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22 October 1975

MEMORANDUM FOR: Mr. John K. Boidock
Chief, Electronic Branch
Office of Export Administration
Department of Commerce

SUBJECT : Soviet Travelling Wave Oscilloscopes

Attached is a report on Soviet travelling wave oscilloscopes which you requested from of this office. Please address any questions to

Attachment
as stated

(S-08210)

SECRET

Attachment

The USSR has manufactured oscilloscopes using cathode ray tubes with travelling wave deflection structures for about 12 years. The first such oscilloscope, the S1-14 (formerly called the SO-1) was announced as being in production in 1963. It had a rated bandwidth of DC-3000 MHz direct to the tube, or DC-1000 MHz through a delay line. The sensitivity was 50 v/cm at 3000 MHz and 33 v/cm at 1000 MHz.

The S1-14 was replaced by the S1-36 in the late 1960's. The S1-36 had a rated bandwidth of DC-1000 MHz. Its published specifications for sensitivity are ambiguous.

The next Soviet travelling wave oscillograph was the S1-61. Introduced in the early 1970's, it had a rated bandwidth of DC-1000 MHz and a sensitivity of 1 v/cm. A later modification, the S1-61A (later renumbered the S7-10A), extended the bandwidth to 1200 MHz with a sensitivity of 2 v/cm. The S1-61A is listed in current Soviet catalogs and represents the production state of the art for Soviet TW oscilloscopes.

[ ]Their published specifications indicate that they are not as advanced as their contemporary Western counterparts.

[

] Several Soviet TW oscilloscopes have been observed at a Soviet laser research facility. On the other hand, the Soviets have made extensive efforts in the past to acquire similar US oscilloscopes through illegal channels. Several years ago, the Soviets legally purchased a US TW oscilloscope to equip the Serpukhov nuclear research facility, rather than use a domestically produced model. It is probable that although TW oscilloscopes are manufactured in the USSR, they are available only to the highest priority users.

CIA/OER
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