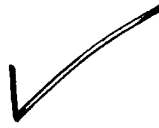


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Cuba: Soviet Military Deliveries in 1986



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A Research Paper

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Cuba: Soviet Military Deliveries in 1986





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A Research Paper

This paper was prepared by  Office of African and Latin American Analysis, and analysts in the International Security Issues Division, Office of Global Issues 


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. It was coordinated with the Directorate of Operations. 

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

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Top Secret**Cuba:
Soviet Military
Deliveries in 1986**

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Summary*Information available as
of 1 September 1987 was
used in this report.*

Moscow is continuing its support for the expansion and modernization of the Cuban armed forces. Soviet military deliveries to Cuba in 1986 returned to the higher levels prevalent in the early 1980s, after sharply declining in 1985. The total tonnage of Soviet deliveries in 1986 increased substantially over 1985. As a result, Havana continues its gradual improvement in defensive military capabilities, while building a small—but growing—potential for intervention and power projection in the region.

Key features of the Soviet deliveries made to Cuba during 1986 include:

- Shipments of military equipment and other goods reached 55,625 metric tons. The quantity of military goods delivered from Eastern Europe and other Soviet client states may have declined slightly from 10,000 tons in 1985 to about 9,000 metric tons.
- Modernization of Cuban Ground Forces is continuing with Havana's receipt of 100 armored vehicles, 16 D-20 152-mm howitzers, a small number of mobile missile and rocket launchers, and some two dozen pieces of bridging equipment.
- Cuban command and control capabilities have improved with the delivery of more than 90 pieces of electronics-related equipment, including the initial acquisition of the R-410M/Twin Plate tropospheric scatter communications system.
- Moscow's transfer of 26 SA-3 surface-to-air missile (SAM) transporters will assist Havana in expanding its air defense umbrella, particularly into eastern Cuba.

In addition, the Soviet Union's delivery of two inshore minesweepers helped sustain Cuban naval and coastal defense force inventories in 1986. Moscow's transfer of two Soviet SSC-3 coastal defense missile launchers—which, in wartime, could pose a potential threat to Caribbean and other shipping lanes—doubled the number formerly known to be operational in Cuba.

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Cuba also continues to be an important transshipment point for Soviet deliveries to Angola and Nicaragua. Although we are unable to confirm the exact amount of military equipment and supplies transshipped from Cuba to Angola, Havana occasionally transfers older weaponry and equipment to Angola for use by Cuban forces there. Light transport aircraft, coastal patrol boats, and anti-aircraft artillery guns were among the major items delivered to the Nicaraguan armed forces via Cuba during 1986.

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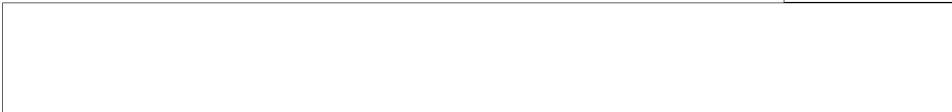


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The Soviets almost certainly intend to continue their support of the Cuban military modernization program through the end of the decade, if only to raise the cost for the United States of any prospective military action against the Castro regime. On the basis of current Cuban needs, we anticipate that Moscow's future deliveries will include additional equipment to improve command, control, and communications capabilities of the Cuban armed forces. The Cuban Navy probably will receive at least one major surface combatant or submarine in the short term, while the Cuban Air Force is likely to benefit from major equipment deliveries.



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Moscow, however, probably will remain reluctant to provide Havana with offensive weapons systems that Washington would view as posing an increased threat to US security interests. In addition, we believe the Soviets are unlikely to substantially exceed current levels of support to Cuba, lest it attract US attention and jeopardize agreement on more strategic bilateral issues such as arms control.



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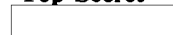
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Scope Note

This paper is the sixth in a series of annual assessments of Soviet military deliveries to Cuba produced since 1981. It examines 25X1 arms and military-associated equipment delivered to Cuba by the 25X1 Soviet Union and its Eastern Bloc allies during 1986. It also identifies trends in these weapons deliveries, assesses their impact on Cuba's military preparedness, and discusses their implications for the United States.

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**Cuba:
Soviet Military
Deliveries in 1986**



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Introduction

This paper details the available information on the transfer of arms and other military-related equipment to Cuba from the Soviet Union and its Eastern Bloc allies during 1986. Trends in these weapons deliveries, their impact on Cuba's military preparedness, and their implications for the United States are discussed.



We have also introduced a revised methodology for determining the contract value of Soviet arms deliveries to the Third World, including Cuba (see inset). Improvements in the methodology for assessing Soviet arms transfers have increased our estimates of the dollar value of Soviet deliveries by roughly two-thirds and estimates of delivery tonnages by one-quarter. The increases reflect an improved estimate of the value of support equipment and ammunition, and a better definition of military tonnage.¹



Notes on the Revised Methodology

Recent revisions in our methodology for assessing the value of arms transfers significantly increase the value of annual Soviet military deliveries to Cuba. These increases are due mainly to a broader definition of what constitutes military tonnage and an improved estimate of the value assigned per ton of support equipment.



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By broadening the definition of what is military related, we have increased slightly the amount of items delivered from Soviet ports other than Nikolayev Port Facilities South. Significant portions of Soviet deliveries from these ports formerly were labeled "military-associated" and were not included in our tonnage calculations. We have eliminated this distinction under the revised methodology. As presently defined, military tonnage is "the weight of all goods except for raw materials known or estimated to have been delivered to military forces."



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Military Deliveries in 1986

General Patterns

The pace of Soviet military deliveries to Cuba quickened during the final months of 1986, reversing the slowdown in deliveries that marked the first eight months of the year. In the first half of 1986, deliveries totaled only about 13,900 metric tons but by year's end had grown to 55,625 metric tons—an increase of more than 60 percent over the 1985 total tonnage figure.² Moscow's large arms deliveries to Iraq in February and March 1986 to help contain an Iranian



² The roughly 60-percent increase in tonnage over 1985 largely reflects differences in the methodological approach used to estimate Soviet deliveries in 1986. When similar methodological guidelines are applied to the 1985 data, for example, the percentage increase in total tonnage drops to approximately 45 percent.



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**Table 1
Top Soviet Arms Export Customers
in 1986**

Rank	Country	Estimated Value of Arms Delivered (<i>Million 1986 Constant US \$</i>)
1	Iraq	3,970
2	India	1,885
3	Vietnam	1,610
4	Cuba	1,460
5	Afghanistan	1,264
6	Angola	1,040
7	Libya	730
8	Syria	575
9	Algeria	560
10	Nicaragua	550



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offensive against the port of Al-Faw may have temporarily delayed the normal Soviet delivery patterns to Cuba, which over the past three years have averaged one or two a month.

We have calculated a \$1.5 billion cost for the arms and other military-associated equipment provided to Cuba in 1986, based on our revised methodology for estimating the market value of Soviet arms deliveries. The 75 Soviet ship voyages used to carry out the transfers were more than double the 35 voyages conducted in 1985, and also established a new high for total arms-related voyages during a year, surpassing the previous record of 68 set in 1982.

Major Arms Deliveries

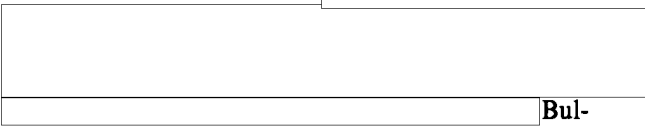
In 1986 the major items of Soviet equipment delivered to Cuba's ground forces included 47 medium tanks—38 T-62s and nine T-54/55s—and 53 other armored vehicles, 16 D-20 152-mm howitzers, a small number of mobile missile and rocket launchers, and about 24 pieces of bridging equipment.



Other Non-Soviet Shipments

As in past years, Cuba depended heavily on non-Soviet suppliers again in 1986 for military-associated goods and equipment such as spare parts, medical supplies, munitions, and vehicles. Our analysis of data available on non-Soviet supplies to Cuba suggests that the volume of deliveries from Eastern Europe and other Soviet client states may have declined slightly over the past year—dropping from an estimated 10,000 metric tons in 1985 to about 9,000 metric tons in 1986.

Nonaligned Yugoslavia's delivery in February 1986 of some 5,000 metric tons of munitions evidently accounted for more than half of all non-Soviet military transfers to Cuba last year.



Bulgaria, which supplied at least an estimated 2,100 metric tons of military-related goods to Cuba in 1986, apparently was a distant second to Yugoslavia in total tonnage delivered to Havana by non-Soviet suppliers.

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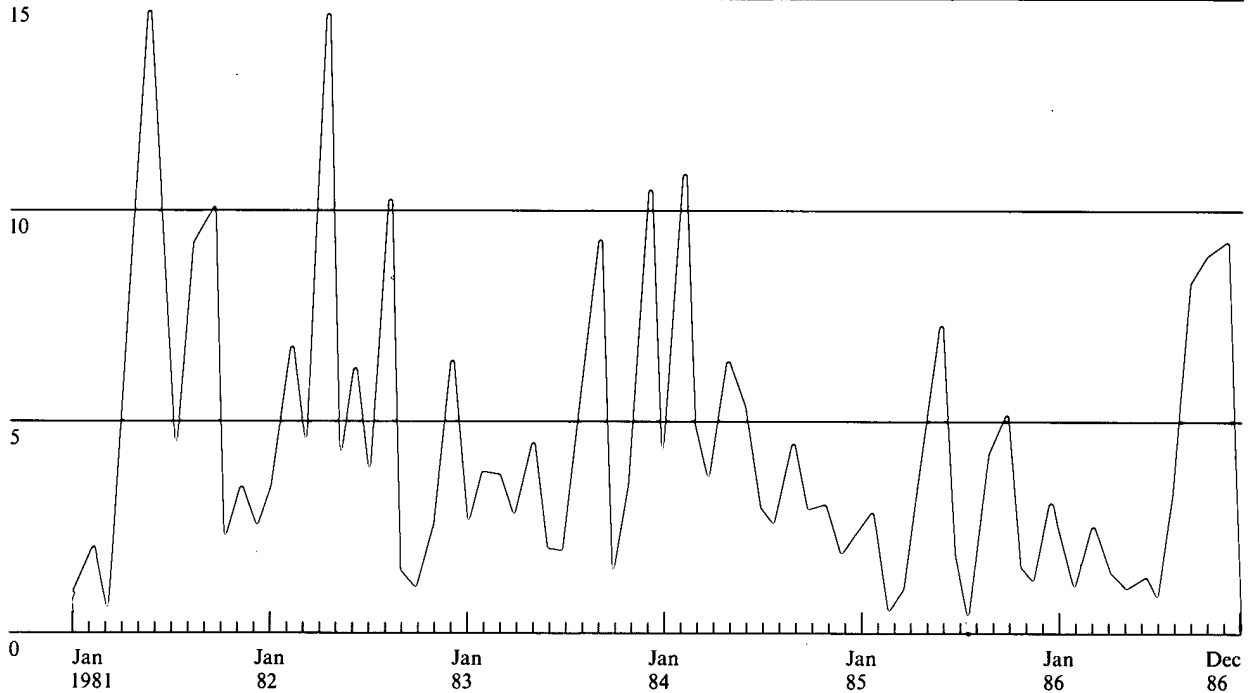
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Figure 1
Soviet Military Deliveries by Month,
1981-87

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Thousand Metric Tons



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Pipeline for Transfers to Other Soviet-Cuban Allies

In 1986, as in past years, Cuba was an important conduit for arms to other Soviet Third World client states, principally Angola and Nicaragua. Most military deliveries to Angola from the Soviet Union are shipped directly, and we are unable to confirm the exact amount of military equipment and supplies transhipped from Cuba. Nevertheless, our analysis [redacted] indicates that Cuba occasionally transfers its older weapons and equipment, such as T-34 or T-54/55 tanks, to Cuban forces in Angola as Havana's domestic military inventories are restocked with more modern Soviet arms. [redacted]

[redacted] we believe Cuba carried out several military transfers to Angola in 1986: 25X1

- [redacted] a Cuban arms carrier delivered an unspecified number of tanks and artillery at the port of Luanda in April. 25X1

- Five BTR-152 armored personnel carriers and some 20 transport vehicles probably were shipped to Angola from the Cuban arms port of Mariel in late July, [redacted] 25X1

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[Redacted]

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[Redacted]

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Meanwhile, the initial phase of the development program, which appears to have accelerated since 1985, is nearing completion. Highlighting this phase of construction is the addition of two single-berth quays equipped with rail-mounted portal cranes, and a new transit shed with more than 60,000 cubic meters of covered storage—enough to store the contents of two average-sized Soviet arms carriers. Approximately 75,000 square meters of paved open storage—sufficient to handle some 4,000 vehicles or 3,600 double-stacked standard shipping containers—and a large port operations area also have been completed. The added equipment storage and maintenance capacity are well beyond current requirements, suggesting that further increases in port mechanization and container operations are planned. [Redacted]

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When the port development program is completed in the early 1990s, we estimate that Mariel's capacity will have increased from three ship berths and almost no shore facilities to at least 10 berths and an extensive support infrastructure, including at least one—and possibly several—of the previously described covered storage sheds. Despite these upgrades, we have no evidence that the modernization of Mariel portends any major increase in Soviet military assistance to Cuba. However, the current and projected improvements will allow more efficient handling of arms deliveries, increase commercial use of the port, and help alleviate congestion at Havana, Cuba's most important port. [Redacted]

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Improvements to the Cuban Port of Mariel. The port of Mariel, located about 40 kilometers west of Havana, is Cuba's primary arms transshipment facility for virtually all military deliveries to Cuba from the USSR, as well as for Cuban arms shipments to Third World allies such as Angola and Nicaragua. Since the modernization program at Mariel was begun in 1981, the military and commercial importance of the port has continued to grow. Mariel already is an important container and roll-on/roll-off cargo-handling facility, and current efforts to improve the port are certain to enhance Cuba's ability to transship military cargo quickly. [Redacted]

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[Redacted]

- Moscow also shipped seven MI-17 helicopters directly to Angola [Redacted] [Redacted] [Redacted] presumably for use by Cuban forces there, [Redacted] [Redacted] [Redacted] [Redacted]

Cuba serves as a major transshipment point for arms and other military-related equipment supplied by the USSR and the Soviet Bloc to the Sandinista regime in Nicaragua. [Redacted]

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two years indicates that AN-2 light transport aircraft, at least one MI-8 helicopter, and a Dabur patrol boat are among major items of equipment returned to Cuba for maintenance or repair. [Redacted]

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Support for the Soviet Presence

The delivery of military equipment and other goods to Cuba intended for use by Soviet forces garrisoned there can sometimes complicate our ability to monitor Soviet military transfers to Cuba. Since 1982 the Soviet motorized rifle brigade—numbering some 2,600 to 2,900 combat troops—has continued to modernize its support and training facilities and gradually upgrade its inventory of equipment. These developments, in our view, reflect the brigade's role as both a symbol of Moscow's support to Havana and the first line of defense for Soviet facilities on the island.

[Redacted]

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Our analysis of Cuban and Nicaraguan merchant shipping patterns indicates that as much as 200 tons of ammunition and other supplies may be delivered from Cuba to Nicaragua by sea each month. Of the more than 5,900 metric tons of military cargo delivered to Nicaragua last year by Cuba—including shipments directly from Cuba and transshipments from other non-Soviet Warsaw Pact countries—a single delivery by a Cuban ship [Redacted] accounted for nearly 4,300 metric tons. Aside from deliveries made to the Sandinistas via Cuban merchant vessels, we estimate that Cuba also has provided some 200 metric tons of military cargo, using Nicaraguan-registered merchant ships to carry out the transfer.

[Redacted]

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Havana's ability to supply war materiel to Nicaragua via aerial deliveries complicates our efforts to monitor military-associated transactions. Cuba's state-run airline, Cubana, makes between six and 10 weekly flights to Nicaragua, which could—under optimal conditions—allow Havana to transfer up to 75 tons of materiel per week in this manner. [Redacted]

Impact of Arms Deliveries on Cuban Military Capabilities

Soviet military deliveries last year appear to have produced a modest qualitative—as well as quantitative—improvement in the capabilities of the Cuban armed forces, while sustaining current inventory levels. The most notable developments, in our view, were the continued upgrading of Cuba's Ground Forces and significant improvement in the military's command and control capabilities with the delivery of more than 90 pieces of electronics-related equipment. [Redacted]

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In addition to acting as a conduit and a direct supplier, Cuba assembles some larger military items before their delivery to Nicaragua and provides crew training and follow-on maintenance and repair of the equipment. [Redacted]

[Redacted]

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Ground Forces

The upgrading of Cuban armor units continued to be a high priority for Havana in 1986 with the acquisition from the Soviet Union of 38 more modern T-62s to replace aging T-54/55 tanks. [Redacted]

[Redacted]

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Managua's current lack of repair facilities and expertise reinforces Nicaragua's military dependence on Havana. Our analysis [Redacted] over the past

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[Redacted]

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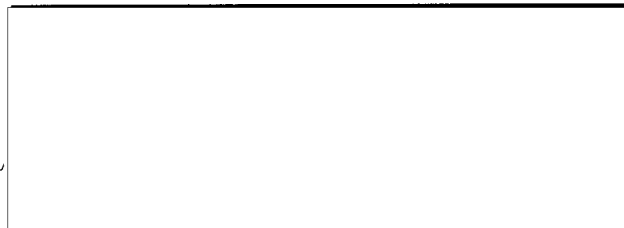


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Table 2
Soviet Deliveries of Military Goods to Cuba,
1962-86, Selected Years

							Total Metric tons
	Ship Voyages	Metric tons	Ship Voyages	Metric tons	Ship Voyages	Metric tons	
1962	125	250,000					250,000
1965	5	10,800					10,800
1970	8	11,300					11,300
1975	8	13,900					13,900
1976	13	19,500					19,500
1977	10	21,600					21,600
1978	12	22,200					22,200
1979	12	17,300					17,300
1980	14	20,900					20,900
1981	24	45,500	21	18,200			63,700
1982	15	24,540	47	35,470	6	3,730	63,740
1983	20	37,690	32	12,970	2	710	51,370
1984	23	41,870	23	8,510	6	4,220	54,600
1985	13	23,868	15	8,448	7	1,830	34,146
1986	12	39,846	59	15,209	4 ^d	570 ^e	55,625 ^f

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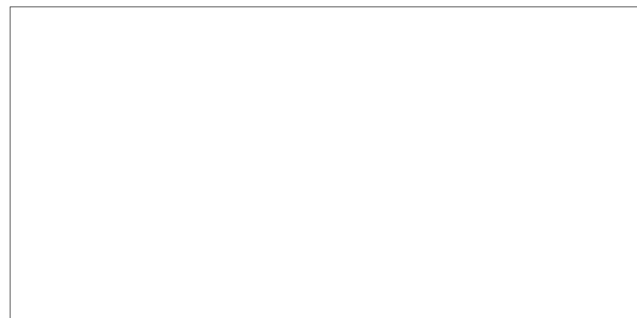
^e The estimated naval tonnage includes four unidentified patrol boats/craft and one unidentified power boat with crated pilothouse.
^f The roughly 60-percent increase in tonnage over 1985 largely reflects differences in the methodological approach used to estimate Soviet deliveries in 1986. When similar methodological guidelines are applied to the 1985 data, for example, the percentage increase in total tonnage drops to approximately 45 percent.

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^c Beginning in 1982, estimates of naval deliveries from all Soviet ports are listed as a separate category; includes for the first time ships delivered under tow or their own power as well as small naval craft such as patrol boats carried by merchant ships, which were included in prior years' tonnages.



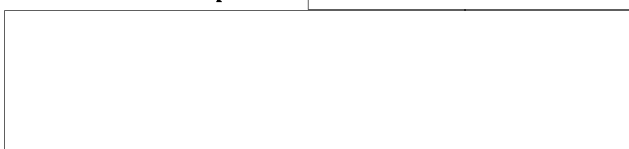
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The mobility and firepower capabilities of Cuba's Ground Forces were further enhanced in 1986 as the result of Soviet shipments.

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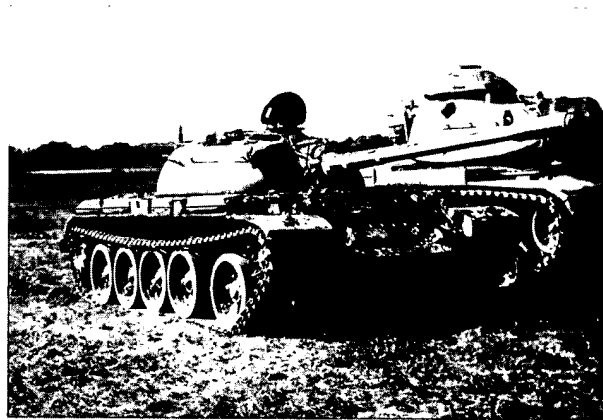
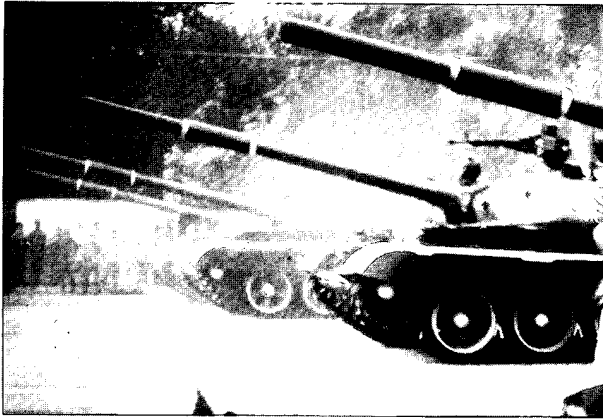


Figure 3. The Soviets are continuing their efforts to gradually upgrade Cuban armor holdings. In 1986, Moscow supplied Havana with 38 T-62 medium tanks (shown here during Cuba's 30th Anniversary parade in Havana last December) to replace earlier Soviet-built T-54/55s (seen here on display at Aberdeen Proving Grounds, Maryland). At least some of this older military equipment is transferred to Angola for use by Cuban forces there.

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[Redacted]

[Redacted]

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[Redacted] the delivery of the BMPs—including an interim stop at San Jose de las Lajas Repair and Storage Depot—took seven days to complete some 500 nautical miles of both road and rail transport. [Redacted]

Naval and Coastal Defense Forces

The Soviets delivered two Yevgenya-class inshore minesweepers and a number of smaller patrol boats to Cuba in 1986. The Yevgenyas continue to dominate the Navy's inventory of craft dedicated to mine warfare, indicating that the Cubans are likely to remain limited primarily to inshore sweeping operations for the next several years. The Yevgenyas lack the minelaying and antisubmarine capabilities of the better equipped Sonya-class coastal minesweepers; Cuba has only four Sonyas in its inventory. [Redacted]

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[Redacted]

In November 1986, the Soviets also delivered two Zhuk-class patrol boats at the port of Mariel. As a result, the transfer of three Zhuks to the Nicaraguan Navy in mid-1986 resulted in a net loss of one for Cuba's Zhuk patrol boat inventory, reducing it to a total of 25 boats. [Redacted]

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[Redacted] over the past year, Cuba's total guided-missile patrol boat inventory dropped from 21 to 18,

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Figure 4. The Soviet Union's delivery of more than 90 pieces of radio, radar, and other electronics-related equipment, including the initial provision of the R-410M/Twin Plate tropospheric scatter communications system shown here, suggests Moscow will give increased attention to improving Cuban command, control, and communications capabilities in the years ahead.

and its torpedo boat inventory fell by nearly one-third. The drawdown, which comes exclusively from Cuba's older inventory of P-4, P-6, and Komar boats that either had fallen into disrepair or been decommissioned because of recurring maintenance problems, probably is having little effect on the Navy's overall patrol capabilities.

Cuba has bolstered its coastal defenses with the acquisition of the Soviet SSC-3 coastal missile system—now used in the Warsaw Pact countries and exported by the USSR to Syria, Libya, Algeria, and South Yemen. We confirmed the SSC-3's deployment in January 1986, when the transporter-erector-launcher for the system was

in an area southwest of Cienfuegos.

In

* The first indication that Havana possessed the improved coastal defense system came in July 1985 when an antiship missile fragment associated with the SSC-3 was found off the Florida coast. US technicians established that the missile probably was fired from a ground-based launcher rather than from a Cuban missile patrol boat.

Table 3
Inventory of Selected Cuban Ground Forces
Weapons and Equipment ^a

	1975	1980	1985	1986
Modern medium tanks				
T-62	0	50	237	275
T-54/55	(400)	630	784	793
Other armored vehicles				
BMP infantry combat vehicle	0	30	81	98
BTR-60 armored personnel carrier	(80)	340	453	453
BRDM reconnaissance vehicle	(40)	90	130	166
Field artillery				
M-1973 SP 152-mm howitzer	0	0	6	6
M-1974 SP 122-mm howitzer	0	6	18	18
B-21 122-mm multiple rocket launcher	(0)	40	72	76
130-mm field gun	(100)	110	176	176
122-mm howitzer	(140)	160	225	225
Air defense artillery				
ZSU-23/4 SP air defense artillery	0	28	45	45

^a Total estimated inventory.

Note: Parentheses denote substantially greater uncertainty.

wartime, Cuba's use of this highly mobile, radar-guided missile—with a range of some 45 nautical miles—could pose a potential threat to shipping in the Yucatan Channel, the Straits of Florida and other sea lanes in the Caribbean.

Air and Air Defense Forces

Soviet military deliveries to the Cuban Air Force in 1986 appear aimed at sustaining current inventory levels and improving pilot training and performance.

Our analysis indicates, for example, that only four MIG-23 fighters—double their number in 1985—could be considered new additions to the Air Force's inventory; three other MIG-23s returned to Cuba following apparent refurbishment in the USSR. Two new MIG-21 Mongol trainers, plus two others returning from repairs, augmented Cuba's meager MIG-21 training fleet. In

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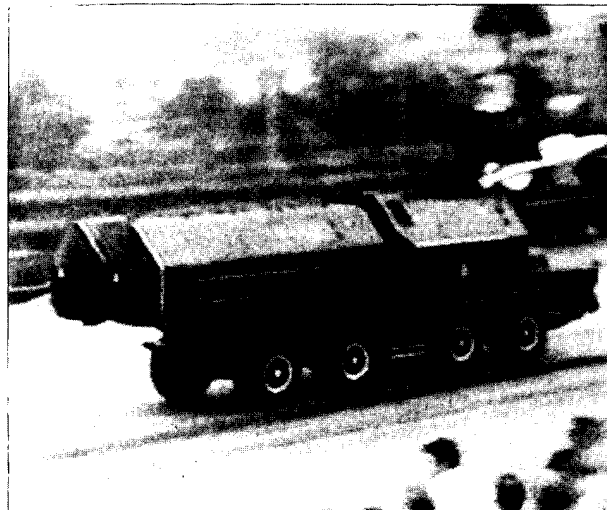


Figure 5. Moscow's transfer in January 1986 of two Soviet SSC-3 coastal defense missile launchers to Havana doubled the number formerly known to be operational in Cuba. In wartime, these missile systems—particularly if they are augmented by additional deliveries—could pose a potential threat to Caribbean and other shipping lanes.

addition, one MI-8 transport helicopter also was delivered to Cuba in mid-1986.

Offsetting these modest gains in aircraft last year are the losses of one MIG-23 and six MIG-21 fighters through various crashes and accidents; only five crashes were recorded in 1985.

The increased number of aircraft crashes probably reflects low pilot training time—of about 60 hours a year—that is substantially less than both Soviet and US standards.⁵ Nagging maintenance problems and

Table 4
Inventory of Selected Cuban Navy Assets^a

	1975	1980	1985	1986
Foxtrot submarines	0	2	3	3
Koni frigates	0	0	2	2
Guided-missile patrol boats				
Komar	(16)	6	3	0
Osa-I	5	5	5	5
OSA-II	1	7	13	13
Torpedo boats				
P-4/P-6/Komar conversion	(24)	(19)	13	6
Turya hydrofoil	0	4	9	9
Patrol boats				
Zhuk	(0)	12	26	25 ^b
Stenka	0	0	3	3
Minesweepers				
Yevgenya	0	7	12	14
Sonya	0	1	4	4
Polnocny landing ship	0	0	2	2

^a Operational inventory only.

^b Three Zhuk patrol boats were transhipped to Nicaragua following delivery and outfitting in Cuba.

Note: Parentheses denote substantially greater uncertainty.

growing fuel shortages reflecting a badly deteriorating economy also probably contributed to increased aircraft downtime and reduced pilot efficiency, in our judgment.

The Soviets delivered 26 SA-3 SAM transporters to Mariel in late November, the first known delivery of air defense missile equipment to the Cuban armed forces since 1984.⁶ More than 100 SA-2 missiles,

⁶ Soviet military deliveries—apparently made before last year but previously unreported—may have allowed Havana to improve its ability to defend Cuban ground force units against air attack.

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200 SA-3 missiles, and 17 SAM-associated radars were added to the Cuban air defense arsenal at that time.

[Redacted]

We believe the delivery of the SAM transporters could signal the arrival of additional SA-3 systems and herald the expansion of Havana's SA-3 coverage into the Eastern Air Defense Zone.

[Redacted] several SA-3 missile launchers and other support equipment were deployed near Holguin earlier this year.

[Redacted]

Outlook and Implications for the United States

We continue to believe that Moscow will support Havana's armed forces modernization efforts through the end of the decade by relying, as it has in the past, on the transfer of largely second- or third-generation equipment to meet Havana's military needs. Soviet Secretary General Gorbachev's attempt to move beyond the current impasse with the United States on arms control issues, for example, suggests that over the near term Moscow will remain reluctant to provide Havana with sophisticated weapons systems that Washington would view as posing a threat to US security interests. Nevertheless, Moscow almost certainly intends to support Cuba's program to modernize its armed forces, if only to raise the costs for the United States of any prospective military action against the island.

Efforts to improve the mobility and firepower of the Cuban Ground Forces probably will continue to receive steady, but more limited, attention from Moscow than Havana's naval and air assets. The latter

**Table 5
Inventory of Selected Cuban Air and Air Defense Force Weapons and Equipment ^a**

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	1975	1980	1985	1986
Modern jet fighters/trainers ^b				
MIG-23	0	12	44	48
MIG-21 ^c	(95)	138	161	161
L-39 trainers	0	0	30	30
Other aircraft ^b				
MI-24 attack helicopters ^d	0	0	11	11
MI-8/17 helicopters	(3)	30	58	58
AN-24/26 transports	(2)	24	30	30
Surface-to-air missile launchers				
SA-2 ^e	102	120	132	132
SA-3 ^e	6	24	42	42
SA-6	0	20	20	20
SA-9	0	0	20	24
SA-13	0	0	12	12

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^a Operational inventory only.

^b Through 1980 there were also decreasing numbers of older aircraft.

^c Includes MIG-21H (reconnaissance) but excludes older MIG-21 variants whose operational status is uncertain.

^d Five to six MI-24 attack helicopters were returned to the USSR in 1986 for overhaul and had not been returned to active Cuban service by July 1987.

^e Includes only launchers associated with sites assessed to be primary occupied/operational sites (excludes dispersal sites).

Note: Parentheses denote substantially greater uncertainty.

[Redacted]

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forces almost certainly are assessed by the Soviets as potentially more important to their longer term strategic goals, while Cuba's ground elements are largely defensive in nature and pose little direct threat to the United States. We anticipate, however, that Moscow will give increased attention in the years ahead to improving the command, control, and communications capabilities of the Cuban armed forces to improve their effectiveness across the board.

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We continue to believe that the Cuban Navy is likely to acquire at least one major surface combatant or submarine in the short term.

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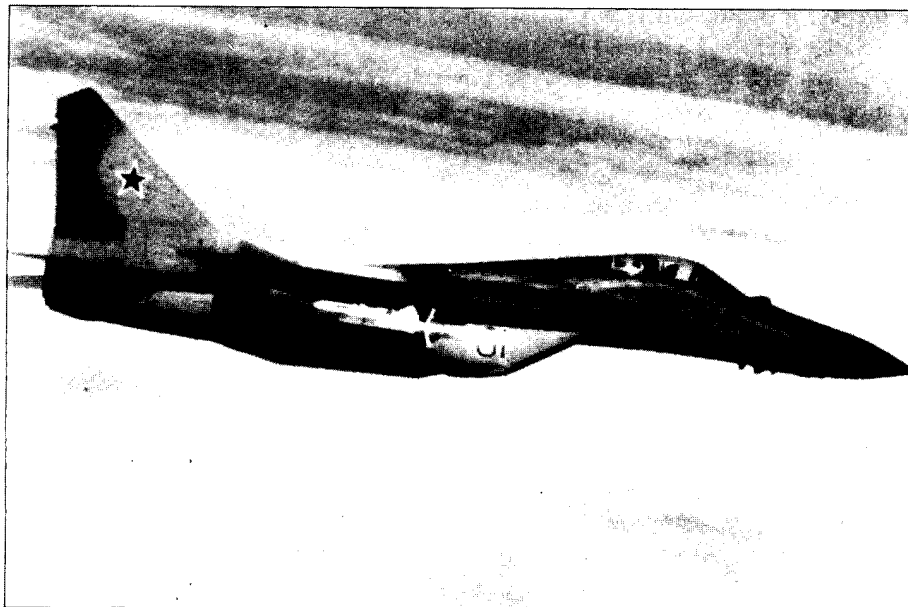
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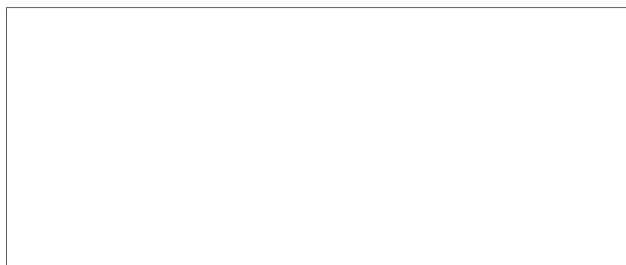
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Figure 6. Moscow's reported plans to introduce the MIG-29 into Cuba next year—if carried out—are likely to significantly improve Cuban air defenses. Intended by the Soviets to be competitive with US fourth-generation fighters like the F-16, the MIG-29 would pose a credible threat against US low-altitude strike and reconnaissance aircraft such as the F-111 and RF-4. Although it does not have the capability to engage high-altitude, high-speed targets such as the SR-71, Cuba could use the MIG-29 to attempt to discourage US reconnaissance missions, which are regarded by Castro as a personal affront and a violation of national sovereignty.



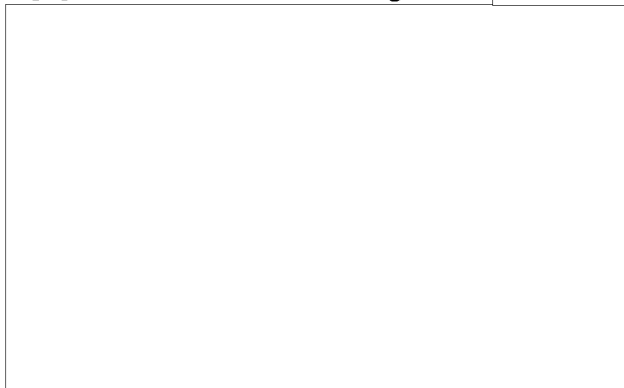
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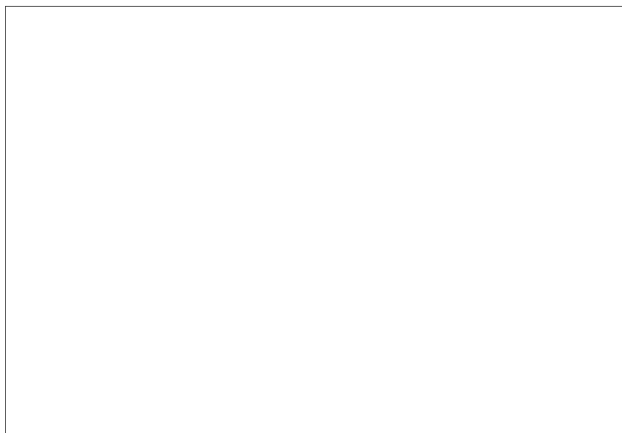
fighter; and its planned introduction in Cuba would significantly enhance the island's air defenses. The aircraft's ability to fly up to 60,000 feet (18,000 meters) and fire more advanced, longer range air-to-air missiles would pose a greater threat to US reconnaissance overflights. Castro's strong reaction to the SR-71 overflight of Cuba by the United States last December may have prompted the Cuban leader to seek the more sophisticated MIG-29 as a visible sign of his displeasure.

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The Cuban Air Force may also benefit from major equipment additions in the coming months



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The MIG-29, which during the past two years has already been exported by the Soviet Union to Iraq, India, and Syria, is Moscow's latest generation

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Appendix A

**Soviet Military Deliveries to Cuba:
Selected Weapons Systems and Equipment, 1981-86^a**

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	1981	1982 ^b	1983	1984 ^c	1985	1986	Total
Ground							
Tank, T-54/55, medium			73	31	50	9	163
Tank, T-62, medium, 115-mm	10		107	45	25	38	225
Armored personnel carrier, BTR-60, 60P, 660 PB	26			31	41		98
Infantry fighting vehicle, BMP	9				42	17	68
Antitank gun, 57-mm, M-1943, ZIS-2	71		82				153
Antitank gun, 85-mm, M-45	29		40				69
Antitank gun, 100-mm, T-12	44		64				108
Air defense artillery, self-propelled, 23-mm, ZSU-23/4							0
Air defense artillery, 23-mm, ZU-23	17						17
Air defense artillery, 57-mm, S-60							0
Rocket launcher, 122-mm, BM-21			12			4	16
Howitzer, self-propelled, 122-mm, M-1974		5					5
Howitzer, 122-mm, D-30			12	46			58
Field gun, 130-mm, M-46	12		24	30			66
Howitzer, self-propelled, 152-mm, M-1973		3					3
Air/air defense							
Fighter, MIG-21, Fishbed/Mongol	26	35	6	4	1	2	74
Fighter, MIG-23, Flogger	4	20	3	3	2	4	36
Transport, AN-26, Curl	4		2	...			6
Helicopter, MI-8, Hip						1	1
Helicopter, MI-17, Hip H			15		2		17
Helicopter, MI-14, Haze			4				4
Helicopter, MI-24, Hind		12					12
Missile, SAM, SA-2, Guideline			46	106			152
Missile launcher, SAM, SA-3, Goa							0
Missile, SAM, SA-3		230	14	206			450
Missile launcher, SAM, SA-6							0
Missile launcher, SAM, SA-9		3	8			4	15
Missile launcher, SAM, SA-13					12		12
Electronic warfare equipment	3			6	15		24
Radar, Fan Song E	3				3		6
Radar, Odd Pair	2						2

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Soviet Military Deliveries to Cuba:

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Selected Weapons Systems and Equipment, 1981-86^a (continued)

	1981	1982 ^b	1983	1984 ^c	1985	1986	Total
Air/air defense (cont.)							
Radar, Back Trap	2						2
Radar, Flat Face B				8		2	10
Radar, Spoon Rest D				6		3	9
Radar, Thin Skin B				3			3
Naval							
Frigate, Koni-class	1			1			2
Submarine, Foxtrot-class				1			1
SSC-3 ground-launched antiship missile system					2 ^e	2	4
Missile attack boat, Osa-II-class	2	4					6
Hydrofoil patrol craft, Turya-class	2		3				5
Patrol boat, Stenka-class					3		3
Patrol boat, Zhuk-class				9	5	... ^f	14
Coastal minesweeper, Sonya-class	1				2		3
Inshore minesweeper, Yevgenya-class	2	1		2		2	7
Degaussing ship, Pelym-class		1					1
Landing ship, medium, Polnocny-class		2					2

^a Included are estimates of the most significant items by quantity. Numbers are minimum counts.

^b Totals for some equipment, such as T-62 tanks and BM-21 multiple rocket launchers, include deliveries both to Cuban forces and, possibly, to the Soviet brigade there.

31 are assumed to be T-54/55 types, and the remainder assumed to be the more modern T-62. Of the 76 single-tube field artillery, 46 were identifiable as 122-mm, D-30 howitzers; the remainder were assumed to be M-46s, which featured prominently in 1983 deliveries.

^d Two AN-26 aircraft were delivered in 1984, but were probably assigned to Cubana Airlines.

^c Of 76 medium tanks delivered in 1984, only 24 were identifiable as to type (T-54/55s). As an approximation, the 1983 distribution between T-54/55s and T-62s was applied to 1984; hence, of the 76,

^f Three Zhuk patrol boats, including two craft delivered to Cuba in 1986, were subsequently transshipped to Nicaragua following delivery and outfitting in Cuba.

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