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Soviet Communications Journals as Sources of Intelligence

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The collection of foreign intelligence is accomplished in a variety of ways, not all of them mysterious.

—Allen Dulles, *The Craft of Intelligence*

“Sputnik will contain two transmitters, with frequencies of about 20 and 40 mc; radiated power will be about one watt. . . . Sputnik’s signals will be c.w. dashes .05 to 0.7 second long. The transmitters will operate alternately, the mark of one corresponding to the space of the other.”

This announcement, published in the June 1957 issue of the Soviet magazine *Radio*, was intended to acquaint Russian radio amateurs with the signal characteristics of Sputnik I so that they would be prepared to monitor the signals once the satellite was launched. The next two issues of *Radio* contained additional details of Sputnik’s transmissions.

If we Americans had been reading *Radio* as carefully as the Russians were, we might have been better prepared to receive Sputnik’s signals when it was launched a few months later. We would have known, for example, that the transmissions were to be on 20 and 40 mc instead of on 108 mc, as had been agreed upon in the IGY satellite program. Our failure to act upon—perhaps even to notice—the announced change in frequencies meant that the Minitrack stations had to adjust hastily to the lower frequencies with improvised antennas and changes in receiving equipment. NSA field stations were able to provide incomplete coverage of the 20-mc transmissions, but, except in a few cases, equipment limitations prevented coverage of the 40-mc signals.

The example of Sputnik illustrates rather dramatically the value of Soviet technical journals as sources of intelligence. If we learned nothing else from Sputnik, we learned that what the Russians write in their technical publications is worth reading. If these journals were little read in the West before Sputnik, today they are read widely and carefully.

Using P241, the Communications Methods Research Branch, as an example, let’s see how useful Soviet communications journals are as sources of intelligence at NSA.

P241 began to read and translate material from the Soviet electronics press in 1958. An early result of this effort was a series of reports in which the contents of two Soviet communications journals were summarized. Concise translations of individual articles were then provided upon request. This service continued for several years but had to be discontinued because the volume of requests became too great for the branch's only Russian linguist. Also, commercially prepared, complete translations of one of the two journals were by then available.

A number of P241's reports have been based, at least in part, on material published in Soviet communications books and magazines. A few examples follow:

- a. A report of mid-1958 provided some of the first documentary information on the R-401 radio equipment. The source in this instance was a Russian railroad magazine, and the equipment described was the RRS-1, the civil version of the R-401 set.
- b. At about the same time, another issue of the same magazine gave us rather complete information on a newly developed Russian teleprinter, the LTA-57. Additional details have continued to appear in various publications until today we know practically all there is to know about the set and the signal it produces. And here again, the published details and the intercepted signal are identical.
- c. The Soviet technical press furnished firm evidence that the Russians had embarked on a large-scale conversion of printer codes. A magazine article of August 1961 reported that all the older model teleprinters used on the railroads were to be converted to the use of a Russian version of International No. 2 Code (1T1JB). Other changes were also to be made, all with the purpose of making Russian printers conform to international standards. The article also contained some good illustrations—the keyboard, code charts and pallet arrangements. An expurgated version of the report was later used by U. S. communicators in their discussions with the Russians on establishing the Washington-Moscow "hot line."

As these examples show, the "open sources" are particularly good for providing information on new equipment. From them, we have obtained specifications on such equipment as the R-series radios, the PM-24, R-60/120, R-400 and R-600 (Vesna) radio-relay systems, photofacsimile sets, and a number of transmitters and receivers. A considerable part of the information in P241's files on Communist Bloc communications equipment comes from the Soviet electronics press.

Equipment information is not, however, the only thing we get from reading the open sources. We also learn of the testing of new systems and techniques, future communications plans, and general trends in Bloc communications usage. Examples which we have reported during the past few years include details on the testing of scatter communications between Leningrad and other points, a summary of

trends in Russian thinking regarding ways of increasing the traffic-handling capabilities of multichannel printer systems, and a report on the Soviet Union's Seven-Year Plan for communications development. The lead article in the Ministry of Communications' monthly journal *Vestnik Svyazi* (*Communications Review*) often sets the course to be followed in civil communications, and this, of course, is useful information to have.

Which are the good sources? Among periodicals, the ones most used in P241 are *Avtomatika, Telemekhanika i Svyaz'* (*Automation, Remote Control and Communications*, the railroads' official journal), *Elektrosvyaz'* (*Telecommunications*), *Radio*, and *Vestnik Svyazi*. More theoretical but occasionally useful are *Radiotekhnika* and *Radiotekhnika i Elektronika*.

Pravda and *Izvestiya* sometimes provide miscellaneous items of interest—announcements of new radio-relay links, the opening of a new television center (which often means that a radio-relay circuit has been extended), and statements by Communications Minister Psurtsev.

For information on military communications equipment and techniques, we rely on the communications section of *Voennyj Vestnik* (*Military Review*). A better source—if we could get it—would be *Voennyj Svyazist* (*Military Communicator*). Except for a few old issues which are available, copies of this magazine unfortunately seem to be almost impossible for foreigners in the USSR to buy, borrow or steal.

The Russians are prolific publishers of books and pamphlets which are sold widely at very low cost. While some of those in the communications-electronics field are written in a popular science vein, there are also serious works, and these are worth looking at. Those which we have used range from booklets on particular microwave systems and communications planning to engineering handbooks. One of the best of these contains whole chapters on various teleprinter and photofacsimile sets in regular use on Soviet radio circuits. All are described in the fullest detail. This particular book cost the Agency \$2.07. Would that all our information could be obtained so easily and cheaply!

As guides to what the Russians are publishing in our field, we use the various periodical indexes and book catalogs published in both English and Russian. C3's new Russian acquisitions are also scanned for items of interest.

A considerable amount of Soviet scientific and technical information is now available in translation. In the communications field, complete translations of the magazine *Elektrosvyaz'*, *Radiotekhnika*, *Radiotekhnika i Elektronika*, and *Vestnik Svyazi* are available in

English. Individual articles, pamphlets and books are also translated by various government and private organizations, notably by the Joint Publications Research Service. Many of the news items from *Pravda* and *Izvestiya* are published in CIA's daily *Foreign Broadcast Information Service* reports. Abstracts of articles from Russian electronics journals are prepared by an Air Force unit at the Library of Congress. Others are published by commercial translation services in digests such as *Electronics Express*.

Finally, how reliable are the Russian sources? Since they are written by communicators and are intended to impart information to other communicators, there seems to be little reason for willful distortion. If allowance is made for a small "bragging factor," the sources can generally be considered reliable. We consider them not only reliable but valuable.