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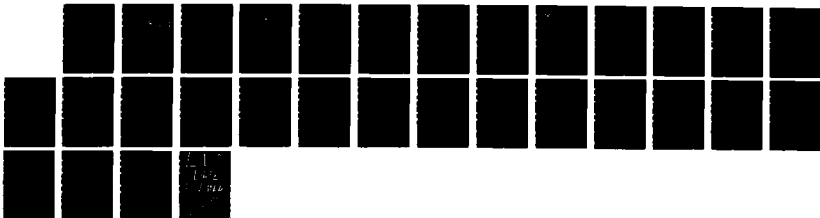
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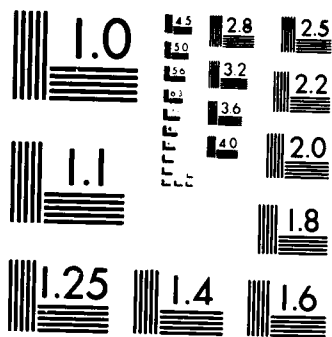
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STUDENT REPORT

AIRLIFT IN GRENADA

MAJOR HUGH B. WILLEFORD 88-2770

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AUTHOR(S) MAJOR HUGH B. WILLEFORD, USAF

FACULTY ADVISOR MAJOR RONALD A. NEWTON, USAF, ACSC/EDJ

SPONSOR COLONEL RONALD L. MOREY, USAF, AWC/DFX

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PREFACE

Airlift played a substantial role in the U. S. military intervention in Grenada in 1983. This paper outlines the events leading to the military action, reviews and analyzes the way in which airlift forces were employed, and applies the insights gained to future airlift involvement in low intensity conflict in Central America and the Caribbean. The author's intended purpose is that those responsible for planning, directing, or executing such future operations might benefit from the analysis presented in this paper.

The author acknowledges the excellent contributions made to this paper by Major Ron Newton, ACSC/EDJ; Lieutenant Colonel Tim Holmes, MAC/XPQA; Colonel Ron Morey, AWC/DPX; and Brigadier General Frank Willis, Commandant ACSC. Their help in completing this research project is gratefully appreciated.



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ABOUT THE AUTHOR

The author is a Senior Navigator with over nine years experience in MAC airlift. First, at Pope AFB, the author was a Squadron Flight Examiner Navigator in the C-130E Adverse Weather Aerial Delivery System aircraft and a Combat Tactics Officer. Then, at Little Rock AFB, Major Willeford was an Instructor in the Tactical Airlift Instructor school and a Group Standardization and Evaluation Navigator. He has completed the Air Ground Operations School Battlestaff course and the Combat Advanced Tactics Instructor course. A graduate of Indiana University with a Bachelor of Science degree in Business Administration, he received a Master's degree in Operations Management from the University of Arkansas. Major Willeford attended Squadron Officer School (SOS) and completed Air Command and Staff College (ACSC) by correspondence prior to his selection to attend ACSC.

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"insights into tomorrow"

REPORT NUMBER 88-2770

AUTHOR(S) Major Hugh B. Willeford, USAF

TITLE Airlift in Grenada

I. Purpose: Review and analyze the employment of airlift forces during the invasion of Grenada and apply the insights gained to future airlift operations in low intensity conflict in the Caribbean and Central America.

II. Review and Analysis: The political, social, economic, and military climates in Central America and the Caribbean make this region a prime candidate for low intensity conflict. The long-standing U. S. national interests in the region make future direct military involvement by our forces likely. The requirement to rapidly deploy combat forces in such a contingency make airlift a critical element of our capability, as it was during the 1983 invasion of Grenada. Airlift played a major role in Operation Urgent Fury. In fact, the Military Airlift Command provided the bulk of Air Force units participating in the operation. The initial assault at Point Salines in the southern sector was airdropped by a combined formation of special and conventional force C-130s. Follow-on deployment of Army airborne forces was accomplished using MAC's intertheater and intratheater airlift aircraft; the C-130, C-141, and C-5. The airlift flow into the small Caribbean island was accomplished using Barbados as a staging base in theater. MAC ground forces supported the airlift forces

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providing air traffic control, air base security, aircraft maintenance, aeromedical evacuation, and aircraft loading and unloading. Air Force Reserve and Air National Guard units augmented the active duty airlift forces. MAC's airlift forces completed this mission in a highly professional manner despite a number of constraints. The C-130s airdropping the initial assault force at Point Salines came under heavy anti-aircraft fire. Small arms fire, runway construction, and lack of airfield lighting limited airland operations on the first day to C-130s. Limited ramp space restricted the airlift flow into Grenada throughout the force deployment phase. Lack of secure communications hampered airlift's ability to execute the mission as did a limited number of aircraft with high precision navigation equipment. Pre-mission intelligence gathering was constrained by the lack of U. S. political and military presence in Grenada.

III. Application: Throughout Central America and the Caribbean airlift will operate in the future under constraints similar to those experienced during Operation Urgent Fury. The surface-to-air threat in most areas will be far greater than in Grenada. United States intelligence capability remains limited by our low level of political and military presence in the region. Military Air Command's ability to operate in the region will be limited by the small number of suitable airfields, thereby requiring establishment of a staging base in theater and resulting in the ramp saturation and airlift flow management problems which follow. Progress has been made since 1983 at improving MAC aircraft survivability and mission effectiveness through equipment enhancements. But secure communications, defensive systems, and precision navigation equipment limitations persist and would hamper airlift's ability to operate effectively in a low intensity conflict in Central America and the Caribbean.

IV. Conclusion: The airlift experience in Grenada offers a number of insights which are applicable to future low intensity conflict airlift operations in the region. Successful airlift operations require the effective suppression of surface-to-air and air-to-air threats. The limited number of suitable airfields will, in most cases, dictate the staging base concept of operations and require careful airflow management to minimize airfield congestion. And finally, the command and control function must be executed with consideration of airlift's limited secure communication assets. As was the case in Grenada none of these constraints prohibit effective mission accomplishment but each requires careful consideration by future airlift planners, commanders, and airmen.

Chapter 1

INTRODUCTION

The American invasion of the small Caribbean island of Grenada in 1983 was, from the Air Force perspective, a Military Airlift Command (MAC) operation. (20:1) The other major commands played only minor or supporting roles. The Tactical Air Command provided air surveillance and was prepared to provide counter air support if the Cubans reacted but the F-15 aircraft never saw direct action. (3:14) The Strategic Air Command involvement was limited to tanker and reconnaissance support for the operation. (3:14) MAC's involvement was widespread involving aircraft and personnel from 21AF, 22AF, 23AF, and from supporting elements of the Air Force Reserves and Air National Guard. (20:1-2)

The full range of MAC resources participated in the invasion; from special operations forces to conventional forces; from the various available aircraft to the wide range of ground support elements available. Special operations aircraft supported the initial airborne assault and provided close air support for the various ground forces. Conventional airlift resources augmented the initial assault and provided both tactical and strategic airlift for both force deployment and redeployment. MAC also provided a wide range of ground support forces including; air traffic control, airbase defense, security police, and weather forecasting. (20:1-2) The Grenada invasion offers an excellent opportunity to examine the combat readiness of the various elements of MAC.

This paper will review and analyze the role which MAC airlift played in the invasion of Grenada: Operation Urgent Fury. It will focus on both the airdrop and airland elements of that operation, and study both strategic and tactical aspects of airlift. Close examination of the airlift aspects of Operation Urgent Fury should help identify a number of strengths and weaknesses in MAC's airlift resources, training, planning, and employment concepts. It should also provide a number of insights which can be applied to future contingencies which involve airlift.

The insights gained from a review of the airlift role in Grenada should be most directly applicable to future low intensity conflicts in the Central American and Caribbean theater. The fact that Operation Urgent Fury was conducted in this region partially supports this contention. But, also the similarities throughout this region in terms of politics, geography, threat, and history make it a prime candidate for application of the lessons of Grenada. (11:54-56) Application of the insights regarding airlift in Grenada will provide a

baseline for improving our employment of these resources in a number of potential conflict areas within the region.

The paper will first look at the political, military, and economic background for the United States intervention in Grenada in 1983. A brief summary of the events which led to the introduction of U. S. forces will provide a point of reference for the concept of operations and rules of engagement under which Urgent Fury was executed. This background will also provide a baseline for selecting the areas of potential future conflict to which the insights gained from the study of Grenada can be applied.

While the review of the Grenada invasion will focus on the role of MAC airlift, a brief description of the overall operation will be provided in order to place airlift in the proper perspective. Analysis of the operation will be limited however, to the airlift element and those factors directly impacting its success. This is intended to limit the scope of the paper and also to keep the paper within the scope of the author's background--airlift.

Following the review and analysis of airlift's role in Operation Urgent Fury the paper will briefly review the current political, military, and economic environment in the Central American and Caribbean Region. This examination will be used to select a number of candidate areas with potential for low intensity conflict which might, like the invasion of Grenada, involve U. S. intervention and the employment of MAC's airlift resources. The paper will conclude by testing the application of the insights gained to future use of airlift forces in the Central American and Caribbean theater.

To preclude any potential for security breach, research for this paper was limited to unclassified material including a number of books and periodicals describing the invasion and airlift's role. The unclassified version of the Atlantic Command Operation Urgent Fury Report, the Project Close Look II Report, and the Airlift Master Plan also provided official background material for the research. Interviews with MAC participants in the invasion including: Brigadier General Frank Willis, who commanded the 317 Tactical Airlift Wing; and Major General Robert Patterson, who was the Commander of Airlift Forces (COMALF) provided personal insights into the airlift role in Urgent Fury as well as the future application of these lessons learned.

Chapter 2

BACKGROUND FOR THE INVASION

The U. S. intervention in Grenada was a continuation of a long history of application of American military forces to conflict in Central America and the Caribbean. Beginning in 1898 with the war against Spain, the U. S. has freely used military power in the region. This direct application of military forces continued throughout the twentieth century in a number of nations including: Venezuela, Panama, Haiti, the Dominican Republic, Nicaragua, Guatemala, and Cuba. (15:--)
Airlift first played a major role in this history of U. S. intervention in 1965 when U. S. forces were sent to the Dominican Republic to end a civil war there which threatened the democratic government. The eventual deployment of over 23,000 troops, predominantly from the Army's 82nd Airborne Division, relied extensively on airlift. (15:--)

While the 1983 invasion of Grenada was the first direct intervention of U. S. forces in the region in eighteen years, our military presence in the region was highly visible in Central America and the Caribbean. The American military was providing advisors to the army of El Salvador; military aid and training to the armies of Guatemala, Honduras, and El Salvador; and both overt and covert aid to the Contra revolutionary forces in Nicaragua. (11:52) The level of military exercises in the area was also increasing with the 1982 addition of Operation Big Pine, a joint U. S.-Honduran exercise, to the annual joint U. S. forces exercise Solid Shield. Major fleet units conducted exercises in the Caribbean Ocean in 1983 reportedly simulating the invasion of Grenada. (11:84) In addition, the U. S. continued to maintain a permanent military presence in the region with installations in Antigua, the Bahamas, Bermuda, Cuba, Panama, and Puerto Rico.

This level of military emphasis on the region was balanced with an increasing focus politically and economically. The Special National Bipartisan Commission for Central America was chartered by the Reagan administration to meet with public and private sector leaders in the area and make recommendations for long-range U. S. policies and objectives aimed at improving political and economic relations. (11:84) The Caribbean Basin Initiative of economic assistance, tariff exemptions, and private sector investment incentives received Congressional approval in the summer of 1983. (11:51) These initiatives and the American military presence in the region reflected the importance of Central America and the Caribbean to U. S. national interests. It's in this context that the events which took place in Grenada in 1983 led to the American military intervention.

Grenada, a former British colony, is located about 100 miles north of Venezuela. The island measures only 10 by 13 miles, has a population of approximately 100,000, and a agricultural economy. The island was granted independence by the British in 1974 and Eric Gairy was elected Prime Minister. Government corruption, economic stagnation, and debt set the stage in 1979 for a coup which overthrew the elected government and brought Maurice Bishop's regime to power. (2:1-5) The U. S. practiced nonintervention and offered economic assistance to the Bishop government. But the series of events which followed indicated Bishop's government intended to reject U. S. assistance, embrace the various communist governments, and attempt to spread communist influence in the region. (2:152) A chronology of those events follows:

April 1979. Grenada establishes diplomatic relations with Cuba and receives a shipment of Cuban military arms. (2:152)

November 1979. Cuba begins construction of a new international airport with a 10,000 foot runway at Point Salines as part of a \$52 million aid package to Grenada. (2:153)

October 1980. Grenada secretly signs a military assistance agreement with the Soviet Union providing 5 million rubles in arms to Bishop's government. (2:155)

July 1982. Bishop visits Moscow and grants Soviet access to Grenada in return for an additional 10 million rubles in arms delivered in August. (2:157)

April 1983. North Korea signs a secret agreement with Grenada for \$12 million in military aid. (2:158)

July 1983. Initial indications of strife within Bishop's communist party begin to appear. (2:160)

September 1983. Grenada Central Committee forces Bishop to share power with his Deputy Prime Minister, Bernard Coard. (2:161)

October 1983. The Central Committee places Bishop under house arrest. After Coard resigns demonstrations aimed at winning the release of Bishop break out. The army puts down the demonstration forcibly, assassinates Bishop and a group of his followers, and seizes power. A 24-hour curfew is imposed and the Pearls Airport is closed. (2:162)

This series of events led the United States and Grenada's Caribbean neighbors to conclude that the instability posed a substantial threat to security in the region. Diplomatic

attempts to ensure the safety of U. S. citizens on the island were rebuffed by the military regime and a Navy task force enroute to the Middle East was diverted to the Caribbean as a show of force. (2:161-162) The Organization of Eastern Caribbean States (OECS) voted to ask Barbados, Jamaica, and the United States to intervene in Grenada and restore order. (7:--)
When a formal written request was submitted by the OECS on 23 October the Atlantic Command was directed to activate a joint task force and begin planning for Operation Urgent Fury. (19:1)

Chapter 3

REVIEW OF AIRLIFT IN GRENADA

The U. S. military activity transitioned quickly from a show of force by the Navy to an invasion of the island. (19:1) The final direction issued to the Commander-in-Chief of the Atlantic Command for Operation Urgent Fury was to:

"conduct military operations to protect and evacuate U. S. and designated foreign nationals from Grenada, neutralize Grenadian forces, stabilize the internal situation, and maintain peace. In conjunction with OECS/friendly government participants, assist in restoration of a democratic government in Grenada." (19:1)

The concept of operations for Operation Urgent Fury divided the island into two operational sectors with the Marines performing an amphibious assault at Pearls Airport in the northern sector while the Army performed a simultaneous airborne assault at Point Salines Airport in the southern sector. The Navy task force would support the Marine assault while MAC airlift would deliver the Army assault force to secure the airfield and neutralize the enemy. Follow-on Army forces would then replace the assault force, evacuate U. S. citizens, and assist the OECS forces in maintaining peace and restoring order to the government. (15:2) The rules of engagement directed that the use of force be restricted to minimize damage and casualties to both civilians and the opposing force. (19:5) The operation was expected to take 24 hours to accomplish given the expected level of resistance. (3:13)

Planning for the operation was restricted to a very short period of time as the joint task force was directed to begin the invasion on 25 October. Advance intelligence indicated that the level of resistance would not be significant. Of the 700 Cuban's estimated to be on the island, only 50-60 were expected to have military training. (12:56) The strength of the Grenadian army was estimated at 1,200 - 1,500 men. (14:12-14) The threat was expected to come largely from small arms. The intelligence assessment was that the Cubans would offer little, if any, resistance and that the Grenadians were ill equipped and too poorly organized to pose any significant threat. (14:12-14) The only possibility of an airborne threat came from Cuba but the likelihood of this occurring was judged to be remote. (3:9) The lack of U. S. representation in Grenada severely restricted the level of human intelligence available prior to the invasion. (12:56)

The responsibility for planning the airlift support for the Point Salines assault fell to the special operations elements of MAC's 23AF. (20:2) Army Special Forces of the 1st and 2nd Ranger Battalions, 75th Infantry were tasked to complete the assault airlifted by a combination MC-130 Combat Tacon aircraft from the 1st Special Operations Wing (SOW) and C-130 aircraft from the 317th Tactical Airlift Wing (TAW). (3:22) The assault was planned as an airland operation given the available threat assessment with a back-up plan to airdrop the Rangers if the runway was obstructed. (16:54) A drop altitude of 1250 feet was selected to avoid the small arms threat that was indicated by intelligence reports. (5:--) A usable drop zone length of 20 seconds and forecast winds of 20 knots also made airland preferable to airdrop. (9:27, 30)

To facilitate the follow-on deployment of elements of the 82nd Airborne which would replace the Rangers after the initial assault, the COMALF determined it was necessary to establish a staging base in the Caribbean because the suitability of the runway under construction at Point Salines for C-141 and C-5 aircraft was questionable and the runway at Pearls would only support C-130 operations. Roosevelt Roads Naval Air Station was eliminated because of ramp saturation. Reopening Ramey Air Force Base was considered but timing made this impractical. Finally, Grantly Adams International in Barbados was selected because of its proximity and size. (20:5-6) Operational security precluded making advance arrangements with the airport officials and as a result when the COMALF landed in Barbados three hours prior to the assault many questions remained unanswered; primarily, the availability of fuel, services, and quarters. (20:5) The COMALF staff quickly established itself at Barbados rapidly transforming the old, unused passenger terminal into an operations center. (4:8)

The assault on Point Salines was scheduled just prior to dawn to allow the Marine amphibious unit enough light to accomplish their simultaneous assault in the northern sector. (22:--) Two hours prior to the assault, an AC-130 gunship arrived over Point Salines to assess the ground situation and provide fire suppression. (16:54)

The assault force left for Grenada late on the 24th in two waves. The first formation consisted of two 1st SOW MC-130 aircraft with their secure communications, inertial navigation, and precision radar equipment leading five C-130s from the 317th TAW. The second formation of five 317th TAW C-130s followed 30 minutes later. (3:22) Enroute to Grenada the formations learned from the gunship that the runway was obstructed by construction equipment. The gunship also reported the presence of heavy anti-aircraft defenses on the airstrip and in the hills to the north of Point Salines. (3:22) The airland option was aborted

in favor of the airdrop option and the drop altitude was changed to 500 feet to minimize exposure to the anti-aircraft fire. (9:26) The planned arrival time was delayed by 30 minutes to 0500 after the Marines aborted their initial assault attempt because of a rain shower near the Pearls Airport. The C-130s began their airdrop 30 minutes after the Marine assault when navigation equipment failure on the MC-130 caused yet another delay. (3:23)

The first C-130 formation over Point Salines encountered heavy anti-aircraft fire and only one aircraft dropped. The AC-130 gunship was called in and quickly suppressed the ground fire allowing the remaining six C-130s to complete their airdrop by 0600. The gunship continued to provide fire suppression for the Rangers as they cleared the runway so the second group of C-130s could airland; which they did shortly after 0630. (3:26)

By 1100 the Rangers declared Point Salines Airport "secured" and C-130s began airlanding personnel and supplies from the staging base on Barbados and evacuating the wounded. Because sniper fire continued only 5000 feet of the runway was usable until late the first day. (9:31-32) This severely restricted the airlift particularly when the lead elements of the 82nd Airborne began arriving at the staging base in Barbados aboard C-141 and C-5 aircraft. As many as five aircraft were circling off Point Salines on the first day, as the airfield could accommodate only one aircraft at a time. (9:31-32) Airlift flow remained restricted even after the east end of the runway was secured late that day. Because Point Salines had no airfield lighting the operation was limited to C-130 aircraft using tactical landing zone lighting. (20:9) The flow improved rapidly after the first day. Two C-130s using combat offload procedures would use the limited ramp space to download while the C-141s would pull to the end of the runway, which was now secure, and offload. Eventually a steady flow of about one airlifter every twenty minutes was established. (22:--) The airlift flow was also enhanced on the second day when C-130s started using Pearls Airport and when additional runway lighting permitted around-the-clock operation at Point Salines of both C-130 and C-141 aircraft. (20:9)

Strategic airlift continued to move personnel and equipment from stateside where the airlift flow was carefully managed to minimize congestion in Grenada. (20:8) War material was stockpiled in Barbados awaiting airlift to Grenada. Not just personnel, weapons, and ammunition; but small artillery pieces, jeep mounted missiles, tanks and armored personnel carriers, communications equipment, bulldozers, forklifts, excavators, prefabricated offices, photocopiers, and thousands of other pieces of equipment. (4:8) In fact, 21AF set an all-time record during Urgent Fury--flying 170 missions in one day. (20:21)

Twenty-eight C-141s moved six 82nd Airborne Battalions from Fort Bragg to Grenada and returned stateside the two Ranger Battalions they replaced in under four days. The C-5s airlifted 40 helicopters to Barbados where they were reassembled and flew to Grenada. (3:39) The C-130s, after the initial airdrop, performed shuttles between Barbados and the two airfields in Grenada each averaging five to six sorties a day. In addition, the C-130s transported fuel in bladders to resupply the Army helicopters. (20:16) Through 8 November, which included a large part of the redeployment, MAC had airlifted the following in support of Operation Urgent Fury: (8:41)

	<u>Passengers</u>	<u>Cargo Tons</u>
C-130	779	5,000
C-141	11,580	4,000
C-5	872	971

The COMALF staff supported the CINCLANT battle staff and provided command and control of all airlift forces involved in Operation Urgent Fury. The staff relied on SATCOM and UYA-7 HF radio to provide secure communication. The satellite was often saturated and the UYA-7 radio communication was often unreadable. (20:17) A large number of requests for airlift support were improperly routed, incomplete, or identified airframe requirements instead of cargo and passengers to be moved. (19:V4-5) This created confusion and also contributed to the saturation of limited secure communication.

A wide range of MAC ground units supported the airlift forces in Grenada. Combat control teams helped the Rangers secure the airfield at Point Salines, directed the follow-on airdrops, and performed air traffic control for not only MAC aircraft but 40 Army helicopters at both Salines and Pearls Airports. An airbase ground defense unit provided perimeter defense at both airfields and a MAC Provisional Security Police Group provided security at both Barbados and Point Salines including guarding the Cuban prisoners. The 3rd Mobile Aerial Port Squadron performed between 50 and 70 aircraft downloads and 30 to 50 aircraft uploads per day at Point Salines. (8:30-41)

Reserve airlift crews from Andrews, Dover, Charleston, McGuire, and Willow Grove also flew in support of MAC. In addition, the 1st Aeromedical Evacuation Squadron and the 375th Aeromedical Evacuation Wing worked in conjunction with the Army MEDEVAC units to airlift the wounded to hospitals in Barbados, Puerto Rico, and the United States. (3:39, 53)

Major General Patterson, COMALF for the Grenada operation summarized MAC's involvement in an interview for the Airlift Operations School journal, Airlift;

"Urgent Fury is a good example of the Department of Defense's dependence on MAC, not only for transportation to and from the fight, but for supplies, fuel, aeromedical evacuation and a myriad of other tasks. MAC had virtually every facet of the command involved in Urgent Fury, and as far as the United States Air Force is concerned, it was really a MAC war." (20:1)

Chapter 4

ANALYSIS OF AIRLIFT IN GRENADA

Operation Urgent Fury certainly did demonstrate DOD's dependence of MAC for a wide range of tasks involving force projection; but the operation also highlighted a number of limitations under which MAC's airlift forces operate. These limitations, unresolved, will constrain airlift's ability to operate effectively in the future. Understanding the factors which hindered airlift during the invasion of Grenada will enable participants in future contingency operations to recognize the constraints under which airlift operates and plan accordingly.

Airlift's ability to operate in anything but a low-threat environment is extremely limited. Because of their speed and size airlift aircraft are very vulnerable to anti-aircraft guns as evidenced by the experience in Grenada. The C-130s were unable to complete their drop on the first pass over Point Salines due to the AAA fire despite having lowered their drop altitude to 500 feet. Constrained by the operation's rules of engagement the AC-130 gunships had not eliminated these guns prior to the arrival of the airdrop formation. Only after the gunship had neutralized the gun positions could the Ranger assault force be airdropped. (8:37) Given the size and speed characteristics of airlift aircraft, effective elimination of an enemy's surface-to-air threat (guns and missiles) in the immediate vicinity of airborne assault objective is essential to successful employment of airlift forces. Air superiority to negate any existing air-to-air threat which might exist is also essential.

The element of surprise greatly enhances the ability of airlift to deliver airborne assault forces to the objective by catching the opposing forces off-guard and unprepared. In Grenada, as Major General William Mall, then Commander of 23AF and who was aboard the first MC-130, said, "They knew we were coming." (8:37) Several factors probably contributed to the enemy's preparation; the presence of the Navy task force, the arrival of the gunship two hours before the assault, and the navigation equipment failure. (3:13, 22, 23) The gunship had recognized the preparations which the enemy was making to defend against an assault; the gun emplacements around the airfield and in the hills to the North, and the obstructions which had been placed on the runway. (3:22) But, Point Salines was still the only area suitable for an airborne assault in the southern sector given the island's terrain.

Failure of the navigation equipment on the MC-130 aircraft highlights a limitation pointed out in 1979 by MAC's Project

Close Look II. The study group strongly recommended that an urgent priority be given to upgrading the C-130 fleet with inertial navigation equipment. (18:iii) Despite this recommendation the C-130s following the MC-130s did not possess this high accuracy equipment and were unable to assume lead responsibility for this night drop on an unmarked drop zone. The C-130s operated under a number of other limitations recognized by Project Close Look II as limiting their combat capability including lack of: secure/jam resistant radios, and defensive avionics systems. (18:iii-iv) The lack of secure communications was highlighted by the need to transmit the revised time for the planned drop to the formation over an unsecure radio. (22:--)

The limited drop zone length at Point Salines dictated that MAC transition from airdrop to airland deployment operations after the initial airborne assault was completed. The need to use Barbados as a staging base for airlift during Urgent Fury was dictated by the characteristics of MAC's airlift aircraft. While both the C-5 and C-141 possess the range, speed, and size suitable for strategic or intertheater airlift, they lack the shortfield capability necessary to deliver directly to most forward locations. Their size also contributes to ramp saturation as was the case with the C-141s operating into Point Salines. Only the C-130s possess the shortfield capability necessary to operate effectively in the tactical or intratheater role. (17:II7-8) These limitations were much in evidence in Grenada. Throughout most of the first day only 5000 feet of the Point Salines runway was available limiting operations there to C-130s. Even when the entire runway was available only one C-141 could operate at Point Salines at a time. Airlift into Pearls was restricted to C-130s for the duration. The staging base concept of operations allows MAC to make the best use of its available aircraft but involves a number of drawbacks: airfield saturation at the staging base, delay in final delivery to the forward base, and the availability of suitable bases to accomplish this staging concept. (17:III-5) MAC's Airlift Master Plan, published in 1983, recognized these limitations and points out the C-17 aircraft as a solution offering strategic size, speed, and range combined with tactical shortfield capability.

The critical element of command and control operated under a number of significant constraints during Urgent Fury. Both Brigadier General Willis and Major General Patterson singled out the lack of secure communication capability as limiting MAC's agility to exercise effective command and control of airlift assets. Numerous mistakes in airlift request routing and requirements definition further saturated the limited secure communications and complicated the management of airlift resources. (19-V5) The urgency of the operation severely

compressed the necessary planning task as did the 82nd Airborne's decision on the second day of the operation to add four additional battalions to the force deployment requirement. Managing the airlift flow to preclude airfield saturation at Barbados and particularly at Point Salines was an extremely difficult task. (20:8-9) The command and control task was further complicated, especially early on, by the lack of accurate and timely intelligence. MAC's ability to overcome these obstacles and effectively manage the airlift portion of this operation is a tribute to its flexibility and its people.

The success which airlift enjoyed during the invasion of Grenada is also a tribute to the various ground support personnel who participated. The combat control teams performed a monumental task, particularly at Point Salines where during one six-hour period they directed 230 aircraft operations (takeoffs/landings of both fixed and rotary wing). (8:41) The aerial port loaded and unloaded cargo for two-and-a-half weeks before anyone got time off. (8:41) Aircraft maintenance crews at Barbados serviced and turned over 500 C-130 sorties before the first delay for aircraft maintenance occurred. (20:12) The roles played by MAC's airbase defense and security police also contributed significantly to the command's successful airlift effort. Airlift certainly is limited by the ability of its ground support to secure, service, load, and control the aircraft. In the case of Grenada these forces greatly enhanced the airlift throughout the system.

Airlift's experience in Operation Urgent Fury indicated a number of limitations to MAC's ability to respond effectively to a low intensity conflict in the Central American and Caribbean region. As pointed out these constraints include: susceptibility to the surface-to-air threat, lack of precision navigation equipment, dependence on the element of surprise for airborne assault, the need to establish a staging base in theater to accommodate various aircraft limitations, limited airlifters with shortfield capability, lack of sufficient secure communications, requirement to respond with only limited time for operational planning, and the need to carefully manage airlift flow to preclude airfield saturation. But the Grenada operations also highlighted MAC's greatest strength in this environment. That strength is teamwork: MAC's ability to deploy its assets anywhere, anytime, and to do so in a self-supporting fashion.

Chapter 5

APPLICATION TO THE FUTURE

Central America and the Caribbean are immerging as a fourth front for U. S. and Soviet confrontation; joining Europe, the Far East, and the Middle East as areas significant to our military leaders and planners. The mass of documents captured in Grenada revealed the Soviets' continued interest in taking advantage of the various political, economic, and social problems which plague many of the Caribbean states. (12:55) Their continued support, through their Cuban and Nicaraguan agents, of communist insurgencies in Central America evidences their intent to expand their influence at the expense of both democracy and U. S. interests in the region. Against this backdrop the likelihood of future crises requiring the application of U. S. military forces to protect our national objectives in the area remains high. As was the case in Grenada, the U. S. ability to quickly project military forces in this region in response to such a contingency will rely in large part on airlift.

In Central America likely candidates for future U. S. military involvement in low intensity conflict include: El Salvador, Guatemala, and Honduras. While Nicaragua also offers some potential for U. S. military action; given the level of military power which the Nicaraguans possess, and the Soviet and Cuban interests there any future conflict involving U. S. forces in that country would not likely be conducted at the low intensity conflict level but rather at the theater warfare level. Because this paper deals with only low intensity conflict Nicaragua is not addressed except in terms of their involvement in insurgencies in neighboring states. In El Salvador, a civil war has continued for seven years and the political, economic, and social upheaval that resulted continues. (6:413) Border tensions with both Honduras and Nicaragua continue and the U. S. is deeply committed to El Salvador providing military assistance and training. (1:283) In Guatemala, after a long struggle the military seems to have gained the upper hand against the insurgent communist backed forces; but concern over guerilla activities remains and the recent restoration of U. S. military assistance and training indicates American commitment to the nation (1:395-396) Honduras' border with Nicaragua continues to offer sanctuary for the contras and potential for conflict between the neighboring states. Nicaraguan military incursions into Honduras continue. (1:414-416) In addition, indigenous guerillas continue to operate both in the interior and along the coast. (10:410-411)

In the Caribbean likely candidates for future U. S. military involvement in low intensity conflict include the Dominican Republic and Haiti. Cuba has provided military training to revolutionary groups in the Dominican Republic. (12:55) While the U. S. continues to be the Dominican Republic's primary source of military training and equipment, the nation recently established full diplomatic relations with Cuba raising concern in the United States. (1:261) The political unrest in Haiti has been magnified by Cuba's increased activities aimed at stirring tension there. (1:409)

The nature of the threat which U. S. airlift forces would likely face in low intensity conflict operations in these Central American and Caribbean nations varies widely and would to a large degree depend on the nation's acceptance of U. S. involvement. For instance, the friendly governments of El Salvador or Guatemala might ask for direct U. S. military assistance to help defeat the insurgent forces in their countries. In this case the threat would be most likely limited to small arms such as: grenade launchers, mortars, submachine guns, and assault rifles. (1:285) A higher level of surface-to-air threat would be faced by airlift supporting U. S. action to assist the Hondurans in repelling Nicaraguan border incursions. The Nicaraguan Army possesses about 700 Soviet supplied anti-aircraft guns ranging from 14.5mm to 57mm in addition approximately 300 SA-6 and SA-7 surface-to-air missiles. (1:693) Unilateral U. S. military action in the Caribbean nations of the Dominican Republic or Haiti would likely face opposition from their indigenous forces. The Dominican Republic's army has one anti-aircraft battalion with 24 U. S.-made 120mm anti-aircraft guns. (1:263) Haiti's air defense is comprised of ten 20mm, six 40mm, and four 57mm guns. None of these states would pose any air-to-air threat to airlift forces though it is believed that 50 Nicaraguan pilots have been trained to fly Russian fighters and that 17 MIG-21 aircraft in Cuba could be sent to Nicaragua in short order. (1:694) In any event, the level of threat likely to be faced by airlift forces in future contingency operations in Central America and the Caribbean will exceed the level experienced in Grenada in 1983.

The continued limited U. S. political and military presence in the region will also hamper future operations, particularly in the Caribbean. The lack of U. S. representation in Grenada in 1983 severely limited our intelligence gathering prior to the invasion. Despite this the U. S. still has no political representative in the five other OECS nations. (12:56) Over the years, the U. S. has gradually reduced the number of facilities which it operates in the Caribbean, departing from bases in Barbados, Grand Turk, Jamaica, St. Lucia, and Trinidad. (12:58) This gradual

withdrawal has served to limit our airlift flexibility by reducing the available staging bases in the region from which we can operate.

As our experience in Grenada demonstrated the availability of suitable airfields is a significant constraint under which contingency airlift must operate. This constraint is as limiting today as it was in 1983. For example, of the 1,600 airfields throughout Central America only about 40 are able to support C-130 operations and far fewer are capable of supporting C-141 and C-5 operations, and the situation in the Caribbean is no better. (13:41) In El Salvador, only the International Airport is suitable for C-5 operations and in Haiti only Port-Au-Prince would support operations by airlifters other than C-130s. (1:282, 411) This lack of suitable airfields would require MAC to use the same staging base concept of operations used in Grenada and most certainly result in the airfield saturation and airflow management difficulties which were present in Grenada. This problem will likely persist until MAC obtains the C-17 aircraft which will possess both the size, range, and speed characteristics of strategic airlifters; and the shortfield capability of tactical airlifters.

Several other equipment limitations under which MAC airlift operated during the 1983 invasion of Grenada persist. Fewer than half of MAC's airlift aircraft are presently equipped with secure radios. While all C-5 aircraft are so equipped, only 170 of the C-141 fleet are equipped with secure voice and installation of this capability in the C-130 fleet will not be completed until late 1989. (21:--) On the other hand, most MAC airlifters are now equipped with jam-resistant voice communications at least for their ultra-high frequency radios. Extending this capability to the fleet's very-high frequency radios has been slowed by technical and fiscal difficulties and a production decision is not expected until early in 1989. (21:--) Likewise, efforts to provide the airlift fleet electronic warfare warning and countermeasures defensive systems against radar guided anti-aircraft and surface-to-air missiles has met with technical and fiscal difficulties. (21:--) MAC's Special Operations Low Level II (SOLL II) C-130 and C-141 aircraft are scheduled for substantial modifications beginning in 1990 to increase their survivability and chances of mission success in augmenting the special operations forces. While this program represents only 11 C-130 and 13 C-141 aircraft the equipment upgrades address the full range of secure communications, defensive systems, and navigation equipment needs first addressed in Project Close Look II and echoed by the experience of Grenada. These systems include: radar and infrared warning receivers, tactical and satellite secure voice, flare and chaff dispensers, forward-looking infrared radar, terrain following radar, night vision

equipment, and high precision self-contained navigation systems. (21:--) In addition, two hatch-mounted secure SATCOM systems per airlift squadron are in production. (21:--) Despite these equipment enhancements the overwhelming majority of MAC's airlift fleet would enter a low intensity conflict in Central America or the Caribbean without secure communications, defensive systems, or precision navigation equipment.

So most of the lessons of Grenada are as applicable to airlift in this region as they were in 1983. The political, economic, social, and military conditions in Central America and the Caribbean remain, in the broad sense, unchanged. American military involvement on very short notice remains a likelihood. The threat which airlift forces would face in such a low intensity conflict in the region is at least as great as that found in Grenada and probably greater. Our limited political and military presence in the area will limit both our intelligence gathering and our ability to operate effectively. The limited number of suitable airfields to support our strategic airlifters would hamper our ability to quickly and smoothly deploy forces into the area of conflict. And finally, while MAC has made significant strides at upgrading the communications, defensive systems, and navigation systems on the airlift fleet; most airlift aircraft still do not possess these enhanced capabilities.

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