare equipment in the C-IED effort?
- Where should we distribute limited reward/reconstruction funds to improve relations with the populace?

Commanders and their staffs constantly sought quantifiable, or at least readily comparable, information on which to base these decisions. CAA deployed analysts provided valuable support and earned positive visibility for CAA by developing methods that provided analytic rigor for hard-to-quantify issues. Following are examples of methods and tools Lieutenant Colonel Mahoney and Major Dietrich developed to help inform commanders' decisions.

Lieutenant Colonel Mahoney and Major Dietrich provided their first decision-support tool when the XVIII Airborne Corps HQ staff began work on a new Operations Plan (OPLAN) in support of their transition with V Corps. Lieutenant Colonel Mahoney and Major Dietrich developed tools for Force distribution analysis in the AO. This enabled the XVIII Airborne Corps HQ staff to determine if any realignment was required given changes in enemy activity observed since their arrival.

Another decision-support tool developed by Lieutenant Colonel Mahoney and Major Dietrich focused on the need to determine a reasonable distribution of available reward money across provinces. Money to fund infrastructure improvements was available as a reward for local cooperation.

Lieutenant Colonel Mahoney and Major Dietrich provided a third decision-support tool, a simple data-visualization methodology. The Command truly appreciated this product. The Command was considering standing up a large number of Police Transition Teams (PTTs) using the military police (MP) available in theater, while simultaneously requiring them to perform the operations they were already performing. Lieutenant Colonel Mahoney and Major Dietrich created a simple display that mapped out the impact of various COAs over time – using the number of MP units over or under the operational requirement as a proxy for the risk involved in the COA. Lieutenant General Vines particularly liked this methodology because it displayed a very complex problem in a straightforward and easy-to-understand manner. The planners who worked for Lieutenant General Vines adopted this method for future force-generation planning.

A final decision-support tool was a display chart showing the overlap of key events in each base-closure. The C3 Plans Base Closure Officer-in-Charge (BCOIC) was frustrated with the visuals that briefers were using. Prior to Lieutenant Colonel Mahoney and Major Dietrich assistance, planners displayed each individual base closure on a separate PowerPoint slide with basic lines and titles hand-drawn. The BCOIC wanted a chart showing all base closures together, allowing for date changes, and Forward Operating Base (FOB) closures, and recent key events, without having to redraw the chart. Lieutenant Colonel Mahoney and Major Dietrich created a chart in Excel that updated as the BCOIC changed data for base closures. With the use of an Excel add-in, the XY Chart Labeler, Lieutenant Colonel Mahoney and Major Dietrich provided a tool that allowed changing Y labels and labeling key events by simply updating data within the Excel spreadsheet. Saving valuable time, the Base Closure Officer-in-Charge (BCOIC) used this chart weekly to brief General Casey on MNC-I base closing status.

The training Lieutenant Colonel Mahoney and Major Dietrich conducted fell into two basic categories: the use of basic analytic tools available in theater, and the employment of basic analytic methodology. They provided support for Excel, FusionNet and Web-Enabled Temporal Analysis System (WebTAS). From the most rudimentary questions in Excel such as "how do I sort this column" to creating and saving advanced database queries in WebTAS, they provided professional assistance when staff officers could not find the software expertise in their own staff section. By searching internet information sites, Major Dietrich was particularly adroit at researching functions that he did not already know how to perform. The same was true with basic analytic methodology training. When Lieutenant Colonel Mahoney and Major Dietrich sensed that a Request for Assistance/Analysis (RFA) had become routine, they would train staff members in simple methods for answering basic analytic questions. "Teaching them how to fish" became a critical part of time management. The two-person cell could never have kept up with requests for analysis and assistance without staff support.

Another function performed by Lieutenant Colonel Mahoney and Major Dietrich was process improvement. Time was always at a premium for a two-person cell supporting two HQ, so saving time was a critical task. This led Lieutenant Colonel Mahoney and Major Dietrich to automate as much routine work as possible.

Lieutenant Colonel Mahoney and Major Dietrich were concerned with the lack of documentation for tasks performed. Previous analysts had to deal with rapidly evolving situations and were more concerned with creating working systems than documenting those systems. By the time Lieutenant Colonel Mahoney and Major Dietrich deployed, the mission had stabilized into a more or less regular routine. While there were a number of new taskers, the emergence of a relatively steady state allowed Lieutenant Colonel Mahoney and Major Dietrich to expand documentation of tasks initiated by Lieutenant Colonel Tom Rothwell.

Lieutenant Colonel Mahoney and Major Dietrich focused on two primary documentation areas. The first area was writing "how to" documents for critical recurring tasks such as updating files when the reporting period changed or transferring critical files to the computers of incoming analysts. The second area was creating self-contained training modules for incoming analysts to expedite their transitions. Lieutenant Colonel Mahoney and Major Dietrich spent a lot of time from January to March developing these products and in the end believed they had documented about 90 percent of their critical, recurring tasks.

Lieutenant Colonel Mahoney and Major Dietrich provided the following recommendations for future deployed analyst rotations:

- Always have a Lieutenant Colonel on the team; that rank gives the cell the additional influence it needs to maintain independence.
- Because geospatial analysis has become an increasing part of the analytic workload in theater, it is critical that analysts have knowledge of ArcView 9.2.
- Maintain CAA ORSA analysts at MNC-I HQ, rather than MNF-I HQ.

5.2.13 CAA deployed ORSA Analyst in OIF - Major Mike Corson (MNC-I C3 Plans)

Major Michael Corson deployed in support of OIF from 9 February and 31 July 2006. His report documented the six months he spent in theater, two months with Lieutenant Colonel Mahoney and four with Major Farnsler.

Although Major Corson worked for MNC-I C3, he also provided products to the MNF-I Commanding General, General Casey, and his staff. During his tenure, Major Corson dedicated the majority of his work to the following staff sections, in order of precedence: MNC-I C3 – including Chief of Operations and Chief of Plans & Policy, TF Troy, MNC-I Deputy Commanding General, Major General Hahn, and the MNF-I CIG.

The following were Major Corson's primary responsibilities:

- Conduct trend analysis on attacks, casualties, and significant activities and then brief the MNF-I and MNC-I Commanding Generals and their staffs.
- Answer RFIs.
- Train and assist various staff sections on the use of analytic tools and methods.
- Serve as liaison between the Iraq theater and CAA.
- Frame problems, gather data, and report findings.

- Improve business practices associated with SIGACTS reporting and database management.
- Host ORSA Information Exchange meetings for analysts.
- Continue professional development.

Major Corson maintained that his top two responsibilities were to perform trend analyses and to answer RFIs. These two responsibilities consumed most of his time, especially on weekends when he developed the MNF-I BUA presentations.

The trend analysis products generated on a routine basis changed little from previous deployments. He prepared the products over the weekend in preparation for the Monday morning BUA to General Casey. For the rest of the week, he focused on answering RFIs from different staff sections. Additionally, more staff sections began paying attention to the portion of the Monday morning BUA report prepared by the CAA analysts. Following the BUA, attendees asked analysts to explain in detail how they created the slides and how they generated the analysis. Attendees also asked analysts to create customized products for their leadership.

An important part of Major Corson's work related to the trends analysis slides produced for the BUA. This was a scripted report that took the majority of the weekend to produce and refine. This report averaged between 20-22 charts. Later on, the MNF-I CIG took more of an interest in these slides and met with CAA analysts to make recommendations on adjustments to the Weekly Trends slides. A major change during Major Corson's deployment was the creation of a new period –the Government Establishment Period, in the BUA briefing. This coincided with the election of Iraqi Prime Minister Maliki on 20 May 2006.

Once the BUA concluded each Monday morning, CAA analysts spent the remainder of the week answering what were usually short-suspense RFI taskers from the MNF-I and MNC-I staffs. If the command leadership liked the results, they would have the analysts turn the RFIs into recurring product requirements.

The following is an example of a RFI task. Normally, the MNC-I C3 Chief of Plans would request a threat briefing for certain cities or provinces as part of the COA and mission analysis his staff was constantly generating. This usually involved accessing the SIGACTS data for appropriate timeframes and determining the best way to represent the data.

During Major Corson's deployment, Lieutenant General Chiarelli, the MNC-I Commanding General, carefully scrutinized the EOF trends. He wanted to know how many occurred each week and how many produced civilian casualties. During the MNC-I daily BUA, Lieutenant General Chiarelli received EOF trends from his MSC Commanders.

Task Force Troy had the MNC-I lead for briefing Lieutenant General Chiarelli on IED activity. Major Corson worked closely with the TF Troy staff officers to determine the number and effectiveness of EFP-type IEDs. CAA analysts assisted TF Troy personnel in building their weekly charts for the MNC-I BUAs. General Casey became interested in EFP trends and requested that Major Corson brief him as part of the MNF-I Monday BUA report. General Casey focused on these chart numbers in order to determine the influx of EFPs into Iraq.

Major Corson produced slides for TF Troy depicting the effect of counter-IED efforts over time. As opposed to just looking at the total number of casualties or the total number of IED detonations, TF Troy personnel wanted to see what the trend was in the number of CF casualties per IED detonation. After a little manipulation in Excel, Major Corson produced a chart

showing the CF casualty rate per detonation. This became a useful metric to gauge the effectiveness of the jamming and up-armoring equipment deployed into theater. An update to this chart was usually requested each time the Secretary of Defense or other official dignitaries visited MNF-I.

During Major Corson's deployment, his workload continued to increase as more staff sections utilized his capabilities. He maximized his use of the CAA Reachback program when given projects with longer suspense dates.

Major Joe Burger, a CAA analyst who had previously deployed to OEF, completed one such project. A staff officer in the C3-FM Division requested Major Corson's assistance on his second day in theater. The staff officer had briefed the MNC-I C3 on the flow plan of Armored Security Vehicles (ASV) into theater. The MNC-I C3 was concerned that the plan did not have any analysis to support its recommendation and the C3 requested the staffer "put a little math behind his COA recommendation." This reachback project resulted in the MNC-I C3 directly presenting CAA's recommendation to Lieutenant General Chiarelli.

Ms. Heather Brownfield, a CAA analyst, undertook a CAA reachback project to quantify the effect of counter-IED activities against those who placed IEDs. This was an update to a previous CAA analysis effort by Lieutenant Colonel Kewley and Lieutenant Colonel Brantley. TF Troy appreciated the analysis and adopted its methodology for future assessments.

A final example of a successful reachback project addressed density plotting. On a weekly basis, General Casey used these graphs to identify trouble spots of enemy activity throughout Iraq. General Casey used the project results to show Prime Minister Maliki exactly where the trouble spots were and where to focus his attention. The project started with a telephone call from the MNF-I Strategy Plans and Assessment division requesting weekly density plot charts for the past two years –104 charts in all. In turn, MNF-I would animate these charts to show the change over time. When CAA analysts started this project, they needed a "baseline" for density plots in order to present attack trends over time. CAA deployed analysts found this project more challenging than they had originally thought; therefore, they requested reachback assistance from CAA cartographer, Ms. Belinda Scheber. MNF-I decision makers truly appreciated the project results. As a side note, Ms. Brownfield and Ms. Scheber later deployed in support of OIF.

KM became one of Major Corson's primary responsibilities. CAA analysts in Iraq became the de-facto database maintenance crews during the first three years of OIF. The main reason for this was significant systemic problems in the reporting and logical definition of significant events reports. In May 2006, CAA deployed analysts began to scrutinize the current SIGACTS database. Upon investigation, they revealed specific problems that inhibited reconciliation of the MSC reporting with records in the MNC-I database, FusionNet. This resulted in the MNC-I SIGACTS redesign process described in chapter seven.

Major Corson learned that analysts expanded their own knowledge and capabilities during their deployments. One way to facilitate this was through sharing experiences with other deployed analysts. CAA deployed analysts met with other analysts in theater, on a bi-monthly basis, to discuss projects, issues, and maintain communication for future endeavors. Meeting topics included the functions and responsibilities of ORSA analysts in theater; types of training required; KM lessons learned; data management issues; EOF trends; an IED TTP survey; and, recommendations for a post-deployment survey.

Major Corson stated that it was important to harness, refine, and develop CAA's reachback capability. Major Corson successfully utilized the CAA reachback by capitalizing on the array of available resources at home station. He developed an effective division of labor by focusing his skills on short-term tasks while employing CAA reachback support for long-term problem analyses. As part of his post deployment report, he recommended maintaining a single Point of Contact (POC), in the OCA Division, for reachback project initiation and tracking purposes.

Major Corson saw the challenge of getting unattached from actual data management in order to focus on generating analysis. Major Corson learned that having to manage data, rather than conduct analyses, was an ineffective use of his skill set; he provided a data management plan to MNF-I and MNC-I.

Major Corson recommended stronger GIS skills for ORSA analysts. His one-week course was not sufficient for the tasks he faced. CAA's reachback assistance involving software and application support significantly aided his ability to become more efficient in the use of advanced functions of various analytic tools such as Excel and ArcGIS.

5.2.14 CAA deployed ORSA Analyst in OIF - Major Andy Farnsler (MNC-I C3 Plans)

Major Andrew F. Farnsler deployed on 26 March 2006 to replace Lieutenant Colonel Mahoney. His eight-month deployment was unusually long—adjusted by request of III Corps to coincide with the end of their rotation. Major Farnsler served in MNC-I C3 Plans with Major Corson. He determined that his primary tasks were:

- Performing operations and system effectiveness analysis
- Identifying friendly and enemy operational patterns and trends
- Creating geospatial and temporal pattern analyses
- Conducting baseline and statistical analyses
- Developing MOEs
- Conducting predictive analysis
- Estimating requirements and equipment fielding priority
- Developing models and simulations of military systems and processes
- Advising the commander and staff on Campaign Plan assessment and information collection management

Major Farnsler saw the above as his portfolio for outreach within MNF-I and MNC-I. As stated before, the roles of the CAA analyst continued to evolve. By 2006, ORSA resources in Iraq had increased dramatically from his first deployment in 2004. Major Farnsler took responsibility for framing problems, providing analytic insights, and offering solutions to commanders and staffs. He performed statistical analyses of enemy and friendly trends to provide support for staff and commander positions. Major Farnsler listed his most important contribution as communicating results and making clear recommendations. In order for him to provide conclusions and recommendations that made operational sense, he had to have a clear understanding of the situation. Major Farnsler observed that because most staff officers did not know OR capabilities and functions, the CAA deployed analysts had to proactively assist the commander and staff with solving problems. Major Farnsler's experience confirmed that the deployed analysts' knowledge of data structure, tools, and analytic methods provided many opportunities to teach others about analytic solutions to complex problems.

Major Farnsler received unique training before he departed CONUS. He received free Department of Justice (DOJ) training on the latest crime analysis methods. Within seven days of his arrival in theater, he developed the Attack Pattern Analysis & Characteristic Exploitation (APACHE) Project.

Project APACHE began as a way to bring crime mapping and analysis techniques to the combat environment of Iraq. Major Farnsler provided a solution to Lieutenant General Metz's 2004 request to develop a method for discerning enemy patterns of attack. His project improved the HDAP algorithm developed in 2004. APACHE's automated algorithms rank clusters of activity based on temporal and spatial metrics. These metrics examine the relationship between events in a series. This integration of geospatial and statistical analyses enabled analysts to identify patterns as soon as they became apparent. Project APACHE improved the detection portion of the targeting cycle by cueing ground-based ISR systems.

Major Farnsler also performed the Rapid Aerostat Initial Deployment (RAID) effectiveness study. This effort began as an analytic component of Project APACHE. This study determined and measured the success of ISR systems and was the first step to improving their operational and tactical employment. Ground-based systems were the immediate target, mainly because they were stationary and required fewer variables to account for. The Command defined success as system acquisition resulting in enemy BDA. Since C3-Force Protection had responsibility for the RAID system, they sponsored the study. Major Farnsler went to Balad and viewed ISR operations from sensors to integration. He had the opportunity to talk with RAID operators, maintenance personnel, and a battalion operations officer, all of whom provided great insight into successful RAID use. The Command implemented many of his recommendations.

The IED TTP survey was an important analytic effort in which Major Farnsler was involved. This process sought to collect Soldiers' lessons learned from the counter-IED fight. It was the first survey work Major Farnsler had addressed and, for him, it was a rewarding analysis. Based on their experience, the Australian OA team developed the survey. Analysts from the Institute for Defense Analyses (IDA) assisted in framing the questions and administering the surveys. TF Troy sponsored the effort and the primary focus was on 4th ID (MND-B), due to its departure in November 2006. Major Farnsler conducted analysis on the data.

Major Farnsler identified the need for a database of survey results before the survey implementation. He designed the initial version, including tables of acceptable values. This effort formed the basis of a final electronic version of the survey. The completed survey instrument, constructed and maintained by the Knowledge Management Office (KMO), was completely online on the SIPRNET. The online version solved many of the problems inherent in an earlier version. Analytically, the online version significantly improved data quality and control.

The survey also examined troop-leading procedures and the Soldiers' perceptions of operations and experience in OIF. Questions in the survey addressed Soldiers' equipment, rest time, adjustment to adversity, attitude, and demographics. The survey specifically addressed some long-standing debates on operations. One such issue was the effectiveness of presence patrols. From the survey, it was evident that Soldiers believed in what they were doing. They agreed that presence patrols were effective. This confirmed counterinsurgency theory and lessons learned from past wars. Additionally, these results confirmed previous studies on effectiveness of Coalition operations.

Iraqi Army in the Lead (IAL) battlespace analysis began with a question from General Casey. In preparation for his upcoming Congressional testimony, General Casey sought evidence of ISF improved effectiveness. This analysis required a complex application of deployed analysts' capabilities. This analysis compared enemy activity over time for areas that had transitioned to IAL. The comparison examined events before, during, and after transition to Iraqi tactical "lead" in the battlespace.

In another study, the MNF-I commander wanted a strategic assessment to determine if the security situation changed after Iraqi Army units took responsibility for an area. General Casey wanted to determine if enemy attacks and resulting casualties changed in areas as the ISF became more active and U.S. Forces assumed a supporting role. This analysis influenced resource decisions, and training and equipping for the ISF.

The EOF study was a major project generated by Major Farnsler. This three-week study developed measures of comparison between geospatial areas to answer the question, "Why have EOFs increased?" This question became very important to General Casey and Lieutenant General Chiarelli in the fall of 2006. Many EOF incidents resulted in civilian casualties caused by CF. Leaders associated these upward trends with new Soldiers arriving in theater to replace units rotating out. The EOF study examined likely causes of this increase and what measures the Command could implement to reverse this upward trend. Although results of the study are classified, recommendations centered on the idea that increased command emphasis on EOF procedures and the TTP of SVIED attacks would reduce the number of EOF. Additionally, a focused information campaign reduced EOF during convoys and at checkpoints. Prior to this study, planners had used this tool to analyze changes in enemy activity after a friendly action. The EOF analysis turned that paradigm around and asked, "How does Coalition activity change after enemy attacks and threat reports?"

One of MNC-I's responsibilities was to properly position forces and assets to mitigate risk and achieve a desired end-state. The political situations in Iraq and the U.S. necessitated planning to draw down forces. Closing FOBs allowed the command to set goals and measure progress. Unfortunately, risk increased as supply lines lengthened without adequate Quick Reaction Force (QRF) and MEDEVAC coverage.

As planners scheduled base closures and QRF reductions, they needed a method to examine risk to convoys and patrols. To meet this need, Major Farnsler created a custom model to compute distance as travel time between FOBs and every point on a fine (0.1 nautical mile) geospatial grid for Iraq. Importing a spreadsheet model, into ArcGIS, with FOB data for each period, enabled depiction of the risk as a lack of QRF or MEDEVAC coverage over time. Major Farnsler recommended that all deploying analysts be taught the basics and some advanced techniques of geo-temporal analysis using ArcGIS. This tool was indispensable for military analysts in studying change detection, patterns of activity, and the enemy and friendly situation. To increase ORSA capabilities, Major Farnsler also recommended improvement in analysts' education of script analysis in ArcGIS.

Major Farnsler noted that deployed analysts needed to expand their knowledge and capabilities. There were many opportunities to find and develop new data sources. Analysts needed to conduct outreach wherever possible. Their work in OIF would affect the future of the ORSA community. Staffing divisions and corps with ORSA analysts would provide opportunities to increase support to warfighters, the joint headquarters, and the institutional Army.

Major Farnsler observed that ORSA development of new tools and data sources would improve analytic models and methodologies. These essential tools included the PointinPoly macro, Effectiveness of Coalition Operations Tool (ECOT), and high-density-attack-pattern tool. These tools reduced human error, provided repeatability and analytic rigor, and documented new processes. Analysts would require resources in order to improve and package these tools for use by future ORSA analysts. Standardizing and automating analysis provided significant benefits.

Major Farnsler made two recommendations: 1) all analysts should become familiar with survey analysis because many analysts in OIF and OEF worked on polling, and 2) instructors should include survey analysis in formal military operations research education curricula as well.

In addition, Major Farnsler recommended in 2004 that every analyst should learn crime mapping and crime analysis techniques. These were excellent tools for analyzing and exploiting human patterns of activity. The techniques were relatively simple, statistically based, and provided justification for solid targeting recommendations in an environment where the enemy was difficult to find and destroy.

5.2.15 CAA deployed ORSA Analyst in OIF - Ms. Heather Brownfield (MNF-I and MNC-I)

On 18 July 2006, Ms. Heather Brownfield began her deployment to support both MNF-I and MNC-I. While technically assigned to work for Lieutenant General Chiarelli, the MNC-I CG, Ms. Brownfield also provided support to the MNF-I CG, General Casey, and his staff. She worked in the MNC-I C3 ORSA cell. She and her team also supported USCENTCOM, both forward and rear, and the Joint Staff. Additionally, she provided analytic support in answering Congressional and Freedom of Information Act (FOIA) inquiries. Ms. Brownfield concluded that inserting ORSA analysts into the MNC-I planning process would lead to greater analytic rigor in preparing for combat operations.

Ms. Brownfield discovered that the largest demand for quantitative support was in the form of descriptive statistics and simple trend charts. The MNC-I C3 ORSA cell was one of the few staff offices to provide the CG with regular quantitative briefings and analytic support. Over time, this became a regular weekly request by the CG. Many other staff elements requested that CAA analysts create standardized trend charts for their areas of interest.

Both the MNF-I CG and the MNC-I CG received a weekly BUA. Ms. Brownfield contributed to these BUA briefings, both scheduled for Monday mornings. In addition to the PowerPoint presentations to support the BUA, she created numerous briefings on trend analysis for attacks, casualties, and significant activities in the ITO. Data management and trend analysis for the commanders and their staffs continued to be the top weekly time consumer, especially over the weekends. Senior leadership began to ask if the analysis conducted by their staff elements matched the analysis conducted by the ORSA cell. The ORSA cell had a strong reputation for authority and reliability on national and regional attack and casualty trends.

During the week, RFIs dominated much of the MNC-I C3 ORSA cell's time. The RFIs often required extensive data mining and clever querying of the SIGACTS and other databases to obtain the necessary information. The staff elements, both within theater and stateside, and the Public Affairs Office (PAO), normally answered these RFIs, which often had a very short suspense.

The ORSA cell's responsibilities had increased over the years. Ms. Brownfield sought to eliminate some of the steps in routine work and some of the processes altogether. In her

deployment report, Ms. Brownfield provided a chronological history of her efforts to reduce the data management workload. She included this section because she wanted to emphasize the large non-ORSA—although important—burden analysts carried. She recommended that future analysts continue to streamline data collection and make improvements to the RFI delivery process.

Ms. Brownfield improved business practices and efficiency at both MNC-I and all the other ITO analytic centers. She led the effort to create a collection of databases and make them available online. This served as a one-stop shop for analysts throughout the ITO to find data resources. Ms. Brownfield created a "How-to" and "Definition" resource website to create repeatability of methods and definition-standardization across all analytic spectrums. She created a number of ORSA cell tutorials to teach planners about ORSA processes.

Ms. Brownfield conducted a significant amount of outreach to other analysts. She exchanged knowledge, skills and tools in an attempt to reduce redundancy of effort and increase collaboration across echelons. She created maintainable datasets and spreadsheet training tools. As part of this effort, the MNC-I ORSA cell hosted two ORSA conferences at the Al Faw Palace. The second conference had over 40 attendees. In general, the MNC-I ORSA cell served as a hub for other analysts to communicate with each other.

Ms. Brownfield summarized her activities as follows:

- Data Management: acquired, cleaned, managed, and distributed the SIGACTS database. Served as a Subject Matter Expert (SME) on the SIGACTS database and training others on its proper use, in addition to providing support on numerous databases maintained by other staff elements.
- Knowledge Management: supported improved data reporting and knowledge management practices in theater.
- Training: trained various staff sections on software, analytic methods, and other ORSA skills. This included the creation of tools and individualized programs for various staff elements. These tools and programs helped minimize the ever-increasing recurring requests for ORSA assistance.
- Outreach to the ORSA Community: organized and conducted outreach and collaborative efforts.
  Hosted conferences for ORSA personnel in theater and hosted site visits around the Baghdad area.
- Analytic Support to the C3 and the MNC-I CG: supported C3 with analysis in the planning phase and develop MOPs and MOEs.
- Analytic products to the MNC-I CG: analyzed topics of interest generated in the senior planning meetings.
- CAA reachback support: identified topics appropriate for reachback support, framed the RFI requests, collected required data and points of contacts, collaborated with other CONUS agencies as required, reported results to the appropriate audience and distributed the final product.
- Business practices: reduced repetitive day-to-day or weekly tasks and improved online resources.

Ms. Brownfield concluded her deployment on 17 December 2006 and offered the following recommendations:

- ORSA personnel need additional training on geospatial software applications.
- Data management and the weekly requirements production restricted the capacity for ORSA work. Commanders should employ ORSA analysts for analyses, not data collection.
- Presidential Management Fellows (PMFs), cartographers, and data managers should augment the two ORSA personnel in Iraq. One-to-three month rotations are sufficient. There are adequate living quarters and workspaces to accommodate them.
- CAA reachback support proved extremely beneficial. Having a night shift to match theater work hours would improve analysis support. The ground truth is that CAA home-station is most concerned with quality in its analysis, while deployed ORSA analysts focus on urgency and speed.
- CAA should employ IWS technology during VTCs with commanders in theater.
- More CAA analysts should take advantage of the opportunity to deploy.

5.2.16 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Steven Stoddard (MNC-I C3 Plans)

Lieutenant Colonel Steven Stoddard deployed to the MNC-I C3 Plans ORSA cell in support of OIF on 21 November 2006. He provided analytic support for special projects requested by MNF-I and MNC-I, and primarily focused on three areas:

- Weekly attack and casualty trends
- Information collection and management
- Friendly and enemy operational patterns and trends

During his deployment, the reporting chain of command for the Plans and Policy Division of MNC-I C3 was Chief, C3 Plans and Policy, subordinate to Chief, C3; subordinate to the Commanding General, MNC-I; subordinate to the Commanding General, MNF-I. Lieutenant Colonel Stoddard performed a great deal of work for the MNC-I Chiefs of FUOPS and CUOPS. Prior to January 2007, CAA analysts in the ORSA cell performed analyses directly for some elements of MNF-I, particularly the CIG and STRATOPS. That practice effectively ended in early 2007 when General Petraeus took command of MNF-I, and Lieutenant General Raymond T. Odierno took command of MNC-I. From that point on, the ORSA cell coordinated with and performed analyses for MNC-I.

Each Monday, during the morning MNF-I BUA, Lieutenant Colonel Stoddard briefed the Attack and Casualty Trends slide for MNC-I. He worked tirelessly to prepare for his presentation. He created a graph depicting the overall attack levels in Iraq for a two-year period. Each bar on the graph represented total attacks for a one-week period. As he performed advanced trend analysis, he discovered that attack levels were less variable than other violence metrics. The quality of his work led commanders to use his Attack and Casualty Trends slide to compare offensive operations with patterns of enemy activity. General Petraeus showed particular interest in this slide. During Lieutenant Colonel Stoddard's first BUA presentation, General Petraeus said that the weekly Attack and Casualty Trends slide was the most important metric for understanding insurgent activity (notes from MNF-I Chief of Staff, 12 February 2007).

In addition to preparing for briefings, Lieutenant Colonel Stoddard performed advanced analyses to answer RFIs. In early December 2006, the MNF-I CIG requested analysis to answer the following question for General Casey: "Since the beginning of operations in sovereign Iraq,

when and how did the nature of violence change?" To answer this question, Lieutenant Colonel Stoddard first examined the totality of attack trends over the entire period. He performed a linear regression in two parts: 1) before, and 2) after the Samarra Golden Mosque attack of 22 February 2006. He used these metrics because there appeared to be a significant increase in violence trends coinciding with this attack. He prepared his analysis by looking at each target set independently. He considered all attacks, broken down by target-type, against ISF, CF, and Iraqi civilians.

- Attacks against the ISF, before the mosque destruction, peaked for major events and were somewhat stable otherwise (demonstrating a moderate increase). After 22 February 2006, violence against the ISF increased more rapidly until Ramadan in October. The overall increase in attacks against the ISF also correlated to their ever-increasing assumption of battlespace. As the ISF became more capable and assumed more territory, insurgents attacked them more frequently.
- Attacks against CF followed the same pattern. Prior to February 2006, attacks peaked at major events but did not otherwise display any discernable trend. After February 2006, these attacks steadily increased in a linear fashion until Ramadan.
- Attacks against Iraqi civilians clearly increased after February 2006. Up to this point, attacks against civilians were constant, with only one significant departure during legislative elections near the end of January 2005. After February 2006, attacks against civilians steadily increased until Ramadan.

Lieutenant Colonel Stoddard concluded that the Golden Mosque attack provoked increased attacks against all friendly forces (many public sources concluded the same). During Lieutenant Colonel Stoddard's deployment, MNC-I's main objective was to quell insurgent violence. "Operation Together Forward" (later known as Operation "Enforcing the Law" or 'Fardh al-Qanoon") was the main effort. "Operation Together Forward (OTF)" began on 14 June 2006 and transitioned to "Fardh al-Qanoon (FAQ)" on 13 February 2007. Securing the civilian population—with Baghdad as the main effort—was the primary objective.

MNC-I C3 staff officers routinely asked the ORSA cell to discern whether the patterns of violence changed in areas where CF conducted operations. Lieutenant Colonel Stoddard used the Exponentially Weighted Moving Average (EWMA) as the primary method for determining indicators of change. EWMA gave the most weight to the most recent values in a series. For example, a particular point in time would be 20 percent of the value from that period plus 16 percent of the value from the period before plus 13 percent of the value from two periods before, etc. (CAA's reachback study "Forecasting Attack Trends" details this method.) Lieutenant Colonel Stoddard used this process on a weekly basis, using daily violence levels (attacks, murders, casualties) to determine if, and when, violence patterns changed in any of the Baghdad Security Districts. MNC-I C3 FUOPS personnel used Lieutenant Colonel Stoddard's analyses to correlate changes with recent CF activities.

MNC-I C3 Plans also requested assistance from Lieutenant Colonel Stoddard in order to analyze where CF had coverage and how frequently that coverage was in place, emphasizing gaps in coverage and potential enemy safe havens. Lieutenant Colonel Stoddard created a coverage chart by plotting all CF activities over an eight-week period. He used all CF reports of attacks on CF, friendly action (such as patrols or cordons), and CF accidents. He analyzed single locations where events were significant enough to cause CF to take action and report the incident. Lieutenant Colonel Stoddard then created a "density" plot in ArcGIS, with break points

to divide these areas by daily, weekly, monthly, and infrequent CF coverage. The ORSA team updated this chart every two to three weeks and distributed it throughout C3. This chart provided the MNC-I CG and his subordinate commanders with situational awareness for coverage and aviation route planning. Senior leaders later used these coverage plots to determine unit boundaries during the establishment of the seventh MND.

Before Lieutenant Colonel Stoddard's analysis, commanders used a T2T process to employ their units. In example, MND-X might report that they employed 30 percent of their forces for logistical support, 20 percent for offensive operations, etc. Unfortunately, the T2T process did not support resource allocation decisions because planners did not take into account the requirements for forces within each MND.

Lieutenant Colonel Stoddard expanded on his previous effort in order to provide a measurement for resource allocation decisions. He related available forces to required forces and compared the available-to-required ratio within each MND. He added the number of CF and ISF and scaled the ISF by relative readiness level. Additionally, he created a function of threat and population. If a region contained violent activity and/or large numbers of people, then it needed security forces. If the region was free of violent activity and/or large populations, it did not need security forces. Lieutenant Colonel Stoddard calculated the total available forces as the sum of CF and "effective" IA Forces. Total CF were the number of U.S. and other CF deployed under the command of a Multi-National Division HQ. MNC-I C1 provided data for this calculation. Lieutenant Colonel Stoddard derived effective IA Forces from the monthly MNC-I C3 Transition Readiness Assessment (TRA) executive brief.

This brief provided required and assigned forces for each IA Division and a TRA for each battalion and headquarters element at brigade and division levels. An earlier study from MNF-I proposed a relationship between TRA levels and CF units. Lieutenant Colonel Stoddard used this relationship to create a rough estimate of effective IA Forces. He assessed an IA battalion as TRA Level 1 if it was capable of conducting independent operations. Based on a recommendation from the MNC-I C3 ISF cell, Lieutenant Colonel Stoddard used the average TRA level for brigade HQ and maneuver battalions in each region in order to approximate the overall TRA level for IA Forces in each region. This average provided a scaling factor to convert assigned IA Forces into effective IA Forces.

In the first half of 2007, the force structure for MNC-I increased by five BCTs (and two Marine rifle battalions). The MNC-I CG studied several basing options for these units. He decided to assign the first two BCTs to MND-Baghdad. Then he directed his staff to examine six options for the remaining BCTs scheduled to arrive in March, April, and May of 2007, keeping four objectives in mind: 1) population security, 2) reduced accelerants to violence in the Baghdad area, 3) ISF supportability, and 4) Anbar success-reinforcement. Lieutenant Colonel Stoddard studied all of the decision points and presented his analysis and recommendations to the MNC-I CG.

In addition to the increased number of BCTs, MNC-I added a Combat Aviation Brigade (CAB) to its force structure. The 3rd CAB deployed in support of 3rd ID MND-C. In order to determine the best location for basing this asset, the MNC-I C3 Aviation Staff requested ORSA support. Lieutenant Colonel Stoddard employed the entire ORSA team and used the Military Decision-Making Process (MDMP) to consider a wide range of factors, including logistic supportability, operational employability, and threats to survivability. Lieutenant Colonel

Stoddard knew that the ORSA team's first step was to define precisely what the MNC-I C3 Aviation Staff needed.

During the MDMP process, Lieutenant Colonel Stoddard emphasized the importance of determining what an RFI sponsor really needed. Many planning officers in theater requested raw data and not analysis. They wanted a simple answer so they could move on to another task. However, in order to provide the sponsor with an answer that solved their problem, deeper analysis was required. Lieutenant Colonel Stoddard provided the following conversation to illustrate this point:

Sponsor:	Can you give me the number of casualties in MND-North?
LTC Stoddard:	Yes, over what period?
Sponsor:	I don't know. Use any period that you think is relevant.
LTC Stoddard:	The answer is 94.
Sponsor:	How do you know that? You haven't done anything yet.
LTC Stoddard:	If you don't care about the period, I'm sure that there have been 94 casualties in some period. I'll figure out how long it took there to be 94 casualties; then I'm done.
Sponsor:	I don't get it.
LTC Stoddard:	Let's start over. What is the problem you're trying to solve?
Sponsor:	Well, we think we know anecdotally that the enemy is using inland waterways to move materiel. They set up caches near the water, emplace IEDs there, and launch indirect fire attacks. This causes casualties. We are requesting Riverine forces to impede the enemy's ability to use the inland waterways, but we need some quantitative analysis to support our request for additional forces.
LTC Stoddard:	Would it be more useful if we analyzed the proportions of caches, IEDs, and indirect fire attacks that occur near inland waterways?
Sponsor:	Yes!

Lieutenant Colonel Stoddard analyzed all caches found and cleared, IED explosions, IEDs found and cleared, and all indirect fire attacks. He used ArcGIS to create buffers (0.5km and 2.0km) around all inland waterways in Iraq. Then he used the ArcGIS intersection tool to determine how many of these events occurred inside the buffers. The MNC-I C3 used this information brief to support its request for additional forces.

In addition to his other responsibilities, Lieutenant Colonel Stoddard managed data and resolved RFIs. One RFI had him examine the potential integration of Coalition and Host Nation (HN) reports. Prior to his arrival, MNC-I did not use HN reports at all. After MNC-I changed from V Corps to III Corps (14 December 2006), the new leadership pointedly asked CAA analysts *why* they could not incorporate HN reports into their analyses by January 2007. Lieutenant Colonel Stoddard analyzed a collection of problems and potential solutions, which he summarized in a white paper (found in Appendix D of his classified report). In preparation for his report, he visited the Iraqi Operations Center where planners collected and managed HN reports. This visit gave Lieutenant Colonel Stoddard a great deal of insight into potential challenges for the Iraqis. Most importantly, HN reports lacked the consistency and timeliness of CF reports. Until the command leadership addressed these shortcomings, any reliance on HN reporting could result in misleading conclusions about operational trends.

5.2.17 CAA deployed ORSA Analyst in OIF - Mr. Scott Sanborn (MNC-I)

On 1 December 2006, Mr. Scott Sanborn deployed to OIF. As his primary duties, Mr. Sanborn maintained a SIGACTS database and provided analytic support to the MNF-I and MNC-I leadership and staffs. As with previous CAA analysts, Mr. Sanborn worked for the Plans Division, Plans and Policy, C3, MNC-I.

Mr. Sanborn's deployment overlapped with that of Lieutenant Colonel Stoddard who departed on 12 March 2007, Major Richard Bell who arrived 19 February 2007, and Ms. Belinda Scheber who arrived on 24 February 2007. Lieutenant Colonel Stoddard assumed the unstated duty of the ORSA team leader and served as the primary representative for analysis generated by the C3 Plans ORSA Cell and analytic reachback efforts conducted by home-based CAA. Major Bell quickly used his expertise to gain the confidence of the senior leadership. He infused statistical and analytic tools into the team's analytic products. Ms. Scheber, a cartographer assigned to CAA, employed her expertise in ArcGIS software and cartographic tools. Ms. Scheber provided mapping and graphical products to staff elements in need, and also performed independent analyses and conducted training on cartographic software.

Mr. Sanborn primarily focused on three functions: preparing weekly attack and casualty trends, collecting and managing information, and analyzing friendly and enemy operational patterns and trends. He saw information collection and management as his most important mission. He took responsibility for a weekly requirement to update a Microsoft Access database, named SIGACTS III, containing key information used by the analytic and reporting communities within MNF-I and MNC-I.

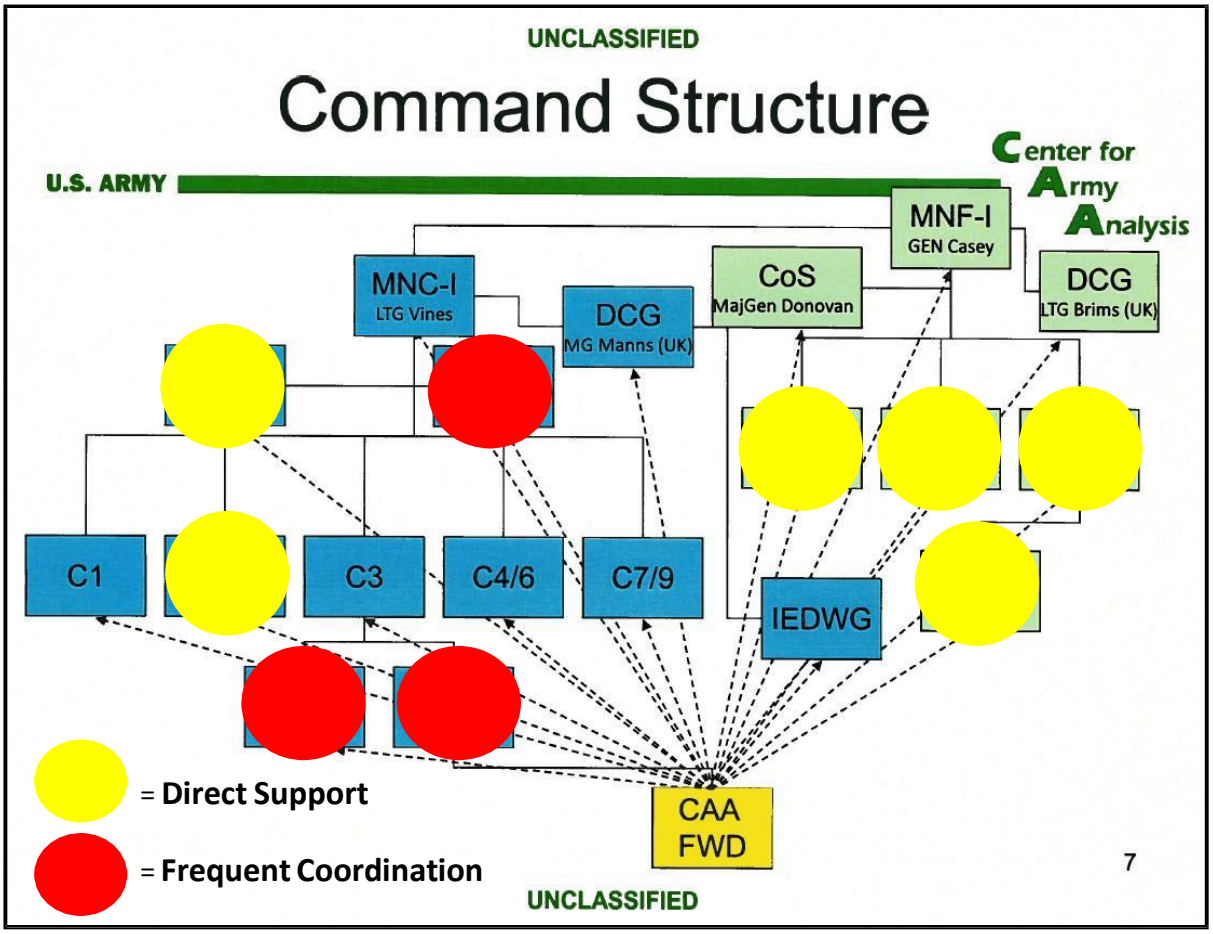


Figure 5-20 Command Structure February 2007

The ORSA Cell worked for the Plans Division of C3 Plans and Policy. Figure 5-20 depicts the Command Structure during this period. Through mid to late January 2007, most of the ORSA Cell guidance and instruction originated from the MNF-I CIG. At that time, MNF-I leadership transferred to General Petraeus, prompting a significant number of staff officer changes within the MNF-I CIG. The MNF-I leadership and staffing changes, coupled with the MNC-I Commander's desire to assume more control of the information that the ORSA Cell distributed on a routine basis, resulted in a shift in control from the MNF-I CIG to MNC-I CHOPS. During Mr. Sanborn's deployment, the two analytic cells he worked with most closely were the MNC-I Effects cell, known as Joint Fires and Effects, and the MNF-I STRATOPS cell.

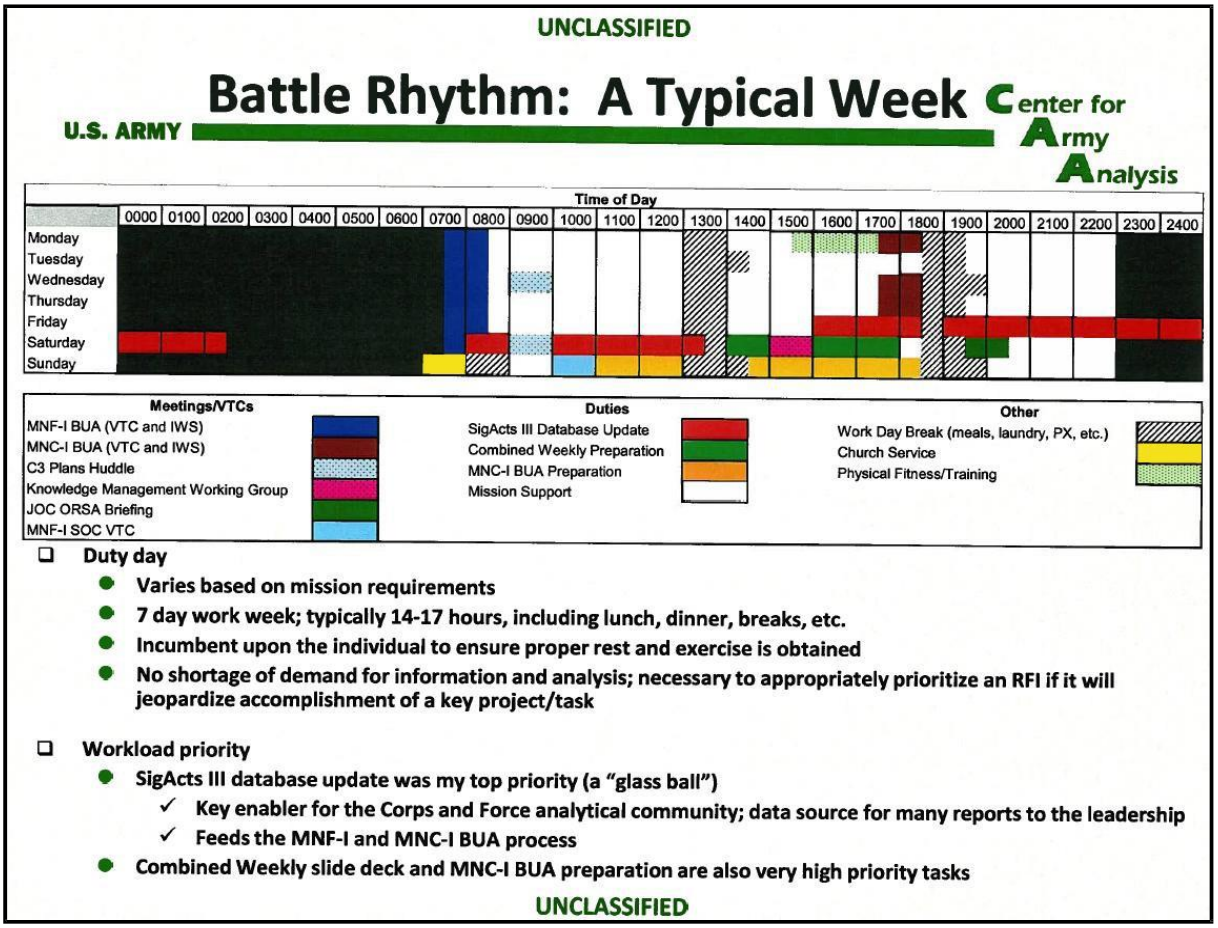


Figure 5-21 Battle Rhythm: A Typical Week

Figure 5-21 provides Mr. Sanborn's Battle Rhythm. The work required a full seven-day work-week. Much of the work occurred between Friday evening and Sunday evening. Mr. Sanborn's most critical tasks included updating the SIGACTS III database from Friday evening through Saturday morning, updating selected MNF-I BUA slides on Saturday afternoon, and updating selected MNC-I BUA slides through Sunday evening.

Other key events included the C3 Plans' "Huddle" meetings on Wednesdays and Saturdays. During these meetings planners and staff members from all major staff elements gathered to produce updates and receive new taskings. At the Saturday evening JOC ORSA briefing, the C3 Plans ORSA team provided an attack and casualty trends briefing to key MNC-I staff and division liaisons. Mr. Sanborn attended a video teleconference (VTC) conducted by the leadership of the MNF-I Strategic Operations Center every Sunday morning. During the VTC meeting, they discussed progress in dealing with MNF-I strategic objectives and consistency in statistics to be reported in the next Monday morning's MNF-I BUA presentation to the MNF-I and MNC-I leadership.

Mr. Sanborn served as a member of the MNC-I KMO Working Group (WG). The KMO working group discussed automation technology issues, to include data-related issues in which analysts and other data users often had a stake (database modification, new data fields, etc.). A key data management task Mr. Sanborn performed was updating SIGACTS III to support the preparation of the Combined Weekly slide deck for inclusion in the MNF-I BUA slides.

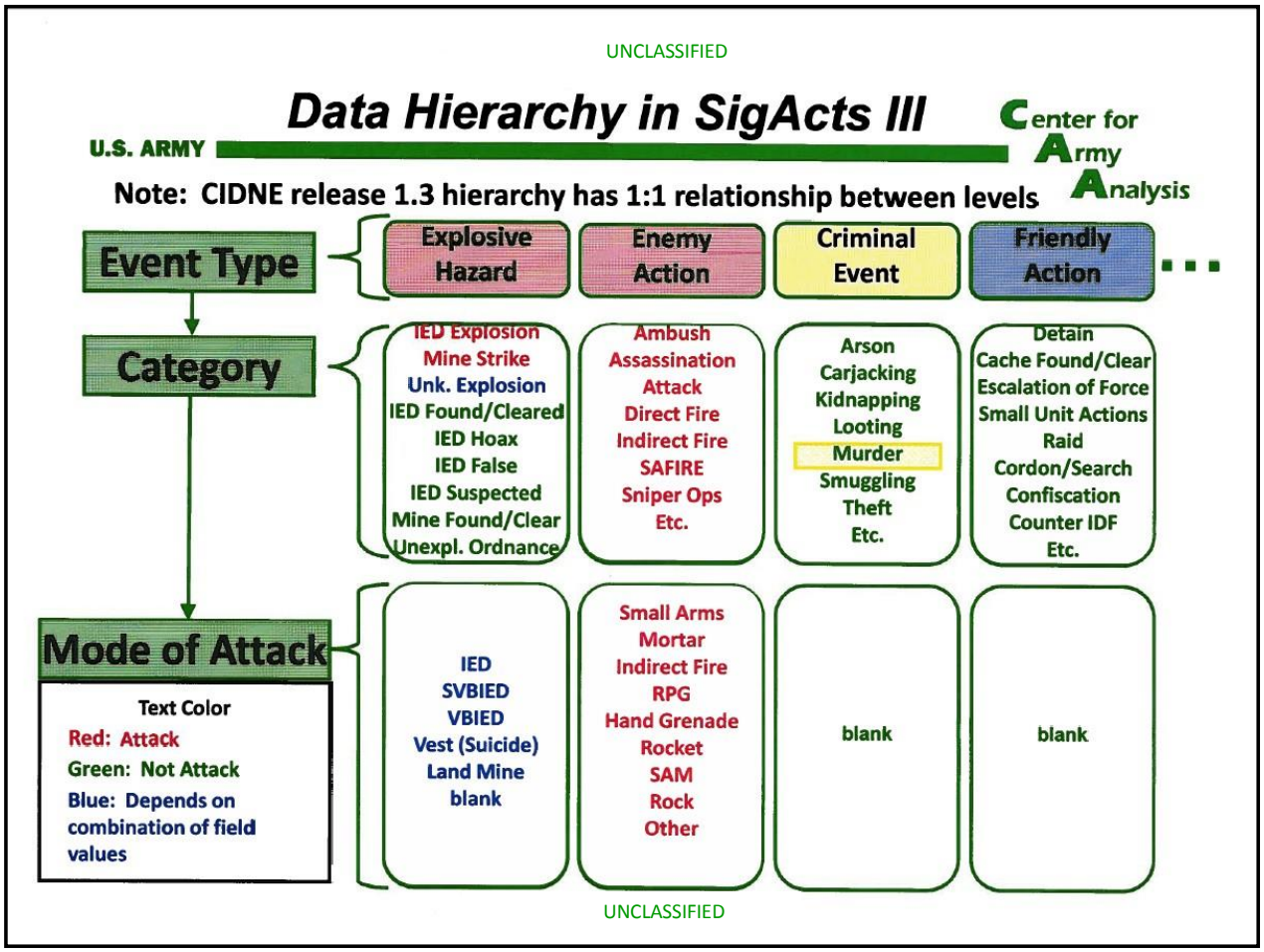


Figure 5-22 Data Hierarchy in SIGACTS III

Mr. Sanborn found that one of the keys to using SIGACTS III was to understand the data hierarchy. Figure 5-22 lists some of the key data fields. Mr. Sanborn considered three tiers when partitioning and filtering data for analysis and reporting: event type, category, and mode of attack. These tiers facilitated useful classification of records. First, they permitted classification of attacks against CF, Iraqi military, civilian authorities and Iraqi civilians. They also permitted the logical groupings of records for analysis and reporting. As shown in Figure 5-22, all records with event type of "Enemy Action" were attacks. Additionally, selected records with event type of "Explosive Hazard" were attack–the subset of "Explosive Hazard" events considered "attacks" were actual explosions, not IEDs found and cleared.

Another system, the CIDNE, is the knowledge management system used within Iraq by CF to store data and facilitate information retrieval and analysis. As previously discussed, it is also the primary source for data used to update the SIGACTS III database. Figure 5-23 provides a generalized CIDNE introduction.

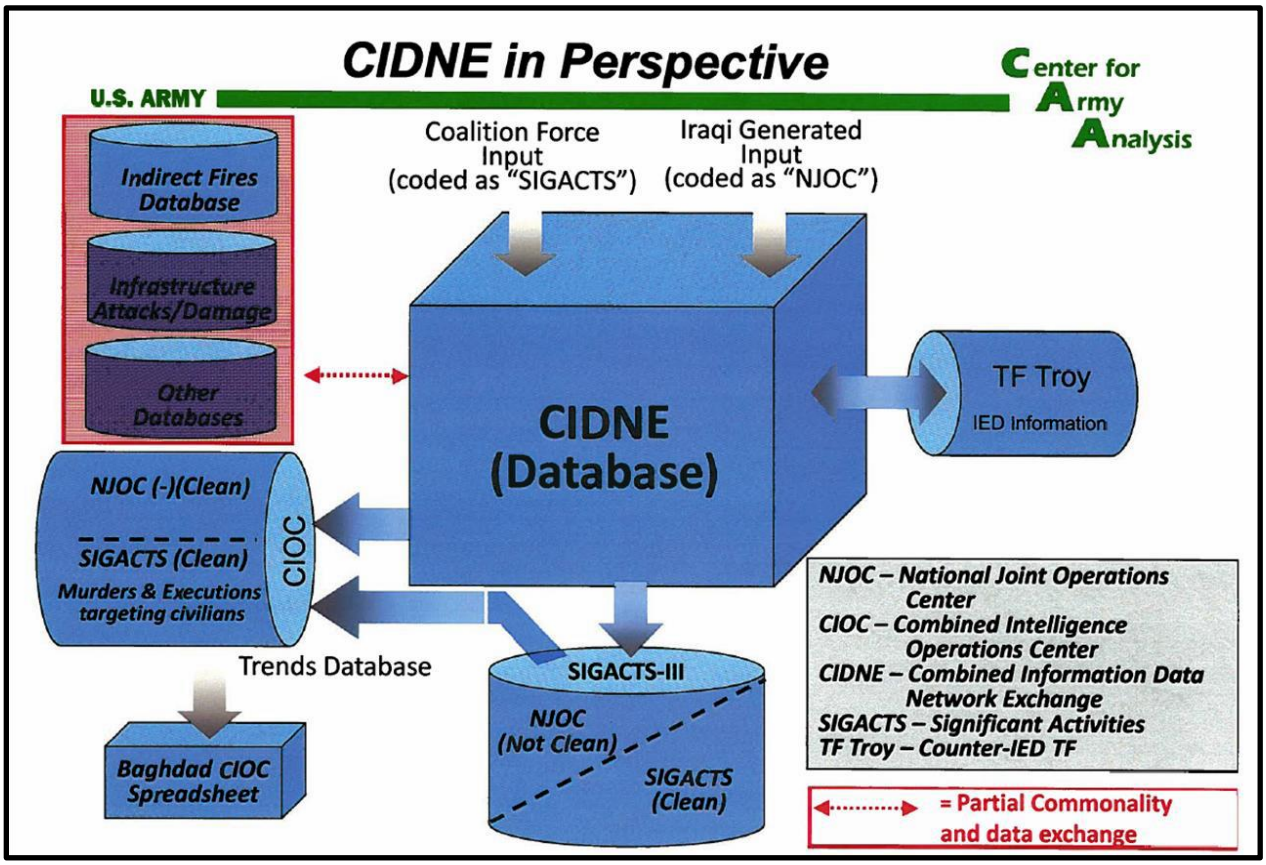


Figure 5-23 CIDNE in Perspective

In November 2006, CIDNE replaced a system called FusionNet as the system-of-record in Iraq. This change occurred shortly before the early December 2006 MNC-I transfer of authority from V Corps, commanded by Lieutenant General Peter W. Chiarelli, to III Corps, commanded by Lieutenant General Raymond T. Odierno. To ensure a complete record of activity, ORSA analysts transferred a significant amount of data from FusionNet to CIDNE.

As depicted in Figure 5-23, two basic categories of data flow into CIDNE justified the creation of an Operations Report. CAA analysts created database records of CF reporting when they assigned the report a value of "SIGACTS" in the "TypeReport" field, and those from Iraqi sources when ORSA analysts assigned the report a TypeReport value of "National Joint Operations Center (NJOC)."

Most of the CF operations reports came from lower-echelon units through company, battalion, and brigade levels to a division reporting system. Other reports came from explosive ordnance disposal units, TF Troy, intelligence units, and other elements. Each division maintained a liaison officer or NCO at MNC-I headquarters who worked in the JOC. The JOC was under the direction of the MNC-I C3 CHOPS. As their primary duty, division liaisons transferred operations reports from their respective division reporting systems into CIDNE. SIGACTS managers then reviewed these reports to ensure completeness, consistency, and, to the degree possible, accuracy. SIGACTS managers were responsible for posting official reports and records into CIDNE and adding follow-on report corrections and updates.

As previously mentioned, analysts transferred most of the Iraqi-generated reports from NJOC to CIDNE. Staff members from MNF-I were leading an effort to modify and streamline Iraqi report processes. They developed a new automated system for both military and civilian Iraqi officials to process and store Iraqi-generated/non-Coalition reports, and ensure database record completeness, accuracy, and reporting timeliness. Officials created new agencies and lines of reporting to facilitate this effort. The importance of Iraqi reporting grew as CF reduced their footprint and turned control over to the Iraqi army and police units.

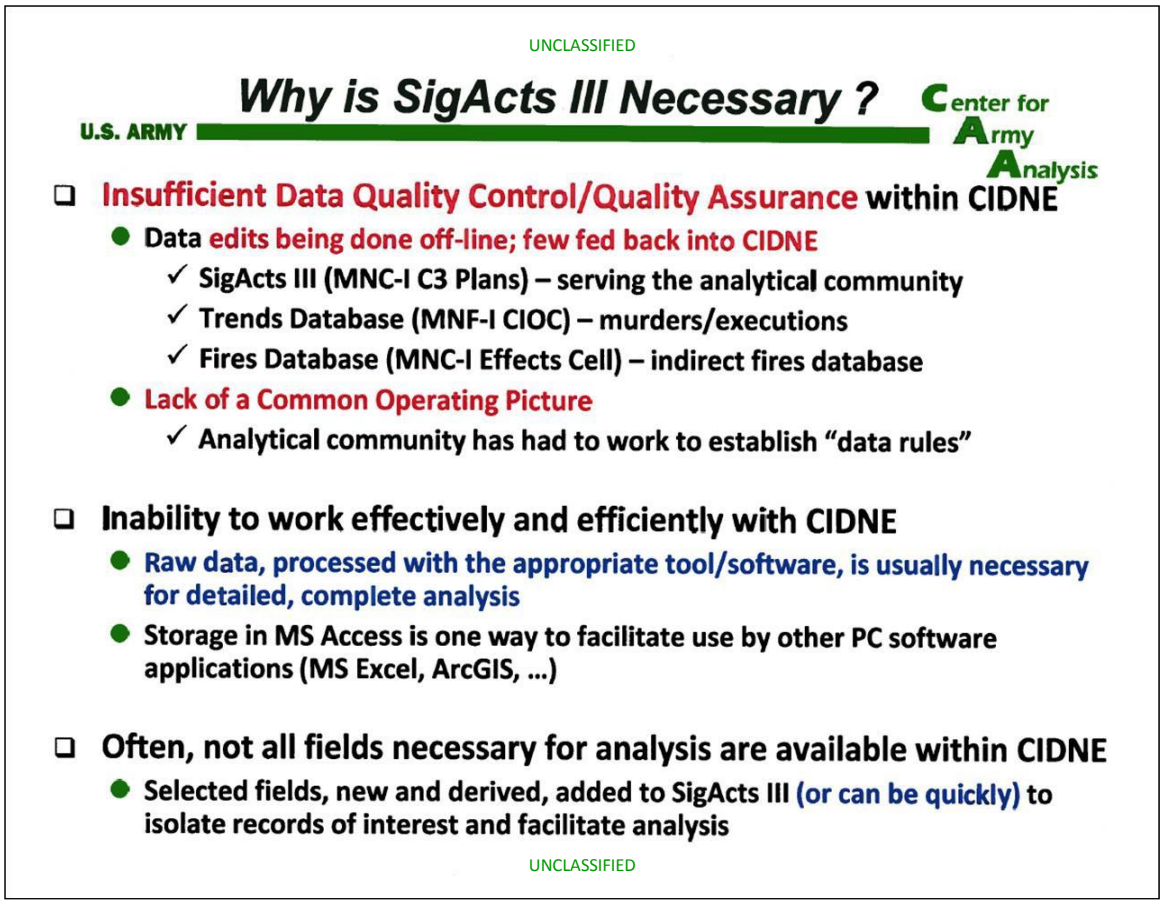


Figure 5-24 the Necessity of SIGACTS III

Figure 5-24 presents justification for creation and use of the SIGACTS III database. Mr. Sanborn understood that the SIGACTS III database provided the analytic community with a set of consistent, partially cleansed data in a format compatible with Microsoft Excel and Excel's pivot table and pivot chart capabilities. Mr. Sanborn set up pivot tables and charts to read directly from a Microsoft Access source such as SIGACTS III, and to link tables and charts from existing Microsoft PowerPoint presentations. By replacing a previous version of SIGACTS III with an updated version, the Excel pivot tables and charts refreshed to add the newly reported data. This permitted a rapid update in the established reporting system.

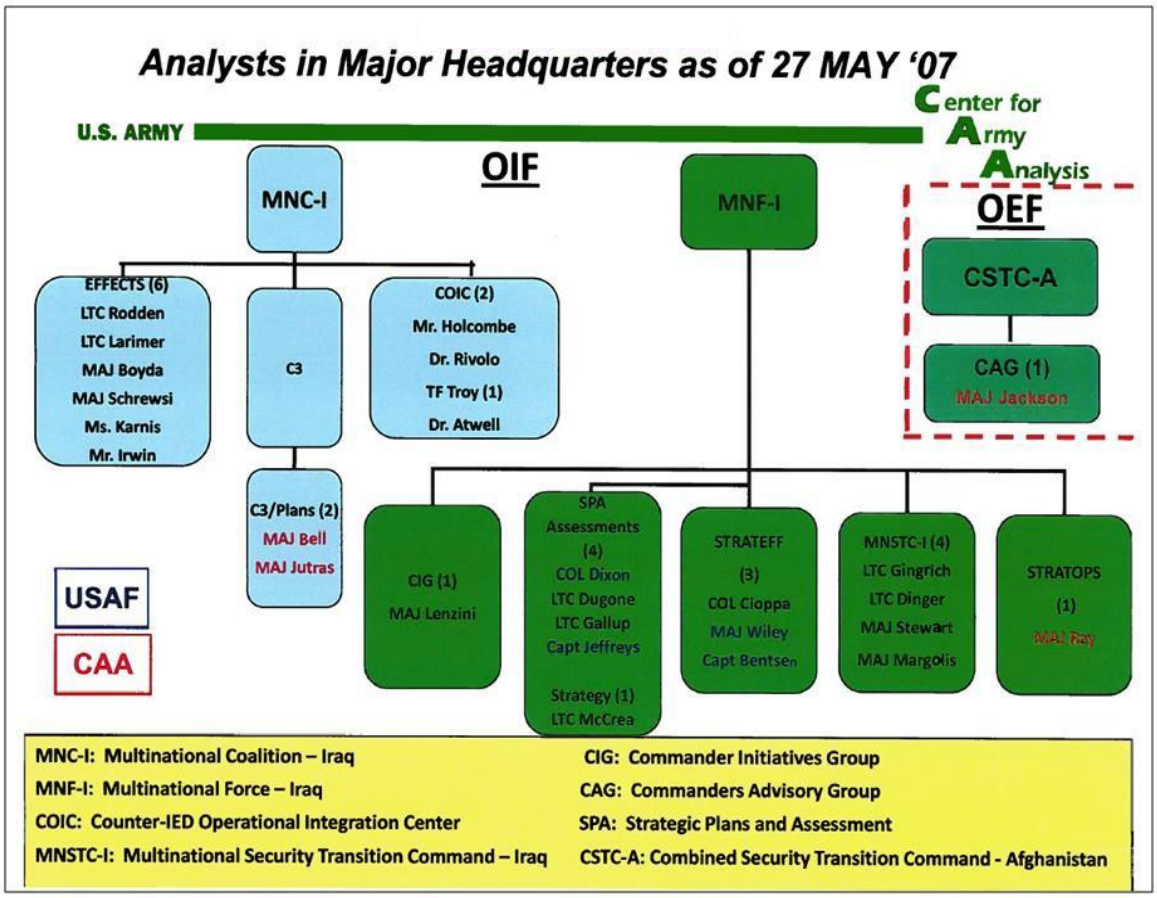


Figure 5-25 Analysts in Major Headquarters

In late March 2007, a series of events resulted in a change of the MNF-I Monday morning BUA presentation by the C3 Plans ORSA Cell. The MNF-I leadership had changed from General Casey to General Petraeus almost two months prior. This resulted in MNC-I C3 CHOPS directing the C3 Plans ORSA Cell, as opposed to the MNF-I CIG, as was the case during the General Casey era. Figure 5-25 depicts most of the deployed ORSA community. The C3 Plans' BUA presentation, tailored to General Casey's information needs, had been relatively static for two years. Following the MNF-I leadership change, the CIG took a close look at the content provided at the Monday through Saturday MNF-I BUA presentations. In order to meet General Petraeus's information requirements, briefers reduced briefing information redundancy at the daily MNF-I BUA presentations, focused the C3 Plans ORSA Cell on issues of concern to the MNC-I, and reduced the Monday morning MNF-I BUA slides for the monthly close-out from twenty down to six.

In mid-May 2007, the C3 Plans ORSA Cell assumed a new responsibility. MNC-I tasked them to provide a weekly briefing as part of the Thursday evening MNC-I BUA to help inform the MNC-I leadership of Operation FAQ progress. The Command wanted specific metrics to complement information provided at the weekly MNF-I BUA. They wanted five or six briefing slides. After consulting with the MNC-I Effects ORSA team, the C3 Plans ORSA Cell established a blueprint for each briefing slide.

Much of the analytic support provided by the C3 Plans ORSA Cell was the result of quick-turn RFIs. Analysts answered the majority of information requests using data from the SIGACTS III database. Topics varied and suspenses were generally short, ranging from one hour to two days.

The ORSA analysts used the ArcGIS software to provide a GIS solution to spatial analysis and imagery support. In theater, many of the intelligence and some of the ORSA analysts worked with ArcGIS, or similar products, to enable GIS analysis and/or support. The MNC-I C3 terrain team, located at Camp Victory, produced shapefiles containing key information (e.g., divisional boundaries, locations of combat outposts, locations of operations) within theater. CAA cartographers provided GIS support throughout OIF. Users of ArcGIS could easily share their files with other interested parties.

The useful application of a GIS product, such as ArcGIS, required training and practical application to obtain necessary proficiencies. Outside of CAA reachback, there were few sources in theater for GIS support. The C3 Plans ORSA Cell frequently answered questions received from the MNF-I CIG, various intelligence staff elements, the planning staff, and others to provide GIS support.

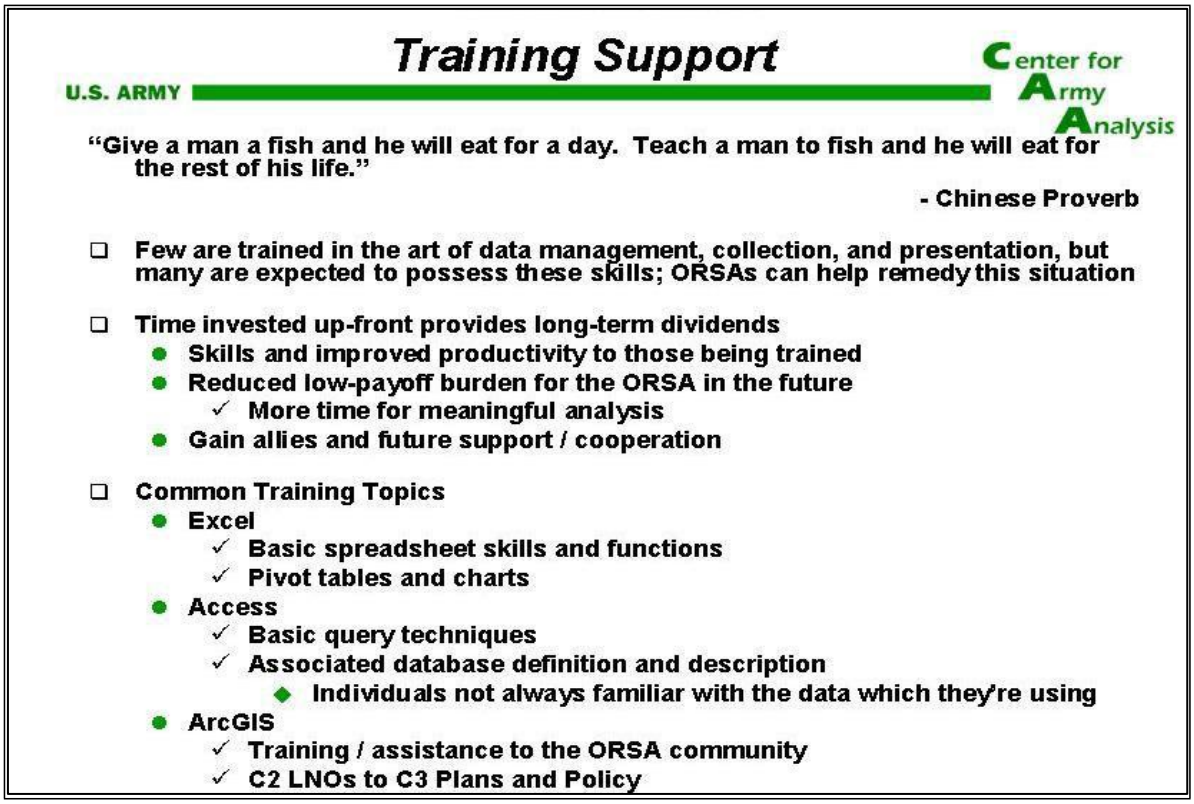


Figure 5-26 Training Support

As stated in Figure 5-26, "Few are trained in the art of data management, collection, and presentation, but many are expected to possess these skills; ORSA analysts can help to remedy this situation." MNF-I and MNC-I planners had responsibility for collecting, managing and manipulating data. Many did not have the necessary skills to conduct these operations efficiently. Many of these non-analytic functions ended up as recurring tasks for CAA analysts because they had the skill set. It was therefore advantageous to allocate time to train staff members in common skills associated with spreadsheets, databases, and GIS functions. This

type of support also helped develop working relationships and enhanced information sharing and support.

Mr. Sanborn made the following recommendations for future deploying analysts:

- Analysts must deploy with appropriate software (e.g., ArcGIS software with appropriate functional modules or add-in applications). They must deploy with sufficient GIS skills. These skills include:
  - Geographic plotting of the activity data of interest
  - Density plot creation
  - Multiple GIS layer or shapefiles manipulation
  - Intersection development between GIS shapefiles and activity data in order to extract data subsets and buffer zones around GIS shapefiles representing areas of interest or focus
  - Manipulation of embedded data within GIS shapefiles
  - The ability to export data from the GIS for analysis within other systems or software applications
- Deploying analysts should report to the OCA Division at CAA and work on analytic reachback projects three months prior to deployment. These projects should incorporate the use of databases and data sources associated with the theater of operations to which the analyst is deploying and should require both Microsoft Access and ArcGIS software application skills.
- Returning analysts should work reachback analytic efforts for at least three months following deployment in order to share their situational awareness of current events, data familiarity, and knowledge of deployed staff elements/personnel. Analysts assigned to the OCA Division already have these pre- and post-deployment opportunities.
- Training specific for the Theater of Operations is essential prior to deployment. The Operating Tempo (OPTEMPO) for analysts in theater is so high that there is little time for research. The quantity of information requested, the analysis required, and time available to produce products mandate that analysts have adequate analytic skills prior to deployment. These skills should include proficiency in mathematical techniques and automation tools and knowledge of the information required to understand the battlefield situation. Prior to deployment, analysts should study current Campaign Plan objectives, associated LOOs, and existing assessment metrics.
- Having a Top Secret (TS) security clearance is preferable. A TS clearance provides ease of access to several MNF-I and MNC-I agencies having operational and intelligence-related data of interest. Some work areas are restricted and require escorted access for all personnel not holding a TS clearance.
- Home station (Fort Belvoir, VA) should update the SIGACTS III database to the extent possible in order to relieve forward-deployed analysts of this recurring burden. Adoption of this recommendation would give forward-deployed analysts more time to use the data to provide analyses.

5.2.18 CAA deployed ORSA Analyst in OIF - Major Rich Bell (MNC-I)

Major Richard Bell deployed to MNC-I from 19 February 2007 to 7 September 2007. The beginning of his deployment overlapped with Mr. Sanborn and the end with Major Jutras. The

majority of the work they performed went through MNC-I C3 CHOPS and Chief of Staff, usually in direct support of a requirement specified by the MNC-I Commanding General. These analysts also performed various functions for several other MNC-I staff sections and coordinated regularly with MNF-I counterparts to ensure consistency in reporting.

These two CAA deployed analysts worked in the MNC-I C3 Plans and Policy ORSA Cell. They spent most of their time supporting the MNC-I Chief of Operations, providing attack and casualty trends assessments, maintaining the SIGACTS III database, and working on special projects assigned by the MNC-I Commanding General.

The Weekly Trends Analysis included a 40-slide overview of attack, casualty, and other trends in Iraq, with a special section on Baghdad. Analysts updated this packet Saturday morning, briefed it to the MNC-I C3 Battle Major and MND liaison officers on Saturday night, and posted it on the MNC-I SIPRNET website on Sunday afternoon. They also provided a hardcopy of this to the MNC-I Joint Operations Center so the MNC-I CG could reference it if necessary during his briefings. Analysts provided a "Key Findings" slide to the MNC-I CG's Executive Officer so he could alert the CG to any significant issues or trends prior to the Monday morning MNF-I BUA.

Major Bell described the "Key Findings" slide as the most important slide in the Weekly Trends Analysis slide set. It provided a summary of the previous week's attack and casualty numbers (as compared to the 12-week average) along with a bullet list of weekly trend highlights. The MNC-I CG's XO found this product very useful in informing the CG of significant developments and trends prior to the Monday morning MNF-I BUA.

In response to the MNC-I CG's desire for a weekly briefing on progress in Baghdad resulting from Operation FAQ, Major Bell and the other CAA deployed analysts created a set of six slides known as the "Baghdad Security Districts Analysis." Each slide contained a bar chart showing weekly totals of attacks and casualties since January 2007 for all of Baghdad, a map showing locations of all events for the most recent week, and ten-week bar charts for each security district. Analysts supplemented these slides with a script that succinctly summarized the current week's activity and highlighted any trends or hotspots for the CG.

The CG was extremely happy to hear that the numbers reflected strong progress in Baghdad because of Operation FAQ. The CG directed that CAA deployed analysts create media talking points based on the MNC-I BUA script. These talking points became a weekly requirement. The MNC-I Chief of Staff (CoS) granted CAA deployed analysts the authority to post these media talking points directly to the MNC-I NIPRNET portal under "Command Messages." In addition to the Baghdad Security Districts (BSD) media talking points, ORSA analysts worked with the MNC-I C3 Battle Major to provide MNC-I CG weekly talking points.

In preparation for a high-level conference involving American and Iraqi leadership, Major Bell created a series of slides reflecting the progress made during Operation FAQ. At the conference MNF-I and MNC-I Commanding Generals would discuss Operation FAQ with senior Iraqi leaders. The slides had to be meaningful, yet simple and easy to read. Major Bell created charts reflecting the increased weapons caches found and cleared in critical AOs. The MNC-I FUOPS Field Artillery cells provided slides depicting operational results and indirect-fire attacks. As the lead Action Officer, Major Bell coordinated all efforts and delivered the final product in both English and Arabic.

Another of Major Bell's major products was the Brigade Combat Team (BCT) Trends Analysis. The MNC-I CG tasked him to separate SIGACTS III data by each BCT AO. In order to identify significant trends, ORSA analysts analyzed the data for the five-month period from 1 February 2007 to 1 July 2007. The MNC-I CG used this product to determine the necessity to reallocate combat power across the Iraqi Theater of Operations. He used this information in discussions with his MND Commanders during a commanders' conference.

The MNC-I Chief of Operations tasked Major Bell to travel to Logistics Support Area (LSA) Anaconda in Balad, HQ of the Combined Joint Special Operations Task Force – Arabian Peninsula (CJSOTF-AP), for a staff assistance visit. There, he assisted with a basing problem. CJSOTF-AP forces were at "surge levels" as were the conventional forces, and they foresaw a drawdown in the future. The Command needed an objective method of quantifying the importance of each Operational Detachment Alpha (ODA) or Sea, Air, Land (SEAL) Platoon location. Major Bell worked with the CJSOTF-AP to identify criteria relevant to the analysis. Major Bell and other CAA deployed analysts used ArcGIS to parse SIGACTS III data within a specified radius of each platoon location.

In addition to special projects for the MNC-I Commander, Major Bell provided input for Presidential speeches, Congressional reports, and the Government Accountability Office visit to Iraq. MNC-I Chief of Operations executed all of these RFIs.

The most memorable short-suspense project Major Bell generated was in response to a CNN news article addressing lower U.S. combat fatalities in Iraq during July 2007. The article focused on U.S. combat deaths, but the journalist also discussed higher Iraqi deaths during the same month. Since both the MNF-I and MNC-I Commanding Generals knew the importance of information operations in quelling an insurgency, this article immediately caught their attention.

In order to obtain statistics on Iraqi deaths in Baghdad, General Petraeus sent an email to Lieutenant General Odierno who then forwarded it to the CHOPS. The CHOPS sent it to Major Bell with the word "homework." Major Bell created a presentation to answer the MNF-I CG's questions. Major Bell created a seven-slide presentation depicting specific metrics and key findings. He then briefed the MNC-I Chief of Operations, who in turned briefed the MNC-I C3 who forwarded the presentation to the MNC-I CG.

The CAA deployed analysts played an important role in geospatial analysis in Iraq, especially with regard to the Baghdad Security Districts (BSDs). At this time, CIDNE, the main data repository for MNC-I–from which analysts derived SIGACTS III–did not classify events in Baghdad by security district. CAA analysts maintained this information in the SIGACTS III database, and also troubleshot and fixed any boundary problems that arose. This was a critical function for CAA.

The CAA cartographer Belinda Scheber originally created The Baghdad Security Belts shapefile for use by the MNC-I Future Operations cell (a shapefile is geospatial vector data formatted for Geographic Information Systems software). CAA analysts incorporated this information into SIGACTS III, the only data repository in theater to have such a feature (later, CAA analysts would further refine shapefiles to match security belt boundaries with security district boundaries). Each improvement was extremely time-consuming.

The MNC-I C3 ORSA cell hosted an ORSA conference in the Al Faw Palace on 5 September 2007. Although the plan had been to hold these conferences quarterly, this was the first since

February 2005. Thirty-five participants representing every MND in Iraq attended the conference. They presented eight different presentations. This proved to be a superb opportunity to make new contacts and share analytic ideas. The ORSA Conference was a joint and combined operation, with attendees representing the United States Army, Marine Corps, and Air Force, the Australian Army, the United Kingdom, and various civilian organizations.

Major Bell said his deployment was a positive experience for him. He utilized his skills and made a great contribution. In a short time, Major Bell learned to provide succinct yet meaningful analysis to senior leaders in Iraq. He occasionally performed functions he had not anticipated, but found these functions important and professionally rewarding. Major Bell strongly recommended that CAA continue to support OIF. He has recommended it for both military and civilians.

Figures 5-27 and 5-28 present Major Bell's lessons learned and his recommendations.

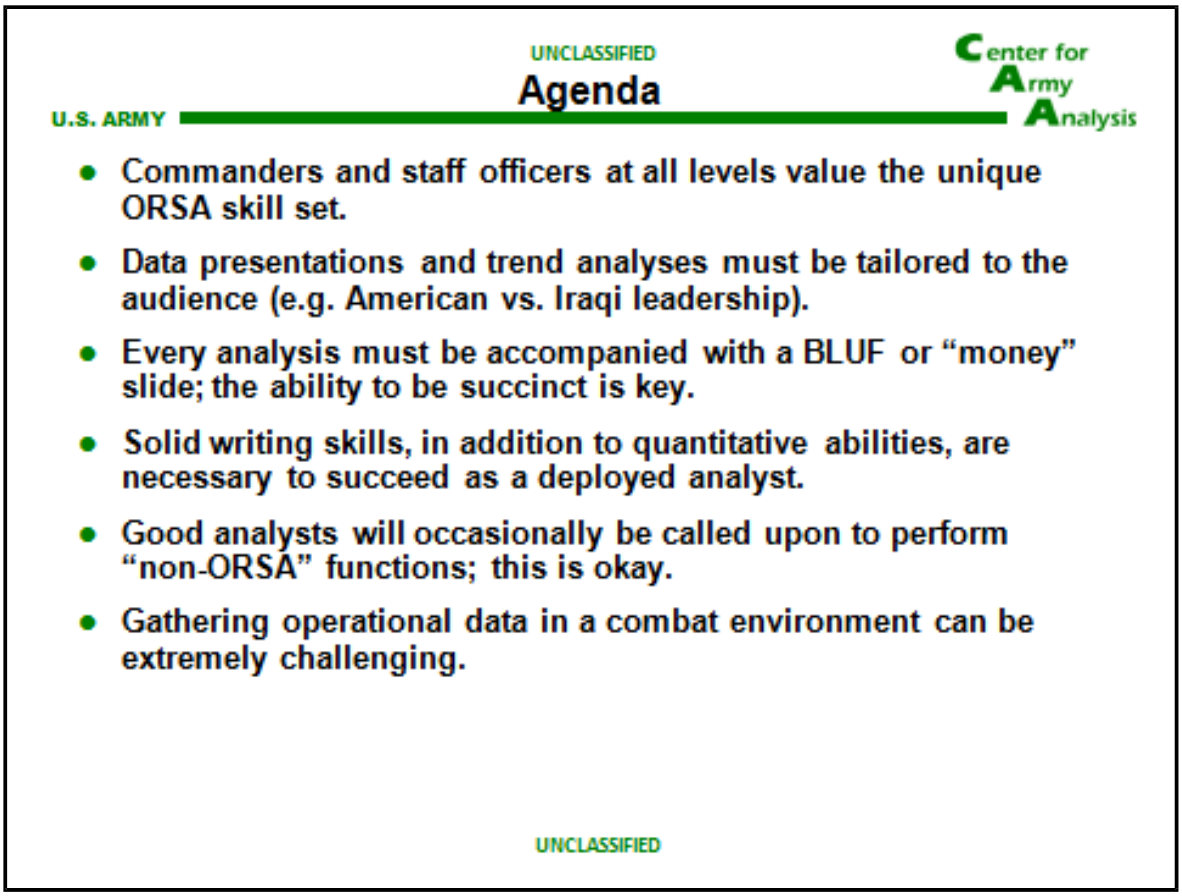


Figure 5-27 Lessons Learned

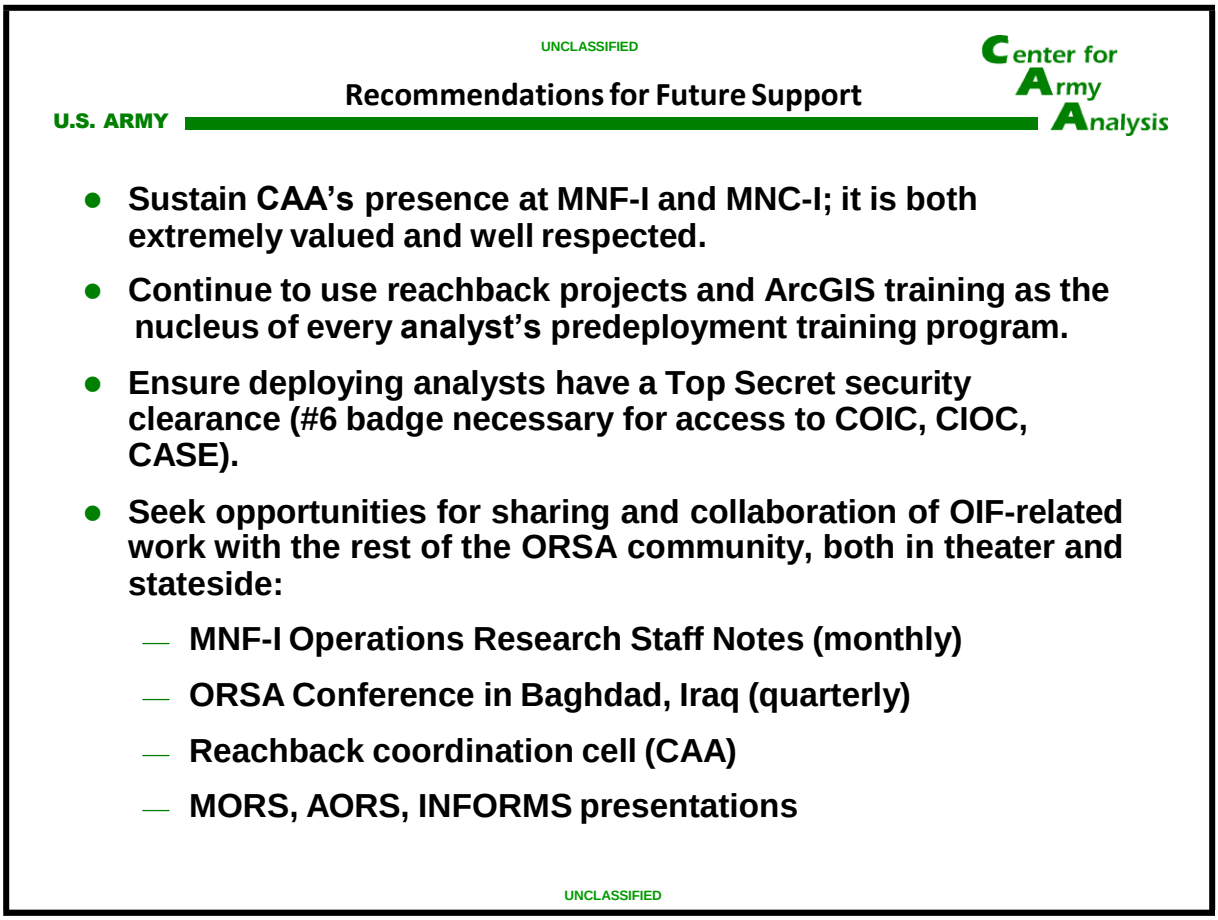


Figure 5-28 Future Recommendations

5.2.19 CAA deployed ORSA Analyst in OIF - Ms. Belinda Scheber (MNC-I)

Ms. Belinda Scheber deployed from 24 February 2007 to 24 April 2007. Ms. Scheber was not an ORSA analyst but a cartographer who used GIS mapping and modeling software. Her deployment was shorter than a normal six-month rotation because it was project-focused. CAA deployed ORSA analyst, Mr. Scott Sanborn, met Ms. Scheber at the airport and oriented her to the area.

Ms. Scheber focused on three primary tasks during her deployment: expanding and updating GIS training for deployed CAA analysts; assisting on eleven separate projects that required Co-geospatial modeling or location maps; and, training other personnel in TF Troy and the Combined Operations Intelligence Center (COIC) in the application of basic methods of GIS. The following paragraphs describe some of Ms. Scheber's contributions.

She produced several general-purpose location maps for MNC-I C3 planners. Each map included the new AOR boundaries with basic geospatial mapping layers consisting of the most current road networks, MSRs, ASRs, rivers, streams, districts, provinces, and location of Forward Operating Bases (FOBs).

Ms. Scheber assisted MNC-I C3 with maps depicting the 3rd ID Advance Team battlespace. She provided MNC-I C3 with large-scale tabletop maps. The available printer determined the size 32 by 32 inches. One of the maps defined the tribal areas in the 3rd Infantry Division's (ID's) AOR.

Another map defined the distribution of Sunni and Shi'a in the 3rd ID's AOR. Ms. Scheber created an attack density plot to show the location of attacks and hotspots between December 2006 and February 2007.

Ms. Scheber also created maps for two water and Riverine studies. Troops discovered weapon caches near or in these waterways. Commanders in the North and West AORs and MNC-I were asking for Riverine resources (i.e. boats, etc.) to investigate and destroy weapons caches. The Deputy of C3 Plans asked that CAA analysts create geospatial models mapping the location of discovered weapon caches in and around waterways. Using calculations in the GIS, Ms. Scheber determined the percentage of discovered weapon caches within 200 meters, 500 meters, and one km of AOR waterways.

Analysts in the JOC wanted a way to quantify attacks in a newly designated area named the "Baghdad Belt." Coalition Forces initiated many offensive actions in response to trouble spots in Baghdad. These events corresponded with the Bush Administration's surge of Soldiers and Marines in January 2007. The Combatant Command defined the "Baghdad Belt" as the regions and areas outside and encircling Baghdad. The assumption was that if numerous coalition activities were occurring in Baghdad, insurgent attacks would increase in the "Baghdad Belt." The Coalition named the activities "Fardh Al Qanoon." Ms. Scheber created a mapping layer representing the "Baghdad Belt" area. This project enabled modeling and comparison of anti-Coalition attacks in the Baghdad AOR. Although the analysis was inconclusive, ArcGIS users in theater incorporated it into the SIGACTS III database in order to count future events.

The acting Deputy of C3 Plans requested approximately 20 maps of important cities in Iraq. The intent of this project was to familiarize the Commanding General with specific areas before a site or city visit. Ms. Scheber provided satellite imagery overlain with foundational map layers of roads, rivers, bridges, FOBs and recent IED events.

To conclude her report, Ms. Scheber offered the following insights from her deployment:

- National Geospatial-Intelligence Agency and MNC-I C2 Terrain Cell did not have the ability to fill GIS analytic needs.
- More personnel with advanced GIS skills should deploy and locate with units such as C3 Plans.
- All deploying analysts should receive GIS software training.
- It was an honor and a privilege to serve in theater and she would like to have stayed longer.

5.2.20 CAA deployed ORSA Analyst in OIF - Major Pierre Jutras (MNC-I)

Major Pierre Jutras began his deployment in support of OIF on 7 May 2007. He replaced Mr. Scott Sanborn in the MNC-I C3 Plans and Policy Division and worked four months with Major Rich Bell and three months with Lieutenant Colonel Todd Henry.

During his deployment, MND and Brigade Combat Teams (BCT) operational boundaries changed. The number of Baghdad Security Districts (BSDs) expanded from ten to fourteen. MNC-I used BSDs as operational boundaries when planning and conducting missions. The Green Zone (GZ), also known as the IZ, was located on the west side of the Tigris River. Major Jutras initiated a reachback request for CAA analysts to update the SIGACTS III database to reflect these new boundaries.

During the deployment of Major Jutras, his team of deployed analysts produced a Baghdad Security Belt report. They designed this report to measure certain metrics inside the BSDs and within the Baghdad Security Belt surrounding the BSDs. This report provided commanders with an indication of whether the enemy was moving out of Baghdad into surrounding areas. It provided an indicator of whether the surge into Baghdad was working. Major Jutras and his team drew required data from SIGACTS III and plotted the data using ArcGIS Geospatial software. They created a graphic depiction of the BSDs and the Baghdad Security Belt. He created an intersection of the data and produced charts and graphs showing trend analysis. He added fields to SIGACTS III to represent these two areas. Planners no longer had to rely on ArcGIS to produce the appropriate data, greatly simplifying the analysis process.

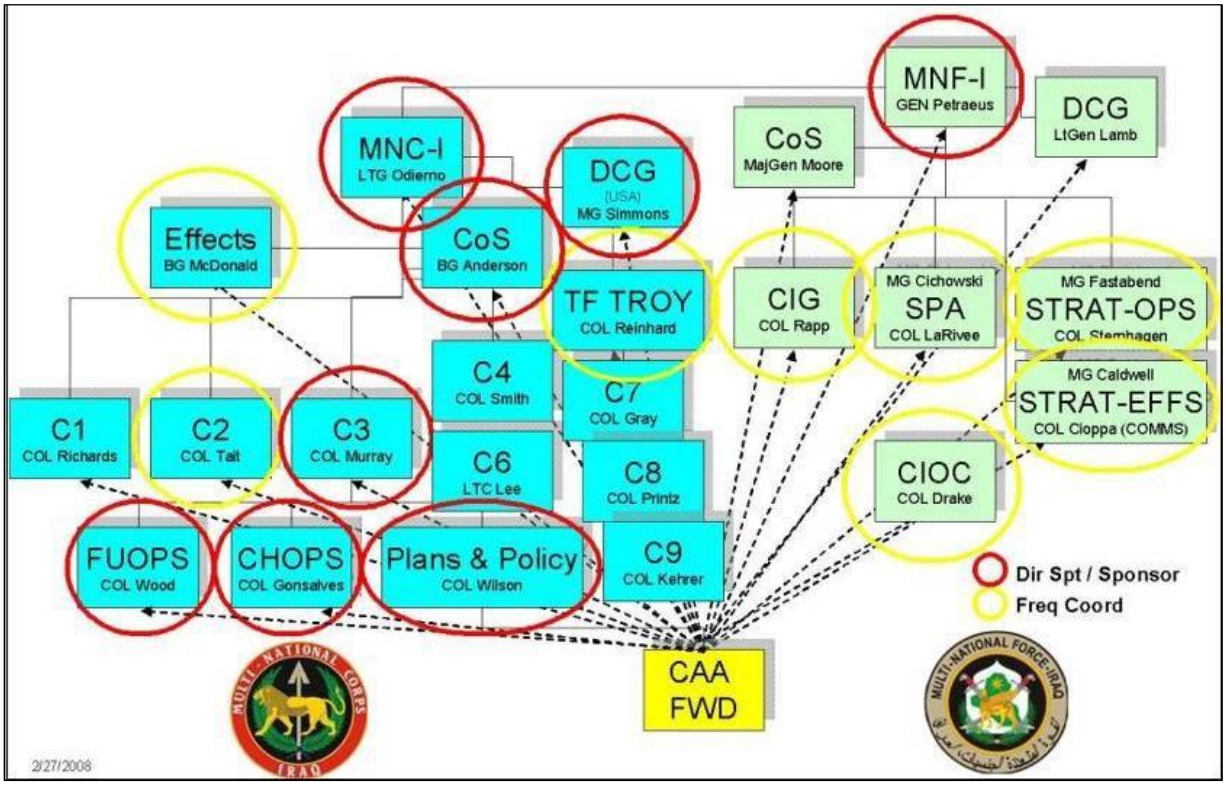


Figure 5-29 Command Structure during the deployment of Major Jutras

Figure 5-29 highlights the various organizations and staffs with which CAA deployed analysts interacted. The diagram is an update to a previous structure and shows how the number of interactions had grown. Major Jutras spent increased time with MNC-I. The majority of his taskings came directly from the MNC-I C3 CHOPS. These tasking originated from the MNC-I C3, CoS, DCG, and both General Petraeus, MNF-I CG, and Lieutenant General Odierno, MNC-I CG. CAA analysts also received requests from many outside agencies such as the Defense Intelligence Agency (DIA), the Central Intelligence Agency (CIA), Office of the Secretary of Defense (OSD), Army staff, and USCENTCOM staff.

The MNC-I Joint Fires and Effects Cell (JFEC) measured the overall effectiveness of the MNC-I Campaign Plan and other activities. CAA deployed analysts provided polling data analysis expertise. They also participated in the preparation of the EAB report and Operation FAQ Congressional Delegation (CODEL) briefs. Major Jutras had regular interactions with the MNF-

I SPA cell–whose role it was to assess progress toward the Joint Campaign Plan (JCP) across the four main LOOs and the eight supporting activities. He worked with the Commander's Initiative Group (CIG) on projects such as General Petraeus's Congressional Testimony. He supported the COIC on developing trends involving civilian murders and sectarian violence. He provided guidance to C2 analysts on using the SIGACTS database to verify trends related to their intelligence findings.

Major Jutras provided the MNC-I CIG with an Al Anbar density analysis for an October 2007 Congressional Testimony. General Petraeus regularly requested these kinds of analyses for his CODEL briefs and media interviews.

Major Jutras worked with the MNF-I Strategic Effects Communications (STRATEFF COMMS) Division on projects such as the Iraq MoI data exchange effort. MNF-I STRATEFF COMMS Division conducted analysis on Iraqi-related stories in western media, analyzed Iraqi media reports for accuracy and, when necessary, assessed the reasons behind any inaccuracies. Major Jutras analyzed sectarian polling data concerning attitudes towards Al-Qaeda in Iraq (AQI) and Iraq militia. Major Jutras assisted in improving the Iraqis' data collection capabilities. He improved database networking, database content, and data entry. He captured the total number of incidents reported, examined these reports for accuracy, and compared the Iraqi reports to those reports submitted by CF. His goal was to improve the Iraqis' data processes before they assumed control of the country's security.

The Multi-National Security Transition Command-Iraq concentrated their efforts on analyzing the development, readiness, and distribution of ISF. The COIC maintained a trends database on ethno-sectarian data. Major Jutras coordinated daily with the COIC on issues related to the accuracy of data on civilian murders reported. Major Jutras maintained the SIGACTS III database and provided input for correcting errors in the CIDNE database. He developed numerous reports for a variety of leaders and agencies, concentrating on attack and casualty trends but touching on hundreds of different metrics used to help measure the success or lack of success of the war effort.

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In-Theater ORSA Analysts Responsibilities

- **MNC-I JFEC EAC**
  - **Measure the overall effectiveness of the Corps Campaign Plan and other activities as directed.**
- **MNF-I SPA Assessments**
  - **Assess progress towards the Joint Campaign Plan across the 4 main LOO's (Lines of Operations) and the 8 supporting activities.**
- **MNF-I CIG**
  - **Analyze and prepare reports and briefs in support of the MNF-I Commander.**
- **MNF-I STRATEFF COMMS Division**
  - **Analyze media reports and Iraqi public perception, primarily using polling results.**
- **MNSTC-I**
  - **Analyze development of the Iraqi Forces.**
- **CIOC**
  - **Maintain Ethno-Sectarian data and other civilian metrics.**
- **MNC-I C3 ORSA Analyst**
  - **Maintain MNC-I SigActs III database.**
  - **Consolidate, analyze, prepare, and brief MNF-I and MNC-I Commanders and staffs and outside agencies on trends, using all associated metrics within database.**
  - **Prepare media talking points for MNC-I Commander and his staff writers.**

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Figure 5-30 In-theater ORSA Analyst Responsibilities

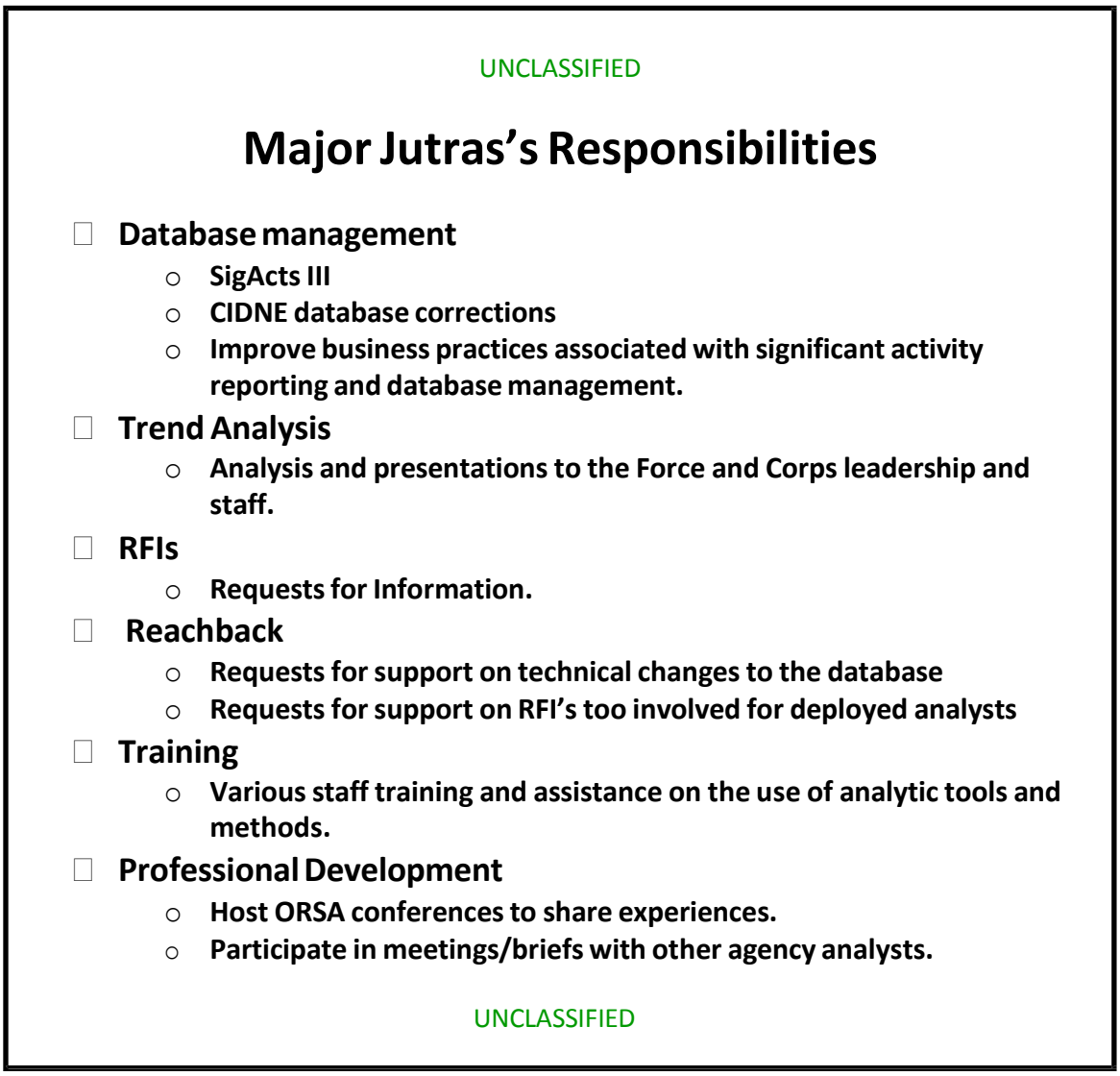


Figure 5-31 Major Jutras's Primary Responsibilities

Figure 5-31 lists Major Jutras's primary responsibilities. SIGACTS III remained the most recognized work of CAA analysts. MNF-I and MNC-I KM personnel requested the assistance of Major Jutras in order to improve data reporting and management issues in theater. Weekly and monthly trend analysis reports for a variety of command and staff sections, such as the CG, the CIG, the C3, the C3 Operations, the C5, the JFEC, and the MNF-I SPA were also a significant part of his workload. In some cases, he updated reports developed by previously deployed analysts. In other cases, he developed new reports based on the needs of the MNF-I and MNC-I leadership. He provided answers to RFIs frequently received from peers in the CIG ORSA division, from personnel collocated in the Plans division, and from a multitude of other offices seeking ORSA expertise. He also answered other RFIs for USCENTCOM and the Pentagon.

Major Jutras sent many reachback requests to CAA for assistance with often changing regional, division and BCT boundaries. Some of these requests were primarily of a technical nature and

required the expertise of coders and cartographers. Other reachback requests simply required too much analytic time for the deployed analysts to accomplish.

The CAA deployed ORSA analysts regularly received training on updated versions of CIDNE and gave training to other staff members on the inner workings of SIGACTS III and pivot table manipulation. Other ORSA analysts trained on ArcGIS, which remained a high-demand skill that few in theater were able to use effectively. Professional development grew during ORSA conferences and from many meetings conducted in theater and via VTC with organizations such as DIA, CIA, and with U.S. Marine, Air Force, Navy, and civilian analysts from throughout the theater.

Due to the continued need for a reliable tool providing theater analysts a means of logically accessing significant activities, Major Jutras remained responsible for SIGACTS III database maintenance. Many analysts drew from the CIDNE database for immediate data mining needs; however, the database changed too rapidly to perform comparison or trend analyses.

RECURRING PRODUCTS	RECURRING MEETINGS
• Weekly Trends Analysis • Corps BUA Slides • DAU • CG Talking Points • Operational Results • Latency Report • Baghdad Security Belt • Base Attacks • Sniper Attacks • EOF Statistics • Devonshire Data	• Force BUA • Corps BUA • C3 Plans Huddle • Corps KMO CIDNE Update • Division LNO Trends Brief • CAA Current OPS VTC

Figure 5-32 Recurring Trend Analysis Product and Recurring Meetings

Figure 5-32 shows recurring trend analysis products that Major Jutras produced on a routine basis; it also depicts recurring meetings attended by CAA deployed analysts.

The Weekly Trends Analysis was a consolidation of charts depicting trends over a 12-week or 52-week period for a wide variety of metrics. Originally, CAA analysts posted this analysis to the web, with a paper copy provided to the C3 CHOPS. Major Bell, who had deployed prior to Major Jutras, put together a hard-copy version in a tabbed folder that made it easy for the CHOPS to use. This drew the attention of Lieutenant General Odierno who requested a weekly updated copy so he could follow the trends occurring in his battlespace. Major Jutras expanded the presentation to include the Baghdad update assessment, the EOF and friendly fire incident analysis, and other operational metrics requested by the Command. Many analysts in theater relied on the data that CAA deployed analysts provided in the Weekly Trends Analysis.

Major Jutras and Lieutenant Colonel Todd Henry, who deployed into theater July 2007, provided a series of charts showing a 30-day moving average for attacks in the BSD beginning in January 2005. Lieutenant General Odierno directed this amendment after a briefing from the IDA contractors assigned to the Combined Operations Intelligence Center (COIC). Lieutenant

General Odierno wanted to see some of the trend charts in a different format to see if the analysis changed. Attack trends often followed the intensity of operations the MNC-I conducted, especially in a densely populated area such as Baghdad. "Total Attacks" data gave the actual numbers for the current week and the previous week. A problem with the 30-day moving average was the loss of a trend line for the last two weeks of the assessed period. Analysts calculated the average using the previous two weeks of data and the next two weeks of data to produce results for a specific day. When calculating the last two weeks, the algorithm did not have a full 30 days of data to average and could not produce an average for the last two-week period.

Major Jutras also prepared the CG's talking points. Talking points are broad statements with supporting charts describing metrics in areas of interest to the media and areas that the CG wanted to emphasize. Analysts originally prepared talking points only for the JOC Battle Major, who included them in a weekly report for the MNC-I CG. These reports became very popular to both the MNF-I and MNC-I CG's speechwriters, who used them to prepare for press interviews. Although still included in the Battle Major's report, Major Jutras and the other CAA deployed ORSA analysts began sending them directly to the MNC-I CG's XO and his speechwriter, as well as to the MNF-I Chief of Operations' Aide. Occasionally, analysts answered RFIs for similar reports on specific areas or for a set of specific metrics that the Command wanted to emphasize to the public through the media.

Major Jutras developed a latency report reflecting the average number of hours from when a SIGACT occurred to when the responsible party posted it into the CIDNE database. He prepared the report for the MNC-I CHOPS and the MNF-I KMO. He also prepared a Coalition report and a HN report broken down by MND regions. The MNC-I CHOPS needed the Coalition report in order to gauge the efficiency of each Division's significant activities reporting.

The MNF-I KMO also wanted the HN report. The KMO was improving the overall HN reporting system. In September 2007, the Coalition reporting average ranged between five and seven hours. The HN reporting average was 24 hours. This analysis was for reports entered into the CIDNE database only. The Iraqis had another database called the Situational Awareness Database – Iraq (SADIQ). The reporting average within this system was much longer and was part of the next one of Major Jutras's projects.

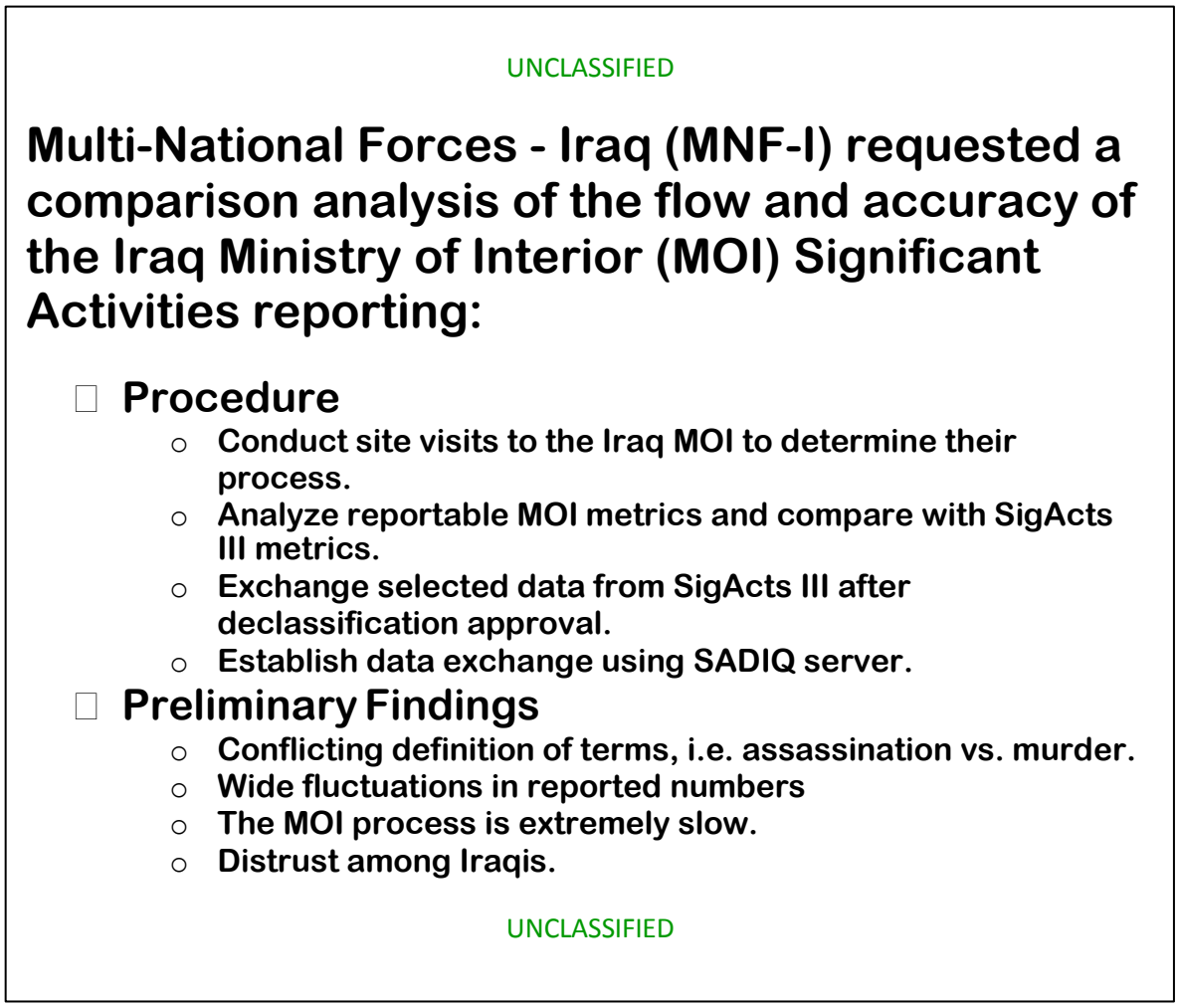


Figure 5-33 Ministry of Interior Data Comparison

The Iraq MoI Data Comparison Project (Figure 5-33) was an interesting project that fell outside Major Jutras's normal daily activities. The Coalition intelligence and operations communities needed the Iraqi police and Iraqi military to collect, consolidate, and analyze data accurately in order to assess actionable statistics. The systems the Iraqi MoI and MoD already had in place were email and paper-copy processes, both lacking timeliness and accuracy. The MoD was slightly ahead of the MoI in the process but was far behind the Coalition in reporting capabilities. Representatives from the MoI admitted that they avoided reporting many numbers as official because they did not trust their accuracy.

The MNF-I STRATEFF COMMS Division took the lead on analyzing the situation and developing a solution. They expected the process to take years to become viable and efficient. This related to the Iraqis' unwillingness to share information with the Coalition and even within their own organizations.

To reduce latency and increase accuracy in HN reporting, the MNF-I SPA coordinated several visits to the Iraqi MoI so Coalition members with a stake in the data environment could discuss methodologies for collection and reporting. MNF-I SPA learned how frequently the reports were

submitted and how the data was consolidated from the primary Iraqi participant who was the Chief, Criminal Statistics Division, Iraqi Police Station Affairs/Security.

Major Jutras analyzed and compared reports received from the MoI. Initial assessments indicated inconsistencies in definitions of terms and wide fluctuations in reported numbers. The contents of specific data fields proved to be very different for SIGACTS reports versus MoI reports for the same periods. Prior to Major Jutras's return to the U.S. on 2 November 2007, he prepared and sent forward data and definitions to the Iraq MoI but did not have the opportunity to conduct a follow-up discussion. They granted approval for a SADIQ server at the MoI, and discussions ensued on how Coalition analysts could gain ready access to the server at MNF-I and MNC-I and begin a regular exchange of data with the MoI.

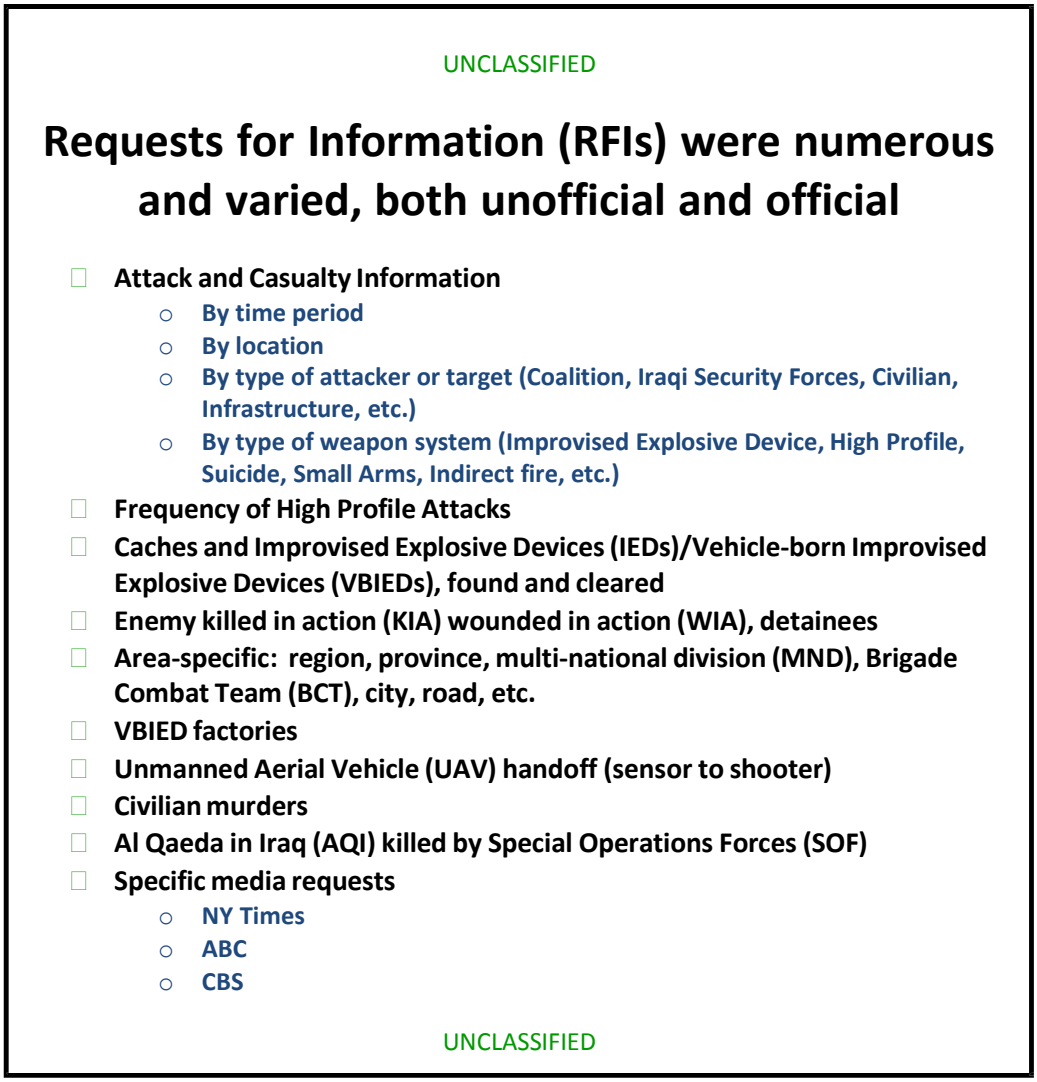


Figure 5-34 Requests for Information

CAA analysts constantly answered RFIs from both unofficial and official channels (Figure 5-34). They regularly received RFIs from within the Plans shop where they were located, especially from C2 planners and the C3 Plans Deputy Chief. The C2 planners, although well supported by the large community of persons assigned to the C2 staff, were familiar with CAA's products and

capabilities with ArcGIS. Many of the requests from C2 planners included density charts to support the C2 planners' analysis. The C2 Plans Deputy frequently had a specific project that he was working on, such as the Waterway Analysis (which was renamed the Riverine Analysis). On multiple occasions, Major Jutras provided products supporting this analysis. CAA's deployed analysts also received RFIs unofficially from C3 staff as well. The majority of these RFIs came from within the JOC. CAA analysts provided data on everything from quick-turn number crunching on attacks and casualties to Unmanned Aerial Vehicle (UAV) handoff analysis. Other deployed ORSA analysts also used SIGACTS III as the primary database of choice for analytic purposes. Most of the non-CAA analysts had little or no experience with ArcGIS, and, therefore, relied on CAA's deployed analysts for support.

Major Jutras conducted the "Frequency of High-Profile Attacks" analysis, which measured the weekly average amount of time between high-profile attacks. These attacks included VBIEDs, suicide vest IEDs (SVIEDs) or person-borne IEDs (PBIEDs). The report included analysis measuring all attacks, those with greater than ten casualties, and those with greater than 30 casualties. This report, originally prepared at the request of the C3, became a monthly product.

Major Jutras often received requests to support media-related events, such as Congressional testimony, or as follow-up to interviews the Command had conducted. One such example was an interview Lieutenant General Odierno conducted with Katie Couric, a CBS news journalist. For this interview, Major Jutras prepared a chart showing how the trend leading into Ramadan for the current year differed from that of the previous three years.

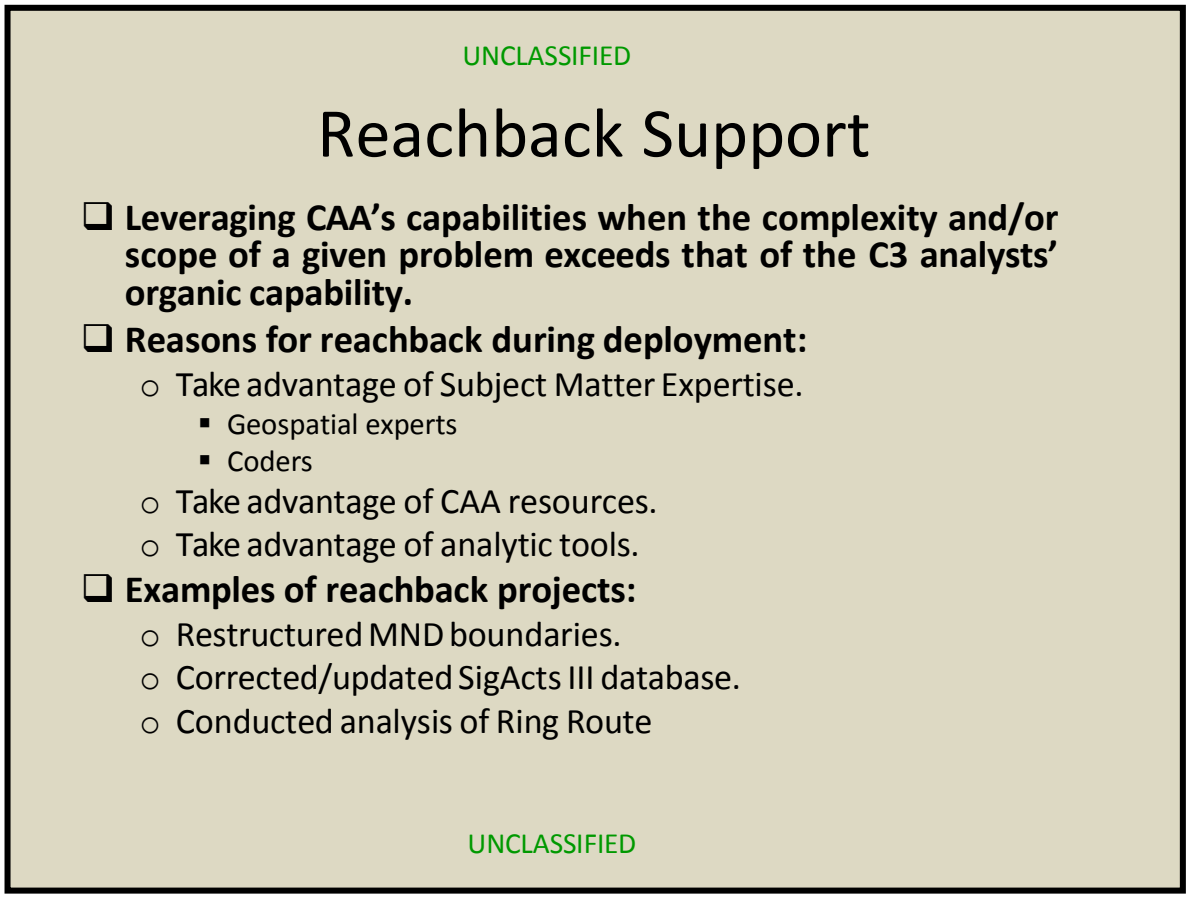


Figure 5-35 Reachback Support

The number of reachback projects sent to CAA varied by analyst (Figure 5-35). Major Jutras utilized CAA reachback capability to keep up with daily demand leading up to Congressional testimony. The CAA OCA Division completed many small-scale projects. Such reachback projects included changes to three regional boundaries, changes to the BSD boundaries, and data plotted on the borders of certain boundaries that had incorrectly identified information in the middle of the Tigris River, caused by gaps in the geographical overlays. Analysts used these corrections to update the Point in Polygon (PIP) macro used to organize the database and add certain fields to aid with analyses. Major Jutras also initiated other reachback projects, asking CAA geospatial experts to enhance his analysis with charts and maps.

Some of his larger reachback requests included ring route analyses. Ring routes are the helicopter routes throughout theater, used on a regular basis to transport personnel and supplies. The C3 Air Battle Major brought this project to analysts to see if they could assist him in determining how to make the ring routes more efficient. Major Jutras recognized this as a network problem too large for deployed analysts to solve in theater. The C3 Air representative permitted Major Jutras to request CAA reachback support (which produced excellent results).

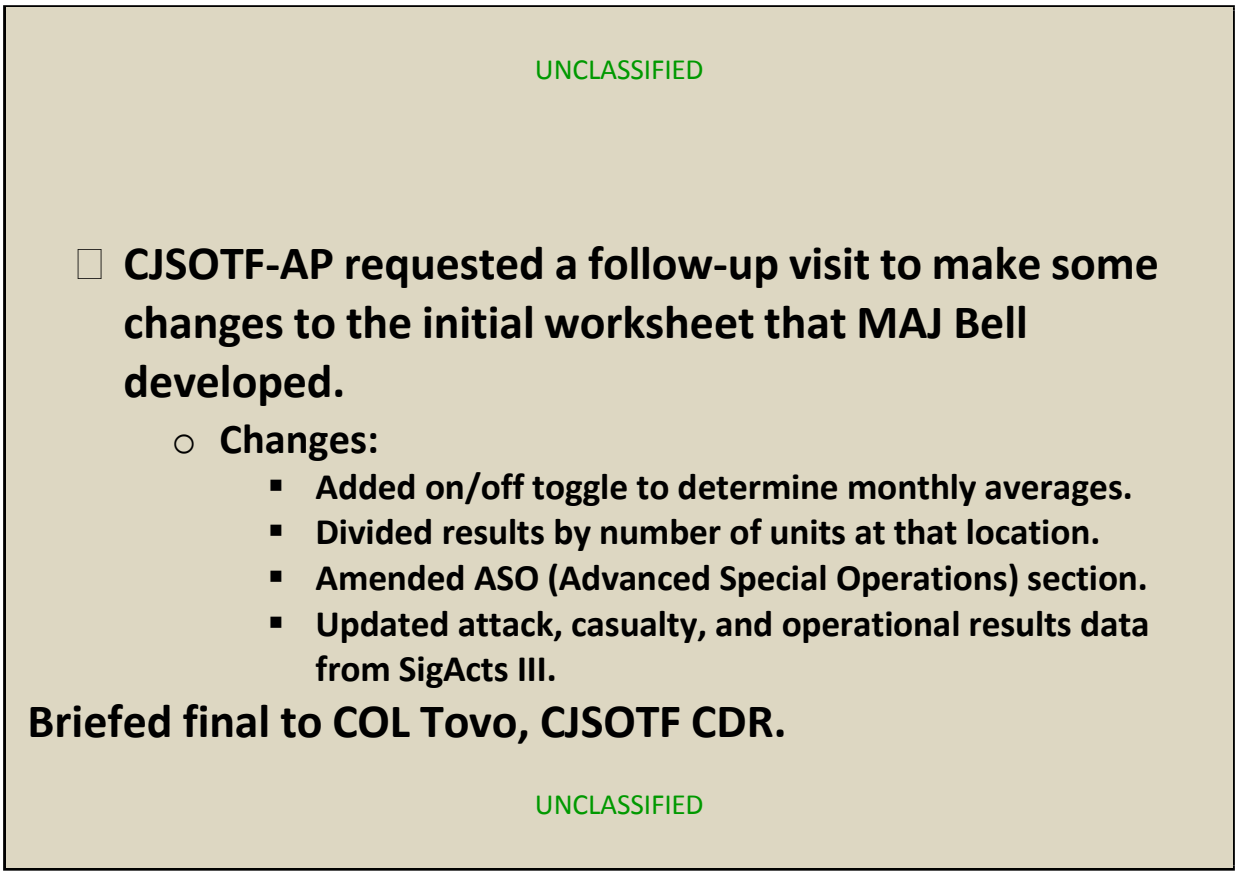


Figure 5-36 CJSOTF ODA/Seal Team Relocation Analysis

From 15 October to 17 October 2007, Major Jutras visited CJSOTF J5 Future Plans to assist with work on ODA/SEAL Team Relocation Analysis project (Figure 5-36). (Major Bell developed this project for the CJSOTF as a means of evaluating unit locations to determine benefits with respect to other unit locations). During Major Jutras's visit, he made changes to the working

spreadsheet at the request of CJSOTF Commander. Major Jutras also provided additional guidance to the staff on how to manipulate the spreadsheet and build new charts. The CJSOTF Commander received the final product prior to Major Jutras's departure.

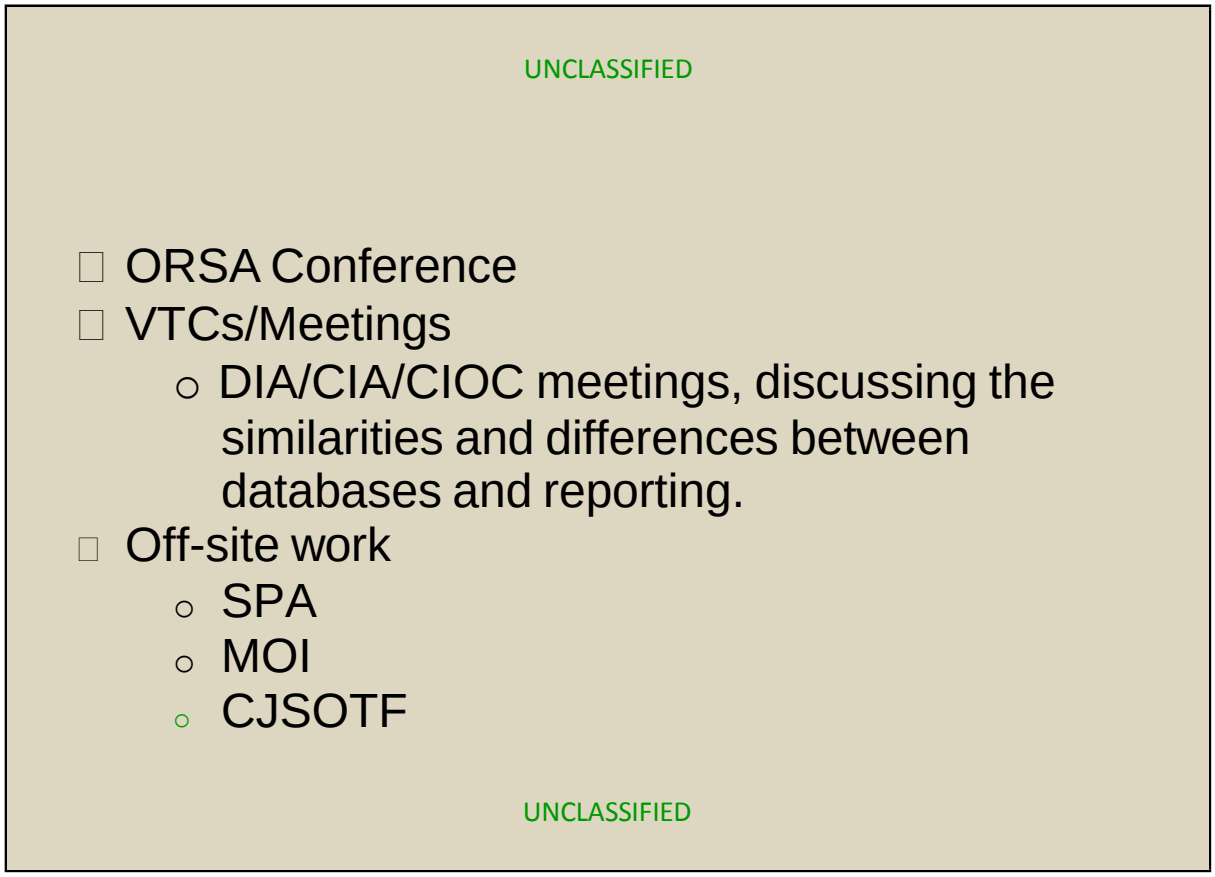


Figure 5-37 Professional Development

Figure 5-37 provides a list of professional development opportunities for CAA deployed analysts. Major Bell coordinated an ORSA conference and led or participated in many meetings conducted in theater and via VTC with organizations such as DIA, CIA, and with U.S. Marine, Air Force, Navy, and civilian analysts from throughout theater. In an attempt to reduce discrepancies between different reporting agencies, CAA deployed analysts conducted discussions about data mining, data interpretation, and data presentation. CAA analysts found their techniques to be very similar to those used by DIA. The DIA representative stated that DIA used CAA processes and instructions for SIGACTS III to produce databases for analytic purposes. The CIA demonstrated some significant differences in data reporting from MNF-I or MNC-I. The most significant was General Petraeus's incidents report prepared by the CIG. An agreed-upon solution was nearing as Major Jutras was finishing his deployment. Much effort continued in the attempt to establish data reporting consistencies throughout theater and with outside agencies. Discussions between agencies, along with one centralized database, were part of the plan to prevent continued issues. SIGACTS III became the primary source for the majority of MNC-I reporting. Consistency was important. It prevented discrepancies in reported numbers on the same incidents or during the same timeframe.

Major Jutras benefited from exchanges with other analysts, such as theater IDA analysts, fellow ORSA analysts at the SPA, CIG, and Strategic Effects Communications (STRATEFFS COMMS) Division, and several MND ORSA analysts. Offsite analysis work gave Major Jutras great professional experiences. These included several coordinated efforts with the SPA, with the Iraq MoD and MoI, and a follow-up to Major Bell's visit to the CJSOTF headquarters.

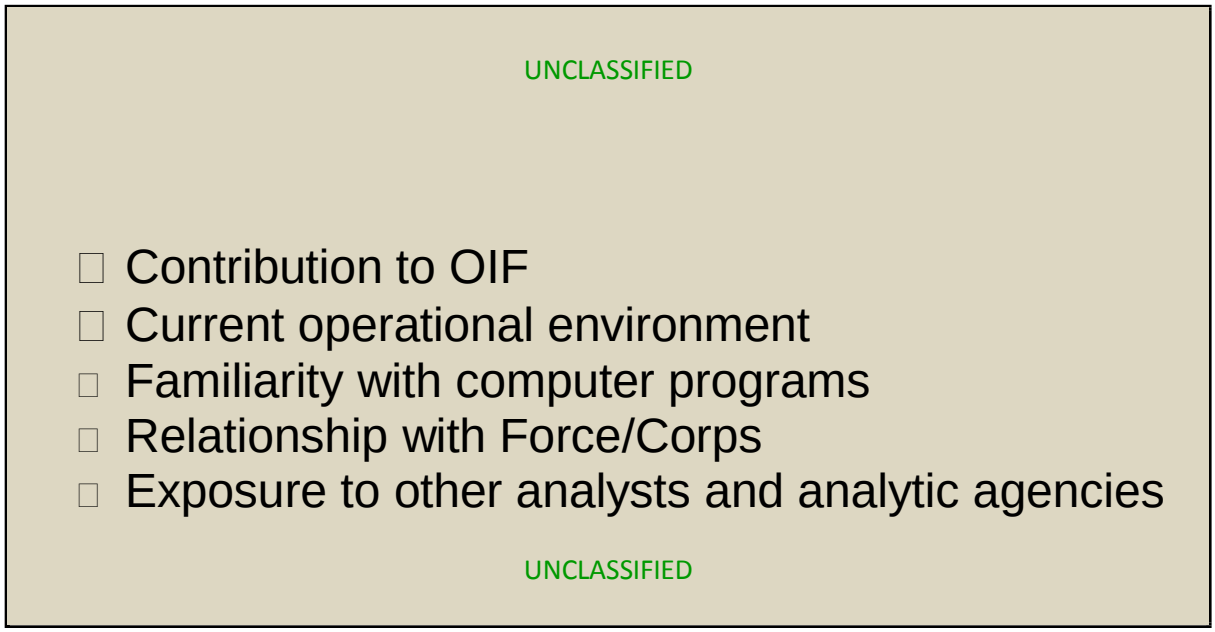


Figure 5-38 Lessons Learned

Figure 5-38 above lists some lessons learned from Major Jutras's deployment experience. His deployment forced him to learn to use new computer programs. These included ArcGIS, Access macros, and Excel pivot tables. Although easily learned in a classroom environment, this knowledge required practical application.

The exposure to other ORSA analysts, and to different analytic agencies working in Iraq, was valuable to Major Jutras. Major Jutras worked with many Army ORSA analysts, Air Force and Navy analysts, civilian ORSA analysts from IDA, Joint Warfare Analysis Center (JWAC), and analysts from DIA, CIA and the Army intelligence community. Major Jutras gained a new understanding and appreciation for their work and contributions.

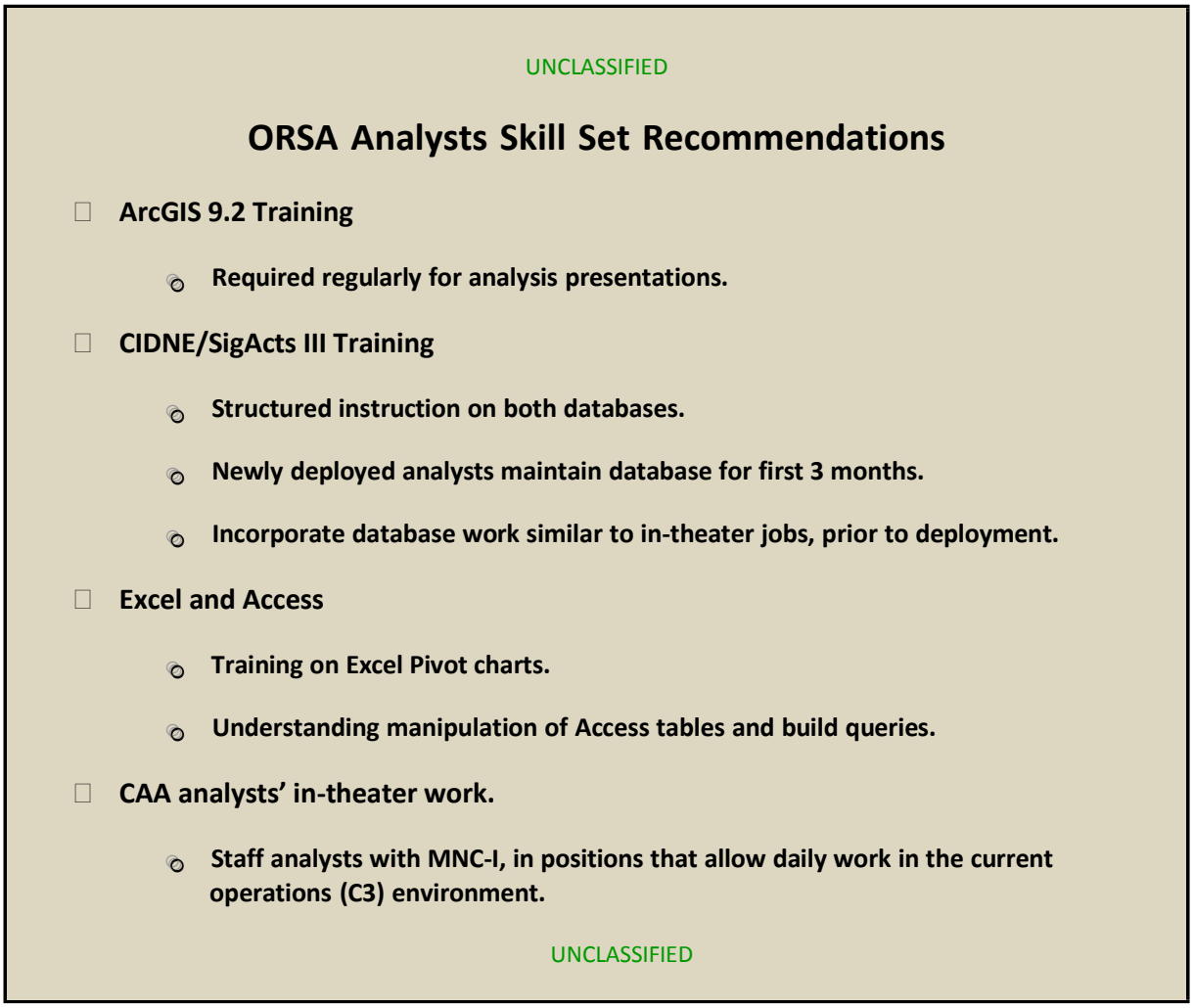


Figure 5-39 Recommendations

Figure 5-39 shows the recommendations of Major Jutras. ORSA analysts should maintain ArcGIS training at a high level. Many projects and briefs demonstrate its use. Deploying ORSA analysts should train on the use of CIDNE and SIGACTS III databases. If deployed analysts already have a basic knowledge of these applications, they can concentrate their transition time on learning the specific reports they will be producing. In addition, thorough training on Access and Excel pivot tables will save the new analyst valuable time. Finally, the current operations environment pace in theater is fast and demanding. This pace is great for rebuilding past operational knowledge and moving the analyst into the "thick of things."

Figure 5-40 Dietz Print (Phantom Warriors: Operation Fardh Al-Qanoon)

Figure 5-40 is a picture that Mr. James Dietz painted depicting the relationship between CF and the ISF during the III Corps deployment as the MNC-I headquarters. Major Jutras purchased print #169 to add to CAA's historical archives. It represents CAA ORSA support to MNC-I.

5.2.21 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Kirk Benson (MNSTC-I)

Lieutenant Colonel Kirk Benson deployed to Multi-National Security Transition Command-Iraq (MNSTC-I) from 15 May to 7 June 2007. This deployment was not part of a regular CAA deployed analyst rotation but in response to a special request for analytic support from MNSTC-I. Beginning in late March 2007 the MNSTC-I M1 advisor to the Joint Headquarters Transition Team (JHQ-TT) requested assistance from Headquarters, Department of Army (HQDA) G1. This request was to determine parameters for building a professional force in the next five years and beyond. Personnel at HQDA G1 provided the M1 advisor an update highlighting future efforts in this area that included two parts. G1 briefed policy inputs and review while CAA briefed development of the ISF Shaping model and overall data requirements. Based on coordination between MNSTC-I, HQDA G1 and CAA, Lieutenant Colonel Benson deployed to provide onsite assistance.

The Iraqi MoD required a method to determine phased promotion policies to shape ISF, specifically the IA, to a given end strength within a given timeframe. Promotion policies needed to provide time-in-grade factors that grew their current force structure to a desired force structure within a set timeframe.

Given this need, Lieutenant Colonel Benson developed some key objectives and guidelines. He analyzed IA attrition factors, examined time-in-grade and time-in-service statistics, and determined the impact of IA force alternatives. Lieutenant Colonel Benson's analysis also considered training base infrastructure and recruiting requirements. With analytic support from CAA, he developed a methodology that ultimately transitioned to MNSTC-I and the Iraqi MoD.

Lieutenant Colonel Benson used the following criteria: allow *x* percent attrition per month; adjust current force to documented positions, exclude current Soldiers serving in undocumented positions (e.g., JHQ) from shaping solution; use a fixed timeline to adjust manning inventories; use an unconstrained recruiting base; and accept a limited ability to implement rank reform initiatives.

Lieutenant Colonel Benson provided the following key findings in his briefing to MNSTC-I and to the Iraqi MoD.

- Review of IA force structure. Analyze rank requirements within the Iraqi Army. Consider the current lack of mid-grade leadership.
- The training base must surge in order to meet ENL/NCO/OFF requirements.
- Iraqi Army attrition varies between reporting agencies.
- Commands must document Joint Headquarters/Support positions in order to capture force generation requirements.
- Strength accounting methods vary; however, Iraqi Army Personnel Status Report (PERSTAT) and MoD pay data reports are more consistent.
- Coalition Forces will require rank reform and/or carrying over-strength personnel in senior positions in the near term.
- Iraqi Special Operations Forces, Air Force, and Training and Doctrine Command elements require cross leveling.
- Targeting a June 2009 generation of the Iraqi Future Force 2008 structure requires a small training base surge.
- Recommend periodic review of attrition/force generation data.

5.2.22 CAA deployed ORSA Analysts in OIF - Lieutenant Colonel Todd Henry (MNC-I)

Lieutenant Colonel Todd Henry deployed on 27 July 2007 to support OIF. He replaced Major Rich Bell as one of two MNC-I C3 ORSA analysts from CAA. During Lieutenant Colonel Henry's first three months in Iraq, he worked with Major Pierre Jutras. Lieutenant Colonel Henry spent the last half of his tour with Lieutenant Colonel Wade Yamada. Lieutenant Colonel Rob Shearer replaced Lieutenant Colonel Henry in January 2008. CONUS CRC scheduling problems and a freak snowstorm in Georgia deprived Lieutenant Colonel Henry and Lieutenant Colonel Shearer of an overlap in their deployments.

During Lieutenant Colonel Henry's deployment, the C3 ORSA Cell was under C3 Plans for administrative purposes, but worked directly for the C3 CHOPS. C3's ORSA cell provided analytic support to C3 Plans and responded to requests directly from the MNC-I CG Executive Officer (XO).

Lieutenant Colonel Henry primarily focused on working with MNF-I SPA Division to incorporate HN reports into SIGACTS III, providing the weekly attack and casualty trend assessments, along with managing and updating the SIGACTS III database. He also initiated a major reachback project with CAA to update the HN reports in SIGACTS III. During his deployment, there was a strong emphasis on including HN reports in analytic products for trend analysis. While HN reports were in the SIGACTS III database, MNF-I only used them to report violent civilian deaths in the U.S. Congressional 9010 report.

Iraqi civilian deaths were a primary measure of the security environment during this period. Briefers presented General Petraeus, MNF-I Commanding General, with a chart of monthly

violent civilian deaths for his September 2007 testimony before Congress. The 50 percent decrease in civilian deaths Iraq-wide, and 75 percent decrease in Baghdad, from January to July 2007 showed the improved security environment brought about in part by the surge of U.S. troops. This following chart is noteworthy in that it is the first time HN reporting was included in MNF-I assessments. MNF-I included the HN reports in their assessment in order to provide an accurate assessment of the current security environment.

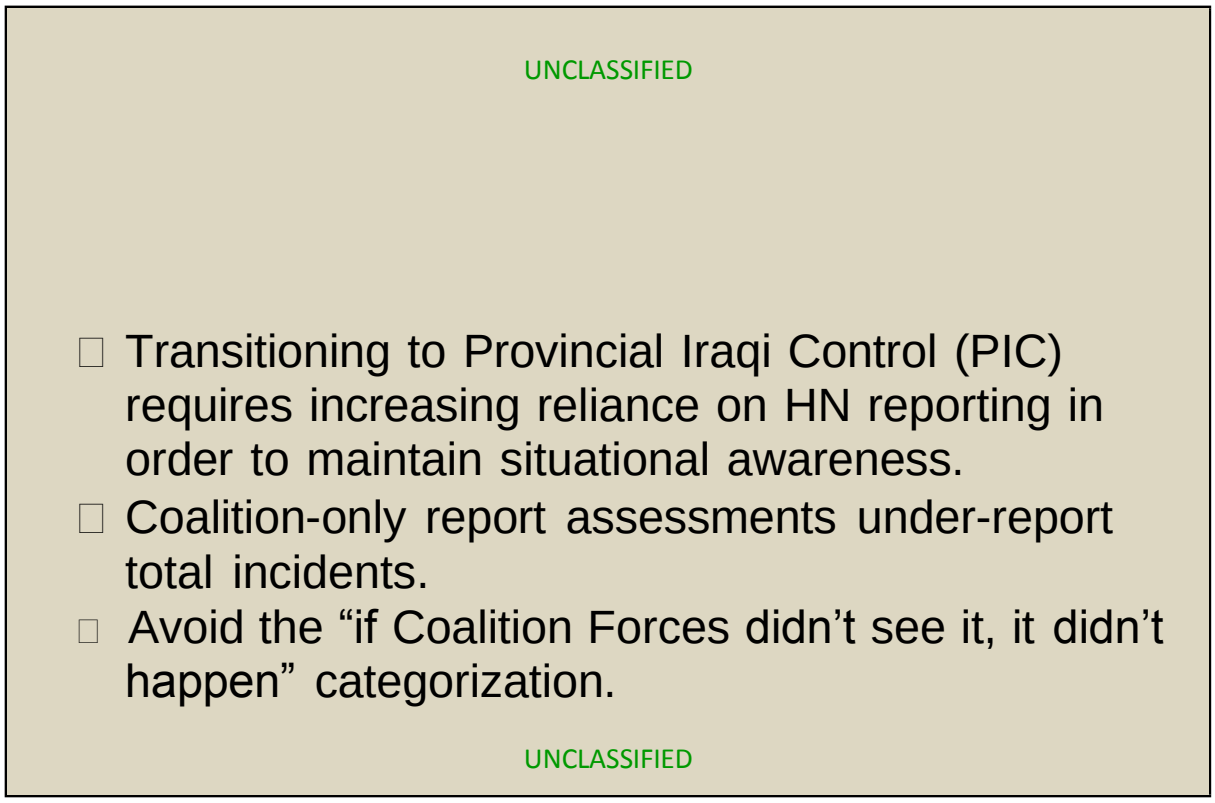


Figure 5-41 Host Nation Reporting

Multi-National Forces - Iraq required inclusion of HN reports in trend analysis the three basic reasons shown in Figure 5-41. As more provinces transitioned to Provincial Iraqi Control (PIC), MNF-I would have to rely on HN reporting in order to maintain situational awareness. Coalition Report Assessments did not capture all events causing under-reporting of event trends. Finally, MNF-I wanted to capture all events in their trend assessments, to include those not witnessed by CF.

The Multi-National Forces - Iraq leadership understood that to include HN reports in trend analysis, HN reports should be comparable in content and accuracy to those of CF. The SIGACTS III database contained HN reports; however, HN reports never went through the quality assurance (cleaning) process that Coalition reports went through. Therefore, MNF-I would not include HN reports from SIGACTS III in any trend analysis. The MNF-I C2 maintained the Combined Operations Intelligence Center (COIC) trends database, used for assessing Ethno-Sectarian Violence (ESV). The COIC trends database contained cleaned HN reports (intelligence analysts scrubbed these records daily for accuracy and content). MNF-I initially used the HN reports from the COIC trends database in their violent civilian death

assessments, but insisted the HN reports in the SIGACTS III database be processed (cleaned) for future inclusion in assessments.

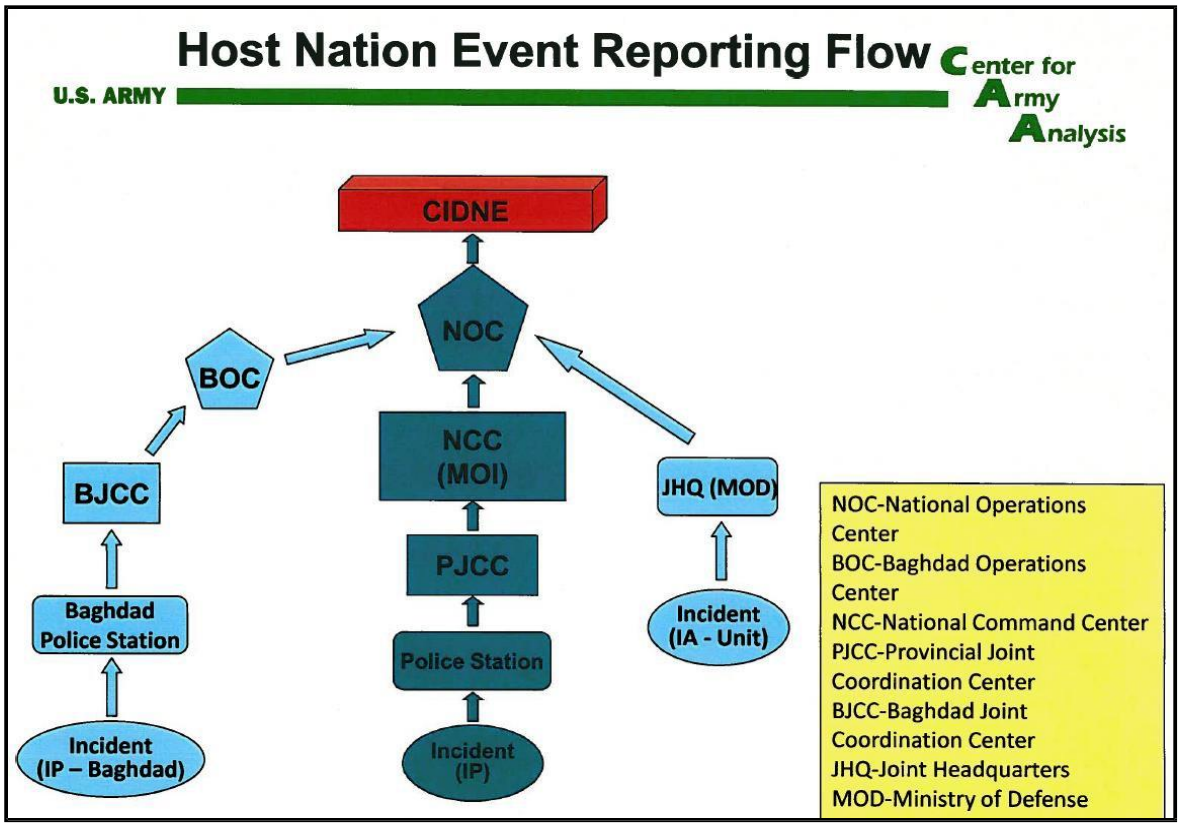


Figure 5-42 Host Nation Reporting Flow

Figure 5-42 shows the significant event report flow for both IP and IA units, as understood in October 2007. Iraqi Army reports flowed from the unit, through the Joint Headquarters (JHQ) at the MoD, to the National Operations Center (NOC). Iraqi Police reports outside of Baghdad flowed through the police station, Provincial Joint Coordination Center (JCC), the National Command Center (NCC) at the MoI, to the NOC. Iraqi Police reports inside Baghdad flowed from the Baghdad JCC through the Baghdad Operations Center to the NOC.

ISF primarily used voice methods (radio or phone) to transmit HN reports. The MoI was developing an automated reporting system; however, they did not have the hardware and software needed to complete its development. A team of U.S. translators at the NOC entered HN reports into the Coalition database, CIDNE.

The Coalition was concerned with location accuracy in HN reports. The GoI did not permit the disclosure of grid coordinates so usually the closest street intersection was the only location information provided. For 95 percent of HN reports, U.S. translators had to estimate grid coordinates when entering reports into CIDNE.

Determining the accurate location of incidents was important because inaccurate reporting could lead to duplication of Coalition reporting. Accurate HN trend analysis required identifying and

eliminating duplicate reports. Identifying duplicates was especially difficult and time consuming since most algorithms used some form of distance and time screening criteria.

In addition, HN reports did not meet the same level of accuracy and content as Coalition reports. ISF did not provide updates to their initial reporting. Analysts updated Coalition reports several times with additional summary information, updated casualty numbers, etc. HN reports contained significantly less information than Coalition reports. On average, Coalition report summary fields contained 250 words. HN report summary fields contained an average of 50 words.

Lieutenant Colonel Henry and his team "cleaned" the approximately 30,000 HN reports in the SIGACTS III database and removed duplicate reports (Figure 5-43). MNF-I had determined that SIGACTS III, with cleaned HN reports, would be the database used for reporting civilian deaths, since it included all HN reports (unlike COIC Trends) and would serve as a single source for casualty trends (CF, ISF and civilian). The Command later decided to use MNF-I STRATOPS as the proponent for HN reporting process.

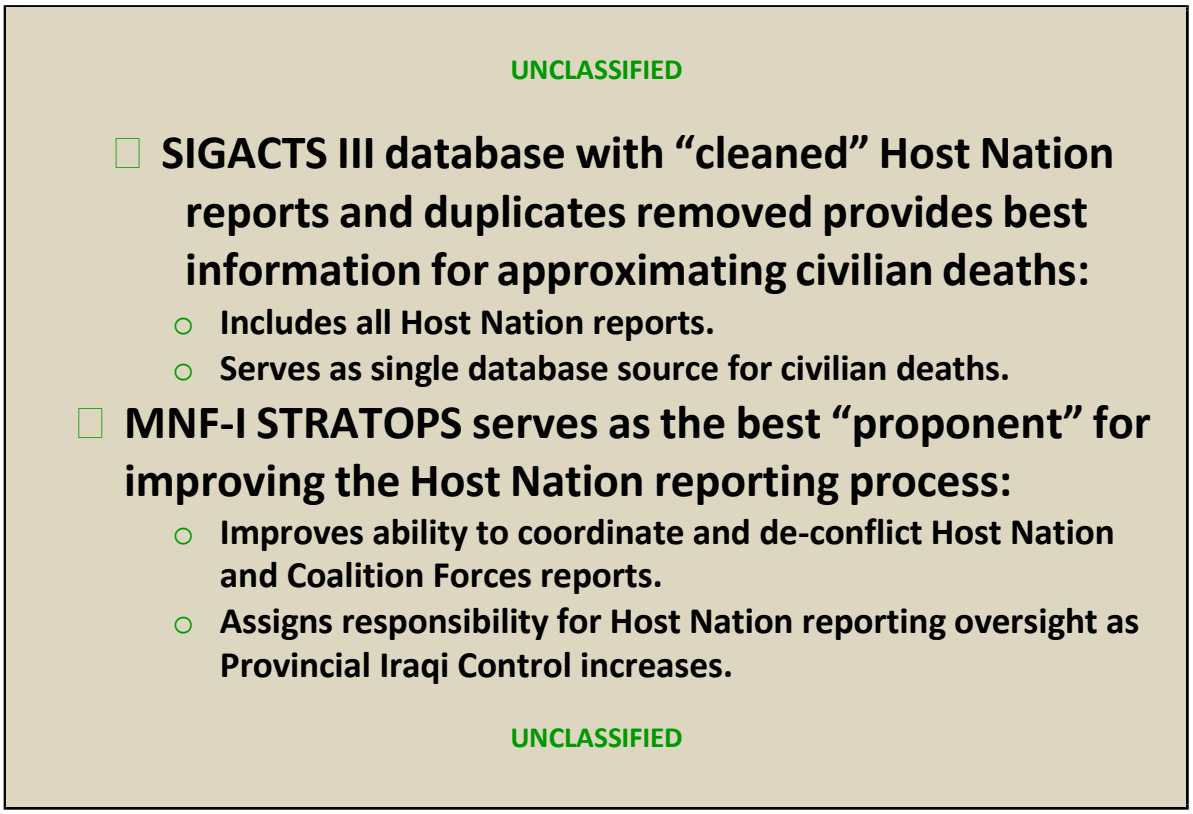


Figure 5-43 Host Nation Reporting Conclusions

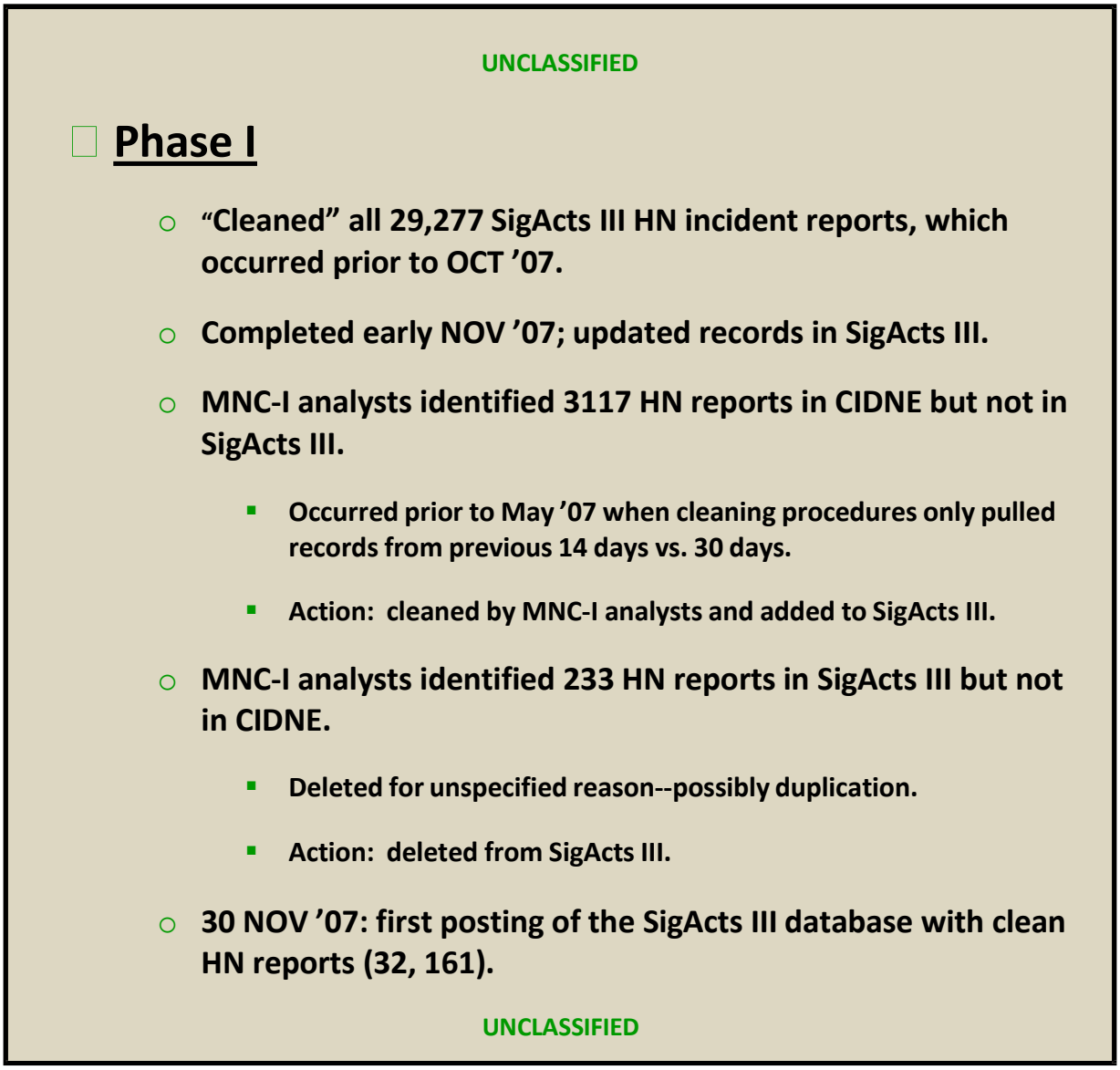


Figure 5-44 NJOC Data into SIGACTS III Reachback Project (1/2)

During this period, CAA deployed analysts also identified 3,117 HN reports that were in CIDNE but not in SIGACTS III. The previous weekly cleaning process, which pulled only 14 days of records rather than 30, most likely caused this problem. Analysts cleaned these records in theater and added them to the SIGACTS III database, November 2007. Deployed analysts also identified 233 HN reports that were in SIGACTS III but not in CIDNE (which probably identified these reports as duplicates). CAA analysts deleted these records from SIGACTS III. By the end of November 2007, SIGACTS III contained over 32,000 cleaned HN reports.

CAA reachback sponsored the Integration of NJOC Data into SIGACTS III (INS) Project, which consisted of two phases (Figures 5-44 and 5-45). Phase I involved cleaning the HN reports already in SIGACTS III. The 29,277 historical HN reports went through the same weekly

cleaning steps taken by MNC-I C3 ORSA analysts. CAA Analysts completed this phase in November 2007 and updated the records in SIGACTS III.

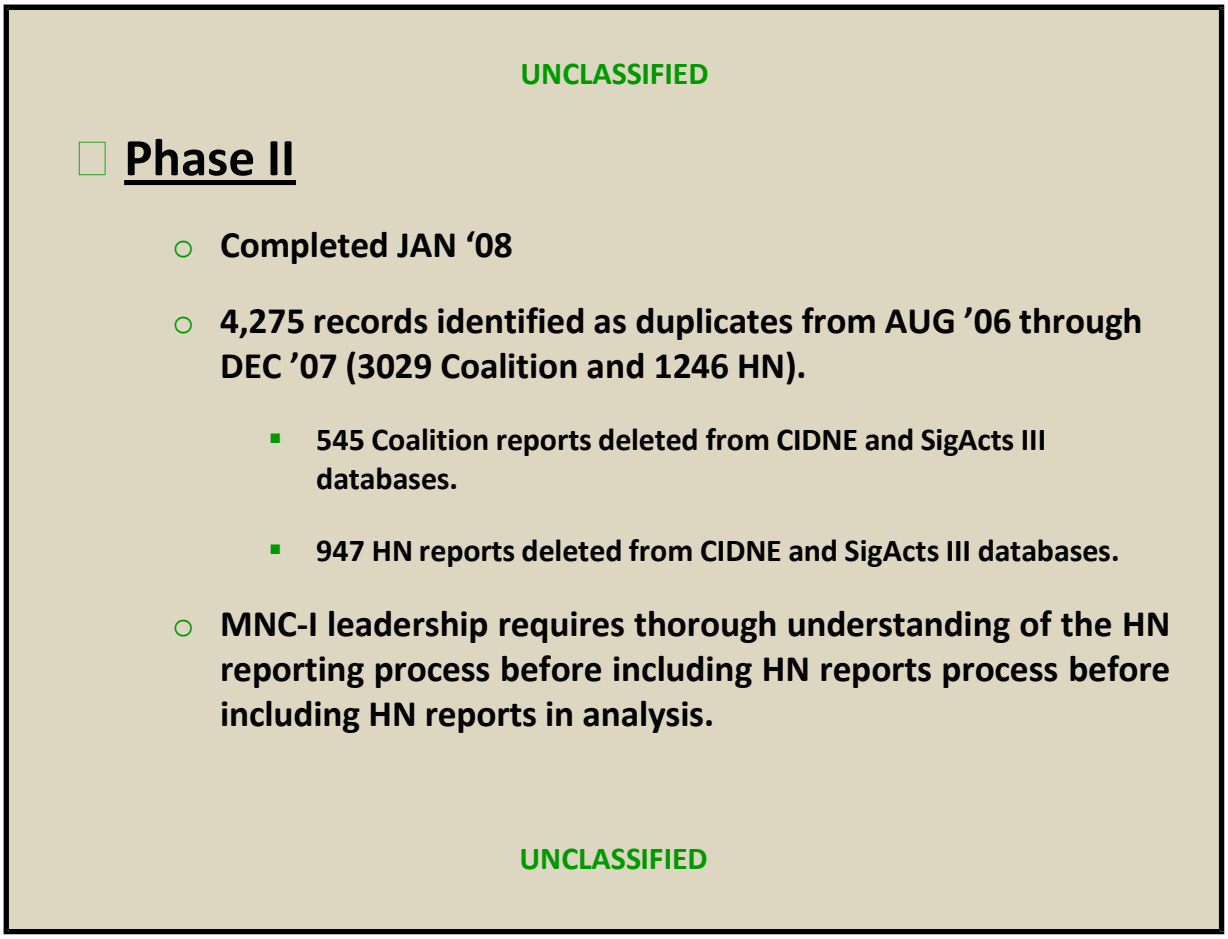


Figure 5-45 NJOC Data into SIGACTS III Reachback Project (2/2)

CAA analysts then started on Phase II of the reachback project, duplicate record identification and deletion (Figure 5-45).

By the end of January 2008, CAA analysts had identified 4,275 records as probable duplicates, including 3,029 Coalition reports and 1,246 HN reports. They sent this list to MNC-I, where the SIGACTS managers and division liaison officers agreed to delete 545 Coalition reports and 947 HN reports. The SIGACTS III database was now ready to include HN reports in all trend analyses.

CAA analysts made two major database changes. First, they added a remains-found category to account for mass-grave findings. Second, they released CIDNE 1.4.2 in February 2008, which incorporated the SIGACTS III database into CIDNE.

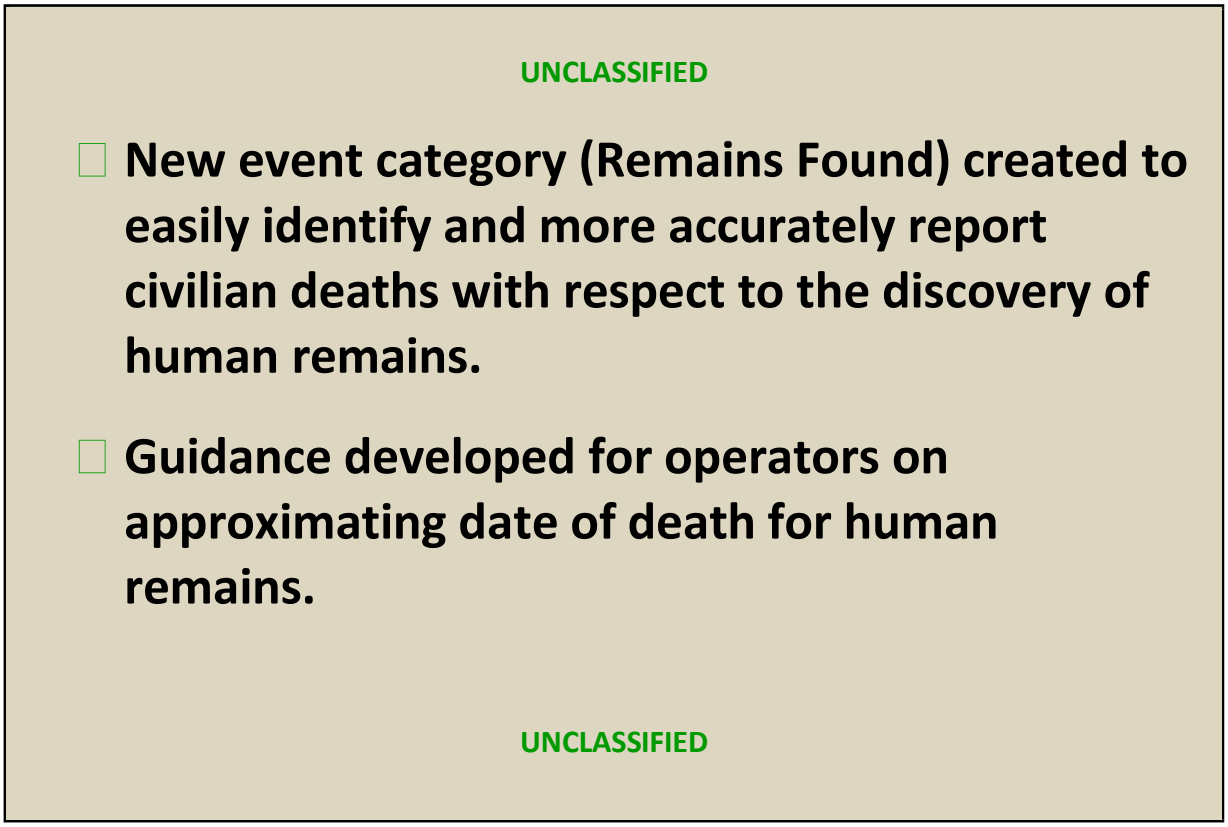


Figure 5-46 Remains Found

Standard reporting procedures had previously coded mass graves and human-remains in the "Other" event category. This required data mining of summary fields. Figure 5-46 shows the new event category added to CIDNE and SIGACTS III. This new category required a method for approximating the actual date of death for more accurate trend analysis. MNC-I C3 CHOPS asked CAA analysts to prepare operator guidance for this requirement. Lieutenant Colonel Henry and Lieutenant Colonel Yamada worked together to provide MNC-I C3 CHOPS with the guidance requested.

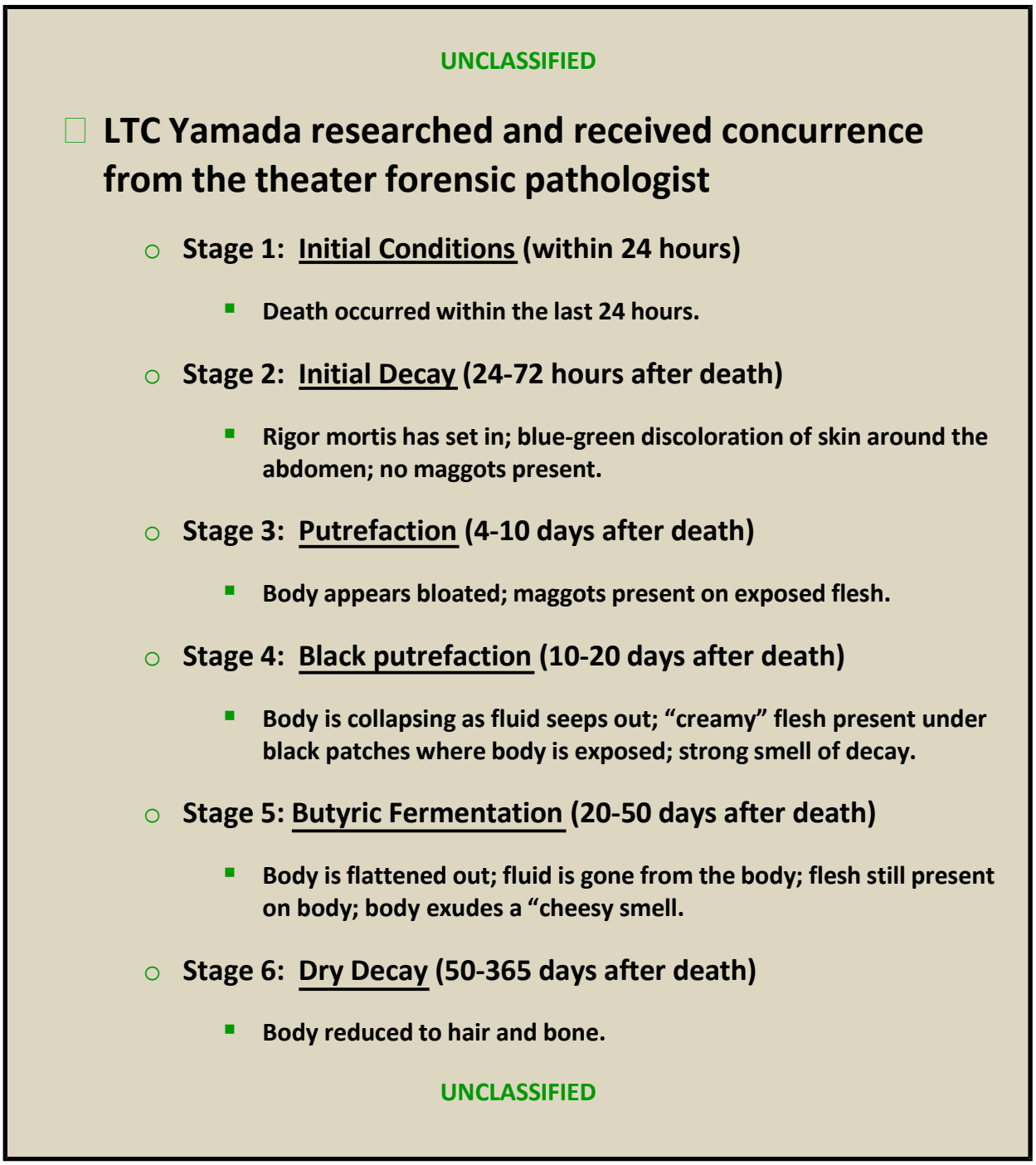


Figure 5-47 Human Remains Research – Lieutenant Colonel Henry

Through internet research, along with verification from a theater forensic pathologist, Lieutenant Colonel Henry and Lieutenant Colonel Yamada identified six basic stages of body decay, along with descriptions of the body in each phase and estimated period for each phase (Figure 5-47). The forensic pathologist agreed with the general descriptions for a body found in Iraq. Analysts consolidated these six stages into five by combining stages two and three. C3 then distributed a

FRAGO intended as a quick-reference guide for operators. This update required another change to CIDNE. More information on this effort is available later in this chapter.

Lieutenant Colonel Henry and Lieutenant Colonel Yamada made several changes to their weekly record cleaning process to help improve communication between the SIGACTS III database and CIDNE. The first implemented change downloaded and cleaned records daily. This allowed a more detailed cleansing of the records to better identify changes made to records already contained in SIGACTS III. The second change, more substantial, added an additional step to the cleaning process to identify records with mismatched event and/or category fields between CIDNE and SIGACTS III. The SIGACTS III cleaning process previously only looked for updates to summary and casualty fields. By September 2007, analysts had reworked the cleaning process to identify and correct event and/or category discrepancies between CIDNE and SIGACTS III. This greatly improved data integrity.

CAA deployed analysts updated the Inland Waterway Analysis product started during Belinda Scheber's deployment. Analysts provided this product to C3 Plans. This analysis helped improve Riverine Operations, as insurgents continued to use the waterways for access to and from attack sites. The analysis included geospatial representations, using ArcGIS, of different types of events within close proximity (.5 km) of inland waterways.

Lieutenant Colonel Henry offered the following recommendations to future deploying analysts:

- CAA analysts assigned to MNC-I must deploy with working knowledge of the SIGACTS III database and adequate skills in MS Access and MS Excel. "Right seat" time is not adequate to provide training on these programs.
- Basic ArcGIS ability is required for MNC-I deployment. A large portion of analysis involved geospatial representation of data.

Lieutenant Colonel Henry learned that deployment of CAA analysts in support of MNC-I provided much needed operational experience for the analysts and an opportunity to interact with other analysts, to include those from other Coalition countries. Based on Lieutenant Colonel Henry's observations the CAA analysts were making a valuable contribution to the operational analysis provided by MNC-I.

5.2.23 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Carlos Lizardi (MNF-I)

Lieutenant Colonel Lizardi was the first CAA analyst assigned to MNF-I. He deployed on 30 September 2007 and attached to the Deputy Chief of Staff for STRATOPS and later to the Deputy Chief of Staff for Strategy, Plans, and Assessments. Figures 5-48 through 5-49 provide a visual description of MNF-I's location. Lieutenant Colonel Lizardi provided analytic support to numerous staff sections throughout MNF-I, its subordinate commands, and to the U.S. Mission in Iraq (USM-I). The analyses conducted in theater by Lieutenant Colonel Lizardi included assessments of the JCP, weekly casualty and attacks trends analysis, geospatial and temporal trends analysis, and a variety of other reports and analytic support functions.

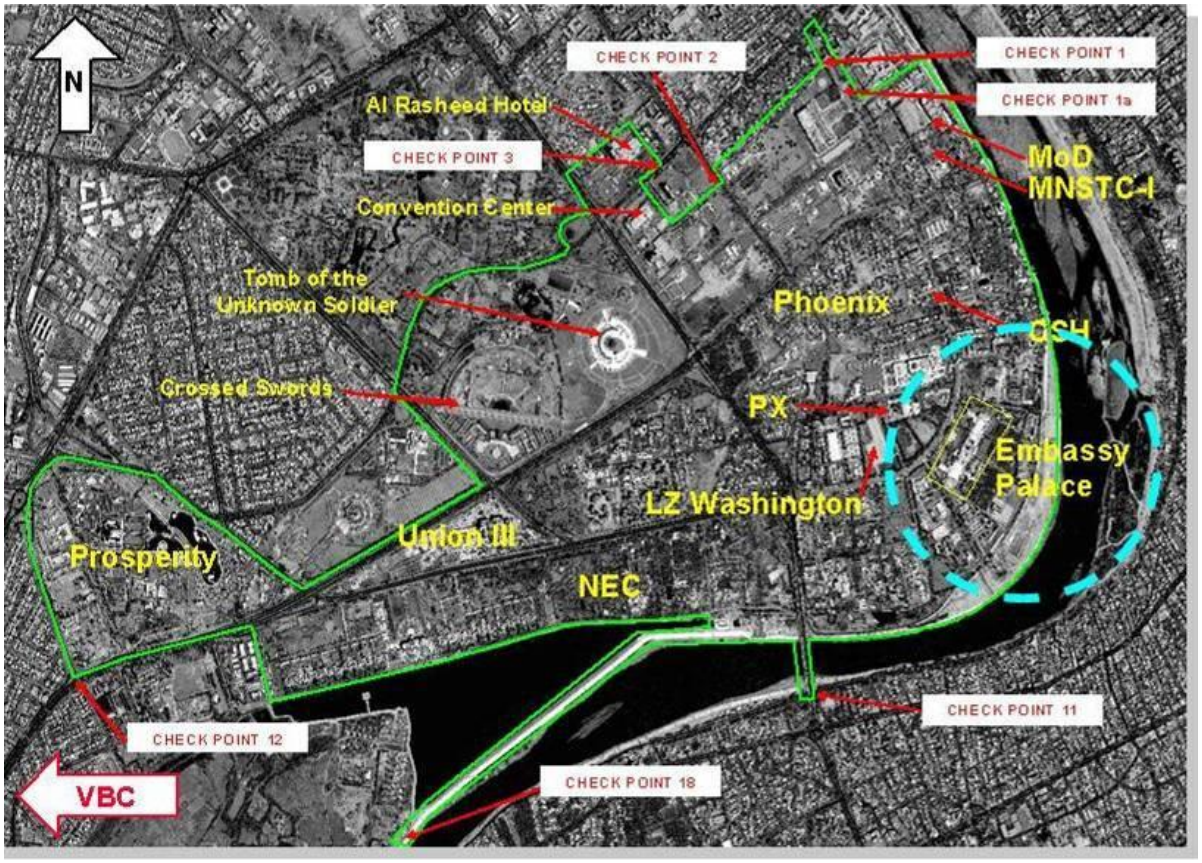


Figure 5-48 International Zone

Figure 5-48 shows a satellite view of the IZ, depicting its boundaries and the facilities within it. The IZ, or GZ as is it also called, is a conglomerate of FOB and GoI facilities in the heavily guarded and fortified central section of the city of Baghdad. Ten BSDs surround the IZ, approximately 15 kilometers to the west of VBC and BIAP. This makes the IZ extremely vulnerable to rocket, artillery, and mortar attacks (Figure 5-49).

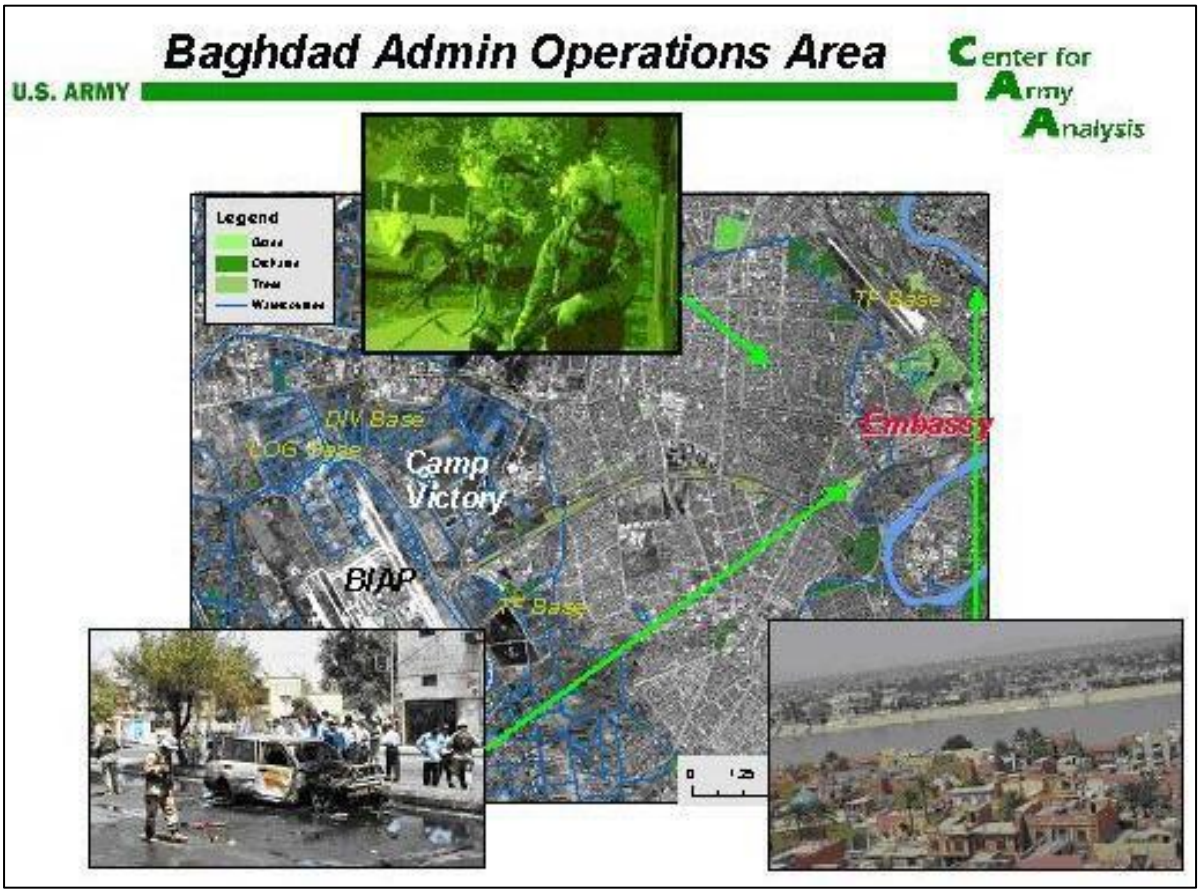


Figure 5-49 "V-Baghdad" Administrative Operations Area

The U.S. Embassy Compound is located on the west side of the Tigris River at the eastern edge of the IZ. Most of the MNF-I staff sections are collocated with the USM-I personnel at the U.S. Embassy Compound. The remainder of the MNF-I staff is located at Camp Victory. A wall protects the compound from observation and direct fire. Rusafa, the site of some of the heaviest fighting in the city of Baghdad, is located just a few hundred meters to the east side of the compound across from the Tigris River.

Figure 5-50 U.S. Embassy Palace

Figure 5-50 is an aerial photograph of the U.S. Embassy Palace. The BSDs and their proximity to the U.S. Embassy are easily recognizable in the background, across the Tigris River. In a larger version of this photograph, sculptures of Saddam Hussein's head are still visible on the top corners of the building. This palace was Saddam's Operations Center where he most likely spent most of his time. The Baath Party headquarters building is located approximately half a mile north-northwest of the palace. Sadr City, a stronghold of the Shi'a militias in the BSDs, is located a few kilometers northeast of the palace. Most rocket and mortar attacks on the IZ and the embassy grounds originated from Sadr City.

The CHOPS at the Strategic Operations Center (SOC) wanted to quantify and qualify daily attack levels and track trends of these attacks during a short-term timeframe. The CHOPS was familiar with control charts and asked Lieutenant Colonel Lizardi to develop a chart using a statistical control process approach. Lieutenant Colonel Lizardi developed a chart that used control limits based on the last 90 days of attacks but only displayed the last 30 days for readability. Each control limit provided qualitative levels of attack activity. The chart also provided the previous and current week's 90-day average. These charts became a recurring project, due on Mondays to the CHOPS. The SOC used them in their daily morning and evening updates to the Director of Operations, who was also Deputy Chief of Staff (DCS) STRATOPS, a

British brigadier general. The slide deck consisted of 20 slides and included overall attacks and ethno-sectarian murders and executions.

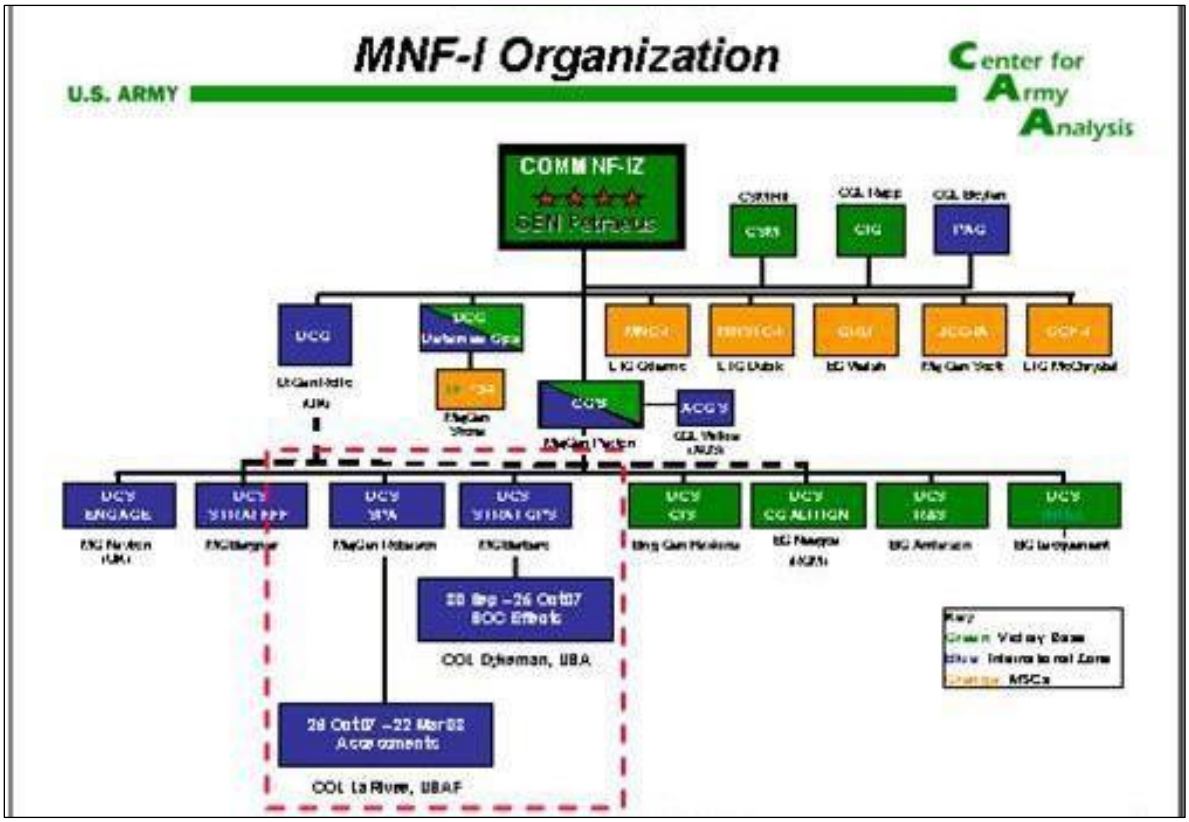


Figure 5-51 MNF-I Staff Organization Chart

Figure 5-51 shows an organizational chart of the MNF-I staff at the time of Lieutenant Colonel Lizardi's deployment. It is color-coded to depict their geographic locations. The MNF-I organization followed a functional rather that a doctrinal force level organization. This organization transitioned into a doctrinal combined-joint command staff by the end of 2006. The red square highlights the staff sections where Lieutenant Colonel Lizardi worked during his deployment. He initially worked in the Strategic SOC, part of the STRATOPS. Two months after Lieutenant Colonel Lizardi arrived, the Command put a plan into place to consolidate ORSA resources across the MNF-I headquarters. Lieutenant Colonel Lizardi started working in the Assessments Division of the DCS for Strategy, Plans, and Assessments. His duties remained the same and he continued to work closely with the SOC.

The SOC is the nerve center of the MNF-I headquarters. During Lieutenant Colonel Lizardi's deployment, there was a push for leadership to focus not only on current operations throughout the ITO but also on the full spectrum of operations. The SOC had liaison officers (LNOs) from every organization within the MNF-I staff and its MSCs, as well as the GoI. On occasion, non-government organization (NGO) LNOs worked in the SOC.

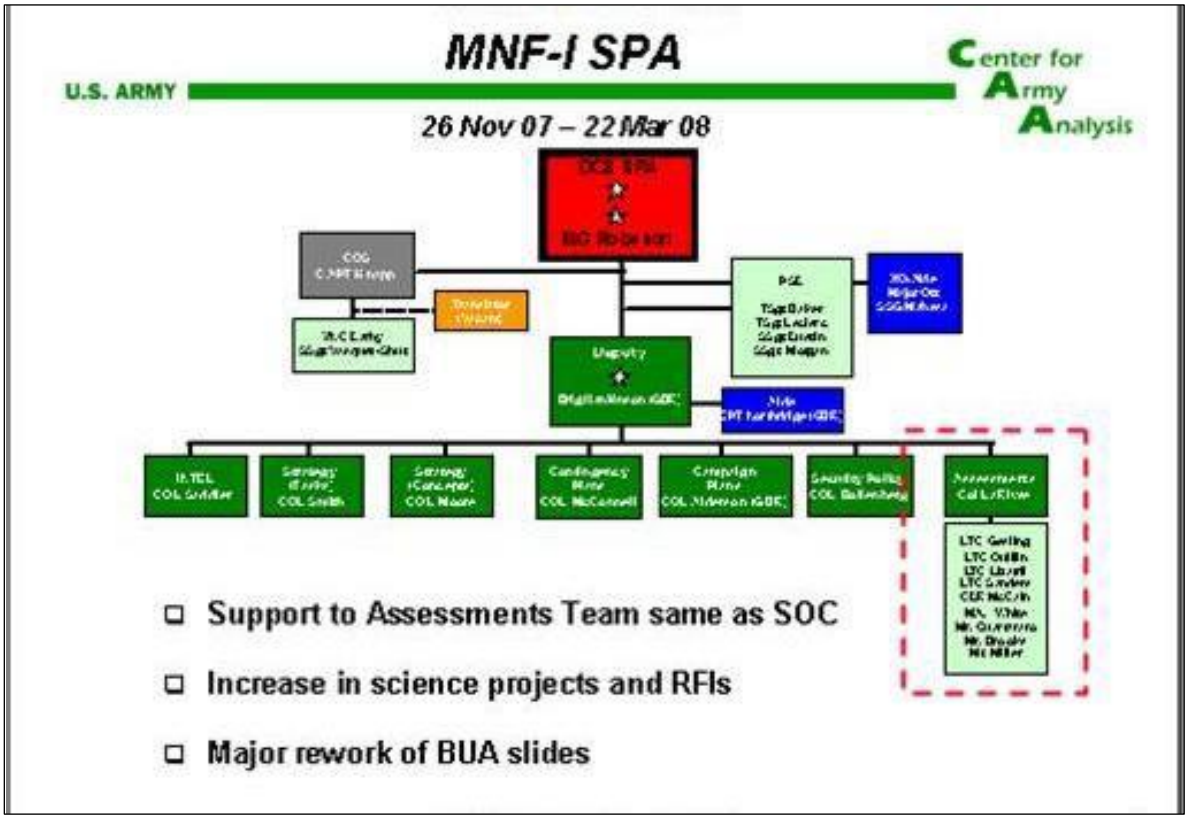


Figure 5-52 MNF-I Strategic Plans and Assessments Organization

Lieutenant Colonel Lizardi characterized the SPA as the brains of the MNF-I headquarters. It focused on strategic plans development and execution assessment frameworks for current operations and future issues of strategic magnitude. Its scope was larger than that of STRATOPS because it considered not only security at the strategic and operational level, but also economic, diplomatic, political, and other implications. It consisted mainly of planners and SMEs. Figure 5-52 provides a diagram of the SPA organization. The red box highlights the Assessments cell where Lieutenant Colonel Lizardi worked after his SOC time. Although his duties remained the same, and he continued to support the SOC with ORSA products and analyses as before, he now had more ORSA projects. The SPA Assessments cell contained four additional ORSA analysts, required to manage the workload.

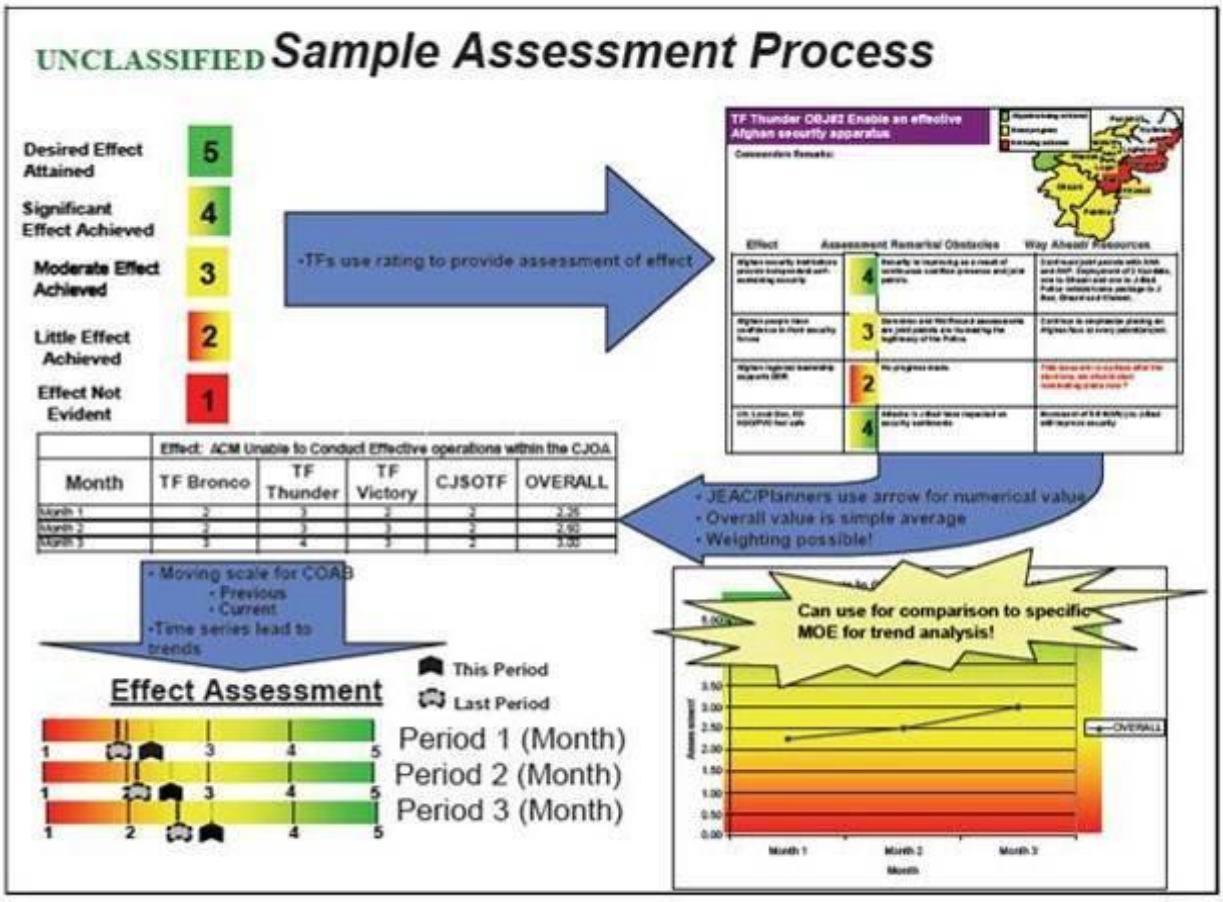


Figure 5-53 Lieutenant Colonel Lizardi Recurring Weekly Activities

Lieutenant Colonel Lizardi's battle rhythm was consistent. He updated recurring reports and briefings on a weekly, biweekly, monthly, and bimonthly basis. Figure 5-53 is a sample briefing slide. The day normally started around 0700 with the BUA and ended around 2200. The work schedule was flexible, but general guidance called for a 15-hour day with breaks for lunch, PT, and dinner, and a half-day off every week. The half day off was mandatory, but never enforced. There were also group activities such as organized sports events every other week for sections to compete against each other. The Command conducted Hail & Farewell events on a bi-weekly basis. These provided an opportunity to welcome new personnel and present awards to outgoing personnel. These also provided DCS-SPA with an opportunity to address SPA as a whole on his vision of operations progression and current and future challenges. Analysts and planners used the weekends almost exclusively to prepare the weekly attack and casualty attack trends slides, also known as the weekly BUA slides. Analysts used any remaining time to read reports, conduct research, answer RFIs, and complete ORSA projects.

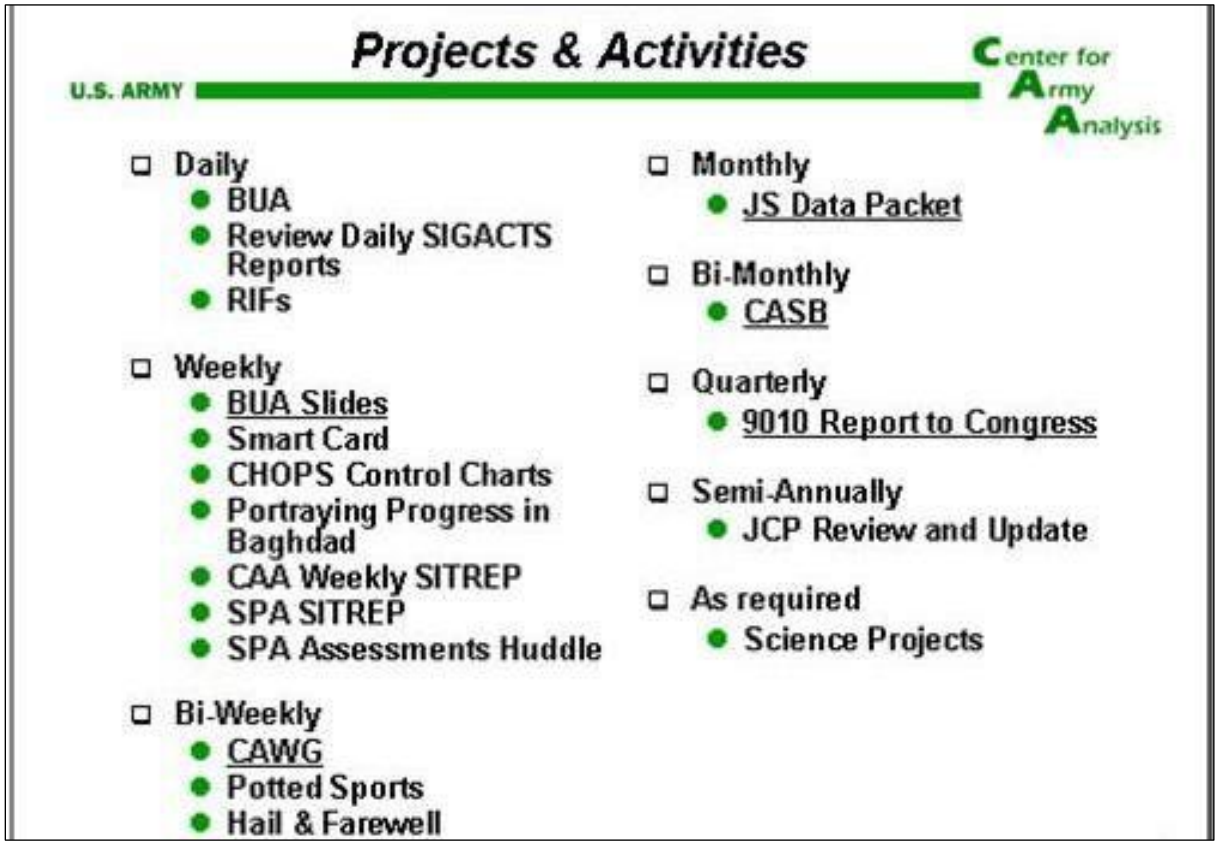


Figure 5-54 Recurring Projects and Activities

Figure 5-54 provides a view of activities recurring on a weekly, biweekly, monthly, bimonthly, quarterly and semi-annual basis. Lieutenant Colonel Lizardi directly contributed to these projects.

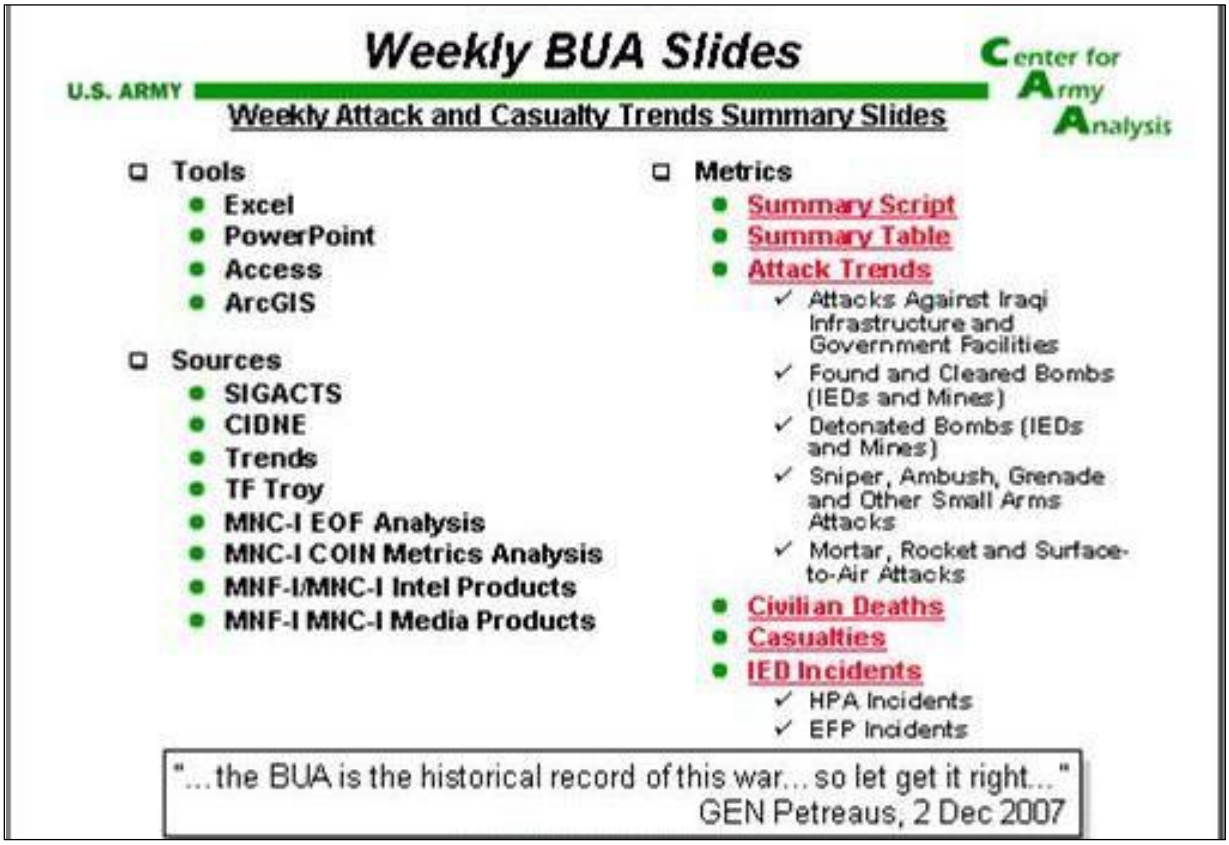


Figure 5-55 Weekly Battle Update Assessment Slides

The daily BUA was an opportunity for the MNF-I CG to address the force and to promote coordination amongst the staff sections and MSCs. Figure 5-55 is a sample BUA slide. The Command conducted the BUA every morning except Sunday. Planners used Sundays to prepare the briefing slides and provide them in hardcopy to the CG. The staff briefed the weekly BUA slides every Monday. Preparation for this brief commenced on Friday with development of the slide shells. Since the Assessment Cell did not release the official SIGACTS III database until Saturday morning, the MNC-I Assessments Cell provided an interim SIGACTS III database dump on Friday morning. On Saturday, they released all three databases required to build weekly slides. Analysts updated the slides and added the latest data and analysis. This is where the "slicing and dicing" took place. The other two databases used were the COIC trends database and the TF Troy anti-armor IED (AAIED) tracker. The trends database was the database of record for ethno-sectarian attacks and casualties, while the AAIED tracker was the database of record for EFP IEDs. When planners and analysts completed the slides late Saturday afternoon, they sent them through the Chief of Assessments' review. The Chief of Assessments then had analysts brief these slides to DCS-SPA. After DCS-SPA approved them, they were then sent forward to MNF-I and MNC-I. On Sunday morning, analysts briefed the approved slide deck during the ORSA VTC.

During the Sunday morning ORSA VTC, analysts from several organizations across MNF-I would provide feedback on the metrics, indicators, and analyses, and discrepancies would be resolved. Once the slides were fully coordinated with the MNF-I analysis community and all discrepancies resolved, a final set of slides was sent to the MNF-I CG as a read-ahead and to the

SOC for inclusion in Monday's BUA slide packet. Finally, analysts uploaded a copy of the slides to the SPA SharePoint for historical purposes.

The Joint Staff received the Joint Staff Support Data Packet (JSSDP) on a monthly basis. It consisted of an executive summary followed by a slide deck containing a compilation of weekly and monthly metrics and indicators. It included quantitative as well as qualitative data for all four LOOs: security, diplomatic, political, and economic. Although SPA Assessments generated some of the slides and analysis, Lieutenant Colonel Lizardi and his teammates compiled the slides to ensure the analysis was relevant and sound. Lieutenant Colonel Lizardi was mainly concerned with the BUA slides he developed every week, which focused on attacks and casualties trends. Like the BUA slides, the JSSDP went through a rigorous vetting process that required multiple examinations and reviews.

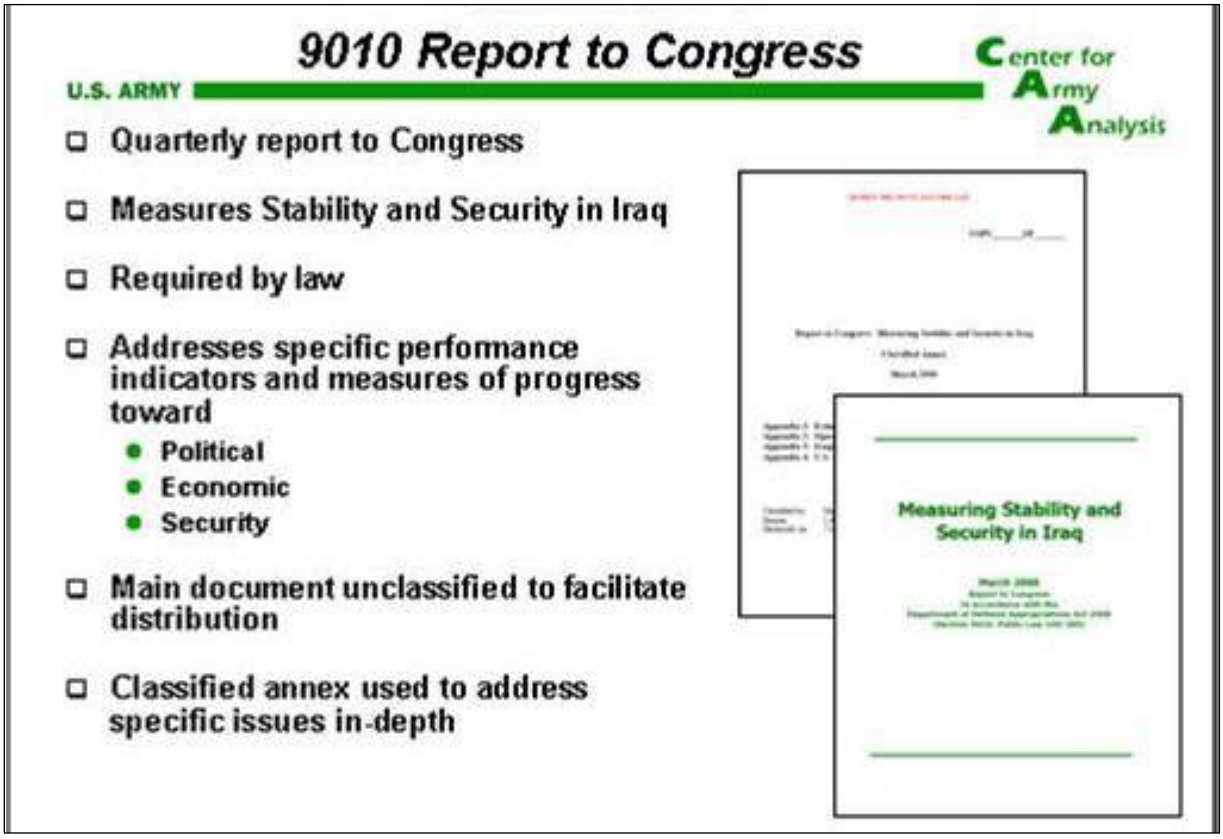


Figure 5-56 9010 Report to Congress

During Lieutenant Colonel Lizardi's deployment, Congress required the 9010 Report to Congress (Figure 5-56) for the quarterly OSD report that addressed progress toward stability and security in Iraq. It addressed specific performance indicators and measures of progress. SPA Assessments prepared the report and MNF-I and the USCENTCOM CG approved it before sending it to the OSD for final approval and submission to Congress. Since the report had to be unclassified, the Command prepared a classified annex for selected members of Congress, providing in-depth information regarding the threats facing Iraq. Lieutenant Colonel Lizardi was responsible for the security portion of the report and for addressing diplomatic implications in the political portion. Like the BUA slides, JSSDP, and the CASB, this report went through a

rigorous vetting process that included not only MNF-I and its MSC, but also USCENTCOM, the Joint Staff and OSD.

Lieutenant Colonel Lizardi also performed a number of other ORSA projects. These projects were typically narrow in scope and of short duration. Some became recurring products. The following are a few examples of different types of projects Lieutenant Colonel Lizardi executed. They provide a good cross-section of the type of work performed.

In preparation for visits to Coalition units and Iraqi cities and provinces, senior leaders received the COIN Metrics Overview briefing as a read-ahead packet. This briefing covered the past 90 days of security-related friendly and enemy activity in and around an area of interest. In addition, it provided a snapshot of security metrics in geospatial and graphical form. The STRATOPS DCS used these briefings to update incoming units on activity in their respective AORs. NGOs such as the UN Assistance Mission to Iraq (UNAMI) also requested overviews of this type.

While at the SOC, Lieutenant Colonel Lizardi produced the "Smart Card" on an "as required" basis. The Smart Card was an Excel Spreadsheet that provided a handy reference for weekly indicators for security, economy, utility production, unemployment, oil production, ISF levels, and Sons of Iraq (SOI). The Smart Card fit on an 8.5" X 11" page when printed. It contained both classified and unclassified data. Senior leaders used it as a hip pocket reference and information source to use during interviews. When Lieutenant Colonel Lizardi transferred to the SPA, the Smart Card became a recurring project and his responsibility. The Smart Card provided indicators related to attacks and casualties.

The Baghdad Operations Update was a project that Lieutenant Colonel Lizardi inherited from a departing member of SPA Assessments. It was a pictorial representation of the status of security operations on the BSD Muhallas, over an 18-month timeframe. It portrayed the trends of security operations in terms of the security phase as described on the MNC-I Operations Order. Disrupt, clear, control, and hold were the four phases of the project. The Baghdad Operations Update project helped illustrate the periods of progress and regression when compared to the overall security situation in the city of Baghdad and Iraq-wide. Analysts updated this recurring project on Wednesday and uploaded it into the SPA Assessments SharePoint.

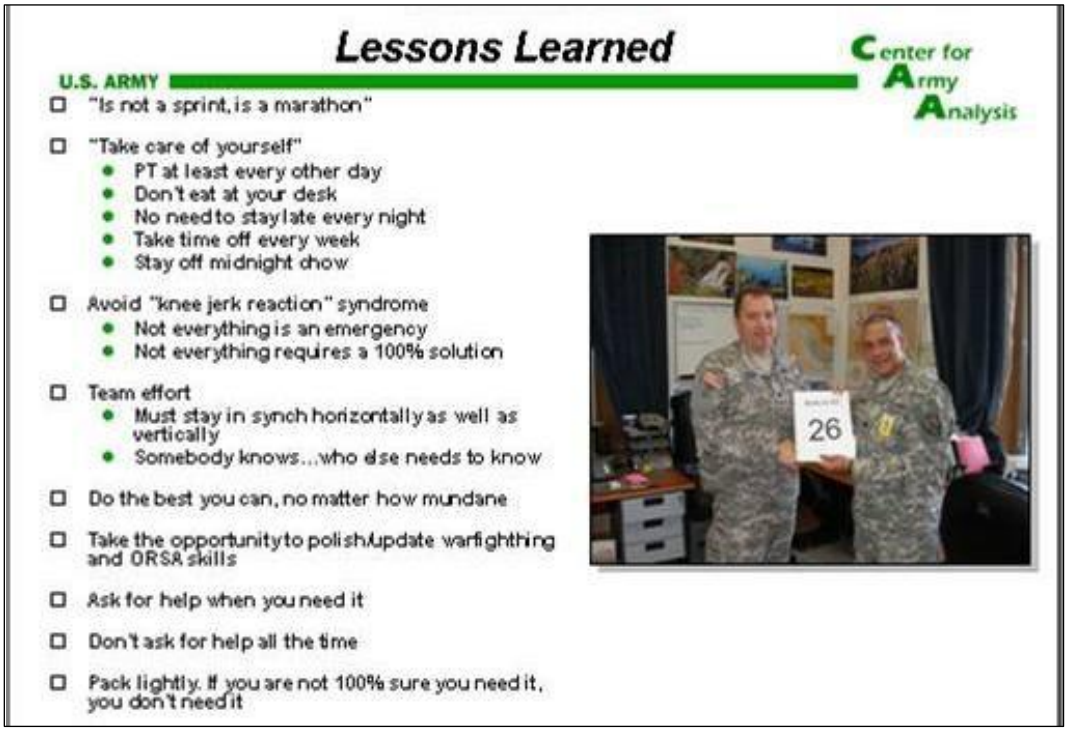


Figure 5-57 Lessons Learned

Figure 5-57 shows Lieutenant Colonel Lizardi's lessons learned from his six-month deployment to the MNF-I. It reflects his experiences and offers advice received from others. Many bullets are common sense but worth repeating.

Lieutenant Colonel Lizardi's best advice for a Deploying Analyst is to insist on a quality continuity book they can read before they deploy. Incoming personnel get the "fire hose" treatment upon arrival and cannot possibly retain all information provided during their transition. A good continuity book would prove a valuable reference. For CAA analysts deploying to MNF-I SPA, an electronic copy of the continuity book Lieutenant Colonel Lizardi prepared is located on the SIPRNET server under the Current Operations Folder, under the folder entitled "23 - MNF-I Continuity Book."

5.2.24 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Wade Yamada (MNC-I)

Lieutenant Colonel Wade Yamada departed from CAA on 13 October 2007 and reported to the CRC at Fort Benning, Georgia. He spent one week there and arrived in Kuwait on 20 October 2007. Lieutenant Colonel Yamada stopped at Camp Buehring, Kuwait to spend several days attending training on improvised explosive devices, weapons firing, and vehicle rollover procedures. He arrived in Baghdad, Iraq on 24 October 2007. For about three months, Lieutenant Colonel Yamada worked with Lieutenant Colonel Todd Henry. Lieutenant Colonel Robert Shearer replaced Lieutenant Colonel Henry. No overlap occurred between Lieutenant Colonel Henry and Lieutenant Colonel Shearer. Ms. Heather Brownfield replaced Lieutenant Colonel Yamada; they enjoyed a two-and-a-half week overlap. Based on Ms. Brownfield's previous deployment experience, she did not require much time to reacquaint herself with her analytic duties. The goal for transition between analysts should be one to two weeks. On 21 April 2008, Lieutenant Colonel Yamada returned to CAA.

Lieutenant Colonel Yamada's primary duties were to provide analytic support to the MNC-I Commanding General and his staff elements and to manage the SIGACTS III database. The data maintained in SIGACTS was the input to Iraq's overall Weekly Attack Trend, briefed to General Petraeus, the CG, MNF-I, at the Monday morning BUA. Leaders used the Weekly Attack Trend charts to brief Congressional delegations who visited the Iraq Theater. Lieutenant Colonel Yamada's deployment was a historic time. He saw the effects of having 20 BCTs in theater. He also witnessed the transfer of authority between III Corps and the XVIII Airborne Corps.

Figure 5-58 MNC-I Transfer of Authority Ceremony 14 February 2008

On 14 February 2008, MNC-I conducted a Transfer of Authority (TOA) ceremony (Figure 5-58). The Commanding General of MNF-I, General Petraeus, presided over the ceremony. During this ceremony, III Corps transferred authority to the XVIII Airborne Corps. Lieutenant General Odierno (pictured on the right) was the outgoing commander who had served as the MNC-I commander for 15 months in Iraq. Under his leadership, CF increased to 20 BCTs, which greatly reduced the level of violence in Iraq. Lieutenant General Lloyd J. Austin (pictured on the left) was the incoming Commander from Fort Bragg, North Carolina. Lieutenant General Austin had previously served in the 3rd ID during the invasion of Iraq and the "march to Baghdad."

When XVIII Airborne Corps assumed command of MNC-I, all ORSA analysts consolidated under the C5 Corps Assessment Cell (CAC). The C5 CAC planned and assessed future operations. Under III Corps, CAA deployed ORSA analysts fell under the C3 Plans section and other analysts worked in the Joint Fires Effects section. Eighteenth Airborne Corps was the first

corps headquarters to deploy to Iraq with its own organic ORSA analysts. Despite working for the C5 CAC, the ORSA analysts delivered most analytic products to the MNC-I CG, the C3, and the CHOPS.

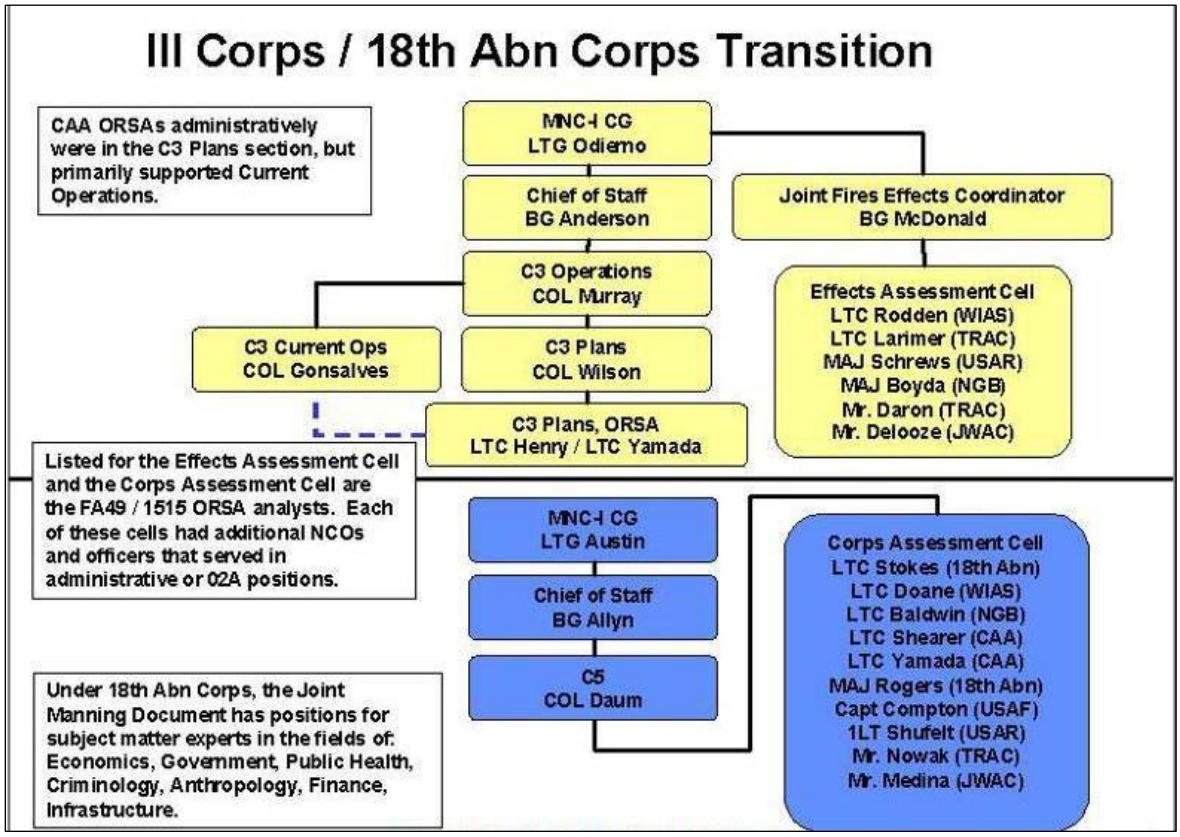


Figure 5-59 III Corps / XVIII Airborne Corps Transition

Under XVIII Airborne Corps, all ORSA analysts worked in the C5 CAC (Figure 5-59). Previously under III Corps, CAA deployed analysts worked in the C3 Plans section, supervised by C3 Current Operations. Under III Corps, the Joint Fires Effects Coordinator supervised the Effects Assessment Cell (EAC). The EAC produced the Campaign Assessment, the Provincial Security Assessment, and conducted polling analysis. This consolidation did not affect the location of CAA analysts. With consolidation of analysts, the CAC also had positions documented for SMEs in economics, government, public health, criminology, anthropology, finance, and infrastructure. CAA analysts worked in the C5 CAC; however, they occupied OR positions in the Counter-Improvised Explosive Device Operations Center, essentially filling official JMD positions.

Figure 5-60 MNC-I Corps Assessment Cell

Figure 5-60 shows members of the CAC. From left to right: Sergeant First Class Darald Jones (CAC Non-Commissioned Officer-in-Charge); Major John Doran (CAC Deputy); Staff Sergeant Locke (Intelligence Analyst); First Lieutenant Brandon Shufelt; Ms. Heather Brownfield (CAA); Mr. Joseph Nowak; First Lieutenant Alexander Raveau (Operations Officer); Lieutenant Colonel Brian Stokes (CAC Chief); Lieutenant Colonel Richard Baldwin (Senior Operations Research Analyst); Dr Heather Felton (Cultural Anthropologist); Captain Jason Compton (U.S. Air Force, Security Analyst); Major Buddy Rogers (Corps Campaign Assessment Analyst); Lieutenant Colonel Wade Yamada (CAA), Mr. Michael Medina; Major Chip Nolan (Governance Analyst).

The following personnel are not pictured: Captain David Jokinen (U.S. Air Force, Infrastructure Analyst), Lieutenant Colonel Robert Shearer (CAA), Lieutenant Colonel David Doane, and Staff Sergeant Tupea (Operations Non-Commissioned Officer).

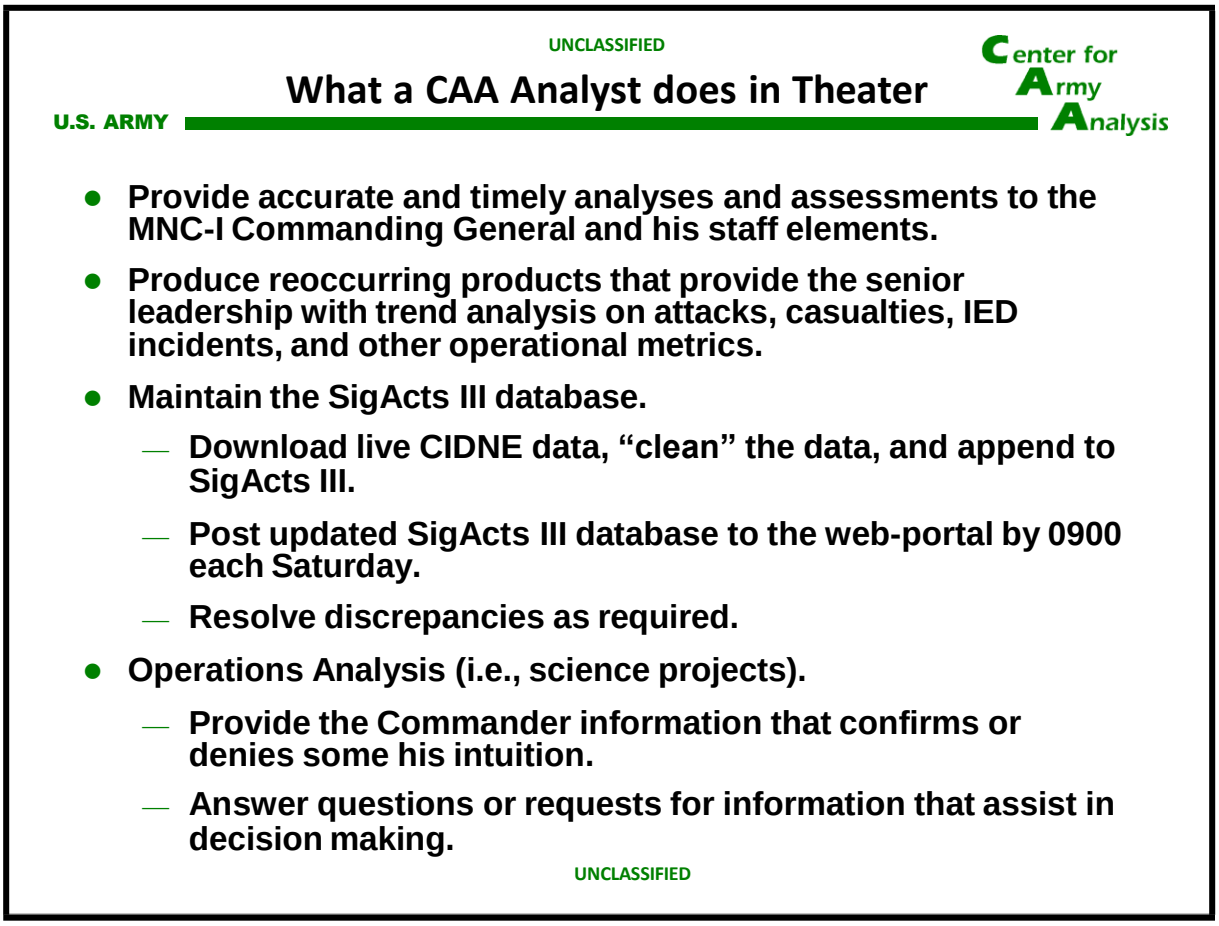


Figure 5-61 What a CAA Deployed Analyst does in Theater

During Lieutenant Colonel Yamada's deployment, CAA deployed analysts provided the CG, MNC-I, and his staff with accurate and timely analysis and assessments (Figure 5-61). Recurring analytic products provided the MNC-I senior leadership with trend analyses for attacks, casualties, improvised explosive device incidents, and other operational metrics. One of the principal duties of CAA analysts was to maintain and enhance the SIGACTS III database. Finally, CAA analysts performed analyses on projects for the CG to help him confirm his own assessments of the battlefield.

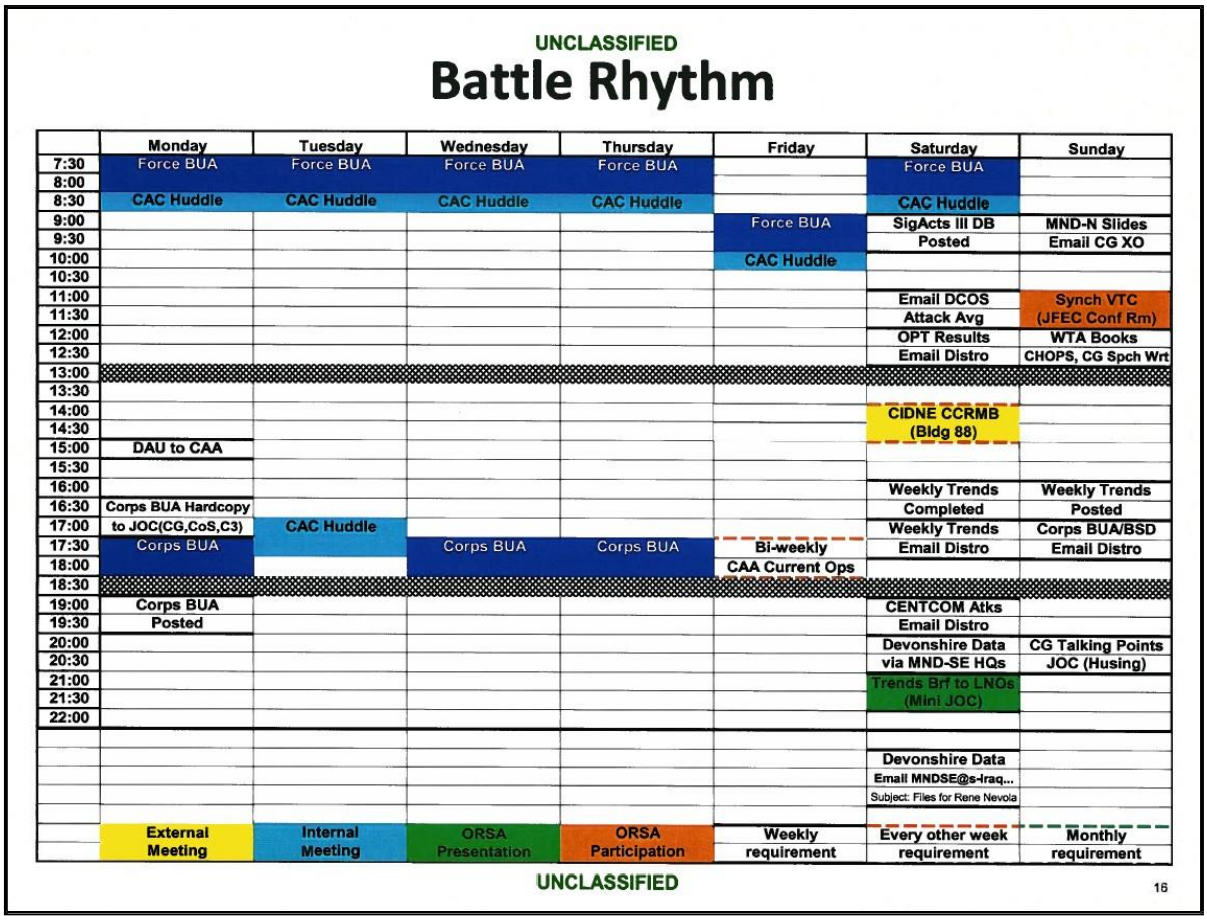


Figure 5-62 Battle Rhythm

During Lieutenant Colonel Yamada's deployment, the battle rhythm (Figure 5-62) remained the same during transition from III Corps to XVIII Airborne Corps. The MNF-I held the BUA six days a week. On Fridays, the BUA started at 0900 to accommodate General Petraeus's physical training runs with officers throughout the command. There were no BUAs on Sundays. On Monday, Wednesday, and Thursday, MNC-I held BUAs with an operational focus. The report week started at 2400 on Saturday and ended at 2359 on Friday. The weekends were the busiest part of the week for analysts and planners who produced trend products. During any "downtime" during the week, ORSA analysts managed the SIGACTS III database, conducted their physical fitness training, and conducted operations analysis. Typically, analysts worked from 0730 until about 2200 on BUA days. On Fridays and Sundays, analysts reported to work at 0900.

On Fridays at 2359, Lieutenant Colonel Yamada and other CAA analysts began production of recurring analytic products. They focused on the ten BSDs. The Weekly Trends packet was a 26-slide packet with slides and trend data on attacks, casualties, improvised explosive device incidents, and other operational data. This product was very popular among analysts both inside and outside of theater. Analysts delivered the Weekly Trends Analysis packet by email to MNC-I senior leaders. In addition, analysts placed the trends analysis packet in a three-ring binder, which the CG used as his "smart book." The Current Operations C3 used this book to prepare for weekly interviews on the G. Gordon Liddy radio show. Analysts also produced a chart

showing the daily average of attacks for the week. The USCENTCOM Commanding General requested this slide, which became a recurring requirement. In addition, analysts prepared an "operational results" slide. The Plans C3 and C5 used this slide in the weekly video teleconference with the Department of the Army.

The MNF-I CG placed strong emphasis on trend analyses. HN reports were in the SIGACTS III database; however, MNF-I only used them to report civilian deaths in the Congressional 9010 report.

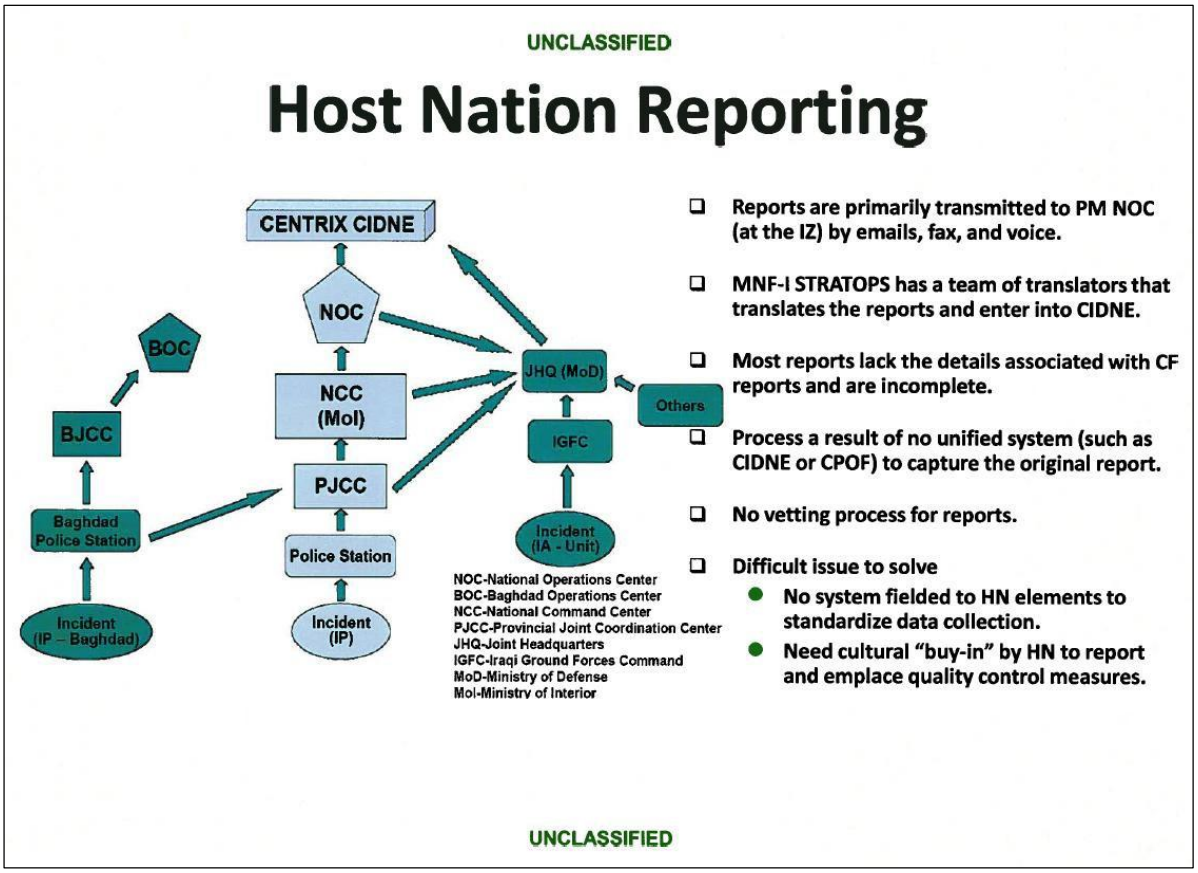


Figure 5-63 Host Nation Reporting

HN reports (Figure 5-63) were an ongoing concern for several reasons. In general, the NOC received the HN reports by email, fax, or voice. There were two sources for HN reports. The reports from IP followed a very well defined system. The IA reports were different. Report submission procedures differed depending on the province. Reports from the Baghdad Operations Center (BOC), reports from the Basrah Operations Command, and most other provinces, followed differing procedures. The lack of a clearly defined reporting system, cultural issues such as reluctance to provide bad news, and a reliance on cell phones as a primary means of communication, made this a difficult problem.

Host Nation reports provided information in areas of the country where CF had turned over provinces to Iraqi provincial control. HN reports in the SIGACTS III database date back to January 2006. In general, HN reports represented about 18 percent of the weekly reports

appended into the SIGACTS III database. The biggest impact on the 12-week average of several metrics was civilian deaths due to murder. When collating CF and HN reports for trend analysis on civilian deaths due to murder from January 2006 to February 2008, HN reports accounted for a majority of civilian deaths due to murder.

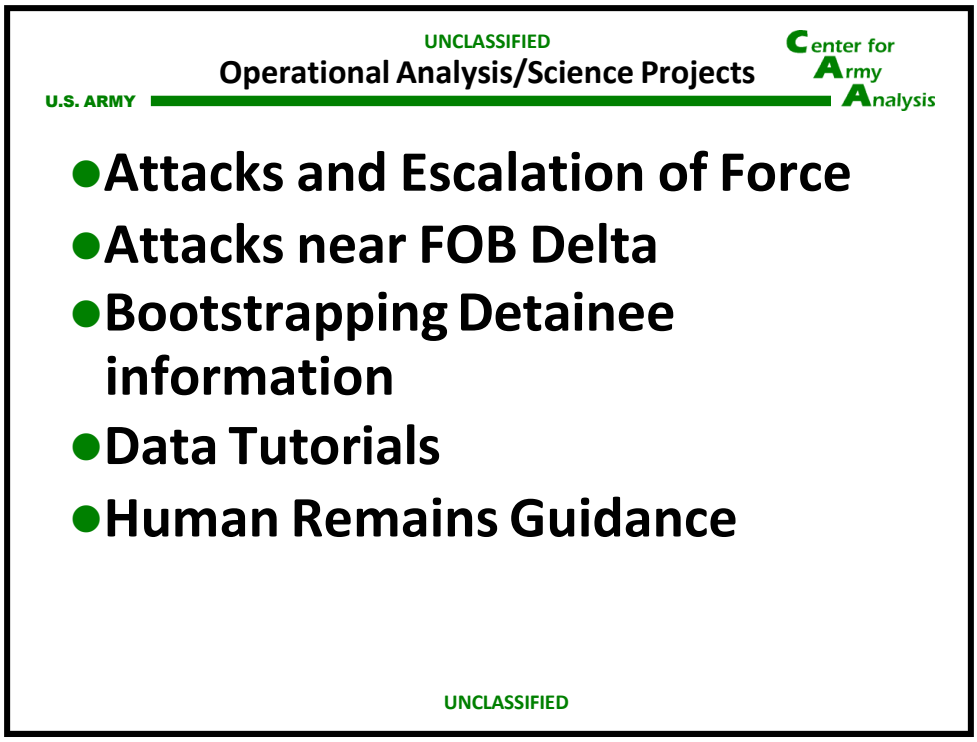


Figure 5-64 ORSA Projects

Weekends were devoted to producing recurring trend products, while the rest of the week was spent answering operations analysis questions for the MNC-I commander or his staff. Figure 5-64 shows some of the operations analyses the ORSA analysts produced to answer RFIs or analytic questions.

In one of the morning MNF-I BUAs, General Petraeus made a comment about overlaying attacks and EOF incidents, which generated a question directed to the Current Operations C3. Lieutenant Colonel Yamada and other CAA analysts provided analysis for the CG's question. CAA analysts plotted the weekly attacks against EOF incidents and found that there was weak positive correlation. However, when these attacks shifted by 14 weeks, there was a strong correlation between attacks and EOF incidents. The analysis concluded that Soldiers would need three and one-half months to adjust their EOF procedures in order to decrease the current level of violence. This analysis provided credibility to anecdotal information that it takes about 100 days to make adjustments.

In April 2008, the MNC-I Fires and Effects Section requested analytic support to study attacks near FOB Delta. FOB Delta was experiencing an increased number of attacks, and the Command was considering moving Multiple-launch Rocket Systems (MLRS) to this base. Lieutenant Colonel Yamada conducted the analysis. He determined that the majority of recent attacks used small arms and came from within 15 kms, which is less than the minimum distance required by these rocket systems. This analysis indicated that it would not be a wise decision to

move these fire support systems to the base and that the MNC-I Fires and Effects Section needed to consider other fire support for close combat.

As part of the Total Army Analysis (TAA) process, the military police corps allocates a portion of their force structure towards military police internment/resettlement units. The allocation fluctuated with the rate of detainees captured. Lieutenant Colonel Yamada estimated the detainee rate for gains and losses to the theater internment facilities. He prepared an exploratory spreadsheet using "Visual Basic for Applications." The spreadsheet used empirical data to estimate the daily average number of detainees flowing into and out of these facilities. Lieutenant Colonel Yamada used a statistical technique for estimating the sampling distribution of an estimator, like the mean or variance, by sampling with replacement.

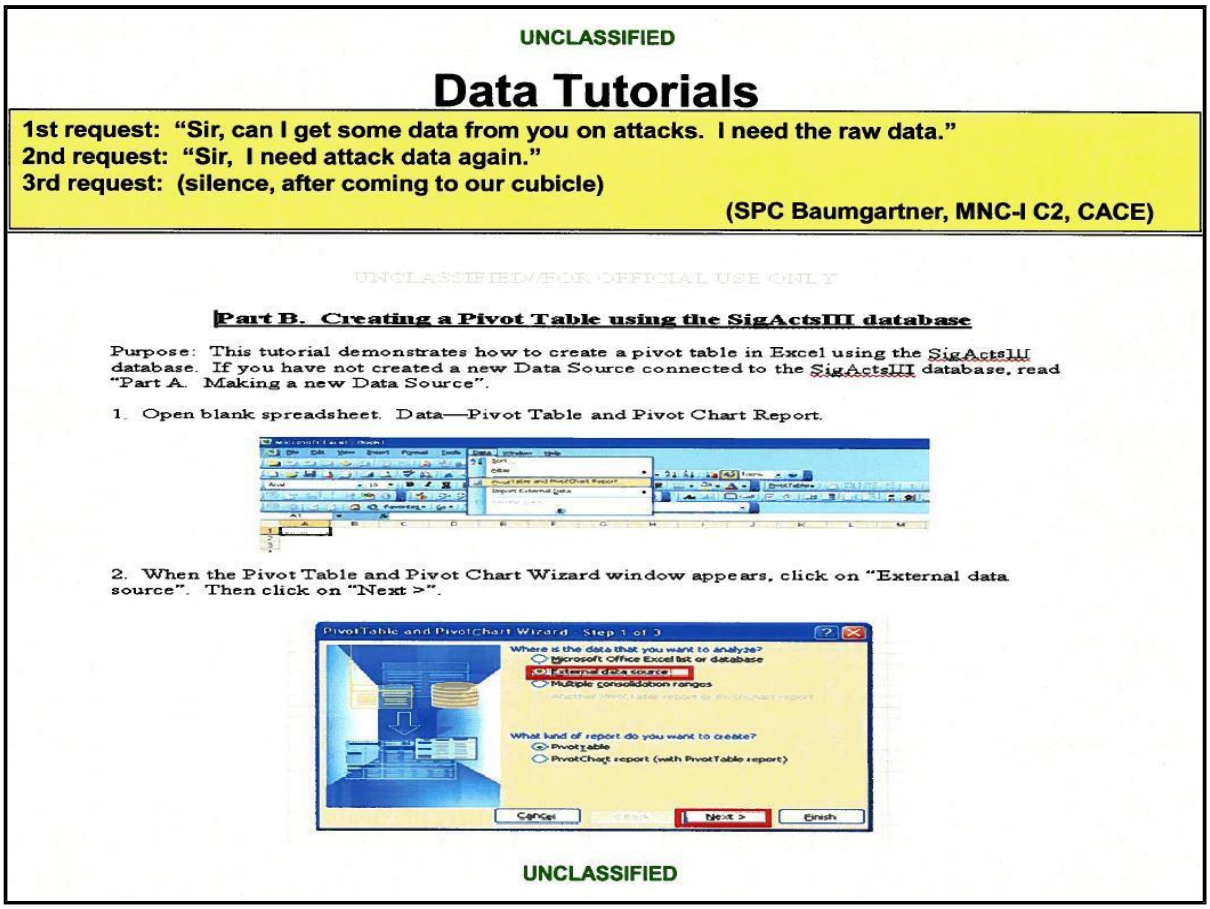


Figure 5-65 Data Tutorials

The CAA deployed analysts continued updating the Sig Acts III database, and received requests from other staff sections for data. The MNC-I C2 section was a habitual customer. This section requested data on attacks by province, by BSDs, and by weapon type. After several repeated requests for the same data, Lieutenant Colonel Yamada and the other CAA deployed analysts developed a data tutorial with written course material. The tutorial covered the creation of pivot tables and the process of adding data to SIGACTS III (Figure 5-65). On several occasions, Lieutenant Colonel Yamada used the tutorial to teach other staff officers and intelligence analysts how to query the database.

In addition to analysis, Lieutenant Colonel Yamada performed other tasks. He guided units with chronicling human remain discoveries. Although not a precise method, this guidance provided units with a method for backdating human remains. Lieutenant Colonel Yamada added these fields to the CIDNE database as drop-down menus for use by units entering reports.

When Lieutenant Colonel Yamada received the task to develop human remains guidance, he performed a search on the Internet. This yielded the information shown in Figure 5-66, which shows pictures of a young pig undergoing body decomposition. Because the body of a pig is biologically similar to humans, these time-elapsed photos are representative of human decomposition over time.

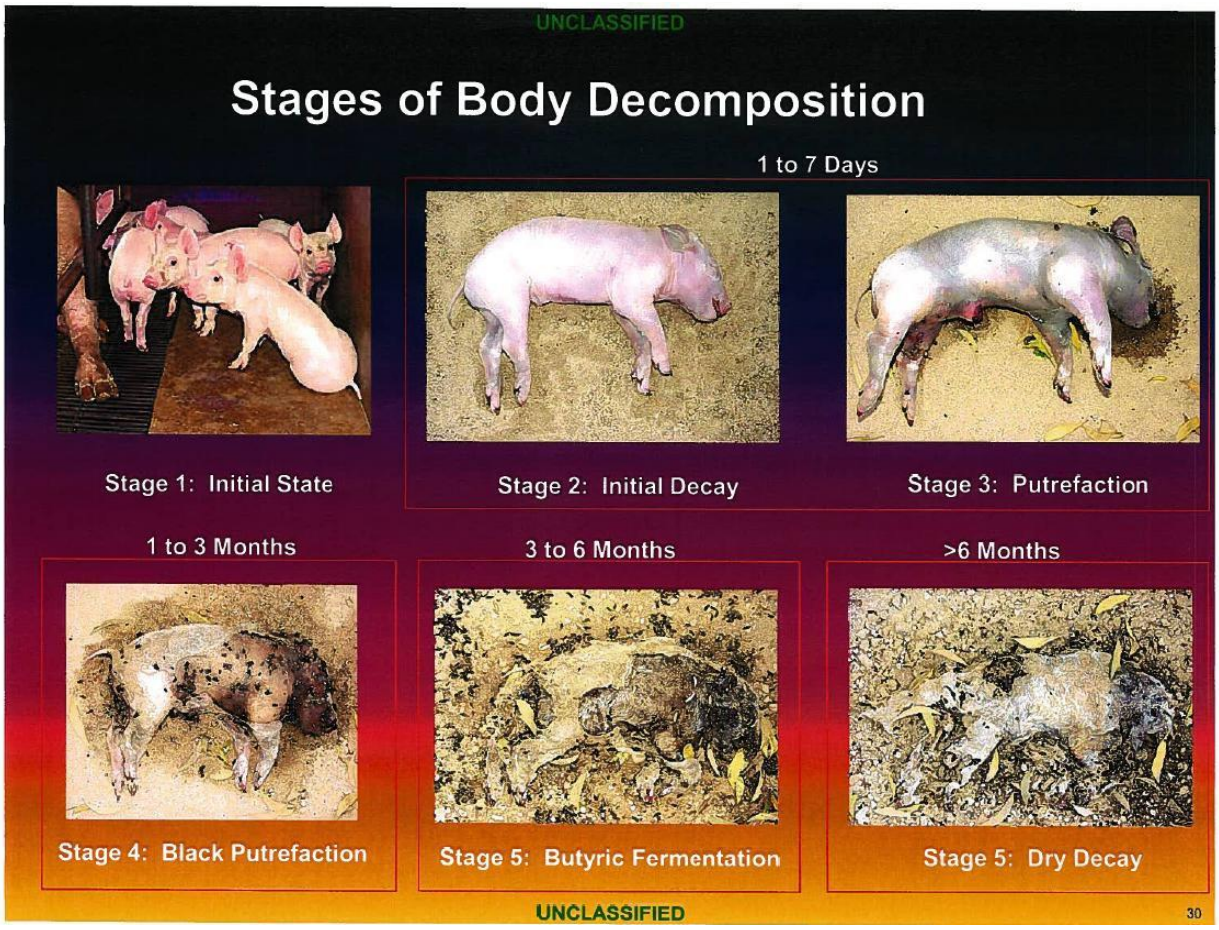


Figure 5-66 Stages of Decomposition

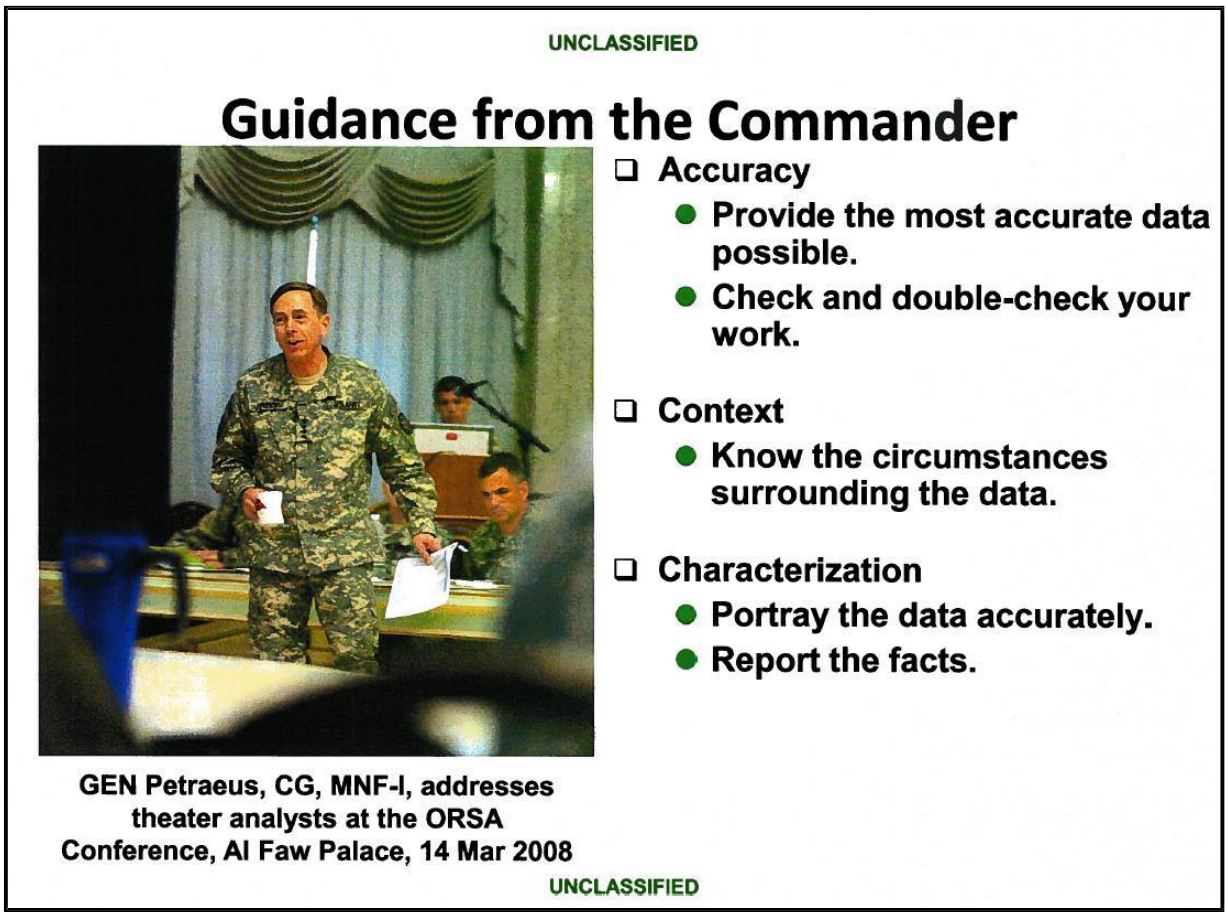


Figure 5-67 Guidance from the MNF-I Commanding General

On 14 March 2008, ORSA analysts gathered at Al Faw Palace for a conference on "best practices" in theater. This conference was an opportunity to share information. The MNF-I CG, General Petraeus, was guest speaker and delivered some key points about analytic work (Figure 5-67). A big consumer of data for his charts, General Petraeus stressed the importance of accuracy, context, and characterization in analytic products. Analysts must create accurate analysis based on accurate data. In reference to context, information such as time of day, enemy situation, or unit involved, add context to the data. Finally, characterization involves portraying data properly and accurately.

Figure 5-68 Important Advice

Victory Base Complex (VBC) was relatively safe, but there were instances where mortars and rockets penetrated the perimeter. Figure 5-68 is a training slide used to demonstrate proper reaction procedures. ORSA analysts developed this slide around late March 2008, when insurgents were pummeling the IZ with frequent rocket attacks. Before rounds impact, sirens sound the "incoming, incoming…" warning. Once secured, an "all clear" sounds across base speakers, and individuals report to their sections for accountability.

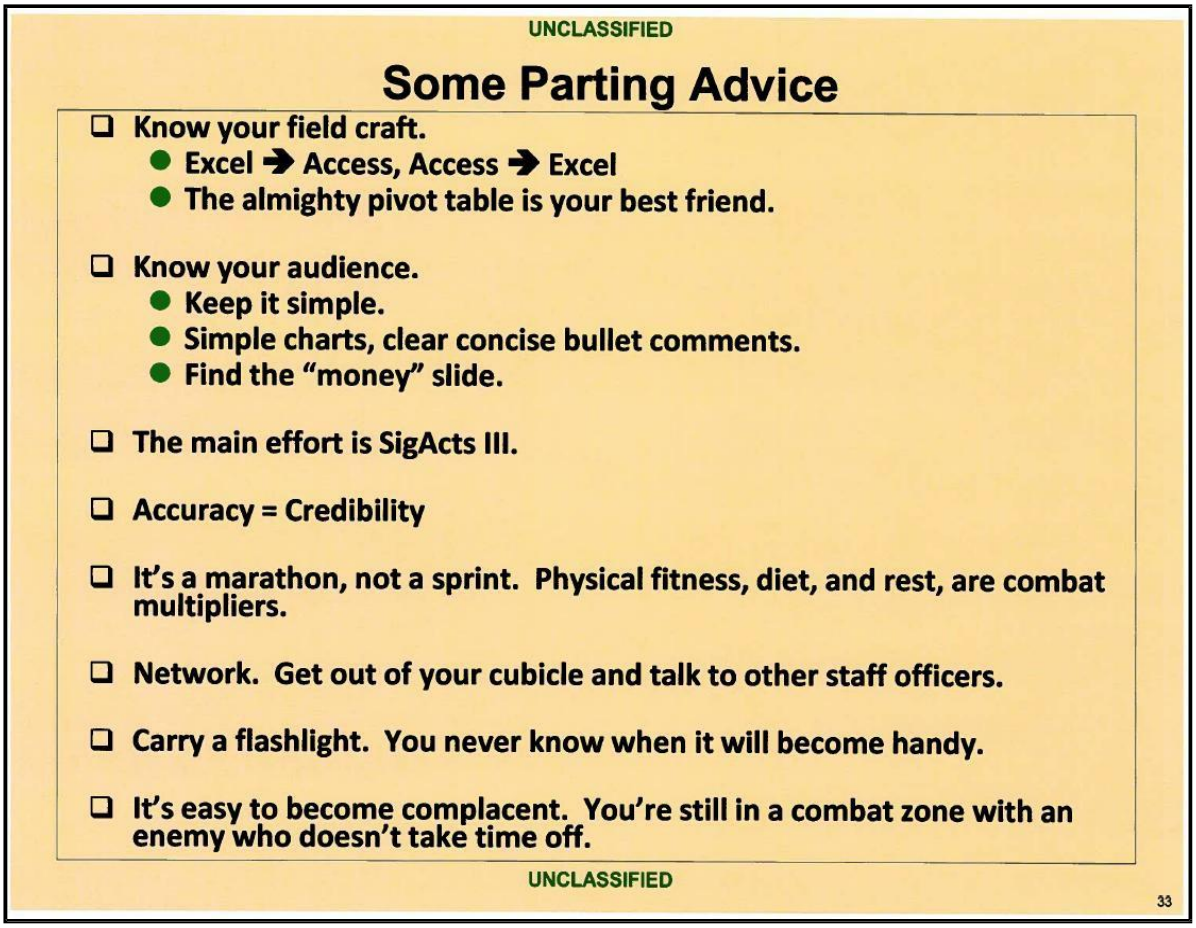


Figure 5-69 Some Parting Advice

Figure 5-69 lists advice for future analysts. It is very important that analysts are experienced with Microsoft Excel and Microsoft Access applications, and that they know the techniques for moving between the two. For example, analysts can use an Access database within Excel to create queries and pivot tables. Analysts can use the Excel pivot tables extensively to summarize data from the SIGACTS III database and produce charts of trends. ORSA analysts should ensure that their work is clear, concise, and focused on important issues. ORSA analysts need to be clear about who will receive their analysis so that they can prepare to explain it on the most appropriate level. Because analysts extensively use SIGACTS III in theater to produce analytic products for senior leaders, managing the database remains a primary task. Accuracy equals credibility. The final bullets in Figure 5-69 offer key advice to deployed analysts.

Lieutenant Colonel Yamada offered further recommendations for future deploying analysts. First, ArcGIS is an important skill for analysts to possess prior to their deployment. Analysts use ArcGIS to display data. Next, because of its importance, future deploying analysts must train on the hierarchy and fields of the SIGACTS III database. Small reachback projects from theater can assist in familiarizing deploying analysts with the data. Third, under XVIII Airborne Corps, all analysts consolidated in the CAC, led by a lieutenant colonel. Lieutenant Colonel Yamada recommended that an FA 49 Colonel lead this cell in order to equal the rank of staff principals. Lieutenant Colonel Yamada's last recommendation was to place a FA 49 lieutenant colonel or major in the MNF-I C2 staff. This staff section lacked analytic capability to conduct analysis on

trends in murders, ethnic-sectarian violence, or assassinations. Intelligence analysts conducted this analysis, but lacked the quantitative skills needed to process mass data.

5.2.25 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Rob Shearer (MNC-I)

From 21 January 2008 to 4 June 2008, Lieutenant Colonel Rob Shearer deployed to provide analytic support to MNC-I. He worked for the ORSA cell of both III Corps and XVIII Airborne Corps. The ORSA cell primarily provided three types of analytic support to MNC-I: operations analysis, intelligence analysis, and management of the SIGACTS III database.

The MNF-I C2 Chief of Staff for Intelligence, Brigadier General Keller, requested that the ORSA cell provide quantitative support to the COIC for its analysis of the size and scope of the Sunni Insurgency. The MNF-I C2, as part of the quarterly 9010 submission to Congress on the status of operations in Iraq, provided estimates for the number of Sunni insurgents in the numerous Sunni Rejectionist and Sunni Extremist groups in Iraq. Previously, the COIC had used a Manpower Equivalent (MPE) model that estimated the number of fighters as a function of the number of attacks per day, the number of days between attacks for a cell, and the number of fighters per cell. With the departure of several of its analysts, the COIC had lost the technical expertise to use the model. The COIC adopted the model and incorporated it into a Monte Carlo simulation to capture the impact of uncertainty in the inputs and to display the variance of the output.

Based on data from the intelligence community in Iraq regarding the composition of the Sunni Insurgency, Lieutenant Colonel Shearer modified the MPE equation to reflect the work force requirement needed to carry out the observed attacks. Lieutenant Colonel Shearer developed an empirical distribution function for attacks per day using the SIGACTS III database.

In addition, the MNF-I C2 requested that the ORSA cell provide quantitative support to the COIC for their estimate of the number of foreign fighters entering Iraq each month. The MNF-C2, as part of the quarterly 9010 submission to Congress on the status of operations in Iraq, provided an estimate using the last three months of data. The COIC had previously used an approach that estimated the number of foreign fighters as a function of the number of suicide attacks. Documents from an Al-Qaeda in Iraq (AQI) emir in Anbar province had provided the data for estimates back to late 2006. Current intelligence reports suggested that these percentages were no longer valid.

The MNC-I CHOPS directed the ORSA cell to develop a capability to analyze the change in attacks over the preceding four weeks (MNDs tended to focus on the current week of attacks and the CHOPS wanted to provide the CG with a longer perspective). Lieutenant Colonel Shearer decided to venture away from bar charts and, instead, used ArcGIS to portray the results. He first extracted records for the previous four weeks from the SIGACTS III database and separated them into two groups: records for the two weeks prior and records back two to four weeks prior. Second, he plotted the attacks from each group into ArcGIS. Third, he developed density plots based upon the number of attacks.

The Arc Geographic Information System (ArcGIS) produced density plots as rasters. Rasters display features on a map as a matrix of cells in continuous space. Each cell in the density plot stores its density value as an attribute. Lieutenant Colonel Shearer utilized the raster calculator to subtract the three-to-four weeks- prior density raster layer from the one-to-two-weeks prior

density layer. The resulting raster layer showed the change in density over the four-week period. He named this analysis Attack Velocity.

The Combined Information Data Network Exchange (CIDNE) served as the USCENTCOM database of record for all significant acts in theater. Accordingly, MNF-I and MNC-I based much of their intelligence and operations analysis on CIDNE data. Two types of SIGACTS data existed within CIDNE: Coalition and HN. Coalition forces produced coalition reports. The ISF produced HN reports. MNF-I and MNC-I limited their analysis to Coalition reports, citing a lack of confidence in the quantity and quality of the Iraqi reports. However, as the Coalition ceded battle space to the Iraqis, MNF-I and MNC-I needed to add HN reports in order to maintain situational awareness of the Iraq Theater as a whole. The MNC-I Chief of Staff tasked the ORSA cell with implementing a system to capture and improve the quality of the HN reports. Lieutenant Colonel Shearer first examined the HN records already in CIDNE and found a large number of IP reports (~ 37,000) and a small number of IA reports (~ 370). The IP reports came from all 18 provinces, with an average of 2,000 records per province. The IA reports came from 17 of the 18 provinces, but ten of the provinces had fewer than ten reports.

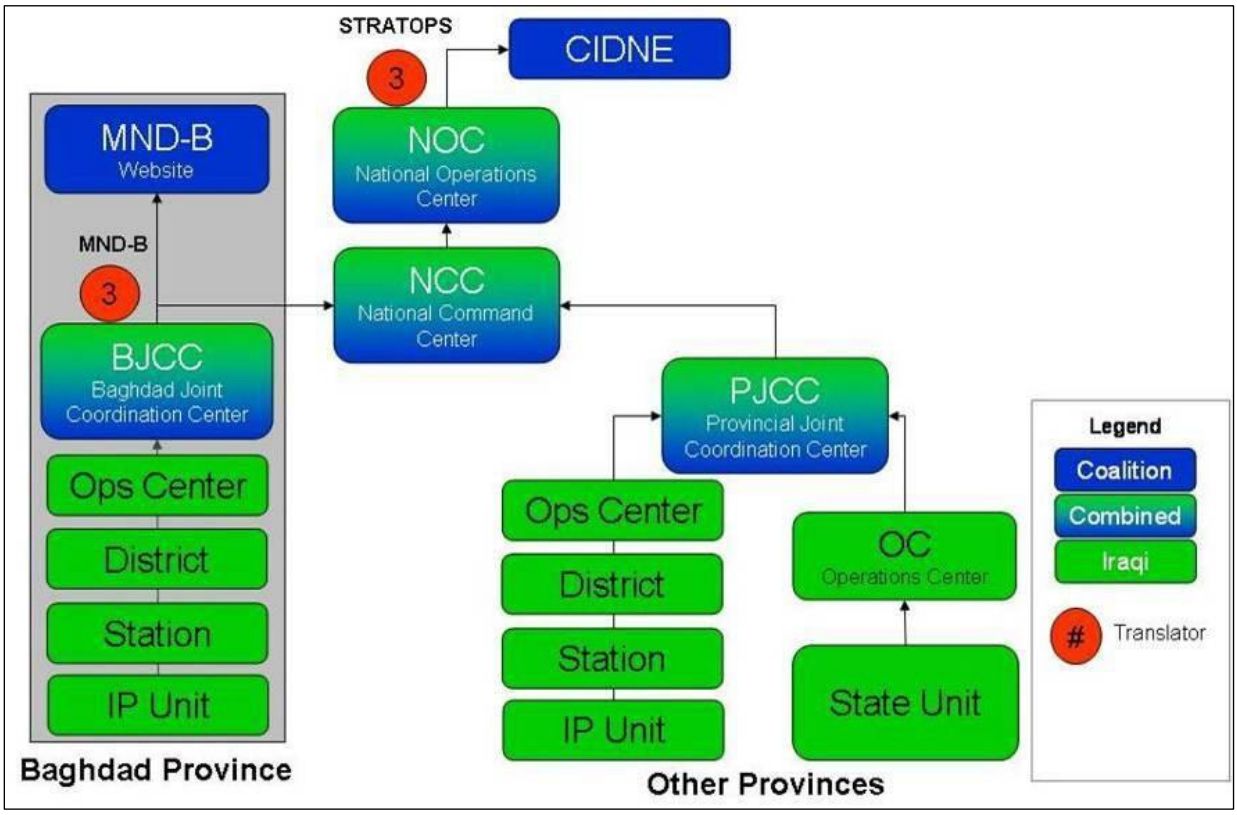


Figure 5-70 Iraqi Police Reporting Process

Lieutenant Colonel Shearer then visited the provinces of Baghdad, Ninewa and Basrah to analyze the Iraqi reporting system. The IP fell under the operational control of the MoI and the IA fell under the operational control of the MoD. Each of the 18 Iraqi provinces had, or planned to have, an MoD Provincial Joint Coordination Center (PJCC) and an MoI Operations Command. Only in Baghdad and Ninewa provinces were the two collocated. IP units reported incidents through their local station up to the PJCC. All of the PJCCs forwarded the reports to the NCC in Baghdad, which sent the reports to the NOC. At the NOC, MNF-I STRATOPS had

three linguists who translated the reports and entered them into CIDNE. Figure 5-70 shows the IP reporting process.

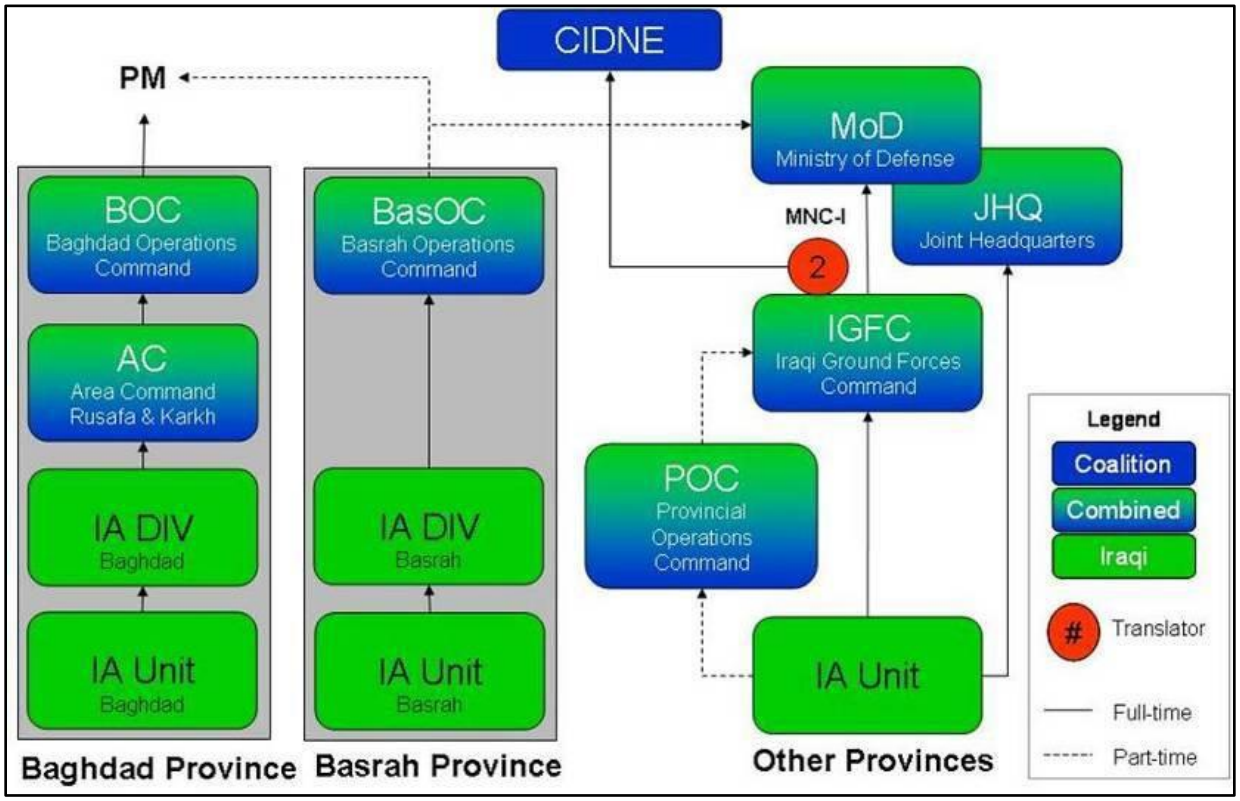


Figure 5-71 Iraqi Army Reporting Process with Linguists

The ISF Intelligence Assessment units reported incidents up through their chain of command to their division headquarters. The divisions in the Baghdad and Basrah provinces forwarded the reports to their respective operational commands. These commands forwarded the most significant reports directly to the prime minister. The divisions in the other sixteen provinces forwarded their reports to both their respective operational command, if one existed, and the Iraqi Ground Forces Command (IGFC). None of these reporting chains led to IA reports making their way into CIDNE. The ORSA cell coordinated with the IGFC and received access to the IA reports. Analysts then obtained two linguists, from the MNC-I C2 Linguists Section, who translated the IA reports and entered them into CIDNE. Figure 5-71 shows the IA reporting process with the addition of the two linguists. On 23 May 2008, The OA cell started transferring the IA reports into CIDNE. In addition, Lieutenant Colonel Shearer began incorporating HN reports into operations analysis for MNC-I.

The MNC-I CG, Lieutenant General Austin, made three to five visits per week to units throughout Iraq. Prior to each site visit, he had the ORSA cell provide him with a one-page summary of each unit's Area of Operations (AO). Lieutenant Colonel Shearer provided a density plot of recent attacks in the AO, charts of attacks, casualties by target type, and additional insights into recent operations. He highlighted the portion of the fight taken up by the ISF.

MNC-I C3 CHOPS directed the ORSA cell to investigate a possible relationship between atmosphere visibility and enemy IDF attacks in Baghdad. The Commanding Generals of both

the MNF-I and the MNC-I hypothesized that the insurgents in Baghdad took advantage of the reduced visibility during sand storms to conduct IDF attacks against Camp Victory and the IZ. Lieutenant Colonel Shearer investigated this hypothesis using data from January through March 2008. He obtained weather data from the Air Force weather squadron in Baghdad and IDF attack data from the SIGACTS III database. A scatter plot and the corresponding Pearson Correlation Coefficient showed no linear relationship between the two.

At the end of 2008, the IA launched Operation Charge of the Knights in Basrah. This operation incited the Shi'a insurgents in Sadr City to attack the IZ with rockets and mortars for several weeks. The CHOPS requested the ORSA cell to test the hypothesis with the latest attack data to see if the relationship had changed. A scatter plot and the Pearson Correlation Coefficient showed a linear relationship between visibility and IDF attacks. IDF attacks occurred in greater number during limited visibility. Further analysis of the first week of the attacks revealed a plausible explanation for the change in results. Attacks peaked during a five- day period at the end of March. The first three days of the insurgent attacks on the IZ (25 to 27 March 2008) occurred during a sandstorm that limited visibility and restricted Coalition Air Weapons Teams (AWTs). Visibility improved the next two days, 28 and 29 March and Coalition AWTs engaged and killed almost all insurgents firing IDF into the IZ. Analysts inferred that the insurgents knew the sandstorm would affect the AWTs and so they had adjusted their IDF TTPs to take advantage of these periods of limited visibility.

The MNC-I Commander, Lieutenant General Austin, observed that he frequently received IDF when visiting FOBs. He wanted to know if this was coincidental or if he was the target. Lieutenant Colonel Shearer used the five FOBs that Lieutenant General Austin had visited twelve times in February. Lieutenant General Austin received IDF on 42 percent of his visits. These FOBs received IDF on a certain percentage of the days in February. Lieutenant Colonel Shearer modeled the number of attacks that the CG received, X, as a random variable with a Binominal distribution. Under the null hypothesis $X \sim \text{Binomial}(n=12, p=0.14)$, with the $P(X = 5) < 0.02$. The data rejected the null hypothesis: the attacks did not appear to have occurred at random. Lieutenant Colonel Shearer met with Counter-Intelligence to investigate how the insurgents might identify the CG's flights. Counter-Intelligence officers discovered that only the CG's flights had AH-64 Apache escorts and utilized the call sign 'Dragon 6' in the clear. The CG, and his Personal Security Detachment (PSD), received the results of the analysis he had requested.

5.2.26 CAA deployed ORSA Analyst in OIF - Ms. Heather Brownfield MNC-I

Ms. Heather Brownfield deployed in support of OIF from 30 March to 15 October 2008. The CAA wanted her to work toward transferring the requirement for content validation and general management of the SIGACTS database from the ORSA analysts to the C3 KMO. In addition, she wanted to document operational changes and security improvements since her first deployment in 2006.

Ms. Brownfield noted that much in the security environment had changed since her first deployment to Iraq. In 2006, attack and casualty trends continuously worsened. Iraq was deteriorating into sectarian turmoil. ESV was on the rise, characterized by neighbor-on-neighbor attacks. Violence levels peaked in summer 2007 and declined thereafter. In 2008, major security trends were steadily improving. ISF was leading major operations across the country. More than half of the provinces were under GoI control. The vicious cycle of ESV that plagued

the streets of Baghdad and elsewhere in 2006 and 2007 was broken. However, insurgents continued to target GoI officials as a means of expressing their opposition.

As security improved, the campaign focus shifted from kinetic to non-kinetic analysis. By 2008, Iraq had a full staff of Intelligence and ORSA analysts. ORSA analysts now worked at the brigade, division, TF, MNC-I, MNF-I, and MNSTC-I levels. Meanwhile, MNF-I and MNC-I merged, leading to a reduction in staff. This meant that the ORSA-to-staff officer ratio was improving. More analysts and more ORSA analysts meant greater specialization in topic portfolios for CAA analysts.

During her deployment, Ms. Brownfield made a significant contribution to improved data management. She identified an official source for attack and casualty data in MNF-I. The SIGACTS III dataset existed in theater. Sometimes dataset values were in conflict with datasets owned by the intelligence and operational communities. The dataset website changed often, making access to data a problem. The dataset on individual computers and on the server was at risk from power failure, network failure, and/or hardware failure. Managing SIGACTS III data continued to be a full time job for the CAA deployed analysts because the process was inefficient.

Ms. Brownfield improved the SIGACTS III database accessibility, content and reliability. She developed a concept to make SIGACTS III available from the CIDNE website. She named her program the "The Subject Matter Expert Analytic Networked Database (SAND)." The interconnection between CIDNE and SIGACTS III gave her program legitimacy; the SAND database would enable any user with a SIPRNET account to access SIGACTS III. Ms. Brownfield's program would have reduced the risk of losing or corrupting the database from hardware, network or user errors. Due to changes in MNF-I priorities, the Command never implemented SAND.

CAA deployed analysts spent a significant amount of time creating charts, briefing-slides, and coordinating with other staff sections to ensure numbers agreed before publishing. Staff products had unnecessary redundancies. Ms. Brownfield worked closely with the KMO to create a one-stop shop for analytic products. She sought to automate numerous staff products and commonly requested charts and statistics in order to make them available from the "Ask ORSA" website. Once she had designed a chart or graph and posted it to the website, it would be available for updates as required. The raw data would be available with a simple download into Excel. Her concept would have reduced production time across staff elements. She programmed SAND with predefined colors, symbols and styles. She programmed SAND with approved chart appearances and predefined definitions of common fields of interest (e.g., IED events, IED detonated, IEDs found and cleared, IED hoaxes, etc.). In addition, she programmed SAND to use field-accepted measurements. The AskORSA website had the potential to improve consistency, reduce user-error, and eliminate redundant staff work.

Staff turnover was high in theater and training times for staff replacements were often inadequate. Staff reorganization was constant. This made finding reliable data sources and maintaining agreed-upon definitions extremely difficult. The Command atmosphere was not conducive to collaboration on issues pertaining to data and information management. In general, staff officers held their positions for six months or less. Leaders were reluctant to change the existing process.

Technical improvements by the KMO were enhancing data ease of use and information transparency. To support KM improvements, Ms. Brownfield encouraged the use of automated products. She chaired a weekly Iraqi Data Analysis Working Group in order to integrate datasets from intelligence, counter-IED, and operational communities. Additionally, she encouraged ORSA analysts in Afghanistan to replicate the processes she and other analysts had developed for Iraq. Ms. Brownfield continued to encourage the transition of SIGACTS III database management from CAA ORSA analysts to the KMO.

Ms. Brownfield's report provided a historical perspective on the evolution of the SIGACTS database developed in June 2003 by CAA analysts assigned to CJTF-7 to the incorporation of SIGACTS III into CIDNE. Her report also contained a detailed chronology of SIGACTS III history development.

The following are examples of Ms. Brownfield's analytic support during her deployment. She provided weekly analytical support to the CG through analyses of the security environment in the BSD and the SOI BDA, which reviewed the significant activities of SOI. Her analysis highlighted major trends and key insights and were included in talking points for the CG and staff. Planners delivered these slides via email, posted to the website and hand delivered in briefing books to the CG, Deputy CG (Operations), CoS, and the CHOPS. Her information was further distributed to the top staff elements in MNF-I and MNC-I.

Ms. Brownfield conducted a monthly overview of violence and security trends in the BSD at the request of the Deputy CG (Intelligence), Major General Brealey (UK). She prepared monthly reports of SOI activities and overall security trends. Planners posted these slides to the website and distributed via email to staff elements in MNF-I and MNC-I.

Ms. Brownfield also supported the following one-time efforts:

- Operation Lion's Pounce: assessing and measuring success in this military operation at the request of the Chief of Operations.
- Analysis on cyclical and cultural factors: determining the expected change in violence due to Ramadan, Ramadan as a factor in national election planning, historical review of Ashura, Christmas, National U.S. elections, and patterns in violence in the lunar and solar calendars.
- MND-South East Forces Drawdown: supporting senior decision makers by providing critical information on resource allocations, threat, and friendly activity.
- Elections planning support: designing a system for units to report the status of election sites; developing the system on CIDNE; managing resulting data; analyzing data; incorporating this data with other information, such as threat, friendly activity, and availability of SOI to support election sites; and briefing the results to the planning team.

Ms. Brownfield concluded her report with a number of comments. Incorporating the CAA deployed ORSA analysts in the bimonthly CAA Current Operations meetings via the integrated web services technology was beneficial to overall cooperation between forward and rear elements. Increased training on geospatial tools was incredibly beneficial. Future deployed analysts can expect to spend an increasing portion of their time on non-kinetic issues that are more difficult to quantify. Pre-deployment training should reflect this. On a personal note, Ms. Brownfield found that involvement in the Baghdad Boy and Girl Scouting Program was a tremendous boon to her mental well-being and stamina in a very demanding environment; she encourages future analysts to take advantage of this wonderful program.

Her tour to MNC-I was rewarding and challenging. She is grateful to have served in theater.

5.2.27 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel David Sanders (MNF-I)

Lieutenant Colonel David Sanders, of the OCA Division of CAA, worked for MNF-I CJ5 Assessments from 1 March 2008 to 15 September 2008. He replaced Lieutenant Colonel Carlos Lizardi. Lieutenant Colonel Rob Kolb succeeded him. In July 2008, the Chief of Assessments left theater for a non-battle medical issue, and Lieutenant Colonel Sanders became the Acting Chief of Assessments until his departure on 15 September when Colonel Mike Hatfield (United States Air Force) arrived and assumed the position.

Lieutenant Colonel Sanders's responsibilities initially included preparing and assessing the Security LOO, briefing the BUA on a weekly basis, updating security related information in the 9010 Congressional Report, and responding to RFIs from both internal MNF-I requests and external requests from USCENTCOM, the Joint Staff, and the U.S. Congress. When he became the Acting Chief of Assessments, he took responsibility for a section of eight analysts, both military and civilians, who assessed the four LOOs, prepared the 9010 report for Congress, and developed an assessment framework for inclusion in the JCP Update for December 2008. As Chief of Assessments, Lieutenant Colonel Sanders worked closely with the State Department on interagency efforts and the assessment of progress along non-kinetic Lines of Operations.

Lieutenant Colonel Sanders witnessed a major event in March of 2008. Violence exploded in both Basrah Province and in the Sadr City portion of Baghdad (locales closely aligned with Jais Al Maudi (JAM; led by Sadr himself). There was ample evidence that JAM, and particularly a portion of the militia known as 'Special Groups' (JAM SG), supported by the Iranian Revolutionary Guard QUDS Force, was equipping (including with EFPs) and training the enemy. The Iraqi Prime Minister, Nouri al Maliki, ordered several ISF divisions into Basrah city, in Basrah Province, to quell the insurgency and reestablish the rule of law. After defeating the insurgents, the ISF, over a two to three week period, stopped the increased violence in Basrah and then advanced to Sadr City where they conducted similar campaigns with similar results. This event, significant for the decrease in violence, led to popular support of the GoI and the Prime Minister, particularly by the Sunni population who witnessed the GoI standing up to Shi'a extremists. Because Maliki was Shi'a, and the Shi'a population held the majority of positions in the GoI, this action spawned ethnic reconciliation in the population. Taken together, these events reduced violence in the country to levels not seen since late 2003.

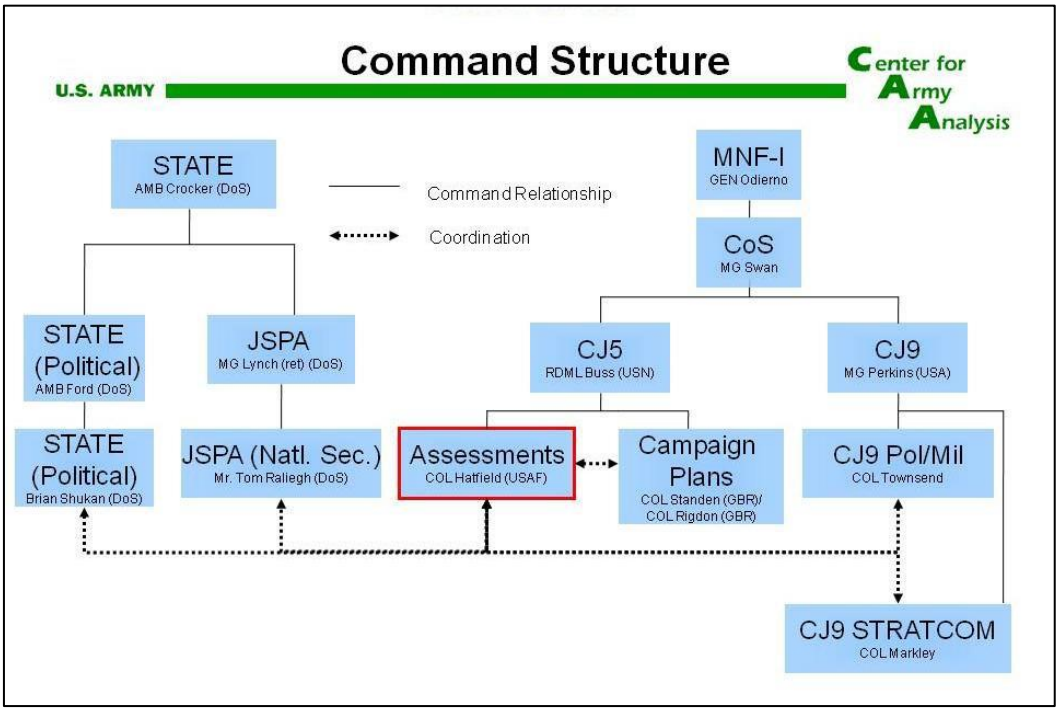


Figure 5-72 Partial MNF-I Organization Chart

Figure 5-72 shows the organizations most closely involved in the work Lieutenant Colonel Sanders performed (MNF-I CJ5 Assessments Division, where Lieutenant Colonel Sanders worked, is outlined in red).

The CJ5 was a U.S. Navy Rear Admiral, and his deputy—a British Army Brigadier General. The CJ5 Assessments Chief was a United States Air Force Colonel leading seven analysts: three U.S. Army ORSA military officers, two IDA civilians, one Joint Center for Operational Analysis (JCOA) civilian, and a Naval officer (branch immaterial). While participating in the development of the MNF-I JCP, Lieutenant Colonel Sanders worked closely with the CJ5 Chief of Campaign Plans. While assessing the JCP, Lieutenant Colonel Sanders worked closely with the State Department's Joint Strategic Plans Assessments (JSPA), MNF-I CJ3, MNC-I C-5, and the U.S. Embassy's Political, Economic, Diplomatic, and Rule of Law organizations.

Shortly after his arrival, Lieutenant Colonel Sanders became responsible for assessing the Security Line of Operations. This weekly assessment primarily used information published in the Significant Activities Database, version III (SIGACTS III). The MNC-I C5 maintained this database of all security incidents in Iraq, reported by both CF and ISF. Lieutenant Colonel Sanders briefed this assessment at the Monday BUA, a theater-wide VTC chaired by the MNF-I Commanding General. During the BUA, the CG provided guidance and direction. Following the reductions in violence over the March to May timeframe, Lieutenant Colonel Sanders significantly revised the BUA slides to emphasize security events in more detail and focus less on the general security situation theater-wide. There was a future objective to expand the assessment to other Lines of Operations.

On a quarterly basis, CJ5 staffed and prepared the Quarterly Reports to Congress on Security and Stability in Iraq. Initially, Lieutenant Colonel Sanders provided security statistics for this report and reviewed all comments related to the security section of the report. When he became the

Acting Division Chief, his duties expanded to include writing the executive summary of the report; reviewing the input from all the Lines of Operations collated by the Assessment section of CJ5; and interfacing with OSD and USCENTCOM on issues related to the report.

The CJ5 Assessments cell regularly performed analysis at the request of the Commanding General, examining specific issues in the command. Lieutenant Colonel Sanders led several of these projects, particularly relating to security issues, and frequently briefed the CG at a weekly meeting between CJ5 and the CG.

Figure 5-73 Members of MNF-I CJ5 Assessments

Figure 5-73 is a photo taken in front of the Presidential Palace, where MNF-I Forward and the U.S. Mission resided.

5.2.28 CAA deployed ORSA Analyst in OIF - Major Marvin King III (MNC-I)

Major King deployed in support of MNC-I from 20 May to 15 November 2008. He replaced Lieutenant Colonel Shearer in the rotation cycle of CAA deployed analysts, overlapping by ten days. He overlapped with Ms. Brownfield for five months, Mr. Wilkes for two months, and Lieutenant Colonel Ware for one month.

All ORSA analysts worked for Lieutenant Colonel Stokes, MNC-I C5 Chief of Assessments. Colonel Culpepper was the C5 Division Chief. Colonel Culpepper spent most of his time and effort on War Plans, but was also responsible for Policy, Force Generation, and Assessments. During Major King's deployment, the Assessments division consisted of the following individuals:

- Lieutenant Colonel Brian Stokes (Chief, Assessments)
- Lieutenant Colonel Karl Schwartz (TRADOC Analysis Center officer--and former CAA analyst)

- Lieutenant Colonel Gregory Graves
- Captain Jason Compton (Air Force)
- Captain Kristen Benson (MNSTC-I)
- First Lieutenant Brandon Shufelt, an Active Guard and Reserve (AGR) FA49
- Mr. Joe Nowak (TRADOC Analysis Center)
- Mr. Mike Medina (JWAC)
- Ms. Heather Brownfield (CAA)
- Staff Sergeant Locke (Intelligence NCO)
- Specialist Walter Menden (Intelligence Specialist)
- Mr. Daryl Jones (Senior Advisor in the Combined Operations Intelligence Center)

Major King managed the data quality of the SIGACTS database and prepared weekly products for the MNC-I CG. He worked on Iraqi data development and responded to Current Operations RFIs and projects.

Major King interacted mainly with the CHOPS, Colonel Parker. Colonel Parker was responsible for SIGACTS database management and focused on short-term trends. If there were major changes to the weekly products prepared for the CG, the CHOPS approved the products.

Major King conducted long-term trend analysis. The KMO officer, Lieutenant Colonel Kim, managed the CIDNE website where units would input data into SIGACTS. Throughout the week, each of the MNDs entered significant activities into CIDNE in accordance with the Corps' reporting requirements. Major King retrieved new data from SIGACTS and reviewed it for accuracy. CAA analysts kept the definitions in SIGACTS III consistent, even as Corps definitions changed. This facilitated accurate trend analysis.

At 1000 on Saturdays, Major King validated and published an updated report. Multiple customers used the database, including Lieutenant Colonel Kolb at MNF-I CJ5, the MNF-I C2, and the MNF-I CIG.

The weekly trends report consisted of 37 slides, covering general analysis, attacks by target and type, casualties, improvised explosive devices (IEDs), High-Profile attacks, detainees, and friendly fire incidents. Major King continued to refine the automated slide-creation process started by Major Jutras. Analysts used these slides in their weekly MNC-I Battle Update Brief (BUB). The preparation process took information from CIDNE, through Access and Excel, into a PowerPoint presentation. Major King's presentation provided an overview of attacks and resulting casualties from the prior week. The data cleaning process was arduous and poorly understood by those outside of the Assessment Community.

When Major King was not working on the SIGACTS III database, he worked other projects and RFIs. The IA Data Development Project required a significant effort in order to translate IA data and enable HN reporting. Later, after the ISF had learned the report "cleaning" process, the Coalition incorporated these reports into the SIGACTS III database.

During his deployment, Major King participated in the following projects:

- Corps staff automation
- Force-to-Population and Attacks-to-Population studies
- Attack effectiveness analysis
- Elections support

- F16 Squadron effectiveness evaluation
- A partnership model
- A counter-sniper allocation study

While assigned to MNF-I, Major King participated in several CAA reachback projects. These projects greatly enhanced the Coalition's effectiveness in theater.

Major King presented the following lessons learned in his redeployment briefing to CAA:

- Analysts must anticipate questions and prepare answers ahead of time using research, data processing and analysis, and proactive chart preparation.
- Inconsistent definitions and naming conventions hinder the work of analysts.
- Analysts found the Commander's Handbook to be an extremely effective tool for explaining the ORSA role to others.
- Building relationships and credibility with those outside of the analyst community is critical to mission success.
- Every large staff needs an ORSA champion to "sell" the ORSA skill set.

5.2.29 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Ron Kolb (MNF-I)

Lieutenant Colonel Rob Kolb, from the Logistics Division of CAA, served in the MNF-I CJ5 Assessments Division of CJ5 Strategy, Plans and Assessments from 16 August 2008 to 9 March 2009. He replaced Lieutenant Colonel David Sanders and later transitioned with Lieutenant Colonel Bob Bradford. His responsibilities included assessing the Security LOO and updating the same reports as his predecessor. Additionally, he briefed the BUA on a weekly basis; updated security related metrics in the 9010 Congressional Report; and responded to RFIs from the Command and higher HQ to include the President of the United States, the Secretary of Defense, USCENTCOM, the Joint Staff, and Congress. Lieutenant Colonel Kolb completed the assessment framework for inclusion in the JCP Update and collected data to develop and assess metrics for the JCP.

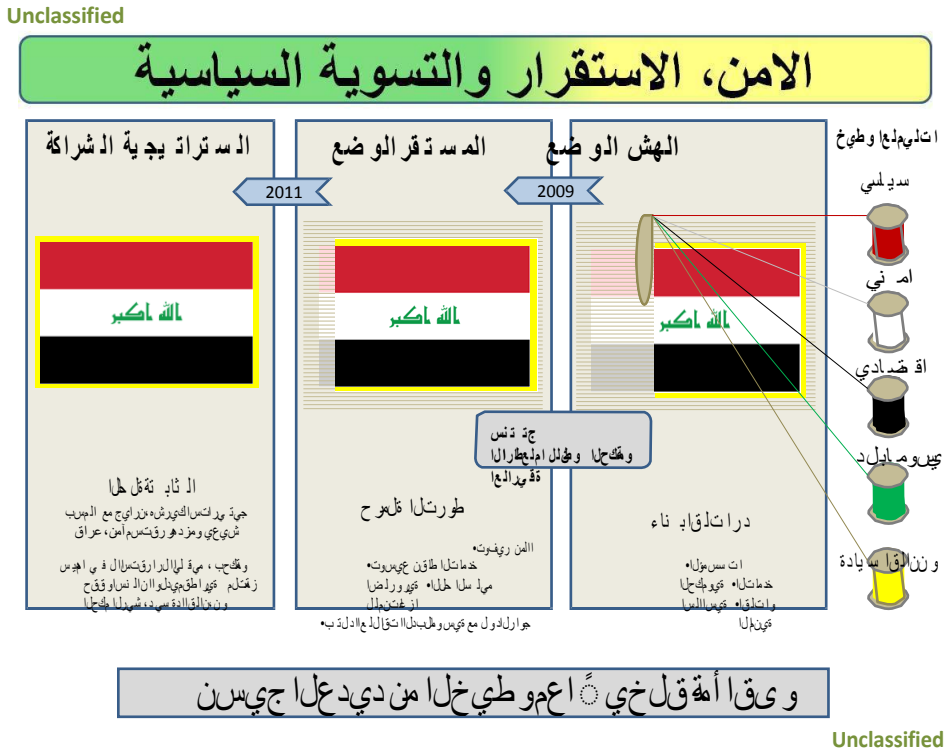


Figure 5-74 Weaving Together the Threads of Stability

Figure 5-74 shows the strategic concept of weaving together the Political, Security, Economic, Diplomatic, and Rule of Law LOOs to build a stronger nation (secure, stable and prosperous, at peace with its neighbors, a strategic partner for regional stability, with a government committed to good governance, the rule of law, human rights, and democracy).

This period marked a pivotal time of transition at the operational and strategic levels, not only for Iraq but also for the United States and International Community. During Lieutenant Colonel Kolb's deployment, General Petraeus became the USCENTCOM Commander and General Odierno became the MNF-I CG. The MNF-I staff moved from the Presidential Palace in the GZ to Camp Victory in Al Faw Palace where the staff collocated with the XVIII Airborne Corps HQ. The Iraqi Presidency and the Council of Representatives ratified the Strategic Framework Agreement (SFA) and began to assume full responsibility for the security of their nation. In January 2009, nearly seven million Iraqis voted in relatively peaceful Provincial elections (whereas 30 months earlier, insurgents killed an Iraqi every 40 minutes). Stability appeared to be taking hold in the country and most indicators of violence were trending downward. Back in the United States, Americans elected Barack Obama to be the 44th President of the United States and the U.S. government began the process of changing administrations.

Figure 5-75 shows the Iraqi Monument to the Unknown Soldier, inspired by the glorification of a martyr from the Iran-Iraq war. The overhead structure represents a traditional shield dropping from the dying grasp of an Iraqi warrior.

Lieutenant Colonel Kolb primarily conducted assessments for the Security LOO. This was a weekly requirement, primarily using information extracted from the SIGACTS III database. SIGACTS III, updated and maintained at MNC-I C5, housed all security incidents, reported by CF and ISF. Lieutenant Colonel Kolb briefed his analysis at the Monday BUA, a theater-wide

VTC chaired by the MNF-I Commanding General. The CG used the BUA to update his senior

commanders and provide guidance and direction. Additionally, Lieutenant Colonel Kolb built assessment templates and prepared the JCP assessments framework required to develop MOEs for every condition/objective.

Figure 5-75 Monument to the Unknown Soldier

Figure 5-76 Dust Storm in the Green Zone

Figure 5-76 is a photo, taken at dusk on 15 September 2008, of the Presidential Palace where the MNF-I staff collocated with the U.S. Embassy. The combination of the sun and sand turned the sky blood red. At the end of the year, CF returned the palace back to the Iraqis and the State Department moved into a new billion-dollar facility farther down the Tigris River. The MNF-I staff collocated with XVIII Airborne Corps at Camp Victory.

On a quarterly basis, CJ5 Assessments staffed the completion of the Quarterly Reports to Congress on Security and Stability in Iraq. Lieutenant Colonel Kolb assisted with the submission of two 9010 reports. He provided the security statistics and reviewed all comments related to the Security section.

CJ5 Assessments regularly performed analysis at the request of the Commanding General, normally examining specific issues in the command. Lieutenant Colonel Kolb chaired several of these projects, particularly relating to security issues, and frequently briefed the CG at a weekly meeting between the CJ5 and the CG. Additionally, Lieutenant Colonel Kolb led dozens of cross-functional, interagency efforts to tackle complex COIN challenges, presenting their results to the U.S. Ambassador and the MNF-I CG. Lieutenant Colonel Kolb assessed kinetic activities in the COIN fight and completed numerous CG-directed studies that included violence during Ramadan, HN reporting, murders, violent deaths, assassinations, caches, terror funding, and Iranian influence. He answered several 'President of the United States' (POTUS) queries and prepared the weekly Security Incidents and Casualty Trends briefings for the MNF-I CG.

Figure 5-77 T-Walls inside Camp Victory

Figure 5-77 captures the image of twelve-foot-high, portable, steel-reinforced concrete walls used for blast protection throughout Iraq. Troops commonly referred to these barriers as "T-Walls," due to their upside-down letter T shape. Some viewed these barriers as a symbol of Coalition presence.

Lieutenant Colonel Kolb considered his deployment to be one of the most challenging and rewarding experiences of his life. In his limited spare time, he worked with students and teachers at a local elementary school, Iraqi Boy Scouts, and children from a Christian church. On 8 October 2008, he led a small team to the al-Watan elementary school (established in 1982 and located in the IZ about one mile from the U.S. Embassy in Baghdad) and delivered toys and school supplies to young students from five to twelve years old. When the MNF-I staff moved to Camp Victory, Lieutenant Colonel Kolb made time each month to teach Iraqi Boy Scouts how to

tie knots and set up a camp site. On Christmas Eve, he and others transported several hundred donated packages of clothing and toys to Christian families near the GZ.

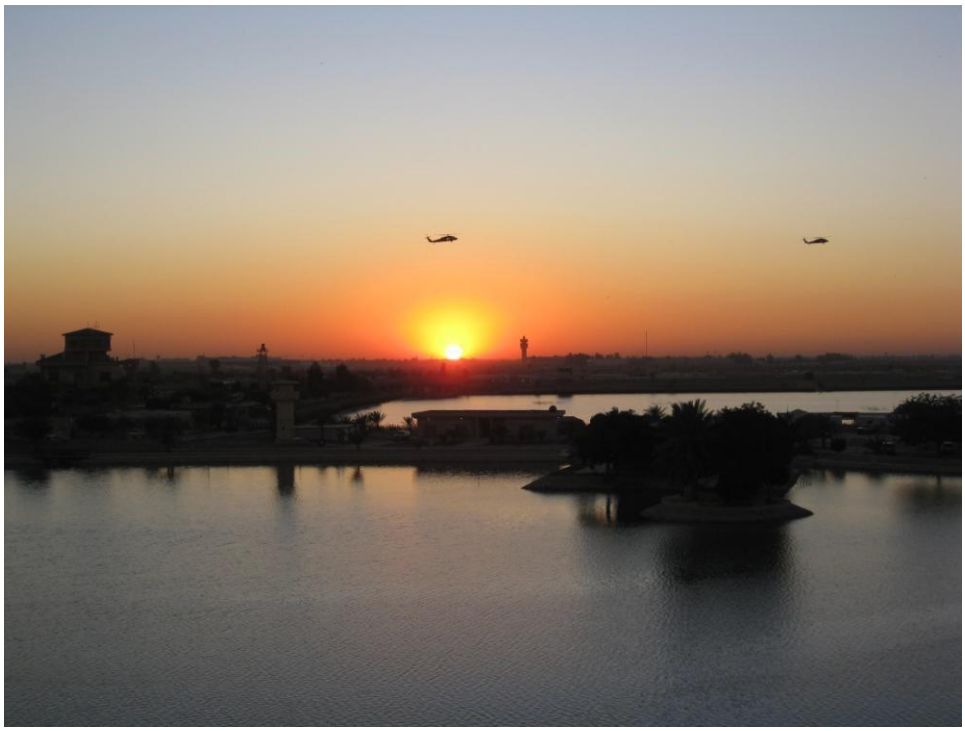


Figure 5-78 View of Baghdad International Airport

Figure 5-78 shows BIAP, originally named Saddam International Airport, viewed from Al Faw Palace (the new home to MNF-I HQ). The control tower is visible in the center of the photograph to the right of the sunset. In October 2008, Turkish Airlines launched three weekly non-stop flights to BIAP, thus becoming the first International Airline to resume service to the Iraqi capital since the UN imposed sanctions on Iraq after its 1990 invasion of Kuwait. Due to the sharp reduction in violence, passenger traffic increased dramatically.

Within a week of returning from theater, Lieutenant Colonel Kolb presented his work to a Joint and International audience at the Logistics Management College' Operations Deployment Course in Ft. Lee, Virginia. The Marine Corps, OSD Program Analysis and Evaluation Board, and the Military Operations Research Society also requested this presentation and its associated background papers.

5.2.30 CAA deployed ORSA Analyst in OIF - Mr. Stuart Wilkes (MNC-I)

On 9 September 2008, Mr. Stuart Wilkes, of the OCA Division of CAA, deployed to MNC-I C5 Assessments to replace Ms. Heather Brownfield. Shortly thereafter, on 23 September, to better utilize Mr. Wilkes's background in history, political science, and military planning, MNFI-CJ5 requested that MNC-I C5 Assessments transfer Mr. Wilkes to them. In early March 2009, Mr. Wilkes conducted a right seat/left seat ride with Mr. Ronald Kollhoff and then redeployed on 6 March 2009. Mr. Wilkes was mainly responsible for preparing and assessing the 25 December 2008 MNF-I JCP. This required writing an extensive information paper on the objectives of the four previous JCPs, and then writing the final 25 December 2008 JCP, Annex A, the Political LOO. Additionally, Mr. Wilkes prepared briefings on some of the non-security LOOs for

weekly secure video teleconferences (SVTCs). He was responsible to staff and edit Sections 1.1 and 1.4 of the congressionally mandated 9010 quarterly reports. Additionally, Mr. Wilkes responded to RFIs generated by the MNF-I staff and their HQ (i.e., USCENTCOM and OSD).

The most important event that occurred while Mr. Wilkes was in Iraq was the negotiation of the U.S./Iraq SFA. On 1 January 2009, the SFA replaced UN Security Council Resolution (UNSCR) 1511 as the legal basis for the presence of the U.S. Armed Forces in Iraq. Under UNSCR 1511, Iraqi sovereignty was limited and CF could conduct operations in Iraq without the permission of the GoI. Under the SFA, the U.S. and CF returned Iraqi Sovereignty to the GoI. U.S. Forces, while retaining their right to self-defense, were required to coordinate their operations with the GoI. The most visible change was the hand-over of security checkpoints to the Iraqis. Mr. Wilkes worked on the Political LOO, which experienced less change than did the Security LOO. The SFA modified the Political LOO to emphasize GoI points of view more heavily.

Most importantly, under the SFA, Iraqis assumed responsibility for their own security and freedom. A stable, self-reliant Iraq, which neither sanctioned nor supported terrorism, was now in the hands of the Iraqis. The U.S. remained in Iraq to support this objective.

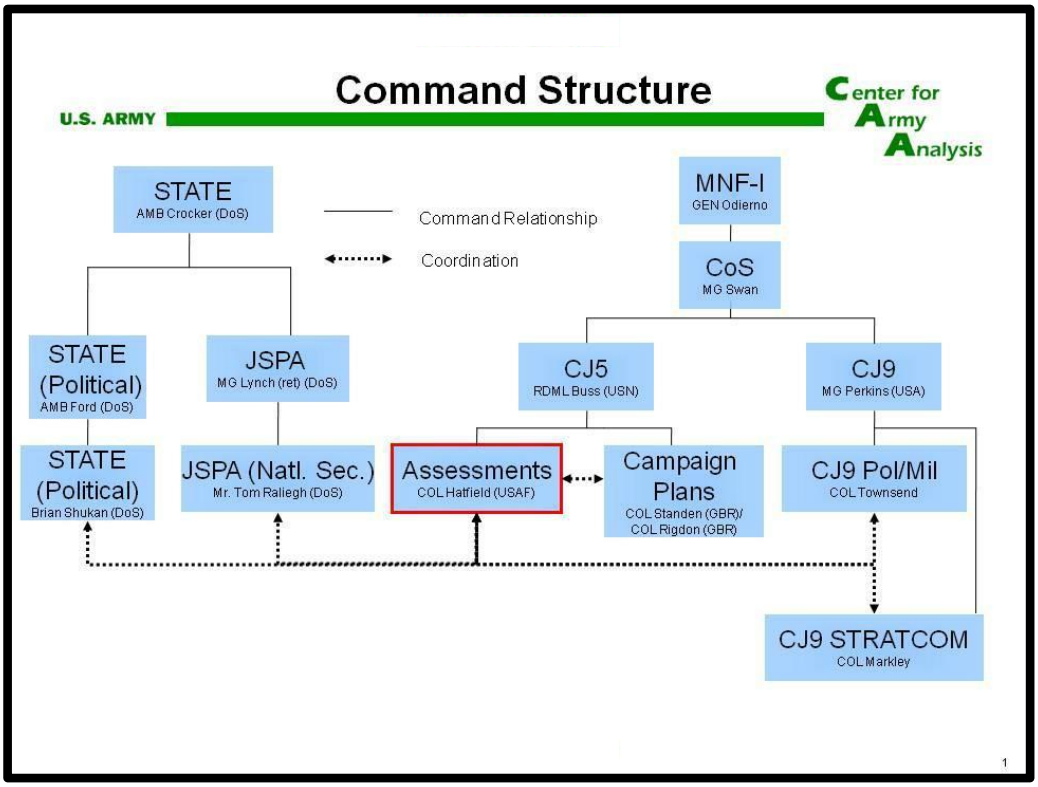


Figure 5-79 Partial MNF-I Organizational Chart

Figure 5-79, a partial MNF-I and U.S. Embassy organization chart, shows the organizations with which Mr. Wilkes worked most closely. He spent most of his deployment in MNF-I CJ5 Strategy, Plans and Assessments (outlined in red).

A U.S. Navy Rear Admiral held the CJ5 position; his deputy was a British Army Brigadier. The CJ5 Assessments Chief was a USAF colonel overseeing seven analysts: four U.S. army officers, one U.S. army civilian, one U.S. Navy administrative officer, and one civilian economic analyst

from the Joint Center for Operations Analysis. While participating in the development of the MNF-I JCP, Mr. Wilkes worked closely with the CJ5 Chief of Campaign Plans (a position successively held by two British army colonels). In order to prepare the JCP, Mr. Wilkes worked closely with MNF-I CJ9 Strategic Communications, the U.S. Department of State (DOS) JSPA office, as well as the U.S. Embassy's Political office.

Mr. Wilkes began by preparing an information paper on the objectives of the first four MNF-I JCPs: 5 August 2004, 28 April 2006, 26 July 2007, and 27 November 2007. He assessed the degree to which the responsible parties had fulfilled these agreements and whether the agreements met the stated strategic objective. Mr. Wilkes captured the results of the previous JCPs, and informed the MNF-I writers of the 25 December 2008 JCP on how best to incorporate the objectives into the plan. To scale this analysis, Mr. Wilkes first became familiar with four related planning documents, hundreds of pages long, as well as thousands of pages of assessment materials MNF-I had accumulated over the previous four years. Mr. Wilkes utilized CAA reachback capabilities (CAA's Mr. Kyle Minor assisted Mr. Wilkes by writing the portion of the information paper pertaining to the 28 April 2006 JCP). The information paper discussed: the evolution of the situation in Iraq, from MNF-I's vantage point; the transformation of the JCP from a primarily operational plan to defeat the remnants of the former regime to an integrated plan for security, political, and economic success; and "rule of law" aspects that might be fueling the insurgency. In order to inform the writing of the 25 December 2008 JCP, the MNF-I CJ5 Chief of Campaign Plans made particular note of the lessons learned.

Upon completion of this first phase, Mr. Wilkes provided support to the activities of the Joint Campaign Plan Analysis Team (JCPAT). The JCPAT included a number of retired flag officers, ambassadors, and senior academics. Mr. Wilkes assisted the MNF-I historian to capture the main points of the materials presented and subsequent discussions related to them. This extensive, firsthand, exposure to the issues facing MNF-I proved invaluable as Mr. Wilkes assisted members of the U.S. Embassy's Political Office in writing the objectives, tasks, and MOEs for Annex A, the Political LOO. The 25 December 2008 JCP was written to function under the SFA, not UNSCR 1511, taking into account Iraq's restored sovereignty. This was Mr. Wilkes's major accomplishment while deployed. His prior attendance at the U.S. Marine Corps Command and Staff College amply prepared him for this task. Together with DOS and U.S. Embassy personnel, and after several draft iterations, Mr. Wilkes produced the final version of Annex A. This annex was significant for having its main MOEs attain the highest level of the JCP's assessment hierarchy of condition, objective, and task. The entire 25 December 2008 JCP had nearly 500 MOEs, most of them applicable to the task level. Only eleven MOEs came from Annex A. Building an assessment framework for so many MOEs and acquiring adequate data to assess them, and then reporting them to the CG, placed an onerous burden on both the MNF-I staff and those receiving the assessments. To reduce this burden, the Political LOO annex became the model, used by the new CJ5 Chief of Campaign Plans, for the 19 June 2009 JCP.

The weekly SVTC schedule provided a supporting framework for in-depth assessment of several of the non-security related LOOs (i.e., Building Civil Capacity). Since the JCP had nearly 500 MOEs, SVTC was important for scoping the issues to a manageable number, allowing greater in-depth coverage. MNF-I CJ9 Strategic Communications (STRATCOMM) provided the conditions and objectives for assessment. Mr. Wilkes gathered data from SMEs and LOO representatives. He asked the involved LOO representatives first to apply weighting to the assessment of the progress toward task completion, and then aggregate up to the objective- and

condition-levels. He advised them to take a strategic view because the assessment process focused on meeting JCP objectives. To assess non-kinetic LOOs, Mr. Wilkes drew from quantitative data (e.g., public opinion polling, the flow of investment in Iraq's oil sector and the quantity and value of its output, the number of countries represented in Iraq by ambassadors, and the number of countries forgiving Iraq's debt to them). Qualitative conditions and objectives required the subjective judgment of the LOO representative.

There were other tasks simultaneously required of CJ5 Assessments, such as the preparation of congressionally mandated Quarterly Reports on Security and Stability in Iraq. This task involved a two-step process: first, receiving RFIs from OSD through the appropriate major subordinate commands and staff sections of MNF-I, and, secondly, answering the RFIs through an O-6 level review, a General/ Flag officer level review, to the Commanding General. At each level, RFIs were fact-checked, edited for clarity and readability, and returned to the original authors and staff sections to gain their concurrence. All along the way, OSD added additional RFIs and edits. This was a three-month process and the top priority of CJ5 Assessments until it was complete. Mr. Wilkes assisted the CJ5 Assessments Division Chief with writing the EXSUM. He worked with the authors from the various MNF-I staff sections to produce Section 1.1, Political Stability, and Section 1.4, Transitioning Security responsibility. He then read the entire report for clarity and completeness.

The CJ5 Assessments Division regularly answered RFIs. One of particular note came right after the provincial elections of 31 January 2009. It concerned a lower voter turnout compared with the two provincial elections of 1995. Mr. Wilkes showed a context for the lower turnout, both in terms of Iraq's own history and in terms of recent regional or parliamentary elections in other countries in the Middle East and South Asia. Mr. Wilkes actually welcomed working with other CAA analysts on complex problems like this, which were very different from analyses that CAA usually studied.

Although there was not much of it, Mr. Wilkes enjoyed his free time. One of the highlights of his deployment was a tour to one of the palaces built by Saddam with Iraqi oil money.

Figure 5-80 Ruins of the Home of the Son of Saddam Hussein's son Uday

Figure 5-80 is a photo of several members of MNF-I CJ5 in front of the ruins of the palace of Saddam Hussein's son Uday.

Figure 5-81 Members of MNF-I CJ5

Figure 5-81 is a photo taken with several members of MNF-I CJ5 from the roof of the "Victory over America" palace.

Figure 5-82 Last Remaining Mural of Saddam Hussein

Figure 5-82 shows the last remaining mural of Saddam Hussein, at the parade grounds of the former Iraqi Republican Guards. Depicted, from left to right, are Mr. Ronald Kollhoff, Lieutenant Colonel Robert Kolb, and Mr. Stuart Wilkes.

Mr. Wilkes's greatest satisfaction came from participating in MNF-I sponsored events for Iraqi Christian children and their families. Unfortunately, one of the unintended consequences of the fall of Saddam Hussein was the rise of religious persecution directed at Iraqi Christians. The threat against them was so severe that Christian children could not play outside their homes or participate in public celebrations. On two occasions, Mr. Wilkes contributed his time to "Kids Day Camp," where MNF-I invited children from St. George's Church to "Forward Operating Base Freedom Rest" for a safe day of games and a barbecue (Figure 5-83). Mr. Wilkes also participated in a Christmas celebration for children at the Al-Rasheed Hotel in the GZ. The CJ5 accumulated and distributed four SUV-loads of gifts, generously donated by American families. These gifts brought great joy to the children, making the donation extremely worthwhile for both the giver and the receiver.

Figure 5-83 Fun at the Kids Day Camp

Figure 5-83 shows an Iraqi girl at the Christian Children's Day Camp, enjoying "egg toss" with a U.S. Soldier.

The following are Mr. Wilkes's lessons learned:

- Know and understand MDMP prior to deployment.
- Department of State personnel are smart and motivated but spread too thin and pulled in too many directions. Modify your expectations of them accordingly.
- Schedule flights using U.S. Embassy flights rather than 'Space Available' (known as Space A).
- The dining facility is either your worst enemy or best friend. You can pork out on fats and sugars or slim down with lots of fresh fruits and vegetables. It is up to you. Either way, the food is tasty, fresh, and filling.
- If the heat does not get to you, the dust will!

Overall, Mr. Wilkes's deployment was an unforgettable and educational experience for him. He worked in a major multi-national HQ, with interesting people who had been everywhere performing fascinating work that truly advanced U.S. and Middle East global security.

5.2.31 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Dave Smith (MNSTC-I)

Lieutenant Colonel Smith of CAA deployed to Iraq as the Chief of Assessments for the Multi-National Security Transition Command, (MNSTC-I), from July 2008 to July 2009.

Lieutenant Colonel Smith's deployment was unique from most of the analysts deployed from CAA. In May of 2008, he received his Ph.D. and volunteered for a Worldwide Individual Augmentation System (WIAS) assignment to Iraq. The military considered these assignments to be a Temporary Change of Station and required the Soldier to have a "host" home station assignment. Since Lieutenant Colonel Smith's follow-on assignment was with CAA, he had the option to either remain with the Student Detachment or transfer early to CAA. He chose the latter because CAA could offer more support to him and his family during deployment. He transferred to the Operational Capability Assessments (OCA) Division before he left. They were fantastic in supporting his needs. The WIAS tasker assignment placed Lieutenant Colonel Smith in the Multi-National Security Transition Command, Iraq (MNSTC-I) as Chief of Assessments within the J5. During his deployment, he worked under Colonel Saddleton of the English Royal Marines. The J5 was later combined to form J 2/3/5. When the J5 consolidated, Lieutenant Colonel Smith's supervisor became the J 3/5 Plans Chief, Captain Hughes of the English Royal Navy.

MNSTC-I was the subordinate element of MNF-I responsible for developing, organizing, training, equipping, and sustaining the Iraqi Security for MoD and MoI and the ISF. From July 2008, MNSTC-I was commanded by U.S. Army Lieutenant General Frank Helmick. MNSTC-I HQ was located in the Baghdad IZ at Phoenix Base, a former elementary school. Additionally, MNSTC-I collaborated with the NATO Training Mission, Iraq (NTM-I) as Lieutenant General Helmick was "dual hatted" as the NTM-I commander. The command was a direct outgrowth of the need to create a new Iraqi Army under the CPA. The original command consisted of the Coalition Military Assistance Transition Team and a separate State Department effort to build a new police force through the Civilian Police Assistance Team and advisory missions to the MoD and MoI. All of these missions were consolidated under MNSTC-I when then Lieutenant General Petraeus was tapped to take over the ISF training mission.

As his title indicated, Lieutenant Colonel Smith's first duty was to provide assessments of the ISF to HQ and the U.S. Embassy. Initially, there were three assessment products used to accomplish this mission: the report to Congress, titled "Measuring Stability and Security in Iraq," commonly called the 9010; the Iraqi Security Force Report to OSD; and the products required for the CASB. Essentially, MNSTC-I Assessments collected, collated, and presented. The MNSTC-I Commander did not want to see charts and statistics and initially found very little use for assessments.

Lieutenant Colonel Smith found preparing the "Measuring Security and Stability in Iraq" report to be the most labor-intensive task for assessments. MNSTC-I's portion of the 9010 was produced by collecting information from the directorates and combining the information in one coherent document to send up to MNF-I. The 9010 was especially time intensive because it required additional drafts as it moved up the chain through MNF-I and over the ocean to OSD. The document had to be staffed by all of the then 11 directorates within MNSTC-I. Each directorate head was a civilian SES or general officer, so staffing required patience as the report worked its way through each of the directors and eventually to the MNSTC-I CG. Lieutenant Colonel Smith found it somewhat disheartening that after all their revisions, the document's last

stop was with the MNF-I speechwriter who essentially rewrote the entire document. Congress eventually scrapped the Department of Defense (DOD) 9010 report and replaced it with the DOD 9204 report ("Measuring Stability and Security in Iraq"), an unclassified and streamlined document.

The ISF Report documented personnel strength within the Iraqi Army, Navy, Air Force, Police, and Counter-Terrorism Force. Since the Iraqis were receiving money from ISF Funding (ISSF), OSD wanted a means to monitor the progressive growth of the ISF. As time went on, ISSF money diminished and the ISF steadily approached an end-state number. There was very little change in the numbers within the report from month to month. Additionally, since the mission had reduced the ISSF and the Iraqis had signed the U.S.-Iraq Security Agreement—which made them a sovereign country—the Iraqis were less willing or able to report accurate numbers. Eventually OSD no longer required this report; however, MNF-I still wanted to retain it despite the suspect numbers that ISF was reporting toward the end of Lieutenant Colonel Smith's tour.

When Lieutenant Colonel Smith first arrived in country, one of the first requirements he had to do was to prepare the read-ahead products for the CASB. The U.S. Embassy and the MNF-I JCP assigned over 140 tasks to MNSTC-I. For the CASB, MNF-I wanted an assessment of each of these individual tasks. Since all of the 11 directorates were involved in accomplishing these tasks, analysts collected assessments from each directorate. Analysts compiled them into spreadsheet form and forwarded the product to MNF-I. Lieutenant Colonel Smith arrived after the July CASB was complete, so he began to work on the CASB scheduled for October. When General Odierno took command in September, he decided to bring in an outside JCPAT to review the JCP format and make recommendations for changes. Due to the staff hours required to prepare for the JCPAT's visit, the CG cancelled the October CASB. After further review, MNF-I discontinued the CASB format and changed to a Senior Leader's Forum requiring a single assessment of the conditions of the JCP, without all of the detailed task assessment.

Since MNF-I reduced the assessment requirements, analysts at MNSTC-I began to review their own assessment program. When Lieutenant Colonel Smith arrived at MNSTC-I, they were planning a Near-Term Assessment (NTA). The NTA was a quarterly assessment based on the balanced scorecards of each of the directorates within MNSTC-I. The Balanced Scorecard (BSC) was a performance management tool for measuring whether the smaller scaled operational activities aligned with their larger scale objectives, in terms of vision and strategy. MNSTC-I's BSCs were "stop light" assessments of each task in each directorate. Problematically, the assessed tasks did not align with the overall MNSTC-I objectives and conditions. Additionally, the sheer number of them required the CG to "get down in the weeds" where the strategic view was not visible. The NTA briefing was an all day event. Each directorate briefed each one of their BSCs. The CG closed the session with the comment, "I really did not want to do this because, usually, nothing useful comes out of it." This comment led Lieutenant Colonel Smith to believe that the internal assessment process needed reform.

The directorates spent a great deal of time preparing the BSCs, which had major shortcomings. They were not strategic in nature (i.e., a directorate would say they were behind in training Iraqis on a certain weapon system, so the CG would tell them to fix the problem. The directorate's general officer knew this was a problem and was just trying to bring it to the CG's attention. However, this kind of assessment led the CG to create a list of specific tasks, resulting in a six page FRAGO. The FRAGO was a waste of time because it directed the subordinate units to perform a task they were already doing. This may have had some value for documentation, but it

did not help the CG articulate his strategic intent). Additionally, the BSCs did not align with the MNSTC-I OPORD. After MNF-I and the U.S. Embassy published the JCP, MNSTC-I used the document to write the OPORD. Tasks in the OPORD were broad and required the directorates to develop implied tasks in support of the overall MNSTC-I mission. These tasks had no connection to the BSCs. Progress was difficult to monitor even though staff writers of the MNSTC-I OPORD had consulted with the directorates and familiarized them with the OPORD tasks. For some reason, within the BSC process, directorates seemed to ignore OPORD tasks. As each directorate moved in its own assessment direction, analysts had difficulty finding common trends to inform the CG at the strategic level. In fact, J5 did not attempt to extract common trends to focus the CG's attention. Instead, J5 allowed the directorates to brief what was, in effect, a bloated command brief.

The October NTA was the last internal assessment by MNSTC-I until mid-March 2009. MNSTC-I was waiting for the new JCP from MNF-I in order to write its new OPORD to support the JCP. The next JCP came out in late December 2008 and the MNSTC-I OPORD was finished mid-January 2009. In the interim, the J5 had become the J 2/3/5, and Captain Hughes had taken the helm as the J 3/5 Plans Chief. Feedback from the previous NTA was not favorable. The CG said he did not find much use for it and the directorates complained about the amount of labor required compiling such a large briefing. Moreover, the MNSTC-I OPORD author, Colonel Madkins, complained that the NTA did not assess the conditions, objectives, and effects spelled out in the OPORD. This feedback led analysts to redesign the internal assessment process to be less labor intensive, closer aligned with the OPORD, and more likely to produce a product that the CG could understand and use.

Analysts began with a JCP that assigned over 140 tasks (in addition to the implied tasks already in the OPORD). The directorates complained that assessing each one of these tasks on a quarterly basis placed an undo burden on them. Analysts in J 3/5 Plans agreed and proposed assessing only the effects within the MNSTC-I OPORD (each effect had an associated set of tasks). Directorates could assess these tasks while analysts assessed effects, which were fewer and more appropriate for the Commanding General's review. The new design assessed each effect using bullet comments and an associated red, yellow, or green "stop light." The "stop light" contained 14 colors as it progressed through the red to green color spectrum.

Each objective had several effects associated with it, so analysts averaged the stop light to produce an objective stop light. All directorates were asked to use the same format, so, although not all directorates assessed all effects, MNSTC-I still had a consistent way to consolidate the results and develop an overall MNSTC-I assessment. This allowed the CG to drill-down from condition to effect, and see the reasoning behind each assessment. This format reduced 140 tasks to 22 effects. Moreover, it supported the new requirements from MNF-I. After the demise of the CASB, MNF-I began to do quarterly assessments. MNSTC-I's requirement was to assess the conditions of the JCP. Since the OPORD was tied to the JCP and the assessment was tied to the OPORD, it was easy to use the internal assessment to answer the MNF-I requirement.

The final step of the entire process was to produce an overall MNSTC-I assessment and brief it to the CG. The CG cancelled the next day-long quarterly assessment and asked for a deskside brief of the 22 overall objectives. At the conclusion of the brief, MNSTC-I discussed trends across MNSTC-I. This brief provided the CG with information he needed at the strategic level.

As part of the Responsible Drawdown of forces in Iraq, MNF-I changed MNSTC-I's command and control structure to align with MNF-I's replacement organization, USF-I. There were two principle pieces of guidance from General Odierno concerning the transformation of MNSTC-I. First, the new MNSTC-I structure should be modular and designed to seamlessly fall under the U.S. Embassy after the withdrawal of the coalition and American forces. Secondly, the new MNSTC-I structure would not have its own staff but rely on the USF-I staff. General Odierno wanted to integrate MNSTC-I functions into the everyday business of USF-I.

Command and Control Transformation (C2T) Operational Planning Teams (OPTs) had been trying to reorganize MNSTC-I since its inception. MNSTC-I had constantly changed to reflect new and evolving mission requirements. In January of 2009, the OPT did not change MNSTC-I (each directorate had grown comfortable with its mission in relation to its workforce). As coalition forces were drawing down, the CG decided that the force design required a fresh look and assigned Lieutenant Colonel Smith to develop a transformation plan.

Before transformation, MNSTC-I commanded the following subordinate units: the Directorate of Defense Affairs, the Directorate of Interior Affairs, the Intelligence Transition Team, the Iraqi Counter-Terrorism Force Training Team, and the Security Assistance Office (SAO). The Directorate of Defense Affairs included the Coalition Army Advisory Training Team, the Coalition Air Force Transition Team, the Maritime Strategic Transition Team, the Joint Headquarters Assistance Team, and the Ministry of Defense Advisory Team. The Directorate of Interior Affairs included the Civilian Police Assistance Training Team and the Ministry of Interior Transition Team.

Lieutenant Colonel Smith first attempted to redesign MNSTC-I into two parallel organizations: an organization focused on military affairs that would eventually evolve into a normal SAO, and an organization focused on the civilian missions of the MoI and the IP. Based on the MNF-I CG's guidance and normalized relationships with other governments in the region, this seemed like a good split. The Directorate of Military Affairs would be responsible for advising, training, and equipping the ISF. As the Iraqi Army, Navy, and Air Force became more competent, this organization would shrink and eventually become the future SAO located in the U.S. Embassy. Lieutenant Colonel Smith's initial design patterned the organization after the U.S. Military Training Mission to Saudi Arabia. The U.S. and Iraq governments could negotiate the steady-state size of the organization. MNSTC-I would structure the Directorate of Civilian Affairs to eventually fall under the U.S. Embassy (MNSTC-I had been granted special authority to advise the IP. This was not a typical mission for a military organization). As relations with Iraq normalized, this mission needed to be 'civilianized.' There was no existing plan in place to transfer authority over to the DOS. Lieutenant Colonel Smith hoped that the formation of this organization would speed up the process. He briefed his proposal to the MNSTC-I Commanding General. The CG liked the concept but thought it was a step too far and asked Lieutenant Colonel Smith to design something in-between the present MNSTC-I and this proposal.

Lieutenant General Helmick wanted to build a structure around the MNSTC-I mission to train, advise and assist ISF. In order to meet this intent, Lieutenant Colonel Smith designed an organization with three major subordinate organizations. Each organization would have separate departments to support the ISF and the security ministries. The SAO would meet the requirements as the equipping organization to fall underneath the U.S. Embassy at steady state. Based on this structure, the next step was to perform a functional analysis to determine which tasks would fall under which of the new organizations.

After several months of wrangling and infighting, Lieutenant Colonel Smith finally developed the new MNSTC-I organization structure consisting of the Iraq Security Assistance Mission (ISAM) and the Iraq Training and Advisory Mission (ITAM). Both organizations directly fell under the CG, USF-I. The CG assigned them to a Deputy Commanding General for Advising and Training (DCGAT). ISAM would eventually transition to the SAO within the U.S. Embassy, while ITAM would slowly contract as Iraqi proficiency improved or USF-I ceased to exist.

Lieutenant Colonel Smith now focused back on analyzing data. The Iraqis did not have the capability to collect accurate data effectively. Moreover, Iraqis were concerned that poor reports would end up "killing the messenger." The Iraqis would not provide any data concerning the religious or ethnic populations within ISF. On numerous occasions, higher headquarters' inquiries came in requesting this data. It simply was not available.

Lieutenant General Helmick, the MNSTC-I CG, was always overscheduled. There was little time to sit down and discuss matters with him. For him, trust came slowly. Once he knew an officer could produce high quality products, they became a member of his inner circle and he relied on. Initially, he did not see the value of assessments. However, once analysts tailored the program to his understanding and use, he considered it vital. Lieutenant General Helmick truly believed that everything he did should make a positive impact on the stability of Iraq.

Lieutenant Colonel Smith felt privileged to serve with coalition officers: he worked under British officers and had an Australian Major working for him. His superior, Captain Hughes, had served over 30 years in the Royal Navy. When Lieutenant Colonel Smith met Captain Hughes, he did not know what an ORSA analyst was. In short order, he figured it out and tapped into Lieutenant Colonel Smith's expertise as often as possible. British officers were less formal and liked to "have a chat" about things rather than receive a formal PowerPoint presentation.

There was very little ORSA work within MNSTC-I; however, when Lieutenant General Helmick found something technical or complicated, he asked Lieutenant Colonel Smith to take it. It was Lieutenant General Helmick's opinion that assessments were not inherently an ORSA mission. Most of the MOEs created were either immeasurable or could not be validated as an effective way of measuring progress. It was easy to count troops to measure progress before the ISF was at full strength, but how does one measure the progress of the security ministries? JP 3-0 has five pages in section D of Chapter 4 that describe the entire joint assessment doctrine. Officers do not need a special skill set to read those five pages and apply the doctrine.

5.2.32 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel James Ware (MNC-I)

Figure 5-84 Major Marv King and Lieutenant Colonel James Ware

Lieutenant Colonel James Ware of the Mobilization and Deployment Division of CAA, was deployed to Multi-National Corps - Iraq (MNC-I) C5 Assessments from 23 October 2008 to 28 April 2009. He replaced Major Marv King from CAA's Operational Capability Assessments Division and was himself replaced by Lieutenant Colonel John Schotzko from CAA's Force Strategy Division. During the time that the XVIII Airborne Corps was in Iraq, the MNC-I Assessment Cell was located under C5 Plans. After the transfer of authority on 4 April 2009, the MNC-I Assessment Cell moved under I Corp's C3 Operations, JFEC.

Lieutenant Colonel Ware's duties and responsibilities were similar under both the C5 and C3, and the office space never changed. His main responsibility was to conduct operations research for the MNC-I Assessment Cell. He also conducted operational-level weekly trends and geospatial analysis, including attacks by target and weapon type; casualties by category and event type; general, high profile, and anti-armor IED trends; operational results to include caches found, enemy casualties, and detainees; detailed analysis of the city of Baghdad; overall casualties by target and event type; and friendly fire incidents. Lieutenant Colonel Ware also: established authoritative data standards for producing actionable assessments in a combat zone; provided analysis and materials for distinguished visitor briefings; and supervised a two-person team consisting of one Army major and one Air Force captain. Typical recurring and one-time products follow:

DEVONSHIRE PIVOT TABLES

- **Requestor.** MND-SE ORSA analyst.
- **Description.** Extract of SIGACTS III database and pivot tables, created to circumvent bandwidth problems in MND-SE.
- **Technique.** Data management using Access and Excel.

- **Impact.** Enhanced MND-SE reporting and analysis.

SURFACE-TO-AIR TRENDS

- **Requestor.** C3 Air.
- **Description.** Periodic analysis of surface-to-air attack incidents and clusters.
- **Technique.** Geospatial Analysis.
- **Impact.** Used to adjust route planning and aircraft allocation.

WEEKLY TRENDS AND ANALYSIS

- **Requestor.** MNC-I Command Group.
- **Description.** Analysis of trends within the MNC-I area of responsibility.
- **Technique.** Database management, spreadsheets, pivot tables, and operational experience.
- **Impact.** Assisted with operational decision-making within the Corps.

ATTACKS FOLLOWING SURGE/TRANSFER OF AUTHORITY

- **Requestor.** MNC-I Staff and Commander's Initiative Group.
- **Description.** Categorized attacks since Operation Iraqi Freedom troop surge and XVIII Airborne Corps' assumption of authority.
- **Technique.** Pivot tables.
- **Impact.** Used by CG and staff to chronicle Corps' history and contributions in Iraq.

USCENTCOM AVERAGE DAILY ATTACKS

- **Requestor.** MNC-I Chief of Staff.
- **Description.** Displays the daily average number of attacks by week since early 2004.
- **Technique.** Pivot tables.
- **Impact.** Sent to General Petraeus with a short narrative and used as an unclassified progress chart for Very Important Persons (VIPs).

ARBA'EEN/ASHURA TRENDS

- **Requestor.** C2 and C3.
- **Description.** Historical casualty trends for two major religious holidays (Shia). Additional geospatial analysis depicted attack density along pilgrimage routes.
- **Technique.** Spreadsheets, pivot tables, & geospatial analysis.
- **Impact.** Used by C2, C3, and Public Affairs Office for security planning and resource allocation in support of the religious holidays.

MOSQUE SERMON TRENDS WITH REACH BACK TO MAJOR SQUIRES

- **Requestor.** C2 and C5.
- **Description.** Analysis and cleanup of mosque and Friday prayer data.
- **Technique.** Spreadsheets, pivot tables, geospatial analysis, and reachback.
- **Impact.** Sermon trends used to judge public opinion. Reachback efforts made the data more useful and available for entry into CIDNE.

HOST NATION REPORTING

- **Requestor.** MNC-I Chief of Staff.
- **Description.** Addition of Host Nation reporting statistics to "Coalition Only" data.
- **Technique.** Data mining, data management, pivot tables, and systems analysis.
- **Impact.** Decision to familiarize Command Group with Coalition plus Host Nation products and act as lead for MNF-I. Adopted as theater standard on 19 July 2009.

OPERATIONAL HIGHLIGHTS

- **Requestor.** DCG-O and CHOPS.
- **Description.** "Cardiac" chart depicting attack data in areas of special interest. C3Fusion would then overlay with current operations.
- **Technique.** Spreadsheets, pivot tables, and geospatial tools.
- **Impact.** Used as a quick assessment of operational effectiveness and barometer for enemy activity.

SIGACTS MANAGEMENT

- **Requestor.** CHOPS and Knowledge Management Officer.
- **Description.** Quality and process improvement project dealing with Significant Activity reporting in Iraq.
- **Technique.** Data management, Access, VBA, and Excel.
- **Impact.** Data and processes audited with users having high degree of confidence in data fidelity. Cleaned data used by numerous elements in and out of theater (including 9204).

MNC-I CG'S MEDIA MAP

- **Requestor.** Commander's Initiative Group and speechwriter.
- **Description.** Provide short progress statements and verify statistics provided by other staff sections.
- **Technique.** Spreadsheets and pivot tables.
- **Impact.** Used by CG to deliver a consistent message at media events and battlefield circulation visits.

9010/9204 SUPPORT

- **Requestor.** CJ5 and C5.
- **Description.** Provide base data for all reporting, draft MNC-I's initial Section 1.3 input, and verify all statistics.
- **Technique.** Data management, spreadsheets, and pivot tables.
- **Impact.** 9010/9204 accurate and delivered to Congress on time.

FOREIGN FIGHTER FLOW

- **Requestor.** CJ2, CJ5, and C5.
- **Description.** Estimate of foreign fighters who entered Iraq to commit suicide attacks. Backwards forecast using a mix of known data (SIGACTS and HUMINT) and subject matter experts.
- **Technique.** Pivot tables and Monte Carlo simulation.
- **Impact.** Used by CJ2 for the classified 9010/9204 annex and by CJ5/C5 to regularly evaluate key metrics.

SIZE OF THE INSURGENCY

- **Requestor.** CJ2 and C5.
- **Description.** Insurgency size estimate broken down by religious sect and interest group. Estimate used known data to evaluate violence, specifically, sect TTPs and cell efficiency.
- **Technique.** Spreadsheets, pivot tables, and Monte Carlo.
- **Impact.** Used by CJ2 for the classified 9010/9204 annex and by C5 to regularly evaluate key metrics in the quarterly Corps Assessment Board.

BASE CLOSURE TIMELINE

- **Requestor.** C7.
- **Description.** Analysis of time required to close multiple types of CF bases in Iraq.
- **Technique.** Monte Carlo simulation using Microsoft Project, Visio, and VBA.
- **Impact.** Closure process mapped completely and critical path determined. Published in Corps FRAGOs.

SUSPICIOUS INCIDENTS

- **Requestor.** C5.
- **Description.** Level of violence depicted before and after the CHOPS decided to change the 'direct attacks' evaluation process.
- **Technique.** Pivot tables.
- **Impact.** Showed the impact of data management policy changes. Convinced CUOPS to analyze impact of future policy changes.

JOC FLOOR SPREADSHEET

- **Requestor.** C3 Fusion Cell.
- **Description.** Automated tool to pull specific data from CIDNE, perform tabulations, and produce BUA slides. Updated earlier effort (by Major King) and included new information requirements.
- **Technique.** Data management, spreadsheets, and VBA.
- **Impact.** Reduced workload for C3 and ensured a good working relationship.

DRIVERS OF PROGRESS

- **Requestor.** Commander's Initiative Group.
- **Description.** One slide of charts and progress narratives in Iraq over a two-year period.
- **Technique.** Spreadsheets and pivot tables.
- **Impact.** First slide shown to VIPs when visiting.

RESPONSIBLE DRAWDOWN SUPPORT REACH BACK

- **Requestor.** C5.
- **Description.** Review of retrograde planning and planning factors for forces in Iraq.
- **Technique.** Reachback.
- **Impact.** Feedback given in time to shape the Rehearsal-of-Concept (ROC) drill.

LIAISON OFFICER (LNO) MEETING

- **Requestor.** CHOPS.
- **Description.** Weekly coordination meeting to verify and synchronize data delivered at the weekly operations roll-up.
- **Technique.** Data management and pivot tables.
- **Impact.** Consistent accounting method within the Iraq AOR.

CONGRESSIONAL DELEGATION AND VIP SUPPORT

- **Requestor.** Multiple.
- **Description.** On-call support for information requests before, during, and after CODELs and other high-visibility visits.
- **Techniques.** Basic skills that varied by product and request.
- **Impact.** Timely and consistent answers/messages from MNC-I. ORSA PALOOZA (Figure 5-85).
- **Requestor.** CJ9 (COL Markley, Senior ORSA in Iraq).
- **Description.** One-day symposium for team building and synchronization of analytic efforts of analysts in Iraq.

- **Technique.** Not applicable.

CAA ACCESS TO CIDNE

- **Requestor.** Not applicable.
- **Description.** Garnering CAA access to CIDNE servers in CONUS with ORSA permissions. Previous method of revising SIGACTS III made obsolete with new CIDNE workflows.
- **Technique.** Data management.
- **Impact.** CAA retained the ability to provide SIGACTS reachback support.

SUPPORT TO MNC-I TRANSFER OF AUTHORITY (TOA)

- **Requestor.** Incoming MNC-I staff.
- **Description.** Oriented incoming I Corps staff officers on analysis products used by outgoing XVIII Airborne Corps staff.
- **Technique.** Not applicable.
- **Impact.** Smooth transfer of authority and new staff oriented early to capabilities of the Corps Assessments Cell.

Figure 5-85 Iraqi Theater Where Dignitaries Met

Larger national/world events often interrupted and shaped the daily routine. These included:

- A Visit by President George W. Bush and the shoe-throwing incident (December 2008).
- A reduction in CF countries from nineteen to four (December 2008 to April 2009).
- U.S.-Iraq Security Framework Agreement (January 2009).
- Provincial elections (January 2009).
- Iraqi control of International Zone (January 2009).
- Responsible Drawdown planning (March 2009).
- MNC-I transfer of authority from XVIII Airborne Corps to I Corps (April 2009).
- Visit by President Barack H. Obama (April 2009).

5.2.33 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel Bob Bradford (MNF-I)

The Center for Army Analysis (CAA) deployed Lieutenant Colonel Bob Bradford to serve as an ORSA analyst for Multi-National Forces - Iraq (MNF-I) (in a position held by CAA analysts since 2007) from 3 February 2009 through 30 July 2009.

He worked in the Assessments Division of the CJ5 Strategy, Plans, and Assessments Directorate, which was located at Al Faw Palace, Baghdad, Iraq.

Lieutenant Colonel Bradford traveled to Iraq through the CONUS Replacement Center (CRC) at Fort Benning, Georgia. He arrived at Fort Benning on 24 January and departed for Ali Al Salem, Kuwait on 30 January, arriving at Ali Al Salem on 31 January 2009. He departed Ali Al Salem late in the evening of 2 February, arriving in Baghdad, Iraq just after midnight on 3 February. He redeployed from Iraq on 30 July, from Ali Al Salem on 1 August, and arrived in CONUS on 3 August 2009. Shortly before Lieutenant Colonel Bradford's arrival in country, Iraq and the United States implemented a new Security Agreement (1 January 2009) and held provincial elections (31 January 2009). During Lieutenant Colonel Bradford's deployment to Iraq, provincial governments were seated, U.S. combat forces withdrew from cities, villages, and localities (beginning 30 June 2009), and coalition partners redeployed to their countries of origin (beginning 31 July 2009). He replaced Lieutenant Colonel Rob Kolb. Major Ryan Squires, later, succeeded him.

Lieutenant Colonel Bradford served in the MNF-I CJ5 Strategy, Plans, and Assessments Directorate under Rear Admiral David H. Buss (later replaced by Air Force Major General Mark T. Matthews). During Lieutenant Colonel Bradford's rotation, the Assessments Directorate was located at the Al Faw Palace (at the VBC) and at the FOB Union III and the U.S. Embassy-Baghdad (USEMB-B) in the IZ, Baghdad, Iraq. Air Force Colonels Hatfield and McConnick led the division sections and separated responsibilities by JCP Political, Diplomatic, Economic, Rule of Law, and Security LOOs, used to focus U.S. efforts in Iraq. Lieutenant Colonel Bradford led the VBC team that primarily focused on the Security LOO, while another army Lieutenant Colonel (Lieutenant Colonel Kucik, then Lieutenant Colonel Nestler) led the IZ team that focused on the other four LOOs and on synchronizing assessment efforts with the U.S. Embassy.

Lieutenant Colonel Bradford planned his schedule around the weekly battle rhythm of the MNF-I HQ and preparing for his Monday Security Trends brief, which he presented during the Monday BUA. His portion of the briefing consisted of four standard slides and occasional special topic slides. The four standard slides were Iraq-wide security incidents; security incidents broken out by MND; the number of weekly casualties and civilian deaths; and weekly trends for four specific types of attacks. Approximately every other week, Lieutenant Colonel Bradford briefed special topics in the BUA. These special topics answered questions from

MNF-I leadership and others within the Assessments Division. Topics included comparison of security incident levels in different periods; detailed analysis of high profile attacks; and a review of monthly--as opposed to daily or weekly--trends. The BUA was a key synchronization tool of MNF-I and provided the Commanding General with a forum to disseminate his guidance. Each BUA focused separately on one of the five LOOs from the JCP: Security on Monday, Rule of Law on Tuesday, Economic on Thursday, Diplomatic on Friday, and Political on Saturday. The BUA was conducted in a series of briefing rooms in Al Faw Palace and the USEMB-B, and was broadcast via SVTC, affording those staff officers in MNF-I and MNC-I who were not physically present with the ability to listen to the BUA from their desks. Afterward, the Commanding General's Chief of Staff disseminated the CG's guidance through taskings. Lieutenant Colonel Bradford's other key responsibilities included: attending a number of Operational Planning Team meetings, providing support to a number of VTCs, and conducting analysis of security trends for a number of MNF-I staff members.

On Wednesday mornings, the MNF-I Commanding General hosted weekly SVTCs. Participant organizations included USEMB-B, United States Agency for International Development (USAID), MNC-I, MNDs, PRTs, the Office of Regional Assessments, and others as required. Topics for the SVTCs rotated weekly, and addressed 1) Balancing Iranian Influence, 2) Building Civil Capacity, 3) FAQ (the Baghdad defense plan), and 4) Foreign Terrorists and Facilitators (FTF). Each of these SVTCs provided progress reports on JCP objectives. Over the course of one quarter, these SVTCs covered all JCP objectives.

Lieutenant Colonel Bradford supported the Balancing Iranian Influence and FTF SVTCs with analyses. One of the key responsibilities of the Assessments Division was assembling reports for MNF-I's HQ. The most important of these was the 9204 report, a Secretary of Defense quarterly report to Congress. Section 9204 of public law 110-252 required the Secretary of Defense to report quarterly on progress in Iraq. This report, entitled "Measuring Stability and Security in Iraq," answered a number of specific questions and provided an overall assessment of progress in Iraq.

MNF-I, and its subordinate commands, drafted the report and submitted it through CENTCOM and the Joint Staff to OSD. The 9204 consisted of a main report and a classified annex. Main report sections covered political stability, economic activity, the security environment, transferring security responsibility, and ISF training and performance. The report required a three-step approval process consisting of an O-6 level review, a General Officer/Flag Officer review, and a Commanding General review. On receipt of the RFI from OSD, the Assessments Division parsed out specific sections of the report to staff sections and subordinate commands, where O-6 level staff officers reviewed it. The Assessments Division assembled and edited the report, checked data for accuracy, wrote the report EXSUM, and simultaneously submitted it to CENTCOM, the Joint Staff, and OSD. This report came back with edits, RFIs, and additional General Officer/Flag Officer comments. The Assessments Division was the primary office responsible for assembling the report and adjudicating issues. On the last review, the Assessments Division updated recent events, reviewed the report to ensure OSD edits had not changed meaning, and forwarded the report to the CIG for final changes by the CG. The entire process, from RFIs to report publication, took all three months of the quarter.

During his deployment, Lieutenant Colonel Bradford collected input, and reviewed and updated information for the June 2009 report for section 1.3, which covered the security environment. He consolidated input from the staff, assembled the O-6 report, and sent it forward for General

Officer review. During Lieutenant Colonel Bradford's deployment, the National Security Council (NSC) instituted a new reporting requirement that asked MNF-I and USEMB-B for assessments of ten metrics of the situation in Iraq. Lieutenant Colonel Bradford was responsible for assembling the metrics and sub-metrics related to security in Iraq—for the CG's review.

Lieutenant Colonel Bradford was the lead for Assessments support to the Plans Division of CJ5. He provided the analyses for two key areas, the development of the MNF-I OPORD 09-01—covering the Responsible Drawdown of forces from Iraq—and Support Provisions for the drawdown. In March 2009, President Barack Obama announced plans to reduce U.S. Forces below 50,000 by August 2010. Subsequently, the MNF-I planning team developed a detailed plan for achieving all key security goals while meeting this force cap. As a member of the OPT, Lieutenant Colonel Bradford participated in plan development. In the initial planning stages, Lieutenant Colonel Bradford leveraged CAA's experience in analyzing support requirements for theater campaigns.

CAA's Logistics Division provided quick-turn analysis of types of support units that would be required to support maneuver units, and some potential trade space within the force cap. This analysis helped the MNF-I planners to get their subordinate units to reduce their resistance to the force cap and to begin negotiating the final force structure. By providing a feasible alternative, CAA empowered MNF-I planners to bring the interested parties to the table. As planning progressed, Lieutenant Colonel Bradford encouraged planners to integrate statistical metrics early in the development process. Unfortunately, this did not happen, and no one developed these metrics until after MNF-I published the OPORD. Subsequently, Lieutenant Colonel Bradford and others in the Assessments Division provided feedback and support to CJ 1/4/8 as they developed drawdown metrics and a drawdown "dashboard" to track key items. Lieutenant Colonel Bradford worked closely with MNF-I's lead planner for C2T on development of Annex C to OPORD 09-01, which covered the plan to merge seven headquarters into one United States Forces - Iraq (USF-I) HQ. After MNF-I published the OPORD, Lieutenant Colonel Bradford supported the USF-I C2T Tiger Team as they worked a collaborative staff process to develop detailed merger plans for each of the staff sections. He focused on metrics for tracking progress to ensure that planners fully considered these as they prepared for the merger.

Lieutenant Colonel Bradford conducted analysis of security issues in Iraq to support the entire MNF-I staff. This section includes examples of analysis that Lieutenant Colonel Bradford conducted during his deployment. During his first month in Iraq, Lieutenant Colonel Bradford noticed that the Commanding General emphasized high profile attacks (HPAs) and how they influenced perceptions of the security environment. MNF-I defined HPAs by the methods of attacks, to include VBIEDs, SVIEDs, and PBIEDs. Lieutenant Colonel Bradford presented a number of charts of trends by time, location and type. The CG took special interest in one stacked bar chart showing the number of HPAs over time--in each of Iraq's provinces--and a series of maps with density plots showing the density of HPAs across Iraq during different periods. This chart succinctly showed that as the total number of Iraq-wide HPAs decreased, they remained steady around Mosul and Baghdad. General Odiemo valued this chart and requested monthly updates. He included the chart in his standard briefing for Congressional delegations, and used it as one of two slides on the security environment included in his briefing on the drawdown plan that he delivered to the Joint Chiefs of Staff at the Pentagon. This simple display confirmed that while security in Iraq was improving, challenges remained in two of Iraq's largest cities.

After the positive reception of his high profile attacks (HPAs) trend chart, Lieutenant Colonel Bradford continued to analyze these attacks. Many people were making comments about the lethality of these attacks, and so Lieutenant Colonel Bradford attempted to isolate lethality trends. Additionally, Lieutenant Colonel Bradford analyzed KIA and WIA, only to find that they followed the same trends as total casualties. On 24 April 2009, Lieutenant Colonel Bradford briefed the chart in to the CJ5, Rear Admiral Buss. Rear Admiral Buss understood the analysis, noted the points and decided to table this chart until someone asked for it. The lesson from this exchange was that the BUA was much more than an information exchange with the CG. It was not a good place to present new analysis. The BUA was the CG's opportunity to communicate with and synchronize the actions of his large staff. It was critically important for the slides to be self-explanatory and consistent with the Commander's message to CENTCOM and the Joint Staff.

Iraq-Afghanistan lED comparisons

In May 2009, an analyst in the CJ3 asked Lieutenant Colonel Bradford to help him with a set of charts he was preparing for the Commander's Update Brief (CUB) to General Petraeus. The charts showed IED incidents for both Iraq and Afghanistan. As presented, they provided a misleading picture, making it difficult to compare incident levels between theaters. Lieutenant Colonel Bradford led a team to prepare the data using analytically sound practices. On May 19, Lieutenant Colonel Bradford presented the analysis to General Odiemo, who subsequently sent it to the USCENTCOM J3 and J5 to point out their potentially misleading slides. USCENTCOM contacted Lieutenant Colonel Bradford for assistance with restructuring the information to present a more accurate picture.

"Who is shooting whom?"

After the 23 April BUA, General Odiemo asked the CJ5 to analyze what types of targets the different insurgent groups were attacking. Specifically, he was looking to dispel an Iraqi perception that Shia groups only targeted CF and did not target ISF or civilian targets. Unfortunately, the SIGACTS database that tracked security incidents in Iraq did not have a field to allow attribution of attacks to groups (analysts placed it in the text field). An initial scrub of the text field in SIGACTS showed that it attributed less than 30 percent of all attacks to a group of some kind. This attribution rate varied widely between the different MNDs. Some attributed most attacks, while others attributed less than five percent of the attacks. Because of this difference in reporting procedures, Lieutenant Colonel Bradford led a team from across the MNF-I and MNC-I staffs to determine how to capture attack attribution. Consequently, the team developed standard rules for attribution based on method of attack and location of attack. Using this process, the team was able to attribute over 70 percent of attacks. Armed with information, Lieutenant Colonel Bradford analyzed the data and briefed the results to the CG, in preparation for an upcoming key leader engagement with Iraqi senior government officials.

Host Nation Reports

One of the most challenging issues Lieutenant Colonel Bradford faced during his deployment was how to maintain situational awareness of security in Iraq once U.S. combat forces pulled out of cities, villages and localities. The SFA between the U.S. and Iraq required U.S. combat forces to leave Iraqi cities, villages and localities by the end of June 2009. Many leaders anticipated a severe reduction in MNF-I’s ability to maintain a clear and consistent picture of security in Iraq. Lieutenant Colonel Bradford and other analysts worked hard to provide several COAs for

maintaining situational awareness after leaving the cities. These COAs required including incidents reported by ISF but not verified by CF in MNF-I counts. Iraqi reports had increased in number and quality over time. Nevertheless, they were not as accurate or timely as coalition reports, and, more significantly, the coalition could not request updates or additional information on incomplete reports. Still, these reports were the best method available for maintaining situational awareness. Many previous CAA deployed analysts had studied the issue of HN reports. Lieutenant Colonel Bradford leveraged the work of previous analysts, including Lieutenant Colonel Rob Shearer, Lieutenant Colonel Wade Yamada, Major Marv King, Lieutenant Colonel Rob Kolb, and Lieutenant Colonel Jack Ware to provide details on the HN reporting process and the quality of HN reports. This work was invaluable in providing a full and coherent package to the CG for his decision. As anticipated, after U.S. Forces pulled out of the cities, existing measures of security that relied solely on coalition reports dropped significantly.

In early July, General Odiemo directed the CJ5 to "Assemble the ORSAs" to determine the proper way to proceed. Lieutenant Colonel Bradford led the team that would brief the CG on the impact of the change and COAs for how to include HN reports in existing trend reports. After the meeting on 15 July, the CG decided to include HN reported incidents in all future MNF-I counts of security incidents. He directed the CJ5 to draft a memorandum from him thru USCENTCOM to the Secretary of Defense describing the problem with security reporting and how MNF-I would count security incidents into the future.

In conclusion, Lieutenant Colonel Bradford's deployment to Iraq was a rewarding opportunity to contribute to a strategic level HQ. His deployment reinforced four enduring lessons about military organizations:

- Great people serve in military organizations, working together, to do the right thing. While occasionally bureaucratic equities did not align, everyone wanted to contribute to a successful operation.
- Coworkers were a great resource and helped keep each other informed. In an organization with continual personnel flux, it was very important to learn quickly from those who knew the terrain.
- It was always right to ask for help (you may not always get it, but you will never get it if you do not ask). Lieutenant Colonel Bradford found this to be essential as he relied on CAA reachback expertise to support a few key projects conducted by the staff in theater.
- While tensions sometimes ran high in a four-star HQ, maintaining perspective was critically important. Having suffered the death of his brother while in Iraq, Lieutenant Colonel Bradford had a personal and life-changing event to remind him of this.

5.2.34 CAA deployed ORSA Analyst in OIF - Mr. Ron Kollhoff (CJ5 Assessments MNF-I)

Mr. Kollhoff, assigned to the Center for Army Analysis (CAA) Campaign Enabler Division, deployed to CJ5 Assessments, Multi-National Force - Iraq (MNF-I) from 14 February 2009 to 3 August 2009. This report provides a summary of Mr. Kollhoff's deployment to Iraq. He reported to the CRC on 7 February 2009 and departed for Kuwait on 13 February 2009. He arrived in Kuwait on 14 February 2009 and then Baghdad, Iraq on 15 February 2009, replacing Mr. Stuart Wilkes. Mr. Jason Southerland arrived in mid-July to replace Mr. Kollhoff.

During Mr. Kollhoff's tour, CAA had two additional analysts deployed, one on the MNF-I Staff, Lieutenant Colonel Bob Bradford, and one on the MNC-I Staff. Figure 5-86 displays the timeline of Mr. Kollhoff and other CAA analysts.

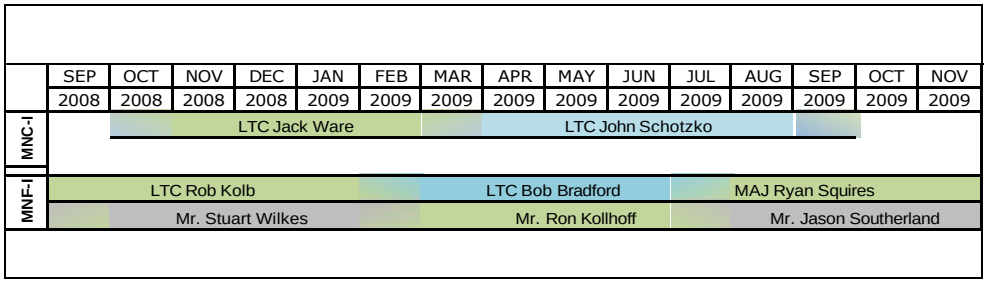


Figure 5-86 CAA Analysts in Iraq

Mr. Kollhoff's deployment began shortly after the January implementation of the SFA between Iraq and the United States, and after the Iraqi Provincial Elections held on 31 January. During Mr. Kollhoff's deployment, Iraq seated its provincial governments, U.S. combat forces pulled out of cities, villages, and localities (completed on 30 June 2009), and coalition partners departed Iraq (no later than 31 July 2009).

Mr. Kollhoff served in the CJ5, Strategy, Plans and Assessments Directorate, under MNF-I. The Director was Rear Admiral Buss for the first four months of Mr. Kollhoff's tour and Air Force Major General Matthews for the final two months. Mr. Kollhoff served in the Assessments Division, which was split between Al Faw Palace at Camp Victory and the IZ at both the new USEMB-B compound and the FOB Union III. When Mr. Kollhoff arrived in Baghdad, his office was initially located in Building 5, FOB Union III, and then moved to the USEMB-B once desk space became available in July. This allowed all of CJ5 Assessments 'Forward' analysts to locate in the same building. Figure 5-87 displays this graphically.

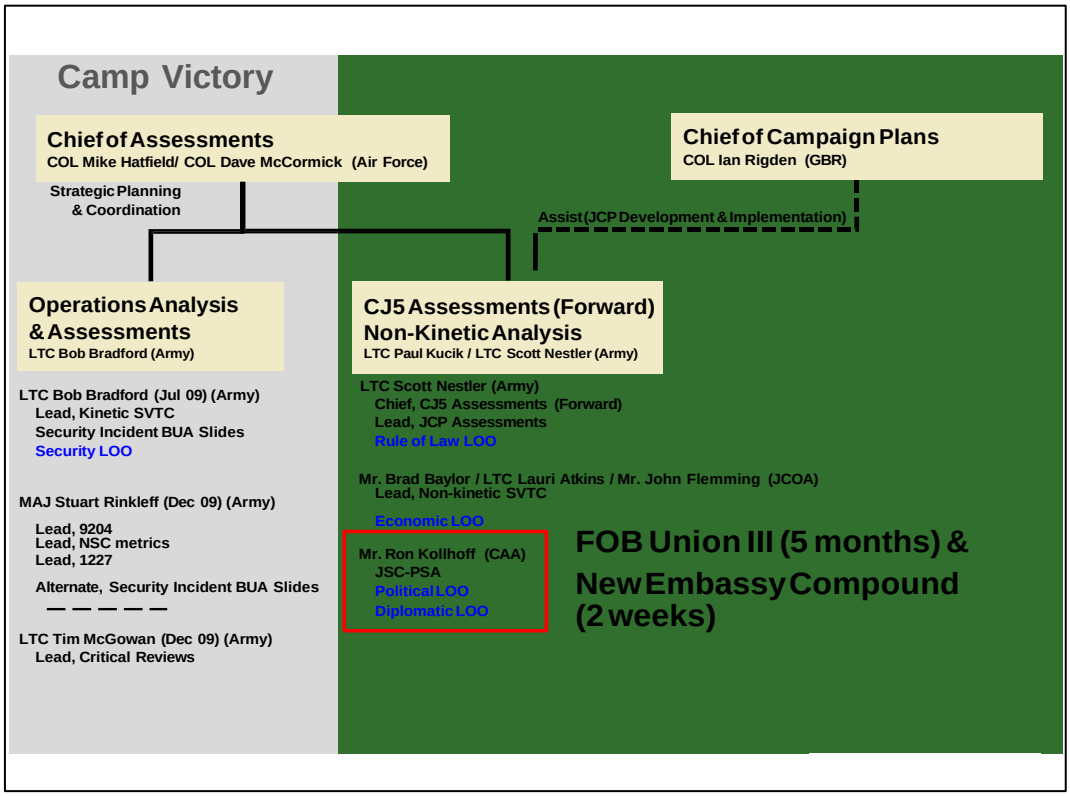


Figure 5-87 CJ5 Assessments Division

Mr. Kollhoff's typical weekly battle rhythm included:

- **Monday**: Security Line of Operations Battle Update Assessment (BUA), Assessments Hour of Power with the CJ5 Director, and Balancing Iranian Influence (OPT) meeting.
- **Tuesday**: Rule of Law BUA and Joint Subcommittee for the Provincial Stability Assessment (JSC-PSA) Working Group.
- **Wednesday**: Secure VTC with the Commanding General and U.S. Ambassador.
- **Thursday**: Economic Line of Operations BUA and JSC-PSA (bi-weekly).
- **Friday**: Diplomatic Line of Operations BUA, Assessments VTC and CAA Current Operations Update (bi-weekly).
- **Saturday**: Political Line of Operations BUA.
- **Sunday**: ORSA Huddle and CAA Deployed Analyst Update.

Mr. Kollhoff's primary responsibilities included: 1) support to owners of non-kinetic Lines of Operations (LOOs) for BUAs; 2) production of reports (OSD, 9204, JCP, Joint Staff Summaries and CG talking points); and 3) measuring progress against the JCP. Additionally, Mr. Kollhoff interacted with the U.S. Embassy Political Affairs office and staff sections for Political-Military Affairs (mainly, the CJ9 Political section). He also supported the Senior Leader Forum (SLF) and produced other reports as required. Additionally, he provided several briefings that highlighted significant events/activities to assist with assessments within the Political and Diplomatic LOOs and to answer quick-turn RFIs.

Mr. Kollhoff assisted the Economic LOO analyst with his development of a top-level assessment designed to be a stage setter for two separate monthly SVTCs dealing with Building Civil

Capacity. The first SVTC focused on the petroleum sector and the second on the agriculture sector. Mr. Kollhoff interviewed SMEs and LOO representatives on the U.S. Embassy and MNF-I staffs to aid in its development. This strategic level assessment highlighted key information and data within the designated JCP conditions and objectives.

Mr. Kollhoff also assisted in the development of a Provincial Stability Assessment Framework (seven major assessment categories focused on five Iraqi provinces) for the JSC-PSA. The CJ5 Director and Iraqi Army Vice Chief of Staff co-chaired the JSC-PSA working group, which met twice weekly at the GoI office. Mr. Kollhoff participated in the working group and presented his work to the co-chairs on a monthly basis.

In March 2009, senior leaders created a new two-star level Joint Campaign Steering Group (JCSG). At the group's request, Mr. Kollhoff initiated a rewrite/update to the Campaign Management and Assessment Annex of the JCP. The updated annex emphasized a new, more simplified measurement/assessment process that focused on measuring progress against the campaign conditions and goals vice on the more than 400 MOEs. Working closely with the CJ5 Assessments and Campaign Plans section, Mr. Kollhoff updated and clearly defined the new focus: synchronization of efforts across LOOs; interagency coordination; assessment of progress; and identification of staff support requirements. JCSG approved the finished product.

One of the major tasks assigned to CJ5 Assessments was to coordinate and staff the quarterly DOD 9204 ("Measuring Stability and Security in Iraq"). This three-month process required close coordination with MNF-I, MNC-I, MNSTC-I and the U.S. Embassy to ensure that OSD received answers to their RFIs and that document writers maintained a consistent theme throughout the report. During its development, writers of the report staffed their drafts through both CENTCOM and OSD staffs and sent the report through three major reviews: O-6 level, General/Flag Officer level, and finally a CG review. Mr. Kollhoff focused his efforts on Section 1.1, Political Stability, where he coordinated inputs from the USEMB-B offices of Political Affairs, Political-Military Affairs, and the Office of Refugee and Internally Displaced Persons Affairs. Mr. Kollhoff worked on the June and September 2009 reports.

As part of the Campaign Assessment process, the JCSG conducted periodic battlefield circulation trips to allow members of the JCSG to get out into the field and have face-to-face meetings with both USEMB-B and MNF-I personnel. Mr.Kollhoff participated in a battlefield circulation trip to Taji, Iraq in June 2009 and met with members of the Baghdad North Embedded Reconstruction Team and the 56th Stryker Brigade Combat Team. He received briefings on select topics involving Governance (capacity building), Economic (agriculture and business development), Public Health, and Internally Displaced Persons.

As part of the Campaign Assessment Process, the JCSG reported progress of the JCP to a quarterly SLF. The MNF-I Commanding General and USEMB-B Ambassador co-chaired this forum. As a potential topic for a panel discussion with senior leadership, the members of the JCSG asked Mr. Kollhoff to research possible discussion points pertaining to Internally Displaced Persons (IDPs) and refugees. IDPs and refugees represented approximately 15 percent of the Iraqi population and were a possible driver of instability. Mr. Kollhoff presented his research and suggested discussion points to the JCSG in June 2009.

Mr Kollhoff gathered the following general observations and lessons learned while deployed:

- CAA has a very good reputation with MNF-I.

- Deployed analysts have the opportunity to work with people of varied backgrounds and skill sets.
- Google is your friend.
- Physical fitness is important and should be part of your daily routine.
- It is easy to become complacent when you live and work "inside the wire."
- Periodic family VTCs conducted at CAA are a morale booster for deployed analysts.

Mr. Kollhoff found his deployment to be a very rewarding and educational experience. Having the opportunity to work at the strategic level brought new challenges and the opportunity to work with many interesting people, both Iraqi and American. Mr. Kollhoff established many life-long friendships, both personal and professional.

Figure 5-88 Members of CJ5 Assessments, March 2009

Figure 5-88 shows the CJ5 Assessments Team, taken in March 2009. These were the analysts assigned when Mr. Kollhoff arrived in February. From left to right, Brad Baylor, Joint Center for Operational Analysis; Mr. Ron Kollhoff, CAA; Colonel Mike Hatfield, Air Force, Branch Chief; Lieutenant Colonel Paul Kucik, Army, United States Military Academy; Lieutenant Colonel Bob Bradford, Army, Center for Army Analysis; Major Stuart Rinkleff, Army, TRADOC Analysis Center – Fort Leavenworth.

Figure 5-89 Members of CJ5 Assessments, June 2009

Figure 5-89 is a picture of CJ5 Assessments, taken outside the Al Rasheed Hotel in the IZ. These were the analysts assigned when Mr. Kollhoff completed his deployment. From left to right, Major Tim McGowan, ARNG; Mr. Ron Kollhoff, CAA; Mr. Brad Baylor, Joint Center for Operational Analysis; Mr. Ron Kollhoff, CAA; Lieutenant Colonel Bob Bradford, Army, CAA; Lieutenant Colonel Paul Kucik, Army, U.S. Military Academy; Colonel David McCormick, Air Force, Incoming Division Chief; Colonel Mike Hatfield, Air Force, Outgoing Division Chief; Major Stuart Rinkleff, Army, TRADOC Analysis Center – Fort Leavenworth; Lieutenant Colonel Lauri Atkins, Army, Joint Center for Operational Analysis.

5.2.35 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel John Schotzko (MNC-I)

Lieutenant Colonel John Schotzko, of the Force Strategy Division of the Center for Army Analysis (CAA), was deployed to Multi-National Corps - Iraq (MNC-I) C3 Operations, from 5 April 2009 to 3 October 2009. He replaced Lieutenant Colonel James Ware from CAA's Mobilization and Deployment Division and was himself replaced by Major Erik Hovda from Human Resources Command. Prior to Lieutenant Colonel Schotzko's arrival, and during the 4 April 2009 TOA ceremony between the outgoing XVIII Airborne Corps and the incoming I Corps, MNC-I's Assessment Cell transitioned from C5 Plans to C3 Operations, JFEC Cell.

MNC-I oversaw MND-N, MNF-W (comprised of United States Marine Corps units), MND-B, and MND-S. MND-S was a blending of MND-C and the British-led MND-SE. The turnover of MND-SE (on 31 March 2009) marked the end of non-U.S.-led MNDs in Iraq.

Lieutenant Colonel Schotzko conducted weekly operational-level trends and geospatial analyses, categorized by: target and weapon type; casualties and event type; general, high-profile, and anti-armor IED trends; operational results that included caches found and detainees; detailed analysis of the city of Baghdad; and friendly fire incidents. Lieutenant Colonel Schotzko established data standards for producing actionable assessments in a combat zone, provided analysis and materials for distinguished visitor briefings, and led a two-person assessment team (one Army Major and one Air Force Major).

Larger theater events often interrupted and shaped the daily routine. Some important events that occurred during Lieutenant Colonel Schotzko's deployment follow:

- U.S.-Iraq Security Framework Agreement (January 2009).
- Provincial Elections (January 2009).
- Iraqi Control of the International Zone (January 2009).
- 'Responsible Drawdown' Planning (March to October 2009).
- Visit by President Obama (April 2009).
- MNC-I transfer of authority between XVIII Airborne Corps and I Corps (April 2009).
- Reduction in Coalition countries, from four to one (April to September 2009).
- U.S. withdrawal from Iraqi cities (June 2009).
- Visits by Vice President Joe Biden (July and September 2009).

These important, and sometimes historic, events shaped the nation of Iraq and U.S. policy/war efforts. The reduction of CF and U.S. presence—coupled with Iraq's increasing independence—clearly produced Iraqi successes.

5.2.36 CAA deployed ORSA Analyst in OIF - Major Ryan Squires (MNF-I)

Major Ryan Squires, of the Center for Army Analysis (CAA) Operational Capability Assessments (OCA) Division, deployed to Multi-National Force - Iraq (MNF-I) CJ5 from July 2009 until January 2010. He replaced Lieutenant Colonel Bob Bradford (followed by Lieutenant Colonel John Dinges). Major Squires served as the MNF-I CJ5 Strategic Security Analyst. His major duties included preparing the weekly Security Trends Analysis for the BUA, assessing the Security LOO for the 2009 JCP, developing the security assessment framework for the 2010 JCP, and performing other analyses and staff actions as directed.

Major Squires deployed during the transition from CF- to Iraqi-led combat operations. At the end of June 2009, just prior to Major Squires's arrival in Iraq, U.S. Forces withdrew from Iraqi cities, villages and locales, turning security over to ISF. Despite continued Islamist Extremist HPAs in Baghdad, and continued ethnic violence in mixed Arab-Kurd populations in Iraq's Northern provinces, the Iraqi government held together. Measures of violence (e.g., security incidents, attacks, casualties and deaths) continued to trend downward throughout Major Squires's deployment. Everyone was cautiously optimistic about ISF's ability to control its own security. U.S. and Iraqi Forces continued to suppress violent factions and create conditions for successful Iraqi elections in early 2010. Operation Iraqi Freedom (a U.S.-led combat operation) concluded at the end of August 2010, and U.S. troops reduced to 50,000.

Figure 5-90 Major Ryan Squires in Al-Faw Palace, Baghdad, Iraq 2009

Most members of MNF-I CJ5 worked out of Al-Faw Palace on Camp Victory, although there was a contingent at the American Embassy - Baghdad (AMEMB-B). The MNF-I CJ5 Director of Strategy, Plans, and Assessments was Major General Mark T. Matthews, USAF. The Deputy Director was Brigadier General Michele G. Compton, United States Army Reserve (USAR). Colonel David C. McCormick, USAF, was the MNF-I Chief of Assessments. The MNF-I CJ5 Assessments cell was responsible for coordinating assessments for all campaign LOOs; preparing the quarterly Congressional 9204 report; and additional activities in support of MNF-I and the JCP.

Major Squires's most high-profile task was to prepare a weekly briefing of security trends (four slides) presented to the MNF-I CG (General Odierno) in each Monday's BUA. These slides provided General Odierno with a meaningful picture of the security situation across Iraq. In preparation for his presentation, Major Squires meticulously coordinated the slide deck with other analysts and staff elements across MNF-I, particularly the CIG. Once approved, analysts disseminated Arabic and English versions to Iraqi advisory groups and USCENTCOM.

As the lead Strategic Security Analyst, Major Squires prepared the quarterly assessment of the Security LOO for the 2009 JCP. The JCP was an annual MNF-I/AMEMB-B joint publication intended to strengthen U.S./Iraq relationships and support the 2008 U.S./Iraq SFA. The JCP Security Annex outlined SFA essential conditions and objectives for establishing and maintaining security throughout Iraq. Each objective included a set of metrics to measure security attainment. Major Squires assembled relevant data to perform these measurements. Once he assembled and organized this information, Major Squires helped the MNF-I CJ5 Strategy cell assess progress along the security LOO so that MNF-I planners and strategists could appropriately modify and update supporting OPORDs and the next (2010) JCP. Major Squires was responsible for a significant portion of the security assessment framework for the 2010 JCP. He worked closely with CJ5 strategy planners to ensure a meaningful, measureable framework. During his deployment, Major Squires was responsible for answering many quick-turn RFIs from the MNF-I Command Group and CJ5. In preparation for the month of Ramadan, Major Squires prepared security trends analyses, including analysis of EFP-use, high-profile attacks, and casualties. Prior to General Odierno's congressional testimony in September 2009, Major Squires prepared a set of briefing papers to assist General Odierno. Most analytic

products required only the ability to interface with AQL and Excel and to chart data for visualization purposes. Major Squires made use of "R" (an open-source statistical package) and ArcGIS to perform his attack trends analysis. Moreover, he found that his working knowledge of Python helped with data manipulation and formatting. Due to the quick-turn nature of his work, Major Squires did not request CAA reachback support during his tour.

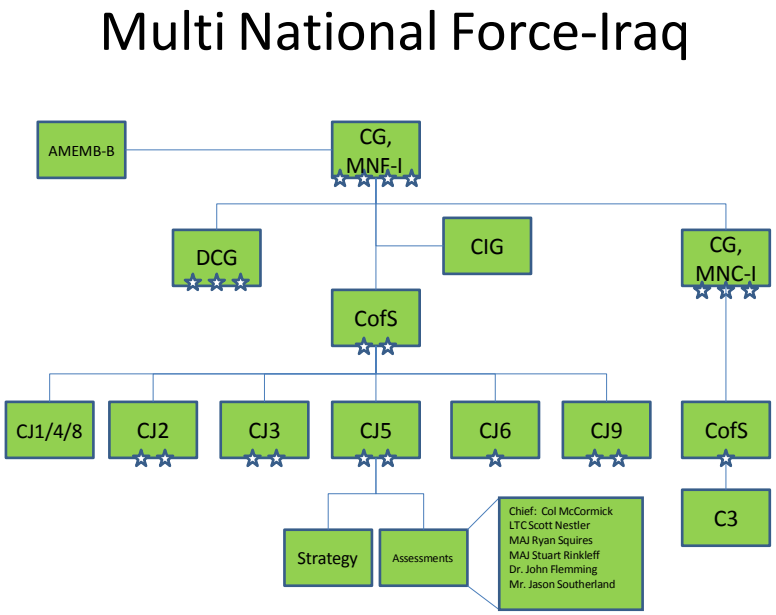


Figure 5-91 Staff Sections that Major Squires coordinated with

Major Squires routinely briefed or submitted his work to decision makers at the two-, three-, and four-star levels. Figure 5-91 depicts some of the staff elements and organizations that Major Squires worked with to complete various analyses and actions. The MNF-I CIG included one analyst, Lieutenant Colonel Joe Baird. Major Squires and Lieutenant Colonel Baird found it essential to coordinate their staff assessments and data analysis efforts to prevent confusion and ensure a coherent message as they completed actions for DOD and CENTCOM. Major Squires worked with CJ2 to produce analyses of attack trends attributable to various insurgent groups. He worked regularly with CJ3 to assess the Security LOO and coordinate analyses. In support of the CJ3 Regional Threats Team, Major Squires produced analysis of high-profile attacks. He coordinated extensively with CJ3 and CJ6 as he attempted to improve Iraqi reporting to support better attack attribution. CJ9 provided polling data results, which analysts used to assess the Iraqi population's perception of security. Major Squires found himself in frequent contact with MNC-I C3. MNC-I C3 managed the CIDNE and SIGACTS databases. MNC-I C3 analysts assessed at the operational level and provided important input to the strategic level assessment.

Although Major Squires worked at the Al Faw Palace, he occasionally traveled to the southern city of Talil to assist an Army Advisory and Assistance Brigade (AAB), the 4th Brigade, 1st Armored Division, and an IA Division HQ. Additionally, he traveled to the AMEMB-B for staff coordination visits. On behalf of the CJ5, Major Squires coordinated efforts to improve the quality and quantity of ISF reports. He started this effort by modifying the CIDNE database to

include more searchable fields for attack categories. Subsequently, Major Squires met and coordinated with Iraqi Ground Forces Command advisors to emphasize the importance of Iraqi Security reporting. He met with IP advisors to emphasize the importance of the IP hotline "TIPS." During Major Squires's limited free time, he exercised and read books on Iraqi culture. Occasionally, he ran 5K and 10K races held on Camp Victory. He met cartoonist Gary Trudeau and attended two U.S.-sponsored events—a speech by California Governor Arnold Schwarzenegger and a concert by singer Billy Ray Cyrus. Major Squires witnessed dozens of severely injured Soldiers—with high spirits despite their changed lives—return to Iraq under the Wounded Warrior Visitor Program. This was a truly humbling experience for him. Without question, Major Squires described his deployment as rewarding, both personally and professionally.

5.2.37 CAA deployed ORSA Analyst in OIF - Mr. Jason Southerland (MNF-I)

Mr. Jason Southerland, of the Operational Capability Assessments (OCA) Division, was deployed to Multi-National Force - Iraq (MNF-I) CJ5 Assessments from 19 July 2009 to 4 January 2010. He replaced Mr. Ron Kollhoff at MNF-I CJ5 Assessments and was not backfilled upon redeployment. Mr. Southerland's primary responsibility was assessments for the JCP Political LOO. Tasks associated with this responsibility included the review and refinement of the JCP re-write and coordination with the U.S. Embassy's political office. Some of Mr. Southerland's other responsibilities included co-development of the Drivers of Instability briefing, participation in the JSC-PSA working group, and editing a quarterly 9204 report. Due to shifting mission requirements in November 2009, Mr. Southerland transferred from the American Embassy to Camp Victory. While at Camp Victory, Mr. Southerland was responsible for coordinating all data input for the Operational Readiness Assessment (ORA) of the entire ISF. Mr. Southerland corrected numerous issues in the record database and had frequent contact with each of the regional MSCs.

The most important event that occurred while Mr. Southerland was in Iraq was the negotiation within the Iraqi Council of Representatives (CoR) of the 2009 national election law. Iraqis first passed the law on 7 November 2009, though Vice President Tarek al-Hashimi vetoed it. At the time, Mr. Hashimi explained that he vetoed the law because it had fewer provisions for Sunni representation than other drafted laws. Iraqis again passed the national election law on 7 December 2009, this time without an executive veto. Had the Executive approved the law in November, the 2010 national elections would have taken place in January 2010, as required by the Iraqi constitution. Delaying the passage of the law from November to December delayed the election from January 2010 to March 2010. This delay was due to the logistical and administrative requirements outlined by the Iraqi organization responsible for all elections—the Independent High Electoral Commission. Other significant events during Mr. Southerland's deployment included the return, or location, of numerous missing persons and several high-profile attacks on Iraqi government institutions. On 2 August 2009, the U.S. recovered the remains of Captain Michael Speicher, presumed first casualty of the first Gulf War. In December 2009, Peter Moore, a British contractor missing for more than two years, returned alive. High profile attacks against the Iraqi government occurred on 19 August, 25 October and 8 December 2009.

The CJ5 was a USAF Major General and his deputy was a U.S. Army Brigadier General. A USAF Colonel led the analysts in CJ5 Assessments: five U.S. Army analysts (four military and Mr. Southerland), and a civilian economic analyst from the Joint Center for Operations Analysis.

While participating in the development of the MNF-I JCP, Mr. Southerland worked closely with the CJ5 Chief of Campaign Plans, a United States Navy Captain. To access the JCP, Mr. Southerland worked closely with the MNF-I CJ9 political section, and two DOS organizations—JSPA and the American Embassy's political office.

In July 2009, a joint MNF-I/American Embassy committee decided to 'update' the JCP. While MNF-I desired to re-write the plan, the U.S. Embassy was concerned that the workload associated with a complete re-write of the campaign would inhibit its ability to meet regular work requirements. Ultimately, the JCP was re-written. Mr. Southerland reviewed the base document and provided substantive feedback to shape the final, published JCP base document. Unlike previous JCPs, the base document in the 2010 JCP was unclassified.

In addition to reviewing the base document, Mr. Southerland provided substantive input for two of its annexes. These annexes were the Political Annex (Annex A) and the Campaign Management and Assessment Annex (Annex K). The U.S. Embassy was responsible for the overall content in Annex A. Their political section pulled the previous JCP's Political Annex and used it for the re-write. When Mr. Southerland reviewed the draft document, he realized that the conditions and objectives were not specific. That is, the conditions were not finite states of existence toward which the U.S. Embassy would work, and the objectives were not discrete changes in the operating environment that would create the desired conditions. Given this recognition, Mr. Southerland worked with the U.S. Embassy's political section to revise the conditions to be finite states of existence and the objectives to be desired changes in the operating environment. Reshaping the objectives eased the process by which Mr. Southerland, in coordination with the U.S. Embassy political section, identified and codified appropriate MOEs for future assessments.

Annex K laid out the various leadership forums that MNF-I and the American Embassy used to manage the JCP. It also laid out specific guidelines for conducting quarterly assessments. Mr. Southerland provided significant input to the senior leader assessment calendar. The CJ5 produced the calendar to create a cycle that was responsive enough to address urgent issues, yet focused enough to maintain long-term, strategic objectives for the U.S. Embassy and MNF-I.

Another of Mr. Southerland's responsibilities was to participate in the JSC-PSA working group. The JSC-PSA was a subcommittee established under the SFA between Iraq and the United States. Unlike other subcommittees, the JSC-PSA did not address any specific articles of the agreement. The JSC-PSA grew out of a previous assessment conducted by Iraq and the United States that determined when the ISF could assume responsibility for security in the various provinces—an assessment called 'Provincial Iraqi Control (PIC).' As a member of the working group, Mr. Southerland identified questions and specific data points that would allow the Iraqis to assess the stability in their provinces. The preponderance of questions and data points were of a social, economic, and political nature. The working group's efforts resulted in the first assessment under the new SFA, which they presented to the JSC-PSA in October 2009.

On a quarterly basis, CJ5 Assessments had to coordinate and staff the completion of the DOD 9204 report. This was a four-step process: distributing the RFIs from OSD to the appropriate major subordinate commands and staff sections of MNF-I; staffing their responses through an O-6 level review; a General/ Flag officer level review; and then the CG's review. At each step, OSD would have additional RFIs and edits. Each level required answering the RFIs, fact-checking assertions, editing for clarity and readability, and coordinating all changes until staff

coordinators gained the concurrence of the original authors and staff sections. This was a three-month process requiring approximately four weeks of effort for each report. Mr. Southerland's role was to assist the CJ5 Chief of Assessments in writing the executive summary, and then to work with the authors from the various MNF-I staff sections to produce Section 1.1 on Political Stability.

One major and ongoing analytic effort of CJ5 Assessments was the search for alternate security measures and other measures of campaign success. Changes in the operating environment motivated the search for alternate security measures. A major condition in the SFA required all United States Forces to withdraw from cities, villages, and localities by 30 June 2009. One downside to this agreement, referred to in the ORSA Community as 'combat forces out of cities,' was a reduced visibility of events as they occurred. This loss of visibility was a manifestation of the classic 'If a tree falls in the forest and no one is there to hear it, does it make a sound?' question. MNF-I leadership was concerned that without Soldiers to report violence and other events, they might not receive accurate reporting of such events. Thus, CJ5 Assessments sought ways to verify the occurrence of violence and other important events by other means.

Mr. Southerland began his search using common analytic techniques such as correlation between variables. He discovered that it was frequently useful to modify common variables and indicators in various ways and to test how these modifications affected various correlations. For instance, Mr. Southerland performed a sample analysis using inflation data available from the Iraqi Central Organization for Statistics and Information Technology. Inflation is simply the ratio, over some period, of the Consumer Price Index. The most common period over which this ratio is applied is twelve months. Inflation is typically a year-on-year metric, and indicates, relative to the previous year, how much more it costs a consumer to purchase a standard 'market basket of goods.' Thus, inflation is an indicator of economic hardship.

Mr. Southerland hypothesized that given the uncertain nature of day-to-day life in Iraq, it might make more sense to measure inflation over a shorter period, say three to six months, and analyze the correlation between these inflation metrics and the occurrence of violent incidents. Mr. Southerland believed that if economic factors truly did affect the population's attitude regarding violence, inflation would be a reasonable summary metric of economic factors. He further hypothesized that the points of reference utilized by Iraqis to compare their economic well-being might be significantly shorter than one year. Iraqis might focus on the recent past as a reference for how well off, economically, they were.

To test this hypothesis, Mr. Southerland gathered Consumer Price Index information for every month from 2004 through 2009. Then, for each period from one to twenty-four months, he computed inflation by taking the ratio of Consumer Price Indices. He then identified, for each month, the total number of violent incidents. Finally, for each inflation period, one month to twenty-four months, he calculated the correlation between total monthly violent incidents and the inflation and plotted the correlation for each inflation period as a function of the length of the period over which the inflation was measured. If Mr. Southerland's hypothesis was correct, he expected this graph to have increasing correlation up to some point, probably in the region of three to six months, and then to have decreasing correlation from this maximum point.

Mr. Southerland's hypothesis was partially correct. He correctly predicted the shape of the curve (i.e., increasing up to a point and then decreasing without correlation from that point forward), though his expectation of what that point would be was incorrect. In reality, the highest

correlation occurred between inflation measured over eighteen months and violent incidents. Inflation measured over eighteen months was a reasonable predictor of violence. Therefore, inflation legitimately represented an alternate measure of security. Unfortunately, due to scheduling conflicts, Mr. Southerland could not fully present his findings to Major General Matthews.

When Mr. Southerland moved to Camp Victory, his responsibility shifted to coordinating the ORA of the entire ISF, less the IA. The ISF consisted of the Iraqi Army, Federal Police, Department of Border Enforcement, Port of Entry Directorate, Provincial Joint Coordination Centers and Regional Operations Commands. Mr. Southerland managed a large database that served as the single reporting point for all inputs from the MSCs. Mr. Southerland restructured the database to make uniform inputs from all units and to improve the reporting process. He also coordinated with the MSCs to ensure that they input their data accurately and on time.

Mr. Southerland enjoyed his deployment experience. Perhaps his fondest memory was his tour of the 'Tomb of the Unknown Soldier.' He greatly appreciated the professionalism with which the Iraqi Honor Guard served and the close ties they had with the American Honor Guard. Though these two groups were originally strangers, they united with honor and duty to carry out their important mission.

Mr. Southerland notes the following lessons learned from his deployment:

- Have knowledge of the military planning process. This is crucial. Equally important is the ability to think, write, and communicate clearly.
- Prepare for situations to change.
- Be flexible.
- Think critically and speak up when appropriate.
- Find a reasonable daily schedule and stick to it. Make time for exercise, rest, and food.
- Remember that U.S. Embassy personnel are stretched thin, maintaining their regular duties as well as coordinating with MNF-I on the inter-agency campaign.

Over all, Mr. Southerland's deployment to Iraq was a remarkable experience and an invaluable education. He experienced life working in the inter-agency environment as part of a major warfighting HQ. The people he worked with and interacted with have forever left their mark on him, for the depth and breadth of their experience and the impact they made (and continue to make) on Iraq and the future security of the United States.

5.2.38 CAA deployed ORSA Analyst in OIF - Lieutenant Colonel John Dinges (USF-I)

Lieutenant Colonel John Dinges of the Resource Analysis (RA) Division, deployed to United States Forces - Iraq (USF-I) J5 Assessments from 13 December 2009 to 15 June 2010. He replaced Major Ryan Squires at Multi-National Force - Iraq (MNF-I) CJ5 Assessments and was succeeded by Major Matt Dorsey. Lieutenant Colonel Dinges served as the Strategic Security Analyst, and he was primarily responsible for security assessments and the management of security-related data and reports. Tasks associated with these responsibilities included preparing and briefing the Weekly Security Incident and Casualty Trends slides for the BUA, providing

data analysis to support strategic and operational assessments and reporting, and responding to all security-related RFIs.

Lieutenant Colonel Dinges's tour of duty in Iraq included a significant milestone in Iraq's history. On 7 March 2010, Iraqi voters participated in their second parliamentary elections. The elections were especially noteworthy due to the degree of leadership exhibited by the GoI, which successfully planned, organized, secured and executed the elections. U.S. diplomats and military largely served in advisory roles and only intervened at the GoI's request. Despite attempts by Violent Extremist Organizations (VEOs) to disrupt the election process, voter turnout was high throughout Iraq and the overall impact of violent incidents was minimal.

The election results support this assessment, as the seats evenly split among the three main parties. Al-Iraqiya led by Ayad Allawi received the most votes with 91, State of Law led by current Prime Minister Nouri al-Maliki received 89 votes, and the Iraqi National Alliance led by Ibrahim al-Jafaari received 70 votes. However, this somewhat equitable distribution failed to produce a clear winner, thereby slowing the process of forming the government and selecting a new prime minister and cabinet. An initial appeals process resulted in a vote recount for Baghdad and delayed the certification of the election results until 1 June. Subsequent negotiations and efforts at compromise did not produce substantial progress, and the issue remained unresolved at the time of this report.

Despite the slow process of government formation, United States Forces (USF) and ISF partnered operations successfully sustained the comparatively low level of security incidents during Major Squires's deployment. Periodic instances of violence still occurred, but VEOs were unable to maintain a sustained level of violence and failed to incite sectarian violence or a full-scale insurgency. Moreover, the ISF increasingly assumed a lead role in planning and executing security operations, enabling USF to continue to downsize throughout the spring and summer of 2010. U.S. combat operations concluded at the end of August 2010, with troop levels below 50,000. To reflect this change in mission, on 1 September 2010 the name of U.S. operations in Iraq changed from Operation Iraqi Freedom (OIF) to Operation New Dawn (OND).

On 1 January 2010, MNF-I officially transitioned to USF-I and the CJ5 became the J5. Figures 5-92 and 5-93 provide partial organizational charts for MNF-I and USF-I. Most members of USF-I J5 were located at Al-Faw Palace on Camp Victory, although a small contingent was located at the AMEMB-B. The USF-I J5, Director of Strategy, Plans and Assessments was Major General Matthews, USAF. The Deputy Director was Brigadier General Michele G. Compton, United States Army Reserve. Col David McCormick, USAF, was the J5 Chief of Assessments. As part of the transition to USF-I, J5 Assessments decreased its strength from 18 to 12 personnel: a USAF colonel served as Division Chief for six U.S. Army analysts, one USAF analyst, one Air Force Test and Evaluation officer, one Foreign Area officer, one geo-spatial analyst, and one Navy submarine warfare officer. The major change in organizational structure during the reorganization was the merging of the I Corps Assessment Cell into J5 Assessments. Consequently, J5 Assessments assumed responsibility for assessing both strategic and operational LOOs. However, the III Corps operations research analysts did not assume these duties as expected upon their arrival in February 2010 and, instead, worked on the personal staff of the Deputy Commanding General for Operations.

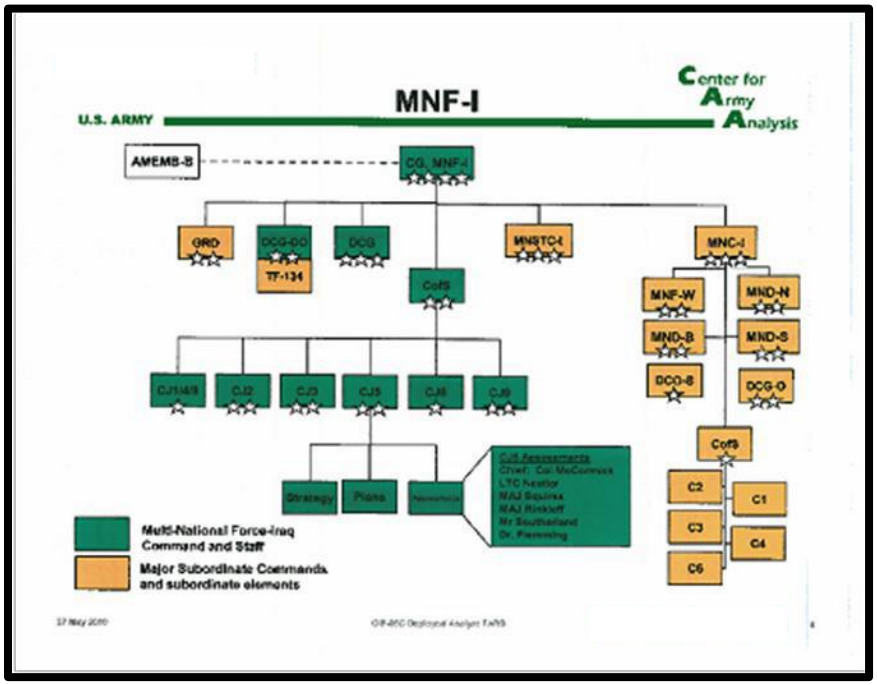


Figure 5-92 Simplified MNF-I Organizational Chart

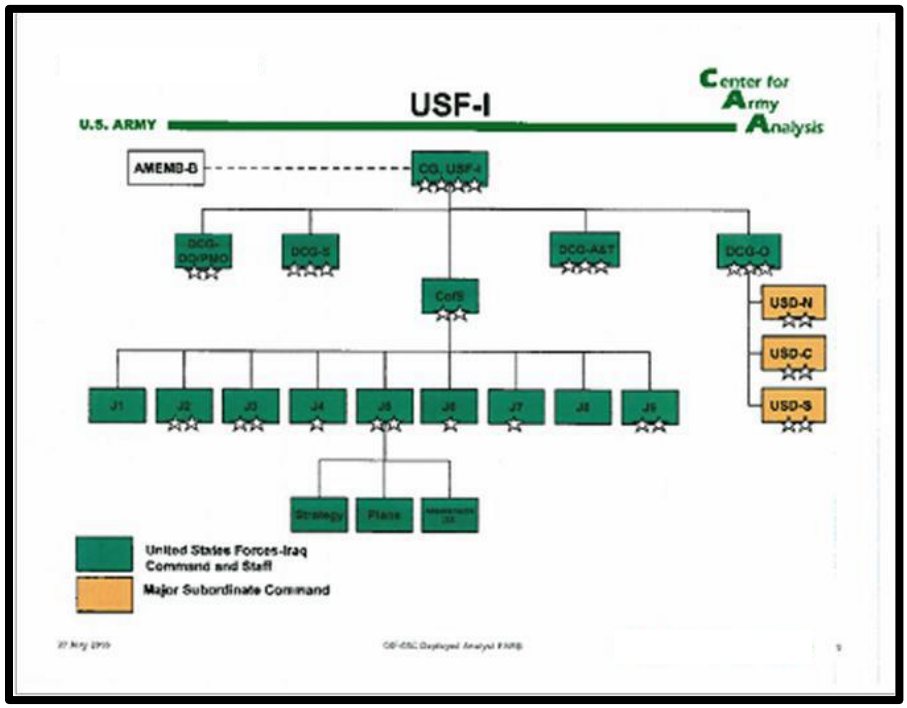


Figure 5-93 Partial USF-I Organizational Chart

Lieutenant Colonel Dinges's primary responsibility within J5 Assessments was to prepare and brief weekly security incidents and casualty trends during the BUA to the USF-I CG, General Odierno. This briefing consisted of four slides that outlined attack and security trends in Iraq and portrayed them in relation to trends since January 2009. Each week, Lieutenant Colonel Dinges reviewed weekly incidents in Iraq to present a meaningful picture of security in Iraq to General Odierno. Additionally, Lieutenant Colonel Dinges prepared and briefed proposed

modifications to these slides. General Odierno agreed with the improvements of scale, content, and readability. Prior to presentation at Monday's BUA, Lieutenant Colonel Dinges carefully coordinated the four slides with other analysts and staff elements in USF-I, particularly the CIG. Following the briefing, translators translated the slides into Arabic and disseminated both the English and Arabic versions of the slides to Iraqi advisory elements as well as to USCENTCOM.

Lieutenant Colonel Dinges was additionally responsible for responding to all security-related RFIs. These requests came in three main forms: 1) direct tasks for the J5 CG, 2) tasks from the J5 CG in a supporting role, and 3) lateral requests for support from other staff directorates. The first category of RFIs was the most time-consuming, normally lasting between two to three weeks to return.

Lieutenant Colonel Dinges was responsible for two major tasks in direct support of General Odierno. First, in January 2010, General Odierno directed J5 to develop a summary of the evolution of the security environment between 2008 and 2009. Another analyst in J5 prepared the initial response but, due to an unclear tasking directive, did not satisfy General Odierno's request. Lieutenant Colonel Dinges assumed this duty as lead analyst and worked with other staff members within the J2 and J3 to complete the task. He compared the 2008 and 2009 security environment across a wide spectrum of factors, including the impact of friendly operations on VEOs, the progress of ISF growth, and the impact of improved security on economic, political, and rule of law areas. Lieutenant Colonel Dinges briefed his final presentation to the Commanding General and his staff, with very positive feedback.

In February 2010, Lieutenant Colonel Dinges was tasked to analyze the security environment surrounding the previous parliamentary elections of December 2005 and present the results as one of four topics within an election update to the entire USF-I senior staff. This briefing provided the USF-I staff with historical insight into violence trends from the previous election as an indicator of potential violence in the March 2010 elections. Lieutenant Colonel Dinges reviewed all security-related metrics during the pre- and post-election periods and aligned them with major events such as the Congressional Referendum in October 2005, the Samarra Mosque bombing in February 2006, and the formation of the government in May 2006. He analyzed the data by province over time and drew out possible indicators. Again, the briefing was well-received and generated discussion across the staff and summary comments from the Commanding General.

In addition to these tasks, Lieutenant Colonel Dinges regularly prepared quick-turn supporting information and graphical summaries of security trends for General Odierno, including a series of papers in advance of the CG's testimony before Congress in June 2010. Besides these requirements, Lieutenant Colonel Dinges also supported the J5 Director and other staff sections with security-related analysis (e.g., EFP) and border-related incident trends for the J2, security incidents trend analysis in the Southern Baghdad Belts for the J3, Election Day violence analysis for the J5, and HPA trends for the J5/J9. Most analytic products required only the ability to interface with a database using SQL or Excel and the ability to chart the data for visualization purposes (a working knowledge of ArcGIS was critical to the graphical portrayal of data and trends, and VBA proved immensely helpful for data manipulation and formatting). Due to the quick-turn nature of his work, Lieutenant Colonel Dinges did not require reachback support during his tour.

Lieutenant Colonel Dinges routinely briefed or submitted his work to decision makers at the two-, three-, and four-star level. The USF-I CIG included one analyst, Major Derek Burt. It was essential that Lieutenant Colonel Dinges and Major Burt coordinate their staff assessments and data to prevent confusion and to ensure that they reported a coherent message to DOD and USCENTCOM. Lieutenant Colonel Dinges also worked with J2 to analyze attack trends attributed to various insurgent groups. He worked regularly with J3 in order to develop the security section of the quarterly 9204 Report to Congress, participate in mission analysis, and coordinate analytic products. Additionally, he worked extensively with J9 to review casualty figures reported in the media, assess HPA trends, and analyze polling data related to perceptions of security. Finally, Lieutenant Colonel Dinges was in charge of overseeing the bi-weekly development of the SIGACTS database and maintaining the data definitions used by analysts across the staff.

In summary, Lieutenant Colonel Dinges found his experience as a deployed analyst to be professionally rewarding and challenging. The entire experience of deployment and service in a joint, strategic-level HQ was valuable, and a summary of some important observations and lessons includes the following:

- Deploying analysts should have a basic understanding of databases and be able to query them using SQL.
- Deploying analysts should know how to automate tasks using VBA or some other scripting language.
- Deploying analysts should develop a good working knowledge of the history, culture and U.S. strategy for the area. This should include a good geographical knowledge of provinces and major cities, as well as the ethnic fault lines that run throughout the AOI.
- Lieutenant Colonel Dinges read several books concerning COIN operations and OIF, and this proved to be a valuable resource in placing the day-to-day events into context.
- Finally, analysts should understand the importance of staff coordination in their deployed HQ.

5.2.39 CAA deployed ORSA Analyst in OIF - Major Matt Dorsey (USF-I)

Major Matt Dorsey of the Campaign Enablers Division of the Center for Army Analysis (CAA), deployed to United States Forces - Iraq (USF-I) J5 Assessments from 29 May 2010 to 6 June 2010, replacing Lieutenant Colonel John Dinges. Major Dorsey assumed Lieutenant Colonel Dinges's duties and responsibilities as the USF-I J5 analyst for strategic assessments. Major Dorsey volunteered for a six-month deployment to Iraq and reported to the Continental U.S. (CONUS) Replacement Center (CRC) at Fort Benning, Georgia on 29 May 2010. He flew to Kuwait on 4 June 2010, and finally arrived in Baghdad on 6 June 2010.

Major Dorsey's main responsibility was to answer all security-related RFIs. RFIs came from multiple sources: 1) directorates outside of USF-I; USF-I senior leadership; and USF-I internal staff elements. Usually, RFIs involved a quick response (24-72 hours); however, depending on the level of detail and complexity, some RFIs took up to three weeks to answer.

Another one of Major Dorsey's primary responsibilities was to provide General Odierno with Iraq-wide weekly Security Incidents and Casualty Trends during the BUA, which occurred every Monday. This presentation consisted of four slides that outlined Iraq-wide weekly security incidents and compared them to weekly trends back to January 2009. Prior to Monday's BUA,

Major Dorsey, along with multiple USF-I staff officers (from the CIG, J3 Current Operations, J9 Strategic Communications, and J1 Personnel), meticulously reviewed the four slides for accuracy. After Monday's BUA, J5 translators converted the slides into Arabic. Staff officers disseminated both versions throughout USF-I and its advisory elements, and USCENTCOM.

From the beginning of OIF, March 2003, CF primarily focused on improving the Security LOO. After the Iraq surge—when CF withdrew from the cities—ISF led security operations. USF-I restructured their forces as Advisory and Assistance Brigades (AABs) and decreased troop levels to 50,000. Major Dorsey's first assigned RFI was to provide security-related information papers for General Odierno's testimony before the Senate Armed Services Committee on 24 June 2010. The information papers displayed attacks and casualty trends by methods of engagements. The suspense was extremely short and time sensitive. These information papers provided General Odierno with strategic level security situational awareness, which assisted him with his testimony.

In July 2010, CAA requested that Major Dorsey provide support for the ORSA Operations Training Course at Fort Lee, VA, delivered through Secured Video Tele-Conferencing (SVTC). Major Dorsey's support focused on USF-I Strategic Overview, Organization, Assessments, and RFIs. Training coordinators directly incorporated redeployed analysts into the ORSA Operations Training Course curriculum in order to provide deploying analysts with information pertaining to the strategic and operational environments, living and working conditions, and to answer their questions.

Also in July 2010, J5 tasked Major Dorsey with updating the previous Ramadan Analysis Study from July 2009, conducted by Major Ryan Squires, which included 2009 historical security environment data. The purpose of the study was to examine the trends of Iraqi Ramadan violence since 2004 and present any distinguishing characteristics of increased violence compared to adjacent months. Using the Islamic Calendar, Major Dorsey analyzed multiple security-related metrics of pre-, mid-, and post-Ramadan months from 2004 to 2010. His informative briefing was well received by the USF-I senior leadership, including the Commanding General. The Ramadan Study provided insights and situational awareness for the CG's expectations of the Iraq-wide security environment for the 2010 Ramadan.

In addition to these tasks, Major Dorsey routinely proofread reports from the USF-I CIG and USF-I J9 STRATCOMM for content, clarity, accuracy, and message. Coordination of staff assessments ensured a consistent message to HQ. Occasionally, for their publications, the USF-I J9 PAO contacted J5 Assessments for recent security-related violence data. Any J9 PAO RFI suspense was time-critical. By design, the data requested was easily accessible from the SIGACTS III Access database, queried using SQL or Excel. As a common practice, all data given to J9 PAO was unclassified.

Major Dorsey also chaired the weekly USF-I ORSA huddle with representatives from CIG J5 Assessments, Counter-IED Operations Integration Center (COIC), J5 FUOPS, and J9 STRATCOMM. The purpose of the meeting was to discuss the previous week's events, share RFI products, and ask for any needed assistance.

Operation New Dawn (OND) officially signified a new era in Iraq. On 1 September 2010, General Lloyd J. Austin III replaced General Raymond T. Odierno as USF-I Commanding General. USF-I's purpose shifted from security to one of economical and political development--using the 'Rule of Law' LOO. By 31 December 2011, all USF-I forces were required to

withdraw from Iraq. USF-I and the U.S. Embassy collaborated during this transition phase to set the conditions for Iraq to become a U.S. Strategic Partner. As of this writing, the U.S. Embassy is scheduled to take ownership of all four LOOs (Economic, Political, Rule of Law, and Security) on 31 December 2011.

During the final two months of Major Dorsey's deployment, he supported the USF-I staff in wargaming efforts. The wargame produced multiple COAs for withdrawing all USF from Iraq by 31 December 2011. Major Dorsey provided analytic expertise and insights with the sequencing of USF withdrawal and bases closures, while having USF available to support specified troop tasks directed by the Commanding General. Ms. Renee Carlucci, Major Dorsey's replacement, assumed the role of USF-I J5 Assessments lead analyst when Major Dorsey redeployed.

In summary, Major Dorsey's deployment was both professionally gratifying and enlightening. The experience of serving on a strategic-level HQ Joint Staff was invaluable.

Major Dorsey gathered the following general observations and lessons learned while deployed, in order of precedence:

- Timing is everything.
- Vital information is required to make command decisions—within the framework allotted—and affect the operational environment and/or task. It is better to give Senior Leadership an early 80 percent solution than to give them a late 100 percent solution.
- Pay attention to detail.
- Mistakes hinder time and progress. Always check, double check, and triple check your work. Once you attach a document to an email and hit 'send,' there is no going back. Always verify attachments one last time.
- Ask the right question of the right person.
- As a staff officer, you will complete many tasks. It is important to prioritize by suspense and understand the task immediately. Know SME POCs before receiving RFIs. It will save valuable time.
- Packaging is key.
- If your products are not readable and professional, you will waste the recipient's valuable time, which affects your credibility as an analyst.
- Everything has a suspense.
- It is your job as an analyst to meet suspenses and provide senior leaders with accurate products that improve the operational and strategic environments.

Figure 5-94 Members of USF-I J5 Assessments

Figure 5-94 shows USF-I J5 Assessment analysts in the Al Faw Palace basement. From left to right: Major Don Hilliard, USAF, Strategic Analyst; Major Matt Dorsey, USA, Strategic Analyst; Lieutenant Matthew Collinsworth, USN, Strategic Analyst; Lieutenant Colonel Paul Ritkouski, USA, Deputy, USF-I J5 Assessments; Colonel Kevin Burns, USAF, Division Chief, USF-I J5 Assessments; Mr. Jesse Merkhael, USA, USF-I J5 Assessments Linguist.

5.2.40 CAA deployed ORSA Analyst in OIF - Ms. Renee Carlucci (USF-I)

Ms. Renee Carlucci of the Force Strategy Division of The Center for Army Analysis (CAA) deployed to the United States Forces - Iraq (USF-I) J5 Assessments Division from 20 November 2010 to 4 May 2011. She replaced Major Matt Dorsey and was the last CAA analyst deployed to Iraq (Human Resources Command (HRC) filled this position with Major Trish Ginther from United States Army Recruiting Command).

Ms. Carlucci served as the Deputy Division Chief to Major General Noel "Tom" Jones. She also served as the Acting Division Chief in his absence. The Assessments Division had a number of key tasks, to include managing the Operational Assessment for USF-I's current OPORD; producing the strategic assessment for the JCP; preparing congressional reports; maintaining the SIGACTS database; reporting significant activities, and conducting analyses. As Deputy Division Chief, Ms. Carlucci shaped work assignments and performed administrative functions.

Major General Jones asked Ms. Carlucci to undertake a special project to develop a discrete-event simulation model to assess USF-I's ability to meet its mission to retrograde all equipment by 31 December 2011. Ms. Carlucci served as the primary modeler and developed a series of models and excursions using Arena software to assist the Command in determining limiting factors and COAs for retrograde. Ms. Carlucci led a large cross-functional Joint Planning Team (JPT) and coordinated regularly with, and briefed as necessary, leaders and liaison officers from U.S. Army Forces, U.S. Central Command (specifically, Army Central (ARCENT)), 1st Theater Sustainment Command (TSC), 402nd Army Field Support Brigade (AFSB), 103rd Expeditionary

Sustainment Command (ESC), Surface Deployment and Distribution Command (SDDC), and other supporting organizations.

General Austin had assumed command of USF-I on 1 September 2010 at the start of OND. While he was communicating a sense of urgency to his staff and forces in meeting OND mission objectives, Iraqis were making steady progress toward self-governance and national security, and numerous important events were occurring around the world. These events included: North Korea's shelling of Yeonpyeong Island; Southern Sudan's referendum on independence; unrest and populace uprisings across the Middle East—resulting in governments falling in Tunisia and Egypt; U.S. and international support to a no-fly zone in Libya to stop Muammar Gaddafi from slaughtering his own people; and a 9.0 earthquake and tsunami in Japan. CF were steadily transitioning numerous tasks and activities to the GoI, the U.S. Embassy-Baghdad, and USCENTCOM. The most important event to occur while Ms. Carlucci was in Iraq was the formation of the Iraqi government on 21 December 2010. Iraqis initially held Parliamentary elections on 7 March 2010; however, Iraqi government formation was delayed, first by allegations of election fraud—which prompted a recount—and then by jockeying of the various parties to form a majority bloc and nominate a candidate for Prime Minister. During Ms. Carlucci's deployment, key positions remained unfilled, primarily MoD and MoI (Prime Minister Nouri al-Maliki acted as minister for these positions).

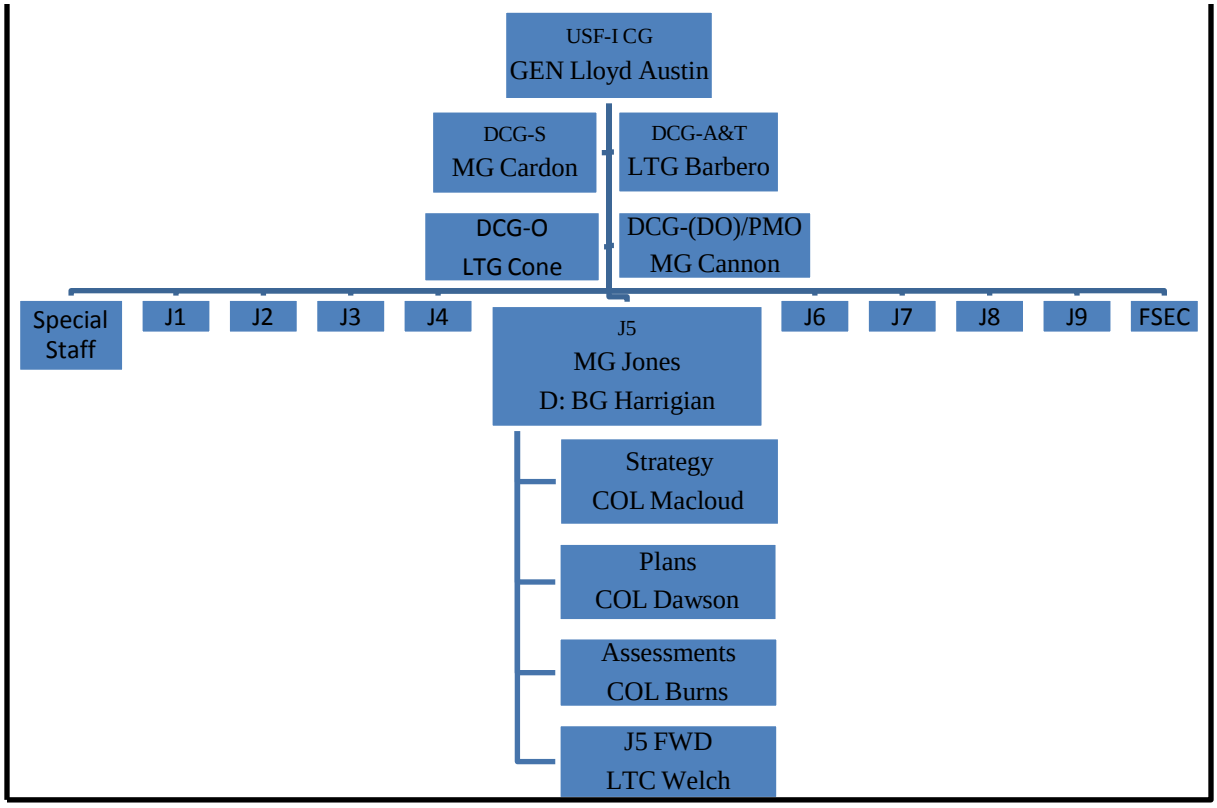


Figure 5-95 United States Forces – Iraq Organization

Figure 5-95 shows a simplified organizational chart of the USF-I HQ. The Assessments Division reported to Major General Noel "Tom" Jones (the J-5) and Brigadier General Jeff L. Harrigian (the Deputy J-5). Both men were Air Force fighter pilots. At the end of March 2011, Major General Jones had to leave his position early in order to return to the U.S. for medical

treatment before reporting to his next assignment at the Pentagon as the next A5. Brigadier General Jeff J. Snow transferred from his position as head of the Iraqi Training and Assistance Mission to take over as the new J5. The Assessments Division consisted of 12 analysts (U.S. Army/U.S. Air Force/U.S. Navy) and 2 linguists. The Division Chief was a USAF Colonel (a scientific analyst). Other than Ms. Carlucci, the analysts were all military (with varying levels of analytical expertise). Colonel Kevin Burns, a senior military professor at the Air Force Institute of Technology (AFIT), came to serve as the Assessments Division Chief in April 2010. His replacement, Colonel Jeff Lanning, arrived in Iraq just 17 days before Ms. Carlucci redeployed. Colonel Burns returned to AFIT as a newly selected Associate Dean.

Figure 5-96 J5 Assessments 1 December 2010

Pictured in the back row, left to right: Mr. Samir Matti, Lieutenant Colonel Bill Fehlman, Major Don Hilliard, Captain Matt Collinsworth, Lieutenant Colonel Linda Lamm, Lieutenant Colonel Libby Schott, Major Kelly Lelito, and Lieutenant Colonel Marty Klein. Pictured in the front row, left to right: Ms. Renee Carlucci, Lieutenant Colonel Paul Ritkouski, Major Matt Dorsey, Colonel Kevin Burns, and Major Dave Cloft.

Figure 5-97 J5 Assessments Key Leadership

Figure 5-97 pictures, from left to right, Lieutenant Colonel Libby Schott, Major General Tom Jones, Ms. Carlucci, and Brigadier General Jeff Harrigian. The major ongoing activity in the J5 was the re-write of the USF-I OPORD. Shortly after Ms. Carlucci's arrival, most analysts in the Assessments Division turned over, leading to the division's major new activity to form the Operational Assessments team that would develop the OPORD assessment framework and associated briefing products. Four or five analysts supported the Operational Assessment and divided responsibilities between staff sections. The strategic analyst responsible for the Strategic Assessment was one of the analysts to turn over.

These major personnel changes led Ms. Carlucci to her first order of business, to become knowledgeable in all division activities and tasks. She supported the Division Chief with division administrative functions and guided new analysts in their tasks. Two analysts maintained the SIGACTS database and provided analysis for weekly Security Trends briefs and other RFIs. Less than a month after Ms. Carlucci's arrival, Colonel Burns took three weeks of R&R and Ms. Carlucci was designated Acting Division Chief. Her analysts drafted the final 2010 JCP Assessment prior to Colonel Burn's return (the four-star/ambassador forum received the brief early February 2011).

Figure 5-98 J5 Assessments Division Members (February 2011)

Figure 5-98 pictures, from left to right: Ms. Renee Carlucci, Major Rob Mitchell, Major Kelly Lelito, Captain Jeff Sipe, Major Dave Little, Major Chuck Weko, Major Andy Ehlert, and Major Dave Cloft.

Prior to Ms. Carlucci's deployment, CAA had received a reachback request from the Assessments Division. The USF-I Chief of Staff, Major General William B. Garrett III, had requested a tool or dashboard to assess USF-I's ability to achieve Reposture objectives. Initially, Major General Garrett gave this tasker to USF-I KMO. However, KMO did not have expertise in data mining and transferred this task to J5 Assessments, who subsequently requested CAA reachback support. Consequently, Ms. Carlucci started studying numerous files and briefings provided by USF-I as background. She conducted a literature search to ascertain what analyses, papers, and articles existed relevant to the Reposture and Retrograde mission.

Along with many useful articles, Ms. Carlucci learned about an analysis undertaken by Army Materiel Systems Analysis Activity (AMSAA) in support of the Responsible Reset Task Force (R2TF). ARCENT sponsored this effort to support the initial drawdown of forces and equipment from Iraq, also known as Responsible Drawdown of Forces 1(RDoF1). AMSAA utilized a discrete-event simulation model using Arena software. However, by the time Ms. Carlucci arrived in country, Major General Garrett had cancelled this tasker.

During her initial inbrief with the Deputy J5, Brigadier General Harrigian, Ms. Carlucci discussed her plans for developing a simulation to support USF-I's retrograde. Years earlier, she had undertaken a similar effort for Combined Forces Command-Korea to examine a retrograde operation in reverse (i.e., Reception, Staging, Onward Movement, and Integration). When Ms. Carlucci arrived in theater, J5 Plans was wrapping up its OPORD re-write with a wargame scheduled for early December. Despite the fact that Major General Garrett had turned off the official tasker, Brigadier General Harrigian asked Ms. Carlucci if she could develop a simulation model to support the assessment of Reposture. Ms. Carlucci replied in the affirmative and began meeting with analysts in the J4 Joint Plans and Integration Center (JPIC).

The OPORD re-write was consuming most of the assessment team's time, and the retrograde project team dwindled to only Ms. Carlucci, Major Chuck Weko, and Mr. Jon Shupenus who was the primary J-4 analyst and conduit to the rest of the J4 Staff. Mr. Shupenus was a GS-14 Lean Six Sigma analyst, deployed from Forces Command, assigned to ARCENT, and attached to USF-I J4. He had built a spreadsheet model in Microsoft Excel that the J4 staff used to answer many questions. He had envisioned developing a discrete-event simulation model, using his experience with ProModel, to conduct in-depth analysis. In order to develop a conceptual model of how all USF-I equipment would be transitioned from Iraq to Kuwait by 31 December 2011, Ms. Carlucci, Major Weko, and Mr. Shupenus began discussions with officers from the many organizations that were responsible for major pieces of the Retrograde mission.

Initially, the Simulation team (Carlucci, Weko and Shupenus) envisioned its responsibilities to include data collection, coordination with SMEs, and conceptual model development. CAA reachback would build the simulation model. Once the simulation model was complete, analysts in theater would need only run the model and make necessary changes on the fly. However, CAA did not have an available analyst to build the simulation model and, therefore, coordinated with AMSAA to support this effort. All parties agreed to use Arena software for the simulation. Ms. Carlucci began arranging to install a software license in Iraq. Ms. Claire Allen, from AMSAA, planned to use version 13.5 for the project and Ms. Carlucci contacted CAA for a copy of this version. CAA had one license for Version 13.0 but its support contract had expired. CAA followed up with Arena and discovered that, in actuality, they had received an upgraded license that extended their support contract. Arena recommended using a downloadable Internet copy of version 13.5 with limited functionality, together with a license file that would enable full functionality. Ms. Claire Allen built the first draft simulation model on an unclassified network and delivered it in January.

With approval, Ms. Carlucci moved the draft simulation to the classified network where the data was located. In the following days, Ms. Carlucci and Major Weko made major programming changes to the model to match the conceptual model. They mailed the revised version back to AMSAA to maintain version control. However, Ms. Allen found that AMSAA did not have a copy of Arena 13.5 on its classified network; she was unable to run or open the model. These technical difficulties (and some of Ms. Allen's work travel conflicts) led all parties to agree that analysts in theater would be the primary modelers and AMSAA would continue in a supporting role. On several occasions, Ms. Allen's assistance was invaluable.

The first big milestone for the simulation team was to provide support for the logistics ROC drill scheduled in early March 2011. Units and subordinate elements entered their movement requirements into a KMO-developed database. This data provided the date of turn-in, location, the number of pieces of rolling stock (RS) and/or non-rolling stock (NRS), and whether the equipment was "sensitive" or "non-sensitive" (DoD prohibited "sensitive" cargo from shipping commercially). "Sensitive" cargo shipped via military convoy to Kuwait. Therefore, while units provided the number of pieces of RS and NRS for retrograde, they did not provide the analysis needed to determine the number of containers, FBs, and HETs required. J4 had been using a planning factor of 300 pieces of NRS per twenty-foot equivalent units (TEUs) to determine the number of TEUs or containers required to ship the NRS. No one could provide the source for this planning factor. Meanwhile, the Country Container Authority (CCA), Mr. Francis Flynn, had requested assistance from J5 Assessments in order to determine two things, the number of

seaworthy containers needed to support the retrograde and the number of seaworthy containers available. This led to the first retrograde-related reachback request to CAA.

In January 2011, Ms. Ashley Francis, from CAA's Mobility and Deployment Division, took the lead on this project and proposed a two-phased approach. Phase I would examine dimensional data for NRS on the Iraq property book in order to estimate container requirements based on cube and weight. Phase II would involve tasking the SDDC to analyze the resulting movement requirements for both NRS and RS using their Transportability Analysis Report Generator (TARGET) to determine the number of TEUs, HETs, and FBs required. However, this project became more difficult than originally anticipated due to the large number of non-standard (no dimensional data available) Line Item Numbers (LINs) on the property books. Up until February 2011, CAA could only find dimensional data for 57 percent of the sensitive NRS and 6 percent of the non-sensitive NRS, with sensitive items accounting for 85 percent of property book NRS. Given this limited data, CAA's initial estimate was 129 items of NRS per TEU. This was 67 percent less than the 300-item planning factor used by J4, nearly tripling the number of containers required.

J4 was quite hesitant to reduce their 300 item per TEU planning factor, while the simulation team wanted to use the most conservative estimate. This was an item of contention during the ROC drill. The following three discussion points helped alleviate concerns. First, Ms. Carlucci and Major Weko demonstrated that the overall impact of a 100-item vice a 300-item per TEU planning factor was negligible on overall movement requirements because NRS constituted only 17 percent of KM data requirements. Second, a historical analysis of RDoF1 NRS movement requirements was done, resulting in 195 items per TEU. Third, by mid-March, after painstaking research, Ms. Francis and her team identified dimensional data for 62 percent of sensitive NRS items, which came out to 199 items per TEU. This convinced J4 planners to change from a 300-item to a 195-item planning factor.

At the end of Ms. Carlucci's deployment, CAA was continuing to research the non-standard LINs that were required to move by June 2011. CAA provided this new LIN list with dimensional data to SDDC to see what movement asset requirements TARGET would produce based on packing the items in the containers and vehicles. This provided a proof-of-principle estimate from TARGET to compare with CAA's estimate based on cube/weight. TARGET also identified the HET and FB requirements for both RS and NRS. A similar controversy arose regarding what planning factor to use for RS. A historical RDoF1 figure from 1st TSC assumed that 47 percent of RS would require a HET, while 53 percent would require a FB. Based on some preliminary analysis of the property book, J4 planners suggested reducing the planning factor from 47 to 25 percent. However, analysis completed by SDDC's Mr. Heath Tree, on the March property book, demonstrated that 40 percent of RS could require a HET.

As mentioned previously, the simulation team started the project by talking to LNOs from the many different organizations responsible for supporting retrograde operations in an attempt to build a conceptual model of how those operations would take place. In order to gain a greater appreciation for the conduct of operations, the simulation team visited a Redistribution Property Assistance Team (RPAT) Yard (Figure 5-99) and a Central Receiving and Shipping Point (CRSP) yard located at the VBC. Throughout February 2011, Ms. Carlucci and Major Weko continued to refine the model, adding functionality, using the KMO database for movement requirements.

At the end of February 2011, and in order to determine if the responses were sufficiently accurate for their intended use, the simulation team conducted a results validation by comparing the responses of the simulation with known or expected behaviors. They used several authoritative data sources for this effort. The team examined historical data collected by the 402nd AFSB from RDoF1 to confirm historical process delays between RPAT yard turn-in and availability for the next movement. ARCENT sponsored a series of Lean Six Sigma efforts to examine the various process steps and associated process times for activities after equipment turn-in. Analysts leveraged these efforts as well. CAA's Mobility and Deployment Division completed a second reachback request examining historical Joint Planning and Execution System (JOPES) data from 2009 and 2010 to determine the intra-theater movement delays that equipment experienced between an origin in the Iraq Joint Operating Area and its destination in Kuwait. The team compared these historical movement delays with simulation results for validation. Mr. Jon Shupenus staffed the underlying movement algorithms with SMEs. Ms. Carlucci briefed the JPT on 8 February 2011. This brief resulted in the verification of the simulation by the JPT members.

Figure 5-99 Equipment for Processing and Inspection at the RPAT Yard

Mr. Flynn requested a third reachback effort from CAA. He needed to know not only how many containers were required to support the retrograde but also how many empty, seaworthy-containers were available. Unfortunately, the Container Advise and Assist Teams (CAATs) that had gone out and surveyed some 7,000 containers learned that the database used to maintain container information was highly unreliable. Could an analytic effort provide an estimate about the container population, given the available survey data? This seemed quite reasonable at first glance. However, they came up against several obstacles. The CAAT team had not conducted random samples. The data collected at different sites by the CAAT teams was not uniform (some surveys identified only whether a container was empty or not, while others specified whether a container was seaworthy or not). The definitions used by the CAAT team were not consistent. Initially, CAAT teams reported that "empty" meant "not locked" (their logic being that if the container had a lock on it, it was "not empty"). A quick survey to the division G4 shops proved that units tended to keep their containers locked whether they were empty or not.

Moreover, it became apparent that "not seaworthy" sometimes meant only that the inspection sticker on the container had expired or could not be seen (some containers were stacked three high). Since each survey generated more questions than answers, this effort was suspended. Mr. Ron Kollhoff attempted to pick up the reachback effort from Ms. Carlucci. However, Mr. Flynn advised Mr. Kollhoff to wait for the database manager to return from R&R. Meanwhile, a FRAGO had gone out to all units and subordinate elements to conduct their own container surveys. With the initiation of this 100-percent inventory requirement, CCA cancelled their undertaking.

Upon verification of the simulation model, analysts ran an experimental design examining five factors. The factors included convoy size, number of convoy escort teams (CETs), number of container handling equipment (CHE), RPAT delays, and movement requirements. Not surprisingly, CHE and movement requirements had the largest impact on the response variables (average and maximum transit times). Mr. Shupenus used Minitab, a commercially available statistics software package, to analyze the results. The analysis examined the relative impact of factors and the interaction of individual factors at the bases.

Following the March 2011 logistics ROC drill and the completion of the Design of Experiment, the J4 used the simulation model to support decision-makers. The simulation team provided numerous findings. These findings included expected base and country transition times; effects of bad weather; effects of route closures; convoy analysis by day and month; convoys by origin/destination; loads/convoys entering Khabari Crossing (daily, monthly, and quarterly); capacity/resource analysis for CHE, ramps, routes, CETs, yards, Convoy Support Centers (CSCs); impact of planning factors; and the impact of various retrograde COAs.

Major Weko and Ms. Carlucci were in a regular battle rhythm of briefing the J4 JPIC Director, Colonel Richard Kramer, and/or the Deputy J4, Colonel Duane Gamble, along with other key staff members on a weekly basis. In addition, they were called upon to brief their work to the J4, Major General Richardson, the Deputy ARCENT Commander, Major General Vangjel, the Special Assistant to the ARCENT Commander, Major General Aycock, and various bodies including the J4 Plans, Integration & Assessments Review, the Executive Sustainment Synchronization Board (ESSB) Council of Colonels, and the ESSB General Officer Steering Committee. These relationships developed into a very collaborative working effort between the simulation modeling team and numerous mobility and transportation planners assigned to the J4.

Figure 5-100 Ms. Carlucci and LTC Libby Schott at Christmas Day Scouting Event

Most deployed analysts talk about the Groundhog Day complex, when each day becomes so much like the previous day that you lose track of time (most days began at 0900 and did not end until 2100 or later, with only two hours off on Sunday). Due to Ms. Carlucci's ongoing responsibilities as Deputy Division Chief and primary simulation modeler, she did not have many opportunities to venture "outside the wire" other than an early trip to the IZ to go to the U.S. Embassy and FOB Union III. To keep her sanity, Ms. Carlucci attended a yoga class taught by volunteers. By the end of her deployment, she and a battle-buddy, Major Kelly Lelito, had organized their own yoga class on the Al Faw Palace patio. Some of her most rewarding experiences involved getting to know people from other countries and cultures. On Christmas Day, Ms. Carlucci volunteered to support a special Iraqi scouting event (Figure 5-100). This was a lot of fun.

Figure 5-101 Working Lunch

Figure 5-101 pictures, from left to right: Major Carlile, Major Kelly Lelito, Ms. Renee Carlucci, Mr. Jesse Merkhael, Lieutenant Colonel Libby Schott, Lieutenant Colonel Stylianos, and Mr. Feras Mahir.

The two linguists assigned to J5 Assessments, Mr. Jesse Merkhael and Mr. Samir Matti, went as well and helped with communication between the kids and the helpers. However, the kids learned some English words quickly on their own. When helpers pushed the kids on the swings, they learned the word "Push!" quick enough. Ms. Carlucci also befriended some of the Ugandans who guarded the Al Faw Palace gates. One was a youth minister who had founded a Christian orphanage back home that he and his mother ran. He sent his money home to support them. The people of Uganda speak many different languages depending on what part of the country they are from and to which tribe they belong. Their languages are not similar. The national language of the country is English. They speak Luganda where the minister is from, near the capital of Uganda. Ms. Carlucci befriended some Iraqi Christians who worked inside VBC. Mr. Feras Mahir (Figure 5-101) is Chaldean (essentially Catholic). He was wounded in the Baghdad Church assault on 31 October 2010. An al Qaeda-linked group took responsibility for the attack that left 58 people dead. Mr. Mahir flew to Italy for medical treatment and returned to work on VBC. He talked about immigrating to the United States; he has relatives in San Diego.

Figure 5-102 Yoga Class, VBC, Iraq

Ms. Carlucci and her team members found Yoga to be a relaxing break from ORSA work. Figure 5-102 pictures class participants on New Year's Eve/New Year's Day, VBC, Baghdad, Iraq.

Ms. Carlucci compiled the following tips for a successful deployment:

- Before you deploy, conduct research on things you might need to know regarding everything from the physical environment to the cultural environment and expected work assignments.
- Try to learn organizational acronyms and protocol before you deploy, enabling you to get up to speed much faster.
- If you did not have the skills before you deployed, you probably will not learn them on the job. So prepare before you deploy. Provide "value-added" whenever you can. It does not have to involve high-tech ORSA skills.
- Try to find analysis-savvy leaders with whom to share your analytic work. These leaders will understand your stated caveats and will not run off "half-cocked."
- If you are proposing to venture into new analytic territory, try to fly under the radar until you are ready for prime time. This will reduce the stress placed on you and improve your opportunities for success. Slowly build a coalition of constituents for your analysis, and increase their understanding and comfort with what you are doing.
- Leave your desk and talk to people, both inside and outside of your organization. This is usually how you will make an impact during your deployment and how your deployment will make an impact on you.
- Explore some activities outside of the office. It breaks up the routine and allows you to make new friends.
- Maintain your physical fitness. This is important for dealing with the stress of working every day (and who wants to return home from his or her deployment heavier).

- Skype and email are readily available to keep you in contact with family and friends at home. Use them regularly. Prior to redeploying, make plans to spend time with family and friends upon your return. This is something all of you can look forward to.

Overall, Ms. Carlucci's tour was a very rewarding and educational experience. She witnessed remarkable progress regarding the stability and security of Iraq, and left hopeful that this would continue. She was extremely proud to play a role in achieving important milestones in Operation New Dawn. As with most studies, the value of ORSA personnel in theater lies in bringing a common level of understanding to all the parties involved in trying to solve a problem. Ms. Carlucci knows that she and others in the Assessments Division accomplished this objective in quite a few areas. She made lasting friendships that she will always cherish.

6 ENDURING EFFORTS AND PRODUCTS

During CAA's years of support to OEF and OIF, some tasks have spanned more than one deployment and have had an enduring impact on the overall support to the Operational Commanders (OCs) and their staffs. This chapter covers the following topics in detail:

6.1 OIF Significant Activities (SIGACTS)

6.2 Host Nation (HN) Reporting

6.3 Iraqi Security Forces Analysis (ISFA)

6.1 OIF Significant Activities

- Credible analysis required accuracy. Prior to the arrival of CAA deployed ORSA analysts, OIF data collection was extremely limited. Planners reported data as a "snapshot" and did not organize it for historical retrieval. Staffers often buried data in staff sections with no operational-level visibility and only "stumbled upon" it during discussions or other research. Planners originally used Microsoft PowerPoint slides and, then later, Microsoft Word documents to create significant activity reports. No one filed the reports by type of event, location, unit, or any other separate category. PowerPoint and Microsoft Word were not conducive to analysis.
- In the summer of 2004, analysts developed a Web-based Microsoft Access database named SIGACTS I (Captain Allison Stewart created its precursor in 2003). The Major Subordinate Command Liaison Officers (MSC LNOs) at the Combined Joint Task-force Headquarters Joint Operations Center (CJTF HQ JOC) located at Camp Victory, populated SIGACTS I. MSC LNOs received information from their HQ via U.S. SIPRNET, CF SIPRNET, secure voice transmission, or messenger, for entry into SIGACTS I database. This information was then visible to Corps.

In July of 2005, XVIII Airborne Corps designated SIGACTS I as the MNC-I reporting tool of record. FusionNet maintained Legacy data from SIGACTS I in order to provide a consistent historical record. At this time, CAA deployed analysts maintained the SIGACTS I database using FusionNet only.

From early 2005 until mid-2006, Commands planned for the deployment of Combined Information Data Network Exchange (CIDNE) to replace Fusion Net. CAA analysts contributed to the design of CIDNE and the way it would receive, display, and output data. CAA analysts established processes for cleaning the data and minimizing staff resources spent on data management. The initial process was time-consuming and reduced ORSA availability for other analyses.

In August 2006, redesigned SIGACTS I became SIGACTS II. SIGACTS II offered a better interface between the data structure of FusionNet and CIDNE. CAA analysts developed SIGACTS II as an interim step while they concentrated their efforts on improving CIDNE.

Unfortunately, this process was labor-intensive because the macros previously developed for recurring weekly Battle Update Assessments (BUAs) and other reports no longer matched the SIGACTS II database structure. Once again, CAA deployed analysts spent a great deal of time on these administrative tasks rather than meaningful in-depth analysis.

By November 2006, CIDNE had become the knowledge management system for both MNF-I and MNC-I. By working closely with the Knowledge Management Office (KMO) and the contractors who developed CIDNE, CAA deployed analysts transitioned smoothly to SIGACTS III without significant interruption to their weekly requirements. This seamless transition strengthened CAA's positive reputation for managing data. CAA made an error-free reporting transition, thus enabling them to assist other offices as they transitioned.

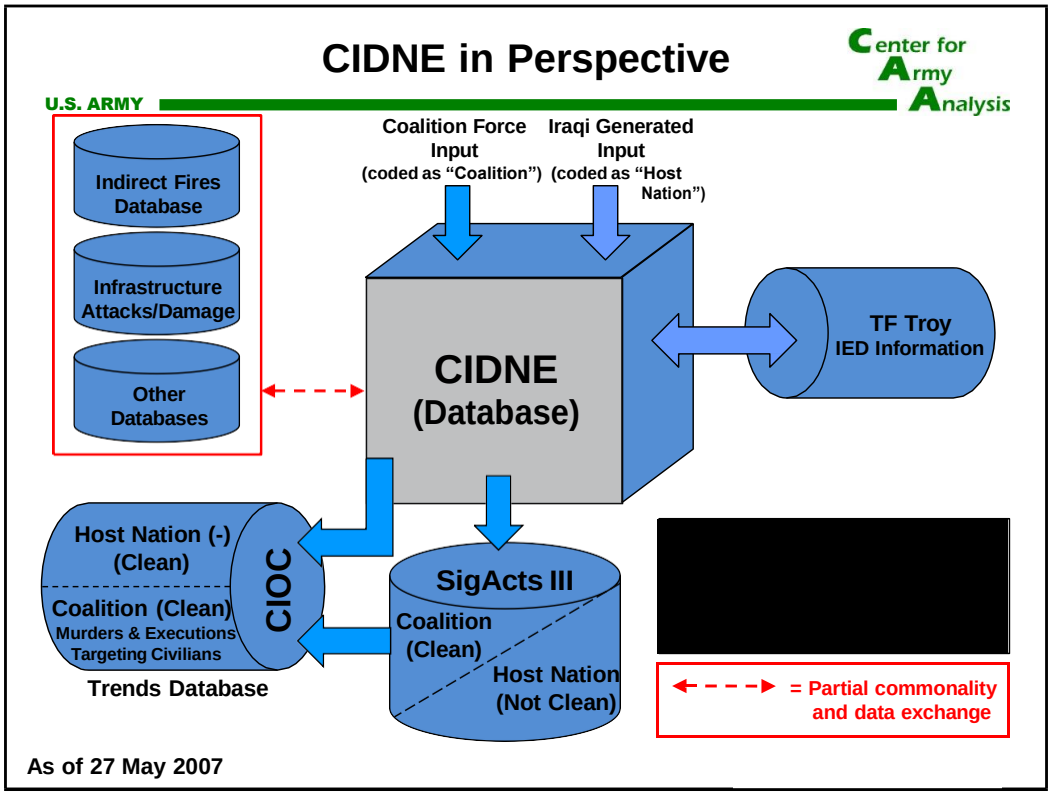


Figure 6-1 CIDNE in Perspective

Figure 6-1 shows the systems relationship of the main databases in use in Iraq during 2005 and 2006. Coalition units provided operations reports containing significant activity/events for the CIDNE database. Host-nation units and agencies provided reports through the NJOC to the CIDNE database.

CAA analysts did not typically use data directly from the CIDNE database. This data was not clean (reviewed for accuracy and completeness, with appropriate edits applied). Clean data ensured record-level logical consistency of reported data and ensured the use of standardized and consistent field values. It provided appropriate derived field values in order to meet recurring reporting requirements not accounted for within CIDNE. The CAA deployed analyst in MNC-I conducted a thorough weekly cleaning of the SIGACTS data in the CIDNE database and partially cleaned NJOC data. Analysts maintained the cleansed data in the SIGACTS III database. Similarly, the Multi National Forces Iraq Combined Operations Information Center (MNF-I COIC) and TF Troy used their subject matter experts (SMEs) to clean portions of the CIDNE database. "Downstream" from the CIDNE database, personnel maintained SIGACTS III. As a group, along with the MNC-I KMO, these organizations worked toward a single, clean CIDNE database. All theater organizations worked toward a single, clean CIDNE database.

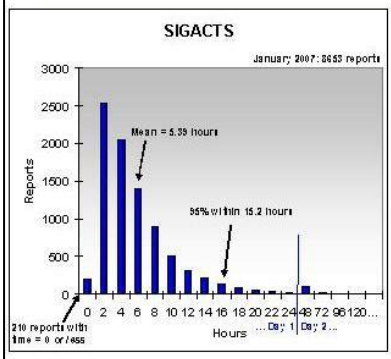
Problem:
1. How long does it take from the time an event occurs until a report is submitted to CIDNE?
2. In order to capture 95% of the events for a given day, how much time should pass between "data cutoff" and "data draw"?

Results:
1. On average, SIGACTS reports are submitted 5.4 hours after events occur. NJOC reports average 13.1 hours between occurrence and report submission.
2. Data cutoff time of 0800 captures 96% of the SIGACTS reports and 72% of NJOC reports from the previous day. Data cutoff time of 0400 captures 90% and 67%, respectively.
3. Differences from December to January:
   - SIGACTS slightly faster (MND-N much faster, all others slightly slower)
   - NJOC much slower
   - NJOC now adding reports through the night

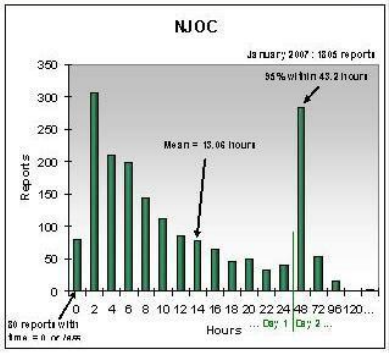
Figure 6-2 Host Nation Reporting, January 2007

In order to determine the most appropriate time to draw daily report information, as well as to analyze potential problems with NJOC data, CAA analysts answered the questions posed in Figure 6-2. They conducted a three-month data collection effort from December 2006 until February 2007, and shared the results of their analyses. The Significant Activities reports were consistent across all three months. NJOC report latency increased over the three- month period (average latency of nine hours, then 13 hours, then 40 hours) even though total reports decreased. During this period, the NJOC was transferring its reporting responsibilities and processes to a different host-nation organization, which accounted for the degradation.

For a report period ending at 2400, later cutoff times allow analysis of more reports.



Report Cutoff Time	SIGACTS	NJOC
0000	79%	61%
0100	81%	63%
0200	84%	65%
0300	87%	65%
0400	90%	67%
0500	92%	68%
0600	94%	70%
0700	95%	71%
0800	96%	72%



- Data cutoff of 0400 includes 90% of SIGACTS reports from the previous day.
- Data cutoff of 0800 includes 96% of SIGACTS reports from the previous day.
- Data cutoff of 0400 includes 67% of NJOC reports from the previous day.
- Data cutoff of 0800 includes 72% of NJOC reports from the previous day.

Figure 6-3 Reports Cutoff Times

The histograms in Figure 6-3 show the Significant Activities and NJOC reports for January 2007. The table in Figure 6-3 shows the number of reports in the database by a series of cutoff times. For example, for significant activity events occurring in January 2007, 79 percent of the reports were in the database by 0000 hours on the day after they occurred. MNF-I used this information to issue an order that all daily reports would use 0400 report cut-off times. This examination greatly reduced reporting latency.

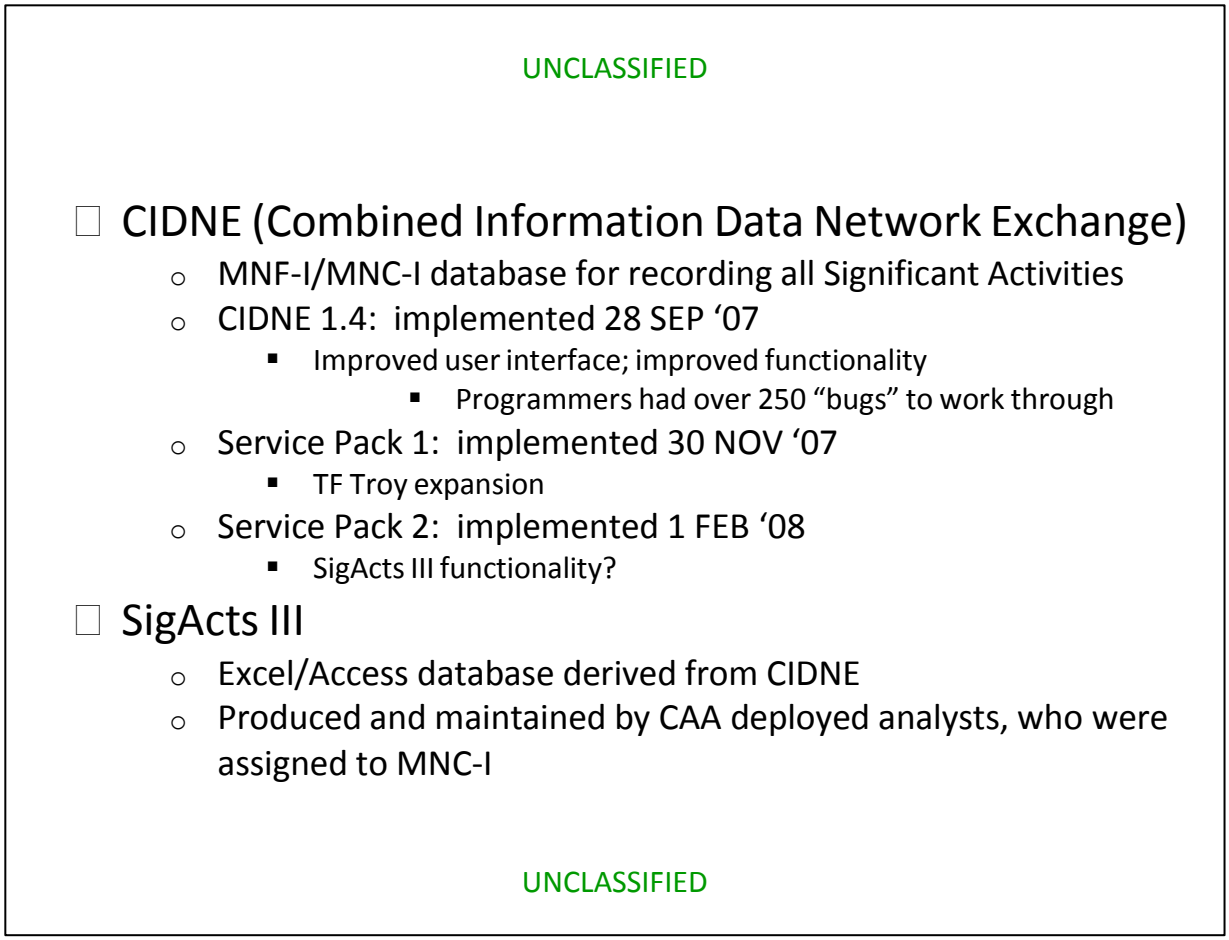


Figure 6-4 CIDNE 1.4

Figure 6-4 outlines the implementation of CIDNE 1.4 at the end of September 2005. CIDNE 1.4 included a new user interface, improved search functions, and drop-down menus to force consistent data entry. Unfortunately, there were hundreds of programming "bugs" preventing a smooth transition from CIDNE 1.3. This caused programmers to push out their timelines for additional planned updates. When programmers finally debugged the database, they introduced Service Pack 1. It incorporated IED-specific database improvements in support of TF Troy requirements. Analysts added many IED-specific fields and linked the Troy database with the CIDNE database. Service Pack 2, fielded on 1 February 2008, incorporated much of the functionality found with SIGACTS III. The Service Pack 2 automated many of the processes that deployed ORSA analysts usually had to run with each pull of data, such as automatically running the Point in Polygon software. The conversion to CIDNE 1.4 incorporated about 70 percent of the past processes created by the CAA deployed analysts, thus making the ORSA analysts' job more efficient.

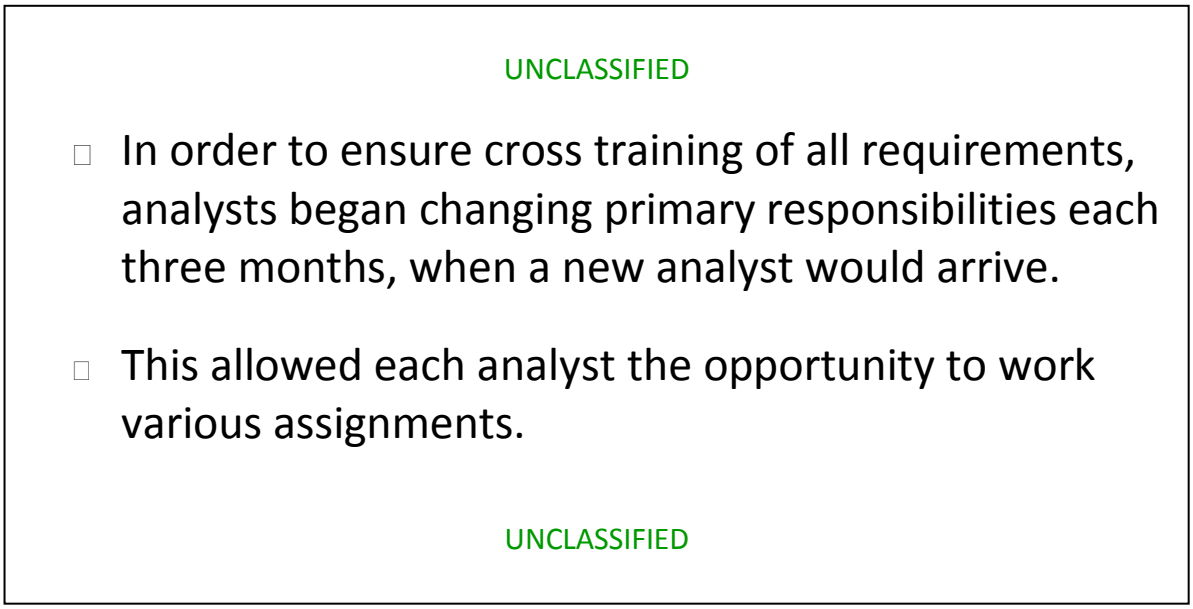


Figure 6-5 Personnel Transition

Figure 6-5 explains the rotation of CAA analysts. The incoming analyst would carry out the weekly SIGACTS III data management responsibilities for approximately the first three months of his or her rotation or until a new analyst came on board and absorbed this responsibility. The senior CAA analyst prepared the Weekly Trends Analysis brief. This battle rhythm continued until mid-2006. This provided each analyst with varied work experience and a broader understanding of the combat theater. In addition, by starting analysts out with responsibility for maintaining SIGACTS III, the analysts realized that the entire team heavily relied on the accuracy of the database for the bulk of their analyses.

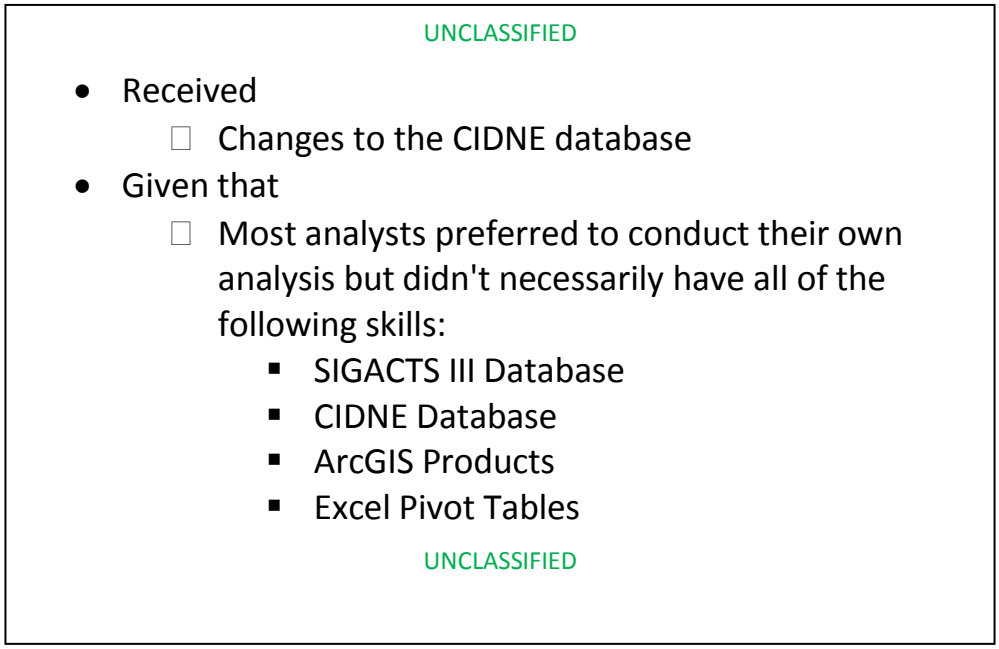


Figure 6-6 Training

Figure 6-6 describes the training given and received while in theater. Each deployed analyst attended a weekly meeting with the CIDNE programming team. In fall of 2007, the development team was updating the CIDNE program and requested input from all the primary users in order to make the product as viable as possible. As part of the process, CAA deployed analysts received training on the new updates to the CIDNE database. CAA deployed analysts educated other staff members on using SIGACTS III, using Excel Pivot tables and CIDNE.

In September 2008, SIGACTS III was available to download from the CIDNE website. Through a long period of development beginning in 2006, the KMO employed various contractors to develop a web-based editing platform to validate and correct the data in the CIDNE database. Prior to February 2009, analysts downloaded the SIGACTS database into an Excel spreadsheet where they added more columns. They also corrected errors in the Access database. After they implemented the web-based editing platform, they could accomplish tasks previously requiring both Excel and Access use within the CIDNE website. They now used Excel and Access to download web-based information as needed.

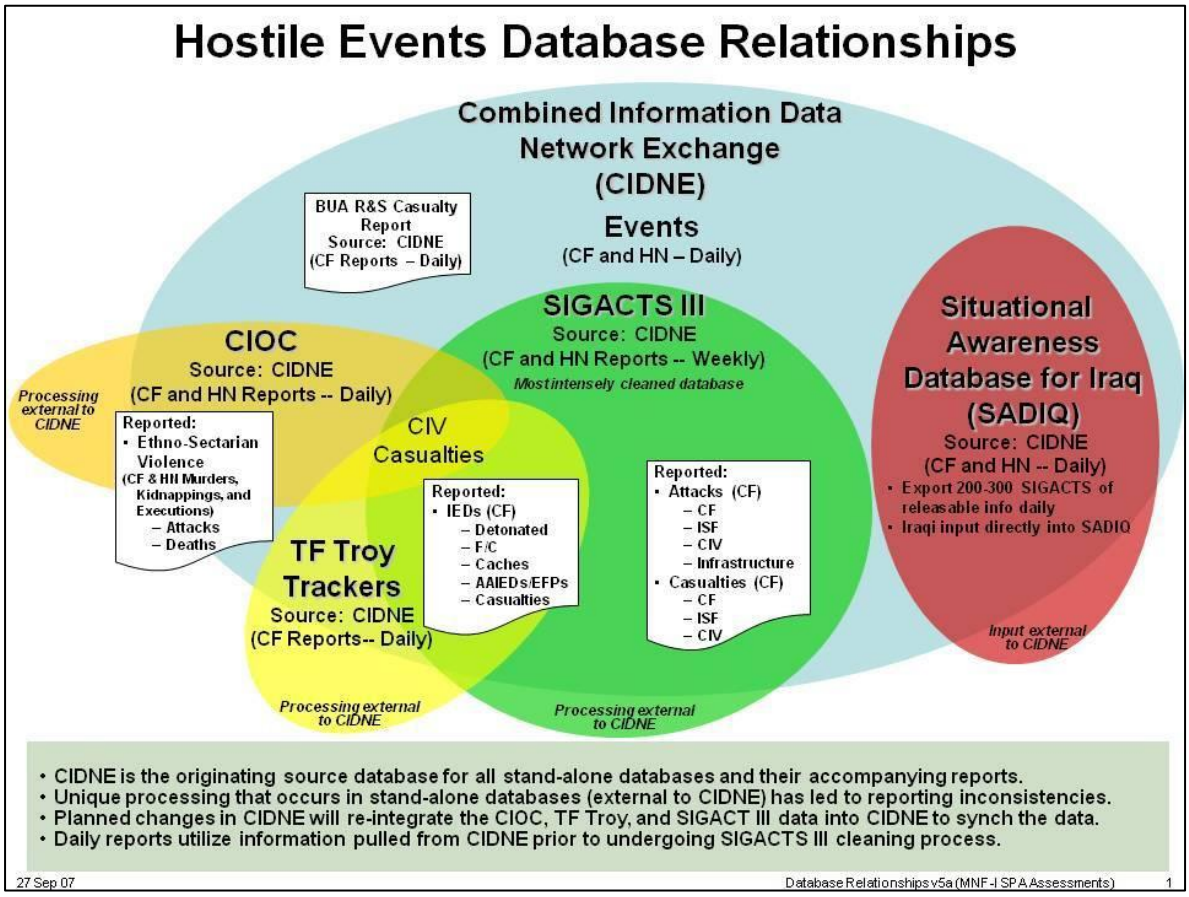


Figure 6-7 Hostile Events Database Relationships

Figure 6-7 shows the complexity of the other databases used in theater at the time. The Contractors for the SADIQ server removed it after December 2008 when the contract expired. The Iraqis intended to use SADIQ in a manner similar to CIDNE; however, cultural issues prevented this. The Command considered including the COIC trends, kidnappings data, and the Task Force Troy IED data sources for inclusion into the CIDNE database structure.

Unfortunately, disagreement on editing permissions, software limitations, accessibility restrictions, and the requirement to post each of the databases, prevented the engineers from combining these three databases. Each database remained separate.

CAA analysts intended to transition responsibility for data management to MNC-I KMO by the end of 2008. However, this did not happen.

6.2 Host Nation Reporting

Host Nation latency reporting remained a contentious issue. Engineers created SADIQ to improve synchronized situational awareness between MNF-I and GoI. SADIQ collected host nation reports through the MoD and MoI. The quantity of reports increased as ISF increased their security and self-sufficiency. CAA deployed analysts provided SADIQ between 200 and 300 SIGACTS of releasable information. They trained the Iraqi military to enter information into SADIQ.

In July 2007, the CAA deployed analysts worked primarily with the MNF-I SPA organization to incorporate HN reports into SIGACTS III, providing the weekly attack and casualty trend assessments, along with managing and updating the SIGACTS III database. CAA reachback undertook a major reachback project to update the HN reports in SIGACTS III. At this point, the Command placed increased emphasis on including HN reports in analytic products for trend analysis (Figure 6-8). While SIGACTS III contained HN reports, MNF-I only used them to report violent Iraqi civilian deaths.

Iraqi civilian deaths were a primary measure of the security environment during this period. General Petraeus presented a chart of monthly violent civilian deaths to Congress during his September 2007 testimony. The 50 percent decrease in civilian deaths Iraq-wide, and 75 percent decrease in Baghdad from January to July 2007, verified the improved security environment, in part brought about by the surge of U.S. troops. MNF-I required inclusion of HN reports in trend analysis for three basic reasons. First, as more provinces transitioned to Provincial Iraqi Control (PIC), MNF-I would rely on HN reports in order to maintain situational awareness. Secondly, Coalition-only report assessments did not capture all events that occurred, and so event trends went under-reported. Finally, MNF-I wanted to avoid the notion that Coalition Forces must have seen an event for it to be included in trend assessments.

The MNF-I leadership knew that HN reports needed to be comparable to Coalition reports in content and accuracy. The SIGACTS III database contained HN reports, but no one processed them through the quality assurance (cleaning) process as they did with the Coalition reports. MNF-I would not include HN reports from SIGACTS III in any trend analysis unless they were clean. The MNF-I C2 maintained the COIC Trends Database, used for assessing ESV, which contained cleaned HN reports (intelligence analysts scrubbed these records daily for accuracy and content).

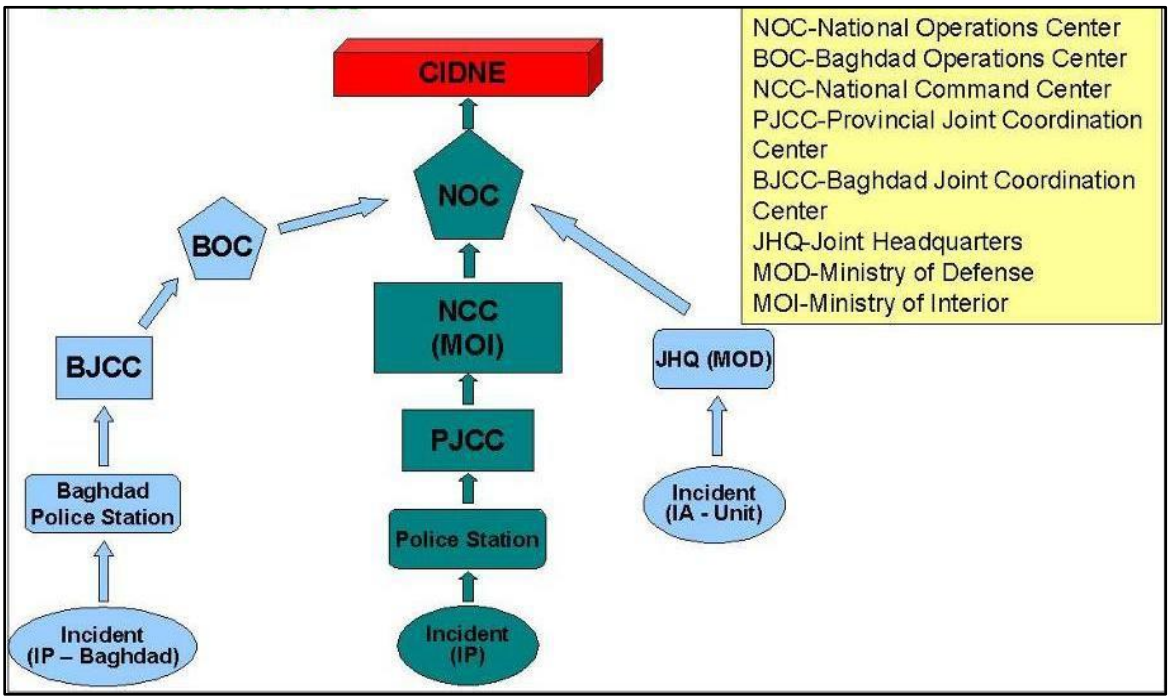


Figure 6-8 Host Nation Reporting Flow

Figure 6-8 depicts Iraqi Forces transmitting HN reports primarily via voice methods (radio or phone). The MoI was developing an automated reporting system but MNF-I knew that it might take years for them to acquire the hardware and software necessary to complete the project. MNF-I was using a team of translators to enter HN reports into the Coalition database, CIDNE.

Multi-National Forces - Iraq was concerned with the location accuracy of HN reporting. They suspected this data because there was very little location data in the reports they received at the NOC (no grid coordinates, usually the closest street intersection was the only location information provided). U.S. translators had to estimate grid coordinates when entering reports into CIDNE.

Determining an accurate location was important because inaccuracy could have led to a duplication of reporting with Coalition reports. Identifying and eliminating duplicate reports had to be resolved before HN reports could be included in trend analysis. Analysts had an especially difficult time identifying duplicates since most algorithms used some form of distance and time screening criteria.

Host Nation reporting was not at the same level of accuracy and content as Coalition reports. U.S. translators had to estimate grid locations for 95 percent of HN reports. Iraqi Forces did not update their HN reports after the initial report. Analysts normally updated Coalition reports several times with additional summary information–updated casualty numbers, etc. HN reports contained significantly less information than Coalition reports. On average, Coalition report summary fields contained 250 words; HN report summary fields contained an average of 50 words. Automated reporting systems would have greatly improved the HN reporting process, but ISF had priorities that were more pressing.

CAA deployed analysts cleaned the approximately 30,000 HN reports in the SIGACTS III database and removed all duplicate reports (Figure 6-9). MNF-I determined that SIGACTS III,

with cleaned HN reports and duplicates removed, should be the database used for reporting civilian deaths since it included all HN reports (unlike COIC Trends) and could serve as the single source for casualty trends (Coalition, ISF and Civilian). After this initial process was completed, it was decided that MNF-I STRATOPS (as opposed to MNC-I Current Operations) should serve as the proponent for the HN reporting process.

- **SIGACTS III database, with "cleaned" HN reports and duplicates removed, provides the best information for approximating civilian deaths.**
  - **Includes all HN reports.**
  - **Serves as a single database source for civilian deaths.**
- **MNC-I STRATOPS serves as the best "proponent" for improving the HN reporting process.**
  - **Improves ability to coordinate and de-conflict HN and CF reports.**
  - **Assigns responsibility for HN reporting oversight, as Iraqi Control increases.**

Figure 6-9 Host Nation Reporting Conclusions

- **PHASE I**
  - **"Cleaned" the 29,277 HN reports that occurred prior to OCT '07**
  - **Completed early NOV '07; reports updated in SIGACTS III**
  - **MNC-I ORSA analysts identified 2,117 HN reports in CIDNE but not in SIGACTS III**
    - **Occurred prior to MAY '07 when cleaning procedures only pulled records from the previous 14 days instead of 30 days**
    - **Cleaned by MNC-I analysts and added to SIGACTS III**
  - **MNC-I analysts identified 233 HN reports in SIGACTS III but no longer in CIDNE**
    - **Deleted for unspecified reason, possibly duplicates**
    - **Deleted from SIGACTS III**
  - **30 NOV '07: first posting of the SIGACTS III database with cleaned HN reports (32,161)**
- **PHASE II: DUPLICATE REPORTS REMOVED**

Figure 6-10 NJOC Data into Sig Acts III Reachback Project (1/2)

The CAA reachback analysts conducted the Integration of NJOC Data into SIGACTS III (INS) project in two phases. In Phase I, analysts cleaned the HN reports already in SIGACTS III (Figure 6-10). Home-station CAA analysts processed the nearly 30,000 historical HN reports using the same weekly cleaning steps used by MNC-I deployed analysts. CAA completed phase I of this project in November 2007, and they updated the records in SIGACTS III.

At the same time, CAA deployed analysts identified 3,117 HN reports that were in CIDNE but not in SIGACTS III. They surmised that this occurred when the previous weekly cleaning process pulled only 14 days of records, instead of 30 days. Analysts cleaned these records in theater, and added them to SIGACTS III in November 2007. In addition, analysts identified 233 HN reports that were in SIGACTS III but not in CIDNE (probably duplicates). Analysts then deleted these from SIGACTS III. By the end of November 2007, SIGACTS III contained over 32,000 cleaned HN reports. CAA then initiated Phase II of the reachback – duplicate record identification and deletion (Figure 6-11).

- **PHASE II**
  - **Completed JAN '08**
  - **4,275 records were identified as duplicates from AUG '06 through DEC '07 (3,029 Coalition reports and 1,246 HN reports).**
    - **545 Coalition reports deleted from CIDNE and SIGACTS III databases.**
    - **947 HN reports deleted from CIDNE and SIGACTS III databases.**
  - **MNC-I leadership requires thorough understanding of the HN reporting process before including HN reports in the analysis.**

Figure 6-11 NJOC Data into SIGACTS III Reachback Project (2/2)

By the end of January 2008, CAA analysts had identified 4,275 records as probable duplicates, including 3,029 Coalition reports and 1,246 HN reports. They sent the list of these records to MNC-I where SIGACTS III managers and division liaison officers agreed to delete 545 Coalition reports and 947 HN reports. Finally, analysts were ready to include HN reports from SIGACTS III in all trend analysis.

In a March 2008 report to the United States Congress, the U.S. Military used both Coalition and HN reports from SIGACTS III to chart civilian casualty trends. In April 2008, CAA deployed analysts, in cooperation with continued reachback to CAA and other staff offices, included HN reports in SIGACTS III. Likewise, CAA deployed analysts downloaded new reports from CIDNE, cleaned them up, and put them into SIGACTS III with a code designating them as HN reports.

After September 2008, analysts made these HN reports available from the CIDNE website in the SAND download. They were not included, however, in the automated charts and reports available on the "AskORSA" website, in accordance with MNC-I policy. MNF-I made an exception for automated reports created specifically for the MNF-I CG.

6.3 Iraqi Security Forces Analysis (ISFA)

As a reachback effort, CAA conducted two formal studies and numerous excursions to examine the capabilities and requirements for an Iraqi Security Force in 2010 and beyond. The MNF-I SPA Division served as the lead coordinating agency for the analysis. The MNF-I SPA

facilitated WGs. They coordinated with CAA in order to provide case development, study data, and scenarios. In addition, they provided CAA analysts with the information required for them to conduct the analysis. In June 2007, MNSTC-I requested that CAA conduct a study to determine if the ISF in 2010 and beyond would have the capability necessary to defeat a projected range of internal threats. The analytic effort would assist in determining the recruiting, training, and fiscal requirements for a robust ISF. Leaders used the analysis to support and defend their budget requests to the Office of the Secretary of Defense (OSD), the Office of Management and Budget (OMB) and to the U.S. Congress.

The ISFA provided insight into force-level requirements. CAA analyzed security LOOs and used 2010 and beyond as their base to project force requirements and prepare the ORA. CAA presented the completed ISFA to the Multi-National Security Transition Command-Iraq (MNSTC-I) on 10 August 2007.

The Multi-National Forces - Iraq, Strategy, Policy, and Assessments Division requested that CAA conduct a follow-on study. Analysts conducted the ISFA II study from November 2007 to March 2008. This study analyzed the ability of the GoI, augmented with varying levels of CF, to sustain momentum against all expected threats. ISFA II also examined GoI resources and Courses of Action (COAs) across the entire diplomatic, political, military and economic spectrum. In order to address these factors, CAA modified the original ISFA wargame and incorporated additional elements of government, information, and security secondary effects. CAA developed the analytic scenarios and identified, assessed, and provided insight into potential sources of failure within the framework of each use-case. The results of the ISFA II study provided the analytic underpinnings for future CF posture decisions. On 7 February 2008, CAA presented the analysis to British Lieutenant General WR Rollo, the MNF-I Deputy CG.

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7 INSTITUTIONALIZING DEPLOYED ANALYST SUPPORT

7.1 General

The U.S. Army's Operations Research/Systems Analysis (ORSA) Community is a collection of highly skilled analysts who have insufficient analytic resource doctrine. Without such doctrine, it is difficult for CAA to inform decision makers on the criticality of ORSA analysts in successful military campaigns. CAA and the FA49 proponent office have undertaken many efforts to codify and improve doctrinal development pertaining to deployed analysts. CAA has provided several contributions, which include a Deployed Analyst Handbook, an ORSA Handbook for the Senior Commander, and a two-week program of instruction (POI) focused on preparing ORSA analysts for deployment. These proactive efforts in support of Overseas Contingency Operations enable the Department of Defense (DOD) and other institutional and operational planning organizations to provide strategic planners with focused recommendations.

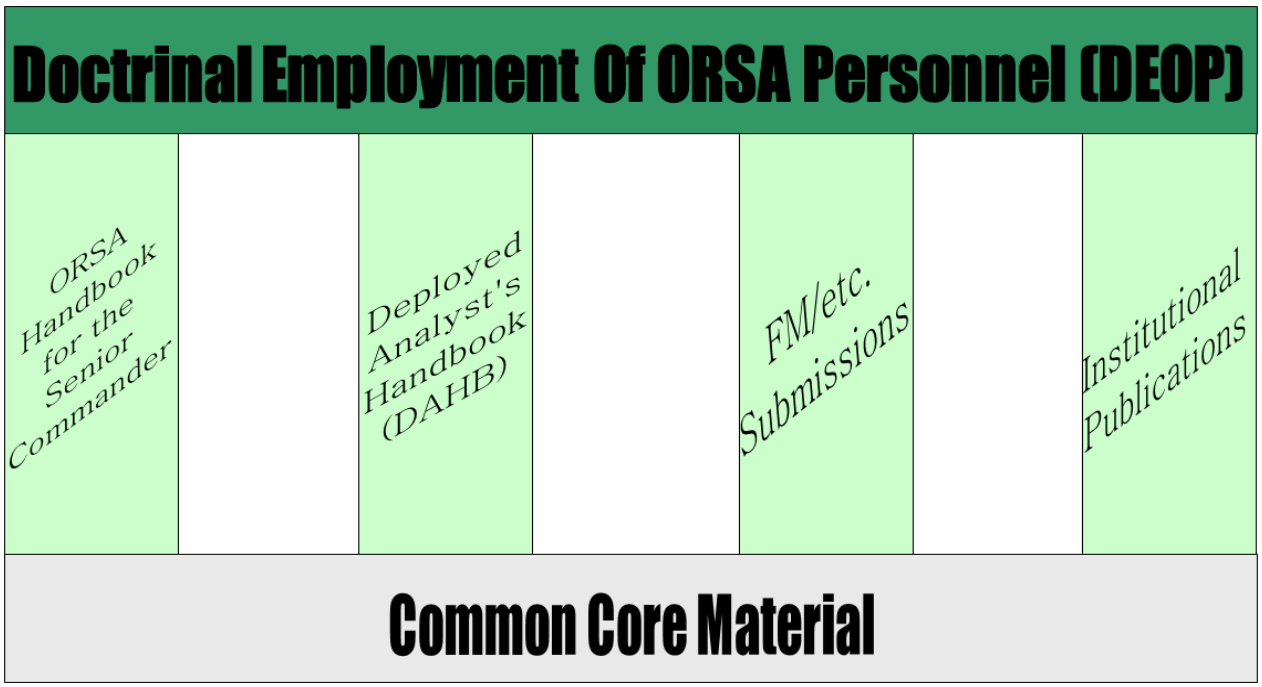

Figure 7-1 Framework for Doctrine Development

Figure 7-1 highlights the architecture for Army doctrine on the Doctrinal Employment of ORSA Personnel (DEOP). There are four pillars to DEOP. These pillars include the ORSA Handbook for the Senior Commander, the Deployed Analyst's Handbook (DAHB), FM submissions, and general publications on common core material development. CAA has made direct contributions in each of these areas.

7.2 Doctrine

The ORSA Handbook for the Senior Commander provides field commanders with a quick reference on ORSA capabilities and analysis available to support the warfighter. The handbook focuses on ORSA operational support to commanders at the brigade-and-above levels. The handbook highlights available ORSA support to the Military Decision-making Process (MDMP)

and to the EBO process. The Deployed Analyst Handbook provides deployed ORSA analysts with a quick-reference overview of expectations and the types of analysis they are likely to use to support the warfighter. The DAHB provides a general orientation and an ongoing reference for deployed ORSA analysts. It contains collective experiences and best practices of many who have served in combat operations.

CAA has provided leaders and analysts with the Senior Commander's and the Deployed Analyst's Handbooks on the Army Knowledge online system.

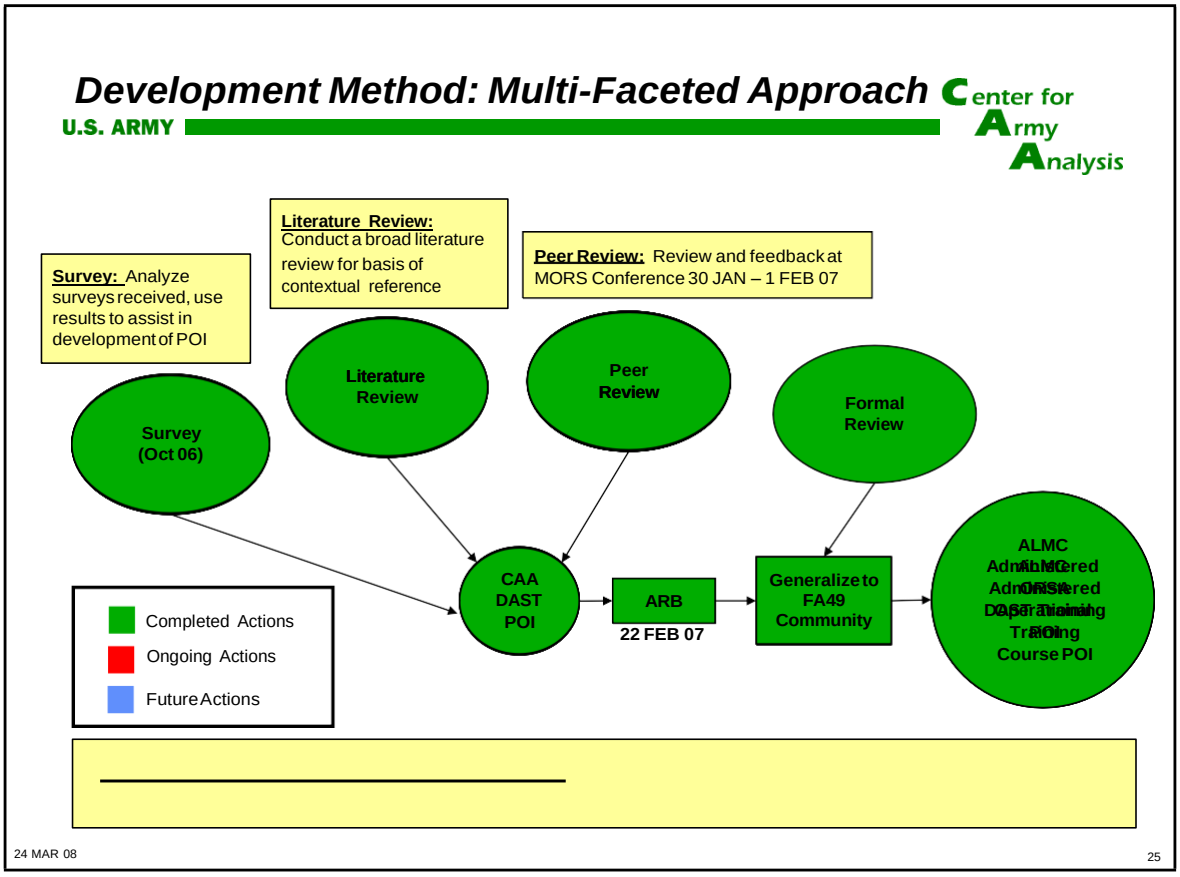

Figure 7-2 Development Method: Multi-Faceted Approach

Figure 7-2 details the development method employed by CAA analysts to create the ORSA Operational Training Course. This multi-faceted method began with a survey (see Figure 7-3) and a literature review.

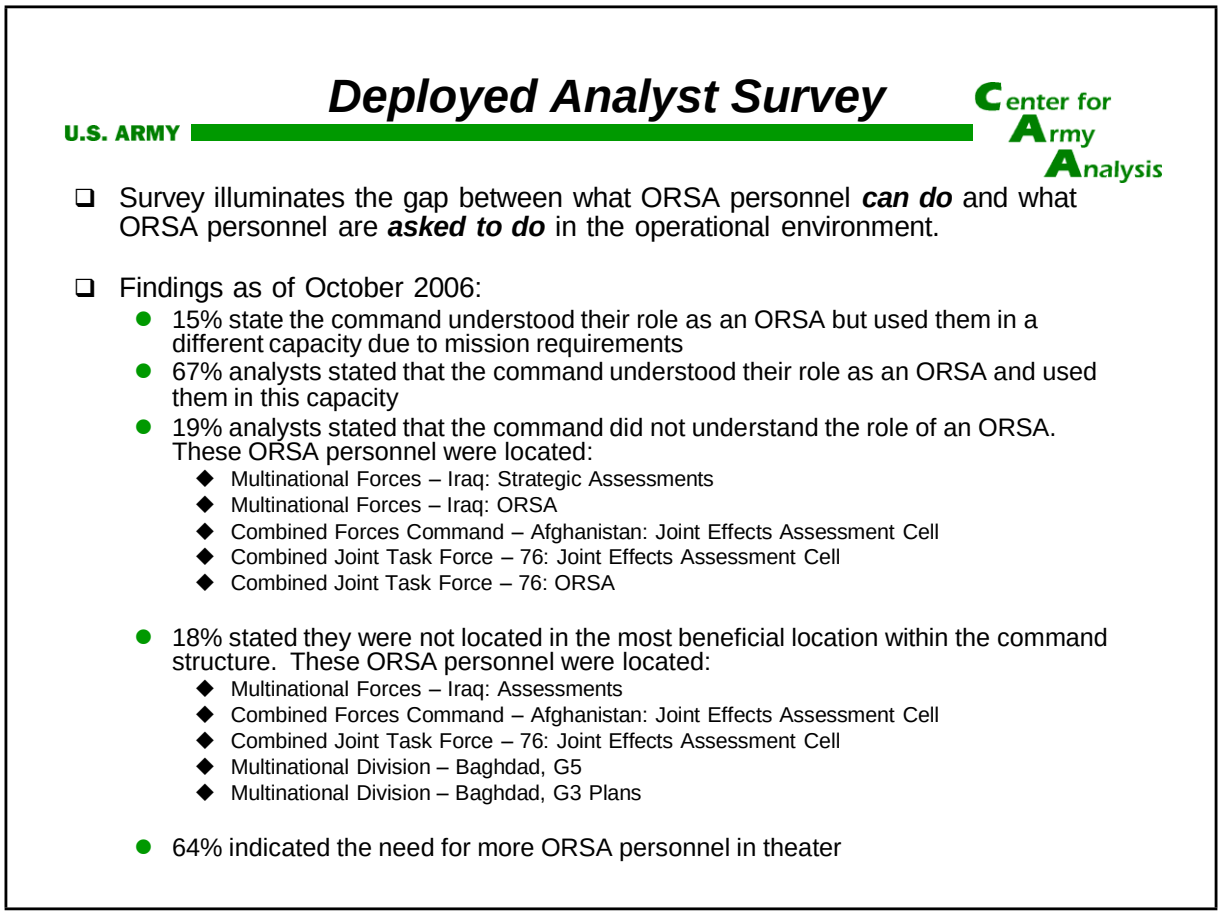

Figure 7-3 Deployed Analyst Survey

7.3 Training

CAA developed and implemented a training program for ORSA analysts serving within operational headquarters at division, corps, Army Service Component Commands (ASCC), Echelons above Corps (EAC), joint, combined and BCT levels. The training program provides a general orientation, requisite skill sets, and tools for meeting current and future challenges ORSA analysts are likely to encounter in both Iraq and Afghanistan and in other combat environments.

ORSA analysts conducted a peer review during the Military Operations Research Society (MORS) Warrior Analyst Conference held 30 January to 1 February 2007. Based on this peer review, CAA developed a deployed analyst POI prototype. CAA conducted an internal peer-review of the POI prototype at an Analysis Review Board (ARB).

The results of these various activities provided the contextual basis to expand the prototype POI to the FA 49 and ORSA community at large (shown in Figure 7-4). From 16-27 July 2007, the ORSA Community offered their first ORSA Operational Training Course at the Army Logistics Management College (ALMC) located at Fort Lee, Virginia (as of this writing, the ORSA Community provides this course twice yearly). Students can enroll online through the Army Training Requirements and Resources System (ATRRS).

7.4 Tools for Deployed Analysts

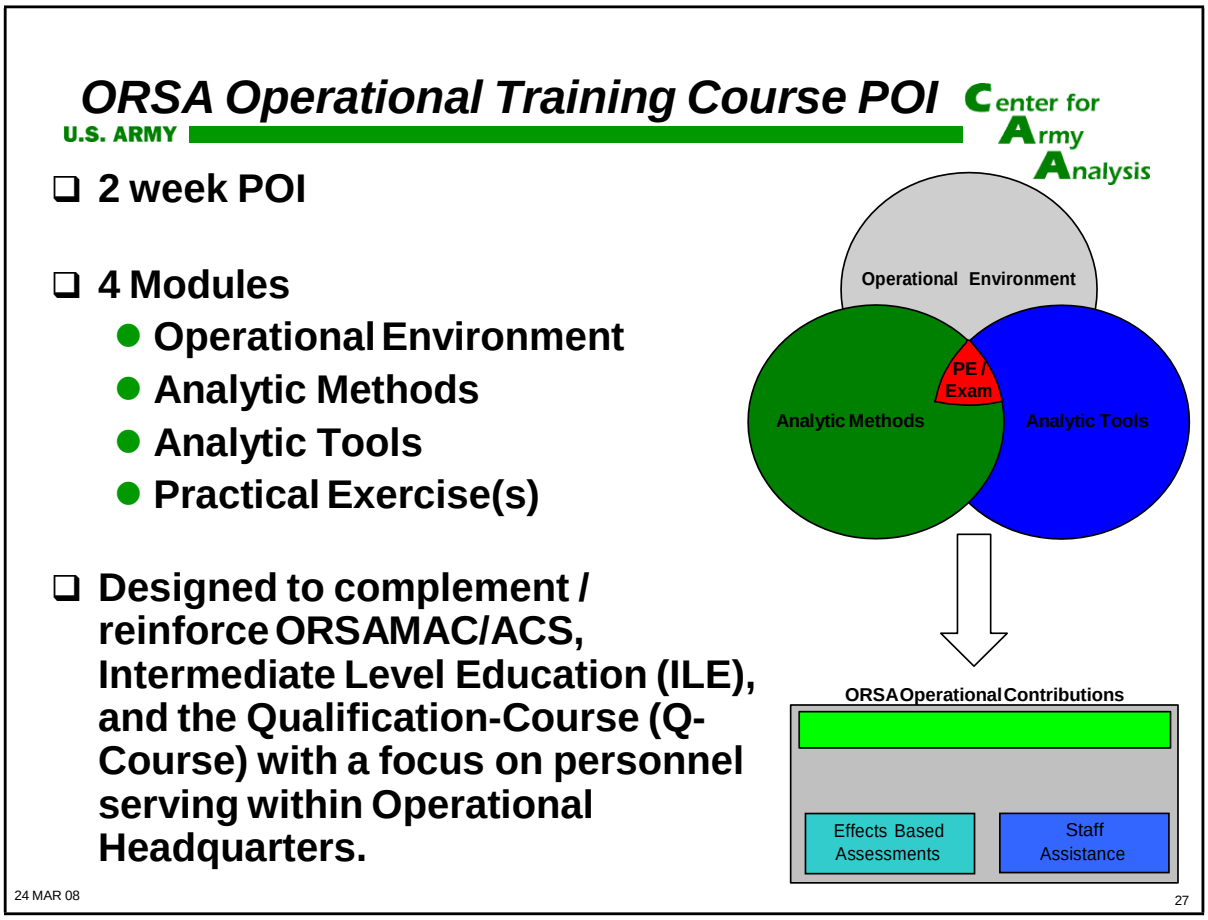

Figure 7-4 ORSA Operational Training Course POI

From the very beginning of the Global War on Terrorism (renamed Overseas Contingency Operations by the Obama Administration), CAA provided complex analyses and geo-spatial hardware and software products not available in theater.

In FY 2008, CAA allocated GWOT funds to procure 48 laptops equipped with the necessary software in order to provide deployed analysts with the necessary statistical and analytic tools. CAA issued the first laptop to a CAA deployed analyst in October 2008. These laptops have undergone appropriate re-conditioning and replacement as necessary.

The ORSA equipment suite consists of:

- Hardware
  - Stand alone notebook computer
  - Video teleconferencing equipment
  - External hard drive
- Software
  - MS Office
  - Insight (Excel Add-In) - Monte Carlo simulation, decision trees, queuing simulations optimization, Markov chains, and forecasting

- Netica – Bayesian network analysis
- Statistical Package for the Social Sciences (SPSS), advanced modules as necessary – Data analysis and comprehensive statistical analysis

- ArcGIS, spatial analyst and other add-ins as necessary – Geographic Information System software

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8 ARMY ORSA REACHBACK CENTRAL

8.1 Background

The U.S. ORSA Community provides a significant portion of the analytic support to operational and theater commands.

Analytic reachback allows the deployed operational Army, to include ORSA analysts serving at division, corps, Army Service Component Command (ASCC), and Multi-National Command HQ, to draw upon both the resources and capabilities of force-generating organizations and institutions when organic assets are insufficient. Currently, the Army maintains ORSA analysts at the Center for Army Analysis (CAA), the TRADOC Analysis Command (TRAC), and the Army Materiel Systems Analysis Agency (AMSAA). CAA voluntarily provides both analytic and administrative support for deployed analysts from its Operational Capability Assessments Division, Current Operations "Reachback" cell. The Reachback Cell expeditiously routes all theater requests for analytic support to the right analytic agency for action.

8.2 Reachback Cell Mission Strategy

The strategy has four key elements:

- Maintain close, customer-focused, and continuing contact with operational headquarters Army ORSA analysts.
- Coordinate responsive access to reachback analytic support.
- Monitor the provision of reachback products for the top management of operational headquarters organizations.
- Maintain close, continuing contact with Army, Joint, and Combined analytic agencies.

In order to facilitate this effort, CAA serves as the point of contact for Army ORSA reachback support. In this role, CAA provides an information conduit between Army operational ORSA analysts and institutional ORSA organizations. Additionally CAA tracks projects, ongoing and completed, for historical purposes. A key component to the success of reachback support is the ability to communicate effectively. CAA has created an Army ORSA Reachback Central website on SIPRNET via the Army Knowledge On-line – SIPRNET (AKO-S) in order to facilitate information sharing and collaboration.

Because reachback questions span a variety of subject areas and echelons, the task is larger than the expertise of any one agency. With CAA serving as the point of entry, ORSA analysts from TRADOC Analysis Center (TRAC), Army Materiel Systems Analysis Agency (AMSAA), Army Testing and Evaluation Command (ATEC), Army Logistics Management College (ALMC), U.S. Military Academy (USMA) and other joint analytic agencies will be available to provide Subject Matter Expert (SME) support. The expertise required includes project management (customer contact, study plan, project review, etc), maintenance of respective portions of the Army ORSA Central website on AKO-S site, project updates, and completed analytic products.

8.3 Reachback Framework

CAA manages and tracks reachback support via the AKO-S SIPRNET site. Deployed ORSA analysts send requirements to CAA via SIPRNET e-mail or telephone, using the Analytic

Support Request Form available on the Army ORSA Reachback Central website. CAA routes projects to appropriate analytic agencies and informs other agencies. CAA monitors project progression and completion. This portal also provides connectivity and access to the reachback sites of other agencies, access to agency-level files via the AKO-S Knowledge Center folders, and all releasable briefing documents.

APPENDIX A LIST OF ACRONYMS

AAA	Air Ambulance Analysis
AAB	Advisory and Assistance Brigade
AAIED	Anti-Armor IED
ABCT	Airborne Brigade Combat Team
ADA	Air Defense Artillery
AFIT	Air Force Institute of Technology
AGR	Active Guard and Reserve
AKO-S	Army Knowledge Online - SIPRNET
ALMC	Army Logistics Management College
AMEMB-B	American Embassy - Baghdad
AMSAA	Army Materiel Systems Analysis Agency
AO	Action Officer
AO	Area of Operation
AOR	Area of Responsibility
APACHE	Attack Pattern Analysis & Characteristic Exploitation
AQI	Al-Qaeda in Iraq
ARB	Analysis Review Board
ARCENT	Army Central Command
ArcGIS	Arc Geographic Information System
ASCC	Army Service Component Commands
ASR	Alternate Supply Route
ASV	Armored Security Vehicles
ATEC	Army Testing and Evaluation Command
ATRRS	Army Training Requirements and Resources System
AUSA	Association of the United States Army
AWESIM™	General-purpose Simulation System
AWTs	Air Weapons Teams
B	Billion
BCOIC	Base Closure Officer-In-Charge
BCT	Brigade Combat Team
BDA	Battle Damage Assessment

BDE	Brigade
BIAP	Baghdad International Airport
BOC	Baghdad Operations Center
BSC	Balanced Scorecard
BSD	Baghdad Security District
BUA	Battle Update Assessment
BUB	Battle Update Brief
C2	Command and Control
C2	Intelligence
C2T	Command and Control Transformation
C3	Plans and Operations
C4	Logistics
CA	Civil Affairs
CAA	Center for Army Analysis
CAATs	Container Advise and Assist Teams
CAB	Combat Aviation Brigade
CAC	Corps Assessment Cell
CACE	Corps Analysis Coordination Element
CAG	Commander’s Action Group
CAS	Close Air Support
CASB	Campaign Assessment and Synchronization Board
CASB	Commander’s Assessment and Synchronization Board
CC	Combatant Command
CCA	Country Container Authority
CCIR	Commander's Critical Information Requirements
CD	Compact Disk
CE	Constructive Engagement
CEM	Concepts Evaluation Model
CETs	Convoy Escort Teams
CF	Coalition Forces
CFLCC	Coalition Forces Land Component Command
CFSOCC	Combined Forces Special Operations Component Command

CFLCC-CO	Coalition Forces Land Component Command Commanding Officer
CG	Commanding General
CHE	Container Handling Equipment
CHOPS	Chief of Operations
CIA	Central Intelligence Agency
CIDNE	Combined Information Data Network Exchange
C-IED	Counter-IED
CIG	Commander's Initiative Group
CITP	Counter IED Targeting Program
CJ-1	Combined Joint Personnel
CJ-2	Combined Joint Intelligence
CJ-3	Combined Joint Operations
CJ-4	Combined Joint Logistics
CJ-6	Combined Joint Strategic Plans and Policy
CJ-7	Combined Joint Operational Plans and Policy
CJ-8	Combined Joint Force Structure, Resources and Assessments
CJCS	Chairman of the Joint Chiefs of Staff
CJSOTF	Combined Joint Special Operations Task Force
CJSOTF-AP	Combined Joint Special Operations Task Force – Arabian Peninsula
CJTF	Combined Joint Task Force
CLE	Commander's Liaison Element
CMO	Civil-Military Operations
COA	Course of Action
CODEL	Congressional Delegation
COG	Center of Gravity
COIC	Counter-IED Operations Integration Center
COIC	Combined Operations Intelligence Center
COIN	Counterinsurgency
CONOPS	Concept of Operations
CONUS	Continental United States
CoR	Council of Representatives
CoS	Chief of Staff

CPA	Campaign Plan Assessment
CPA	Coalition Provisional Authority
CPG	Commander's Planning Group
CRC	CONUS Replacement Center
CRSP	Central Receiving and Shipping Point
CSCs	Convoy Support Centers
CUB	Commander's Update Brief
CUOPS	Current Operations
CWU	Combined Weekly Update
DA	Department of Army
DAHB	Deployed Analyst's Handbook
DCG	Deputy Commanding General
DCGAT	Deputy Commanding General for Advising and Training
DCS	Deputy Chief of Staff
DEOP	Doctrinal Employment of ORSA Personnel
DETF	Disablement and Elimination Task Force
DIA	Defense Intelligence Agency
DOD	Department of Defense
DOJ	Department of Justice
DOS	Department of State
DTRA	Defense Threat Reduction Agency
EAB	Effects Assessment Board
EAC	Echelons Above Corps
EAC	Effects Assessment Cell
EBO	Effects Based Operations
ECOT	Effectiveness of Coalition Operations Tool
EDA	Exploratory Data Analysis
EFP	Explosively-Formed Penetrator
EOF	Escalation of Force
ESRI	Environmental Systems Research Institute
ESSB	Executive Sustainment Synchronization Board
ESV	Ethno-Sectarian Violence

EWMA	Exponentially Weighted Moving Average
EXSUM	Executive Summary
FA	Functional Area
FAQ	Fardh al - Qanoon
FB	Flatbed
FM	Field Manual
FOB	Forward Operating Base
FOREWARN	Forecasting Regional Stability in the Context of War
FRAGO	Fragmentary Order
FTF	Foreign Terrorists and Facilitators
FTP	File Transfer Protocol
FUOPS	Future Operations
GAO	Government Accountability Office
GIS	Geospatial Information System
GoA	Government of Afghanistan
GoI	Government of Iraq
GS	General Schedule
GTA	Gun Truck Analysis
GUI	Graphical User Interface
GWOT	Global War on Terrorism
GZ	Green Zone
HDAP	High Density Attack Pattern
HET	Heavy Equipment Transporters
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HN	Host Nation
HPA	High Power Amplifiers
HPA	High Profile Attack
HQ	Headquarters
HQDA	Headquarters Department of Army
HRC	Human Resources Command
I MEF	1st Marine Expeditionary Force
IA	Iraqi Army

IADD	Iraqi Army Data Development
IAF	Iraqi Armed Forces
IAL	Iraqi Army in the Lead
ID	Infantry Division
IDA	Institute for Defense Analyses
IDF	Indirect Fire
IDPs	Internally Displaced Persons
IED	Improvised Explosive Device
IFOB	Integrated Forward Operating Base
IGC	Iraqi Governing Council
IGFC	Iraqi Ground Forces Command
IMA	Individual Military Augmentee
INJOC	Iraqi National Joint Operations Center
INS	Integration of National Joint Operations Center data into SIGACTS
INTSUMs	Intelligence Summaries
IO	Intelligence Officers
IP	Iraqi Police
IPB	Intelligence Preparation of the Battlefield
IRoA	Islamic Republic of Afghanistan
ISAF	International Security Assistance Force
ISAM	Iraq Security Assistance Mission
ISF	Iraqi Security Forces
ISFA	Iraqi Security Forces Analysis
ISG	Iraqi Survey Group
ISSF	Iraqi Security Forces Funding
ISR	Intelligence, Surveillance, and Reconnaissance
ISWG	Infrastructure Security Working Group
IT	Information Technology
ITAM	Iraq Training and Advisory Mission
ITO	Iraqi Theater of Operations
IWS	Information Workspace
IZ	International Zone

JAC	Joint Analysis Cell
JAM	Jais Al Maudi
JCC	Joint Coordination Center
JCOA	Joint Center for Operational Analysis
JCP	Joint Campaign Plan
JCPAT	Joint Campaign Plan Analysis Team
JCSG	Joint Campaign Steering Group
JFCOM	Joint Forces Command
JFEC	Joint Fires and Effects Cell
JHQ	Joint Headquarters
JHQ-TT	Joint Headquarters Transition Team
JICM	Joint Integrated Contingency Model
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor
JMACE	Joint Military Art of the Command Environment
JMD	Joint Manning Document
JOC	Joint Operations Center
JOPES	Joint Planning and Execution System
JPIC	Joint Plans and Integration Center
JPT	Joint Planning Team
J-RSOI	Joint Reception, Staging, Onward Movement, and Integration
JSC-PSA	Joint Subcommittee for Provincial Stability Assessment
JSPA	Joint Strategic Plans Assessments
JSSDP	Joint Staff Support Data Packet
JSTAFF	Joint Staff
JTF	Joint Task Force
JWAC	Joint Warfare Analysis Center
K	One Thousand
KIA	Killed in Action
Km	Kilometer
KM	Knowledge Management
KMO	Knowledge Management Office
KMWG	Knowledge Management Working Group

KwH	Kilowatt per Hour
LCMR	Lightweight Counter-Mortar Radar
LNO	Liaison Officer
LOO	Line of Operations
LSA	Logistics Support Area
LTC	Lieutenant Colonel
M	Million
MDMP	Military Decision-Making Process
MEDEVAC	Medical Evacuation
MEF	Marine Expeditionary Force
MEL4	Military Education Level 4
MLRS	Multiple-Launch-Rocket System
MNC-I	Multi-National Corps - Iraq
MND	Multi-National Division
MND-B	Multi-National Division-Baghdad
MND-C	Multi-National Division-Center
MND-CS	Multi-National Division-Center South
MND-N	Multi-National Division-North
MND-NE	Multi-National Division-Northeast
MND-SE	Multi-National Division-South East
MNF-I	Multi-National Forces - Iraq
MNF-W	Multi-National Force-West
MNSTC-I	Multi-National Security Transition Command-Iraq
MoD	Ministry of Defense
MOE	Measure of Effectiveness
MoI	Ministry of Interior
MOP	Measure of Performance
MORS	Military Operations Research Society
MOUT	Military Operations on Urban Terrain
MP	Military Police
MPE	Manpower Equivalent
MRA	Manasia, Research and Analysis

MS	Microsoft
MSC	Major Subordinate Commands
MSR	Main Supply Route
NAI	Named Areas of Interest
NATO	North Atlantic Treaty Organization
NCC	National Command Center
NCO	Non-Commissioned Officer
NGO	Non-Governmental Organization
NIPRNET	Non-secure Internet Protocol Router Network
NJOC	National Joint Operations Center
NOC	National Operations Center
NRS	Non-rolling stock
NSC	National Security Council
NSC	National Simulation Center
NTA	Near-Term Assessment
NTLAS	Neurosurgical Team Location Study
NTM-I	NATO Training Mission-Iraq
OA	Operations Analysis
OC	Operational Commander
OCA	Operational Capability Assessments
OCO	Overseas Contingency Operation
ODA	Operational Detachment Alpha
OEF	Operation Enduring Freedom
OER	Officer Evaluation Report
OIF	Operation Iraqi Freedom
OMB	Office of Management and Budget
OND	Operation New Dawn
OPCON	Operational Control
OPG	Operations Planning Group
OPLAN	Operations Plan
OPORD	Operations Order
OPSUMS	Operations Summaries

OPTEMPO	Operating Tempo
OPT	Operation Planning Team
OR	Operations Research
ORA	Operational Readiness Assessment
ORSA	Operations Research/Systems Analysis
OSD	Office of Secretary of Defense
OTF	Operation Together Forward
PAM	Pamphlet
PAO	Public Affairs Office
PBIED	Person-Borne IED
PERSTAT	The Personnel Status
PIC	Provincial Iraqi Control
PIP	Point In Polygon
PJCC	Provincial Joint Coordination Center
PMFs	Presidential Management Fellows
POC	Point of Contact
POI	Program of Instruction
POTUS	President of the United States
PPBES	Planning, Programming, Budgeting, and Execution System
PSD	Personal Security Detachment
PTDS	Persistent Threat Detection System
PTTs	Police Transition Teams
QRF	Quick Reaction Force
R2TF	Responsible Reset Task Force
R&R	Rest and Recuperation
RAID	Rapid Aerostat Initial Deployment
RAO	Rear Area Operations
RDML	Rear Admiral
RDoF1	Responsible Drawdown of Forces
RFA	Request for Assistance/Analysis
RFIs	Requests for Information
ROC	Rehearsal-of-Concept

ROK	Republic of Korea
RPAT	Redistribution Property Assistance Team
RS	Rolling Stock
SA	Situational Awareness
SADIQ	Situational Awareness Database - Iraq
SAND	Subject Matter Expert Analytic Networked Database
SAO	Security Assistance Office
SASO	Security and Stability Operations
SAVA	SWA Air Vulnerability Analysis
SDDC	Surface Deployment and Distribution Command
SEAL	Sea, Air, Land
SFA	Strategic Framework Agreement
SIGACTS	Significant Activities
SIPRNET	Secret Internet Protocol Router Network
SKIL	Support in Kuwait for Internal Look ‘03
SLF	Senior Leader Forum
SME	Subject Matter Expert
SOC	Strategic Operations Center
SOI	Sons of Iraq
SPA	Strategy, Policy and Assessments
SPSS	Statistical Package for the Social Sciences
SSPK	Single Shot Probability of Kill
SOFA	Status of Forces Agreement
STRATCOMM	Strategic Communications
STRATEFFS COMMS	Strategic Effects Communications
STRATOPS	Strategic Operations
SVIED	Suicide Vest IED
SVTCs	Secure Video Teleconferences
SWA	Southwest Asia
SWAG	Simple Worksheet-Based Analysis Graphical User Interface
T2T	Troop-to-Task
TAA	Total Army Analysis

TACWAR	Tactical Warfare
TARGET	Transportability Analysis Report Generator
TEU	Twenty-foot Equivalent Unit
TF	Task Force
TM	Training Manual
TOA	Transfer of Authority
TRA	Training Readiness Assessment
TRAC	TRADOC Analysis Center
TRADOC	Training and Doctrine Command
TSC	Theater Sustainment Command
TS	Top Secret
TTPs	Tactics, Techniques, and Procedures
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
UN	United Nations
UNAMI	United Nations Assistance Mission to Iraq
UNSC	United Nations Security Council
U.S.	United States
USEMB-B	U.S. Embassy-Baghdad
USF-I	United States Forces - Iraq
USAF	United States Air Force
USAID	United States Agency for International Development
USCENTCOM	United States Central Command
USF	United States Forces
USG	United States Government
USMA	U.S. Military Academy
USM-I	U.S. Mission in Iraq
VBA	Visual Basic for Applications
VBC	Victory Base Complex
VBIED	Vehicle-Borne Improvised Explosive Devices
VEOs	Violent Extremist Organizations
VIPs	Very Important Persons

VTC	Video Teleconference
WebTAS	Web-Enabled Temporal Analysis System
WG	Working Group
WIA	Wounded in Action
WIAS	Worldwide Individual Augmentee System
WMD	Weapons of Mass Destruction
XO	Executive Officer

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