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Preface

This account of the Soviet arms build-up in Cuba was compiled by the U.S. Arms Control and Disarmament Agency as a basis for examination of the lessons to be derived from the Cuba experience with respect to arms control inspection and verification.

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Agency. The date of information cutoff was approximately 1 March 1963.

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DIA and DOS review(s) completed.

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I. EARLIEST INDICATIONS OF THE SOVIET BUILDUP IN CUBA

A. Indications of the Soviet Decision

One of the most difficult aspects of the Cuban buildup is the determination of just when the decision was made by the Soviet Union to put offensive weapons in Cuba, together with the surface-to-air missiles which we now believe to have been placed in Cuba primarily as protection for the offensive weapons to come. Even from the easier position of looking backward, it is difficult to see what indicators there were before July, at best.

Early 1962. In March 1962 the only major military items discovered to be en route to Cuba were torpedo boats and submarine chasers. There were 31 MIG's (3 MIG-19's and 28 MIG-15 or -17's) located at airfields at San Antonio de los Banos, Camaguey, and Santa Clara. (Another report stated that about 60 of these earlier model MIG's had been delivered to Cuba during the previous year.) Naval communications were in the process of changing from regular nets to teletype/microwave links, but this could not have suggested the vastly increased and improved communications facilities necessary for the developments of September and October. It was estimated on 15 March that there had been no major increase, changes or redeployment of military equipment or personnel in Cuba within the preceding few weeks. This judgment was repeated on 8 May 1962. There had been unconfirmed evidence in intercepts in early April that Cuba might now have the Soviet BAR LOCK early warning radar and FISHNET IFF radar; and there was a report of 30 April that a Cuban Government communications center, with monitoring, decoding and deciphering equipment, had been established in Havana under the command of a Soviet colonel.

Even as far back as March there had been low-level reports of suspected missile activity in or near Mayari Arriba, Cuevas del Pepu, and Mangos de Baragua (all in central Oriente Province), but these were not confirmed. There were additional reports 23 April of two independent missile sightings in the Managua area; these were allegedly surface-to-air missiles, described as being of the Nike type. One sighting, reported 25X1C [redacted] was in the Tetas de Managua hills, on two occasions, the first four months earlier. Another source reported 15 to 16 missiles about 20 miles south of the road from Santiago de las Vegas to Managua, about 5 kilometers east of Santiago de las Vegas. Despite the specificity of

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25X1D these reports, they could not be confirmed. [redacted] revealed no missiles or missile-related activity in the Tetas de Managua hills. A secured area containing two occupied three-gun artillery positions and [redacted] storage facility was located there. On the same date, no missiles or related activity were revealed in the indicated area near Santiago de las Vegas. (Santiago de las Vegas did later become a SAM support and assembly area.) 25X1B

A CINCLANT report of 17 May to DIA summed up the situation regarding missile reports as follows:

All intelligence collection and research sources available to CINCLANT had for over two years been concerned with the problem of possible missiles or atomic weapons in Cuba. The findings were that although there had been many rumors of missile sites, there was no confirmation of the presence in Cuba of any type of guided missile, and no evidence of air-deliverable or any other atomic weapons in Cuba, nor of suitable delivery vehicles. There was no evidence of Soviet atomic weapons of any type en route to Cuba, nor evidence of any Soviet intent in this regard. CINCLANT concluded that it was "highly unlikely the USSR would select Cuba as the first country to obtain Soviet atomic weapons, or that the USSR would place atomic weapons in a militarily untenable location such as Cuba."

Political indications. There may (now, at least) be said to have been some political indications that a significant increase in Soviet assistance to Cuba, and correspondingly in Cuba's status, was about to take place, but certainly until the reports of July 1962 these could not have indicated the direction or degree of Soviet aid. A Soviet official in a briefing given to Soviet Bloc UN delegates, reported 6 April, allegedly said that the Soviet Union "had plans for Cuba" and was supporting her transition to a full-fledged Socialist state. This statement was supported by Khrushchev's speech of 18 May in Pleven, Bulgaria, which carried a step further Soviet public incorporation of Cuba into the Bloc. The May Day slogans published in the 17 April Pravda promoted Cuba to a "candidate status" by listing it directly after the Bloc states and ahead of Yugoslavia. The American Embassy in Moscow commented that Soviet press accounts of Cuban developments were found on occasion to be surprisingly open in treating Cuba in the same fashion as Bloc members. There is no indication, however, until July that any unusual decision had been taken to "fortify" Cuba.

Soviet Ambassador to Cuba Kudryavtsev was on 4 June replaced by his second in command, A. I. Alekseyev, who has been identified since at least 1947 with Soviet intelligence. The circumstances and timing of Kudryavtsev's recall were somewhat unusual, and a later report deriving from Raul Roa Khouri, Cuban ambassador in Prague and son of the Cuban Foreign Minister, stated that Kudryavtsev had had "a terrible interview" with Khrushchev on his return. Khrushchev, who was very angry with him, reportedly said that Kudryavtsev knew nothing about Cuba, and had been mistaken about the whole situation there.

Raul Roa Khouri is allegedly the source of another interesting report, an ex post facto chronology (10 December 1962). According to this, Cuba had learned in April 1962 that the United States was preparing an attack on Cuba. Cuba then "immediately" sent a military delegation to the Soviet Union, which succeeded in obtaining an increased quantity of arms and equipment, and also an agreement for the establishment of strategic missile bases. The agreement stipulated that the missiles would be under Soviet command, and would be used only in the event of a US nuclear attack.

There were, however, only two known relatively high-ranking missions to Moscow during April. On 3 April, Cuban Minister of Interior Ramiro Valdes and another Cuban security official were in Moscow, and on 29 April Minister of Public Works Osmani Cienfuegos and Joaquin Ordoqui, Army chief of Supply, arrived in Moscow. As Minister of Public Works, Captain Cienfuegos was involved in military construction activities.

An NSA report says that possible evidence that the Soviets had been planning missile installations in Cuba as early as April 1962 may be seen in recently noted reports in the Soviet journal Sovetskaya Rossiya in May and August 1962 that one Feodor Mikhaillovich Bondarenko arrived (unnoticed) in Cuba on 6 May and departed on 8 June. A Soviet General-Major of Artillery of that name has been identified in the Moscow Air Defense (PVO) District as concerned with surface-to-air missile training. Although the name is not an uncommon one and several other Russians with all three names the same have been noted in [redacted] it is suggestive that the arrival in Cuba of General-Colonel N. I. Gusev and General-Lieutenant of Aviation S. F. Ushakov had been noted in [redacted] of 5 and 6 May. There is no explanation in the report of why reference is made to April, when the visits were in May. 25

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[redacted] that the Soviet decision to send strategic missiles to Cuba was probably taken sometime between late March and mid-May, and most probably during the month of April, although the decision very likely had been under consideration for some time. The political climate in Cuba was probably not considered propitious for the missile venture by the USSR until after the resolution in late March of the political conflict within the Cuban leadership. The estimated time to marshal the equipment in the Soviet Union for shipment to Cuba (the first ship left the USSR in mid-July) indicates that the decision was probably taken by mid-May. Also, it was on 14 May that the supplementary protocol to the Cuban-Soviet trade agreement was announced. This agreement substantially increased Soviet economic support for Cuba and may well have been a quid pro quo for Cuban acceptance of the missiles. In addition, in mid-May it became apparent from intercepted messages that the Soviet military aid program in Indonesia was without warning being subjected to delays. With the benefit of hindsight, it seems likely that the delay in Indonesia was being caused by the sudden implementation of a high priority program elsewhere, i.e., in Cuba.

Raul Castro's July trip to Moscow. Implementation of the Soviet-Cuban agreement probably began with the visit to Moscow on 2 July of Raul Castro, on the invitation of the Soviet Defense Ministry. With him were nine Cuban army or air force officers, and one Alexei Dementiev, identified as a Cuban with a diplomatic passport when he departed Havana aboard the Cubana flight to Prague, but revealed by intercepted Soviet plain text messages to be the Havana representative of the Soviet Engineering Directorate, the organization which handles Soviet military aid to foreign countries. Raul Castro was given VIP treatment on his arrival; he was met at the airport by Defense Minister Malinovsky and other high officials, and on 3 July had an audience with Khrushchev. But there was little publicity during the latter part of his visit, and he departed with little fanfare. His return to Havana was announced on 17 July. 25X1C

There was independent reporting [redacted] service on 15 August 1962 that Raul Castro on his visit to Moscow signed an agreement allowing the Soviets "free use of Cuban territory for handling any matter military or otherwise as they saw fit, not having to give any account of their acts to the Cuban Government."

Further indication of some sort of new factor in the Cuban military scene was given at the time of Raul Castro's Moscow visit by Cuban army officers, who were reported to have said during conversation concerning the possibility of Cuba's surviving an attack from the United States that the danger of US invasion is decreasing with the passing of time and "will be over by September." An economist and close friend of Carlos Rafael Rodriguez, President of the National Institute of Agrarian Reform, was reported to have said that the United States is afraid to interfere with Soviet-flag vessels, but "in September the Americans will also respect the Cuban flag." At another point the same informant was reported to have referred to the NATO nations as a belt of bases surrounding the Soviet Union; he added that "in September Cuba is going to be the buckle in this belt."

Oddly enough, the same remark was attributed also to Che Guevara, in reported conversations with a friend on 28 and 30 June. Guevara was said to be fearing an invasion in July, when Cuba was unprepared. Guevara referred to a "desperate plan" to ask the Soviet Union to locate an atomic base in Cuba which would be "like a buckle in a belt of bases surrounding the USSR," but he felt there was no time left for such a measure. Although he is an admirer of Stalin and Mao and does not have confidence in the present Soviet regime Guevara implied that there had been no recourse but to turn to the Soviets by sending Raul Castro to find out exactly what aid Cuba can count on. This report is not at all compatible with what is known of Guevara, but is included as an illustration of the problem of discrimination of accurate information. [redacted] that the reference to Cuba being a buckle in the belt of NATO bases was heard from Cuban military sources before and after this time. 25X1B

A Cuban source close to Fidel Castro and regarded as reliable stated on 11 August that any attempt to land forces in Cuba would meet with disaster because the country now had, with Soviet assistance, "four times greater capability to repel outside attack."

September statements. A joint Cuban-Soviet communique issued in Moscow on 2 September following a week-long visit by Che Guevara and Emilio Aragones contained a strong Soviet affirmation of its "right" to provide Cuba with military equipment and technicians, to help Cuba counter the threat from "aggressive imperialist quarters." It stated that in response to Cuban requests for assistance in arms and

technicians, the Soviet Union had agreed that "as long as threats from the aforementioned quarters...continue, the Cuban republic has every right to adopt measures to guarantee its security...and all sincere friends of Cuba will have full right to accede to these legitimate demands." This line was continued in a Soviet government authorized statement issued on 11 September, stating that "it is now impossible to attack Cuba and to consider that such an attack would go unpunished for the aggressor." Assuming this to be an accurate translation, the apparent emphasis on the word "now" is significant in connection with the Soviet-Cuban decision then being implemented.

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25X1C A [redacted] reported (on 13 September) that on 11 September the party's secretary general stated he had received an official Cuban message that Havana had recently signed a secret but formal mutual defense treaty with the Soviet Union. He said the treaty would make Cuba a member of the Warsaw Pact group and, according to the Panamanian Communist leader, the most significant feature of the arrangement was that it would provide a legal basis for the "construction of Soviet and Bloc military bases in Cuba." An intelligence comment at the time said that it was unlikely that a Panamanian Communist leader would have been favored with "an official Cuban message" dealing with a subject of such gravity; nevertheless, it is interesting to note that this seemingly accurate report is not ex post facto, as several other analyses were, and that it correlates well with other information reported above.

An intercept of the Soviet Air Force link in Hungary on 14 September stated that "volunteers for the defense of Cuba" were expected "to hand in applications." Another message on the same link requested the number of volunteers which had applied. As of 19 September, requests for volunteers for Cuba among Soviet military units stationed in East Europe were continuing; messages to this effect were intercepted on Soviet military links in East Germany and Poland.

Another unusual occurrence that might have attracted attention was the notification to foreign newsmen by the Cuban Government on 25 September that thereafter they would have to get special permission to visit any part of Cuba outside Havana's city limits. There was no explanation of this action by the Foreign Ministry. Existing press credentials were canceled, and correspondents were instructed to apply for new press cards two days later.

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B. Increase in Soviet Shipping and Military Activity in Cuba in July and Following Months

Shipping pattern. The decision to enlarge the Soviet military presence in Cuba became evident toward the end of July 1962, when substantially increased military cargoes and Soviet personnel began to arrive in Cuba. As we now realize, the first of the heavy shipments of arms and personnel left Soviet ports in the Baltic and Black Seas in mid-July, just prior to Raul Castro's departure from Moscow, suggesting that agreements for new material had been worked out prior to the visit, but that the signal to begin deliveries had been delayed until the Cuban delegation arrived to complete arrangements. By the end of the month a steady stream of Soviet merchant ships was leaving the USSR carrying military equipment to Cuba. Almost all civil cargoes apparently were diverted to non-Bloc ships. From an average of nineteen Soviet Bloc dry cargo ship arrivals in Cuba during the first seven months of 1962, the arrivals rose to 43 in August and 50 in September, and 36 in October. Known military inbound dry cargo to Cuba (in thousand metric tons) rose from 2.0 in the April-June period to 4.6 in July, 45.3 in August, 66.8 in September, and 49.7 in October. (Note that October figures are for only about half the month, since they do not include the ships that turned back or were not dispatched because of the quarantine. Thus the total figures for October, without US intervention, would have shown an increase over September.)

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From 15 July to 8 August some sixteen Soviet merchant ships made false declarations of their destination when leaving the Black Sea, and each reported a cargo tonnage well below its capacity. No cargo information was available at this time, but light loads and false declarations have been characteristic of Soviet arms shipments in the past.

Passengers to Cuba. It might have been expected that personnel would arrive prior to the equipment they were to set up or the construction they were to carry out, and this proved to be the case. One of the first direct indications in Cuba of the Soviet decision came with the arrival of five passenger ships from 26 July to 6 August, with the last one being distinguished by the publicity given it as carrying some 1,500 "economic technicians" and students, 25X1B

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It was at about this time too that 25X1C began to be received that some 25X1C of these Soviet personnel were engaged in unidentified military construction; and there were continuing rumors from within Cuba of a large influx of Soviet Bloc personnel, the estimated numbers ranging from a few hundreds to many thousands. References were also made to secret installations on the northern coast of Cuba controlled by Soviet troops. There was, however, no firm information at this time of who the Soviets were or what their task might be.

The equipment reported to be entering Cuba included anti-aircraft fire-control radar, early warning radar, and 25X1B assorted other military communications equipment. An

credit sent by Moscow on 16 August to the head of the Soviet military aid group in Havana of $145,000. This was the largest payment of its kind previously noted; a similar payment in July had been for only $8,000. (Although much of

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of construction activity, and of forced evacuations of Cubans from certain areas throughout the country.

Construction activities. The first estimate that the USSR might be establishing surface-to-air missile (SAM) sites in Cuba was made on 17 August, although other guesses were that the construction activity which served as the main indicator could be the building of a [redacted] system targeted against Cape Canaveral and other US installations, or an ECM system aimed at US space, missile, and/or other operational electronic systems. [redacted] 25X1B

25X1B [redacted] 22 August there had been as many as 26 suspect Soviet arms shipments since mid-July (in addition to regular tanker and cargo ships). Passenger ships arriving since late July or then en route carried a minimum of about 5,400 persons, the arrival of only 1,500 of whom had been publicly announced. Recently unloaded Soviet equipment included electronic vans, motor transport, mobile generator units, prime movers, tracked vehicles, cranes, trailers, fuel tanks, and other construction equipment, all of which could be associated with SAM sites. Several Soviet vessels were reported on 5 September to have been in the Bahia de Nipe area since 29 August offloading heavy equipment and munitions and disembarking personnel under rigid security conditions.

[redacted] 25X1C that this construction was being done by recently arrived Soviets with newly delivered equipment and material. The construction at both sites was at this time (21 August) in very early stages and involved large amounts of equipment (over 100 trucks, trailers, and other vehicles at one) and some type of excavations. [redacted] 25X1C that similar activity might be under way or about to start at other places in Cuba.

25X1B [redacted] "Coupled with the extraordinary Soviet Bloc economic commitments made to Cuba in recent months, these developments amount to the most extensive campaign to bolster a non-Bloc country ever undertaken by the USSR." "Such an influx of Soviet personnel and equipment into a non-Bloc country is unprecedented in Soviet military aid activities; clearly something new and

different is taking place." Apparently no one yet thought beyond SAM sites, however, and it was said that there was no hard evidence that any of these Soviet Bloc personnel were in combat military units.

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[redacted] personnel in Cuba who observed some of the equipment and personnel felt that it suggested that SAM and radar sites were being constructed. Soviet personnel also were reported using the former reformatory school at Torrens, Southwest of Havana; this developed into what is now believed to be the central Soviet command headquarters (see Section V of this study).

An unusual announcement by Radio Moscow on 24 August in a Spanish transmission to the Caribbean area, an obvious 25X1B [redacted] claimed that many Soviet vessels were carrying agricultural machinery, etc., to Cuba. [redacted] 25X1C reports, however, told of such events as the unloading by the Soviets, under tight security, of large wooden boxes or vans, military vehicles and trucks, tanks, etc., at the port of La Isabela 16-18 August from the Soviet vessel Khirurg Vishnevskiy. These were reportedly taken to a farm called Santan some 8 kilometers south of the port.

Moscow also publicized large shipments to Cuba of foodstuffs and material supporting Cuba's economic development. A TASS report stated that the volume of Soviet/Cuba trade had grown to such a large degree that part of the shipments to Cuba were being carried on chartered foreign ships. As was pointed out by NSA, however, although the flow of industrial materials continued at a steady rate during July and August, since July no shipment of this nature on a Soviet vessel had been noted (to 28 August), suggesting that the USSR may have initiated a policy on about 1 July to utilize chartered Western vessels for ordinary shipments to Cuba, reserving its own vessels for other cargoes.

Pattern of construction activity, 28 August 1962. By 28 August it was possible to summarize construction activity by Soviet Bloc personnel in Cuba as follows:

1. La Coloma - Guatana area in the western part of Pinar del Rio Province. Cuban civilians were evacuated from a farm in the Guatana area in late July. Subsequently, Cuban militiamen stationed on the farm were replaced by non-Cubans and the entire area is said to have been enclosed with barbed wire. Quantities of construction equipment and

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military items were sent into the area. reported an encampment off the Coloma highway of some 400 Soviets who disembarked at Mariel.

Another center of activity in western Pinar del Rio Province was reported at Vinales, midway between the city of Pinar del Rio and the north coast of the province. 25X1C reported this to be the site of a Soviet encampment, and on 20 August observed a military convoy on the road just south of Vinales headed toward that location. 25X1C 25X1C

2. Mariel area in eastern Pinar del Rio Province. Much of the equipment that landed at this north coast port and many of the passengers who debarked here from at least two Soviet vessels were evidently sent to other places in Cuba, but some apparently stayed in the immediate vicinity. 25X1C that equipment unloaded at nearby ports to the east of Mariel was seen being convoyed toward Mariel and that an island near Mariel, 25X1C recently renamed Cayo Lenin, was evacuated of Cuban civilians who were also debarred from a nearby beach area.

3. Torrens area SW of Havana city. Torrens boys' reformatory was taken over and residents of several farms in the vicinity were ordered to leave, apparently by Minister of the Armed Forces Raul Castro personally. Evacuees were told the area was needed for Soviet personnel. The area was apparently intended to be a central control point for the activities under way elsewhere.

4. Santa Cruz del Norte, on north coast midway between Havana and Matanzas. Construction activity on the top of a hill just south of the town was reported by a refugee and his information subsequently confirmed by photography. The farmer on whose land the construction activity was taking place had been summarily moved out in late July. 25X1C that men and equipment unloaded in Matanzas and Havana were convoyed in the direction of Santa Cruz del Norte during the first half of August.

5. Canimar River area just east of Matanzas. Construction activity consisting of the leveling and grading of a naturally almost level portion of a hillside by Soviet Bloc heavy equipment and personnel was observed early in August at a site called El Bongo. Numerous reports indicate

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that men and equipment were taken to this area early in August. [redacted] report that Soviet personnel who disembarked in Matanzas made numerous trips between the port area and El Bongo convoying much heavy equipment to the area.

6. Sagua la Grande and Cayo Esquivel in northern Las Villas Province. A number of reports indicate that the Soviet vessel Khirurg Vishnevskiy docked at the port of La Isabela on 16 August. Much of the equipment was taken to the Santana farm midway between La Isabela and Sagua la Grande. On Cayo Esquivel, an island off the coast near Isabela, two sources reported the evacuation of civilian residents in late July and the shipment of non-Cuban personnel to the island.

7. Sancti Spiritus area in southern Las Villas. Several ships apparently unloaded in the south coast port of Casilda and their cargoes were transported through Trinidad in the direction of Sancti Spiritus. The final destination was unknown, but it may have been near the Cuban air base at Santa Clara.

8. The Banes area in Oriente Province. Military cargoes were unloaded at Nicaro and apparently other ports in the vicinity of Banes in early August and the cargoes taken in the direction of Banes or the Peninsula de Ramon. Residents of an area near Banes were evacuated in late July. [redacted] indicated that extensive military construction was under way in the area. A frequent item in these reports was the alleged arrival in the area of rockets or missiles, described by one source as offloaded in the port of Nicaro between 1-4 August, between 18 and 50 in number, 20-21 feet long, 18 inches in diameter, red, with yellow nosecones.

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Analyses of Soviet shipping and construction. Despite this information, [redacted] felt it necessary to state in its "Conclusions on Cuba" on 29 August 1962 that we were not able to determine on the basis of the evidence available at this time the precise nature or purpose of the intensified program of Bloc military assistance and construction in Cuba. At the least, they said, recent deliveries indicated a significant Soviet effort to improve the defensive military capabilities of the Cuban regime.

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It was in photography [redacted] that confirmation was received that a SAM system was being deployed (photo 1). Twelve sites were identified.

(As an interesting sidelight, Raul Roa Khouri, Cuban Ambassador in Prague, was reported to have said shortly before 4 September that recent Soviet deliveries to Cuba have even included "rockets of the same kind that shot down the U-2 plane." One MIG-21 jet fighter was seen at the airfield in Santa Clara (the first confirmation of the presence in Cuba of the MIG-21), and indications were noted that at that airfield there might be at least 13 more MIG-21's still unassembled (photo 2). Eight Komar-class missile boats were also seen, and one land-based anti-shipping cruise missile site. 25X1C

[redacted] that extensive construction activity believed to be connected with a missile site was in progress at Cabanas. Work was said to be going on around the clock, performed by "Soviet and Chinese personnel." Cubans were barred from the area, as they were from another to the south of San Antonio del Sur. The Cabanas report was substantially repeated in a 25X1C 25X1C [redacted] 9 October report from a fairly [redacted] A "large concrete base" was reportedly being constructed in the restricted area, where approximately 800 Soviet Bloc personnel were said to be billeted in tents. At the same time, initial construction was reported to be under way on an unidentified facility at Banes, where ground had been cleared in the southeastern portion of the port area and a number of pieces of unidentified equipment were observed.

An NSA analysis of 12 October, of recent [redacted] on Soviet 25X shipping for Cuba, indicated that although Soviet cargo shipments so far in October continued at a rate considerably above the rate prior to the summer, there had been a slight decrease since the peak level of the first week in September. There had recently even been some Soviet ships declaring for Cuba, although the vast majority of ships continued to screen their activities by either making false cargo and port declarations or simply not issuing declarations of any kind.

From this point on, with a vast increase in reconnaissance and other information, it will be more comprehensible to continue the account on a topical basis, reviewing first the information learned about the various weapons systems.

II. THE FIRST MOVE: SURFACE-TO-AIR MISSILE (SAM) INSTALLATIONS IN CUBA

Arrival of SAM units. The Soviet operation in Cuba began with the movement of surface-to-air missile (SAM) battalions, armored groups and construction units. The first units of 6 SAM regiments, of about 700 men each, began leaving the Soviet Union in mid-July, and their deployment to Cuban battle stations continued through August. The timing of arrival and the subsequent positioning of the SAM units as well as the armored groups appear to have been phased with the closely following MRBM and IRBM units, and make it clear that the primary purpose of the air defense system constituted by the SAM's and MIG's and associated radar was to protect and screen the offensive weapons systems.

SAM battalions and armored groups were first deployed to western Cuba in early mid-August, and construction of fixed sites for IRBM's began soon thereafter. MRBM units in this area arrived at these sites about mid-September. In central Cuba the SAM's and armor arrived by early September, preceding the beginning of MRBM and IRBM construction by two or three weeks. Toward the end of September a third group of SAM sites and an armored group were established in eastern Cuba. It is
25X1D interesting to note that based on known characteristics of the SA-2 system and extrapolation from the pattern observed [redacted] it was possible
25X1D [redacted] that as many as 24 sites might eventually be set up.

Chronology. The probable chronology with respect to SAM sites is as follows:

25X1D [redacted] Work began on SAM sites at Matanzas, Havana, Mariel, Bahia Honda, Santa Lucia, San Julian, and La Coloma surrounding the area where the San Cristobal MRBM sites and the Guanajay IRBM sites were later established.

25X1D [redacted] Construction began on SAM sites at Sagua la Grande, Caibarien, and Sancti Spiritus in central Cuba. These with Cienfuegos ringed the eventual locations of the Sagua la Grande MRBM sites and the Remedios IRBM sites.

25X1D [redacted] Construction began on SAM sites in eastern Cuba at Manati, Senado, and Manzanillo.

Late September - early October: The fourth increment of SAM sites was being developed to complete the coverage of the island.

25X1D As of [redacted] all 24 SAM sites were individually operational with both missiles on launchers and the essential radar in position (photo 3). The sites were installed with haste and final construction work such as building revetments was still going on.

25X1D As of [redacted] all elements of a standard SA-2 site had been identified at one or more of the sites in Cuba including launchers, GUIDELINE missiles, FAN SONG (formerly FRUIT SET) guidance radar, SPOONREST acquisition radar, SCOREBOARD IFF antenna, and MERCURY GRASS communications equipment. Although an integrated command and control net for SAM sites had not been firmly identified, it was considered highly probable that an integrated command and control net for SAM's was by this time in existence in Cuba.

25X1B A detailed analysis of the 24 individual SA-2 sites shows that they were chosen so as to have negligible masking of their radio horizon by local obstacles and terrain. This enhances their early acquisition and detection capability.

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25X1B Twenty-three of the sites do not have a mask which exceeds [redacted] elevation. Fourteen of the sites do not have a mask which exceeds [redacted] elevation. (One 25X1D has a masking of [redacted] 25X1D

25X1D Site pattern and missile characteristics. The sites have six launch positions encircling a central guidance area. The sites are in most cases joined by a road network in a "Star of David" pattern (photos 1, 4, & 5). Personnel quarters and missile trailers are situated nearby. In order to acquire an emergency operational capability during the initial deployment phase, the missile equipment was placed into position prior to the construction of permanent launch and guidance revetments. Later, when launch revetments were constructed, they were net-covered and contained a canvas-covered missile launcher positioned on a concrete pad. The guidance area (ordinarily) contained a canvas-covered FAN SONG radar surrounded by vertical camouflage netting, enclosed by an earthen revetment.

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The SA-2 missiles [redacted]

25X1D [redacted] and include a solid propellant booster and liquid propellant sustainer. The latter stage contains both the

guidance package and the warhead. Three missile hold revetments with seven refire missiles are positioned along the circular perimeter road. It is estimated that the SA-2 system has a capability to reload and refire in a period of 5 to 10 minutes.

In the central guidance area of the La Coloma SAM site, taken as an illustration (photo 5), there is a centrally positioned FAN SONG guidance radar with supporting control and generator vans. The radar includes a single dish-shaped reflector, a trough-configured reflector, and other observable components. Such a radar has an estimated capability to track hostile aircraft up to altitudes of 95,000 feet, at horizontal ranges out to 110 nautical miles.

25X1D [redacted]

indicate that the latest Soviet FAN SONG radar is deployed on the island. The identification of this particular model in Cuba is significant because it had never been observed in the hands of any other than Soviet personnel; it is thus

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25X1D **SAM status,** [redacted] the following was the status of SAM installations in Cuba:

Site	Date First Observed	Date Last Observed	Launch Pad Status	No. Missiles & Transporters
San Julian 22-05-28N 84-08-58W	[redacted]		Revetted	3-5 miss.on launcher 6 miss. transporter
La Coloma 22-18-42N 83-32-35W			Revetted	1 miss. on launcher 8 transporter 2 prob.miss.on launcher
Santa Lucia #1 22-41-05N 83-55-45W			Revetted	3 miss.on launcher
Bahia Honda 22-57-32N 83-17-28W			Revetted	3 miss.on launcher 7 miss. trailer

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Mariel 23-00-55N 82-49-30W		Revetted	3 miss.on launcher 6 miss. trailer
Havana East 23-09-25N 82-13-32W		Unrevetted	3 miss.on launcher 7 miss. trailer
Caibairen 22-28-15N 79-29-35W		Unrevetted	2 miss.on launcher 1 poss.miss.on launcher 4 transporter
Chambas 22-13-20N 78-53-30W		Unrevetted	3 miss.on launcher 7 transporter
Chaparra 21-07-20N 76-26-20W		Unrevetted	3 miss.on launcher 7 miss. transporter
Cienfuegos 22-02-50N 80-24-20W		Unrevetted	5 miss.on launcher 6 miss. transporter in hold revetment
Jiguani 20-21-00N 76-20-00W		Unrevetted	3 miss.on launcher 6 miss. transporter (1 in position to load)
Sagua La Grande 22-51-10N 80-05-50W		Revetted	3 miss.on launcher 1 transporter 4 poss. transporter
Sancti Spiritus 21-47-45N 79-29-30W		U/C Revetted	3 miss. on launcher 7 miss. transporter
Senado 21-36-30N 77-33-31W		Unrevetted	3 miss. on launcher 7 trailer
Ciego De Avila 21-42-13N 78-50-21W		Unrevetted	3 miss.on launcher 7 miss. transporter
Manati 21-13-45N 77-02-15W		Unrevetted	1 miss.on launcher 6 poss. transporter

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Esmeralda 21-55-48N 78-13-18W		Unrevetted	4 miss.on launcher 6 miss. transporter
Los Angeles 21-00-40N 75-41-43W		Unrevetted	4 miss.on launcher 7 miss. transporter
Cabanas 20-06-20N 75-20-15W		Unrevetted	2 miss.on launcher 7 transporter
Seguena 21-37-33N 82-57-33W		Revetted	3 miss.on launcher 1 poss. transporter transporter covered
Matanzas 23-01-50N 81-29-14W		Unrevetted	2 prob.miss.on launcher 5 miss.transporter
Manzanillo 20-18-20N 77-06-08W		Unrevetted	6 launcher 4 miss.on launcher
Deleite #1 22-59-31N 80-45-47W		Revetted	6 miss. transporter
Santiago De Cuba 19-59-20N 75-50-58W		Unrevetted	6 transporter. 3 miss.on launcher

ALTERNATE SAM SITES

Site	Date First Observed	Date Last Observed	Launch Pad Status	Alternate Site For
Deleite #2 23-01-30N 80-44-39W			Unoccupied	Alternate Site for Deleite #1
Santa Lucia #2 22-43-40N 83-49-50W			Unoccupied	Alternate Site for Santa Lucia #1

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SAM SUPPORT AND ASSEMBLY AREAS

Site	Date First Observed	Date Last Observed	Equip.	Other Equipment
Santiago De Las Vegas 22-57-40N 82-21-30W			34 transporter 12 prob. miss.	5 miss.dollies 12 pieces heavy equip. 35 misc. vehicles
Santiago De Cuba 20-03-10N 75-53-20W			35 trailer 75 miss. container	35 add'l vehicles
Ciefuentes 22-36-10N 80-05-03W			5 transporter 4 poss. transporter 12 canister 20 poss. canister	10 vehicles 2 tractor-trailer 2 liq. storage tanks
Ciego De Avila 21-52-00N 78-44-07W			27 miss. transporter 45 miss. container 4 revetted storage	Approx 55 vehicles
Pinar Del Rio 22-21-09N 83-39-15W			19 transporter Approx. 50 canister	Stacked U/I equip. 25 add'l vehicles
Victoria De Las Tunas 21-04-40N 77-00-00W			100 miss. canister 24 transporter	50 vehicles 16 tents 2 long buildings
Manzanillo 20-18-20N 77-06-08W (Assembly Area only)			20 canister 20 transporter	

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SAM support equipment. As an instance of the circular or spiral nature of confirmation in these matters, it was announced on 25 October that a re-examination of photographs
25X1D
of Soviet ships bound for Cuba dating from late [redacted] disclosed that at least 15 tank trucks specially
25X1D
designed to transport SA-2 missile propellant were sent to Cuba. Identification was based on pictures of six ships taken between [redacted]
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SAM regiment organization. [redacted]
25X1B
six SAM regiments, each with a strength of about 1,000, are operating the entire complex of launch sites and support facilities. A single SAM regiment is responsible for four SA-2 sites, each manned by a battalion of about 140 persons. The battalion at a single SAM site would normally include one firing battery of six launchers and a radar and technical company. The total Soviet personnel requirements would be reduced considerably if Cubans performed some of the security and support functions.

The SAM system would necessarily have a central command control headquarters -- probably located at air defense district headquarters -- together with associated communications. The first clear evidence identifying the communications facilities associated with the SAM components was noted in VHF radio intercepts on 9 November in a SAM training exercise in Oriente Province. Photographic evidence of some sites indicates that both HF radio and VHF multi-channel radio relay equipment are probably providing operational and administrative communications for these sites. Target tracking data apparently is relayed either directly to the SAM sites or via sector or district broadcast facilities. If the

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[redacted]

Analysis of recent SAM developments in Cuba. Six SA-2 GUIDELINE surface-to-air missile sites have recently been redeployed in Cuba. The movement of three of them materially affects the over-all defense of the island, but the other three were transferred only very short distances.

Initial deployments suggested that the SAM sites were to be around the periphery of the island and that the Soviets

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[redacted]

25X1B

[redacted]

A minimum of 30 installations would have been required to provide a complete barrier, but construction seemed to stop with only 24 sites emplaced. Three major gaps were apparent: (1) the important crossroads at Camaguey; (2) the east-west corridor across the southeast section of the island; and (3) the central portion of the southern coastline. To date, three major redeployments have been made: (1) the Cabanas site was moved about ten nautical miles northwest to Maldonado; (2) the Senado installation was shifted about 18 nautical miles to Camaguey; (3) and the Chaparra site was moved about ten nautical miles southward. These repositionings filled two of the gaps. The corridor on the eastern end and around the Holguin area was closed and the Camaguey area, including the airfield, is now well inside the SA-2 defense ring. It is believed that the three sites were redeployed for the express purpose of correcting inadequacies in the original SA-2 deployment under the zonal or barrier defense concept as well as providing more effective air defense of important military installations in the Camaguey and Holguin areas.

25X1D [redacted] revealed a new SAM site under construction 2.5 nm south-southeast of the Camaguey airfield. The equipment at the new site almost certainly came from the Senado site, approximately 18 nm northeast of the new one, which was noted abandoned in

25X1D [redacted] The new site is typically star configured, is unrevetted, and contains six launch positions with six launchers mounted on missiles. It also contained, at the time of photography, guidance radar, seven missile transporters, ten prime movers, and four large and one small tents.

25X1D [redacted] revealed that a new SAM site had been set up in the Holguin area, 11.1 nm west of the city of Holguin. The site includes six unrevetted launchers and complete guidance equipment. Also at the site when photographed were seven missile transporters, 32 vehicles, and four large and three small tents. The launchers are arrayed in the usual circular pattern, but were not at the time served by roads. The equipment for the new site almost certainly came from the former SAM site at Chaparra, which

25X1D photography of [redacted] had showed to be in the process of dismantlement.

A missile guidance signal intercepted from Cuba on 12 January 1963 suggests that the USSR may be introducing less-advanced radars for use with surface-to-air (SAM) missiles, perhaps preparatory to phasing Cubans into the SAM system. The signal is believed to be the missile guidance portion of an S-band version of SAM radar. In the past only the C-band version, more advanced than the older S-band equipment, has been identified in Cuba. The C-band has been kept in the hands of Soviet personnel, both in Cuba and the Bloc, and it is unlikely the Soviets would relinquish control of the C-band SAM radars to the Cubans.

The presence of the advanced C-band equipment has been confirmed at all 24 Cuban SAM sites. The appearance of the older equipment suggests that replacement is in the process of taking place. The less efficient S-band FAN SONG has in the past been found in those areas where Soviet control is not exercised over the SAM system, such as in East Germany. Conversely, the advanced C-band equipment has never been noted out of Soviet control. The change in Cuba therefore strongly suggests the possibility of diminished Soviet interest in the SAM system in Cuba and the possibility of an eventual Cuban takeover of the system.

There is no firm evidence of Cuban training in the SAM system, but that such training may be taking place is suggested by the coincident references intercepted from the Soviet controlled R-401 communications system to Soviet departures and Cuban training. Although not all R-401 communications facilities in Cuba have been equated to the air defense system, some of them have.

Soviet manning of surface-to-air missile installations in Cuba. Evidence indicates that the rapid establishment of more than 20 surface-to-air missile sites in Cuba during 25X1D [redacted] was part of a program to build up a Soviet equipped and operated air defense system in Cuba, incorporating modern radar systems and MIG-21 jet fighters in addition to the SAMs. The primary purpose of the program was evidently to protect and screen the offensive weapons systems (MRBMs, IRBMs, and IL-28 bombers) which were installed as the air defense system was being completed.

25X1B [redacted]

equipment. The first SAM sites to be set up were located in the western half of Cuba around the first long-range Soviet missile installations; the next near the ballistic missile

installations in central Cuba, and it seems likely that the sites now existing in relatively remote areas of eastern Cuba were intended to guard similar offensive missile units which had not yet arrived.

There is no evidence that Cubans received any type of training for the operation, support, or maintenance of the Soviet SAM installations now located in Cuba. There is no

25X1B

There have, however, been no indications from any source of training in the Bloc for Cubans on any form of missile. In the past, this sort of evidence has been available on the training programs for Indonesians, Iraqis, and Egyptians. Missile training sites have also been observed in other countries receiving Bloc missiles. The number of Soviet personnel sent to non-Bloc countries being supplied with missiles has been relatively small, ranging between 100 and 200 technicians.

25X1C

25X1C Virtually all the reports indicate that Cubans are excluded from the SAM sites and that the entire system, at least until very recently, has been under exclusive control of the Soviets.

25X1C

25X1C Cubans apparently are utilized in some unloadings of ships -- although frequently they also are excluded from this work -- and as military escorts for convoys of equipment up to the missile sites. All evidence -- including official Cuban statements -- however, indicates that Cubans are not allowed to observe, much less participate in, the operations at such sites. Premier

Castro, for example, stated to U Thant that there are not and have not been any Cubans on missile sites and they have been rigidly excluded throughout the program.

25X1C

[redacted] stated that in early August Cuban Major Dermido Escalona, military commander of Pinar del Rio Province and a political leader of the province, was denied access to a Soviet missile installation in the province, and was told by Soviet sentries at pistol point that "not even Fidel Castro" could enter without the Soviet commander's permission. 25X1C

25X1C [redacted] that Cubans were forbidden to enter Soviet military areas at Bahia Honda, Mariel, and La Cabana. The source of this report finally secured the Soviets' reluctant permission to enter only long enough to supervise the installation of 1000-man military messes at each site. The few Cubans who entered were closely escorted and watched while inside these areas.

It would take some time for the Cubans to be trained sufficiently to take over the SAM system now existing in Cuba. Meanwhile, if the system is to be operational, it will require the continuing presence of at least 3000 Soviets.

There are as yet (1 March 1963) no indications that any SAM sites in Cuba have been turned over to Cubans. Information is too scanty at this time to permit a conclusive judgment on the timing of such a transfer. It is now believed that SAM training for Cubans is under way, although there is little direct evidence as to when such training may have begun. A number of reports, including some COMINT material, point to March 1963 as the time when some kind of change related to the status of the SAM sites is likely.

Following are summaries of the significant intelligence, arranged in chronological order, so far received indicating that transfer of the SAM sites to the Cubans is planned:

a. A report in late November 1962 referred to Spanish-speaking Soviet officers instructing Cuban militiamen at a "camp" which has been identified as a SAM assembly and support area.

b. During November and December 1962, and January 1963, Soviet communications operators made several references to training Cubans. None of these references, however, could be traced directly to SAM units.

c. In mid-December, Cuban officers were reported attending "indoctrination" lectures on "missiles." It is not clear whether these were general orientation or training lectures, but the reported content of the lectures indicates that they concerned SAMs. 25X1B

d. On 2 January, a SAM transporter with a Guideline missile was driven in a parade in Havana by Cuban personnel. A cruise missile transporter was also driven by Cubans in this parade. [redacted] the implication might be that the SAM and cruise missiles had or were to become part of the Cuban military inventory.

25X1C e. In mid-January, [redacted] 25X1C

[redacted] 1 March the Cuban military would activate an "all-out" anti-aircraft effort to clear Cuban skies of unidentified aircraft. An order to this effect was said to have been circulated as of 17 January.

f. On 8 February, operators' chatter in Spanish with Cuban idiom was heard on unidentifiable terminals of Soviet VHF multichannel (R-401) radio relay communications. The chatter, using terminology which suggested that the operators were already trained rather than in process, referred to tuning R-401 equipment and subsequent readability. This is the first firm indication that Cubans are using this equipment. The major identified users of R-401 facilities in Cuba are Soviet SAM installations, although R-401 facilities are known to be used by other Soviet elements of as yet undetermined subordination.

g. In mid-February, Joaquin Ordoqui, chief of Cuban Army logistics, was quoted as stating that as of early February the Soviets were instructing Cubans in the operation of SAMs. When Cubans had become proficient, the Soviets would be withdrawn and the Cuban Government would then have the sole right to decide when to use these weapons. The Cubans had agreed with the Soviets not to use the weapons against US reconnaissance flights.

h. In his speech of 22-23 February, Fidel Castro implied that Cuban technicians were needed to "manage" SAM systems. He said, "We need a good technician to manage a surface-to-air missile, but at the same time we take him out of school. No, it hurts to lose a good technician. What to do?"

i. On 23 February, Soviet operator chatter from the Banes station of the Soviet command group included the statement that "all have gone home. From March we train the Cubans....I will be going home in March." This statement could refer to training with SAMs, cruise missiles, or other facilities in the Banes area.

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[redacted]

III. SOVIET OFFENSIVE WEAPONS IN CUBA

First evidence. We shall discuss first the MRBM and IRBM missile sites, and then the IL-28 jet light bombers. The first hard information on the delivery of Soviet offensive weapons to Cuba came, however, in connection with IL-28's.

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[redacted]

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[redacted] reported the arrival of crates which met the IL-28 description during the third week of September. [redacted] reported seeing four such crates arriving at Mariel on 19 September. Another source reported the arrival of an unspecified number of IL-28 crates in Havana on 20 September. There was no way to determine the accuracy of these reports when first received, however, for at that time no IL-28 crates had been seen on the decks of Soviet ships going to Cuba. In retrospect, it is likely that at least one of these reports was correct, for there definitely was one IL-28 shipment missed by [redacted] of Soviet shipping. There was also one report with date of information 2 October which may have been correct, since the Kasimov arrived in Cuba about 1 October.

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Information concerning the IL-28's and the Kasimov was [redacted]

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[redacted] We shall discuss this more critical development first, and then return to the IL-28's.

A. Soviet MRBM's and IRBM's in Cuba

1. Summary

The Soviet Union, by late October 1962, had established nine offensive missile sites in Cuba at four separate locations (photo 7). Six were field sites for the road-transportable Medium Range Ballistic Missile (MRBM), and three were fixed sites for the Intermediate Range Ballistic

Missile (IRBM). Four of the MRBM sites were located in an area near San Cristobal, 50 nautical miles southwest of Havana. The two other MRBM sites were located near the town of Sagua la Grande, 135 nautical miles east of Havana. Each of the
25X9 MRBM sites included four launch positions, mobile ground
25X9 support equipment, and [redacted]

The fixed IRBM sites were located at Guanajay near Havana and at Remedios, 175 miles to the east. The Guanajay location included two fixed four-launcher sites, while the
25X9 Remedios site, which was in an early stage of construction,
included a single four-launcher site. The fixed IRBM sites
25X9 also included concrete control bunkers, [redacted] and missile servicing facilities under construction.

In summary, there were nine offensive missile bases completed or under construction in Cuba by 22 October, with a projected total of 36 launching positions -- 24 MRBM and 12 IRBM.

25X1D 2. Chronological Account

The [redacted] photographic missions. The
25X1D first conclusive evidence of Soviet offensive missile deployment in Cuba came from a high altitude U-2 reconnaissance mission of [redacted] Prior to that time, routine high
25X1D altitude photo reconnaissance over the four locations had revealed no evidence of missile activity. Flights from about

[redacted]

25X1D shows no military activity at all on the sites at Guanajay,
San Cristobal, Sagua la Grande, and Remedios [redacted]
25X1D [redacted]. Weather conditions and a series of operational equipment
25X1D failures had caused stand-downs from the latter date until [redacted]

25X1D [redacted]

25X1D

25X1D

Since weather had permitted coverage of only two of the four missions assigned for , these flights were carried over, with a peripheral mission on along the southeast coast, and a peripheral mission on along the northeast coast. There was a mechanical abort on , and weather stood down the planes inclusive. 25X1D

25X1C

dated 5 October requested priority coverage of suspected surface-to-surface (MRBM) areas in Cuba. The planes stood down on because authorization for flights had not yet been granted, and on because of weather. Transfer of responsibility for the flights precluded a mission on 25X1D

revealed two Soviet field MRBM units deployed in the heavily wooded San Cristobal area . In the most advanced site found, there were eight missiles and four launchers visible . Seven missiles on trailers were clustered near two missile shelter tents, while the eighth was positioned adjacent to an emplaced erector. Propellant equipment was also observed nearby, and temporary military billeting facilities and other supporting equipment were seen. 25X1D

At the second site found approximately five miles away, the Soviets were detected in the early stages of setting up a missile encampment .

Six MRBM's on trailers had apparently just arrived and were parked in a wooded area. In addition, a missile vehicle convoy was noted arriving at the site. During the few days following, the Soviets established two more MRBM sites in this area, which on the date of this photography were not

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[redacted]

Missile identification. At this early stage, analysis was directed toward the identification of the type of missiles deployed. On the basis of site characteristics it was difficult at this point to distinguish between the 700 nautical mile and 1100 nautical mile Soviet missile systems: neither

25X1D [redacted]

precluded identification of similar field type launchers in the Soviet Union or European satellites. [redacted] report that the 1100 n.m. missile can be readily deployed to presurveyed alternate sites in a matter of six hours plus

25X1C

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* Definitions. 1. An Emergency Operational Capability exists when a site could launch some missiles should a decision be made to do so.

2. A Full Operational Capability is achieved when a site has reached a steady state of readiness with the ability to salvo its first missile load within about six to eight hours and with the ability to refire within four to six hours. An emergency operational capability could be achieved at an MRBM site as soon as the launch crews, missiles, launchers, propellants, warheads and necessary checkout equipment have arrived at a presurveyed area. Full operational capability would be achieved when the erector/launchers are in place, the cabling between launchers and control is permanently installed, and the launch crews, missiles, and propellant trucks, warheads, and checkout equipment are arranged at the site in an orderly manner. At an MRBM site, full operational capability would probably lag the emergency operational capability by about five days.

transit time. The balance of evidence, including interpretation estimates of the missile size (those photographed were canvas covered, with blunt noses), was on the side of the 1100 n.m. missile.

Area photo coverage. As a result of the identifications made in the San Cristobal area, the President, who was advised of these findings on 16 October, directed that high altitude aircraft survey the island completely in order to determine precisely the nature and extent of Soviet offensive missile base construction in Cuba. There was of course no

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25X1D [redacted] photographic coverage identified two more Soviet MRBM sites, nine miles apart, 135 miles east of Havana near the small town of Sagua la Grande (Photo 14). These sites resembled the ones at San Cristobal but appeared to be more permanent in nature. The Soviets had constructed a new road system into the site area and had already emplaced erectors at two of the launch pads. The other two launch pads were not yet completed, but the erectors for these positions were observed nearby.

25X1B [redacted]

"San Cristobal Area:

The sites in this area are considered to be unimproved
25X1D field type sites and to have an emergency launch capability as of 20 October 1962 if nosecones and warheads are available. All essential elements for an operational unit (launchers,
25X1D missiles, and fueling equipment) were noted at this site on [redacted] The launchers are in position, are adequately spaced, and missiles are available. These sites appear in the photography to resemble a field-type MRBM site described in
25X1C [redacted] Soviet personnel are there, living in
25X1D tents. The only components necessary for an operational capability that could not be identified on [redacted] photography are warheads and nosecones for missiles."

25X1B [redacted]

25X1B

25X1C

From [redacted] direct data defining Soviet MRBM unit reactions and refire time, it is possible to conclude that the units found in Cuba have a four to six hour refire capability.

It was estimated that the third site near San Cristobal might be a launch site because it contained two launchers and two missile transporters. However, the support structures at this facility were more extensive than those at Sites 1 and 2, and there were differences in configuration. In addition, only 50 per cent of the necessary equipment for a battalion launch position was observed at Site 3.

Sagua la Grande Area:

25X1D
25X1D

The two sites in this area, covered by photography of [redacted], were designated improved field type sites because of their more permanent appearance [redacted]. They closely resembled the sites in the San Cristobal area, but the terrain features here dictated considerable clearing and grading for deployment of the system. There were also several permanent structures at the launch pad areas which were not found at the San Cristobal sites.

At this time it was estimated that the launch sites in this area could be operational within one week; the estimate was on further analysis lengthened to 1 November. Launchers were already being emplaced on the pad clearings, and missiles and related equipment, including an appropriate number of fuel trucks, were in the area. Thirty-five vehicles arrived in a support area at Site 1 within the [redacted] period between the two photographic missions of [redacted]

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Guanajay Area:

25X1D

25X1D

Photographic coverage of this area was obtained on [redacted]. Nearly all features of the sites

in this area observed to this time indicated heavy construction of a permanent nature. At Site 1, heavy construction involving excavations for fuel tanks, transverse cable tunnels, and
25X1D probable vehicle revetments were observed. Concrete was being poured for launch pads, and two concrete batch plants were present. The launch pads measured [redacted] feet, and when
25X1D completed later included a launch ring and flame deflector at the center. Four [redacted] probable propellant tanks were located adjacent to one excavation. The site was being fenced. Site 2, also with four launchers, was in an earlier stage of construction, and only a few of these features were observed. At Site 1, the paired pads were separated by 750 feet and were served by a centrally positioned control bunker.

25X9 [redacted]

The site configuration was similar in many respects to 25X1B launch areas at [redacted] which have been associated with IRBM test firings. The similarities
25X1B included launch pad configuration and separations, and vehicle revetments. Transverse cable tunnels have also been observed [redacted] The configuration of
25X1B the sites at Guanajay was also similar to thirteen deployed sites [redacted] which are believed to be IRBM sites.

No missiles or missile-associated equipment were observed in the area of the sites. In addition, the current nature and extent of construction activity was taken to preclude the possibility of mobile missile-related equipment occupying these sites at the time of the photographs. It was thus concluded that the sites were intended for the Soviet SS-5 2200 nautical mile missile, although none of these were ever seen in Cuba, nor have they been seen elsewhere.

The date of operational readiness for Guanajay Site 1 was at this time estimated to be the end of November, and the
25X1B other between 15-30 December. Construction of a similar site [redacted] has been completed in a six-month period. It
25X1D can be determined from photography that the earliest date Site 1 could have been started was after [redacted]
25X1D [redacted]. The appearance of the site no more than six weeks later indicated an urgency in the site construction program. The remaining construction work could probably be completed on this urgent basis in four to six weeks. Six

weeks was considered the earliest time that this site could reach an operational status and still allow time for a thorough check of installed equipment, and Site 2 appeared to lag Site 1 by about one month.

Possible central missile checkout, storage, and repair bases were also located at this time at Soroa, between the two western deployment areas, and at Managua, south of Havana.

25X1D

Photography of [redacted] and subsequent analysis, confirmed a new offensive missile site at Remedios, which was quickly identified as an IRBM site. It was in an early stage of construction. Initial excavations in the launch pad area had been completed and clearing for cabling and the control bunker were completed, as well as footings for the other control bunker. A concrete batch plant had been established, and a [redacted] was under construction. As at Guanajay, no missile equipment was identified in the area. The site appeared to be in the same general stage of construction as Guanajay Site 2.

25X9

Analysis of these IRBM sites in these different stages of construction provided a basis for determining the characteristics of a completed site. A centrally located launch control bunker serves two launch pads. Cables from a vehicle revetment to the launcher are below ground level in a preformed concrete conduit which is large enough to allow launch crew access. This design facilitates refire capability. The entire site is permanent in nature.

An MRBM battalion, on the other hand, has the capability of conducting launch operations from unimproved launch areas. However, in order to achieve a better readiness and maintenance capability, certain improvements are necessary. These include missile-ready shelters, launch pad leveling, and stabilization and revetments. Preliminary analysis indicates that erection of the missile is accomplished by use of the missile transporter in conjunction with the launcher-erector, probably using an "A" frame technique. Each missile is serviced by two oxidizer trucks and one fuel truck. A small revetted area located about sixty feet away contains a possible checkout panel and/or power supply. The identifications and location of complete missile checkout equipment has not been determined. After firing, a second missile, with its associated fuel and oxidizer trucks, is brought to the site and the operation is repeated.

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Beginning of low altitude flights. High altitude photography through [redacted] provided additional information on continuing construction of the sites, but no important new

details were forthcoming until the commencement of low altitude flights. The restrictions on low altitude reconnaissance were removed following the President's speech on 22 October, and intensive coverage of the missile sites and other installations was begun, using reconnaissance versions of the Navy F8-U and the Air Force RF-101 (Photo [redacted]). These aircraft were directed to fly at altitudes below [redacted] The results were striking, and quickly permitted more accurate analysis of the operational readiness of the Soviet offensive missile sites.

Soviet response. As might be expected, there was Soviet response to these low altitude missions. Conventional anti-aircraft artillery was deployed [redacted] On several occasions pilots returning from low altitude missions reported that they believed they had been fired on by ground batteries, but that the shooting was ineffective. There is no way of determining whether the batteries in these instances were manned by Soviet or Cuban personnel.

[redacted]

Continuation of site construction. Low altitude photography at San Cristobal Launch Site 1 on [redacted] showed considerable activity. Five canvas-covered missile transporters and seven drive-through, missile-ready tents [redacted] were observable. A truck was visible half-way out of one end of one of these tents, suggesting the possibility of an additional missile transporter. A missile erector was observed under canvas, with cabling linking the firing position with command control equipment positioned nearby in the woods. Five camouflaged, van-type vehicles on wooden hard-stands were positioned to the side of each launch position. Probable theodolite stations were present, with at least one being used. A POL storage area contained four large tanks and

a large number of drums similar to 55-gal. drums. Sixteen oxidizer trailers and eight fuel trailers are ground together in one area [redacted]. Twelve tracked prime movers and four trucks with special van-type bodies were also noted in this same area.

At Site 3 at San Cristobal, it was possible to tell from this low altitude photography that from each of the four leveled launch pads a cable extended to a three-sided

25X1B [redacted]

bundled and was suspended above ground by short stakes. At three of the pads, a possible theodolite was located under a roofed shelter, about 60 to 70 feet from the pad. Three of the four erectors were in position, and all four erectors were canvas covered. There were four missile-ready tents, only one possible missile transporter, and six truck-mounted vans.

25X1D

Particularly good quality photography was acquired of the Sagua la Grande Site 2 on [redacted], showing that

25X1D the site had the necessary personnel, equipment, and facilities to be fully operational [redacted]. Only four missile transporters had been observed to this date. There were 16 oxidizer trailers and eight fuel trailers in the area. A wide looping service road ran into the launch positions where a canvas-covered missile erector and launch stand were emplaced. Vehicle trackage into one of the missile shelter tents indicated that a missile and transporter might be inside. Camouflage netting was being

25X1D stretched out near the missile erector prior to being placed across the site. In [redacted] low level photography four canvas-covered erectors and launch stands were

25X1D emplaced on prepared launch positions with cabling in place. Five missile-ready tents, 100 [redacted] feet, were then in the area. Two vans were parked near a group of three missile-ready tents; two large ducts led from the vans to the tents, possibly for heating, airconditioning or dehumidifying the tents.

25X1D The [redacted] low level reconnaissance over Guanajay produced considerable evidence of Soviet activity. At Site 1 surveying equipment and personnel were noted on two of the pads, and at Site 2 bulldozers were in the process of excavating and grading the launch pad positions. An open storage area at Site 1 contained many pre-formed concrete slabs of various sizes, and at Site 2 there were stockpiles of pre-formed concerte slabs in the pad areas.

Trucks could be seen moving about the area of Site 2, and large, truck-mounted cranes were being used in loading and offloading material.

25X1D By [redacted] there was practical certainty that the field-type MRBM sites were for the SS-4 (SANDAL) 1100 nautical mile ballistic missile system. All of the essential elements of this system had been identified: canvas-covered missile transporters, launch stands, erectors, oxidizer and fuel trucks, cabling, theodolite stations, power generators, and communications equipment. The evidence was also clear that the Guanajay and Remedios sites were for a different missile system from that employed at the field-type MRBM sites. The pad design, size, and separation were compatible with what are believed to be IRBM installations [redacted] 25X1B

25X1D Low-level photography of San Cristobal Site 1 on [redacted] 25X1D (Photo 20) showed only four of the eight previously identified missile transporters. These four were without nosecones. The missing transporters were probably in the ready tents. Cabling could be seen running from the missile-ready tent into the woods where power generators were probably located. This suggested that the missile was either being checked out or was being held in readiness. The four missiles in open storage had not been checked out or mated with their nosecones. 25X1D

With respect to IRBM's, additional analysis of [redacted] low level photography showed that at Remedios there was an improved road with wide radius turns approximately 3 1/2 miles southeast of the previously identified site. The road terminated at the edge of a wooded area which was possibly the planned location for a second site in the area. The large amount of prefabricated concrete forms and other construction material in open storage areas would be adequate to support an additional site.

25X1D As of [redacted] there was no evidence of any intention to halt construction, dismantle or move the missile sites.

25X1B [redacted]

25X1B

[redacted]

Indications of operational activity. There was also at this time considerable evidence of operational activity as well as the continuation of construction activity. At some of the sites, missiles were being moved about, implying a successive checking out of the missiles in the ready tents. Although no specific indicators were detected, warhead checkout may also have been occurring in the ready tents, although there is no direct knowledge that warheads were or are present in Cuba. There was also considerable movement of vehicles at all MRBM sites. At Sagua la Grande there was heavy trackage in the launch areas, and at Site 2 heavy trackage in the vicinity of the erectors and oxidizer and fuel trailers indicated that the system had been exercised, possibly at night.

25X1D At the Guanajay Site 1 IRBM installation, construction and vehicle activity was marked and at least 44 missile-support vehicles were identified in an area some 500 yards south of
25X1D the open storage area. None were in the immediate area on [redacted]
[redacted] and only 6 could be seen on the [redacted] photography.
25X1D Some appeared similar to that seen at MRBM sites, including 2 fuel trailers, 2 oxidizer trailers, 2 tracked prime movers, and 7 van-type trucks. The vehicles were located in the edge
25X1D of a wooded area and other equipment may have been hidden from view. On [redacted] there had been an increase to at least 61 vehicles, including two additional possible fuel trailers. All four possible fuel trailers were definitely larger than those seen at MRBM sites.

A possible regimental headquarters was discovered approximately midway between Guanajay IRBM Sites 1 and 2. The area
25X1D contained approximately ten buildings, all of which were present in [redacted] This is a known military camp, which may have been occupied by Soviets; vehicles and personnel were visible, and there was evidence of vehicle movement between the area and Sites 1 and 2.

Adjacent to this headquarters area, a microwave communications station was identified, with one of two parabolic antennas oriented toward a large, high-frequency radio station near Bauta, and the other undetermined. At Sagua la Grande Site 2, a microwave relay tower with two dish antennas oriented

approximately 135°/315° was found, to the rear of the launch area, with three associated camouflaged communication vans. Microwave towers were also identified at San Cristobab MRBM Sites 1 and 3. This would suggest an integrated microwave command and control communication system, but the use of high frequency radio is also indicated by the presence of high frequency antennas at Sagua la Grande Sites 1 and 2.

25X1D

Automatic anti-aircraft weapons and personnel trenches for protection against air attack were evident at many of the MRBM sites, introduced within the few days before [redacted]. Ground fire was noted on the low-level photographic [redacted]

25X1D 25X1B 25X1D

25X1D

Situation on [redacted] the date of the Soviet decision to remove the offensive missile bases from Cuba, it was possible to summarize the situation as follows (information up through detailed analysis of low-altitude photography taken on [redacted]

25X1D

A total of 33 missile-transporters and 33 missile-ready tents had been identified. With the 24 launchers of the 6 MRBM sites believed to be fully operational, there was a capability to launch up to 24 1100 n.m. missiles within six to eight hours of a decision to do so and a refire capability of up to 24 additional MRBM's within four to six hours. Activity was continuing at all the MRBM and IRBM sites covered by the [redacted] photographic missions. [redacted]

25X1D 25X1B

25X1B

[redacted] There was an increase in defensive measures, e.g., a 6-gun 57 m.m. AAA position with WHIFF radar and rangefinder at San Cristobal Site 1.

No IRBM missiles, missile tranports or erectors had been identified. However, there were oxidizer trailers and possible fuel transporters, larger in size than similar transporters at MRBM sites. No new MRBM or IRBM sites had been detected; however, there had been no high altitude coverage appropriate for search since [redacted] There was evidence of the [redacted] however, judged not to be ready for storage, assembly or checkout.

25X1D

25X9

On 28 October Scrambler communications between the USSR and Cuba were established, thus meeting the requirement of the deployed missile units in Cuba for a communications system which is both very secure and capable of handling a large volume of traffic. These links were the best candidates to date for Soviet command and control of the missile forces in Cuba.

Soviet decision to remove missiles. At the critical period just after Khrushchev's announcement that the offensive missile sites would be removed, [redacted] 25X1B

25X1B [redacted]

Available evidence did not, however, indicate Soviet preparation for dismantling or vacating the offensive missile sites identified in Cuba. On the contrary, full operational capability at all MRBM sites still existed as of mid-afternoon, 25X1D [redacted] There was clear photographic evidence that construction activity was continuing at the San Cristobal and Sagua la Grande MRBM sites, but limited and poor photography of the IRBM sites precluded positive assessment of construction activity.

Many of the missile erectors at the MRBM sites had been moved from their hardstands and were no longer visible (photo 22). There was evidence that at least one of these erectors 25X1B [redacted] as were the majority of the missile-associated vehicles and equipment. Launch stands, cabling, and other components of the launching complexes were still in place at each of the MRBM sites, although if the sites were being dismantled one would expect the cabling to be removed first. The movement of erectors away from positions next to the launch stands was judged to have no effect on full operational capability, provided the erectors remained in the general area. 25X1B

25X1B [redacted]

Soviet offensive missile organization in Cuba. It is believed that the Soviets intended to deploy a total of five missile regiments in Cuba, two at San Cristobal and one each at Sagua la Grande, Guanajay, and Remedios. 25X1B

25X1B [redacted]

25X1B

This pattern was substantially realized at all of the MRBM sites in Cuba. A total of 33 MRBM missiles were identified through photography; 23 at the San Cristobal sites and 10 at Sagua la Grande. The fact that at least six missile transporters were observed at four of the six MRBM sites, or more than one missile per launcher, leads us to the belief that the Soviets intended to follow normal doctrine and provide two missiles per launcher at each MRBM site in Cuba.

Although we did not observe the estimated total of 48 MRBMs, knowledge of the actual number probably is incomplete because of limitations on air coverage and Soviet efforts at camouflage and concealment. It was estimated on 5 November that there almost certainly were more MRBM missiles in Cuba than the 33 observed.

25X1A

25X1A On 4 November, Kuznetsov in conversation alluded to the presence of 41 Soviet missiles in Cuba (presumably either MRBM or IRBM or both). Although the Kuznetsov statement cannot be substantiated, the number used would accord with the estimate that about seven ships carrying at least six missiles and missile transporters each have arrived in Cuba. If we assume that the number

25X1B of missiles actually delivered was 41 or 42, then 7 or 8

Some IRBM missile support equipment was observed at Guanajay. 25X1B

25X1B

However, no IRBMs were observed during the removal of offensive missiles from Cuba, whereas the "missing" MRBMs were detected during this phase. It is assumed, therefore, that no IRBMs had been brought to Cuba. Even if IRBMs were hidden, the sites (unlike those for MRBMs) take a considerable time to construct, which could be detected by continuing surveillance.

3. Time Factors in Construction of Soviet Missile Bases in Cuba

Relation to type of site. The type of IRBM site that appeared to be under construction in Cuba would have required about two and one-half to three months after the time of the initial site survey to achieve full operational capability. With good quality photography, the first identification of this type of IRBM site could be made within two or three weeks after the survey, or nine to ten weeks prior to full operational status. None of the three identified IRBM sites in Cuba had reached an operational capability prior to withdrawal.

The MRBM sites in Cuba were of a field type, requiring a minimum amount of construction prior to the emplacement of equipment. These sites appear to have reached full operational capability in about three to four weeks after arrival of basic equipment at the site. Positive identification of the type of MRBM sites observed in Cuba would be difficult even with good quality photography prior to the arrival of the missile trailer and launcher erector equipment at the site. In Cuba, this critical point in the delivery of equipment appears to have occurred about two weeks before the site became fully operational. Camouflage, concealment, or deception efforts could make positive identification more difficult.

Under optimum conditions, it would take no more than a week to complete the initial site survey, site preparation, and installation of equipment necessary for the type of MRBM system deployed in Cuba to achieve full operational status. With good photography, a site for such a system could be identified upon arrival of the missile equipment, which could occur within the first three to four days, or as late as eighteen hours prior to full operational capability. At any time during site preparation an emergency capability to launch at least one missile could be achieved in about eighteen hours after the missile unit arrived at the pre-surveyed site. Such an emergency effort was never made in Cuba.

Site timing as revealed by clandestine reporting. A thorough review of refugee reports concerning the general areas in which IRBM and MRBM sites were found produced some probable indicators of scheduling. This collateral information indicated that plans to deploy ballistic missiles in Cuba were being implemented by the end of August. Site locations

apparently had been selected and the surveys for the initial installations were probably completed by that time.* IRBM site construction was apparently under way in [redacted] and preceded the MRBM sites. This sequence is also indicated by the photography.

San Cristobal Area. Reported activities indicate that probably all of the San Cristobal sites were selected for MRBM deployment in August [redacted] 25X1B

25X1B [redacted] 25X1D

Sagua la Grande Area. On [redacted] 25X1C

25X1C [redacted]

Material delivered to the project included lumber and prefabricated concrete forms. This suggests that site construction was under way at that time.

Guanajay Area. [redacted] 25X1C

25X1C [redacted]

25X1D Prefabricated concrete slabs up to [redacted] in size and more than 30 dark colored cylindrical tanks about 30 feet long and 10 feet in diameter were offloaded about 8 August. Tubular and

25X1D semicircular shaped concrete forms arrived in Mariel during the same period. Similar items have been photographed at

25X1C the IRBM sites in the Guanajay-Bauta area. [redacted] 25X1C

25X1C [redacted] this material was designed for use in building

25X1C missile bases, and that some of the cargo was delivered to

25X1C the Bauta area. On [redacted] 25X1

[redacted] special construction was well under way at this time at locations coincident to the two IRBM sites. This indication that construction activities were probably under way in September is compatible with photographic evidence that work was

25X1D initiated after [redacted]

* This analysis is ex post facto. It appears possible that similar indications could have been obtained by such analysis earlier, perhaps by [redacted]

25X1D

25X1D

Remedios Area. Concrete forms similar to those observed at Mariel were off loaded at the port of La Isabela during August. On [redacted] construction equipment in the general area of Remedios was commandeered by the militia for use in improving access roads. 25X1C

25X1C [redacted] a rocket base was being constructed by the Soviets at a location now identified from photography as Remedios Site 1. A second

25X1C base [redacted] a missile site was not found in photography although new road construction was observed in the area.

4. The Shipping of Missiles into Cuba.

Ship requirements. After identification of the MRBM missiles in Cuba, it was clearly of interest to determine how and when they had been sent there, since no visual evidence of their shipment had been obtained. Because of their size, it was determined that the only possible way for Soviet SANDAL

25X1D missiles to reach Cuba clandestinely was to transport them

25X1D below the decks of large hatch ships, of the kind shown in a [redacted]. Although our naval reconnaissance aircraft photographed these ships and carefully analyzed their deck cargoes, as the [redacted] photograph shows there was no evidence of missile equipment. Only conventional cargo trucks appeared on the deck. After the event,

25X1B [redacted]

25X1D Suitable Soviet ships. Several Soviet ships were found to have hatches large enough to load SANDAL missiles. [redacted] 25X1D

25X1D [redacted]

[redacted] These made a total of six voyages to Cuba or part-way, mostly involving delivery of military equipment.

25X1D The [redacted] was en route to Cuba from the Black Sea with military equipment at the time the quarantine was established, with an estimated arrival date of about 3 November. It was one of the seven Soviet ships contacted by individual cipher messages from Moscow six hours after the President's public statement regarding the quarantine, and it turned back toward

25X1D the Soviet Union. The [redacted] arrived at Mariel on 28 July from the Black Sea, with a suspected arms cargo, arrived again at an unidentified Cuban port on 7-8 September and again in mid-October, both times from the Black Sea, and with suspected

25X1D arms cargo. The [redacted] arrived in Cuba on 29 August and about 8 or 10 October, also from the Black Sea and with a

25X1D suspected arms cargo. Other possible ballistic missile carriers are 25X1D
25X1D and this ship made voyages from the Black Sea to Cuba in August and September with probable military equipment, and was en route to Cuba at the time 25X1D of the quarantine. It is estimated that the holds beneath such long hatches are probably capable of storing 24 crated missiles of 70' dimensions or about 16 missiles mounted on these transporters without crating.

25X1D 25X1D
The was one of the ships that reversed course, and was photographed in the Baltic on with a deck cargo which included two special IRBM launch ring transport trucks, one of which contained an IRBM launch ring and flame deflector, and other missile-associated equipment, thus confirming the surmise that it carried 25X1D
25X1D missiles on its earlier trips. made one voyage to Cuba, arriving in early October. Its military cargo at that time included the ten IL-28's. The 25X1D hatch opening; it arrived in Cuba from the Baltic in August, from the Black Sea in September, both judged to be arms cargoes, and was en route from the Baltic in October when 25X1D it turned around. The made one voyage to Cuba from the Baltic in mid-August, and one from the Black Sea in early October, both suspected arms cargoes. The seven ships just listed made a total of 13 25X1D trips to Cuba since late July.

25X1D Soviet timber carriers, 25X1D
have missile-carrying capacity, On the other hand, the was one of the ships which took missiles out of Cuba deck-loaded; therefore it may not
25X1D have been possible to use its hold for missiles. Also, the were the ships which removed all 42 of the IL-28's from Cuba deck-loaded, even though they could apparently have loaded the crates into the hold.

25X1C Soviet unloading procedures. A report 25X1C
stated that when a Soviet vessel approached for unloading military equipment in Havana, the standard procedure was for two Cuban sub-chasers to escort it into harbor from about six to eight miles off the coast. Other Cuban vessels patrol and maintain surveillance of the route of the vessel, and the waters around the dock are searched by Soviet frogmen, sixteen of whom are based at the naval arsenal in Havana. Frogmen apparently perform similar duties at Mariel.

25X1C

when the missiles and equipment had been brought to Cuba, they had been unloaded from Soviet ships with the greatest precautions. Soviet personnel were dressed "in special costumes and even wore masks." When the missiles were reloaded for embarkation the personnel were dressed merely in shorts and shirts,

25X1C 25X1C

25X9

25X9

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25X1B

Collateral evidence. There have been indications that the KGB controls [redacted] weapon shipments in transit to military units. 25X1B During the crisis, the KGB established three Morse links of relatively slow transmission and low data handling capability between the USSR and Cuba. These links were probably not suitable for command purposes, but more likely were intended 25X1B for traffic of an administrative character. [redacted] 25X1B [redacted] and the security arrangements required for Soviet personnel would logically explain KGB presence. The characteristics of the communications links tends to favor the latter explanation.

C. Soviet IL-28 Jet Light Bombers in Cuba.

25X1D

The IL-28. As was mentioned earlier, the Soviet ship 25X1D [redacted] 25X1D 25X1D [redacted] capable of [redacted] 25X1D [redacted] ranges of 590 nautical miles and return. With wing-tip tanks [redacted] to ranges of 740 nautical miles. The aircraft is capable of speeds up to 465 knots.

In summary, by late October 42 of these unassembled bombers had been delivered to Cuba, by ship, and were sent to San Julian airfield in the west and Holguin in the east. San Julian received 33 disassembled aircraft, of which 13 were uncrated and seven completely assembled. None of the other nine aircraft delivered to Holguin were ever uncrated. 25X1D Of the 21 fuselage crates and one fuselage photographed at San Julian on [redacted], ten were those seen on the [redacted] and 25X1D the remainder it is believed were delivered in late September 25X1D on one or two ships, which were never photographed at sea. Seven more IL-28 crates were photographed on the [redacted] 25X1D before it arrived in Cuba on [redacted]. These too, were 25X1D taken to San Julian, bringing the total there to 29. Photographs of the [redacted] 25X1D [redacted] showed 13 IL-29 crates on deck. These photographs 25X1B [redacted] number of crates. The [redacted] arrived in Cuba about 20 or 21 October, but was not photographed again. It delivered nine fuselage crates to Banes, from where they were delivered to Holguin. The remaining four crates were delivered to Mariel, and taken to San Julian during the first week in November. 25X1D

Thus only three ships were photographed with IL-28 crates, 25X1B [redacted] 25X1D

Early indications of IL-28's in Cuba. Although the discovery of these crates on a ship headed for Cuba had been the stimulus for the reconnaissance missions of [redacted] once probable offensive missile sites were found priority was rightly given to them, and there was little reporting, 25X1D in summary material at least, on the IL-28's. On [redacted] 25X1C [redacted] arrivals of crates containing IL-28 bombers, but these were not confirmed. The estimate that the crates seen on the [redacted] probably contained IL-28's was reported to the intelligence community on 10 October. On 21 October it was reported that extensive construction had been noted at Holguin airfield, but it was not until surfacing of the Cuban offensive weapons picture that comments began to appear on IL-28's.

As early as August 1962 there had been a [redacted] 25X1C report that Soviet personnel had completely taken over the air base at San Julian. This report [redacted] 25X1B 25X1B [redacted] also included statements that Soviet military personnel had occupied all of the coastal positions in Pinar del Rio which had been manned previously by Cubans, and that Soviets and Czechs controlled the air base at San Antonio de los Banos. [redacted] 25X1B 25X1B [redacted] San Antonio de los Banos is one of the three fields associated with MIG-21 jet fighters, which to the present time are apparently operated by Soviets and Czechs.

25X1C

25X1C [redacted] reported in mid-October that although the San Julian base was defended by Cuban military personnel guarding the entrance to the base, Cubans were not permitted on the base, which was occupied only by Soviet Bloc personnel.

25X1D

Photographic confirmation. Previous coverage of San Julian airfield had revealed no evidence of aircraft activity, but when high-altitude photographs were made on [redacted] 21 shipping crates measuring 60 feet in length and conforming to the crate configuration [redacted] were observed near the center of the airfield and one exposed fuselage. The latter directly confirmed the earlier judgment of the contents of the crates. In addition to the large fuselage crates, component crates were also observed. 25X1D

During the next few weeks the Soviets assembled several of the IL-28 bombers at San Julian, and when low-altitude 25X1D reconnaissance began the details became known. Only partial coverage of the field was obtained on [redacted], but two IL-28's had been assembled, two were partially assembled, and there were 23 fuselage crates, bringing the total IL-28's in Cuba to at least 27. [redacted] a convoy of 35 trucks, 27 of which were towing twin-mount 30 mm anti-aircraft artillery, was observed on the main entrance road behind the operations area. It was reported on 29 October that one IL-28 was in the final stage of assembly, both engines having been 25X1D installed, and three more in various stages of assembly. A photograph of [redacted] showed two aircraft in an advanced stage of assembly, and other aircraft, aircraft components, and shipping crates (photo 27). On [redacted] two six-gun 25X1D AAA sites, at least one of which was occupied and manned, were discovered at the airfield, in addition to one concrete pillbox and at least eight small log and dirt bunkers 25X1D with firing slits. San Julian had earlier (at least up to [redacted] been used as a ground forces training area, with numerous weapons positions, trenches, etc.

25X1D

Status of IL-28s at time of missile removal. There was continuing assembly of IL-28's between late [redacted] 25X1D [redacted] and no evidence of intention to withdraw them from Cuba. Nine fuselage crates were identified [redacted] at 25X1D Holguin Airfield [redacted]. These were 25X1D 25X1D almost certainly the crates observed on the [redacted] before it docked at Banes near Holguin on 20 or 21 October. With the nine aircraft and twenty fuselage crates at San Julian airfield, and the four fuselage crates observed at a transshipment point near San Julian, the newly identified crates raised the total of IL-28's and IL-28 crates observed in Cuba to forty-two.

Work had begun earlier in the year on lengthening the runways at Holguin and building covered aircraft revetments there. This work was apparently completed in July, but the 25X1D airfield was used little if at all up to the [redacted] date. The sixteen covered revetments were similar to those used by MIG fighters at three other Cuban military airfields.

25X1D Photography of [redacted] showed a total of twenty-four 25X1D IL-28 crates at San Julian, four more than on [redacted] On both days, a total of nine IL-28's was observed, including 25X1D 25X1D five which appeared to be completely assembled. On [redacted] photography showed that the two partly assembled IL-28's at San Julian were not being worked on; and there was no

25X1D

25X1D change in the status of other IL-28's or crates at either San Julian or Holguin. Assembly of IL-28's had been resumed, according to [redacted] photography, and two more IL-28 25X1D fuselages had been removed from crates since [redacted] at San Julian. Of the seven completely assembled, at least one and probably two were airborne during [redacted] Four or five were in various stages of assembly on [redacted] 25X1D 25X1D compared with only two on [redacted]

25X1D [redacted] there was no change in the status of the 25X1D aircraft at San Julian, except for the addition of camouflage netting. On [redacted] thirteen uncrated aircraft had been 25X1D seen there, compared to twelve on the preceding day. Coverage of San Julian airfield on [redacted] revealed a total of thirteen aircraft uncrated, of which seven had been completely assembled and appeared flyable (four of these were trainers)

25X1B [redacted]

IV. OTHER SOVIET ARMS IN CUBA

A. Coastal Defense Cruise Missiles.

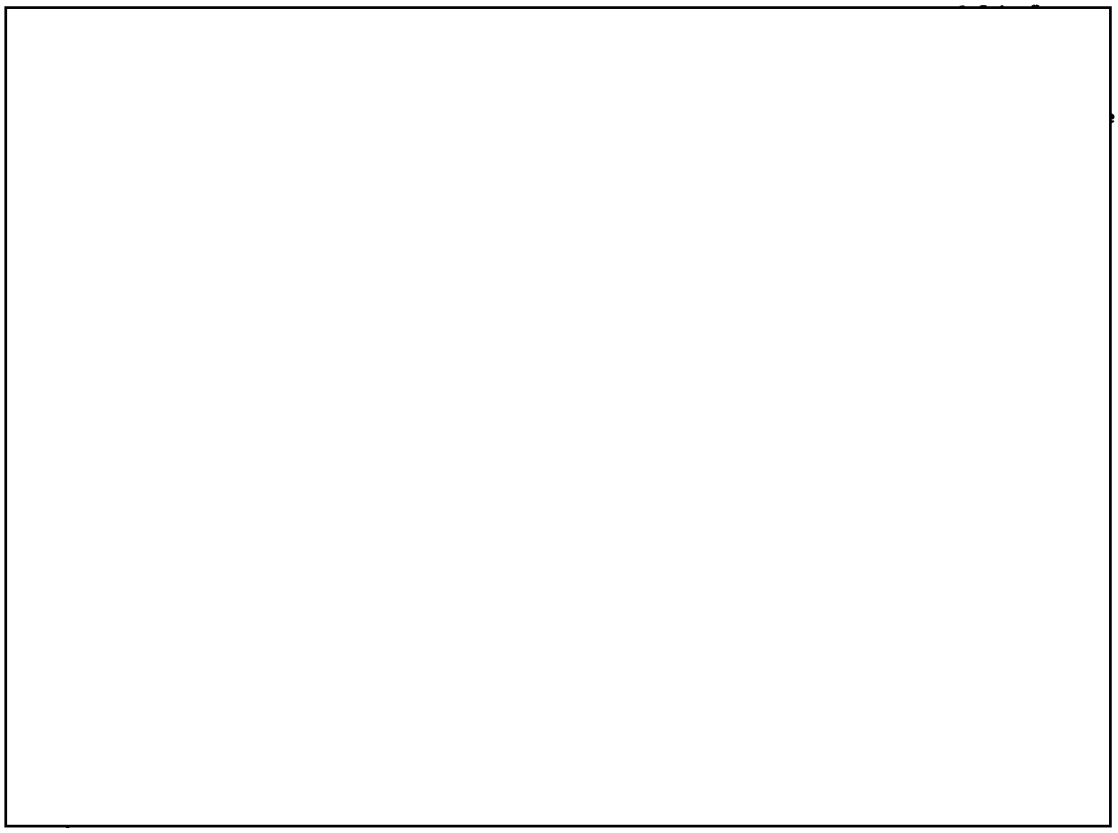
Key beach and harbor areas in Cuba are protected by Soviet coast defense cruise missiles. Three operational and two possible coastal defense cruise missile sites have been identified (photo 30). The Banes site covers a section of the northeastern coastal area; Santa Cruz del Norte and Campo Florido provide cover of beaches east of Havana; Guerra protects the approaches to Mariel; and Siguanea covers the approaches to the Isle of Pines. Campo Florido and Guerra, listed as possible launch sites, may function as cruise missile support and training centers.

The Soviet cruise missile (modified AS-1). The missile 25X1B system deployed at these five sites provides a defense against hostile shipping and amphibious landings. [redacted]

[redacted]

25X1B

25X1B



Soviet cruise missile sites in Cuba. The first identification of cruise missile deployment in Cuba was made from high altitude photography obtained over the Banes area in eastern Cuba on [redacted] Preliminary analysis was completed on [redacted] and the site was reported as a probable coastal defense cruise missile site. On [redacted] a detailed analysis was completed and the facility was confirmed. The site had two revetted 35' rail launchers, each connected to a Soviet WHIFF tracking radar. Other equipment included missile trailers, generators, electronic vans, and general purpose vehicles, as well as tents for personnel.

25X1D 25X1D 25X1D

The Banes and Santa Cruz del Norte sites were considered operational at least as early as 18 October. [redacted] low-level photography of the Banes site showed extensive camouflage

25X1D

of significant elements of the installation. The site appeared fully operational.

Photography of the Banes area on [redacted] revealed that a road connects the coastal defense cruise missile installation there with an alternate launch site some 1.1 n.m. to the north-northeast. The alternate launch site, first observed in photography of [redacted] contains two launch revetments and nine other rectangular revetments of varying sizes. They were still unoccupied as of 9 January and no tents or service facilities were located near the alternate site. No change was observed in the original site.

25X1D

25X1D

The Siguanea cruise missile site, deployed on the southwestern coast of the Isle of Pines, has [redacted] launchers emplaced behind earthen revetments. One of the

25X1B [redacted]

Some interesting shifting of equipment took place in connection with the Campo Florido site. Cruise missile equipment was noted there at a fairly early stage in the identification of cruise missile sites, but photography of [redacted] disclosed the presence of a new cruise missile site 3 1/2 miles southwest of La Sierra, which is located about 15 miles southeast of Cienfuegos in Las Villas Province. The site appeared operational and included two canvas-covered transporters aft of the two launchers. Control positions to the rear of the two launchers were connected by cable to the launcher and to unidentified radar in the immediate area. A three-gun, small-caliber AAA position was observed in the immediate area. Equipment observed in the area included two vehicle revetments (one containing a van), three trucks, five arched-roof crates, five tents, and one truck-mounted antenna. As of [redacted] however, it was discovered that the equipment at the La Sierra site had apparently been moved to Campo Florido, located about ten nautical miles east of Havana. It is possible that some of the equipment earlier seen at Campo Florido was dispatched to and subsequently returned from La Sierra. Photographic reconnaissance of [redacted] revealed that the La Sierra site had been abandoned. No missiles or missile-associated equipment remained, and the only remnant of the site was the earthen revetment, which was empty.

25X1D

25X1D

25X1D

25X1B 25X1D

Two uncovered and fully assembled cruise missiles were noted on [redacted] at the Campo Florido installation. [redacted] site is located several miles from a coast in a valley, and 25X1D the configuration of the site does not suggest a missile-launching function.

An area near Mayari Arriba in an inland, moutainous area of Oriente Province some 40 miles from Guantanamo Naval Base may also be connected with cruise missiles. Missile-related equipment which could at first not be identified was determined after [redacted] photography to be similar to equipment at the Banes cruise missile site. On 24 November, an intercepted Cuban ground forces VHF voice communication referred to the presence of a Cuban battalion guarding a Soviet camp at Micara, which is in the immediate area of Mayari Arriba and may be the installation described here. Because it was not on the coast, however, the site was thought to be a supply and storage point rather than an additional cruise missile site. Reports reaching the US Naval Base at Guantanamo Bay have also referred to the storage of military equipment, including missiles of an unidentified type, in this area. 25X1D

25X1D Further analysis of photography of the area as of [redacted] indicated that eight vehicles [redacted] 25X1B
25X1B [redacted] The installation did not appear to have any launchers, fuel trucks, or electronic 25X1D equipment. Forty-eight large crates, [redacted] in size, identical tp crates seem at Cuban coastal defense cruise missile sites, were noted at Mayari Arriba, and were believed to contain cruise missiles. Their presence as well as the 25X1D general appearance of the installation suggest that it may have been planned as a cruise missile support or storage facility. There was little change in the appearance of the installation from [redacted] possibly indicating that work had been halted.

25X1D Aerial photography of [redacted] showed twelve cruise-missile transporters near the Guerra site several miles west of Mariel. This was the first cruise-missile equipment positively identified at this site. In addition, the photography revealed 43-45 crates resembling cruise-missile crates, and nine prime movers, ten cranes, and at least 150 other vehicles. Previous photography reveals that such crates were present in the area earlier than [redacted] 25X1D

31 January 1963 cruise missile summary. The coastal defense cruise missile situation in Cuba was summarized as follows on 31 January:

Three operational Soviet cruise missile units have been confirmed in Cuba. They are located in prepared sites at Santa Cruz del Norte, Banes, and Siguanea on the Isle of Pines. It is believed that there is a fourth operational unit which was briefly deployed to the south coast (La Sierra) in November 1962 and then returned to Campo Florido where it occupies what may be a stand-by and training site. In addition to these four units, there are two others, at Mayari Arriba and Guerra.

25X1D The four known operational units are each equipped with at least eight cruise missiles and possibly ten, making for a total of 32-40 operational cruise missiles. In addition, a total of 94 crates which probably contain cruise missiles
25X1D have been counted in photography of Mayari Arriba (48) and Guerra (46). The crates at Guerra probably arrived at that spot between [redacted] It is not known if they arrived
25X1D by sea during the period immediately prior to [redacted] or if they had already been in storage in Cuba for sometime. Two
25X1D Soviet ships called at Mariel, nearby, between [redacted] but they were believed to be carrying commercial cargoes. The tractor trailers which are present in the same location as the crates, however, are now known to have been there since [redacted]

25X1D It is believed that each cruise missile unit (probably a battalion) normally has eight missiles -- four for each of its two launchers. The 94 probable cruise missile crates stored at Mayari Arriba in the east and Guerra in the west suggest that the original program called for the deployment of twelve more cruise missile units on the coasts of Cuba. The coasts east and west of Havana, east of Banes, east and west of Santiago de Cuba, and the central southern coasts are likely areas for such deployments.

It seems likely that the USSR intended to deploy more than the four operational cruise missile units which have been identified in Cuba. The three operational sites now occupied by units give only scant defense to key areas and possible invasion points. The long stretch of coast to the east and west of Santiago de Cuba, and the coast in the south-central area from the Bay of Pigs east, are both uncovered, although one unit was deployed temporarily to the latter in early November. 25X1B

25X1B [redacted]

25X1B

[redacted]

New units may in time be manned by Cuban personnel.

25X1C [redacted]

B. Komar Guided Missile Patrol Boats.

Supplementing the land-based coastal defense missiles against invasion and shipping are twelve Komar-class guided missile patrol boats. For some time, eight boats operated from the port of Mariel in the west, while the remaining four operated from Banes (photos 32, 33, 34). Between 5 and 7 January 1963 the four stationed at Banes returned to Mariel, according to intercepted naval messages and visual sightings by U.S. Navy elements. The reason for and significance of the redeployment are not clear. It may be that all twelve boats are to operate out of Mariel in order to train Cuban crews to man them (the crews have been mixed Soviet and Cuban). It is also possible that the vessels have been transferred to Mariel for eventual reshipment to the USSR. The reason for the move was thought to be an important one, since it left the Banes area -- the scene of considerable recent construction of naval port facilities -- and the northeastern sea approaches to Cuba protected by only one Kronstadt-class subchaser and one patrol boat.

25X1B

The Komar boats [redacted]

25X1B [redacted]

Each boat features two 20-foot long launcher cannisters positioned aft. The boats must return to base or to a tender for reloading. Tenders for these craft were not as of [redacted] identified in Cuba. The Komars have all been transported to Cuba as deck cargo on Soviet ships, two and four per shipload. The first shipment arrived in Havana on [redacted]

25X

Intercepted communications during a 30 and 31 January naval exercise involving a Cuban "frigate" (patrol escort) and an undisclosed number of Komar-class missile patrol boats tends to substantiate the view that the Komar boats are tactically controlled by Soviet personnel during practice activity. The intercepts reveal that Soviet personnel boarded the Cuban "frigate" in the company of a Cuban interpreter.

Submarines. [redacted] 25X1B

25X1B [redacted] maintenance, there were no indications that any were being modified to serve as a full-scale submarine base. Also, no Soviet submarine had been detected operating in the Western Atlantic since early November.

C. MIG-21 Jet Fighter.

25X1D

First sighting of MIG-21 in Cuba. Although high altitude reconnaissance coverage of Cuban airfields had been provided during the summer of [redacted] the first confirmation of the presence in Cuba of the MIG-21 came on [redacted] when one was observed at the airfield near Santa Clara, parked in front of four aircraft shipping crates (photo 2). There were indications that there might be at least thirteen more MIG-21's at the airfield, still unassembled. Construction of covered aircraft revetments had been reported at Holguin Airfield early in [redacted], but no aircraft were observed, and it was thought that there was no increase in the estimate of some 45-48 jet aircraft of earlier models supplied so far by the Soviet Bloc.

25X1D

Location in Cuba. The high-performance MIG-21 interceptor aircraft, nicknamed FISHBED, has a delta wing configuration and is capable of speeds up to about 1000 knots at 40,000 feet, and of ranges up to 290 nautical miles without auxiliary fuel tanks (photo 35). They are usually armed with two air-to-air missiles each and have a combat ceiling of 51,000 feet. Three airfields in Cuba have been associated with deployment of the MIG-21. Initially, the aircraft were delivered to Santa Clara airfield in central Cuba where they were than assembled. (Santa Clara was reportedly taken over by the Soviets during the first week of September.) Subsequently, some were deployed to San Antonio de los Banos in the west, and Camaguey in the East (photo 36). To date, a maximum of 42 MIG-21's have been identified at these three airfields.

25X1B

Delivery of MIG-21's to Cuba. The Soviet [redacted]

25X1B [redacted] which arrived in Cuba early in September,

25X1B

delivered at least twenty-two MIG-21's [redacted]
25X1B and other information strongly suggests [redacted] The number of MIG-21's in Cuba as of 26 September was estimated to be between 25 and 30; these were in addition to about 60 MIG fighters and trainers of earlier models delivered during 1961.

Readiness of MIG-21's at Cuban airfields. In the six-week period between 5 September and 17 October the Soviets assembled 38 additional MIG-21 aircraft (above the single one first seen) at Santa Clara airfield. In one photograph they are
25X1D shown parked along a taxiway in groupings of 11, 12 and 16 [redacted]. Other aircraft noted at the field include 20 MIG-15 Fagot fighters and three liaison types.

The fact that some of the MIG-21's were flyable was confirmed by high altitude photography acquired a day later than 25X1D
the previous photograph; a MIG-21 in flight was observed just leaving the runway [redacted] 35 MIG-21's and four more probables were located at Santa Clara, raising the total of MIG's of all types to nearly 100. By 21 October the four probables had been confirmed. Communications intercepts indicated that the pilots and controllers spoke Spanish with a Slavic accent. The first Comint indication of MIG-21 operation was on 18 October; the pilot was Soviet, and there were indications in his conversation that the aircraft had a retractable nose cone, and thus was of the newest generation of fighters.

Air-to-air missiles on MIG-21s. The first evidence of air-to-air missiles in Cuba was provided by [redacted] 25X1D
photography at Santa Clara airfield, although it had earlier been assumed that Cuba's recently acquired MIG-21's would be equipped with these weapons (photo 39). This missile, designated as the AA-2 and nicknamed ATOLL, was observed lying in front of one of the aircraft in preparation for loading. Other MIG-21 aircraft observed in the area already had air-to-air missiles loaded beneath their wings. The ATOLL missile

25X1B [redacted]

25X1D [redacted] it had been determined that eleven of the MIG-21C jet fighters at Santa Clara were armed with the air to-air missiles. A total of 29 of these fighters could be seen. Low-level photography of San Antonio de los Banos airfield on the same date showed 8 MIG-21C's, also equipped with missile launchers, and provided the first information on

25X1B

[redacted]

25X1D Number of MIG-21s found in Cuba. High-level photography of [redacted] over the military airfields near San Antonio de los Banos and Santa Clara revealed a total of forty-two MIG-21 jet fighters at the two airfields. The highest number of MIG-21's previously accounted for was thirty-nine, which 25X1D were first seen at Santa Clara airfield on [redacted] It is considered almost certain that all the MIG-21 aircraft in 25X1D Cuba arrived there before [redacted] photography also revealed continued construction of aircraft revetments at the San Antonio de los Banos airfield. In this case, as with the MRBM's, it is interesting to speculate where the additional ones, beyond those observed by aerial photography, were.

D. Soviet Armored Forces and Ground Equipment.

Locations. Soviet ground forces are deployed in Cuba at four major installations (photo 40). Each installation includes a regimental size armored task force with modern Soviet ground force fighting equipment, including tactical rocket launchers. Artemisa and Santiago de las Vegas are located in western Cuba near Havana. Remedios is situated in central Cuba, and Holguin, the location also of an important military airfield, is in the east.

25X1D "Standard" ground armaments had been furnished to the Cuban forces since the beginning of Soviet military assistance to Cuba, but after discovery as early as [redacted] of the large encampment and vehicle storage area near Remedios (photo 41), there evidence began to accumulate that Soviet ground forces were present in Cuba in greater strength than was previously apparent. The Remedios encampment contained what was thought to be a FROG (Free Rocket Over Ground) launcher on an amphibious tank chassis and thirty-one probably T-54 tanks. A tank park containing thirty-four probable T-54 tanks was also found near Havana on the same date.

Equipment, description, and organization. Analysis of photographic coverage available up to [redacted] suggested

25X1B

that the four major military camps in Cuba contained highly mobile composite Soviet Army ground combat forces of regimental size [redacted]. These units had earlier been equated to four reinforced medium tank battalions, a FROG artillery rocket battalion, and a SNAPPER antitank missile unit, with a total strength of about 1,200 men. It now seems that these composite groupings contain a total of well over 4,000 troops. The presence of Soviet Army units in such strength reflects [redacted] to create and maintain a strategic missile base in Cuba. With the removal of the missile bases, it was thought that the ground combat units might also be withdrawn, although no preparations for their departure have been noted. 25X1B

All four of these camps evidently had been established since the beginning of the Soviet build-up in July, and they have certain similarities. While most of their facilities were of a temporary character, construction of permanent buildings similar to those at the missile sites has been started. 25X1B

25X1B Modern sophisticated equipment, [redacted] was identified at each of these camps. At one--Santiago de las Vegas--Soviet Army emblems, including the elite "Guards" unit badge, the armored insignia, and the Red Army Star, were prominently displayed on the ground at two separate areas.

The disposition of these units also reflect their Soviet identity; all are in areas containing sensitive military installations of prime interest to the Soviets. Three are near the former offensive missile bases, and the fourth is adjacent to the strategically significant airfield at Holguin in eastern Cuba. Runways over 10,000 feet long and [redacted] hangars ans storage facilities are being built at this field, 25X1B

25X1B [redacted]

Since there were some differences in the types and quantities of equipment identified at these camps--because of camouflage, dispersal and incomplete coverage--the exact composition and strength of the units had not been established as of the November date. The pattern, however, appeared to be that of a composite, heavily armed grouping consisting of a medium tank battalion, an armored reconnaissance company, an armored infantry unit of company or possibly battalion strength, a multiple rocket launcher battery, [redacted] FROG artillery rocket battlaion with two launchers, and a SNAPPER antitank missile company with about nine triple launchers. At least one of the groupments (Holguin) also 25X1B

included a 120-mm. mortar company with 10 pieces (photo 42), a 57-mm. antitank battery, an antiaircraft unit with self-propelled guns, which may be new-model. 85-mm. (SU-85) guns with auxiliary fuel tanks, and an engineer unit with self-propelled hydraulic bridging equipment. Each of the camps also has one or two emplaced antiaircraft batteries, but these may not be organic to the mobile groupment. A formation of this composition would comprise at least 1,000 to 1,500 men, and possibly as many as 2,500. There were enough tents in the cantonments at Holguin to house more than twice that number of troops under normal field billeting conditions.

25X1B [redacted]

The introduction into Cuba of Soviet ground combat forces is consistent with a capability not only to defend their sensitive installations against invasion, but also to secure them against "counterrevolutionary" activity. Their presence also provides also provides the Soviets a potent source of influence on the internal Cuban scene. Retention of these units in Cuba after the withdrawal of the MRBM's would seem to indicate that Moscow has not abandoned the concept of developing Cuba as a strategic Soviet military base.

25X1D

SUMMARY OF EQUIPMENT AT MILITARY CAMPS IN CUBA
AS OF [ ]

TYPE	HOLGUIN	REMEDIOS	SANTIAGO DE LAS VEGAS	ARTEMISA
T-54 tank	30 prob	33	39	30
SU-100 Assault Gun	9	9	2 plus	9
SNAPPER AT Missile	10 Poss	9-10 Poss	6 Poss	2 Poss
FROG Launcher	-	1	-	2
FROG Transporter	-	7	8 Poss	5
Armored Personnel Carrier (BTR-50)	7	14	-	2
8-Wheel Personnel Carrier	11 Poss	8 Poss	-	28
Multiple Rocket Launcher	-	5-6	-	5
57-mm. AT Gun	2	-	-	5
120-mm. Mortar	10	-	-	-
AAA Battery	2	2	1	1

25X1B

[ ]

The camps were discovered to be similar in configuration and to include numerous platoon and squad tents in unit groupings and a large motor pool area. Ground forces equipment was parked in the open. The early high-altitude photography was helpful in locating garrison areas, but had to be supplemented by low altitude photography in order to determine the types of equipment deployed at the four locations. 25X1B [redacted]

25X1B [redacted]

(photo 43). It was possible to count and identify numerous other kinds of vehicles and equipment (e.g., photos 41, 42, 43, 44).

25X1D

The FROG system. The FROG free flight tactical rocket system included in the Soviet arms delivered to Cuba provides a long-range artillery support capability. The weapons [redacted]

25X1D [redacted] are mounted on a standard amphibious PT-76 tracked tank chassis and are capable of ranges between eleven and twenty-six nautical miles. They are highly mobile and may be employed in either offensive or defensive roles to supplement the firepower of tube-type artillery. 25X1B [redacted]

25X1B [redacted]

FROGs were probably intended for forces defending the MRBM and IRBM sites. Their mobility makes them suitable for use, in conjunction with other armored equipment, as part of a mobile defense force against amphibious invasion.

25X1B [redacted] 25X1B

[redacted] The number, organization and type of FROG units in Cuba are not known with certainty. A low level

25X1D photograph of the Remedios camp taken on [redacted] shows a group of six FROG transporters clustered beneath the natural camouflage of tree foliage and secured by a double wire fence. These transporters are used only to transport the FROG whereas 25X1B the erector-launcher [redacted] is used to erect, aim and launch the FROG. This equipment has been observed in heavily secured and camouflaged areas at three of the Soviet military camps in Cuba. None has been observed at Holguin.

The SNAPPER antitank missile system. In addition to the FROG missile, the Soviets also brought into Cuba their most modern antitank missile system. This new system, nicknamed 25X1B the SNAPPER [redacted]

25X1B 25X1B

[redacted] This system consists of three missiles mounted on retractable short-rail launchers installed on a modified amphibious armored personnel carrier (BRDM). The missile 25X1D measures [redacted] in length and has a maximum range of 2500 meters, minimum range 600 meters; body diameter is [redacted] 25X1D It is estimated to be capable at 0 degrees of penetrating 11-19 inches of armor (sufficient for any known tank), and to have a single shot hit probability of 70-80%. The missile is believed to be command-guided, utilizing a wire link between the missile and the launching vehicle. Target missile tracking is estimated to be optical from either the vehicle or a remote station connected with the vehicle by cable. System effectiveness would be reduced by either battlefield conditions or night; in the latter case flares or IR devices could improve performance.

25X1D On [redacted], a low level photograph of a vehicle 25X1D parking area at the Artemisa Military Camp showed Soviet SNAPPERS in line near a heavily wooded sector (photo 44). The triple rail launchers were exposed on two vehicles, while others appeared to have the launch section covered. A total of eight SNAPPERS was observed at this location on [redacted] the SNAPPER was also observed at Remedios, Santiago de las Vegas, and Holguin.

Continuing construction at Soviet military camps. As air 25X1D photographic coverage of the four Soviet encampments continued, it was found that not only was there no indication of removal of these forces, but the equipment continued to increase, and construction of permanent facilities was continued and com- 25X1D pleted. As of [redacted] activity was continuing at two of the four identified Soviet military encampments covered in high-altitude photography of [redacted] At the encampment near Artemisa, construction on ten buildings was completed 25X1D and another nineteen were being built. This represents an in- 25X1D crease of nine over these noted in photography of [redacted] and six more than were observed on [redacted] The presence at this camp of 180 vehicles and pieces of equipment, including five probable FROG rocket transporters and an unidentified number of tanks and trucks, was also noted on [redacted]

25X1B [redacted] 25X1D

25X1D the encampment near Remedios in northern Las Villas Province on [redacted] revealed that at least 155 vehicles, including 39 tanks, were present there. Aerial photography of an area near the City of Matanzas on [redacted] showed four vehicles

25X1D

tentatively identified as Soviet FROG rocket transporters. The vehicles were located on a short winding road leading to a dead end at a possible mine or quarry.

25X1D [redacted] photography showed no signs at the encampments of preparations to dismantle or withdraw additional forces from Cuba. About 200-250 vehicles, including roughly 35 tanks, were observed at each of the four encampments. At Artemisa, construction of barracks-like buildings was continuing.

25X1D In photographic coverage of [redacted] construction of barracks-like buildings was continuing at Artemisa and Remedios. Each of the four encampments included one medium tank battalion, and at least three of them were equipped with FROG artillery rockets, SNAPPER antitank missiles, and other mobile weapons, with no change in numbers.

25X1B [redacted] some of the equipment from the Soviet armored group encampments might shortly be shipped back to the USSR was obtained in photography of [redacted]
25X1D [redacted] when ten FROG missile transporters were observed on
25X1D a pier at the port of Mariel both before and after a freighter entered the bay and tied up at the same pier. No FROG missiles or launchers were seen, however, on either day. The only other time FROG transporters have been even tentatively identified outside the four Soviet encampments was the sighting mentioned above of four transporters on a road near Matanzas. The Soviet ship [redacted] is believed to have picked up the ten FROG transporters from Mariel, when it left Mariel on 1 January. It proceeded to Bahia Honda where it appears to have loaded additional material.

25X1D Photography of [redacted] showed that construction of barracks and other permanent buildings appeared to be nearing completion at Artemisa. Only seventeen tents remained of the approximately 120 observed at the encampment two weeks earlier,
25X1D suggesting that the barracks had been occupied. Again, there
25X1D were no signs here or at the three other camps of any preparations for withdrawal (cf. [redacted]

Other Soviet military equipment in Cuba. A number of reports and observations concerned other kinds of Soviet military equipment in Cuba. 25X1C

25X1C [redacted]

25X1C

[ ]

An intercepted message of 20 November from the Soviet organization in Moscow dealing with the export of aircraft informed the Soviet trade representation in Havana that six MI-4 (Hound) helicopters were shipped to Cuba aboard the Soviet vessel Kimovsk on 12 November. As of the month of November 1962, Cuba was estimated to have a total of over 100 Soviet MI-4 and MI-1 (Hare) helicopters.

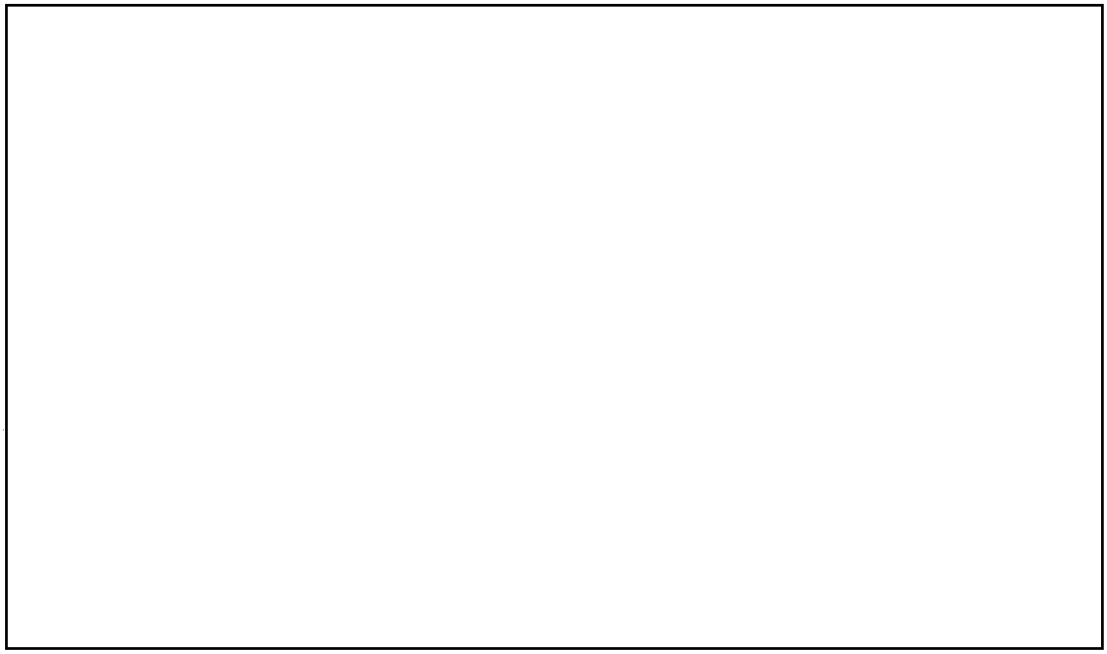
In the 2 January 1963 military parade in Havana there were 102 T-34 medium tanks, 68 SU-100 assult guns, 31 JS2 heavy tanks, ordinary artillery including 150 heavy field pieces and mortars, and 150 antiaircraft and antitank weapons. In addition to Czech Beehive RM130 rocket launchers, shown the previous year, there were thirty 132mm launchers M-13 with their tilts and all the ramps for sixteen small-size rockets. Twenty army jets flew overhead, including three MIG-21's, and a formation of 24 helicopters passed along the parade route. No Soviet personnel were observed in the ground elements in the parade.

Soviet military support facilities in Cuba. By late October 1962, the Soviet Union had completed construction of the logistical support facilities that were designed to sustain for long periods of time the military force deployed in Cuba. These facilities were located throughout the island and were so constructed or situated as to support a particular segment of the Soviet military force. Re-supply and servicing centers for surface-to-air missiles, as well as a uniquely configured, isolated and heavily secured port area to receive propellants for offensive missile systems, were uncovered by high altitude surveillance. In addition newly constructed heavily secured strategic storage points for high explosives and POL were also found.

In support of their twenty-four deployed surface-to-air missile sites, the Soviets constructed six SAM support and assembly areas: at Santiago de las Vegas, Santiago de Cuba, Ciefuentes, Ciego de Avila, Pinar del Rio, Victoria de las Tunas, and Manzanillo. A typical SAM assembly area, as shown by aerial photography, includes assembly and checkout

buildings, numerous Guideline missile transporters, missiles, propellant storage, and other related equipment.

25X1B



25X1D The exact date that activity was initiated at Punta Gerardo could not be determined, but it is clear that propellant supply point was in operation by [ ]. It is likely that the operation was initiated during the month of 25X1D September. It appeared by [ ] coverage that additional support facilities were planned. Also, a light tank was seen patrolling between the double fencing.

In order to provide special construction support and to assist in negotiating difficult terrain, a special Soviet 25X1D engineer camp was established at San Jose de las Lajas. This camp, as shown in photography of [ ], included modern Soviet heavy floating bridge ponton sections, cranes, tractors, graders, amphibians and other supporting engineering equipment.

Strategic reserves of POL were stored on the island in order to accommodate the large amounts of military equipment 25X1D moved into Cuba. One of the storage areas for POL is at San Ricardo. As photographed on [ ], it contained 130 liquid storage tanks in seven separate excavations.

25X1B

V. SOVIET COMMAND/CONTROL AND COMMUNICATIONS SYSTEM IN CUBA

A. Command/Control and Communications

Soviet command. NSA reported in an analysis of 5 December 1962 that Soviet communications in Cuba appear to reflect a senior Soviet military authority in the Havana area who controls Soviet ground, naval, air and air defense elements in Cuba, with direct communications facilities between this authority and the Ministry of Defense in Moscow.

Evidence suggests that the Soviet military forces remaining in Cuba may represent a formation with the command structure of an organization directly subordinate to the Ministry of Defense and comparable in command composition (although not in strength) to other Soviet armed forces elements outside the USSR proper. These Soviet communications and Soviet organizational doctrine indicate that the command structure within Cuba is comparable to that of a Soviet Group of Forces. This hypothesis is based on the totality of [redacted] evidence available to the December date, and the comparison of communications activity, communications equipment usage and typical Soviet doctrine for the employment of operational-tactical forces. 25X1

[redacted] reports indicate the widespread use of Soviet communications procedures and callsigns, Soviet scrambler communications within Cuba and between Cuba and the USSR, the appearance of an address representing the Ministry of Defense in communications between Cuba and the USSR, the use of Soviet high-grade literal and digital cryptographic systems, the use of Soviet multi-channel VHF and UHF systems, and the continued appearance in communications of references to high-level Soviet military personalities in Cuba.

Senior Soviet officer in Cuba. 25X1B [redacted] 25X1B

25X1C [redacted] Soviet General Stazenko identified himself as the commander of all Soviet military personnel in Cuba.

With respect to communications, Deputy Minister of Communications Kavtaradze from the Georgian SSR of the Soviet Union was in Cuba at least since June 1962. In the middle of

February 1963 he was being transferred back to Moscow for a new assignment. He was reported to have said that it would take at least a month to complete what he was doing in Havana.

Torrens-possible Soviet command/control center. As early as August 1962 it was suspected that the former Boys' Reformatory at Torrens, southwest of the city of Havana, had been selected as the central control point for Soviet activities under way elsewhere on the island. Residents of several farms in the vicinity were ordered to leave, and these orders were apparently delivered by Minister of the Armed Forces Raul Castro personally. Evacuees were told that the area was needed for Soviet personnel. 25X1C

25X1C [redacted] 25X1C [redacted] The Soviets were reported to have installed personally a subterranean multi-pair communications cable to the town of El Chico and to be using some adjacent farms.

25X1C [redacted]

25X1C [redacted] Soviet activity in the Torrens area was continuing at the end of November, although it was less than in October. [redacted] that the reformatory appeared to be being transformed into a major Russian encampment and that considerable construction had been carried out between the aerial arrays and the main buildings. Eight large sheds about 130 feet long were being built, 154 hardstands for vehicle parking, and 215 sheds. On these hardstands and in the trees behind were at least forty vehicles. In the trees behind the aerial array at least thirty electronic vehicles and large gasoline-pump trucks were seen. Over 100 Russians were seen, but accommodation existed for over 1,000.

Microwave Communications. Microwave communication facilities identified on 26 October in the Guanajay IRBM area were oriented toward a large high-frequency radio installation near Bauta. This suggested the possibility

that the command control of Soviet Forces in Cuba may be exercised through a high-frequency radio link to the Bauta installation and relayed to individual sites or regimental headquarters through a microwave system. The microwave system could also provide a capability to communicate between sites.

A Cuban military microwave radio relay network was installed by RCA during the Batista regime. There was a correlation between the locations of identified missile sites and the terminal, relay and feeder facilities of the Military Network, which forms a main communications artery running from Santiago de Cuba through Havana to Pinar del Rio and is the principal telecommunications facility in Cuba for military traffic. The RCA equipment provides twenty-four telephone channels in the 1700 to 1985 megacycle frequency range, and with modification has a capacity potential of 120 telephone channels. There is also a sizable number of spur lines and base stations. The Guanajay and Sagua la Grande microwave antennas could be part of, or tied in with, this original system, but construction activity at the Guanajay terminal at the end of October showed that the system was at least being modified or extended.

Soviet communications channels. Intercepts continued to indicate the presence in Cuba of communications facilities for handling high volume, extremely secure communications. Analysis covering the period 28 October through 7 November revealed the existence of at least two identifiable Soviet communications groups in Cuba passing messages in what appeared to be high-level Soviet cipher systems and utilizing operational procedure unique to Soviet communications. The first use of HF radioprinter "Scrambler" was noted in Cuban communications on 8 November. A reference to "switch to Scrambler" had been noted in chatter on 30 October. This particular link is believed to be reserved for Soviet use.

On 10 November it was said that at least two and possibly three additional Soviet communications groups had become active in Cuba since the end of October, using procedures unique to Soviet communications and transmitting messages with the characteristics of high-level Soviet cipher systems. The identities and locations of the users were not known; it could mean the establishment of additional unidentified Soviet military facilities in Cuba.

Soviet communications activity continued to reflect planning for establishment of permanent Soviet bases associated

25X1

with all branches of the armed forces. There also appeared to be exclusive Soviet manning of all surface-to-air and coastal defense cruise missile sites.

Analysis on 2 November 1962 of potential command links between Moscow and the missile forces deployed in Cuba indicated that of nine possible links, five were not considered suitable for command purposes because of relatively slow transmission speed and low data handling capacity; and two broadcast links, one VLF and one HF, are one way only and would require another link to pass traffic back to Moscow. The two remaining links, considered the most likely ones for command communications, first appeared on 23 October passing Morse traffic, and began Scrambler operations on 28 October, by which date all MRBM sites were believed to have become operational. Scrambler provides the volume, speed and security believed necessary for missile command and control.

Within Cuba, the orientation of microwave towers located at MRBM and IRBM sites suggested that they linked the launch sites with a location in the Havana area. None of these antennas was a part of the Cuban National VHF/UHF network. The existence of an alternate means of communications between the Havana area and these sites was suggested by the large number of MF/HF communications vans observed at the sites.

It appears that direct radio links from Moscow to Havana provided communications between Headquarters Strategic Rocket Forces in Moscow and the Division Headquarters in Havana. The microwave circuits between Havana and the sites probably linked Division Headquarters with each of the Regimental Headquarters.

Soviet Communications traffic patterns. An unusually high volume of Soviet diplomatic traffic was passed between Moscow and Havana on 18 December; there was no collateral information indicating what the cause may have been. On that day Moscow sent 50 encrypted messages, 21 of them priority, to Havana on the KGB-controlled circuit. On the same date, 27 messages, 17 of them priority, were sent from Havana to Moscow. The average had been about 15 to 16 messages each way. The record daily high for Moscow to Havana was on 1 November when 77 messages, 48 of them priority, were sent. The record high for Havana to Moscow was on 31 August when 50 messages were sent, four of them priority. Outgoing messages from the Soviet communications center--both to the command communications group inside Cuba and to a lesser degree to Moscow--more than doubled in December over November. Most of the increase (in message numbers used) occurred after 19 December. The significance is not understood, but the

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increased messages may relate to possible Soviet troop rotations or other movements.

During January 1963, three communications stations serving the command group of the Soviet forces in Cuba ceased activity. On 10 February two of these three were again noted active. One of the two, the station which is believed to link the commander of Soviet forces in Cuba with the main Soviet communications and relay center at Torrens, was not active between 25 January and 10 February, when it was heard again. The other facility to resume operations was the unidentified Soviet station at Santa Cruz del Norte. Still not active as of 10 February was the station which is believed to link the commander of Soviet Naval forces in Cuba with the center at Torrens. This station had not been heard since 19 January. In addition to the return on 10 February of the two cited stations, a new station became active on that day. Preliminary analysis by NSA suggested that this unlocated station may be subordinate to the station at Santa Cruz del Norte. The long absence of the two command-group communications stations suggests that alternative communications facilities under Soviet control were in use during this period.

Soviet naval communications. With respect to the naval station mentioned above, SIGNIT analysis of the communications features of the Havana terminal of the Soviet naval link indicated that it had developed into an almost complete submarine communications service facility. The terminal has basically the same communications capabilities as the submarine base stations located in the Soviet Union but as of the end of December 1962, when the analysis was made, was operating on a much more limited scale. The facility in Cuba is comparable to those at a Soviet fleet headquarters, with the important exception of a demonstrated broadcast capability. The sophisticated facilities available to the Soviet naval communications station in the Havana area provide secure and rapid communications of a type usually reserved for major Soviet naval commands.

B. The Development of the Soviet Air Defense System in Cuba.

Early information and organization. Beginning as early as May 1962 the Cuban Revolutionary Air Force (CRAF) was expanded and, with the introduction of MIG-15, MIG-17, MIG-19 and later MIG-21 aircraft, had a greatly increased capability. Fighters were noted in various training exercises including GCI practice, night flying, drag chute landing, aerial gunnery exercises, etc. Soviet influence was apparent through the use of Russian voice on observed communications. The Soviets at this time were apparently acting as instructors. These aircraft were deployed at the CRAF headquarters at San Antonio de los Banos, Santa Clara, and Camaguey.

In mid-September the first [redacted] intercepts of SPOONREST radar were noted, compatible with the Mariel and Bahia Honda SAM sites, although no communications were isolated which could be equated to these SAM sites. The Cuban Air Surveillance network was initially isolated in [redacted] on 9 October; the reporting code and message format showed Soviet influence. The system used for reporting of targets was markedly similar to the Soviet and European satellite bloc air defense organizations prior to 25 March 1962. 25X1 25X1

The Air Defense network consists of five stations reporting target reflecticns, which include both Cuban and U.S. flight activity. These five stations are located at (1) San Antonio de los Banos area, (2) Niagara area, (3) Santa Clara area, (4) Camaguey area, and (5) Alquizar. These stations provide overlapping coverage of Cuba except for the area east of 76-45W, and dense overwater coverage out 60 to 80 nm and in the Havana area out to 120 nm.

The CRAF had by 26 October 1962 increased its air defense activity, concurrent with the increase of U.S. reconnaissance flight activity. An all time high was noted on 18 October with 63 MIG pilots noted in exercises. Thirty-two of these were believed to have been Russian (a new high) and one was believed to be a Czech.

Change in system 27 October 1962. The air surveillance organization of the Cuban Air Defense System underwent a major structural change in the early morning hours of 27 October 1962. The change resulted in a close-knit communications grouping with apparent headquarters at or near Havana (the CRAF headquarters is at San Antonio de los Banos). The complete Russian dominance was apparent through the introduction of Russian callsigns, codes, procedures, and language. It appeared that the air defense system was heavily manned by Soviet personnel. The surveillance area was also expanded to encompass all of Cuba and overwater coverage to a distance in excess of 100 nm. Communications were also improved, as reflected by multichannel VHF communications, operated exclusively by Soviet operators engaged in air surveillance reporting. ELINT intercepts provided indications of rapid deployment of the latest Soviet models of early warning/ground control intercept and height-finding radars in Cuba. In less than a week commencing 24 October, the following equipment was intercepted from Cuba: FLAT FACE, BAR LOCK, STONE CAKE, BIG MESH and ROCK CAKE. About thirty-five EW and/or GCI sites had been identified, most of which included more than one type of radar. In addition there were a number of acquisition and fire-control radars associated with SAM's and antiaircraft artillery. These radars

covered the entire island and should provide excellent coverage from low to high altitudes.

Communications intelligence of 5 November indicated exclusive Soviet operation of certain air defense communications systems, ground control intercept centers, and the fighter aircraft under control of these centers. One report indicated that Soviet pilots under Soviet GCI control were flying coastal patrols. Another report noted the introduction in air defense traffic of a highly complicated off-line communications security device which hitherto had been detected outside the USSR only in occasional fleet command use. These developments followed the rapid conversion to operational status during the previous two weeks of modern Soviet-controlled radar facilities throughout Cuba.

Later Organization. As of 10 November 1962, it was estimated that the Cuban air defense system continued to be composed of a controlling authority believed located in the San Antonio de los Banos, the Santa Clara, and the Camaguey areas. Each of these facilities had a broadcast station for the forwarding of correlated tracking information to interested consumers. Manual Morse communications were employed for this purpose by the three sector headquarters. The National Broadcast facility utilizes both manual Morse and the high frequency radiotelephone communications for the same purpose.

The Russian dominance of the Cuban air defense system continued to be apparent from the signal procedures noted and the use of Russian language. The degree of participation by Cuban personnel in the over-all system was not determined; however, the existence of a communications link serving an air defense role and employing exclusively Cuban procedures had been noted. This link was noted active on 5 November 1962, but activity prior to or subsequent to this date was not known. The information available indicated that this link was located in the central sector, with the radar equipment being served possibly located at Santa Clara.

The general situation of the system remained as previously reported; however, the Western and Eastern sectors employed four subordinate radar stations, while the central sector continued to have three subordinate radar stations. There was an indication, not confirmed, that this sector may have gained an additional station after the 10 November callsign change. The territorial organization of the system appeared to be patterned after a single Soviet-type air defense district, with the three sectors coinciding roughly with the known tactical regions of the Cuban ground forces. The over-

all joint Cuban/Soviet direction center was thought to be located in the Havana area and the main fighter-control center--believed predominantly Soviet-manned--probably at nearby San Antonio de los Banos airfield.

No significant changes in either the control or the capability of the air surveillance system in Cuba has been noted since 22 January 1963. Soviet forces continue to maintain control of the surveillance system and to predominate in its operations, although results of tracking are exchanged with the Cuban national air defense authorities. There appears to be no trend toward increased Cuban participation, although there have been recent references in operator chatter to some men going home and replacements arriving, and references on the Soviet command communications facilities to training Cubans. It appears that Soviet personnel continue totally to control and man the surface-to-air missile system, although some Cuban participation may be in the offing.

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THE 1962 SOVIET ARMS BUILD-UP IN CUBA

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A Study by the

Arms Control and Disarmament Agency

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