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Cuba: Military Intervention Capabilities in Central America

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An Intelligence Assessment

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ALA 83-10179C

November 1983

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Errata

Notice to recipients of Intelligence Assessment *Cuba: Military Intervention Capabilities in Central America*, ALA 83-10179C, [redacted]

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Attached is the **Key Judgments** section of this Intelligence Assessment. The Key Judgments page was not printed in all copies of the Assessment.

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Cuba: Military Intervention Capabilities in Central America

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Key Judgments

Information available as of 10 November 1983 was used in this report.

Cuba, with the largest and best trained and equipped military in the Caribbean Basin, has the capability to deploy a substantial combat force in Central America. We judge that Cuba's air and sea transport assets could move and logistically support a force of at least 25,000 troops, assuming secure ports and airfields:

- A major airlift could deliver some 8,000 troops or 900 tons of supplies per week—enough to support more than 10,000 troops—but would be difficult to maintain indefinitely. Havana's normal several weekly flights to Nicaragua could bring more than 1,000 troops per week.

- Sealift would be needed to deliver heavy equipment and, particularly in the event of a large intervention, at least some supplies. Nicaragua's small east coast ports could be used, but large amounts of equipment could be delivered faster by going through the Panama Canal to Corinto on the Pacific coast.

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Havana could intervene in Central America with little or no warning. Airlift alone could bring in several thousand lightly armed troops and, if conducted on a small scale over several weeks, probably could not be detected as part of a military intervention operation until Cuban units were identified in-country. The supplies needed to logistically support these troops also probably could be delivered relatively discreetly by merchant ships. Obviously, if speed were of critical importance to Havana and a major force were being assembled and transported as rapidly as possible, our ability to detect the operation would improve dramatically.

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While Havana could independently initiate a large-scale military move in Central America, to maintain the effort it would need continued Soviet shipments of fuel, munitions, spare parts, and other logistic support. Moscow could directly and discreetly send this materiel on the merchant ships that regularly visit Cuban ports. If Soviet logistic support were not forthcoming and Cuba's military stockpiles proved inadequate, Havana would have to divert such resources as fuel from the civilian sector and acquire materiel such as ammunition and spare parts from alternate sources.

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Cuban military capabilities are overwhelming in the Central American context, and, assuming no US armed response, a large Cuban force deployed there probably could defeat those of any country in the region.

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Because Cuba's armed forces are oriented to conventional warfare, their counterinsurgency capabilities—which would come into play if Cuba intervened in Nicaragua—are less formidable but still impressive:

- The forces best suited for counterinsurgency operations would be airborne- and airmobile-trained units and lightly armed infantry troops supported by helicopter.
- Although Air Force training appears adequate, effective air support could be hampered by the shortage of suitable airfields, absence of adequate radars, and Cuba's small number of helicopters.
- The Navy would play a more limited role, considering its small size and the nature of likely operations in Central America.

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In Nicaragua, several thousand conventionally armed Cuban troops could provide effective static defense of many key installations. Cuban operations against insurgent forces, however, would be hampered by terrain that favors guerrilla warfare and the poor transportation infrastructure. To succeed, Cuban forces—in concert with the Sandinistas—would have to conduct an aggressive campaign with potentially heavy casualties, receive accurate and timely intelligence on their elusive insurgent targets, and provide logistic support to widely dispersed forces.

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Regardless of events in Central America, over the next few years we expect Cuba's overall military capabilities to improve as its forces grow more proficient in operating new weapons and receive additional equipment—such as the IL-76 heavy transport—from the Soviets. Havana's ability to conduct an intervention operation will continue to be constrained by Cuba's dependence on the USSR for materiel support. Moreover, we doubt that Cuba could conduct any intervention operation involving more than a few thousand troops in the face of US interdiction.

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Cuba: Military Intervention Capabilities in Central America

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An Intelligence Assessment

This paper was prepared by Office of African and Latin American Analysis. It was coordinated with the Directorate of Operations.

Comments and queries are welcome and may be directed to the Chief, Middle America–Caribbean Division, ALA,

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Preface

This paper focuses on Cuba's capability to intervene with military forces in Central America. Any Cuban decision to take military action would depend on a number of factors, of which the most important would be Castro's fear of provoking US military retaliation and the extent to which the Soviets were willing to back Cuban military moves. Other considerations would include the likely outcome of the operation itself, the justifiability of its actions to the international community, and the economic costs. The exact combination necessary to precipitate such action is highly problematic and, by design, is outside the scope of this paper.

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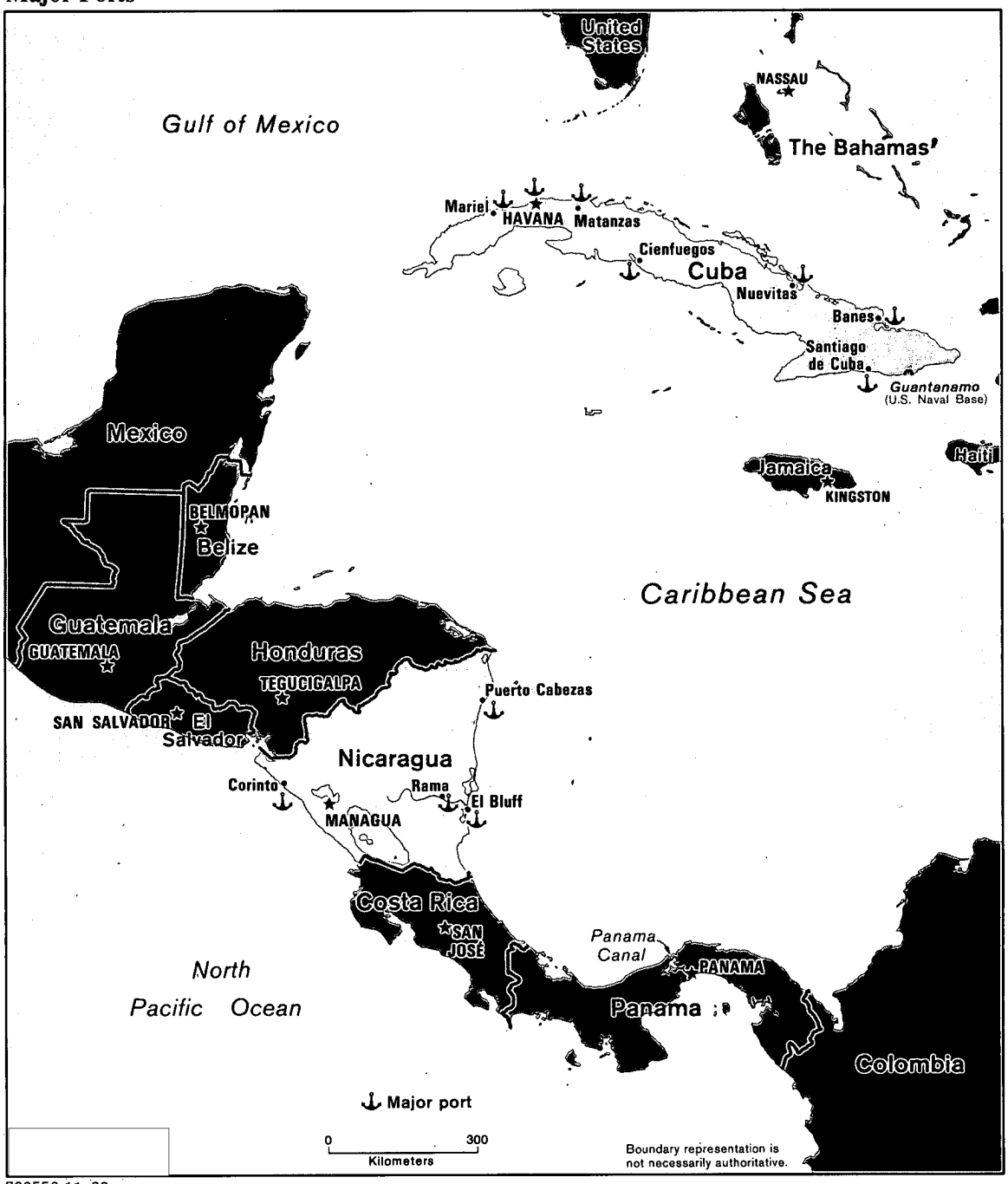
Figure 1
Major Ports



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Cuba: Military Intervention Capabilities in Central America

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Introduction

In a broad sense, Cuba—by providing a wide range of political and military support to revolutionary groups—has "intervened" in most Latin American countries since Fidel Castro came to power in 1959. Only since the mid-1970s, however, when Castro sent thousands of troops to Angola, have Cuba's armed forces developed the capability to bring potentially decisive military power to bear in a foreign environment. This capability has improved steadily as Cuban forces have gained combat experience abroad, new Soviet weapons, and additional airlift and sealift support.

This paper examines Cuba's capability to intervene with substantial military forces—introducing and supporting regular combat units, rather than slightly expanding the size or activities of the current Cuban presence—in the troubled Central American region. It first discusses the general factors that would affect Cuban military capabilities regardless of the specific circumstances under which Cuba intervened. These include the availability of Cuban forces and their capabilities, airlift and sealift resources at hand for transporting these forces, and likely Soviet support. It then outlines Cuban capabilities in greater detail, by analyzing the force requirements, deployment times, and logistic support necessary under three different operational scenarios. While these scenarios focus on potential Cuban military operations in Nicaragua, they also broadly illustrate Cuban capabilities to respond to similar challenges throughout the region. Finally, the paper discusses the likely nature of future improvements in Cuban military intervention capabilities.

Force Availability and Capability

We believe Cuba's military—the largest and by far the best trained and equipped in the Caribbean Basin—could provide substantial combat forces for operations in Central America if the United States did not intervene. With formidable conventional warfare capabilities, the Cuban military would have little difficulty defeating any of the region's indigenous armed forces. In all likelihood, however, if the Cubans intervened in Nicaragua, they would be combating guerrilla forces, whose defeat would require an aggressive counterinsurgency campaign with larger forces and potentially higher casualties than Cuba has borne in Angola.

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Limiting the ultimate size of any Cuban troop commitment would be the difficulties of moving and logistically supporting large forces off the island, and the need—as Havana probably sees it—to retain the bulk of its forces in Cuba for defensive purposes. As in Africa, Cuban combat forces would be tailored to meet the requirements of their mission, local terrain, and nature of the enemy. Each type of Cuban force available has particular strengths and weaknesses, and thus varying suitability for the missions it could be expected to conduct.

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Ground

The Cuban Ground Forces, because of its size, could provide the most substantial commitment. As in its previous interventions, Cuba probably would draw primarily from the army's thousands of reservists, even for a relatively small intervention operation, leaving the bulk of regular personnel at home for defensive purposes. According to statements by Raul Castro, some 70 percent of Cuba's forces in Angola and Ethiopia were reservists. Barring a major intervention requiring large numbers of conventional weapons, the army's inventory of most weapon systems probably would be sufficient. Cuba has only small numbers of some items that would be particularly useful in Central America, such as light reconnaissance vehicles, however.

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Table 1
Estimated Cuban Combat Forces Available for Operations in Central America

Force Component	Estimated Total Size	Maximum Number Available for Deployment [a]	Comments
Ground Forces	60,000 to 70,000 active-duty troops in Cuba, about 40,000 in Africa. Hundreds of thousands reservists; more than 100,000 immediately available.	As many as 30,000, mostly mobilized reservists.	Availability depends mainly on mobilization's impact on Cuba's economy. Lightly armed troops could be airlifted; heavy equipment must be shipped by sea.
Landing and Assault Brigade	At least 1,500 lightly armed troops plus unknown reserves.	Nearly all.	Airborne-qualified elite force; could be quickly airlifted. On the basis of satellite photography, dedicated airlift probably includes about 20 turboprop transport aircraft and several helicopters.
Special Troops	2,500 to 3,000 lightly armed troops plus unknown reserves.	At least 1,500 to 2,000 active-duty troops plus reserves.	Ministry of Interior elite force; could be quickly airlifted. Trained for such specialized tasks as airborne operations, sabotage, and using explosives.
Air Force	18,500 personnel, with 675 pilots. Operational combat aircraft include: about 120 MIG-21 and 33 MIG-23 jet fighters; 30 L-39 jet trainers; about 40 MI-8, MI-17, and MI-24 helicopters.	30 MIGs, primarily MIG-21s; 15 to 20 L-39s; and 10 to 15 helicopters.	Fighter deployment would be limited to 20 or so at most, however, because of Nicaraguan airfield capacities. Overall availability primarily based on acquisitions since late 1981 and number of aircraft assigned to training, rather than operational, bases. Fighters could fly to Central America; helicopters must be shipped.
Navy	12,000 personnel, with 400 to 500 naval infantry and 70 frogmen. Two Polnocny-class landing ships. Two F-class submarines. One Koni-class frigate. Numerous patrol boats and minesweepers.	All naval infantry and frogmen. Two landing ships, and possibly a few other combatants.	Naval infantry equipped with at least eight armored personnel carriers and four light tanks. Each Polnocny can carry 180 troops or six armored vehicles with crews up to 1,500 miles. Frogmen reportedly trained in explosives, infiltration, and sabotage and served in Angola.

[a] The figures in this column represent a "worst case" scenario and should be viewed as the maximum likely "pool" from which Cuba probably could draw. We consider the simultaneous deployment of all these forces unlikely because of the severe strain it would place on Cuba's defensive and logistic capabilities.

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Mobilized reservists probably would need several weeks' refresher training prior to their deployment abroad. While such training activity could provide the first indication that forces were being prepared for operations abroad, it would be difficult to determine whether the reservists were intended for Africa or about to embark on a new campaign in a country such as Nicaragua—in fact, even the reservists involved probably would not be told their ultimate destination until the last possible moment.

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We judge that the army's equipment and training prepare it primarily for conventional operations.

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Cuba's African Experience: Lessons for Central America

Cuba's two previous large-scale military interventions—in Angola in 1975 and Ethiopia in 1977—illustrate how similar involvements might evolve in the future and point out Cuba's potential strengths and weaknesses. In both cases, Cuba's military commitment progressed through three general phases:

- *The introduction of a small number of advisers and technicians—less than 100—to assist in military training and in the assimilation of newly delivered Soviet equipment.*
- *The introduction of as many as several hundred additional specialists—including tank drivers, artillery crews, and medical personnel—to assume more vital combat support tasks as the security situation deteriorated.*
- *The deployment of thousands of combat troops when the military situation became critical.*

The Angolan and Ethiopian operations were successful in a number of ways and give the Cubans experience in many of the tasks they would have to perform if intervening in Central America:

- *The Cuban presence was decisive in assuring victory. Cuban units—bearing the brunt of the fighting—conducted aggressive campaigns in unfamiliar territory soon after their arrival.*
- *Cuba began an efficient troop deployment within only weeks after deciding to intervene. Civilian transport resources were mobilized quickly and both regular army personnel and newly activated and trained reservists participated.*
- *Cuba effectively commanded the tactical operations of both Cuban and foreign personnel on the battlefield.*
- *Using Soviet materiel support, Cuba established adequate resupply networks.*

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Cuba's African adventures have not been without problems, however. Cuba's conventionally armed and trained military has had difficulty countering the guerrilla threat to Angola that reemerged after the successful conclusion of the conventional campaign. Cuba also has been reluctant to become actively involved in similar operations in Ethiopia against the Eritrean separatists, probably for political reasons—Havana could be perceived as opposing a legitimate struggle for independence—and to avoid incurring additional high casualties.

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Like Angola, Cuban operations in Central America probably would involve combat against guerrilla forces, against which the Cubans could not fully utilize their conventional force superiority and training. Moreover, we believe Moscow probably would hesitate to provide the highly visible military support furnished during the height of both African interventions. In those cases, the Soviets not only helped transport Cuban troops, combat equipment, and supplies, but also deployed naval combatants in neighboring waters.

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Weapons such as medium tanks and armored personnel carriers, and training that focuses on methodical battles against comparably equipped opposing forces, probably would enable the army to defeat the conventional ground forces of any country in Central America. Mechanized infantry and other armored units would be suitable for controlling major population centers and lines of communication, and could also be used effectively in a static defense role, such as guarding military garrisons and outposts, airfields, and key economic targets. Unless supported by troop-carrying helicopters, however, most army units would be neither equipped nor trained for aggressive search-and-destroy missions against insurgent-type forces in the rugged terrain that typifies much of Central America.

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In our view, Cuba's two airborne- and airmobile-trained units—the Landing and Assault Brigade and the Ministry of Interior's Special Troops—in addition to lightly armed regular infantry troops transported by helicopters, would be best suited for conducting small-unit operations against unconventional forces and in reacting quickly to local disturbances in isolated areas. They also could be used to secure an airfield—against light, local opposition—in preparation for the arrival of regular units. Both specialized units, utilizing helicopters and small transport aircraft, frequently practice paradropping troops and occasionally cargo. Because these units are equipped with only light weapons, they would need to receive fire support from combat helicopters and army artillery during larger operations. The effectiveness of even "quick-reaction" units such as these in conducting counterinsurgency operations, however, would be hindered by the difficulty of obtaining and quickly communicating accurate intelligence on elusive insurgent targets, the mountainous terrain, a limited road network, and the challenge of resupplying units operating far from their bases.

Air

Effective air support would be critical to the success of any Cuban intervention operation. Cuba's Air Force far outmatches any in Central America in terms of size—it is larger than those of Honduras, El Salvador, and Guatemala combined—as well as sophistication, training, and combat experience. In recent years, deliveries of additional aircraft and more advanced training have improved the ability of the Air Force to conduct combat operations.

Effective air operations in Central America would be limited by the number of suitable airfields, lack of adequate radars for controlling air assets, and the high level of maintenance and logistic support required. In addition, because Cuba's air assets are limited, we doubt that Havana would divert more than a token number of aircraft from their primary mission of defending Cuba, unless the Soviets provided replacements. In Angola and Ethiopia, the Soviet Union supplied all combat aircraft,

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Of the several types of aircraft available, helicopters would be best suited for counterinsurgency operations. Cuba's MI-8 and MI-24 attack helicopters could be used to bombard insurgent positions and to provide air cover for ground troops and supply columns.

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Transport helicopters could ferry troops and supplies to remote areas, conduct reconnaissance, and evacuate wounded. We judge, however, that Cuba's helicopter resources would not be sufficient to support large-scale counterinsurgency operations in inaccessible terrain. Cuba's inventory probably would be adequate for a limited intervention totaling a few thousand troops.

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Cuba's late-model MIG-21 and MIG-23 jet fighters have the range and speed necessary to react quickly over broad areas, but would have to be based in Nicaragua—the only friendly territory in Central America—to be utilized effectively in the region. Used in an air superiority role, the MIGs would be more than a match for Honduras's early 1960s vintage Super Mysteres—the most advanced fighter in any Central American air force. The MIGs and Cuba's L-39 jet trainers could effectively support conventional ground operations as well, striking such sizable targets as enemy convoys. The L-39s also could be used to deliver bombs, rockets, or other ordnance against insurgent positions. Cuban pilots could have difficulty, however, locating and striking the smaller groups of personnel that typically would be encountered in counterinsurgency operations.

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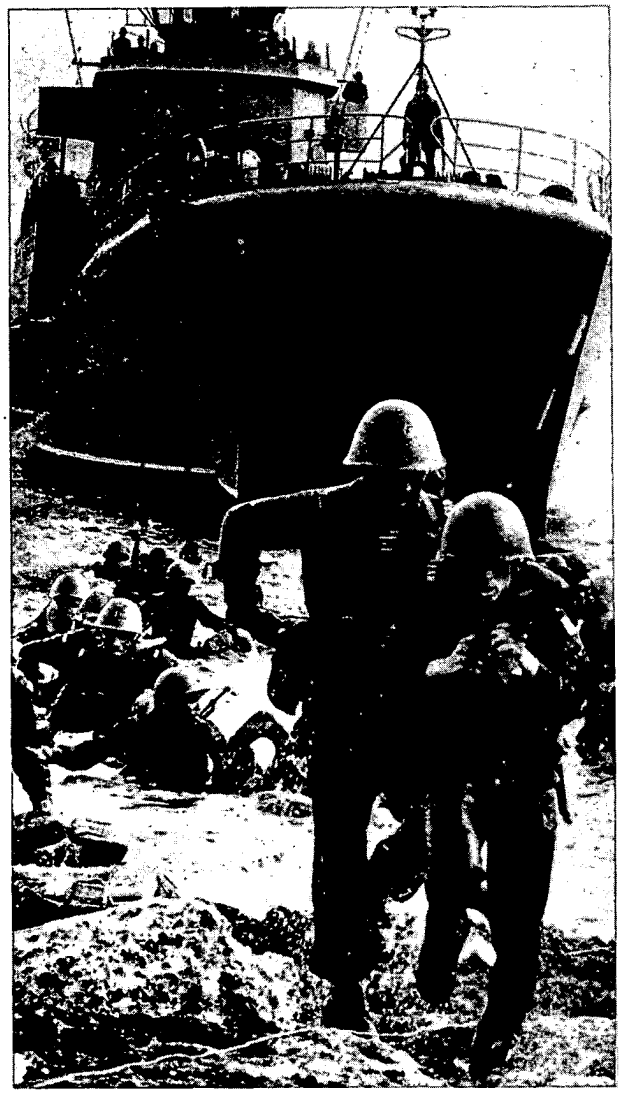

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Figure 2. Top left: Cuban amphibious assault landing exercise, with Polnocny-class landing ship. Top right: Landing and Assault Brigade paradrop training. Bottom right: Cuban Ground Forces training with T-54/55 tanks.

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Naval

Primarily a defensive force, the Cuban Navy in any intervention probably would play a much more limited role than the ground or air forces. Considering the Navy's limited size and the nature of potential operations in Central America, we believe that Cuba is unlikely to base naval combatants there. A few vessels could be escorts for merchant ships transporting or providing logistic support to Cuban intervention forces. In addition, the Navy's two specialized combat

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forces—a naval infantry unit and a frogman contingent—could participate in larger ground operations aimed at seizing or securing specific targets in coastal regions. Although Cuba's submarines have not yet ventured beyond coastal waters, they have been used to transport small groups of Cuban frogmen in exercises that simulated attacks on coastal defense positions.

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The naval infantry is the largest component capable of performing limited offensive missions it has conducted a number of amphibious assault landing exercises this year, using the Navy's Polnocny-class landing ships for the first time. Although the landing ships can deliver a small combat force to distant shores, in our judgment, the Cubans still lack experience in integrating all the complex factors involved in conducting an amphibious assault landing operation against even small-scale but determined opposition. Moreover, we believe that providing the high level of logistic, air, and naval support necessary for such an operation would severely strain Cuba's merchant marine, Air Force, and naval combatant force. Consequently, the landing ships would most likely be used in a general logistic support role, transporting equipment and supplies to areas already secured by Cuban or friendly forces and resupplying remote locations that lacked developed port facilities.

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The Logistics of Intervention

In our judgment, Cuba's airlift and sealift resources are sufficient to transport and support even a large intervention force in Central America—on the order of 25,000 troops—assuming that Cuba had free access to secure ports and airfields. As in previous Cuban interventions, much of the transport responsibility would fall to the civilian transport fleets. Aero Caribe and Cubana Airlines control all of Cuba's larger aircraft, and the merchant fleet includes the vast majority of Cuba's sealift assets. These organizations are manned to a large extent by military reservists, which would make possible a rapid shift from civil to military operations. Cuba's proximity to Central America and the growth of its transport fleets in recent years lead us to conclude that direct Soviet participation in moving men or materiel would probably be unnecessary in most circumstances. Should large military items need to be airlifted quickly by heavy transports, however, direct Soviet support—either by providing transport aircraft or by delivering military equipment directly—would be essential, since Cuba does not yet possess these aircraft.

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Airlift

In our judgment, airlift operations would provide the fastest and most secure means to transport troops and supplies to Central America. Because the cargo capacities of Cuba's aircraft are relatively limited, however, some supplies—and virtually all equipment—still would need to be shipped by sea, particularly for a major intervention operation.

Cuba has more than 70 operational transport aircraft with the range to reach Central America, offering a total capacity of about 5,500 troops or 700 metric tons of cargo. The most suitable aircraft for supporting military operations include Cubana's 11 long-range IL-62—two of which are on lease from the Soviets—and five medium- to long-range TU-154 jet transports. Each is capable of carrying 170 to 200 troops or more than 20 tons of supplies. Cuba has 26 short-range AN-26 aircraft—most of which belong to the Air Force—which also would be appropriate for use in Central America. Each can carry 30 paratroops, 38 troops, or nearly 5 tons of supplies; paradrop men or materiel; and use short, unimproved runways.

Havana can choose from several options in conducting an airlift. Factors that would be considered in the selection process include the number and type of aircraft available, the degree of urgency, the airfield and tactical conditions in the host country, the amount of secrecy desired, and the degree of Soviet involvement. In our judgment, the most ambitious airlift operation that Havana conceivably could undertake and maintain would involve about 30 aircraft, primarily AN-26s from the Air Force and IL-62s and TU-154s from Cubana Airlines. In the absence of armed opposition, about 8,000 troops or 900 tons of supplies could be delivered in the first week and nearly 7,000 troops or 800 tons of supplies thereafter.[2] With minimal Soviet assistance—such as Moscow's diverting to the operation its weekly IL-62 flight to Havana and Managua, as well as assuming the responsibility for supporting operations in Angola—Cuba could bring more than 10,000 troops or 1,200 tons of supplies the first week, and more than 8,000 troops or 1,000 tons of supplies thereafter. Roughly 50 percent more could be delivered if the IL-62s and TU-154s were scheduled for two flights daily. Operations of this magnitude would face many impediments common to large airlifts, however, such as unavailability of aircraft and pilots, difficulties in keeping aircraft on schedule, and inadequate air traffic control and ground support personnel in the receiving country. The activity also would be detected almost immediately.

Cuba could opt for a less obvious, but more time-consuming, operation. By dedicating its several weekly flights to Nicaragua to a military airlift, for example, Havana could deliver more than 1,000 troops or 150 tons of supplies per week. If two TU-154s or IL-62s flew daily—a schedule maintained for about 10 days each February and November to rotate Cuban teachers in Nicaragua—more than 5,000 troops or 700 tons of supplies could be introduced by the end of two weeks. Such an effort would enable Cuba, undetected, to build up sizable forces—as many as several thousand troops—over time and to provide such logistic support as small arms, ammunition, and medical supplies. Havana would be unable to supply by air other combat necessities such as trucks or heavy equipment, however, or to use such a small airlift to support logistically a major intervention involving more than several thousand troops actively engaged in combat.

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Sealift

We believe that, considering the vulnerability of merchant ships to a potential US blockade, Cuba would rely less on open, large-scale sealift operations than is typically the case for supporting a military

[2] Our calculations assume that each aircraft makes one round trip flight daily, that none refuel en route, and that the serviceability rate averages 85 to 90 percent during the first three days and 60 percent thereafter. For a detailed discussion of our assumptions and methodology, see the appendix.

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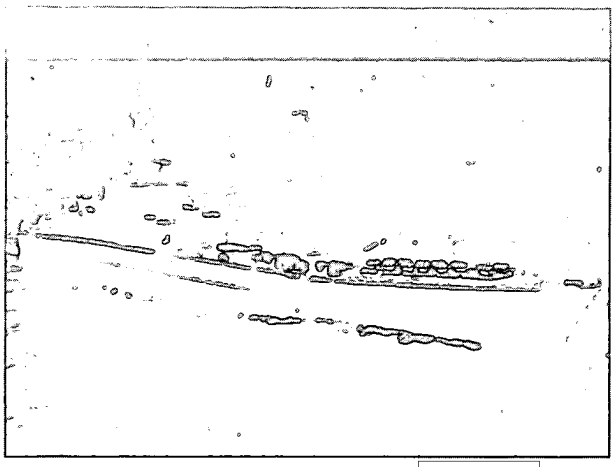

Figure 3. Cuban Polnocny-class landing ship.

intervention. Sealift was the mainstay of the Angolan buildup, for example, transporting 75 percent of Cuban troops and virtually all equipment.

In Central America, however, we believe sealift would be used more selectively to transport military equipment and, depending on the size of the intervening force, any logistic support beyond the capabilities of Cuba's air transports. Individual ships also could be used to covertly pre-position equipment and supplies in Nicaragua, leaving combat personnel to be flown in quickly when needed and significantly reducing the amount of warning time available. It would take two to three days for the initial ships to reach Central America if east or Caribbean coast ports were used, and up to two to three times longer to reach Pacific ports through the Panama Canal. Going around South America—a highly unlikely option—would take more than one month.

Although virtually the entire Cuban fleet of nearly 90 oceangoing merchant ships theoretically would be available, in our judgment, no more than 10 to 12 vessels—the maximum number used during the Angolan buildup—probably would be necessary. To transport large amounts of combat equipment and trucks as rapidly as possible, Cuba would need to utilize large vessels such as its eight El Jigue–class merchant ships. Each has a service speed of nearly 17 knots, an onboard crane capable of handling 50 tons, and capacity of more than 12,000 tons or about 1,500 troops. All have been used extensively to transport men or materiel to Angola and would need little or no modification to serve in a military support role. If less materiel were involved or time were not as important, in our view, the relatively short distances to Central America would allow Cuba to turn to its many smaller cargo ships—in the 5,000-ton range—which could use many ports unable to accommodate large vessels.

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Havana has additional options in conducting subsequent logistic and resupply operations, which would involve the shipment of only a few hundred tons of supplies daily even to support a major intervention force totaling 25,000 troops. Small coastal freighters, with a capacity of up to 1,000 tons of cargo or a few trucks, would be ideally suited for shipping materiel to many of the region's smaller ports. In addition, the Caribbean coast of Central America is within the range of Cuba's two Polnocny-class landing ships. Each could deliver a small amount of materiel—six armored vehicles, about 215 tons of cargo, or up to 180 troops—to ports or isolated beach areas, provided that adequate roads were available for transport inland.

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Soviet Support

Without specific Soviet materiel support—contingent on Moscow's political sanction for Cuban actions—Havana's capability to sustain an intervention operation would be limited. Cuba depends almost totally on the Soviets for combat equipment, spare parts, munitions, and fuel. Although the Cubans could independently initiate major military action abroad, they would rely on continued Soviet materiel deliveries to support their forces' operations.

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We do not know the size of Cuba's military stockpiles or how long Havana could support operations abroad using only the materiel on hand. If the logistic support needed were not provided by the Soviets, Havana would have to divert such resources as fuel from the civilian sector and attempt to acquire materiel such as spare parts and ammunition from alternate sources.

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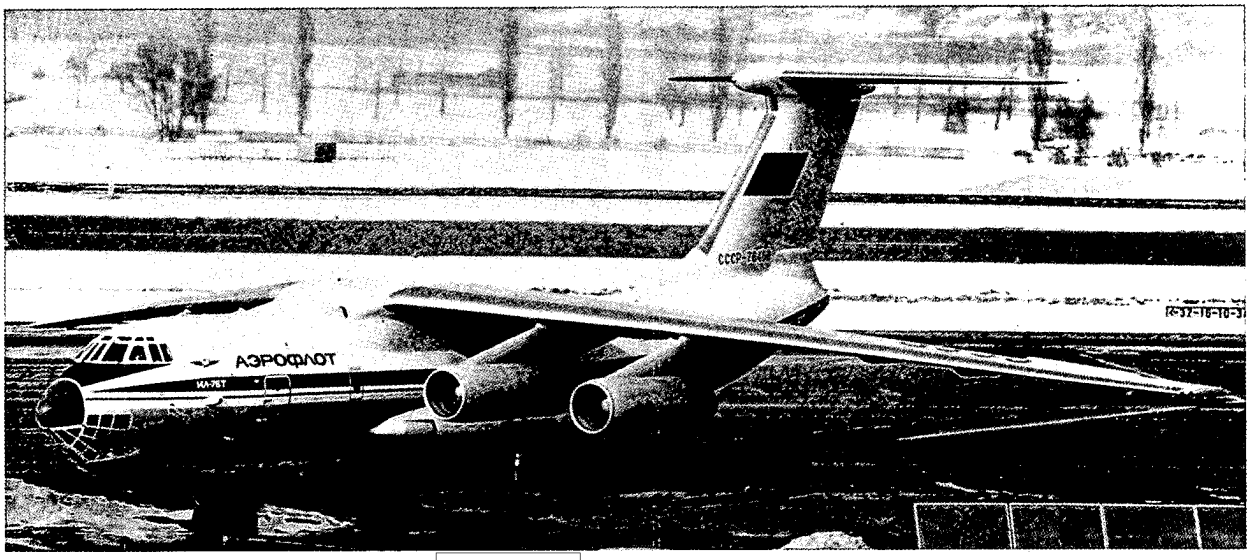

Figure 4. IL-76 Heavy cargo transport aircraft. *Jane's All the World's Aircraft 1982-83*

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In our judgment, Moscow could directly and without detection send Cuba the logistic supplies required for a limited intervention—on the order of 5,000 troops—on the arms carriers and other merchant ships that regularly visit Cuban ports. Providing support to substantially larger forces would require a more visible increase in Soviet shipping—arms deliveries to Cuba could roughly double, for example, if the operations of 25,000 troops actively engaged in combat were being supported.

The Soviets could take a number of additional measures to support Cuban operations. These include sending pilots, technicians, or other military specialists to bolster Cuban defenses; directly shipping seemingly innocuous—but nonetheless important—equipment and supplies, such as trucks and fuel, for Cuba's use abroad or, in the case of Nicaragua, shipping small amounts of combat equipment ostensibly for use by the Sandinistas; and taking over Cuba's regular civil air or merchant fleet routes. Most of these activities would probably be detected within a few days to a week. We believe Moscow would be unlikely to take such highly visible steps as deploying a naval task group as a show of support to Cuba or openly shipping large amounts of war materiel directly to Central America for use by Cuban troops.

Cuban Military Operations in Nicaragua: Three Scenarios

The success of any Cuban military intervention operation would depend largely on the specific circumstances under which Havana intervened and a host of other variables. To illustrate the capabilities of Cuban troops in various military situations, we examined Cuban force requirements and capabilities to conduct three different military actions related to security conditions in Nicaragua. Although we tried to make the cases realistic, they should be viewed as vehicles for examining the capabilities of Cuban combat forces to perform a variety of roles in any one of a number of countries rather than as our assessment of the likely course of events or the precise Cuban military response to those events.

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Our scenarios assume that neither the United States nor Central American countries would interfere directly by interdicting Cuba's supply lines, mounting cross-border attacks into Nicaragua, threatening Cuba militarily, or pursuing other hostile actions. We also assumed that the Sandinista government would cooperate fully with Cuban efforts and that the

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Possible Expanded Cuban Military Presence in Nicaragua

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between March and mid-1983 Cuba had sent more than 3,000 personnel—2,500 army regulars and reservists and 750 Ministry of Interior Special Troops—to Nicaragua.

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Cuban combat forces in Nicaragua could now total nearly 3,500, in addition to an estimated 1,500 to 2,000 military and security advisers. We also estimate that 5,000 to 6,000 Cuban civilian teachers, construction workers, and other advisers—many of whom probably have had some military training and could be mobilized quickly if needed—are present in Nicaragua.

unlike the majority of military personnel already in Nicaragua—primarily engaged in advising and training the Sandinista military—the arriving troops were sent to help the Sandinistas counter anticipated insurgent operations.

all of the troops,

were integrated with Nicaraguan units.

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We believe that these Cuban forces could bolster considerably Nicaraguan capabilities to combat insurgent units. Lightly armed, appropriately trained army personnel and Special Troops would be well-suited for conducting unconventional operations against guerrilla forces. The contingent would be too small and lightly equipped to enable the Nicaraguans to defeat the insurgents, however, or to intervene independently elsewhere in Central America.

Nicaragua's limited number of combat aircraft and helicopters could not provide an adequate level of air support.

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Soviets would be willing to provide whatever support was necessary. No dedicated Soviet support for Cuba's operations is assumed unless explicitly stated.

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In our analysis of the amount and nature of Soviet support necessary, we assumed that current deliveries to Cuba's military and economic sectors continued at a normal rate. Thus, even if no specific Soviet support were provided for the intervention effort, Havana could draw from these resources to help support its operations. The impact on an intervention of the Soviets withholding or reducing their normal deliveries to Cuba is impossible to quantify precisely, because the size and composition of Cuba's military stockpiles, as well as the extent to which Havana would be willing to draw from civilian allocations, are unknown.

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The three operational scenarios examined were:

- ***Internal Security Worsens.*** Cuban forces of about 3,000 to 5,000 troops are committed to help Managua control public disturbances provoked by Sandinista repression and a deteriorating economy and to provide static defense of key military and economic targets.

- ***Insurgent Threat Intensifies Moderately.*** Cuban forces totaling some 12,000 to 15,000 troops join Nicaraguan military units in responding to a growing insurgent challenge.

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Table 3
Potential Operations in Nicaragua: Cuban Capabilities at a Glance

Scenario	Force	Deployment Time	Logistic Requirements
Internal security worsens.	3,000 to 5,000 troops, primarily conventional ground forces.	At least two weeks	20 to 40 metric tons per day; two to three dedicated IL-62 flights daily.
Insurgent threat intensifies moderately.	12,000 to 15,000 troops, primarily lightly armed counterinsurgency forces.	At least two to three weeks	100 to 180 tons per day; several IL-62 flights daily or two or three deliveries per week by coastal freighter.
Major insurgent challenge.	As many as 25,000 troops, combination conventional/counterinsurgency force, with air support.	At least four weeks	Approaching 300 tons per day; sealift most viable, using several weekly deliveries by coastal freighter, or periodic deliveries by larger merchant ship.

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- ***Major Insurgent Challenge.*** Cuban forces approaching 25,000 troops are used in response to a massive insurgent challenge, including a diversification in insurgent tactics to include conventional operations, which threatens the survival of the Sandinista regime.

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Operational Considerations

Regardless of the scenario, Havana's ability to move large forces to Nicaragua and logistically support their operations could be hampered by numerous physical constraints:

- Nicaragua's terrain, like most of Central America, is largely unsuited for conventional operations and favors guerrilla warfare, particularly in the mountainous central highlands and tropical Caribbean lowlands, where most insurgent activities currently are concentrated. Conditions for cross-country movement of ground forces are poor, and few parachute drop zones or helicopter landing sites for airmobile forces can be found in the steep mountains covered with dense vegetation or the marshy coastal plains.

- Air operations also would be affected by these terrain features and by reduced visibility during the rainy season (May through October in the west and May through January in the east). During the dry season, blowing dust and smoke from burning fields also could restrict visibility along the Pacific coast. In addition, only three airfields currently could support operations by combat aircraft. Sandino International Airport in Managua is equipped for sustained operations, and the airfields at Montelimar and Puerto Cabezas could handle limited operations.

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- Except for the Pacific coast region, the ground transportation network—as throughout Central America—is of relatively limited capacity. Even if the key bridges, passes, and other vulnerable points could be secured, many roads would need nearly continuous maintenance to remain passable under sustained, heavy traffic, especially during the rainy season. The rail system currently is barely adequate for normal civilian use.

- Nicaragua has only two ports on the Caribbean coast that would be suitable for use in a Cuban intervention operation, and both have limitations. No roads connect the port of El Bluff with Nicaragua's interior, and direct access to the port is limited to shallow draft vessels such as small coastal freighters. Deliveries by large oceangoing vessels must therefore be transshipped to Rama, a small, poorly equipped port located 100 kilometers upstream. The other Caribbean port, Puerto Cabezas, can also accept only small coastal freighters, and the road linking it with the west is still only partially paved. To reach western Nicaragua, cargo delivered

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Figure 5
General Operating Areas of Insurgent Groups

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to either port must be trucked some 300 kilometers on routes vulnerable to interdiction. Use of Nicaragua's primary Pacific coast port of Corinto would require passage through the Panama Canal, adding at least three days to the sea transit.

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Havana would have to utilize both merchant ships and aircraft to transport the intervention forces postulated under each scenario. While aircraft could bring troops and supplies, ships would be needed to deliver their combat equipment and trucks. Therefore, unless this equipment already had been pre-positioned in Nicaragua or the Soviets were willing to deliver it themselves, a Cuban intervention operation depending on airlift alone would be limited to lightly armed combat troops. A number of other considerations would weigh against relying exclusively on airlift—a major airlift is difficult to sustain, an airlift consumes large amounts of fuel while delivering relatively small amounts of cargo, and transport aircraft, like merchant ships, are vulnerable to interdiction.

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Case I: Internal Security Worsens

A variety of factors—such as heightened anti-Sandinista sentiment among the civilian populace and increased insurgent sabotage activity—prompt a marked deterioration in Nicaragua's internal security situation. As a result of actions by the Sandinistas, such as employing harsh measures against the Catholic Church or such civilian organizations as labor unions, widespread antiregime violence and civil disorder ensues. In addition, the insurgents increasingly threaten key military and economic targets, as they did in the September and October 1983 attacks on Puerto Sandino—Nicaragua's only crude oil import facility—and the October 1983 attack on the oil storage facilities at Corinto.

We assumed that Cuban troops were called on to help the Sandinistas defend important military and economic targets threatened by either insurgent activities or an increasingly hostile populace. Some key targets that might require protection in this scenario include Corinto, which handles 80 percent of the country's oceangoing trade, the pipeline from Puerto Sandino to the Esso refinery in Managua, and the thermal power plant at Puerto Sandino. We judge that the Cubans and Nicaraguans also would protect key bridges and choke points on such important lines of communication as the Inter-American Highway and the transnational road to Rama and would establish or augment their military presence in municipalities that have a history of antiregime unrest, such as Puerto Cabezas.

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We estimate that a Cuban augmentation of about 3,000 to 5,000 ground troops and support personnel, deployed in company- and battalion-size units throughout Nicaragua, could be employed effectively in a static defense role and to help Nicaraguan forces combat unrest in urban areas. Such a force would be equipped primarily with armored personnel carriers, reconnaissance vehicles, and some artillery and antiaircraft weapons—all drawn from Cuban stocks—and would be supported by large numbers of trucks and a few transport helicopters. Although these forces, operating either independently or integrated with Nicaraguan units, also could combat the insurgents to some extent, in this scenario Havana would leave counterinsurgency operations largely to the Nicaraguans, while Cuban troops would assume much of the burden of static defense of important installations and lines of communication.

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If Havana wanted to introduce this force as rapidly as possible, we estimate that—although most of the troops could be flown to Nicaragua in as little as a week or so—a minimum of two weeks would be needed to transport their equipment by sea. To deliver its forces in this short a time, Cuba would have to use about four merchant ships comparable to the El Jigue-class, which would carry all the equipment and as many troops as could be accommodated, and one IL-62 flight daily for two weeks to transport the

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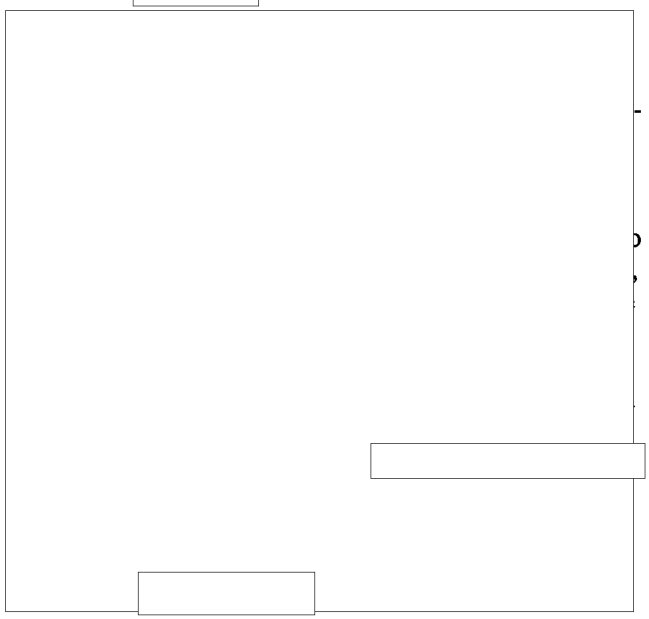
remaining troops.[4] At least three of the ships would need to transit the Panama Canal and unload at Corinto to complete the deployment within two weeks. If the Cubans elected to send only one ship through the Canal and sent other, smaller ships to ports on the Caribbean Sea, more than three weeks probably would be needed, even if both east coast ports were utilized.



In terms of logistic support, the Cubans would have little difficulty—the force would be small, its activity level would be relatively low, and it would be garrisoned primarily along the major lines of communication. Any operations conducted under this scenario would be of limited scope and duration, with the units quickly returning to their bases. We estimate that about 20 to 40 tons of supplies would be needed per day, depending on the level and type of activity.[5] In our judgment, Havana could readily supply this small level of logistic support by drawing from the materiel delivered as regular Soviet military shipments.

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We estimate that more than half of Cuba's logistic requirement under this scenario would consist of fuel and other petroleum products, some of which could be provided directly by the USSR or possibly other countries. Cuba's ability to supply fuel to its forces would not be seriously affected by insurgent sabotage of the crude oil import terminal at Puerto Sandino, fuel storage tanks, or other components of Nicaragua's petroleum supply infrastructure. Only refined petroleum products would be sent for the military resupply effort, and Cuba would probably establish separate military depots for storing its fuel and other critical supplies.

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Should Havana resupply its forces solely by air, two to three dedicated IL-62 or TU-154 flights daily probably would be sufficient to provide their forces' total logistic needs. If the Soviets shipped the fuel needed, the Cubans probably could resupply their forces' remaining logistic needs with one flight per day. Resupply also could easily be accomplished by sealift. Vessels such as the Polnocny landing ships and coastal freighters could transit directly to Rama and transport adequate supplies with only one delivery every week or so.

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Case II: Insurgent Threat Intensifies Moderately

The Sandinistas are threatened by insurgent forces numbering some 15,000 troops, which have increased their combat effectiveness—through improved tactics, command and control, and logistics—and have expanded their activities to include frequent incursions deep into Nicaragua and limited operations in more populous areas. Increased popular support and small-scale defections from Nicaragua's militia and reserve units provide the insurgents with some of their logistic needs, but they still depend on supply lines through Honduras and Costa Rica for the bulk of their materiel. Government forces face an increasing challenge in trying to maintain the status quo.

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[4] Our methodology for determining Cuban force movement capabilities is presented in the appendix. Our estimates represent the minimum times that various force deployments would take and assume that the Cubans are loading and delivering their forces as rapidly and efficiently as possible. We also assumed that Cuban ships transiting the Panama Canal have only trucks or supplies as deck cargo, and exhibit no external signatures—such as field kitchens—that openly identify them as carrying an intervention force. If the Cubans elected to introduce their forces more gradually, our estimated deployment times could increase severalfold, and our ability to detect the operation on a timely basis would decrease markedly.

[5] We calculated resupply requirements for four main categories of materiel—ammunition, fuel and other petroleum products, rations, and nontechnical items such as tents. The appendix presents our methodologies for determining these logistic support requirements.

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Nicaragua's Growing Insurgent Threat

Beginning shortly after the Sandinista victory in 1979 with a few poorly armed bands of former National Guard members, the insurgency now poses an increasing challenge to the Sandinista regime. The insurgent groups have grown to include disaffected Sandinistas, Miskito and other Indian groups, peasants, small landowners, and laborers. We estimate the insurgents total at least 10,000—and perhaps as many as 12,000—armed fighters and active collaborators, comprising three main groups—the Nicaraguan Democratic Force (FDN) operating mainly in northwest and central Nicaragua, the Democratic Revolutionary Alliance (ARDE) in the south, and the Miskito-Sumu-Rama Revolutionary Front (Misura) in the northeast. The Sandinistas have incurred increasing political, military, and economic costs because of the insurgency, with many reservists and militiamen being called to active duty and scarce economic resources diverted to military use.

The insurgents have demonstrated the capability to mount guerrilla warfare operations such as ambushes, sabotage, and attacks on outposts. Their activities have been largely confined to the remote, relatively unpopulated northern and southern border regions and Caribbean coast—areas where the central government traditionally has had difficulties maintaining tight control. In recent months, however, central Nicaragua has been threatened as well, and the insurgents have staged limited, quick-strike attacks against such highly visible economic targets as the oil terminal at Puerto Sandino—Nicaragua's only crude oil delivery point. Although reserve and militia units have borne the brunt of the fighting against the insurgents, regular Army and Ministry of Interior Special Troops increasingly have become involved.

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The insurgents' prospects for success are uncertain. It remains unclear whether the FDN insurgents have overcome the logistic problems that halted their offensive in central Nicaragua last spring, and ARDE has repeatedly stated publicly that logistic shortages have limited its zone of operations. The insurgents also have not yet demonstrated a capability to conduct coordinated attacks on multiple fronts, permanently interdict main lines of communication, or carry out other large-scale operations that would increase dramatically their threat to the Sandinista regime. The insurgents have yet to become a self-sustained fighting force and remain dependent on external sources for weapons, ammunition, and other supplies. The potential for the groups to collaborate—and thereby increase their effectiveness—is restricted by their diverse goals and uncertain popular support, and by the intense rivalries and animosities between the FDN—whose top military leaders include former members of Somoza's National Guard—and ARDE—led by former Sandinista leader Eden Pastora. Moreover, the insurgents have yet to gain large-scale popular support and build a political infrastructure able to exploit the regime's repression, for example, by orchestrating demonstrations, strikes, or street violence in the major population centers.

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We theorized that Cuba would send some 12,000 to 15,000 troops to Nicaragua to help counter this insurgent threat before it grew substantially larger and developed an extensive popular support base. The bulk of the contingent would consist of lightly armed infantry and airmobile troops supported by artillery, light reconnaissance vehicles, and helicopters. Nicaraguan Army and militia forces would play a critical role; they would be responsible for defending secured areas against the return of insurgent groups and for conducting any small-scale, cross-border operations against insurgent supply bases. Cuban troops would support any cross-border operations from within Nicaragua and—together with Nicaraguan forces—would conduct counterinsurgency operations within Nicaragua and patrol the borders to reduce the flow of arms and men.

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We estimate the Cubans would need a minimum of two to three weeks to transport the entire force—including both combat equipment and trucks—to Nicaragua if five or six large merchant ships were sent via the Panama Canal to Corinto and three or four dedicated IL-62 flights took place per day. If, however, most of the equipment had been pre-positioned in Nicaragua or if the Soviets shipped directly to Nicaragua the several hundred trucks we judge would be needed, we estimate that the force could be introduced in as little as two weeks or so, if Cuba were willing to mount a major airlift.

Whether Havana would opt for such a potentially visible and relatively fast troop deployment or for a more gradual buildup of its forces would depend largely on the situation in Nicaragua. In the absence of a looming collapse of the Sandinista government, we believe Cuba probably would prefer to take several weeks to build its forces to the level postulated. For example, Havana's intervention in Ethiopia—roughly comparable to this scenario in terms of the number of troops involved—was accomplished over nearly three months, with the Soviets transporting all equipment and some personnel. Using only ports on the Caribbean coast, Cuba could complete the delivery of all equipment, including trucks, within six weeks and still have the option of airlifting lightly armed combat troops to Nicaragua on short notice.

We probably would have some indication that forces were being readied for possible operations abroad, especially if speed were an important Cuban consideration. it would be difficult to determine precisely their ultimate destination or the timing of their deployment. A troop airlift could be initiated with little or no warning; how soon the activity would be detected and identified as a military operation would depend primarily on the number of daily flights involved. As in the previous scenario, a more leisurely introduction of forces could considerably reduce our ability to detect an intervention operation on a timely basis.

We estimate that a force of this size actively engaged in counterinsurgency operations would consume an average of about 100 to 180 tons of supplies per day. Havana's ability to maintain this level of logistic support indefinitely without additional Soviet assistance is open to question. If the Soviets did not provide this aid, Havana might be able to fill the gap by diverting materiel from the civilian sector, curtailing military training activity, drawing from its own or Nicaraguan stockpiles, or developing alternate sources of supply. If these actions were insufficient, Cuba's combat capabilities probably would be somewhat reduced. Cuban forces probably would be able to conduct limited, selective operations against the insurgents, but would not have the means to wage an agressive campaign indefinitely.

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Sending the necessary logistic support would be considerably more difficult than in our first scenario but, in our judgment, probably within Cuban transport capabilities. Sealift would provide the most efficient resupply means—two or three shipments per week by coastal freighter to Nicaragua's Caribbean coast probably would suffice. Trying to rely on airlift exclusively would be difficult, as multiple flights would be needed daily, even if the Soviets shipped fuel to Nicaragua directly.

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The greatest challenge to providing logistic support, however, would be the need to ensure that the supplies—after reaching Nicaragua—were delivered to the proper location in a timely manner and in the proper mix and quantity. Cuban forces operating against the insurgents might be away from their bases for extended periods, and the bases themselves would probably be far from main ports and air terminals. Supplies, therefore, would have to be trucked overland through rugged terrain on possibly unsecured roads. Short-range transport aircraft or helicopters also could be used to paradrop supplies to forces operating in more inaccessible areas, but their use for routine logistic support would be somewhat restricted. Aircraft—especially helicopters—would need to be kept available for higher priority missions and supplies could be damaged or fall into enemy hands.

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In our judgment, the Cuban contingent envisioned in this scenario, in concert with Nicaraguan regular and reserve units, probably would be able to reduce substantially the postulated insurgent ground threat,

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but would have to overcome numerous potential operational difficulties. Cuban forces would need to establish small, defensible outposts, provide for secure transportation and logistic support, and—together with Nicaraguan forces—conduct an offensively oriented counterinsurgency campaign yielding potentially heavy Cuban casualties. Troops pursuing the insurgents in mountainous terrain would have to operate mainly on foot and carry few heavy weapons, reducing their ability to bring the full force of their firepower to bear. They also would need accurate and timely intelligence on the locations and strengths of insurgent units. The insurgents' familiarity with the terrain and their ability to disperse into the countryside and regroup at will also would complicate operations.

On balance, we assess that the Cubans' superior command and control, combat experience, logistics, and ground and air weaponry—coupled with the manpower resources available to the Nicaraguan military—probably would enable them to deny the insurgents permanent secure operating bases and to drive many across the borders. Whether the insurgents could later resume large-scale combat activities would depend on such imponderables as the amount of external support available to rebuild their combat apparatus, the willingness of Honduras and Costa Rica to provide safehaven, the ability of the Nicaraguan military to prevent border infiltrations, and the degree of popular dissent within Nicaragua.

Case III: Major Insurgent Challenge

As many as 25,000 Cuban troops—comparable to Cuba's commitment in Angola—are dispatched to uphold the Sandinista government in the face of a sharp deterioration in internal security conditions. The insurgents have approximately doubled in numbers, begun a conventional campaign aimed at seizing and holding key municipalities and engaging regular Sandinista forces directly, and—most important—developed a unified political infrastructure that major elements of the population can rally around. The insurgents are able to travel throughout the countryside at will, and government forces are unable to depend on the lines of communication outside of the main cities and towns. Nicaragua's regular military units are plagued by desertions, and the militia is undependable. The insurgents receive intelligence, food, supplies, safehaven, and recruits from a generally sympathetic civilian populace.

Cuban forces intervening at this late stage would, at the outset, face a number of formidable tasks. At a minimum, Cuban troops—with only minimal assistance from the Nicaraguan military—would have to restore and maintain order in the key population centers, establish secure lines of communication linking these centers, and begin to conduct harsh, punitive operations against the insurgents. They would need large forces able to perform in conventional, counterinsurgency, and static defense roles. The Cuban contingent we envision would consist of conventional ground troops equipped with tanks and armored personnel carriers, lightly armed infantry and airmobile troops, combat helicopters, and possibly MIG jet fighters to provide air support.

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The subsequent combat activities and longer range missions of Cuban forces would depend largely on Cuba's overall goals and objectives, as well as on the insurgents' response to the intervention. If Cuba intended to eradicate a firmly entrenched insurgency such as this, an aggressive, large-scale military pacification campaign—considerably more ambitious than that presented in the previous scenario—would be necessary. To prevent the insurgents from rebuilding their forces in areas cleared by counterinsurgency operations, Cuban forces also would need to reduce insurgent border traffic and establish a presence in cleared areas. Coupled with the military campaign would be the even harder task of neutralizing the insurgents' political infrastructure and reestablishing administrative control.

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An intervention of this magnitude would be considerably more complex and disruptive than smaller operations because of the number of units involved, the large mobilization required, and the greater risk of facing stiff opposition soon after their arrival in Nicaragua. We estimate that, under the best of circumstances, it would take Cuba at least one month to transport a force of this size and composition to Nicaragua. To deliver the force most efficiently, several merchant ships would need to transit to Corinto—where commercial activities would have to be substantially curtailed for at least a few days

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during military unloading operations—concurrent with a monthlong troop airlift involving four IL-62 flights daily. Although Cuba theoretically would be capable of such a rapid introduction of forces, we believe that Havana probably would prefer a more gradual deployment—a few months or longer—with fuller utilization of Nicaragua's east coast ports. As in the previous scenario, if a rapid infusion of personnel were needed to stabilize the situation, Cuba could airlift several thousand troops within a few weeks, concurrent with sealift operations.

Havana would be hard pressed to conduct an intervention of this size without Soviet assistance. Cuba's inventory of ground weapons and helicopters would be depleted substantially to provide the large amount of equipment we estimate would be required. Cuba would therefore have to receive some equipment—particularly artillery and small armored reconnaissance vehicles—from the Soviets, either through shipments to Cuba or directly to Nicaragua. Moreover, resupply requirements could approach 300 tons per day, depending on Cuban combat levels. If the Soviets did not provide this logistic support, Cuban forces could at most defend key targets against the insurgents and would be unable to actively pursue them on a large scale.

Cuba would have to depend primarily on sealift to resupply their forces. Should Cuba be unable to effect seaborne deliveries, the equivalent of more than 15 IL-62 and TU-154 flights daily—exceeding, in our judgment, realistic Cuban airlift capabilities—would be necessary to resupply solely by air. Delays caused by weather, harassment or sabotage at ports and along land routes, or other uncontrollable factors could complicate resupply operations, possibly resulting in reduced combat effectiveness among many remotely deployed units. Even if the primary lines of communication remained accessible, timely resupply to large, dispersed forces actively engaged in combat would be difficult at best.

A Cuban combat contingent of some 25,000—without the support of both an effective Nicaraguan military ally and the majority of the civilian population—would be hard pressed, in our view, to simultaneously combat the insurgents, secure cleared areas, and prevent border infiltrations. In our judgment, Cuban conventional operations probably could drive the insurgent units from more populated areas, or force them underground, and allow the government to reassert minimal authority. The substantial firepower provided by weapons such as combat helicopters and field artillery initially could inflict many insurgent casualties and cause at least short-term demoralization.

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In these circumstances, the insurgents would be likely to withdraw to the extensive but relatively uninhabited mountainous interior, the border areas, and the east coast, where they would resume guerrilla operations. They would be able to harass and inflict casualties on Cuban and Nicaraguan forces, disrupt such vital economic activities as agriculture and petroleum refining, and impede travel on all but the few major lines of communication. Unless Cuba and Nicaragua augmented their forces substantially, embarked on a comprehensive military and civil pacification effort, and successfully pressured Honduras and Costa Rica to deny the insurgents access to their territories, the insurgent force postulated probably would be able to continue the guerrilla struggle indefinitely.

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Outlook and Implications for the United States

Regardless of events in Central America, over the next few years we expect Cuba's overall military capabilities to improve as they grow more proficient in operating new weapons and receive additional arms and other equipment from the Soviets. The type of force that Cuba develops in the future depends on the kinds of equipment Moscow provides and Cuba's own military priorities. A number of factors will influence Soviet military deliveries, including the USSR's military and economic needs, the requirements of Moscow's other client states, the overall character of Soviet-Cuban relations, the Soviet need for a military surrogate, and the extent to which Moscow might want to limit or expand Cuban capabilities. For its

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part, Havana would have to consider whether it wanted to develop forces geared toward defeating a guerrilla challenge abroad at the possible expense of conventional warfare capabilities vital for defending Cuba itself.

In terms of regional power projection, the introduction of the Polnocny-class landing ship in 1982 and IL-76 cargo transport aircraft expected by early 1984 is particularly significant. These transport assets will provide Cuba with increased flexibility to conduct an intervention in Central America. With the IL-76, Havana would be able to fly in greater amounts of cargo per aircraft than heretofore possible as well as large combat equipment. Along with providing a modest amphibious lift capability, the Polnocny landing ships enable Havana to make logistic deliveries to small ports and other locations that would be inaccessible to large merchant ships. Cuba would need a substantial inventory of these assets, however, and would have to expand considerably the training and size of its Air Force and Navy to be able to use this equipment to undertake operations against significant opposition. We also expect the Cubans to receive more multipurpose systems like the MI-24 helicopter that would be suitable for a wide variety of roles either in Cuba or abroad.

Notwithstanding these improvements, however, we believe that Cuban military intervention in Central America would continue to suffer from important limitations. Although capable of transporting a large force to Central America, Havana still would remain dependent on the USSR for such critical logistic support as fuel and spare parts. In addition, the ability of Cuban forces to intervene successfully in a hostile country against large opposing forces will remain limited, although small-scale assaults could be successful in the absence of US interdiction. Moreover, although Cuban forces in Angola may be becoming more involved in counterinsurgency operations, Cuban military training continues to emphasize large-scale conventional military operations, which would bear little resemblance to the guerrilla environment facing Cuban forces intervening in Nicaragua—the most likely country in Central America for direct Cuban military involvement.

Should Havana decide to intervene militarily in Central America, it could do so with little or no warning. Airlift alone could bring in several thousand lightly armed troops and, if conducted on a small scale over several weeks, probably could not be detected as part of a military intervention operation until Cuban units were identified in-country. The supplies needed to logistically support these troops also probably could be delivered relatively discreetly by merchant ships. If resupplying by air alone, however, the high number of flights that would be necessary for all but a limited operation could be readily detected. Obviously, if speed were of critical importance to Havana and a major force were being assembled and transported as rapidly as possible, our ability to detect an intervention operation would improve dramatically.

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We doubt that Cuba could conduct any intervention operation involving more than a few thousand troops in the face of US interdiction. The extent to which Cuban operations would be impeded would depend on the kind and timing of actions taken. If the Cubans were denied access to the Panama Canal, for example, they still could transport and support even a large combat contingent by using airfields and east coast ports, although—in the case of Nicaragua—it could take more than twice as long to deliver the force. If, on the other hand, Havana were faced with a total sea blockade and were utilizing airlift alone, it could transport only lightly armed troops, supplies, and possibly small amounts of equipment such as light antiaircraft guns. Airlift could provide sufficient logistic support for an active combat force of several thousand troops at most, and even that level of effort would be a challenge to maintain indefinitely.

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There would be little Cuba could do if they were denied the use of both sealift and airlift. In these circumstances, Havana would have to utilize those forces already available in-country, supplemented by mobilized reservists present in a civilian capacity. Considering its recent experience in Grenada, we believe Havana may try to increase covertly the Cuban presence in Nicaragua as a precaution, in the event it could not bring in forces under more critical circumstances.

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Appendix

Methodology for Determining Cuban Force Movement and Logistic Support Capabilities

Airlift

With more than 70 operational civilian and military transports capable of reaching Central America, Havana can choose from several options in conducting a military airlift. Factors that would influence which aircraft were selected include aircraft and pilot availability, the type of operation being supported, the amount of time available to prepare, the capacities of host-country airfields, and the extent of secrecy desired.

The Assumptions

Our estimate of which aircraft would be suitable and available for a military airlift Recognizing that Cuban planners might allocate resources based on entirely different criteria, we selected the aircraft on the following basis:

- Only aircraft that could complete a round trip mission to any point in Central America without refueling were included. This would save turnaround time and reduce fuel requirements in the host country.

- The growth of Cuba's transport inventory in recent years was analyzed to determine which and how many aircraft might be in excess of Cuba's immediate needs.

We believe Cuba would maximize the use of military aircraft to reduce potential hard currency losses from diverting large numbers of civilian aircraft from commercial service. Thus, we assumed that virtually all of Cuba's AN-26s and only those civilian aircraft routinely available on an ad hoc basis would be used for a long-term, open-ended commitment.

For each scenario considered, we also assumed that:

- Neither the United States nor other countries interferes with Cuban operations.
- Sufficient pilots and airfield support personnel are available.
- The serviceability rate for the transports involved averages 85 to 90 percent during the first three days and 60 percent thereafter.[7]
- All airfields are secured and can accommodate the number of flights involved; arriving personnel and cargo can be readily cleared from the area by ground transportation.
- No overflight clearances are required, and no refueling is done in Central America.
- Unless stated otherwise, each aircraft makes one round trip flight per day.

Cuba's Alternatives

To determine Cuban capabilities, we examined several hypothetical operations, ranging from an all-out airlift involving Cuba's entire transport fleet to a small-scale operation utilizing only the flights regularly conducted at present.

In our judgment, the most ambitious airlift that Havana conceivably could undertake and maintain Such an operation could transport about 8,000 to 9,400 personnel or 900 to 1,200 tons of supplies the first week, and some 6,700 to 7,900 personnel or 770 to 1,000 tons thereafter. With minimal Soviet participation, about 10,000 troops or 1,200 tons could be transported the first week and 8,400 troops or 1,000 tons thereafter.

[7] Serviceability rate is the percentage of aircraft capable of performing a mission on any given day. It assumes that a prior standdown of 10 days occurs for maintenance and other preparation, only unscheduled maintenance is performed during the "surge" period (days one through three), and aircraft resume their regular maintenance cycle thereafter.

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The amount carried in either case could increase by roughly 50 percent if the IL-62s and TU-154s were scheduled for two flights daily.

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Sealift

It would be necessary for Havana to utilize both merchant ships and aircraft to transport the intervention forces postulated in our scenarios. We assumed that merchant ships would carry all equipment and as many troops as could be accommodated and that aircraft would bring the remaining troops. The amount of time needed to move each force would be driven primarily by how long the sealift portion of the operation took, which, in turn, would depend on such variables as the size and composition of the force, the number of merchant ships involved, and the Nicaraguan ports used.

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For each scenario, we assumed that:

- The United States or other countries do not interfere.
- No equipment is pre-positioned in advance.
- The necessary ships, aircraft, and crews are readily available, and encounter no delays en route by such uncontrollable factors as weather.
- All ports and airfields are secured, military shipments receive priority, and equipment can be readily cleared from delivery points by road.

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Three representative Cuban merchant ship types—the El Jigue-class and the smaller Camaguey and Pinar del Rio-classes—were chosen to illustrate Cuban sealift capabilities. All three types have supported Cuban operations in Angola and would be appropriate for transporting materiel to Nicaragua. Cuba also could utilize many other ships. Those whose size and configuration are similar to the classes used as our examples probably would have comparable lift capabilities, although their precise equipment-carrying capacities would have to be determined individually (see table A-3).

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Table A-3
Selected Cuban Merchant Ship Characteristics [a]

Ship Class	El Jigue	Pinar del Rio	Camaguey
Gross registered tons	9,400	3,000	2,300
Deadweight tons	12,680	4,100	3,200
Cruising speed (*knots*)	16.8	14	16
Heaviest onboard crane capacity (*tons*)	50	25	10
Total storage space (*square meters*)	5,950	1,900	1,940
Draft (*meters*)	9.0	6.2	5.7

[a] Ship characteristics, as well as the physical dimensions of military equipment, are furnished in DIA Report DST-2050H-611-81, November 1982, *Communist Military Sealift and Afloat Logistic Support Forces, Volume II*, (Confidential).

To calculate the number of ships needed to transport each force postulated in our scenarios, we:

- Determined the numbers and types of equipment to be loaded and how much floorspace each item would require. (Floorspace equals equipment item's length times width, plus a standard "loading factor" of 20 to 40 percent to allow for unusable space.)

- Allocated equipment to each ship—taking into account the dimensions of the hatches and holds and the available heavy lift capacity—until all equipment had been hypothetically loaded. To the fullest extent practical, combat equipment was concealed below deck while trucks were carried in the open.

- Allocated personnel—at a standard rate of 1.5 square meters of floorspace per man—to any upper decks ('tween decks) that could not be utilized for equipment. Supplies were allocated to similarly unused lower holds and also were assumed to be carried on vehicles being transported.

Table A-4
Sealift Movement Time Estimates

Activity [a]	Minimum Time Required [b]
Loading operations in Cuba (using multiple ports if necessary)	Two ships per day
Sea transit to	
Corinto (via Panama Canal)	Five days
El Bluff or Puerto Cabezas	Two days
Unloading operations in Nicaragua	
Corinto	One to two ships per day
Puerto Cabezas	One ship per day
El Bluff–Rama (includes transshipping)	Four to six days per El Jigue. Two to three days per Pinar del Rio
Land transportation	
Rama or Corinto to Managua	One day
Puerto Cabezas to Matagalpa area	One to two days

[a] Many of the activities would be conducted concurrently.
[b] Fractions of days have been rounded.

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Using the time assumptions presented in table A-4, we calculated how long it would take to ship each force to different Nicaraguan ports.[8] Hypothetical shipments involving El Jigue-class ships were sent to the Pacific coast port of Corinto and to El Bluff on the east coast to determine the fastest route. Although Corinto is farther from Cuba and involves passage through the Panama Canal, materiel delivered via El Bluff must undergo time-consuming transloading operations onto smaller vessels for final shipment to Rama, 100 kilometers upriver. The Camaguey and Pinar del Rio classes were utilized only for deliveries

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to Nicaragua's east coast ports. El Bluff was used by the Pinar del Rios, while Puerto Cabezas on Nicaragua's more isolated northeast coast was used for deliveries by the Camaguey, whose shallow draft would permit direct unloading.

We calculate that the Cuban force deployments in our scenarios could be accomplished most quickly by using Corinto, which is large enough to accommodate vessels the size of the El Jigue and is near the main land routes. Of the two Caribbean coast ports, deliveries to Puerto Cabezas could theoretically be completed somewhat more rapidly than those via El Bluff to Rama. In our view, however, El Bluff/Rama would be the better alternative for a military sealift operation. They have been utilized for arms deliveries in the past, and land travel through southern Nicaragua would be more secure than in northern areas where insurgent activities have been concentrated. Moreover, Rama is linked to the interior by Nicaragua's only east-west all-weather road, which could support the simultaneous movement of large numbers of vehicles, and is closer to western Nicaragua than is Puerto Cabezas.

Materiel Support

Without effective logistic support, Cuban combat operations would be severely retarded. To determine Cuban capabilities to provide logistic support, we estimated the tonnage of supplies needed daily for each scenario and then calculated the number of aircraft or ships required to transport these supplies to Nicaragua.

Tonnage Estimates

The USSR currently provides virtually all of Cuba's military equipment and logistic needs, and large numbers of Soviet military advisers are present in Cuba. Because of this and the involvement of Soviet personnel in organizing logistic support for Cuban intervention forces in Ethiopia, we assumed that Cuban force planners would adhere closely to Soviet guidelines to determine logistic requirements. Our estimates were thus based largely on Soviet logistic planning factors, modified as necessary to take into account scenario-dependent variables. 25X1

Resupply requirements were calculated for four main categories of materiel—ammunition, POL (petroleum, oil, and lubricants), rations, and nontechnical supplies such as tents. For each scenario, ammunition and POL accounted for the bulk—two-thirds or more—of Cuba's logistic needs. Although Cuban forces, according to military doctrine, would exploit local resources to the fullest extent practical, we believe that Cuban logistic planners still would have to be prepared to provide their forces' total logistic requirements if necessary. Moreover, local resources are scant in Nicaragua, as well as throughout Central America. 25X1 25X1

Ammunition. Of the four categories of materiel, estimates for ammunition expenditures were most sensitive to the operational assumptions of the various scenarios and thus reflected the widest variation. To calculate ammunition expenditures for ground weapons, we first developed a range reflecting the number of combat engagements that each type of unit would experience during a typical two-week period for each scenario. We then estimated how many "units of fire" would be consumed per weapon per engagement, by taking into consideration the weapon type, the opposing force, and the presumed duration and intensity of Cuban combat operations.[10] Estimated "units of fire" 25X1

[9] We based our calculations on data derived from DIA reports DDB-1150-1-83, August 1983, *Soviet/Warsaw Pact Sustainability Planning Factors for Frontal Operations* and DDB-1150-1-78, May 1978, *Warsaw Pact Logistics Guide*. The logistic planning factors presented in these publications were formulated for conventional operations in Central Europe and were therefore modified as necessary to reflect our best estimate of resupply needs for the smaller scale operations presented in our scenarios. 25X1

[10] "Unit of fire" is a Soviet accounting measure—upon which planned or actual consumption rates are based—that refers to the standard number of rounds allocated to a particular weapon type or combat unit. The "unit of fire" of an assault rifle is 300 rounds, for example, while that of a 122-mm field artillery piece is 80 rounds. 25X1 25X1

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Table A-5
Estimated Daily Logistic Requirements [a]

Tons

Scenario	Total Needs	POL	Ammunition	Rations	Nontechnical
Internal security worsens.	20 to 40	12 to 23	1 to 3	6 to 10	2 to 4
Insurgent threat intensifies moderately.	100 to 180	30 to 60	35 to 75	25 to 30	10 to 18
Major insurgent challenge.	200 to 300	75 to 110	50 to 100	50	20 to 30

[a] Figures are rounded.

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consumed were then converted to metric tons and divided by 14 to determine daily ammunition requirements. Ammunition expenditures for helicopters and fighter aircraft were based on standard consumption rates per mission.

POL. POL requirements were affected primarily by the number of vehicles involved in each scenario and by the activity levels postulated. For each scenario, we calculated daily POL requirements by first estimating the number and type of vehicles involved and determining the "refill," in liters, for each.[11] The "refills" were then multiplied by estimated consumption factors—we assumed that 0.20 refills were consumed per day in "inactive" units and 0.30 refills per day in units engaged in combat. Forcewide totals were determined and the resultant number of liters converted to metric tons.

Rations and Nontechnical Supplies. Rations were calculated at the flat rate of 2 kilograms daily per man. We assumed that the Cubans would obtain water from local sources in Nicaragua. Nontechnical supplies were estimated to comprise approximately 10 percent of the total daily logistic requirement.

[11] "Refill" equals a tracked vehicle's fuel capacity and the amount of fuel necessary for a wheeled vehicle to travel 500 kilometers.

Transport Requirements

After estimating the daily logistic requirement for Cuban forces under each scenario, we determined the number of aircraft or ships needed to transport this materiel to Nicaragua. Our tonnage estimates were first multiplied by a 40 percent "loading factor" to account for the weight of any packing materials and to allow for unusable space within the carrying compartment:

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- For air resupply operations, we based our calculations on the capacity of Cuba's largest aircraft, the IL-62, which can carry more than 26 tons. To transport 100 tons daily, for example, an estimated six IL-62 flights would be needed (100 tons plus 40 percent, divided by 26).

- Because the lift capabilities of Cuba's merchant ships are so large and varied, and the vessels also might be transporting nonmilitary items, our estimates for the numbers of ships needed are less precise. In general, we assumed that a fully loaded coastal freighter with a deadweight tonnage of 1,000 tons probably could provide about 600 tons of supplies per shipment.

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