

MEMORANDUM FOR:

Two variants of unclassified comparison of Soviet Union and the US in the "top twenty technologies." Released annually by the DDR&E. Based on intell community inputs.

There is an important message here: the Soviets do not seem to be able to compete with the US in the ability to support a program to develop a space-based BMD. It takes more than just directed energy and power sources to make a weapon system. It is particularly significant that the Soviets are in such arrears in the computer and sensors arenas...

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UNCLASSIFIED

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WHO IS WINNING THE TECH RACE?

This chart, adapted from a Defense Department report, shows relative U.S. and Soviet standing in 20 areas of technology chosen by the Pentagon as a valid base for comparing overall U.S. and Soviet technological standing. These technologies are all "on the shelf" and available for application, but the list is not intended to compare technology levels in currently deployed military systems.

The arrows indicate that the relative technology level is changing in the direction indicated—either toward greater equality between the United States and the Soviet Union or, in one case, toward greater U.S. superiority in the field.

The report cautions that these comparisons depict overall average standing only, not relative standing in subcategories of a given technology.

Basic Technologies	U.S. Superior	U.S./U.S.S.R. Equal	U.S.S.R. Superior
Aerodynamics/Fluid Dynamics		●	
Computers and Software	←●		
Conventional Warheads (including all chemical explosives)		●	
Directed Energy (laser)		●	
Electro-Optical Sensor (including infrared)	●		
Guidance and Navigation	●		
Life Sciences (human factors/biotechnology)	●		
Materials (lightweight, high strength/temperature)	●→		
Micro-Electronic Materials and Integrated Circuit Manufacturing	●		
Nuclear Warheads		●	
Optics		●	
Power Sources (mobile; includes energy storage)		●	
Production/Manufacturing (includes automated control)	●		
Propulsion (acrospace and ground vehicles)	●→		
Radar Sensor	●→		
Robotics and Machine Intelligence	●		
Signal Processing	●		
Signature Reduction	●		
Submarine Detection	●→		
Telecommunications (includes fiber optics)	●		

SOURCE: THE FY 1987 DEPARTMENT OF DEFENSE PROGRAM FOR RESEARCH AND DEVELOPMENT

important
for SDI -
type
technologies

TECHNOLOGY COMPARISONS
TOP TWENTY TECHNOLOGIES

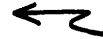
UNITED STATES
LEADS

EQUALS

SOVIET UNION
LEADS

- 0 COMPUTERS/SOFTWARE
- 0 SIGNAL PROCESSING
- 0 RADAR SENSORS
- 0 E-O SENSORS
- 0 GUIDANCE/NAVIGATION
- 0 STEALTH
- 0 OPTICS
- 0 MICRO-ELECTRONICS
- 0 TELECOMMUNICATIONS
- 0 SUBMARINE DETECTION
- 0 PROPULSION
- 0 MATERIALS
- 0 ROBOTICS
- 0 LIFE SCIENCES
- 0 PRODUCTION

- 0 DIRECTED ENERGY
- 0 POWER SOURCES
- 0 FLUID DYNAMICS
- 0 CONVENTIONAL WARHEADS
- 0 NUCLEAR WARHEADS



YES, THEY ARE
GOOD IN DE
TECHNOLOGIES

BUT

THE SOVIETS
DON'T HAVE THE
OVERALL LEAD
IN ANY AREA.

IMPORTANT
IF THE
SOVS
WANTED
AN "SDI"
OF
THEIR
OWN

DECLASSIFIED