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Central Intelligence Agency

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Washington, D.C. 20505

6 October 1982

MEMORANDUM FOR: General E. C. Meyer, USA
 Chief of Staff, Army

THROUGH : Major General William E. Odom, USA
 Assistant Chief of Staff for Intelligence, Army

SUBJECT : Interagency Study on Battlefield Lasers

In light of your expressed interests, John McMahon asked me to forward you the attached proposal, which indicates that the Community is beginning to focus on battlefield lasers.



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Executive Assistant
to the DDCI

Attachments



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THE DIRECTOR OF CENTRAL INTELLIGENCE

WASHINGTON, D.C. 20505

National Intelligence Council

DDI #7143-82
15 September 1982

MEMORANDUM FOR: Chairman, Weapons and Space Systems Intelligence Committee
Chairman, Scientific and Technical Intelligence Committee

VIA : Deputy Director for Intelligence

FROM : 25X1
Acting Chairman, National Intelligence Council

SUBJECT : Proposal for an Interagency Study on Soviet Battlefield
Laser Threat to US Forces

REFERENCE : Memo from D/OSWR to C/NIC, Same Subject, DDI-6870/82,
Dated 23 Aug 82

1. I have reviewed the referenced proposal and believe it outlines an excellent approach to a key intelligence issue. It is clear that the deployment of anti-sensor laser weapons on the battlefield presents a major challenge to US weapon developers. The US Army Chief of Staff has recently reiterated his concerns over these developments. I believe these concerns and the other factors noted in the proposal argue for a prompt response by the Intelligence Community. 25X1

2. The most effective and efficient vehicle for such an assessment appears to be a joint WSSIC/STIC study. The assessment should include some projective thinking on where in the force structure these weapons may be deployed and how they would be used on the battlefield. This will require some work outside of the S&T Community. The study should be geared to the people who allocate R&D dollars rather than bench engineers and should be as tight a schedule as possible. 25X1

3. MG Edward B. Atkeson, USA, National Intelligence Officer for General Purpose Forces, is prepared to cooperate fully in this project. He has spoken with General Meyer about Army concerns in this area and has recently begun a dialogue with the Army Deputy Chief of Staff for Research, Development and Acquisition and his staff on more specific Army requirements. I believe Ted can offer valuable insights as your committees begin defining terms of reference for the study. 25X1

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cc: DDCI

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23 AUG 1982

MEMORANDUM FOR: Chairman, National Intelligence Council

THROUGH: Deputy Director for Intelligence

FROM: Director of Scientific and Weapons Research

SUBJECT: Proposal for an Interagency Intelligence Memorandum on Soviet Battlefield Laser Threat to US Forces.

1. From a variety of sources, it is clear that there is heightened interest and concern over Soviet threats to US forces that are posed by lasers, particularly low and medium-energy devices that have received little or no serious attention in the Intelligence Community. Though recognition of the possibility of such threats is not at all new, having been discussed for well over a decade, there is now an appreciation of the enormity of the potential threat and the perception of a clear and present danger to US forces.

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2. The most authoritative and up-to-date assessment of the problem and a statement of official concern are contained in the March 1982 Report of the Defense Science Board Task Force on Forward Area Laser Weapons. The covering memorandum for this report, approved by the Secretary of Defense, made specific recommendations for actions by the DOD, USDRE, and the Services. It also noted certain deficiencies in intelligence support, declaring that:

- "much more emphasis and higher priority should be given by the intelligence community to evaluating the laser threat, both from collection and analysis viewpoints. In particular, more emphasis is needed in the low and medium energy threat evaluation."
- the Director, Defense Intelligence Agency, is to be required by USDRE to "provide greater effort and higher priority for intelligence collection and analysis on the Soviet anti-sensor laser threat, including not only high, but low and medium energy programs as well."

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SUBJECT: Proposal for an Interagency Intelligence Memorandum on Soviet Battlefield Laser Threat to US Forces

Collection

Earlier this year, the DCI received a letter from General Meyer, Army Chief of Staff, asking for support and higher priority in collection of intelligence on the Soviet use of lasers in ground weapon systems. The Human Resources Committee was tasked to review community collection capabilities and the Weapon and Space Systems Subcommittee (WSSIC) was instructed to prepare a tactical laser collection support brief. [redacted] 25X1

It seems fair to conclude that the Intelligence Community now recognizes, albeit belatedly, the need to assign a higher priority to the low/medium energy laser threat. The WSSIC collection support brief will help to improve collection and it serves as the beginning of a formal community response to the implorations of the Defense Science Board and General Meyer regarding collection. [redacted] 25X1

But a community response to the challenges and requirements to improve the analyses and threat estimates of Soviet battlefield lasers is not apparent. [redacted] 25X1

Analysis

Within the Intelligence Community, Army and Air Force have been the primary producers of the finished intelligence that does exist on the low/medium energy laser problem. For the record, their major publications include:

- "Projection of Electro-Optical Systems for Soviet Ground Forces," (FSTC), AST-1740R-100-76-SAO, [redacted] November 1976. [redacted] 25X1
- "Low Energy Laser Technologies--USSR," (FTD), DST-1743S-034-79, 12 September 1979; Executive Summary, DST-1740E-034-80, 18 April 1980. [redacted] 25X1
- "Low Energy Laser Applications--USSR," (FSTC), DST-1743S-031-79, 2 November 1979; Supplement 2, DST-1740S-036-82-SUP 2, 7 May 1982. [redacted] 25X1
- "Soviet Tactical Laser Threat," (Army), ATC-TD-1740-013-80-SAO, [redacted] December 1979. [redacted] 25X1
- "Helicopter and Ground-Based EO Capabilities-- Eurasian Communist Countries, Volume 2: Electro-Optics," DST-1740S-005-81-VOL 2, 31 July 1981; update issued 16 July 1982. [redacted] 25X1

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PROPOSED INTERAGENCY ASSESSMENT: The Soviet Battlefield Laser Threat to US Military Forces

Background

Most of the US tactical equipment in the forward combat area, either presently deployed or planned for deployment in this decade, is heavily dependent upon electro-optical (EO) systems for navigation, target acquisition, fire control and precision guidance of munitions. Many billions of dollars have been or are programmed to be invested in air and ground weapon systems which depend upon EO sensors and seekers. The US dependence on EO systems is considerable and pervasive.

The concern is primarily over low and medium-energy laser weapons that could be derived from current technology. The Intelligence Community has been concerned with the strategic threat posed by high-energy laser damage weapons--the Soviet low and medium-energy threats to tactical systems were, with some exceptions, largely overlooked. Today that threat may well be imminent.

Key Questions

Most of the key questions of interest on the subject of the battlefield laser threat were recently compiled by the Letterman Army Institute of Research. With some paraphrasing, these are:

- Which Soviet/Warsaw Pact military platforms currently field laser devices? What are the purposes of these lasers?
- For each fielded or deployed Soviet/Warsaw Pact laser device, what are the types of lasers, their wavelengths, average power/pulse energy, peak power/pulse energy, pulse width, prf, and beam divergences?
- Are low-energy/low-power laser devices used in Soviet/Warsaw Pact war-gaming scenarios and military exercises?
- What are the Soviet/Warsaw Pact employment provisions, norms, and tactics for their military lasers?
- What are the capabilities of the Soviet/Warsaw Pact forces in engaging US/NATO forces with existing laser hardware, either as dedicated weapons or as weapons of opportunity?
- Does Soviet/Warsaw Pact military training provide for the use of lasers offensively? Against what targets? Under what circumstances?
- What are the Soviet/Warsaw Pact projections for introducing additional and new low or medium-energy laser devices into their armed forces? By what time? On what platforms? For what uses?

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Precis

This study should address the emerging issue of low and medium-energy tactical battlefield laser capabilities of the Soviet Union and the Warsaw Pact countries and the threats these pose to US and NATO forces and systems. It should review and summarize the status and prospects in Soviet research, development, production, and deployment of a wide variety of lasers and laser devices used as rangefinders, illuminators, designators and guidance systems, and weapons. The issues and topics to be covered include:

- Soviet/Warsaw Pact capabilities to produce rugged, reliable, battlefield lasers for military applications.
- A deployed laser order of battle for Soviet/Warsaw Pact military equipments (tanks, armored vehicles, personnel carriers, helicopters, and aircraft).
- Technical characteristics of deployed and projected Soviet/Warsaw Pact laser systems and their performance in their primary, intended roles.
- Performance of deployed and projected laser systems used in any secondary or ancillary roles, e.g., a rangefinder used as a countermeasure to a sensor or as an antipersonnel "blinding" weapon.

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