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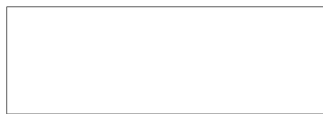
10 April 1984

NOTE FOR: C/TTAC/OSWR/DDI

FROM: EA/DDCI

Fred:

Please have someone take a look at this and get back to me with any comments in a couple of days.



Attachment

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*ep: Hand Carried by TTAC on  
13 April at 1800  
Action complete*

EA/DDC  cn

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NATIONAL RESEARCH COUNCIL

2101 Constitution Avenue Washington, D.C. 20418

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84-1661

April 10, 1984

John McMahon  
Deputy Director  
Central Intelligence Agency  
Washington, D.C. 20505

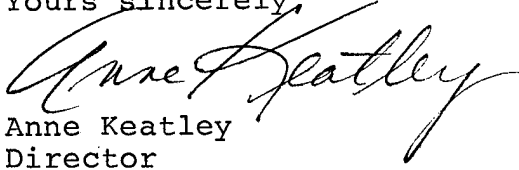
Dear Mr. McMahon:

As a follow-up to the February Export Control Seminar at which you spoke, we are planning to produce a report that will include edited transcripts of several of the presentations, including those of Roland Schmitt (General Electric Co.), Richard Meserve (Covington & Burling), Paul Gray (MIT), as well as your own talk. The report will be sent to all participants and to individuals who were invited to the seminar but were unable to attend. Additional copies will be available to you.

Enclosed for your review is a copy of your edited presentation. In order to meet a publication target of April 30, I would appreciate your sending or calling in any comments or corrections to Lois Edwards (334-2431) by Friday, April 20. I would especially appreciate it if someone could check the spelling of the German names on p.12.

Thank you for your help. If you have any questions please give me a call.

Yours sincerely,

  
Anne Keatley  
Director  
Academy Industry Program

Enclosure

B-302



THE JUSTIFICATION FOR AND CONSEQUENCES  
OF CONTROLS

John McMahon, Deputy Director  
Central Intelligence Agency

As you can imagine, the intelligence community is somewhat uptight on technology transfer. We get a little demoralized to spend a lot of effort to find out about Soviet weapon systems only to have them end up being ours. That's not an overstatement. The technology transfer on military-related hardware is enormous, and what I would like to do today is share with you a feeling that we are not really dealing with a bunch of spooks who get some information every now and then. We are dealing with a concerted effort by the Soviet Union, beginning in the Politburo on down, in a well organized structure that orchestrates the acquisition of hardware as well as technology.

At one time we were quite content to be the target of all of this because of the position the United States

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enjoyed in the technological world. That technology has been shared now with Western Europe and Japan as they have expanded to meet the United States technologically, and it has afforded the Soviet Union and their allies in the Warsaw Pact a happy hunting ground. If they can't get it here, they can get it someplace else.

With the Europeans very much involved in this now, we run up against a blood strain that desires trade with the East and views the United States with a little bit of skepticism as we begin to put controls on that trade. We finally caught the attention of our allies about two years ago when we pointed out to them that it was not a question of trade, but of robbery, that the Soviets were running clandestine operations against them and walking away with their technology free of charge. That caught their attention and they now realize that it's for real. In the past year over 100 Soviets have been expelled from Europe because they were caught red-handed. I would like to share with you some of our own clandestine operations as well as from sharing our experience with our Western allies. This is not a new issue between the intelligence community and the National Academy. We had a very interesting dialogue

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with the Dale Corson Panel\* in which we studied the problems posed by our concern for U.S. national security needs as well as their impact on academic exchanges. It was not surprising that we didn't agree on all points, but there was a sufficient sharing of views that I think it had a very valuable effect across the board. Insights were gained by the Academy as well as the public about a problem that until then had very much been overlooked. The Academy has played a very useful role in developing awareness throughout academia about this technology transfer problem.

Technology transfer, of course, has many facets, but in terms of national security, it can be distilled down to a simple, overriding problem, at least at the moment: the simple acquisition of military-related Western technologies by the Communist world, and here we focus principally on the Soviets and their Warsaw Pact allies.

The scope of the Soviet collection effort and the ability of the Soviet military industrial complex to assimilate Western technology is most impressive, and it really surprised us when we began to look into it. They

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\*Panel on Scientific Communication and National Security, chaired by Dale R. Corson

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can do it. There was a very glib saying for years that, well, even if the Soviets get the technology, they can't put it to use because they can't produce it. All we have to do is make sure that they don't get our production techniques, and they can't do much about it. Well, that has proven false; they can do much about it and are doing it today.

Just during the late '70s, the Soviet collectors have acquired some 30,000 pieces of Western controlled as well as uncontrolled equipment, weapons, military components, and manufacturing technology, and over 400,000 technical documents. Unfortunately, a good many of these documents are classified. We know that the KGB and their counterpart in the military, the GRU, as well as the Ministry of Trade, the Soviet Academy of Sciences, and the State Committee for Science and Technology are seeking and have already acquired and copied the following items to help solve their problems in developing new weapons and military equipment.

They have hundreds of pieces of microelectronic fabrication as well as memory tester systems, hundreds of electronic test and metering systems for quality control on aviation, missile, and undersea systems. They have programmable oscilloscopes, scores of

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microwave and other advanced communications equipment, high quality large photographic systems for thin film production, multimillion dollar large machining centers for manufacturing tanks and military vehicles, industrial lasers and lasers for communications and weapons R&D, fiber-optical production systems, space shuttle equipment and knowhow, quality lubricants and rubber products for military vehicles, high density self-contained power supplies, and high modulus glass fibers.

That's just a sample of how they can reach into our technology and get it; and we know they have it. As a result of these acquisitions, the growth of Soviet military power has been greatly accelerated in all key areas, and there has been a steady erosion of technological superiority on which U.S. allied security increasingly depends. The narrowing of the technological gap in turn has compelled the United States and its allies to make even greater efforts to overcome the growing sophistication and lethality of the Soviet military focus.

Although there is growing public awareness of this problem, very few outside the intelligence community understand how the Soviet program for collecting and

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exploiting Western technology is organized and implemented.

Parenthetically, I would like to comment on an article that the French intelligence service kindly leaked through a French periodical in which they mused about the beauty of the United States and its ability to sustain two defense programs, one of their own and one of the Soviet Union, the problem being that we have to spend money just to stay even with ourselves because of this rush of technology to the Soviet Union.

The organization and structure of the Soviet S&T acquisition program is considerable. We have collected in the intelligence community a truly impressive amount of evidence about the Soviet Union's worldwide effort to acquire high technology, and it is no accident on the part of the Soviet Union. It is extraordinarily well organized, highly centralized, and under the direct supervision of the highest organs of the party and the state: the Politburo of the Communist Party Central Committee and the Council of Ministers. The primary control over the technology acquisition and exploitation rests with the VPK, the Military Industrial Commission. Significantly, predecessors to the VPK have existed since the 1930s to ensure that the Soviet military gets

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the resources it needs from the planned economy.

Sometime in the late 1960s, the VPK was directed to greatly expand its efforts in acquiring technology from the West as well.

The VPK directly oversees the participation of the 12 key Soviet industrial ministries that are involved in military production as well as in the assimilation of Western technology into that production. In addition to the VPK, there is a little-known organization inside the State Committee for Science and Technology called the Technical Center. It is a central clearinghouse for the program and is responsible for collecting the requirements and reports submitted by the defense industrial ministries to the VPK, and for the intelligence information and materials acquired by the collecting agencies.

The defense industrial ministries in turn are required to report regularly to the VPK on their progress in assimilating the savings in this foreign technology into their weapons program. The collection requirements are gathered by the Technical Center, blessed by the VPK, and given to the collectors for action. The Soviets designate as the collectors the KGB and the GRU as well as the State Committee for Science and Technology, the

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Soviet Academy of Sciences, the Ministry of Foreign Trade, and the intelligence services and foreign trade missions of their Warsaw Pact allies.

From our knowledge, the KGB and the GRU account for about 70 percent of the most significant military-related items acquired from the West. This includes not only classified items, such as weapons systems components, but also such key dual-use and export-controlled items as computers, microelectronics, fiber optics, powder metallurgy, composite materials, lasers, and associated production technology. In the recent French report that I spoke of, it was estimated that during the last three years the KGB alone acquired 30 percent of France's latest high technology achievements. It is interesting to note that 80 percent of this 30 percent was acquired on the open market.

The role of the State Committee for Science and Technology--the GKNT as we call it--and the Soviet Academy of Sciences in acquiring Western technology is of particular relevance to this gathering. The GKNT is responsible for coordinating all applied research in the Soviet Union. It also plays an important role in acquiring Western technology. GKNT's scientific and technical information gathering and processing

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activities are vital to the generation of Soviet requirements for foreign technological acquisitions. These activities are conducted through a nationwide, centrally-directed system that comprises some 100,000 individuals and several thousand information departments affiliated with Soviet research institutes, design bureaus, and production facilities.

In addition, the GKNT manages efforts to acquire Western technology through the activities of Soviet scientists and engineers involved in academic, commercial, and scientific exchanges with the West, including those sponsored by the Soviet Academy of Sciences. This we know for a fact. In an era of quantum leaps in military technology, basic research has become increasingly important to a nation's long-term military potential. Most basic research in the Soviet Union is done under the auspices of the Soviet Academy of Sciences.

A fact difficult to accept in the United States is that the Soviets, with growing frequency, have used academic exchange programs with Western universities and research centers to acquire sensitive scientific information for use in their weapons programs. Western magnetic bubble memory technology, microelectronic and

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laser research, nuclear energy technology, and deep diving submersibles are but a few of the areas in which Soviet scientific exchanges have scored notable successes.

The Soviet Academy of Sciences, along with the GKNT, work closely with Soviet intelligence services. Soviet scientists traveling to the West are briefed by Soviet intelligence services on S&T intelligence requirements before they leave the country. They also are expected to assess their Western colleagues for their potential as intelligence agents. Moreover, an increasing number of intelligence officers are given S&T training to allow them to masquerade as scientists in part of these exchanges.

The Ministry of Foreign Trade (MFT) is responsible for the majority of the illegal trade conducted through normal trade channels. The MFT operates a large network of trade offices, joint companies, and purchasing missions whose staffs are quite adept at obtaining Western equipment. The KBG and the GRU regularly co-opt members of the MFT foreign trade organizations for special collection tasks abroad, and both intelligence services use the MFT trade missions abroad as cover for some of their personnel. Many of the 100-plus Soviets

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who have been expelled by Western countries for espionage within this past year were attached to these trade missions.

Finally, the Soviet Union has made increasing use of its East European surrogates to acquire Western technology, for two reasons. First, the East European countries generally have a better image in the West than the Soviet Union, and thus, their intelligence collectors are often able to blend and operate more freely. Second, the Soviets must have multiple channels for acquiring Western technology so that none of their defense industrial ministries become dependent on a single channel. The USSR Ministry of Radio Industry, for example, acquired embargoed items routinely through the Hungarian collectors. The most active East European countries in acquiring technology for the Soviets are East Germany, Hungary, Czechoslovakia, and Poland.

The Soviet Union and its East European allies use a vast array of methods to acquire U.S. and other Western technology. Let's discuss illegal trade through third countries, because this is the area where international export controls are the weakest. Unlike classic espionage operations, illegal trade, also known as diversions, rarely employs covert trade craft. Although

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intelligence officers are involved in arranging diversion operations, the main mechanism for acquiring controlled items through this channel is a host of fraudulent trade schemes.

A main target of diversion efforts is computers and semiconductor production equipment. In this area of diversions, we have identified already some 300 firms operating from more than 30 countries, and there are probably many more that remain unidentified. We know of at least five major diversion networks operating in Western Europe. Two of these, Debrukhausen and Meuller Networks, are some of the Soviet Union's largest suppliers of semiconductor production equipment, and they operate on a global scale. Meuller and Brukhausen were both indicted in 1977 in the United States Federal Court for illegal trade activities. However, because illegal trading is not an extraditable defense, they remain at large. Werner Brukhausen, a West German, at one point in the 1970s had more than 50 front companies operating in Austria, France, the United Kingdom, Switzerland, West Germany, and the United States. From 1977 to 1981, millions of dollars of equipment used to make microprocessors, computers, and integrated circuits were transferred through Werner to the network to the Soviet Union.

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Richard Mueller, also a West German, is a master at proliferating a maze of front companies with no ostensible connection to himself, and I must say that personally I stand in awe of his ability. We estimate that during the period 1977 to 1980, Mueller smuggled some \$10 million dollars worth of embargoed technology from the United States to the Soviet Union.

Just this past December, West German and Swedish customs seized two U.S. Vacs-11 782 computers and related equipment that Mueller was attempting to smuggle to the Soviet Union. The diversion route followed a typically roundabout course, from the United States to a Mueller front company in South Africa, from there to another in West Germany, and then Sweden, finally, on their way to the Soviet Union. Fortunately, they were intercepted. Mueller's whereabouts at present are unknown. He may be residing in a Soviet bloc country.

None of our allies, of course, condone the use of their territory for illegal trade activities, but the penalties for engaging in diversions have little deterrent value. Fines rarely exceed a few thousand dollars, while the profits for illegally selling controlled equipment to the Soviet bloc goes to the tens of millions of dollars. In 1982, Brukhausen, for

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example, netted \$18 million dollars. Prison terms are rarely imposed, and when they are the sentence is usually suspended.

The United States alone cannot respond adequately to the mounting threat posed by the Soviet technological acquisition program. Only a concerted, multifaceted approach, combining both effective export control policies and vigorous counter-intelligence programs by the United States and its allies can thwart this highly organized Soviet acquisition effort. For many reasons, the United States must take the lead in making the case for stricter export controls and enforcement. Some of our allies still believe that trade is a way to persuade the Soviet Union to act more responsibly in the world, despite all the historical evidence to the contrary. Their economies are also far more dependent on exports than are ours, and they have traditionally viewed the Soviet bloc as a lucrative market.

Proposals to eliminate the requirement to obtain a validated license before exporting to COCOM countries goods that are subject to the multilateral COCOM controls could jeopardize our whole export control mechanism. It is the opinion of the intelligence community that removal of validated licenses for goods

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to be shipped to other COCOM countries would weaken substantially the ability of the United States to monitor the flow of its technology abroad and to prevent the unauthorized re-export of this technology to the Soviet bloc.

In conclusion, I can only impress upon you that it is a massive program on the part of the Soviet Union. It does work. When we see the Soviet weapons system that is actually ours or a derivative of ours, it convinces us of the enormity of this problem and the success that the Soviets enjoy. The insights that we have into the Soviet Union and what they are doing to us and the Western world convinces us that this merits the attention of the National Academy of Sciences as well as every American, including our industrial base.

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