Operational Sustainment in an Immature Theater

A Monograph
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Second Term AY 89/90

UNCLASSIFIED
JRITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION / AVAILABILITY OF REPORT approved for public release
DECLASSIFICATION / DOWNGRADING SCHEDULE	distribution unlimited
PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
NAME OF PERFORMING ORGANIZATION SCHOOL OF ADVANCED MILITARY STUDIES, USAC@cgsc 6b. OFFICE SYMBOL (If applicable) atzl-swv	7a. NAME OF MONITORING ORGANIZATION
ADDRESS (City, State, and ZIP Code)	7b. ADDRESS (City, State, and ZIP Code)
8. NAME OF FUNDING / SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
OPERATIONAL SUSTAINMENT IN AN IMMATURE THEATER (U).

12. PERSONAL AUTHOR(S)
Maj. YVES J. FONTAINE, USA.

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
MONUGRAPH	FROM _____ TO _____	90/04/30	54

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	SUSTAINMENT, IMMATURE THEATER, CONTINGENCY OPERATIONS, CONGO, FALKLANDS, DOMINICAN REPUBLIC, GRENADA, OPERATIONAL LEVEL OF WAR, OPERATIONAL SUSTAINMENT.

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This study identifies critical sustainment issues for the deployment of contingency forces to an immature theater and analyzes doctrine's adequacy as it provides guidance to logisticians in developing concepts to support such operations. The study begins with an analysis of four contingency operations: the 1964 US/Belgian hostage rescue in the Congo, the 1965 US intervention in the Dominican Republic, the 1982 British campaign in the Falklands, and the 1983 US invasion of Grenada. The study identifies repetitive sustainment problems with each operation as compared with the following sustainment considerations: planning, deployment, command, control and communication, synchronization logistics intelligence, forward basing, air superiority, future sustainment, and medical evacuation. These problems are the sustainment issues which require particular attention from logisticians when developing a support concept for contingency operations. The analysis identifies the need to use existing plans, the need to use preestablished loading plans, the need for a Joint Task Force (JTF)with a logistics cell and dedicated

20. DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION Unclassified
22a. NAME OF RESPONSIBLE INDIVIDUAL Major Yves J. Fontaine	22b TELEPHONE (Include Area Code) (913) 684-2138 22c. OFFICE SYMBOL ATZL-SWV

DD Form 1473, JUN 86 *Previous editions are obsolete.*

SECURITY CLASSIFICATION OF THIS PAGE
UNCLASSIFIED

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SCHOOL OF ADVANCED MILITARY STUDIES

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Accepted this 29th day of May 1990

A-1

ABSTRACT

OPERATIONAL SUSTAINMENT IN AN IMMATURE THEATER by MAJ Yves J. Fontaine, USA 54 pages.

This study identifies critical sustainment issues for the deployment of contingency forces to an immature theater and analyzes doctrine's adequacy as it provides guidance to an analysis of four contingency operations; the 1964 US/Belgian hostage rescue in the Congo, the 1965 US intervention in the Dominican Republic, the 1982 British campaign in the Falklands, and the 1983 US invasion of Grenada. The study identifies repetitive sustainment problems with each operation as compared with the following sustainment considerations: planning, deployment, command, control and communication, synchronization logistics intelligence, forward basing, air superiority, future sustainment and medical evacuation. These problems are the sustainment issues which require particular attention from logistician when developing a support concept for contingency operations. The analysis identifies the need to use existing plans, the need to use preestablished loading plans, the need for a Joint Task Force (JTF) with a logistics cell and dedicated communication, the need for logistics intelligence, the proper use of synchronization, and the necessity for protection through air superiority as issues in sustaining the deployment of contingency forces in an immature theater. The analysis reaffirms doctrine's adequacy in addressing the issues.

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I INTRODUCTION

The United States and its allies have used contingency operations throughout history to achieve their strategic objectives. The deployment of US forces in Lebanon in 1958, the intervention in the Dominican Republic in 1965, and the assistance provided to allies for the hostage rescue in the Congo in 1964 are some examples of US involvement in contingency operations using joint and combined forces. More recently, Britain's victory over Argentina during the battle for the Falklands in 1982, the United States' victory over Cuban expansionism in the 1983 "Urgent Fury" operation, and the recent successful operation in Panama, demonstrate additional use of contingency forces to meet strategic objectives.

Today, the recent developments in world affairs toward democracy and the constant increase in cost of military systems oblige the major world players to look toward different uses of armed forces to achieve strategic objectives. For example, the breakdown of the Eastern block communist regimes, the rise of democratic tendencies in the Soviet Union and the unification of Western Europe are some examples of a world striving toward freedom and a better life. As a result, world powers become more peaceful, and economic pressures dictate the type and quantity of forces each side can afford. These factors substantially reduce the risk of a major world conflict as compared to the past

century. Therefore, one can see warfare changing from nations' use of large conscript armies in a large theatre of war to the use of small armies capable of deploying throughout the world.

In this monograph, I will identify critical sustainment issues for the deployment of contingency forces to an immature theater by analyzing operational sustainment in support of the following operations: the 1964 "Dragon Rouge and Noir" operations - the US intervention in the Congo to rescue hostages; the 1965 operation "Power Pack" - the US intervention in the Dominican Republic; the 1982 operation "Corporate" - Britain's battle for the Falklands; and the 1983 "Urgent Fury" operation - the US invasion of Grenada. I will analyze the support concept and actual support provided in each contingency operation using the following sustainment considerations: planning, deployment, command, control, communication (C3), synchronization, logistics intelligence, forward basing, air superiority, future sustainment, and medical evacuation. From this analysis, I will identify repetitive logistics problems which occurred in contingency operations. These problems are the sustainment issues which require particular attention from logisticians when developing a support concept for contingency operations. Finally, I will determine if today's joint doctrine provides the proper guidance to logisticians in developing such support concepts. The objectives of the monograph are

twofold: first, to depict a list of sustainment issues which are useful to logisticians in preparing support concepts for contingency operations, and second to recommend to either maintain or improve the joint logistics doctrine in planning the support for contingency operations.

FM 100-5, Operations, defines contingency operations as "Military actions requiring a rapid deployment to perform military tasks in support of national policy."(1) Normally, the US uses contingency operations to provide a show of force in support of a threatened ally, to react to an invasion of a friendly government, to protect property of US nationals and to rescue hostages.(2). To achieve these missions, contingency operations most likely consist of joint undertakings conducted under the framework of the unified command system. The unified and specified command planners consider numerous factors to ensure the force's readiness and availability to accomplish the mission. These include an analysis to determine mission tasks, and an analysis of the adequacy, deployability, supportability, affordability, and availability of the force.(3). A discussion about all these factors is beyond the scope of the monograph, but a closer look at the considerations for the deployment and sustainment of contingency forces can serve as a basis for further historical analysis.

FM 100-5, Operations, and FM 100-16, Support Operations, Echelons Above Corps, identify numerous support

considerations in using contingency forces in an immature theater. First, in order to achieve *initial maximum combat* power and rapid deployment, contingency forces most likely deploy with minimal logistics assets, following an established plan.(4). Second, contingency forces will most likely deploy to a theater without a significant preestablished US support base, no prepositioned material and minimal host nation support. Third, contingency operation planners may anticipate that the actual employment of the force will be of short duration but will still require additional forces to achieve the strategic objectives.(5). Fourth, the availability of logistics intelligence plays an important role in providing the necessary data to assist planners in the allocation of the proper mix of forces deploying to the theater of operation.(6). Fifth, the need for rapid response requires contingency forces to rely heavily on strategic airlift for deployment and resupply. (Sealift is still needed to transport oversized elements and following forces to the theater). This primary dependency on the air mode translates into a need for continuous air superiority while deploying the force and securing lines of communication.(7). Finally, long range communication is crucial for proper coordination and synchronization between elements in the theater of operation and theater of war.(8) The analysis of the four contingency operations will demonstrate that failure to properly address these

considerations results in significant logistics shortfalls.

II. Analysis of Contingency Operation

A. Dragon Operation- Rescue of Hostages in the Congo 1964-1965.

The 1964 Congo hostage rescue, code name "Dragon Rouge and Noir", was a unique operation without contingency precedent. Hostage seizures by emerging political factions started a new form of warfare. Neither the US nor Belgian governments had a contingency plan on the shelf. The operation was a military operation short of war fought with political limitations, time constrained planning, and outside pressure from world opinion.(9)

The US-Belgian operation was devised to rescue European and US citizens trapped in the internal Congolese Simba rebellion. The Simbas had captured over half of the country. More importantly, they had captured the city of Stanleyville which acted as the hub of the Eastern Congo transportation network. The rebels also controlled the 1600 European/US citizens located in Stanleyville.(10) The Simba's capture of Stanleyville had stunned the western world, forcing the US and Belgian governments to react in support of the sovereign African nation. The US Joint Chief of Staff (JCS) immediately tasked the US Strike Command (USSTRICOM), under the command of General Paul Adams, to deploy a Task Force to the Congo.(11) General Adams formed Joint Task Force (JTF) Leo and located it in the Congo to coordinate US efforts in

support of the Congolese forces. The Belgian and Congolese governments formed an "international" army, under the command of Belgian Colonel Frederick Vandewalle, with a mission to defeat the rebel force and restore Congolese control over the African Nation. The army consisted of Belgian officers acting as advisers to African troops, mercenaries and Katangese tribal soldiers.(12). As Colonel Vandewalle advanced toward Stanleyville however, the Belgian, US and Congolese governments started to fear for the safety of the US and European citizens.

In order to prevent a holocaust, an operation to rescue the US and European citizens had to be implemented. On 8 November, the Belgian Prime Minister proposed a combined US-Belgian operation to accomplish the rescue mission.(13). Even though General Adams had developed OPLAN 515-1 under which a US airborne unit would have rescued the hostages, the final political decision to use Belgian forces to accomplish the rescue mission prevented implementation of this plan. On 10 November, the JCS sent orders to the United States European Command (USEUCOM) to assemble a team and plan the operation with the Belgians.(14).

Although lacking a clear mission statement, USEUCOM and Belgian planners developed OPLAN (319/64) which called for two rescue operations.(15). The first, Dragon Rouge consisted of three phases: the first phase involved 12 C130E aircraft deploying 545 Belgian soldiers, 8 jeeps, 12 motor

tricycles commanded by Belgian Colonel Charles Laurent to the Congo. The force would start in Belgium, with enroute rest and refueling stops in Spain, Ascenscion Island, and Kamina airfield in the Congo. At the final stop, mission coordination with Colonel Vandewalle was to be conducted for deployment to Stanleyville. The second phase, the assault phase, consisted of an airborne assault on Stanleyville to secure the airfield. The Belgian airborne force would then liberate the hostages and evacuate them to Kamina airfield near Leopoldville during the third phase.(16). The plan worked well. Although the Simbas shot some of the hostages, (18 dead, 40 wounded), the majority (appr. 1200) were rescued and evacuated to Leopoldville.(17)

The second operation, "Dragon Noir", the rescue of hostages at Paulis, Congo, followed a similar concept. Belgian paratroopers were picked up at Stanleyville and flown to jump on Paulis to secure the airfield and evacuate the hostages. In this instance, the fog prevented the Simbas from firing accurately on the C130E carrying the paratroopers. Although 20 hostages were massacred as the paratroopers landed, the operation resulted in an additional 375 hostages liberated.(18)

The combined force planners devised a simple and easily coordinated concept to support the operation. Each country retained control of its own forces. The Belgians provided the manpower to accomplish the mission, while the US provided

the logistic support and deployment assets. Specifically, the US provided sixteen C130E aircraft to move one Belgian airborne battalion with organic equipment and the bulk of air resupplies including additional air sustainment, rations and ammunition.(19)

The deployment to Stanleyville and Paulis followed a well laid plan. The planners believed intelligence reports which identified Stanleyville airport as capable of handling only three C130 airframes at a time. Therefore, planners organized the aircraft flow into Stanleyville to fit the receipt capability of the airport. Aircraft 1,2,3,4,5 were used to assault the airfield in an airborne operation; aircraft 8,9,11 for quick off load of paratroopers; and aircraft 6,7,10, and 12 for long term off load such as equipment, ammunition, and vehicles. Aircraft 6,7,10 were also used as hostage rescue aircraft and aircraft 12 as medical evacuation aircraft.(20). The deployment to Paulis followed the same procedures.

Valid concerns were raised during the planning, involving the availability of medical support to the Belgian force and the hostages and the compatibility in communication within the combined force. The US agreed to supply an emergency medical team along with medical supplies. The Belgians also augmented their field medical staff with elements from the military hospital at Anvers. The US Air Force (USAF) provided an additional C130 aircraft "talking

bird" and ground to air radios to allow the Belgian forces to communicate with the American aircraft.

Finally, the command and control was split between the two countries. Operational control remained with the American airlift commander until arrival at Stanleyville, where operational control switched to the Belgian jumpmasters and Belgian commander.(21)

The analysis of the concept of support with the sustainment criteria listed in the introduction on page 3 identified problems in planning and C3. First, the lack of a mission statement complicated the planning process and demonstrated the reluctance of both countries to directly intervene militarily in a foreign country's internal problem.(22) Second, the ad hoc organization influenced by the hesitant political leadership and the lack of synchronization between political and military leaders allowed planners only 48 hours to plan an entirely new operation.

The lack of planning time affected the preparation for the deployment of the forces. The US preparation for the operation concentrated on support for airlift, provided by the 322nd Air Division at Evreux, France.(23) Colonel Burgess Gradwell, who commanded the airlift for Dragon Rouge and Noir, had to assemble fifteen crews and aircraft consisting of 12 primary aircraft, 1 maintenance aircraft, 1 spare aircraft, and a talking bird. He also had twenty four

hours to assemble twenty eight maintenance personnel, spare parts and spare engines. These requirements forced him to recall aircraft from missions as far as Libya to support the operation.(24)

The force encountered further difficulties in staging for actual deployment. Political pressure influenced planners to alter the choice of staging base from Wheelus Air Base, Libya to Ascension Island. The decision forced the establishment of an additional refueling point in the Congo (Kamina), and added critical time to the overall deployment plan.(25). Additionally, Ascension Island did not have the facilities to support a large deployment of forces. Thus, planners had to plan and provide additional logistics support in a short time. As a result of rapid planning, the US Air Force officer in charge was surprised to receive a force of 14 aircraft and 700 personnel arriving for staging and did not have the logistics apparatus ready to support the force. The Dragon task force had to spend one uncomfortable night waiting for appropriate accommodations.(26). Once in the staging area, US-Belgian training in proper communication procedures and airborne jumping procedures was conducted.

Command, control and communications reflected the disjointed feelings about the situation; lines of authority were muddied and often in conflict.(27) At the tactical level, confusion erupted in both Belgian and American camps. The exclusion of General Paul Adams from the planning of

logistics support after he had developed a joint task force in the Congo and an OPLAN to rescue the hostages with US soldiers, was disruptive and extended command rivalries between USEUCOM and USSTRICOM over the American airlift. This event foreshadowed planners who would ignore an already developed OPLAN in future operations in the Dominican Republic and Grenada. General Adams was finally given operational control of the assault airlift force at Ascension to ease the strained relations between the two Headquarters.([redacted]) Adams dispatched a liaison officer to the staging area and pulled the communication annex out of OPLAN 511-1 to use in support of Dragon Rouge and Noir. Similar problems arose between Colonels Laurent and Vandewalle because each individual had misgivings about the other's operation.

Communication problems did not significantly impact logistics operations but aggravated the command and control problem. The Belgians did not establish a control headquarters during the operation and thus, had to rely on US communications to coordinate with their national joint staff. This added to the emphasis on security, overloaded the communications system with classified traffic and overwhelmed the capacity of the talking bird.

Obviously, the lack of detailed planning and the problems in command and control affected the synchronization of the operation. The combined leadership on site, however,

overcame the problem by face to face coordination. Liaison officers were provided at all levels of decision making, and language was not a problem in planning since the Belgians spoke English.

Overall, the mission was a success with 1600 hostages rescued and only 61 killed.(29). However, operationally the haste in planning and the lack of a sound command and control system resulted in a slow reaction by the combined forces. Logistically, the hasty planning affected support to the combined force at the staging area and resulted in deployment problems. The C2 problems prevented the planners from using an already developed OPLAN and expand on it to fit the new situation. Although these problems affected operational level synchronization, tactical face to face coordination assured the success of the operation.

B. Operation Power Pack: The Intervention in the Dominican Republic-1964-1965.

In April 1965 and closely following the involvement in the Congo, US forces deployed to secure US interest in a foreign nation.(30) President Johnson decided that a political solution to recent turmoil in the Dominican Republic could not be achieved and directed the employment of US forces in the area. The President's primary goal was to protect American lives, but also, to prevent a regime sympathetic to the Communists from taking power in the region.(31)

The operation consisted of an initial landing of 536 Marines assigned to Task Group 44.9 into Santo Domingo, followed by 2 Airborne Combat Teams of the 82nd Airborne Division.(32) These forces were augmented by the remainder of the 82nd Airborne Division and the 4th Marine Expeditionary Brigade. The Marines established an international security zone around the US embassy and opened a corridor through rebel territory. They joined with the 82nd Airborne soldiers who had landed at San Isidro airfield on the opposite side of the island. The corridor trapped rebel units in a controlled area and provided an internal line of communication between Army and Marine forces. This assisted in humanitarian acts which included making food, medicine, and water available to the inhabitants.(33) The US soldiers remained in these positions until relieved by the Organization of American State (OAS) forces.

The initial concept of support called for the deployment of forces with five days of supplies using strategic airlift and for the rapid establishment of a resupply system. The strategic airlift used in deploying elements of the 82nd Airborne Division to the San Isidro airfield consisted of 33 C130 sorties to carry troops and 111 C130 sorties to carry equipment.(34) Units deployed with 5 days of classes I and III; 15 days of classes II and IV; and the unit basic load in class V. Units also deployed with organic medical support. Automatic resupply procedures were initially established from

one staging area at Pope Air Force Base (AFB). This was changed to two staging areas when Pope became saturated with outgoing supplies.(35) The expansion of logistics support occurred soon after the initial flow. The 5th Logistical Command established a logistical base by D+7 in anticipation of the arrival of the Latin American forces. The port of Andres was secured by D+10 for the arrival of the first shipment of automatic resupply. The discharge capability of the port, however, was insufficient to support the requirements which forced the US to establish logistics over the shore operations.(36)

Even though the deployment achieved its original purpose in supporting the soldier, the contingency operation exposed several problem areas when analyzed with the sustainment criteria identified previously. Problems in planning, deployment, C3, logistics intelligence, and synchronization affected sustainment of the operation.

As the President decided to alert and deploy elements of the 82nd Airborne Division, XVIII Airborne Corps and Tactical Air Command (TAC), serious difficulties arose in planning the airlift. Specifically, and as seen during the crisis in the Congo, services did not have the updated deployment plans developed by the Atlantic Command (LANTCOM-OPLAN 310-2-65) which addressed airlift operations in the Dominican Republic.(37) Thus, sloppy plan maintenance resulted in planners using outdated and inaccurate information to develop

a plan for the operation. For example, the XVIII Airborne Corps OPLAN 310-2 lacked an up to date troop list, while the 82nd Airborne Division OPLAN 310-2L-63 did not reflect the current configuration of the Division. Obviously, the inaccurate information affected resupply calculations, which resulted in emergency resupply actions during the operation.(38).

The deployment itself encountered significant problems. Hasty planning and rushed loading, compounded by the reluctance of the Air Force to change plans to fit the tactical needs, resulted in aircraft arriving at destination without full loads and with unneeded supplies.(39) The delayed decision to remove and derig equipment used in the "Blue Chip" exercise (ongoing at the same time), the lack of adequate lighting and the shortage of Air Force loading equipment further impaired loading procedures.(40)

The crisis between deployment and logistics worsened as the JCS directed additional soldiers to deploy to the theater of operation. For example, upon receiving embassy reports of mass casualties in San Domingo, the JCS inserted the 15th Hospital into the airlift. The reports were erroneous, and the unplanned assets just augmented an adequate medical system.(41) Naturally, as the Power Pack tactical troop list expanded, the combat service support resupply also increased and by D+1, it became apparent that the initial staging area Pope AFB had reached a saturation point forcing the

establishment of an alternate airfield at Seymour Johnson AFB.(42)

The operation experienced similar command, control and communication problems as in the Congo. Commodore James A. Dare, Commander of Task Group 44.9, initially controlled the operation from his flag ship at sea. This created a C2 problem because of difficulties encountered in communication from ship to shore. Neither the Task Group 44.9 nor the US Embassy in Santo Domingo had the adequate equipment to communicate with one another. The US embassy added to the confusion by issuing execute orders to the deployed military forces on the ground. Communication across the board remained a problem until the arrival of the 82nd Airborne Division Headquarters, forcing the leadership to use a hand radio to communicate between Task Group 44.9 and the embassy during the first stage of the intervention.(43)

Logistically, the 82nd Airborne Division identified inadequate communication as a problem during the operation. The inability of the forward elements to communicate with the logistic center in the US prevented proper requisitioning of logistics assets. Additionally, when the need for a second staging area surfaced, the problem in communication still existed increasing the lack of control in requisitioning. This resulted in an uneven flow of aerial resupply and in a loss of control of logistics assets during the initial stages of the operation. The situation was rectified when a

centralized logistics command, the 5th Logistical Command, took control of the airfield and supply stocks and, when given appropriate communication capability, established a logistical base.(44)

The establishment of the logistical base was also hampered by errors in intelligence. For example, the lack of real estate and covered areas for sensitive supplies resulted in supplies being unprotected and weather damaged. A proper analysis of logistics assets available in the area during the planning phase would have revealed these limitations prior to deployment.(45).

The initial problem with the deployment plan added to the lack of cooperation in changing loading plans and serial flights to fit the tactical needs, resulted in serious synchronization problems. For example, as force employment became imminent, tactical troop strengths were suddenly increased and logistical units phased back in the air stream. The subsequent delay of the introduction of the logistics units in the theater, which were carrying part of the deployed unit's supplies, created confusion. Units had to use emergency requisition procedures to overcome shortages. The proper synchronization of the flow of combat and combat service support (CSS) units would have ensured a timely introduction of logistical elements in the theater and concurrently assured continuous sustainment.(46)

The intervention in the Dominican Republic was a

success. Operationally, the US restored democracy and averted a communist take over in the region at a cost of 27 soldiers killed and 172 wounded.(47) Logistically, problems occurred throughout the operation. These were primarily caused by rapid planning, inadequate communication equipment, and lack of synchronization in deploying the force. The major costs incurred consisted of an increase in emergency requisitions during the operation which caused unplanned resupply actions, and a loss of control on logistics assets during the initial phase of the operation. Nevertheless, the establishment of a logistical base in the Dominican Republic rectified the problems and ensured that no significant logistics shortages were experienced by the force.

C. OPERATION CORPORATE: The Battle for the Falklands-1982.

The Falklands are a group of islands under British rule located 8,000 miles Southwest of the United Kingdom, over 3,500 miles from Ascension Islands and 400 miles from the Argentine mainland.(48) On 28 March, 1982, an Argentine task force composed of one aircraft carrier, three destroyers, three transporters, two corvettes, and one landing ship invaded the Falkland Islands(49). In response to the Argentine invasion of British territory, Britain deployed its contingency forces with rapid speed. Britain formed Task Force 317, consisting of a carrier group and a landing task force group. This force had a mission to

conduct military operations to reestablish British control over the Falklands.(50)

There were two phases to the campaign: Phase One from 1 to 21 May consisted mainly of naval and air engagements in which the Argentine suffered tremendous aircraft losses and the British lost 6 major ships.(51). Phase Two from 21 May to 14 June consisted of an aggressive British offensive after a landing at San Carlos beachhead and included ground attacks which resulted in the Argentine surrender.(52)

The logistics support to this operation and the dispatch of a task force in such a short time were magnificent achievements. They resulted from close cooperation between services, merchant navy, royal dock yards, commercial ports, transportation offices and industry. First, the task force had to be stocked with provisions for at least three months at sea. Second, a system had to be established for resupply without return to Britain.(53) Third, a plan had to be conceived to support the concept of operation. To achieve logistical support of such a large task force, the British requisitioned civilian ships to augment the Royal Fleet Auxiliary (RFA). They modified these ships to accept military equipment, supplies, and soldiers. Additionally, in order to support the task force during the sea voyage, the RFA stationed fuel tankers throughout the route to the Falklands and a resupply ship in the vicinity of Gibraltar.(54)

Concurrently with deployment, lead elements of the British forces landed at Ascension Island, preparing the island to operate as the intermediate staging area for the task force. Thousands of tons of supplies were flown to the staging area to support the amphibious task group.[55] Later, another logistics staging area was established at sea closer to the Falklands which had the capability to repair battle damage on vessels. The tug, repair, and logistics area operated on the northeast edge of the theater under the protection of the carrier battle group.[56]

Command and control of logistics operations fell on Commodore Michael Clapp. He was assisted in his task by an ad-hoc tri-service logistics support cell which became invaluable in coordinating resupply. LTC Ivar Hellberg, commander of the commando logistics regiment developed the concept for providing support to the land forces. The plan called for two landing ships to support one beachhead landing with replenishment ships remaining further at sea.[57] A hospital ship also remained at sea ready to accept casualties evacuated by air. The concept, naturally, called for air superiority to allow 24 hour a day operation. The following analysis of the sustainment concept compared to the sustainment criteria described in the introduction identifies the strong British cooperation and synchronization between services and industry, the choice of staging area, C3, and the proper use of logistics intelligence as the causes behind

a successful operation. However, the British encountered problems in loading procedures and air superiority.

The synchronization served the British well as they planned and identified resources needed for the deployment of a contingency force without contingency plans "on the shelves". Furthermore, since the Falkland Islands were located far away from Britain, the deployment of the force to the area of operation became of crucial importance. Primarily, the British wanted to ensure that adequate combat power was provided up front to defeat the Argentine force. To solve the problem and ensure the availability of adequate transportation, the British requisitioned and transformed 50 merchant ships which were used during the campaign.[55]

Although the improvisation of requisitioning the ships was brilliant, it was lessened by the loading problems encountered due to the rush in deployment. Loading occurred at a rapid pace to meet starting time deadlines and without regard to any loading plan. This resulted in a loss of accountability. The British attempted to relocate loads on ships enroute to the Falklands but could not completely correct the errors caused at the port of embarkation. Combat units would experience shortages during the battle because supplies were located too deep in the ships' storage areas and because accountability had been lost.[56] For example, a shortage of helicopter heavy lift occurred during the operation because all assets were loaded on a single ship and

subsequently lost when the ship sunk. A key lesson to learn from this operation is the importance of planning for loading and the priority given in loading assets.

The staging identified at Ascension Island became one of the major reasons behind the British success and demonstrated the need for staging when conducting operations in remote areas. Ascension Island allowed the British to decrease the distance between their homeland and the battlefield by half and, by the same token, allowed the British to reduce the order-receipt time for all supplies.(60)

A sound and synchronized command, control and communication system enhanced the chance for success. At the strategic level, a small group of ministers managed the crisis on a daily basis with the Prime Minister. Contrary to the operation in the Congo, this group established clear guidelines for the operational commanders yet did not interfere with them 8,000 miles away. Satellite communications allowed clear coordination without excessive security precautions.(61) Command and control for sustainment rested with Commodore Michael Clapp and the planning for operational sustainment with LTC Ivar Hellberg. Even though command and staff elements had to separate on numerous occasions due to the poor availability of ships, command and control remained intact.

The British applied a good intelligence analysis prior to deploying their force to the Falklands and in choosing the

landing site. They realized that the untrafficable terrain would eliminate the need for trucks in support of the force. They thus adjusted the loading of assets in Britain by reducing the amount of trucks while increasing helicopters deploying to the theater.(62) Additionally, based on terrain analysis and the enemy situation, the British identified San Carlos as the landing site. San Carlos provided good beaches for landing and protection from the enemy air and submarine attacks.(63)

The battle of the Falklands reemphasized the importance of air superiority in the deployment of forces far from home. The British counted on early air superiority as essential in allowing 24 hour logistics support. Their failure to achieve this goal resulted in a slow down of logistics support to such an extent that it took nearly a week to build up enough supplies ashore to allow movement out of the lodgement area.(64) Had the Argentine identified the correct decisive point in the British task force, its logistics lifeline, and attacked logistics ships by air, the British would have found the campaign significantly more difficult.

The medical plan was an extension of the synchronization between the three services. The plan called for air evacuation of casualties, forward medical teams augmenting combat units and a field surgical team with a surgeon placed as far forward as possible for immediate support.(65) However, the lack of air superiority adversely affected

medical support. Delays in medical evacuation occurred as logistics ships seeking protection from air attacks were forced farther to sea. The increase in helicopter requirement to transfer supplies from ship to ship and ship to shore drew assets away from casualty evacuation, as dedicated lift had not been identified for casualty evacuation. This problem added to the terrible terrain which prevented soldiers from carrying a wounded man to a pickup point, resulted in the unnecessary severity of casualties(66)

Finally, the British recognized the criticality of sustaining forces, prisoners of war, and civilian populace after the campaign. Therefore, the British captured Port Stanley not only as an operational objective but also for logistics purposes. They expanded the Port Stanley airfield to accept air resupply from Ascension Island. The expansion called for 6,000 tons of material, 5,000 tons of emergency plant/stores and 1000 engineer troops.(67) The British also realized that the port needed upgrading to accept civilian shipping. In order to augment Port Stanley discharge capacity, the task force carried all organic port facilities in terms of mooring lighters and other requirements.

In summary, the British succeeded in supporting the operation by properly synchronizing the logistics support of a tri-service force, ensuring that the C2 remained intact and clear throughout the operation, and establishing staging operations and rapid resupply procedures to support combat

units. However, the British also experienced significant logistical difficulties. First, similar to the operation in the Dominican Republic, they experienced problems with loading procedures. The cost of rushed loading ultimately resulted in a delay in combat operations. Second, they experienced logistical drawbacks due to the lack of protection against enemy air attacks. The need for air superiority to protect logistics functions surfaced in this operation, as compared with the two previous operations, because of the higher level of technology used by both parties to wage war. The British demonstrated that planners must anticipate the air threat and protect logistics lifelines accordingly. Overall, the results of this logistics effort were astronomical. In seven weeks, the task force assembled 28,000 men, 100 ships, sailed 8,000 miles and provided support to 10,000 men ashore. The operation was a proof of logistical prowess.(66).

D. GRENADA OPERATION-OPERATION URGENT FURY 1983

Located at the end of a chain of Caribbean Islands, known as the Lesser Antibes, Grenada sits astride the main shipping lane for supertankers that bring US imported oil from the Mideast and Africa. Additionally, Grenada is in easy striking range of the Venezuelan oil fields, another source of US imported oil. It is no wonder that the US became concerned when Cuban engineers began construction of an airfield capable of receiving long range military

aircraft. The US concerns heightened in 1980 when Grenadian leaders signed a treaty with Moscow, giving the Soviets landing rights on Grenada.(69)

In October 1983, a US Task Force was dispatched to Grenada to evacuate US and foreign citizens and to reestablish a democratic regime in the area. The operation has been described as a "come as you are scenario typified by critical time sensitive mission requirements, minimal planning, employment of joint and combined forces, incomplete intelligence, C3 intensity, and high political visibility."(70)

The initial actions taken in response to the unrest in Grenada included diverting the USS Independence and Navy/Marine amphibious groups from deploying to Lebanon, and preparing the 82nd Airborne Division for deployment to the theater of operation. Concurrently, Admiral Wesley McDonald, Commander in Chief of Atlantic Command, received the mission to conduct operations to protect and evacuate US and designated foreign nationals from Grenada, neutralize Grenadian forces and stabilize the internal situation.(71)

Atlantic Command immediately organized a large task force headquarters to plan and coordinate the operation. JTF 120 was thus established and the commander designated as Vice Admiral Joseph Metcalf III. A seventeen man joint staff quickly assembled on the ship Guam to plan the operation. However, most of the officers had never worked together, were

unknowledgeable of the other services' method of operation, and forced to work in isolation due to operational security (OPSEC) requirements.(72)

Although a contingency plan existed in the Pentagon for intervention in Grenada, planners ignored it for a new concept. The concept changed the command and control structure by eliminating the XVIII Airborne Corps Headquarters' involvement in the operation. The planners, however, kept the 82nd Airborne Division involved in the operation, splitting an established chain of command and altering logistics relationships.(73) The concept divided the operation in 3 phases: Phase 1 called for the surprise seizure of the island and the rescue of the governor and medical students. Phase 2 called for the arrival of Task Force 121 of the 82nd Airborne Division to establish order. Phase 3 involved peacekeeping duties. Throughout the operation, the naval battle group provided surface and air support.(74)

The actual operation was plagued with setbacks. Special operation forces encountered numerous problems caused by poor intelligence on available landing zones, insufficient quantities of heavy weapons and communication equipment, and inaccurate maps. Special forces failed to achieve surprise and to capture critical objectives such as the radio transmitting stations and the prison. Ultimately, the Rangers and Marines captured Saline and Pearls airfields

allowing deployment of the 82nd Airborne Division which defeated the Grenadian/Cuban forces and rescued the US citizens. However, the confusion caused by the strong Grenadian defense resulted in request for unnecessary reinforcement.(75)

Although due to security reasons, logistics planning was deliberately kept separate from operational planning, logisticians saw transportation and sustainment, particularly the deployment capability of the 82nd Airborne Division, as requiring special attention because of the distance involved between the two nations. Therefore, sustainment planners first planned to use C130 aircraft with inflight refueling capability to deploy the force without stops to Grenada. Second, they established a forward staging area in Barbados capable to receive C5A aircraft which could not land in Grenada. The forward staging allowed the deployment of large items, such as helicopters, for use in the theater of operation.(75)

The concept of support called for air deployment of forces to Grenada. Lines of communication were established from Ft. Bragg to Pope AFB to Grenada to support the deployment of forces and light equipment, and from Ft.Bragg to Pope AFB to Barbados to Grenada to deploy heavy equipment. Airborne troops were to deploy with three days of supply to provide time for the establishment of logistic stockage at Saline Airport, Grenada.(77) Once established, the 82nd

Airborne Division Support Command (DISCOM) would provide combat service support (CSS) forward using direct requisitioning procedures from Grenada to Ft. Bragg through the tactical satellite system. A regular replenishment air flow of two aircraft per day would ensure daily resupply, and the extensive use of captured equipment, particularly wheeled vehicles, would augment transportation shortages on site.(78). Even though an actual medical evacuation plan did not exist, the 82nd Airborne Division would deploy with minimal organic medical assets counting on the Navy to provide back up hospital support.(79).

A review of the actual support of the operation with the sustainment criteria identified in the introduction identified numerous logistical discrepancies. Problems in planning, deployment, C3, logistics intelligence and synchronization affected the sustainment to combat soldiers.

The rapid planning and overuse of security adversely affected the entire operation. First, the JTF Headquarters was established rapidly, which meant the staff members had not worked together prior to the operation. Second, as seen in the Congo and Dominican Republic operations, JTF planners did not consider searching for an already developed contingency plan. The use of an existing plan would have identified a different but already established chain of command and prevented some of the logistics problems which occurred during the operation. Third, under the guise of

operational security (OPSEC), the commander of the 82nd Airborne Division was kept in the dark until the last moment, which forced him to plan rapidly for the operation. Finally, the minimum involvement of logistics planners in the overall concept directly affected the operation, resulting in airflow backups at Saline airfield and in emergency requests for replenishment that could have been anticipated and planned. (80)

The problem in planning forced the 82nd Airborne Division to deploy rapidly regardless of loading plans. The small amount of vehicles available for deployment obliged soldiers to carry three days of supply (classes I and V) on their backs accentuating fatigue. More importantly, it precluded the units from using long range communication capability and affected air defense Stinger weapon ammunition resupplies. (81) Logistically, the rapid planning and loading prevented the timely deployment of forklifts to the theater of operation. The lack of forklifts drastically slowed the unloading process in Grenada and concurrently increased the waiting time for other aircraft to land. Some of the aircraft were diverted to Barbados. (82)

Command , control and communications procedures were problemsome as in the Dominican Republic. First, Admiral Metcalf, located offshore, led the ground forces on shore. Despite good reason to designate a single ground force commander, Admiral Metcalf maintained a centralized C2 system

which kept forces separated rather than working together. The failure to designate a single ground force commander created problems in coordinating support between services. Particularly noteworthy are the conflicts to prioritize resupply shipments and the difficulty in coordinating medical evacuation. (93)

Second, the inability of the services to communicate with one another surfaced as one of the largest problems encountered in the operation. JTF 120 failed to establish adequate communications for the force, and the communication equipment was incompatible. (94). Logistically, the confusion in communications meant that all units developed their own systems to request replenishment. Units used the operations net versus logistics net to obtain support. They bypassed the established system for replenishment which caused duplication of requests and loss of control. (95)

Additionally, the lack of a secured communications system limited the military airlift command's (MAC) ability to effectively command and control airlift assets. This resulted in confusion, and ultimately in additional airplanes sent to fill duplicated requests jamming the already crowded airfield. The problem was eventually solved by centralizing airfield control at ports of debarkation and ports of embarkation. (96).

Missing intelligence caused major problems for the forces as they prepared to invade the island. Logistically,

missing intelligence on road networks, suitability of landing beaches and a general layout of the area prevented planning for proper logistics support.(87) For example, the failure of logistics intelligence to identify potable water supplies in Grenada resulted in paratroopers carrying additional canteens of water to combat, thus additional weight.(88) The Barbados defense force had the intelligence available; the JCS did not include them in the planning.(89)

The lack of coordination between JTF planners added to excessive OPSEC resulted in the rejection of an already developed OPLAN, and caused loading problems, deployment problems, and requisitioning problems. Excessive OPSEC prohibited JTF planners from synchronizing the plans for the operation with logisticians until the last minute. Additionally, critical personnel in the 82nd Airborne Division were denied access to the plans because of OPSEC. The restrictions resulted in rapid logistical planning and affected the type of support forwarded to combat units in Grenada as officers with no knowledge of the plan made decisions on replenishment needs to the theater.(90)

Similar to the Falkland experience, the medical support suffered from lack of planning and synchronization. A plan did not exist nor was one developed to coordinate joint medical operations. As already identified, CSS planners did not assist in planning the operation, nor did they formulate an overall medical command structure headed by a joint task

force surgeon.(31) The concept called for the USS Guam and Trenton to provide medical and surgical support. Based on this information, ground forces deployed with minimal organic medical support counting on rapid evacuation to the Naval fleet.(32) Due to a lack of synchronization, however, medical officers from different services did not know of the evacuation plans. Additionally, actual evacuation by air was impaired by the lack of Army pilots trained to land on ships. Nevertheless, all these problems did not stop the US medical forces from accomplishing their mission through improvisation, tactical level coordination and flexibility.

Grenada once again demonstrated the need for a good plan to sustain forces after the battle. The original plan anticipated stability operations which consisted of internal security, psychological operations and civil affair programs. The goal was to establish an atmosphere of well being and assist Grenada on its path toward democracy.(33).

In summary, the Grenada operation was a success. However, the US forces experienced significant logistical problems caused mainly by the rapidity in planning, and by the excessive OPSEC criteria which prevented necessary synchronization to take place. The costs of these problems were a rise in emergency requisitions and a concurrent impact on the airflow into Grenada. Nevertheless, US forces demonstrated the flexibility to adapt to the situation and achieved the mission.

III. SUSTAINMENT ISSUES

The analysis of the four contingency operations identified significant sustainment issues. The sustainment issues fall in the following categories: planning, deployment, command, control and communication, logistics intelligence, synchronization, and protection.

The analysis of the contingency operations identified a failure to use existing contingency plans or an absence of plans as a cause behind rapid planning and logistics support problems. Throughout the operations, the rapidity in planning caused logistics confusion, sustainment shortages and emergency resupply operations. The use of existing contingency plans plays an important role in providing support to contingency operations. Sustainers who ignore existing plans or fail to develop a plan for an area of interest risk increasing the chance of confusion in logistics support.

The rapidity in planning also adversely affected the deployment of contingency forces to the area of operation. In most instances, the rush in planning resulted in a similar rush in loading regardless of loading plans. This impaired deployment. For example, the failure to follow loading plans resulted in failure to locate critical supplies on ships in the Falklands, in communication problems, soldier fatigue and overburdened airfields by incoming supplies in Urgent Fury, and in basic load shortages during the Dominican Republic

operation. The adherence to loading plans can, thus, be considered a sustainment issue. Contingency planners who ignore loading plans and who do not synchronize changes to the loading plans as dictated by the tactical requirements, impact on the logistics support provided to the combat forces.

Command, control and communications surfaced as major problems in most contingency operations. Throughout the analysis, issues such as the establishment of proper lines of authority, interservice rivalries, and poor command and control did have an impact on logistics. The impact was felt in the confusion and lack of synchronization between the numerous logistics systems operating in the area. For example, the exclusion of General Adams from the planning process in the hostage rescue in the Congo extended command rivalries between USEUCOM and USSTRICOM affecting the American airlift. Additionally, the failure to designate a single ground combat commander in Grenada able to synchronize operational and logistical requirements resulted in conflicts to resupply the force and in problems with medical evacuation.

The lack of communication within the commands, particularly between forward logistics bases and the CONUS base impacted on the sustainment process even more. An uneven flow of supplies and a lack of control ultimately resulted. This was corrected only by the establishment of

logistics headquarters and, thus, a dedicated communication system. The establishment of a JTF with a joint logistics cell and a dedicated communication system for logistics are thus sustainment issues.

Logistics intelligence plays an important role in providing information on the enemy and the terrain prior to an operation. The Falkland Island operation demonstrates the use of proper logistics intelligence prior to an operation. In this operation, key logistics intelligence data such as the identification of the road network, the availability and capability of resources in the theater of operation played an important role in assisting the deployment of forces. It further identified assets needed for sustaining future forces and civilian populace. However, the operation in the Dominican Republic and operation Urgent Fury suffered some difficulties in obtaining proper logistics intelligence. Operation Urgent Fury suffered from a lack of available intelligence from the start as demonstrated in the US forces' inability to properly identify potable water sources and accurate maps. The operation in the Dominican Republic suffered from a failure to properly identify the assets available to protect supplies and from overestimating the discharge capacity of the port of Andres. The proper use of logistics intelligence is, thus, a sustainment issue particularly in an immature theater where knowledge of an area is crucial to the success of the contingency operation.

The majority of the operations demonstrated deficiencies in synchronization at the strategic and operational levels. During the Congo operations, the lack of synchronization forced by the political constraints caused confusion and last minute planning. Through face to face coordination, the professionalism of the tactical players resolved the situation. Similarly, the lack of synchronization during the Dominican Republic and Urgent Fury operations resulted in overloading and overburdening the sustainment system in both operations. Finally, coordination would have solved the medical evacuation problems encountered during the Falkland and Urgent Fury operations. The proper use of synchronization can, thus, be identified as a sustainment issue. Contingency commanders who force rapid planning and emphasize OPSEC that exclude mission essential planners reinforce the chance for synchronization failure.

The critical importance of air lines of communication surfaced throughout the operations. Today, contingency operations depend on air assets to accomplish the mission and rely on sea assets to reinforce the sustainment effort. Failure to achieve protection over logistics assets results in drastic changes to the support plans and in higher risks of failure, as seen during the Falklands operation. In addition to a resupply mission, air power must provide protection to logistical assets. Protection by the use of air power can, thus, be considered a sustainment issue. The

lack of air cover over the theater of operation would most likely result in significant changes in the concept of support.

IV. ANALYSIS OF DOCTRINE WITH THE SUSTAINMENT ISSUES:

The historical analysis identified sustainment issues which need planners' particular attention in order to develop the support for a contingency operation. After the review of the sustainment issues with the guidance provided in joint publications, I believe that doctrine provides a comprehensive guide to assist logisticians in building support concepts for contingency operations.

Use existing plans: JCS Publication 4-0, Doctrine For Logistics Support Of Joint Operations, identifies that logistics factors almost always constrain major operations to certain limits such as the availability of combat forces, the limit in depth of the attack, and the speed of advance. These constraints surface the need for realistic logistic assessment and planning prior to any operation. Inadequate and rapid planning in sustainment, which surfaced throughout the historical analysis, result in shortages of logistics resources. The actions taken to correct the shortages drain the sustainment system, and cause overgrown logistics structures such as clogged ports and mixed up distribution systems. (#4)

In order to preclude such problems, JCS Publication 4-0 calls for logisticians to anticipate possible problems as

they analyze the characteristics of the operation.(95) Doctrine emphasizes the need for proper identification of critical sustainment factors, of possible chokepoints to the logistics support and the need for synchronization in planning, particularly with movement control. For example, a theater commander will most likely not have direct control over the movement in the theater as contingency forces are dependent on strategic airlift. In this instance, doctrine calls for synchronization between theater commanders and the US Transportation Command (USTRANSCOM) through the use of liaison officers.(96) Finally, logistics planners must anticipate operational branches and sequels to develop appropriate support plans.

Adherence to loading plans: The historical analysis identified loading plans as crucial to the deployment of a force. The failure to follow the plans or the failure to synchronize changes based on the tactical situation creates confusion in logistics. JCS Publication 4-0 affirms that each campaign and operation demand its own analysis of the proper balance of forces and equipment to deploy which will impose the most destruction on an enemy in the early phase of the operation. The commander fights a continuous struggle to apportion combat and support forces to win. The key factors which impact on the decision to deploy sustainment assets versus combat assets include: the identification of gross requirements needed for use during initial support, the

adequacy of transportation facilities, the condition of roads and rails, and the length of lines of communications.(97) Doctrine calls for the proper analysis of these factors during the planning phase of an operation and surfaces the need for a proper balance at the beginning of the conflict.

JTF with joint logistics cell: JCS Publication 4-0 emphasizes logistics as a function of command. Contrary to findings in our historical analysis, doctrine emphasizes that a commander who wants to have control over the strategic, operational, and tactical levels of war must also have single control over logistics.(98) The theater commander can exercise operational command (OPCOM) over logistics through the service component commanders, functional component commanders, unified commanders, and JTF commanders.(99) He accomplishes OPCOM by management by exception, by the incorporation of service components logistics systems in a zone operation, and by the allocation of scarce resources among subordinate commanders based on stated requirements.(100) Joint doctrine, however, emphasizes that although service component commanders provide logistics resources, it is the combatant commander's responsibility to develop and synchronize the overall plan for providing the resources needed to support the concept of operation. To achieve such synchronization in logistics, the creation of a joint logistics cell as part of the JTF must be considered.

Dedicated communication system: JCS Publication 4-0

considers a communication system as the means to provide information to support command decisions. Doctrine also emphasizes the aim of joint logistics operation to integrate service programs with the commander's logistics concept and defines communications as one of the key elements to accomplish the integration.(101) The historical analysis confirmed that the lack of adequate communication did hinder logistics support in the initial phase of contingency operations. To prevent such an occurrence and to ensure that an effective flow of information is kept throughout an operation, doctrine calls for long range communications established early in the operation.(102)

Proper use of logistics intelligence: Doctrine recognizes the criticality of proper intelligence in logistics. Accurate, up to date information is vital to effective logistics planning. Commanders for example, need to know where supplies can be located in contingency missions, the information being dependent on an analysis of the available terrain.(103) Crucial information, missing from some of the operations analyzed, such as terrain analysis, status of roads, capacity of airfields to discharge air resupply and of seaports to discharge sea resupply serve as a base for the establishment of logistic and deployment priorities. Logistic intelligence is part of the data a commander must have to properly deploy to contingency areas.

Proper use of Synchronization: The historical analysis

showed the need for synchronization between operations and logistics to achieve victory in war. Additionally, synchronization within the logistics arena also plays an important part toward a successful operation. Even though logistics support is a service responsibility, joint logistics operations must synchronize service programs and integrate these programs with combatant operational concepts. JCS Publication 4-0 identifies the key steps needed to properly coordinate as: adequate access to information, cooperation built on mutual understanding, respect, and adequate communication channels.(104) To prevent impediments to synchronization, and overcome feelings of self-reliance and differences in training and system, doctrine prescribes joint education and training in conjunction with standardization of methods and materials.(105)

Protection by air superiority: The need for appropriate protection to logistics operation surfaced throughout the monograph. It is obvious that since logistics provides the physical means by which combat forces exercise power, the logistics system is an inviting target to enemy air and ground attacks. Protection of logistics assets provides a key factor to a successful operation. Logistic assets needing protection include ports, supply points, depots, lines of communication, bridges and industrialized centers. As the historical analysis describes, protection in an immature theater significantly improves lines of

communication and both air and sea ports of debarkation. JCS Publication 4-0 emphasizes the need for dispersal of logistic assets, multiple lines of communication and training in security measures as possible protective measures.(196)

V. CONCLUSIONS:

Contingency operations involve intricate, joint and, in one of the historical analysis, combined forces to accomplish the mission. The use of different services to jointly accomplish a mission, automatically raises the specters of friction and fog of war as different services have different systems and priorities in training and educating their forces. The friction caused by joint and combined actions is particularly prevalent in sustainment. The different logistics systems used by all players surface significant sustainment issues and create the need for an intricate synchronization system in an attempt to resolve these issues. The sustainment issues identified in the monograph: the use of existing plans, the adherence to and the synchronization of loading plans, the need for a JTF with a joint logistics cell and a dedicated communication system, the use of logistics intelligence, and protection can all be attended to through proper synchronization during the planning phase of the operation.

Today's doctrine directly addresses all sustainment issues. However, the doctrine used in the analysis was

drafted within the last four to five years, well after the historical analysis timeframe. Thus, recent doctrine corrected the sustainment issues identified during the analysis. The proof of the upgrade in doctrine and the concurrent correction in training and thinking in the US Army occurred in 1989 during the operation " Just Cause" in Panama. The operation was a successful contingency operation because of the clear guidance provided by the national command authority to the forces involved, the time available and well used to develop and practice a good operation plan, and the flexibility to execute the plan when given the approval without interference from political pressures.(197)

Operation "Just Cause" demonstrated that great strides have been taken toward incorporating the lessons learned from past contingency operations. Logisticians, however, must still be aware of the sustainment issues identified in this monograph in order to develop support concepts for such operations.

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