Directorate of
Intelligence

Top Secret

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Syria's Offensive Chemical Warfare Capability

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An Intelligence Assessment

Top Secret

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Syria's Offensive Chemical Warfare Capability [redacted] (b)(3)

An Intelligence Assessment

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This paper was prepared by [redacted] Office of Near Eastern and South Asian Analysis, and [redacted] Office of Scientific and Weapons Research. It was coordinated with the Directorate of Operations. [redacted]

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Comments and queries are welcome and may be directed to the Chief, Arab-Israeli Division, NESA, on 351-5955. [redacted]

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Syria's Offensive Chemical Warfare Capability [redacted] (b)(3)

Key Judgments

Information available as of 15 October 1985 was used in this report.

We believe Syria has developed a substantial chemical weapons stockpile of indigenously produced binary-type chemical munitions, principally aerial bombs and warheads. We assess that Syria could produce 7.8 metric tons per month of the nerve agent sarin. We believe Syria could produce 10 Scud missile chemical warheads and 60 500-kilogram chemical bombs per month. [redacted] (b)(3)

Within the next five years we believe Syria will develop a more persistent chemical agent, such as soman or VX. Either of these could be used to neutralize enemy rear areas that the attackers do not plan to occupy immediately. Syria probably is also experimenting with chemical warfare applications for conventional artillery systems. [redacted] (b)(3)

We believe that only President Assad can order the use of Syria's chemical weapons. In our view, he would authorize their use only if Syria's defeat or an enemy chemical attack appeared imminent or in retaliation for a chemical attack. In the event of Assad's death or removal from power, this policy would change little, if at all. [redacted] (b)(3)

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An embargo against shipments to Syria of Western equipment, precursor chemicals, and technical support would not slow Syrian production of chemical weapons. [redacted] (b)(1) (b)(3)

We have no evidence of Soviet provision of the production facilities, chemical precursors, or scientific expertise that would aid nerve agent research. [redacted] (b)(1) (b)(3)

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The relatively muted public reaction to Iraq's use of chemical weapons against Iran and the proliferation of these weapons in the region suggest a lower threshold for the use of chemical weapons in future Middle East conflicts. Syria is the fourth Middle Eastern nation, after Egypt, Iraq, and Israel, known to produce chemical weapons. Iran and possibly Libya are also trying to develop these weapons. Other countries in the region, such as Saudi Arabia, Jordan, and Kuwait, are concerned about their inadequate chemical defense capabilities and are taking steps to enhance them.

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Syria's Offensive Chemical Warfare Capability (b)(3)

We believe Syria emerged from the 1973 Arab-Israeli war determined to develop an independent capability to produce chemical weapons. The Egyptians, who apparently supplied Damascus with chemical munitions such as aerial bombs and artillery rounds in 1973, could not be counted on in a future conflict. Concern in Damascus over Israel's chemical warfare program probably further spurred Syrian chemical weapons research. (b)(3)

The Syrian view of chemical weapons as a last resort was demonstrated in the final days of the 1973 war (b)(1) (b)(3) the fall of Damascus to advancing Israeli forces seemed imminent. (b)(1) (b)(3)

Development of the Chemical Weapons Program

After 1973, Syrian Brig. Gen. A'dib Trabzali—an expert on Soviet chemical warfare doctrine and head of the Syrian Army's Chemical Administration Branch—was charged with the responsibility for developing an offensive chemical warfare capability, (b)(1) (b)(3) Under his supervision, Syria's chemical weapons development program probably relied initially on the expertise of a small number of senior officers who led ostensibly defensive chemical warfare units. These same officers may have helped select the Scud surface-to-surface missile (SSM) and aerial bombs as delivery systems for lethal chemical agents. (b)(1) (b)(3)

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The Army's Defensive Chemical Units

Since the 1960s, Syria has considered the prospect of chemical warfare a serious threat. The measures it has taken to provide its troops with defensive training and equipment laid the foundation for development of an offensive capability. The Syrian Army has worked closely with Soviet military advisers to train and equip defensive chemical units that are assigned to all of its major elements. Most Syrian military personnel probably have at least a basic understanding of the uses and effects of chemical weapons and how to protect themselves against them. (b)(1) (b)(3)

Units of the Army's 28th Chemical Regiment are assigned to the Army General Headquarters, the divisions, and maneuver brigades. These elements are officially charged with providing smoke concealment for maneuvering forces and destroying enemy forces and materiel with flamethrowers. Below the brigade level, chemical units are assigned as needed by the brigade commander (see figure 3). (b)(3)

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Syria's CW Research Center

The chemistry department of the Centre d'Etude et Recherche Scientifique (CERS), headquartered in Damascus, is responsible for Syria's chemical weapons research. [redacted] (b)(1) (b)(3)

CERS is subordinate to the Syrian Ministry of Defense and functions as Syria's authority for weapon systems research and development, [redacted] (b)(1) (b)(3) The center conceals its chemical warfare research activities in agricultural and medical research programs [redacted] (b)(1) (b)(3) In our view, because of the secrecy surrounding the program, few of the center's personnel have had a role in the center's chemical research, and even fewer know that Syria has developed a nerve agent for use in Scud missile warheads. [redacted] (b)(3)

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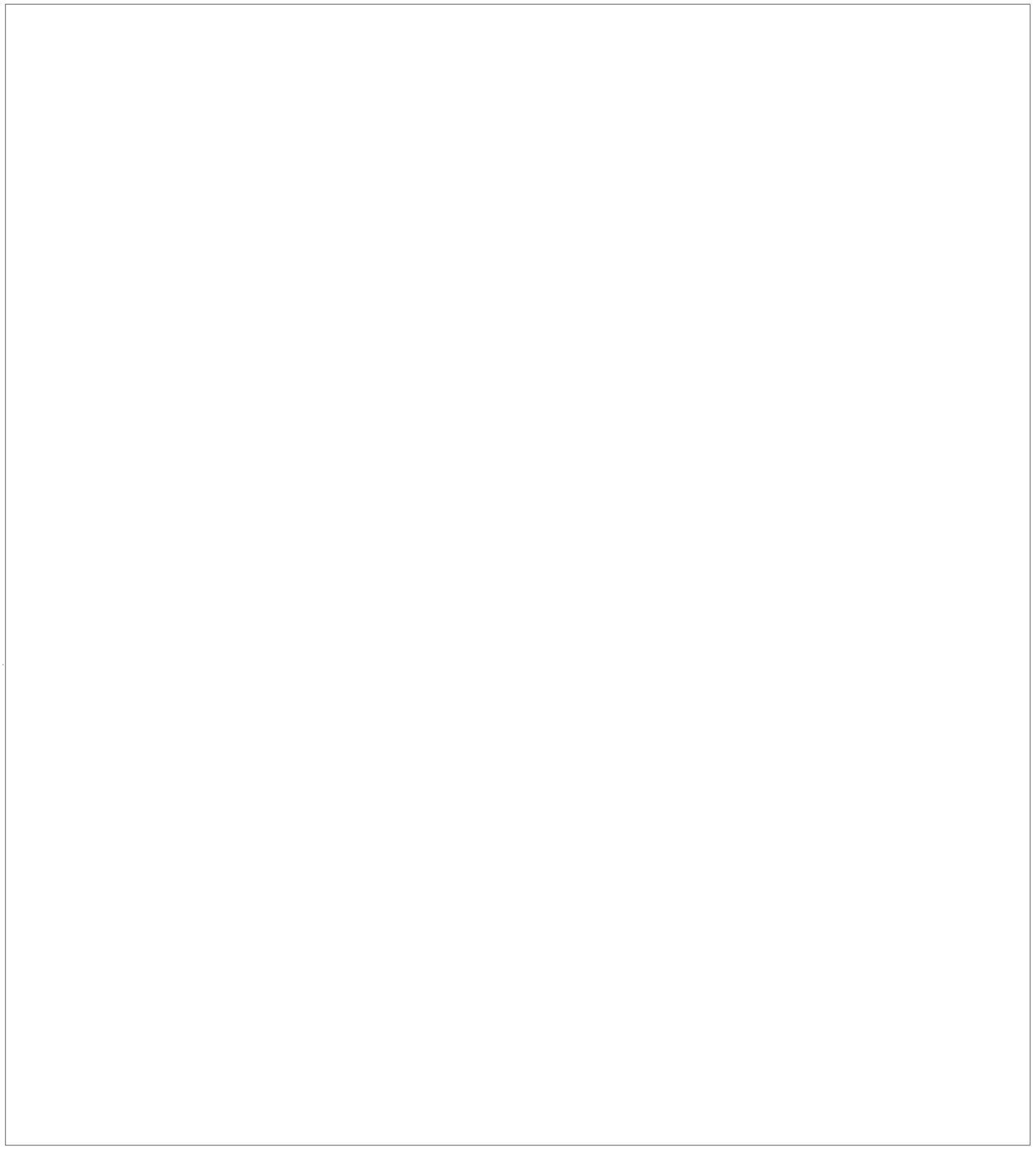

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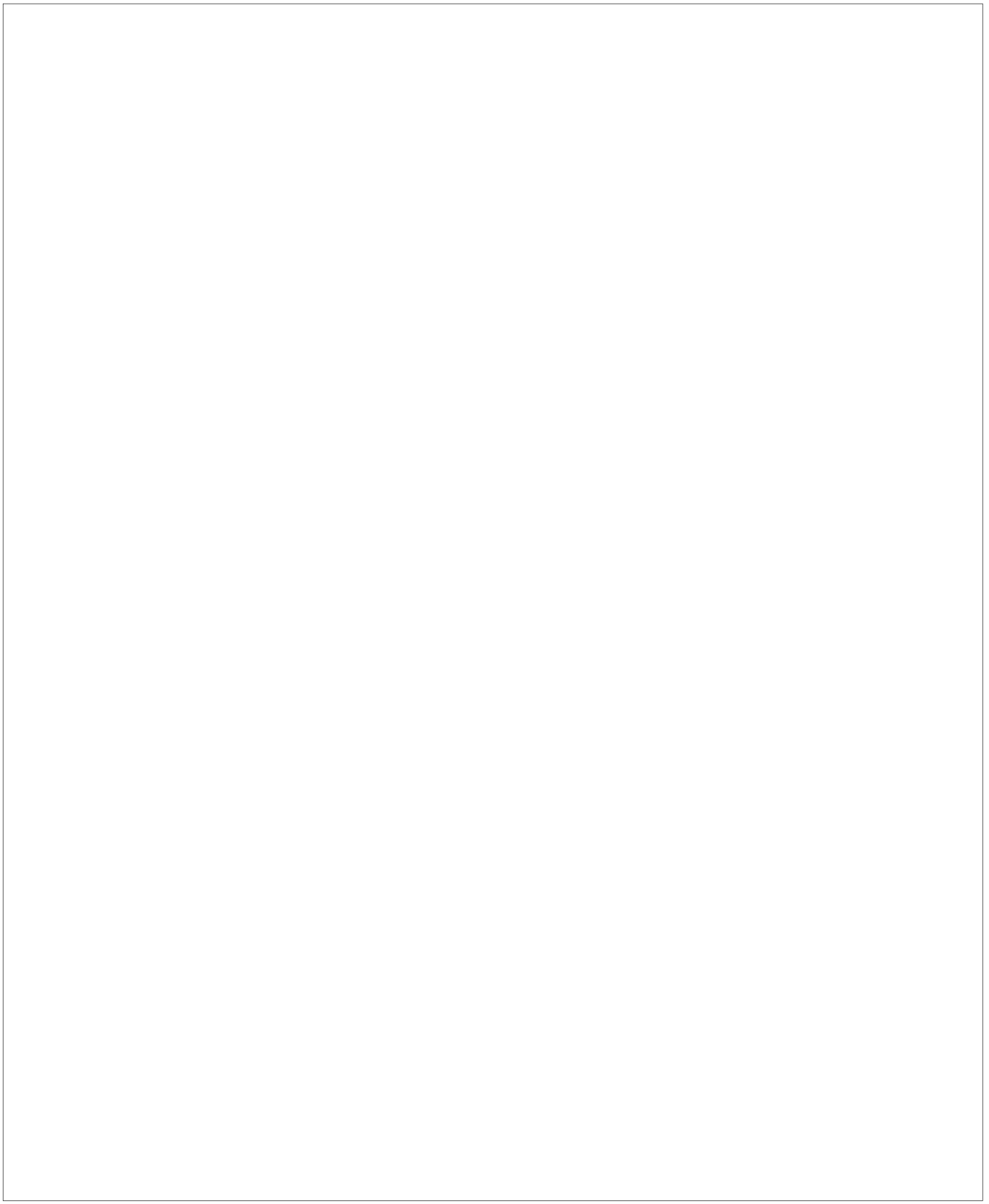

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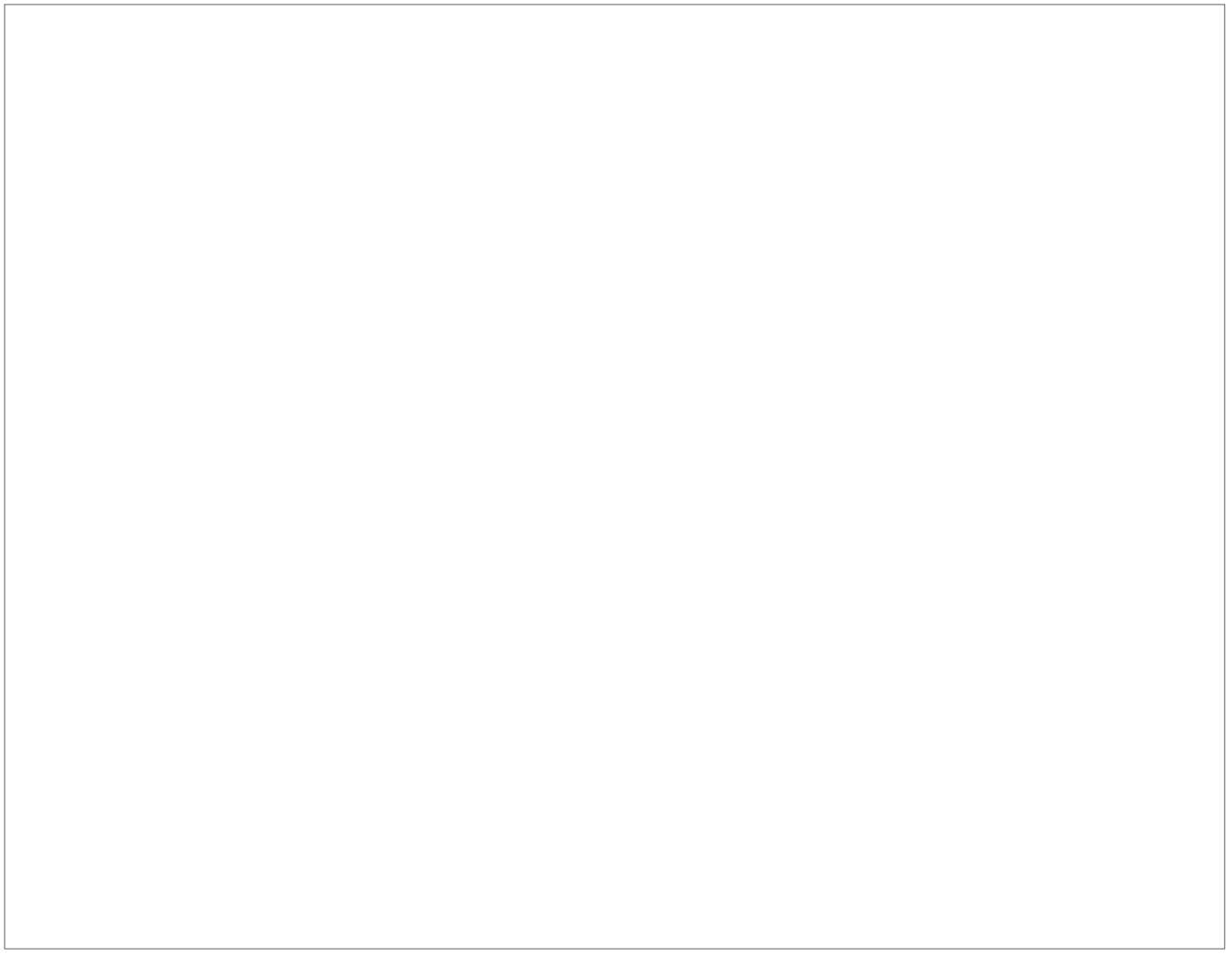

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by which time all the equipment purchased in 1983 would be installed—indicates that Syria's chemical weapons stockpile could consist of as many as 70 Scud missile warheads and 560 500-kilogram bombs. If Syria produced these munitions at maximum production capacity—10 Scud missile warheads and 60 bombs per month—its munitions stockpile would grow dramatically. (b)(1) (b)(3)

Stockpile and Delivery Means

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Analysis based on the expected production rates, and the assumption that full-scale production began in early 1985— Syria may be stockpiling chemical agents as a safeguard against

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(b)(3) international trade restrictions on certain chemicals or destruction of some of its CW facilities.[2]

In the years since Syria began its CW program, some Syrian military personnel have heard rumors of chemical weapons stockpiles, but few apparently have

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(b)(3) detailed knowledge.

We suspect that Syria has selected the Scud as a primary means of launching a chemical attack because it has a much greater range than the Frog or SS-21, the only other SSMs in Syria. Israeli cities and military installations—the presumed targets of Syria's CW program—are well within the Scud missile's 300-kilometer maximum effective range.

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(b)(3) Syria would use fighter-bombers, such as its SU-20/22 or MIG-23 (Flogger F) aircraft, to deliver chemical bombs. We doubt these would be used as readily as the Scud missiles because of the greater vulnerability of aircraft to enemy fire. (b)(3)

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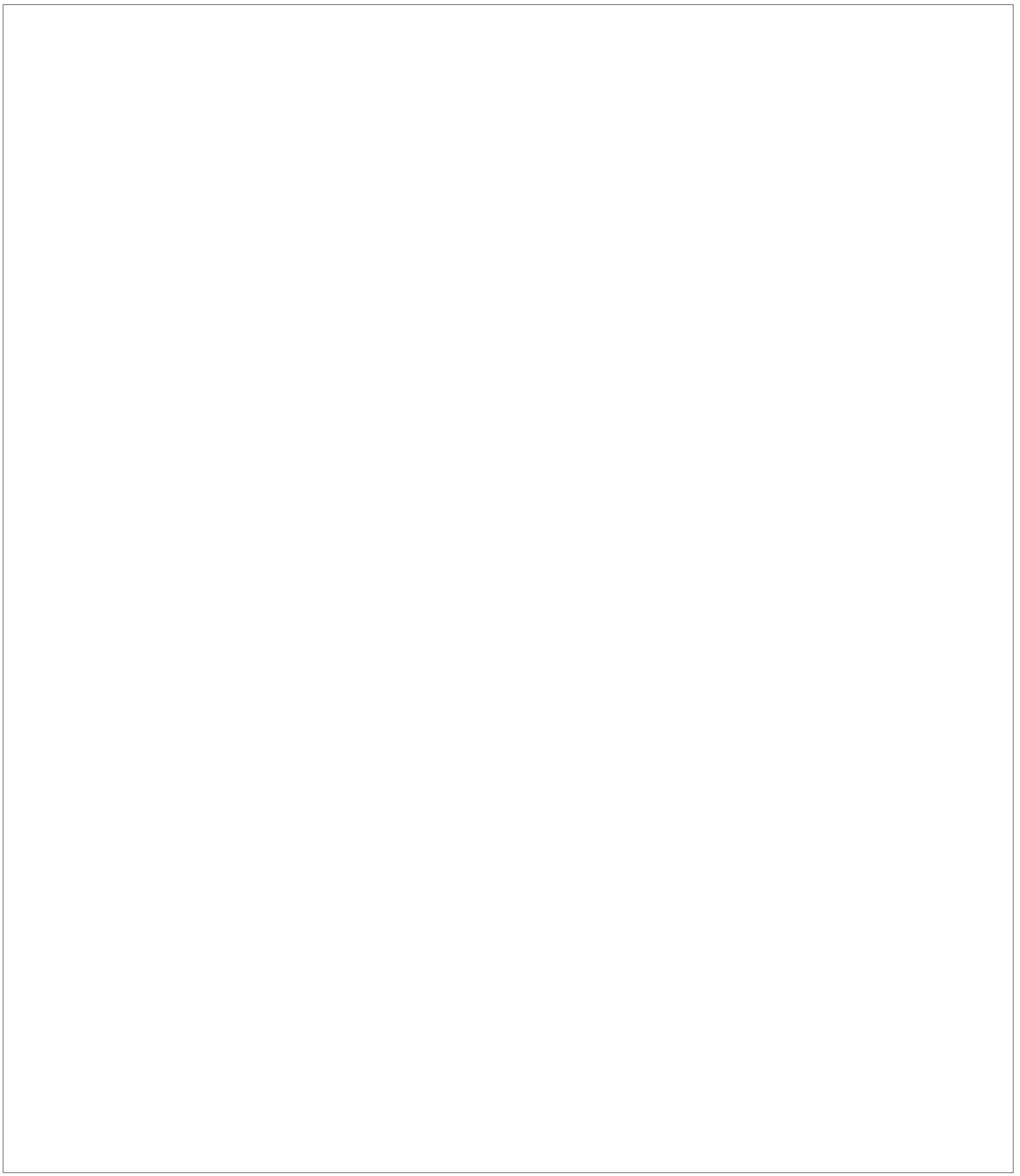

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Chemical Warfare Planning

Extensive Soviet assistance since the early 1960s in developing Syria's defensive chemical warfare regiment suggests that Syrian chemical warfare doctrine is modeled on Soviet doctrine, which regards chemical weapons as weapons of mass destruction. We believe Syria would use chemical weapons against such targets as the enemy's major troop concentrations, airfields, and command and control facilities. (b)(3)

The nerve agent sarin is particularly well suited to the small theater of operations that would be the setting for another war with Israel. Sarin is a "nonpersistent" chemical agent that dissipates within a few hours of a chemical attack, allowing advancing troops to enter the affected area without great risk. In the confined geographical area where future Syrian-Israeli battles might take place, only a nonpersistent nerve agent would allow the user to overcome rapidly enemy troops and occupy enemy territory. (b)(3)

If Assad contemplated launching a chemical attack against Israel, he would have to consider wind conditions over Israel and western Syria. During the summer and early fall, prevailing surface winds in Syria are eastbound and can gust in excess of 17 knots, greatly increasing the danger that chemical agent would be blown toward Syria's civilian population and troops. Wind conditions during the rest of the year generally are more favorable. (b)(3)

Regional Implications of Syrian CW Production Capability

Syria's development of a CW production capability and the absence of a major international outcry over Iraq's use of chemical weapons against Iran suggest a lower threshold for the use of chemical weapons in future Middle East conflicts. In addition to Iraq and Syria, Egypt and Israel are known to produce chemical weapons. Iran and possibly Libya are also trying to develop these weapons. Other countries in the region, such as Saudi Arabia, Jordan, and Kuwait, are concerned about their inadequate chemical defense capabilities and are taking steps to enhance them. (b)(3)

Syrian ability to wage chemical warfare will raise the level of tension between Syria and Israel and between Syria and moderate Arab states such as Jordan. (b)(3)

Chemical weapons production by Syria and Iraq has increased the likelihood of Israeli airstrikes against their suspected storage and production facilities. (b)(1) (b)(3)

Israeli military actions to reduce Syrian chemical warfare capabilities probably would result in retaliatory Syrian attacks and could lead to war. (b)(3)

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Israeli airstrikes on Syrian chemical warfare facilities probably could slow, but not stop, Syria's CW program. The production and storage facilities almost certainly are not colocated, and destroying all of the facilities would be difficult. Moreover, we believe Syrian chemical experts could design and build new facilities without outside assistance. (b)(3)

Efforts to gain acceptance for an international treaty banning chemical warfare may prove futile in the Middle East. Middle Eastern states would be unwilling to forgo newly acquired CW capabilities if they believe that their hostile neighbors will not accede to or comply with a treaty banning chemical weapons. (b)(3)

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Israel almost certainly will increase pressure on the United States to convince its West European allies to control exports of chemical warfare materiel to Syria. If recent experience is an accurate guide, most European governments will attempt to cooperate but will have difficulty imposing embargoes unless they have proof that their nationals are aiding Syria's CW program.

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In any case, an embargo on all Western-origin materiel with chemical warfare uses probably could not slow, much less stop, Syria's production of chemical weapons.

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In our view, moreover, Syria's stockpile of surplus chemical precursors and the expertise of its scientists would ensure that the CW program continues despite embargo efforts.

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Outlook

We believe Syria would use chemical weapons as a last resort in an all-out war with Israel when its own defeat appeared imminent or if it believed an enemy was about to launch a chemical attack. As long as Iraq is engaged in war with Iran, Syria will not be as concerned about Iraqi CW capabilities.

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As long as President Assad is in power, there probably is little chance that Syria would try to surprise Israel by using chemical weapons early in a war because of the certainty of massive Israeli retaliation. We do not believe that Assad will relinquish his strict control over the chemical weapons program because of the danger that unauthorized individuals would misuse the weapons. In the event of Assad's death or removal from power, a successor regime—eager to establish its legitimacy and authority—probably would maintain strict control over chemical weapons.

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Syria's intentions regarding its stockpile of excess chemicals and chemical weapons are unclear. Assad probably views them as a safeguard against international trade restrictions on the sale to Syria of chemicals and materiel with CW-related uses. Syrian scientists may also intend to use some of the excess chemicals to produce other types of nerve agents. We do not believe Syria would provide chemical weapons to Lebanese militias and Palestinian organizations because it has only limited control over such groups.

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Syrian desire for an Iranian victory in the war with Iraq, however, may persuade Assad to offer chemical weapons to Iran

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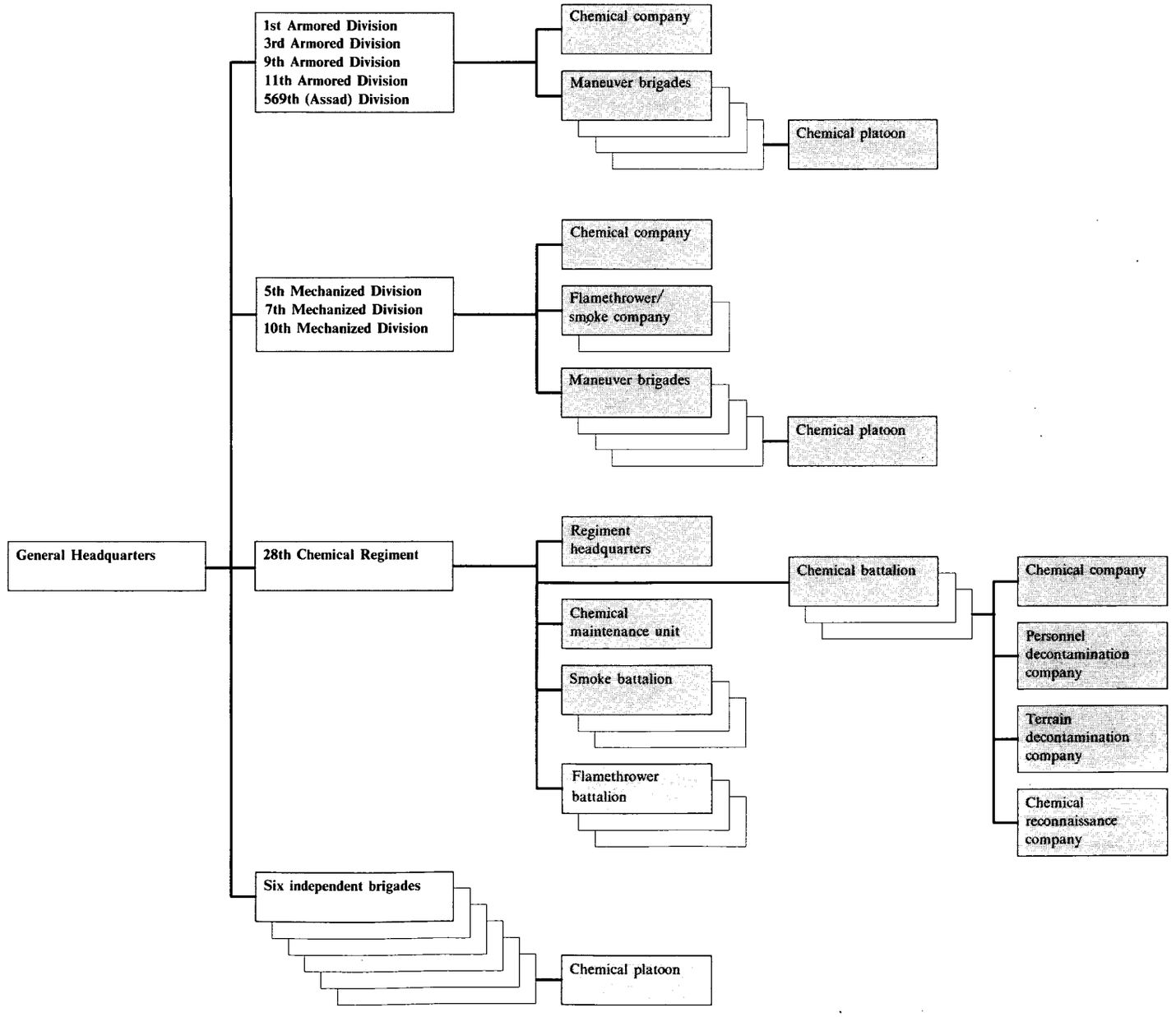
Such a transfer

would provide an opportunity to test the weapons in combat. (b)(1) (b)(3)

Syria probably will apply its chemical weapons research to conventional artillery systems within the next five years. CERS may already have done this with the Soviet-made BM-21 multiple rocket launcher (MRL), which has twice the range (20.5 kilometers) of other MRLs in Syria. The BM-21 is a particularly suitable delivery system for sarin because it can quickly disperse the nerve agent over a large area, has excellent mobility, and has a high revolution rate that would aid mixing in a binary system. (b)(3)

Syrian Regular Army Chemical Warfare Organization



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