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EO 13526 3.5c

Central Intelligence Agency



Washington, D.C. 20505

81 JAN 1990

MEMORANDUM FOR: George M. Caldwell
Director of Intelligence Support
White House Situation Support Staff

SUBJECT: The SA-7 Threat: A Current Assessment 3.5c

1. The attached memorandum provides a current assessment of the threat posed by the continuing proliferation of SA-7 surface-to-air missiles into the hands of violence-prone subnational groups. While we judge that there are few barriers to the acquisition of these weapons by terrorist, insurgent, and even criminal organizations, we anticipate that such groups will continue to have difficulty in effectively using the SA-7 systems they may acquire. 3.5c

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2. This memorandum was prepared by
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3. Your comments are welcome and may be directed to me
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Attachment:
GI M 90-20010

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Central Intelligence Agency



Washington, D. C. 20505

DIRECTORATE OF INTELLIGENCE

31 January 1990

The SA-7 Threat: A Current Assessment

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Summary

A variety of recent reporting suggests that an increasing number of violence-prone subnational groups are acquiring or seeking to acquire SA-7 missiles. In addition to terrorist and insurgent groups--which have had SA-7s since the early 1970s--these groups may include at least one major Colombian narcotics trafficking organization. Given the availability of SA-7s on the gray arms market and the largesse of several state sponsors of international terrorism, we believe that the proliferation of SA-7s into the hands of terrorist, insurgent, and possibly criminal groups will continue. Based on the technical limitations of this weapon system--including altitude constraints and environmental degradation--we expect such groups will have difficulty in effectively using their SA-7s unless they have highly qualified outside assistance.

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Office of Global Issues. Comments and queries are welcome and may be directed to the author

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CLINTON LIBRARY PHOTOCOPY

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The SA-7 Threat: A Current Assessment

Although terrorist and insurgent groups have had access to SA-7 surface-to air missiles for nearly two decades, recent events suggest a growing threat stemming from their continuing proliferation.

- o In May 1989, Cypriot police discovered two SA-7 missiles hidden in shallow water off the coast of Larnaca and subsequently arrested several Lebanese nationals. Unconfirmed press reports speculated that the weapons had been cached in anticipation of a Syrian-sponsored attack against Lebanese Christian leader General Awn.
- o Salvadoran officials discovered 24 SA-7s and other weapons in the wreck of a light plane which crashed in November 1989 while ferrying arms from Nicaragua to leftist insurgents in El Salvador.

o EO 13526 3.3(b)(1), 3.3(b)(6), 3.5c

Moreover, a variety of information indicates that some Colombian drug kingpins have been interested in acquiring SA-7 missiles since at least 1988. 3.3(b)(1), 3.3(b)(6), 3.5c

EO 13526 3.3(b)(1), 3.3(b)(6), 3.5c

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TEXTBOX

The SA-7 Weapon System

The SA-7 is a man-portable, infrared (IR) homing missile designed by the Soviets in the 1960s for use against low-flying aircraft. The SA-7 system consists of a launch tube (containing one missile), a gripstock, and a thermal battery. The battery provides electrical power to the launcher prior to missile firing, while the gripstock attaches to the launch tube and houses the acquisition and tracking electronics as well as the firing mechanism. The seeker and guidance control electronics on board the missile guide the SA-7 to the target after firing. Both the launch tube and the battery are expendable, while the gripstock can be reused by attaching it to an unfired missile. EO 13526 3.5c

There are two major variants of the SA-7--the original system called the SA-7a and an improved version introduced in the early 1970s called the SA-7b. Although similar to its predecessor in appearance and operation, the SA-7b has a slightly increased range and maximum altitude and incorporates other improvements. Its missile cannot be launched unless the seeker is locked on a target and the SA-7b is less vulnerable to infrared countermeasures--such as flares--because of its seeker's increased sensitivity and smaller field of view.

EO 13526 3.3(b)(1)

3.3(b)(1) Unless otherwise noted, the term "SA-7" as used in this paper will refer to both versions. 3.5c

EO 13526 3.3(b)(1)

3.3(b)(1)

If Colombian traffickers have succeeded in acquiring significant quantities of SA-7s and competent training in their use, however, this would significantly increase their chances of downing a specific aircraft. The SA-7 is most effective when fired in salvos by qualified operators. Similarly, we cannot preclude the possibility that traffickers could hire trained SA-7 operators from the five Latin American countries which have this weapon in their inventories.

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Widely Available in the Third World

Of all man-portable surface-to-air missiles (SAMs), the Soviet-style SA-7 is by far the most widely distributed and easy to obtain. Several countries manufacture this weapon and have exported large quantities of SA-7s to Third World countries. The weapon has been in the inventories of several major terrorist and insurgent organizations for many years. Moreover, SA-7s are readily available for purchase on the international gray arms market.

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Manufacturers. Since its development in the Soviet Union in the 1960s, the SA-7 has been produced under Soviet license in Bulgaria, Yugoslavia, Poland, and North Korea. Although it is a relatively old system, available information suggests that the SA-7 is still manufactured by Bulgaria, North Korea, and, perhaps, Poland. In addition, Pakistan, Egypt, and China also currently manufacture their own man-portable SAMs which are similar to the SA-7. 3.5c

Distribution. A variety of reporting indicates that in addition to producing SA-7s for their own defense forces, the Soviets and other manufacturers have exported at least 60,000 SA-7s to over 40 countries throughout the Middle East, Africa, and Latin America. Recipients of these SA-7s are also known to have provided some of these missiles in turn to others. For example, Libya--which received a minimum of 5,000 SA-7s over the years--has supplied some of these missiles to such diverse groups as dissidents in Qatar and the Provisional Irish Republican Army. 3.5c

Seizures of SA-7s illustrate the variety of terrorist and insurgent groups that have access to the weapon.

- o In 1973, five members of the Palestinian Black September Organization were arrested in possession of an SA-7 near Rome's Fiumicino Airport. 3.3(b)(1)

EO 13526 3.3(b)(1)

- o Greek authorities discovered an SA-7 in the apartment of a suspected Popular Front for the Liberation of Palestine (PFLP) operative in Athens in 1978.
- o In 1979, Italian police arrested three Italians and two Palestinians transporting two SA-7s in Ortona, Italy. The PFLP admitted ownership of the missiles and requested their return, claiming that the SA-7s were being sent back to the Middle East for repair.
- o EO 13526 3.3(b)(1)
- o In 1987, French authorities seized 20 SA-7 missiles --and 150 tons of other ordnance destined for the Provisional Irish Republican Army (PIRA)--from the cargo ship Eksund II en route from Libya to Ireland.

EO 13526 3.3(b)(1)

In addition to the seizures noted above, circumstantial evidence suggests that the Colombian 19th of April insurgent group and the Italian Red Brigade terrorist organization may have received a limited number of SA-7s in the early 1980s.

EO 13526 3.3(b)(1), 3.5c

Available on the Gray Arms Market. Unlike many newer, more advanced SAMs, the Soviet-style SA-7 is also available through private weapons dealers on the international gray arms market.

3.3(b)(1), 3.5c

EO 13526 3.3(b)(1), 3.5c

A variety of reporting indicates that the gray market price for an illicit SA-7 has fallen from over \$30,000 per missile and \$6,000 per gripstock several years ago to an asking price of \$10,000 and \$1,500 for the same components today. This decrease in price is almost certainly due to the large numbers of SA-7s coming onto the gray market as these weapons are removed from Soviet and Bloc arsenals and replaced by newer, more sophisticated SA-14s and SA-16s.

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Limited Terrorist/Insurgent Use. Despite the widespread availability of SA-7s in terrorist and insurgent hands, their use by such groups has been limited. According to press reports:

- o Two commercial aircraft were destroyed by insurgent-fired SA-7s in Rhodesia (Zimbabwe) in the 1970s.
- o An Afghan airliner was downed by a possible SA-7 in 1984.
- o In 1988, the Polisario Front used SA-7s to shoot down one chartered DC-7 aircraft and damage another over the Western Sahara.
- o Sudanese insurgents used an SA-7 to shoot down a civilian aircraft in 1986 and, more recently, in 1989.

EO 13526 3.3(b)(1), 3.5c

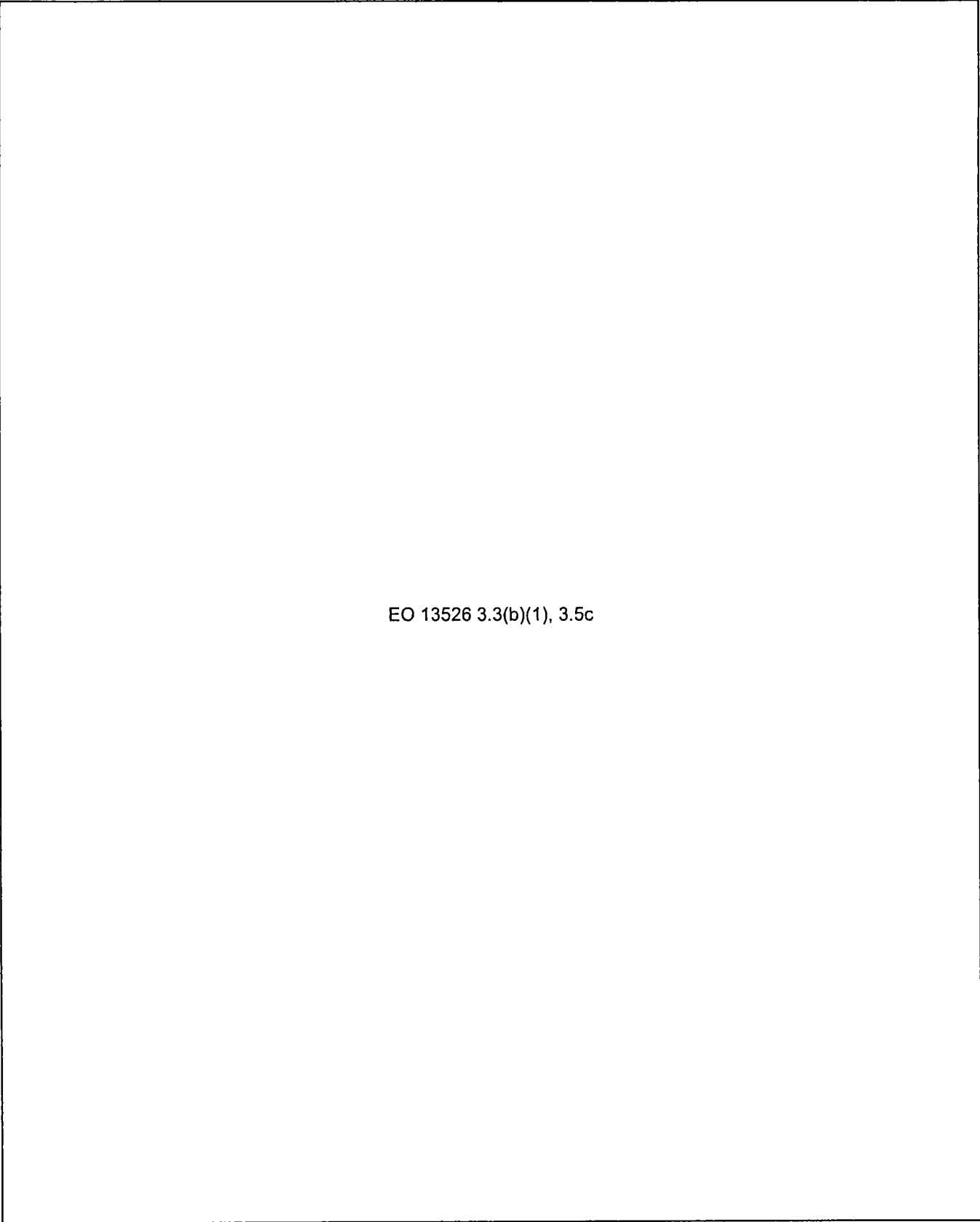
System Effectiveness

We believe that the limited use of the SA-7 by insurgents and terrorists reflects inherent limitations of the weapon. Technical assessments of the weapon and extensive reporting of SA-7 deployment in several regional conflicts indicate that its performance is limited by a number of factors to include technical parameters of the system itself, as well as operator constraints and environmental conditions. EO 13526 3.5c

EO 13526 3.3(b)(1), 3.5c

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EO 13526 3.3(b)(1), 3.5c

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The Future Threat

We judge few barriers exist to the acquisition of SA-7s by any terrorist, insurgent, or criminal groups that do not already have them. Acquisition will be particularly easy for groups allied with a state sponsor of international terrorism--such as Libya--or having extensive international business contacts as do many narcotics trafficking organizations. Possession of an SA-7 will not, however, ensure the group's ability to destroy an aircraft of its choice. Because of technical limitations in the missile's design as well as the difficulties inherent in its use, SA-7s pose only a limited threat, and then only when fired by well-trained operators. Moreover, both versions of the SA-7 are susceptible to a wide range of well-established countermeasures,

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EO 13526 3.3(b)(1), 3.5c

APPENDIX A

CLINTON LIBRARY PHOTOCOPY

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CLINTON LIBRARY PHOTOCOPY

APPENDIX B

CLINTON LIBRARY PHOTOCOPY

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Features of Semtex

Semtex has characteristics common to all modern plastic explosives, such as Composition C-4, the most common US plastic explosive. Its advantages include:

- **Power:** Approximately 400 grams—about 14 ounces—of Semtex made up the bomb that destroyed Pan Am 103.
- **Versatility:** Easily molded by hand into any size or shape at a wide range of temperatures and virtually waterproof.
- **Safety:** Insensitive to shock and heat; designed to explode consistently with any standard detonator.
- **Detectability:** Extremely difficult to detect by odor or gas detection methods.
- **Ease of use:** Only limited technical expertise and equipment are needed to make Semtex an effective terrorist weapon.
- **Shelf life:** If stored with typical environmental precautions for explosives, it will last for decades.

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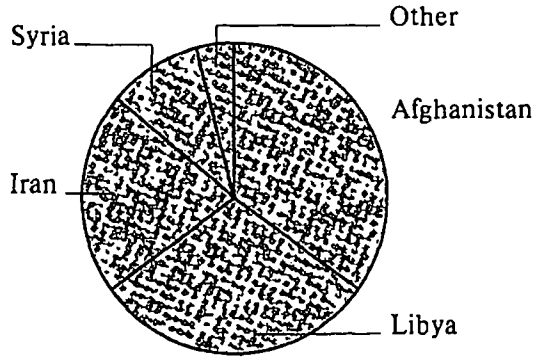
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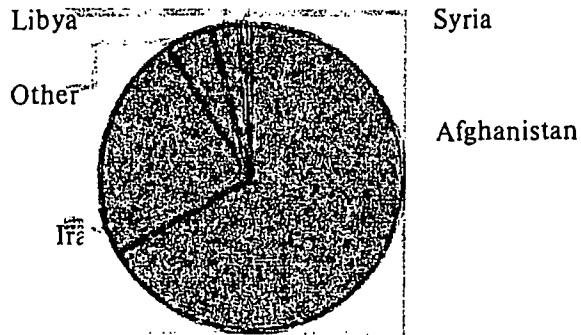
State-Sponsored Terrorist Incidents by Country, 1986-88

Percent

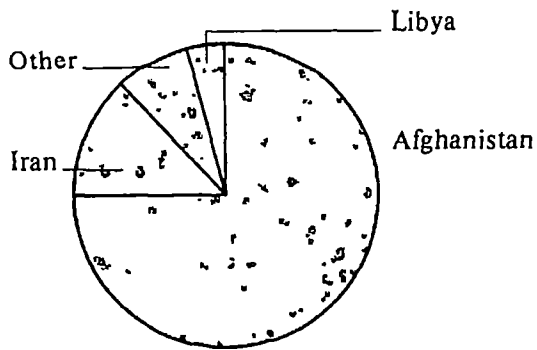
1986



1987



1988^a



^a Statistics for 1988 are only for the first six months.

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