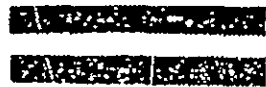


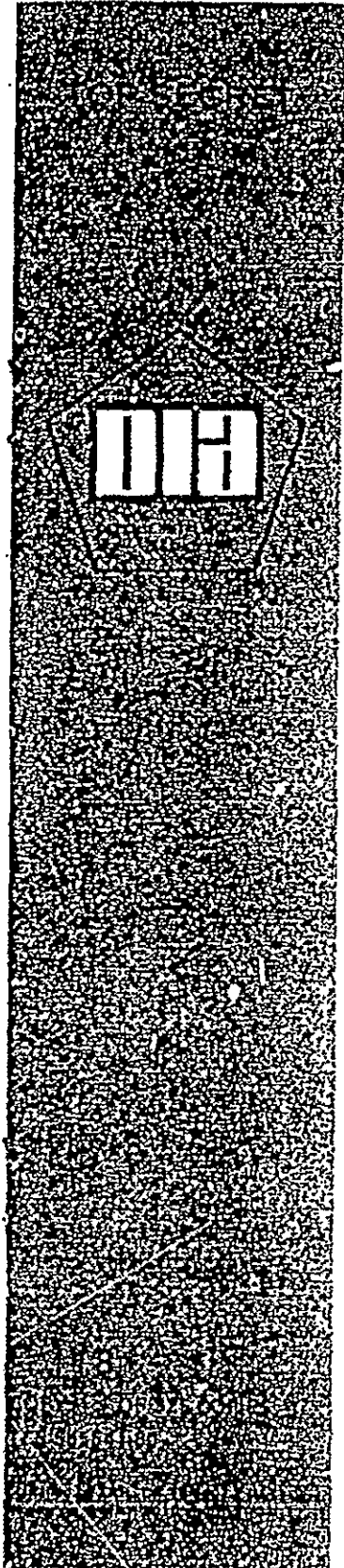
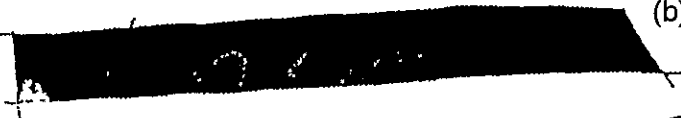
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TRENDS AND DEVELOPMENTS

FOREIGN TECHNOLOGY  
WEAPONS AND SYSTEMS

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**TRENDS AND DEVELOPMENTS  
IN FOREIGN TECHNOLOGY, WEAPONS,  
AND SYSTEMS**

FOREWORD

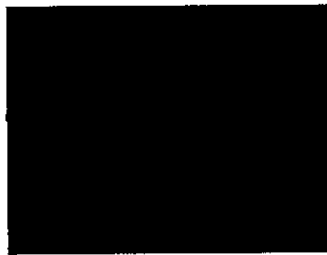
The purpose of this publication is to provide all-source intelligence support to the Department of Defense on significant foreign trends and developments in weapons, systems, research and development, and technology. It is furnished to non-DoD agencies for information only.

In the interest of timeliness, interpretations and analyses of information in this publication will, in many instances, represent preliminary views which will be subject to modification in the light of more information and more complete analysis.

Articles which deal with topics under continuing active analysis will be covered periodically as more complete evaluations become available. Such articles will be identified by an asterisk (\*) following their title.

Questions or comments on the contents of this publication should be referred to DIA (ATTN: DT).

FOR THE DIRECTOR:



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EDITOR  
Raymond A. Baunder

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Volume 14

3 March 1980

TABLE OF CONTENTS

Page

*HIGHLIGHTS*

SAM Radar Activity (U)	iv
FOXBAT Developments (U)	iv
Soviet Naval Communications (U)	v
Soviet Large Surface Ships (U)	vi
Chinese SLBM Program (U)	vi

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*MISSILE SYSTEMS*

Soviet Advanced Tactical Air Defense System (U)	6
---	---

*BIOLOGICAL AND CHEMICAL WARFARE*

Biological Weapons - USSR (U)	9
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*NAVAL SYSTEMS*

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*This scientific and technical periodical will normally be published each week as articles of significant importance are available. Issues will be assigned the Monday date for the week concerned and will be numbered sequentially throughout the year.*

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## BIOLOGICAL AND CHEMICAL WARFARE

Biological Weapons - USSR (U)Background

~~(S//NOFORN)~~ Intelligence information reports and allegations of Soviet involvement in offensive biological weapons development have been received by the Intelligence Community sporadically since World War II. Sources of the allegations have ranged from low-level defectors to high-level Soviet academicians. Allusions and allegations to possession of biological weapons also have been made by high political and military leaders. Most of the information has come from overt literature and human intelligence sources and some clandestine reporting.

~~(S//NOFORN//SI//INTEL)~~ None of the information has described in sufficient detail the biological weapons, the contained agent, or the locations where these were manufactured. However, the information has occasionally named disease producing agents and the type of delivery system. There has been a paucity of detailed information for establishing the credibility of the source or descriptions of the weapons. Photographic intelligence of prospective R&D centers, suspect production or storage sites, and proving grounds has been extensively studied, but has not yielded a definitive BW weapon signature.

~~(S//NOFORN)~~ As a result of overt HUMINT collections and open literature information, the Intelligence Community can adequately monitor and assess Soviet, or any other nation's capabilities and state-of-the-art developments in scientific and technological areas that would be important in the research, development, production, testing and evaluation of potential biological agents for warfare purposes. However, analysis of biological warfare-related scientific developments is one of the most difficult areas of intelligence. The BW analyst is continually confronted with the question--is a particular development intended for offensive BW purposes? Until a disease producing agent is placed in a delivery system for the express purpose of injuring or killing man, animal, or crops it is generally not considered a biological weapon development.

(U) The central fact concerning biological warfare is that from a strictly scientific and technical point of view, there are ~~no~~ technological barriers or breakthrough requirements for any national power to develop a biological weapon. Open source literature provides the requisite technical base. Various agents are available from both commercial and natural sources. The material means for production and dissemination are widely available at very modest costs.

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(U) The convention on the prohibition of the development, production, and stockpiling of bacteriological (biological) and toxin weapons went into force in 1975. It has no verification requirements and is in effect a gentlemen's agreement. This convention calls for a conference of parties to the convention to be held in Geneva during 1980. The conference will review the operation of the convention, and will also discuss new scientific and technological developments relevant to the convention.

~~(S/NOFORN//INTEL)~~ The intelligence community has been watching closely all these developments, particularly as they relate to activities within the USSR. In recent years, we have seen significant acquisition of technology and equipment, building of large scale biological fermentation facilities, and progress in other areas considered to be useful should the USSR decide to pursue production of biological weapons.

~~(S/NOFORN//INTEL)~~ In recent years the Intelligence Community has focused on a number of sites in the USSR which have been categorized as suspect BW production facilities. The controversial nature of these sites within the Intelligence Community revolves around the commonality of "storage/bunker" areas with identical configurations at the different sites. The purpose of these "storage/bunkers" has not been conclusively established; but, they appear to be constructed for storage of explosives or explosive components, suggesting weapons activity.

#### Probable Biological Weapons Accident In Sverdlovsk

~~(S/NOFORN)~~ We have in recent months (late summer 1979 to present) received collateral information that typifies the problem of identifying an offensive BW effort in the Soviet Union. It is one example of continuing allegations of Soviet BW involvement in the face of the convention. However, the intelligence information received from the various sources clearly makes a strong circumstantial case that the Soviets are pursuing the development and probable production of biological weapons.

~~(S/NOFORN)~~ Four separate and unrelated human sources have recently reported that an accident occurred at a biological warfare institute in Sverdlovsk. The first source reported three hundred Soviets died of what a local paper called "Siberian Ulcer", or anthrax. This was allegedly the local authority's attempt to stem the panic caused by these deaths. Also, this source indicated the real cause of death was a leak at one of the "bacteriological warfare" installations. No further details were provided. The second source reported that in late May 1979, a persistent rumor heard on the streets

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of Moscow was that some sort of disaster had occurred in Sverdlovsk earlier in the month. Several hundred people supposedly had died from an unknown cause. Authorities in Sverdlovsk first thought diseased cattle in the area around the city had caused the deaths with the result that most if not all of the animals had been destroyed. Later investigations, according to the rumor, indicated the cattle had not caused the human beings' deaths. There was some speculation that an airborne disease may have been the culprit.

~~(S/NOFORN)~~ By early July 1979, there had been no official Soviet announcement on the rumored disaster. The third source reported that he had heard from three close friends (two steel production engineers and a dentist) about an accident which had occurred in Sverdlovsk in May 1979. One of his friends lived in Sverdlovsk and the other two had close relatives living there. The three friends on three different occasions told him basically the following. People in the institute who had been affected tried to flee in panic but were held inside by security personnel. One of the source's friends also told him that personnel from several state agencies wanted to flee the city after learning of the accident but were also restrained from doing so.

[REDACTED] The occurrence of a significant incident has been at least partially confirmed [REDACTED] (b)(1)  
[REDACTED] shows that in mid-April 1979 a quarantine was declared in Sverdlovsk. The reason for the quarantine was not specified; however, the situation in Sverdlovsk was described by a military officer "as not entirely favorable."

~~(S/NOFORN)~~ The fourth source, whose information has been recently acquired (Jan-Feb 80), gives a more detailed description of what transpired in Sverdlovsk. He was a practicing surgeon in a District Hospital at the time of the accident. His information was primarily obtained as a result of conversations with his fellow surgeons. The following are the details furnished by the source:

- A biological accident occurred inside a military installation in the Chakalov city district of Sverdlovsk. "Dispersible bacteriological weapons" are produced here.

- In late April 1979 the population was awakened by a loud explosion which was attributed to a jet aircraft.

- Four days later seven or eight persons from the military installation were admitted to hospital number 20 in the suburb where the military installation is located. Their symptoms were high fever (104 degrees), ears and lips turn blue, difficulty in breathing (with choking symptoms). They died within six to seven hours and autopsy reveals a severe pulmonary edema and symptoms of a serious toxemia.

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• About six days after the illness first appeared, the source and a number of other doctors from various hospitals were called together by the district epidemiologist. The number of fatalities had risen sharply and source estimated deaths at this time at 40. The district epidemiologist announced the outbreak of an anthrax epidemic and gave a lecture on the disease. He also noted the epidemic was caused by the illegal slaughter of a cow suffering from anthrax in a town about 10 KM NE of Sverdlovsk and the beef being sold in the suburb where the fatalities were occurring. This explanation was not accepted by the doctors in attendance because the fatalities were caused by the pulmonary type of anthrax as opposed to the gastric or skin anthrax which would be more likely if one had eaten or handled anthrax contaminated beef.

• The doctors were ordered to admit all suspected patients and persons in contact with them to hospital number 40, a nine-story building which had been vacated to handle persons suffering from the epidemic. Persons working in the hospital were for the most part vaccinated and about two weeks after the hospital was converted all workers at the hospital and close family members were given daily doses of tetracycline antibiotic.

• The hospital was taken over by the military and completely sealed off from its surroundings.

• Other details concerning the outbreak began to leak out in medical circles.

• The first casualties were a fairly large number of male reservists at the military installation. They were the first to come in contact with the biological agent after the explosion.

• More casualties occurred among workers in a ceramics factory adjoining the military installation even though they had been working indoors. It was ~~surmised~~ <sup>supposed</sup> that the agent had been sucked into the buildings by the ventilators. The doctors also learned that the explosion during the night occurred in a laboratory inside the military installation and in the opinion of the doctors this laboratory was tasked with the cultivation of agents for biological weapons.

• The ceramic factory being downwind from the military installation at the time of the explosion, received concentrated quantities of the bacilli (agent) in the factory rooms.

• The military takeover of the epidemic hospital resulted in concealment of the exact number of casualties, but there was talk of more than 200.

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- Eventually all persons in the city district affected were ordered to report for vaccination. This allegedly led to serious post-vaccination complications and source himself declined the vaccination.

- US, West German and Soviet broad spectrum antibiotics were reported to have been particularly effective against the agent.

- It soon becomes apparent that persons who had been in contact with patients suffering from the disease were not infected and doctors who had performed mouth-to-mouth resuscitation on dying patients show no symptoms of the disease. Only persons who had been directly exposed to the airborne agent contracted the disease.

- In early May 1979, about two weeks after the first casualties Defense Minister Ustinov and two days later Minister of Health Petrovski allegedly arrived in Sverdlovsk. Their visit was not publicized. Shortly after the epidemic began the Chief Epidemiologist of the Ministry of Health in Moscow arrived in Sverdlovsk with several assistants and a large laboratory and remained for several weeks.

- The dead were placed in chloramine, a decontaminating and disinfecting compound; no cremations were possible because of lack of facilities. Relatives were not allowed at the funerals.

- The ceramics factory was sprayed in its entirety inside and out with chloramine. Large areas around the military installation were graded and covered with asphalt.

- On 14 May, source found an official notice posted on the bulletin board of his apartment building ordering all residents to remain inside their apartment between 1400 and 1500 hours, since all building roofs and other surfaces in the city district (an area about 5 by 7 km.) were to be sprayed from the air. Open areas, fields, sewage systems were also decontaminated.

- Wild animals in a small forest near the military installation were allegedly killed and most of the dogs in the city district were picked up and destroyed.

- By early June 1979 the epidemic had run its course and in early September 1979 the "epidemic hospital" was returned to civilian control by the military.

- No information as to details of the explosion inside the military installation. Unconfirmed reports say that the installation commander, a general officer committed suicide after the first casualties.

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Conclusion:

~~(S//NOFORN)~~ The information compiled on the Sverdlovsk biological accident presents a very strong circumstantial case for biological weapons activity at the large well-secured military facility we hold as a probable biological warfare research, production and storage installation. This evidence shows a high probability that pulmonary anthrax was the causative agent of the casualties/ fatalities. Although a number of other agents may have caused the problem, the measures described to control the "epidemic", symptomology, treatment and information indicating the disease was not contagious points to anthrax. An infective dose for man is estimated to be about 10,000 spores, thus a very large quantity of anthrax spores would have been released into the atmosphere to have caused the relatively large number of casualties. This would negate any research and development for peaceful purposes, i.e., vaccine research or BW defense research. Any number of factors could have caused an explosion in a biological facility such as the one in Sverdlovsk ranging from a boiler explosion, leaking gas jets, highly volatile solvents used in freeze-drying processes to an inadvertent explosion of fuse detonators used in some biological munitions.

~~(S//NOFORN)~~ Although the production of biological weapons cannot be confirmed at the Sverdlovsk facility the evidence points strongly to an illegal store of biological agents and probably biological weapons development or production. [REDACTED]

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