

BODY

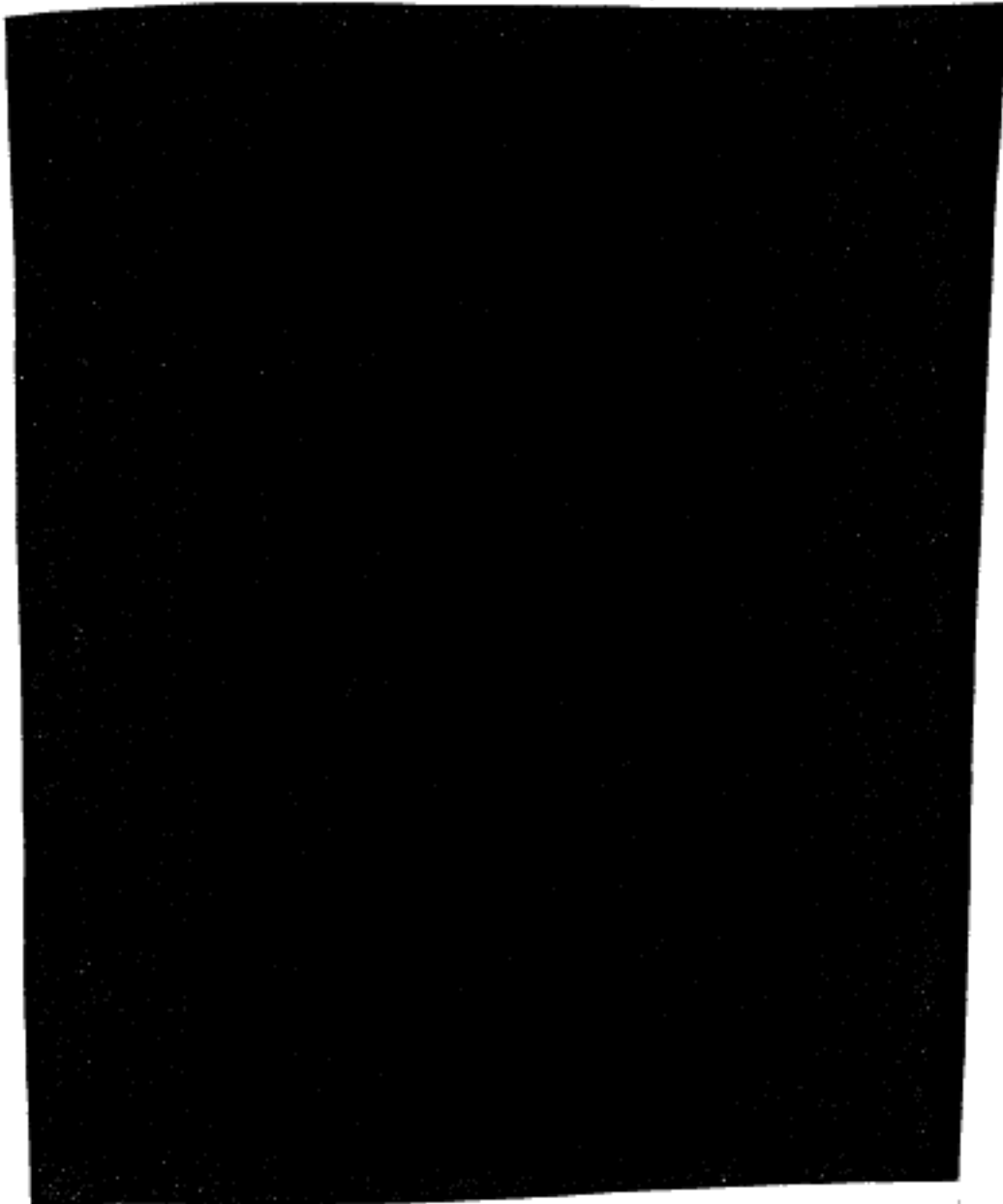
SUBJECT: SCIENCE AND WEAPONS REVIEW CABLE,
SW SWRC 89-5002K, 10 JANUARY 1989

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ISRAEL: ANTITACTICAL BALLISTIC
MISSILE PROGRAM [REDACTED]

VARIOUS SOURCES INDICATE THAT THE ISRAELIS ARE
ENGAGED IN A LARGE, DIVERSE ANTITACTICAL BALLISTIC
MISSILE PROGRAM TO DEVELOP DEFENSES AGAINST ARAB
MISSILES ARMED WITH CHEMICAL WARHEADS. WITH
CONTINUED US TECHNICAL ASSISTANCE, THE ISRAELIS
SHOULD BE ABLE TO MEET THEIR 1995 DEPLOYMENT GOAL.
[REDACTED]

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1. ISRAEL: ANTITACTICAL BALLISTIC
MISSILE PROGRAM

VARIOUS SOURCES INDICATE THAT THE ISRAELIS ARE ENGAGED IN A
LARGE, DIVERSE ANTITACTICAL BALLISTIC MISSILE (ATBM) PROGRAM
TO DEVELOP DEFENSES AGAINST ARAB MISSILES ARMED WITH CHEMICAL
WARHEADS. ACCORDING TO THESE SOURCES, THE ISRAELIS PLAN TO
HAVE THE FIRST PHASE OF THESE DEFENSES READY BY 1995.

A LARGE PART OF THEIR ATBM PROGRAM IS FUNDED THROUGH THE US
STRATEGIC DEFENSE INITIATIVE (SDI) PROGRAM FOR THEATER



[REDACTED]

DEFENSE. DEFENSE ATTACHE AND OTHER REPORTING INDICATES THAT
ADMIN

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[REDACTED]

[REDACTED]

[REDACTED]

SECTION 3 OF 18

[REDACTED]

[REDACTED]

BODY

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(RVS) OF SS-21 AND SS-23 SHORT-RANGE BALLISTIC MISSILES.

TO OBTAIN INITIAL TARGET POSITION AND VELOCITY DATA, THE
ARROW WILL RELY ON A PHASED-ARRAY RADAR, [REDACTED]

AFTER TARGET TRACK BY THE RADAR, THE ARROW WILL BE LAUNCHED.
IT WILL USE GROUND-BASED RADAR-DERIVED DATA FOR THE INITIAL
PORTION OF FLIGHT. AN ONBOARD INERTIAL MEASUREMENT UNIT THEN
WILL FLY IT TO [REDACTED] THE
ESTIMATED INTERCEPT POINT. [REDACTED]

TARGET KILL WILL BE EFFECTED BY A NONNUCLEAR, SHAPED WARHEAD.
THE PLANNED PROBABILITY OF KILL IS 90 PERCENT. [REDACTED]

[REDACTED]

[REDACTED] THE THREE
ARROWS MODIFIED TO SIMULATE TACTICAL BALLISTIC MISSILES WILL

[REDACTED]

*Bracketed
Denied*

[REDACTED]

[REDACTED]
FLY A PROFILE SIMILAR TO THAT OF THE SS-23. THEY WILL BE LAUNCHED FROM A BARGE IN THE MEDITERRANEAN TOWARD THE ISRAELI COAST. THE OTHER THREE ARROW MISSILES ARE TO INTERCEPT THEM FROM THE YAVNE MISSILE TEST CENTER SOUTH OF TEL AVIV. [REDACTED]
[REDACTED]

RELIABLE REPORTING INDICATES THAT THE ISRAELIS CONSIDER THE ARROW PROGRAM TO BE ON SCHEDULE. THE FIRST SOLID-MOTOR BOOSTER TEST [REDACTED] ACHIEVED PARTIAL SUCCESS, AND THE SECOND SUCH TEST [REDACTED] WAS COMPLETELY SUCCESSFUL. [REDACTED]

ISRAEL IS PRESSING THE UNITED STATES TO PROVIDE FUNDS FOR THE DEVELOPMENT OR PURCHASE OF THE ARROW SYSTEM'S ENGAGEMENT AND EARLY WARNING RADARS (IN ADDITION TO THE [REDACTED] DOLLARS ALREADY AGREED TO). [REDACTED]

TEST BED

IN ADDITION TO THE ARROW PROGRAM, A COMMAND, CONTROL, AND COMMUNICATIONS TEST BED WILL BE CONSTRUCTED TO CONDUCT COMPUTER SIMULATIONS OF PROPOSED ATBM DEPLOYMENT ARCHITECTURES. THE TEST BED WILL BE BUILT BY THE ISRAELI FIRM TADIRAN [REDACTED] AND THE CONSTRUCTION WILL TAKE ABOUT 30 MONTHS. THE [REDACTED] COST IS CURRENTLY BEING COVERED BY ISRAEL; HOWEVER, DEFENSE MINISTER RABIN HAS ASKED THAT THE COST BE SPLIT BETWEEN THE UNITED STATES AND ISRAEL, WITH THE UNITED STATES FUNDING 80 PERCENT, AS WITH THE ARROW PROGRAM. [REDACTED]

HYPERVELOCITY GUN

THE ISRAELIS HAVE ALREADY DEVELOPED A PROTOTYPE FOR A ADMIN [REDACTED]

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[REDACTED]

[REDACTED]

SECTION 4 OF 18

[REDACTED]

[REDACTED]

BOD1

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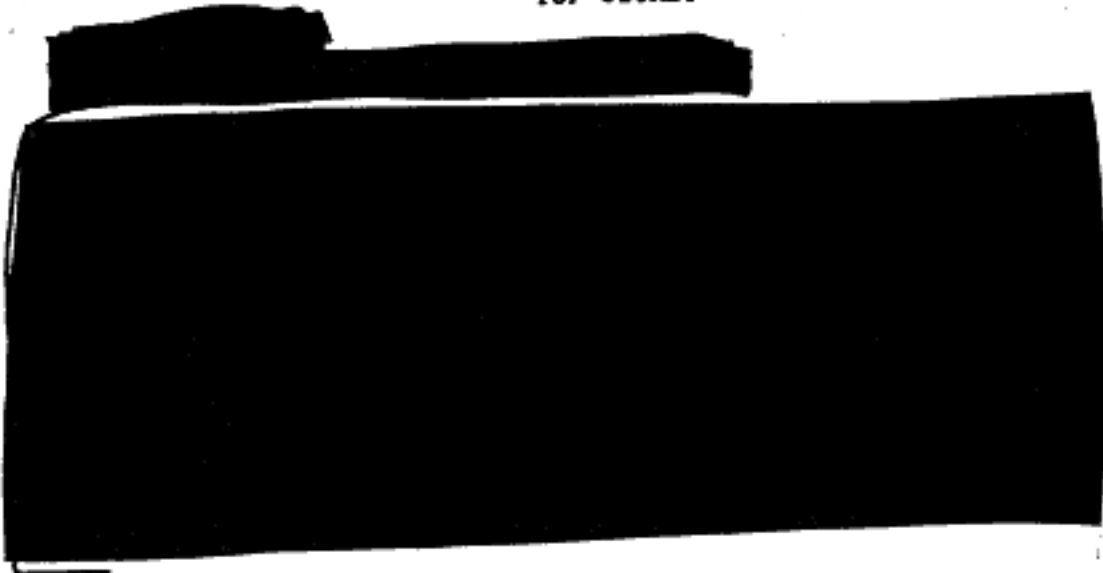
Refer to
[REDACTED]

HYPERVELOCITY GUN. THE PROTOTYPE HAS A BARREL ABOUT 4 METERS LONG, ABOUT 45 CENTIMETERS (CM) IN DIAMETER IN THE REAR, AND TAPERING TO ABOUT 18 CM IN FRONT. PROPULSION IS STARTED BY ELECTROMAGNETIC FORCE FOLLOWED BY A CHEMICAL CHARGE TO INCREASE VELOCITY. THE SYSTEM HAS ACHIEVED A VELOCITY OF 1,950 METERS PER SECOND. THE TESTS HAVE BEEN CONDUCTED AT THE SOREQ NUCLEAR RESEARCH FACILITY SOUTH OF TEL AVIV. THE FINAL GUN PROBABLY WILL HAVE A CALIBER OF ABOUT 155 MILLIMETERS. THE COST OF THIS PROGRAM IS 85 DOLLARS MILLION.

[REDACTED]

[REDACTED]

[REDACTED]



Refer to

HEL PROGRAM

ISRAEL HAS AN EXTENSIVE LASER RESEARCH AND DEVELOPMENT COMMUNITY. THERE ARE 35 ISRAELI FIRMS, AS WELL AS A NUMBER OF UNIVERSITIES, ENGAGED IN ELECTRO-OPTICS AND LASER RESEARCH AND PRODUCTION. THE CENTER OF EXCELLENCE FOR CHEMICAL LASERS AT BEN GURION UNIVERSITY HAS A GRANT UNDER THE SDI FRAMEWORK TO DEVELOP NOVEL CHEMICAL LASERS. SOURCE REPORTING INDICATES THAT THE WEAPON SYSTEMS DIVISION OF RAFAEL, THE ISRAELI ARMS DEVELOPMENT AUTHORITY, IS WORKING ON AN AIRBORNE CHEMICAL LASER WEAPON SIMILAR TO THE US MIRCL SYSTEM. HOWEVER, RAFAEL SEEMS TO LACK DATA ON MISSILE VULNERABILITY TO LASER ATTACK. GIVEN THE DIFFICULTIES THE UNITED STATES HAS ENCOUNTERED IN TRYING TO DEVELOP LASERS FOR MISSILE DEFENSE, WE BELIEVE THAT THE ISRAELI AIRBORNE HEL WILL BE MORE USEFUL AGAINST CRUISE MISSILES THAN AGAINST BALLISTIC MISSILES.

SPACE-BASED SENSORS

WITH THE LAUNCH OF THEIR FIRST SATELLITE, THE ISRAELIS DEMONSTRATED THE CAPABILITY TO PLACE A SATELLITE IN LOW EARTH ADMIN

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