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An Overview Of Export Controls on Transfer of Technology to the U.S.S.R. in Light of Soviet Intervention in Afghanistan

At President Carter's direction the Secretary of Commerce suspended existing licenses and barred the issuance of new licenses to ship high technology commodities and to transfer technical data to the Union of Soviet Socialist Republics effective January 11, 1980.¹ Although the United States has controlled high technology exports to the Soviet Union in the past because of their potential military applicability, President Carter has used the Export Administration Act of 1979² to declare the current embargo for a different foreign policy purpose. The embargo is designed to hurt the Soviet Union's industrial modernization efforts in hopes of persuading it to withdraw its military troops from Afghanistan and to show that the United States will not idly stand by when such military intervention occurs.³ Thus, while the use of export controls on

¹ 45 Fed. Reg. 3027 (1980) (to be codified in 15 C.F.R. § 390.6). The regulation provides in part:

(a) All validated licenses, reexport authorizations (15 C.F.R. § 374), and parts and components authorizations (15 C.F.R. § 376.12) for shipment of any commodities or transfer of technical data (15 C.F.R. § 379) to the Union of Soviet Socialist Republics (U.S.S.R.) are suspended. This suspension includes shipments under special bulk licenses described in Part 373 to the extent they authorize shipment of commodities to the U.S.S.R. Except as described in the Savings Clause, no exports or reexports may be made against such suspended licenses or authorizations without further approval from the Office of Export Administration. This order does not affect any agricultural commodities or products made subject to validated licensing pursuant to § 376.5 of these regulations.

(b) *Savings Clause.* Shipments of any commodity or technical data previously authorized for shipment to the U.S.S.R. by a validated license or authorization as described in paragraph (a) of this section, that were on dock, on lighter, laden aboard any exporting carrier, or in transit to a port of exit pursuant to actual orders for export prior to 12 noon EST January 11, 1980 may be exported under that validated license or authorization up to 12 noon EST January 13, 1980. Any such shipment not exported before 12 noon January 13, 1980 may not be shipped to the U.S.S.R. without further authorization from the Office of Export Administration

Id. at 3029. See also Interpretation of Technical Data Regulations, *id.* at 20,071 (to be codified in 15 C.F.R. § 379, Supp. No. 2); *id.* at 37,415 (revising policy on exports to Afghanistan).

² Pub. L. No. 96-72 (1979) (to be codified in 50 U.S.C. app. §§ 2401-2420). See text accompanying notes 65-75 *infra*.

³ President Carter has brought other foreign policy weapons to bear on the Soviet Union in response to its invasion of Afghanistan. Besides the high technology embargo considered in this note, he cancelled surplus grain shipments to the U.S.S.R. 45 Fed. Reg. 1883 (1980). The United States also boycotted the 1980 Summer Olympics in Moscow. See TIME, Aug. 4, 1980, at 28-33.

technology as a foreign policy weapon is not new, this latest action offers an opportunity to review U.S. statutory controls on technology exports with a focus on the Soviet Union in order to put Carter's action in historical as well as legal perspective.

This note will first discuss the facts of the current embargo. Then, a brief history of Soviet need for foreign technology, a catalogue of U.S. law governing the transfer of such technology, and a discussion of U.S. policy objectives regarding transfer of technology to the Soviet Union will provide the context in which the recent ban on sales will be considered and analyzed.

The principal items that have been affected by President Carter's technology embargo are computers and related equipment, automobiles, communications, chemicals, lasers, microprocessing equipment, and oil and gas drilling equipment.⁴ Regarding the economic impact of the embargo, the *New York Times* reported White House Press Secretary Jody Powell as stating:

Last year, the United States exported about \$400 million worth of such products and associated technology to the Soviet Union. Mr. Powell contended, however, that the relatively small value of those sales, compared with total American exports, was far less important than the potential consequences for the Soviet Union, which is trying to expand and modernize its productive capacities.⁵

Thus, the Carter Administration has determined that the embargo is worth the price that it may cost in lost exports.

President Carter further sought to coordinate the high technology embargo with allied nations to ensure that it is worth the sacrifice and to stem the fears of businessmen and others that the embargo would not be effective if foreign firms picked up U.S. contracts that are lost.⁶ European allies at a NATO meeting of January 16, 1980, agreed "not to un-

⁴ N.Y. Times, Jan. 10, 1980, at 18, col. 2 (computers, metallurgical sciences, automobiles, communications, and chemicals); Wall St. J., Jan. 7, 1980, at 3, col. 3 (computers and related gear, lasers and microprocessing equipment, and oil and gas drilling equipment). See also 45 Fed. Reg. 29568 (1980) (amending 15 C.F.R. §§ 385 & 399) (adding lasers, silicon materials, and other items to the Commodity Control list).

⁵ N.Y. Times, Jan. 10, 1980, at 18, col. 2. Cf. Wall St. J., Jan. 7, 1980, at 3, col. 3 ("A Commerce Department spokesman said U.S. exports of 'high technology' products to the Soviet Union ranged between \$150 million and \$216 million annually over the past four years. This was only a fraction of the total U.S. exports to the Soviets, which rose from \$1.6 billion to \$3 billion during 1976-79.")

⁶ Christian Sci. Monitor, Jan. 10, 1980, at 1, col. 1 ("U.S. State Department officials expect the Soviet Union within the next few months to launch a major diplomatic and propaganda offensive aimed at breaking Western solidarity."); N.Y. Times, Jan. 10, 1980, at 18, col. 2 ("White House Press Secretary said that the Administration was 'encouraging those who share our deep concerns' over the Soviet intervention in Afghanistan not to take advantage of the American embargo."); Wall St. J., Jan. 7, 1980, at 3, col. 3 ("U.S. government officials say they're hopeful that U.S. allies will cooperate with the embargo on high technology sales to the Russians. Friendly countries have 'indicated some willingness to cooperate,' one official said.")

Businessmen have not been fully assured that such coordination will be achieved, however. For instance, Sperry Univac lost a computer order from the Soviet Union in 1978 when the U.S. government delayed approval of its export license while Soviet dissidents were being put on trial in the Soviet Union. A French firm picked up that order, and businessmen believe that the

dermine or undercut" the U.S. embargoes on grain sales, high technology exports, and commercial credit to the Soviet Union.⁷ Such solidarity was promising; however, the support fell short of an agreement by the NATO countries to reduce their current level of trading with the Soviets. Consequently, the effect of the embargo on the Soviet Union will be essentially that produced by the loss of U.S. technology in this area.

The Soviets currently view U.S. technology as necessary to their modernization efforts, but Soviet views on the importation of technology from capitalist nations and firms varied greatly in the initial part of the twentieth century and may continue to do so in the future. In the early 1920's, at the time of the "New Economic Policy," the Soviet Union was increasingly receptive to "mixed companies"⁸ within their industry.⁹ Mixed companies were seen as necessary for modernization of industry and business; and, Lenin wrote that at the time, "If we were unable, even under these circumstances to learn, to supplement what we have learnt and to complete it, our people would entirely and hopelessly be a nation of fools."¹⁰

The government under Stalin's rule, however, viewed such cooperation with foreign enterprises as having served its purpose because it felt that the socialist elements predominated the economy by that time. The government viewed joint stock companies, including mixed companies, as uncritically taken over forms of capitalist administration. Stalin and the 16th Party Congress believed that although the joint stock companies were important in the first years of Soviet power, they had outlived their usefulness. Consequently, in 1930, the 16th Party Congress ordered them liquidated.¹¹

Although there have been frequent variations of joint ventures in-

same thing will happen to contracts lost or delayed under the current embargo. Wall St. J., *supra*, at 8, col. 4.

⁷ Wash. Post, Jan. 16, 1980, at 1, col. 4. Research has not disclosed evidence of similar assurances by the Japanese.

⁸ The term "mixed companies" is used generically to describe companies in the Soviet Union which have both Soviet and Western ownership or control. These include joint ventures and companies with joint stock ownership among others.

⁹ Loeber, *Capital Investment in Soviet Enterprises? Possibilities and Limits of East-West Trade*, 6 ADEL. L. REV. 337, 344 (1978).

The charters of mixed companies had to be examined by the Main Concessions Committee and approved by the Council of the People's Commissars of the U.S.S.R. . . . The Committee was set up in 1922. It was headed by Piatakov (in 1923), and later by Trotsky (1925-27) and Kamanev (1929-1932). The fate of these chairmen should not be overlooked as a possible factor in the Soviet debate on joint-ventures today. Trotsky was exiled from the Soviet Union in 1929 (and murdered in Mexico in 1940), while Piatakov and Kamanev were sentenced to death on the charge of 'trotskyist' activities in the show trials of the late thirties and executed.

Id. at 345.

¹⁰ 33 V. LENIN, SOBRANIE SOCHINENII (COLLECTED WORKS) 420 (4th ed. 1955) (quoted in Loeber, *supra* note 9, at 346).

¹¹ Loeber, *supra* note 9, at 346.

volved the Soviet Union in third countries since the 1920's,¹² the Soviet Union only again began to emphasize trade as an important tool for modernizing its economy and as a permanent stimulus for economic growth and higher productivity in 1971.¹³ The social benefits of increased trade for the Soviet Union are obvious. Trade with the United States helps the Soviet Union to gain Western technology, to learn Western methods of management, and to gain access to Western markets. Trade also enables it to increase exports and to improve its balance of payments.¹⁴ Currently, the Soviet Union feels a strong need for trade with the United States involving high technology.

The connection between trade and improved political relations between the two superpowers in the 1960's-1970's is crucial to the renewed receptive attitude of the Soviets toward trade. In the statement of "Basic Principles of United States-Soviet Relations," signed in Moscow in 1972, it was stated that:

The U.S.A. and the U.S.S.R. regard commercial and economic ties as an important and necessary element in the strengthening of their bilateral relations and thus will actively promote the growth of such ties. They will facilitate cooperation between the relevant organizations and enterprises of the two countries and the conclusion of appropriate agreements and contracts, including long-term ones.¹⁵

The Soviets see trade as a significant barometer of the general state of U.S.-Soviet relations.¹⁶ Increased trade between the United States and the Soviet Union during the 1970's was a direct result of the warming of relations between the superpowers up to the time of the Afghanistan invasion.¹⁷

Despite the warming of political relations, the two countries have had different views as to the mutual benefit of their economic relations. Whereas the Soviet Union sees trade as a "mutually beneficial" relation-

¹² See generally U.S. CENTRAL INTELLIGENCE AGENCY, *SOVIET COMMERCIAL OPERATIONS IN THE WEST* (1977) (Contract No. ER 77-10486); *DIRECTORY OF SOVIET AND EAST EUROPEAN COMPANIES IN THE WEST* (R. Morgan ed. 1978).

¹³ See BUSINESS INTERNATIONAL, *DOING BUSINESS WITH THE USSR* 25-34 (1971).

¹⁴ Loeber, *supra* note 9, at 338. Advantages from joint ventures to Western firms include large profits, overcoming the Soviet shortage of foreign currencies, and access to the Soviet domestic market with knowledge that labor is cheap and strikes unlikely. *Id.* at 338-39.

For the legal aspects of cooperation with Soviet economic organizations, see Berman, *Joint Ventures Between United States Firms and Soviet Economic Organizations*, 1 INT'L TRADE L. J. 139 (1975); Pedersen, *Joint Ventures in the Soviet Union*, 16 HARV. INT'L L. J. 390 (1975). For a bibliography of Soviet foreign trade law, see Loeber, *supra* note 9, at 355.

¹⁵ U.S.S.R., *BASIC PRINCIPLES OF U.S.-SOVIET RELATIONS*, Point 7 (May 1972) (quoted in H. KAHN & W. SCHNEIDER, *NATIONAL SECURITY POLICY ISSUES IN U.S.-SOVIET TECHNOLOGY TRANSFER*, at 6-1 (1974) (Dep't of Defense Contract No. DAHC-15-17-C-0274)).

¹⁶ Pravda, March 17, 1973. There is a view that detente is but a subterfuge for the Soviets who need it only for the purpose of gaining additional strength with the help of Western financing and technology before they launch their next large scale offensive. See Solzhenitsyn, *Advice to the West, in an "hour of extremity,"* TIME, Feb. 18, 1980, at 48-49.

¹⁷ The warm relations should not be overstated. The Jackson-Vanik Amendment to the Trade Act of 1974, requiring a finding of free emigration before a country could be granted most favored nation treatment, 19 U.S.C. § 2432 (1976), chilled trade relations for a time. See Osofsky, *U.S.-Soviet Trade: Problems and Prospects*, 27 MERCER L. REV. 717, 730 (1976).

ship, the United States has viewed it as an American subsidization of Soviet industry via trade credits. The U.S. goal has been to develop a sufficient volume of trade to provide the Soviet Union with a stake in the continuity of such trade.¹⁸ In the process of increasing trade, the United States as a country has been giving the Soviet Union the benefit of its comparative advantages, especially in the area of high technology, and has received little in return from the Soviet Union. The bargain may be mutually beneficial for the U.S. businesses directly involved in the transfer of technology, but the United States as a whole receives nothing in return equivalent to the technology transferred. If the United States as a nation has benefited from the transfer of high technology, it has only been from the intangible aspects of better relations, a surer understanding of the Russian people,¹⁹ an export-heavy trade balance, and the possible creation of a Soviet dependency on liberalized trade.

Although the two superpowers disagree as to the equality of their present trade relationship, historically they have been in step in restricting trade with one another. The United States has been more liberal in allowing trade with the Soviet Union in the last ten years than at any prior time in U.S. history. There have been a myriad of laws providing for peacetime controls on various exports of technology to the Soviet Union, other communist countries, and countries where such trade might prove detrimental to the national security of the United States.²⁰ These controls on technology have varied during the twentieth century in a manner paralleling the variations in the political climate between the United States and the Soviet Union. An understanding of the evolution of such controls and those that are currently applicable will aid interpretation of the recent embargo and estimates of what may follow in its wake. The acts governing technology export control will be considered in four groups: those authorizing export controls in times of war and national emergency, which are administered by the Treasury Department; those governing arms controls, which are administered by the Defense and State Departments; those providing for coordination of export controls with allied countries, which are administered by the State Department; and those authorizing export controls for foreign policy and national security purposes, which are administered by the Commerce Department.

The first legislation authorizing export controls by the President is the Trading With the Enemy Act of 1917.²¹ During periods of war or

¹⁸ H. KAHN & W. SCHNEIDER, *supra* note 15, at 7-6.

¹⁹ See Solzhenitsyn, *supra* note 16.

²⁰ For a discussion of such authority during wartime, see Berman & Garson, *United States Export Controls—Past, Present, and Future*, 67 COLUM. L. REV. 791, 791 & n.1, 792 (1967).

²¹ 50 U.S.C. app. §§ 1-44 (1976) (amended 1977).

The one group of export controls not discussed in this note is that which authorizes the Nuclear Regulatory Commission to control exports of nuclear source materials. 42 U.S.C. §§ 2153-2160 (Supp. II 1978).

national emergency, this Act authorizes the President to control all exports to countries designated as enemies.²² It is administered by the Treasury Department and has been used primarily to supplement the direct controls over exports issued by the Department of Commerce.²³ The President's authority under the Act is quite broad, and up until 1977 could have been used for purposes unconnected with warfare. The President would first declare a national emergency; then he would invoke the Act to implement desired export controls.

In 1977, however, Congress revoked the President's authority to unilaterally declare a national emergency in order to implement export controls under the Act.²⁴ Congress took this action because Presidents had extensively used emergency authority under section 5(b) of the Trading With the Enemy Act to regulate transactions that were unrelated to a declared state of emergency.²⁵ At the same time that Congress revoked such authority, it authorized extensions of one year at a time for certain existing controls under the Act,²⁶ including a prohibition against the shipment of strategic goods to certain countries such as the Soviet Union. President Carter extended these controls on September 12, 1979,²⁷ so they are still in effect for items contained in the Commodity Control List which the Commerce Department implements pursuant to the Export Administration Act of 1979.²⁸ Because Congress has repealed the authority to create future export controls by declaring a national emergency, the President may only implement further export controls under the Trading With the Enemy Act during wartime.²⁹ Therefore, the use of this Act to embargo transfer of technology to the Soviet Union was precluded in the 1979 embargo.

The second group of Acts that control the export of technology are those concerned specifically with arms control. The Neutrality Act of 1939 for a time authorized the State Department to regulate the export of munitions.³⁰ In 1954, however, Congress determined that this section of the 1939 Act was unworkable due to its cumbersome detail, red tape,³¹ and the overly restrictive regulatory apparatus for presidential author-

²² 50 U.S.C. app. § 5(b) (1976) (amended 1977).

²³ See text accompanying notes 65-75 *infra*. For a discussion of pre-1967 usage of the Trading With the Enemy Act, see generally Berman & Garson, *supra* note 20.

²⁴ National Emergencies Act of 1977, Pub. L. No. 95-223, § 101(a), 91 Stat. 1625 (1977) (codified in 50 U.S.C. app. § 5(b) (Supp. II 1978)).

²⁵ S. REP. NO. 466, 95th Cong., 1st Sess. 2, reprinted in [1977] U.S. CODE CONG. & AD. NEWS 4540, 4541. A second reason was that the National Emergencies Act of 1977 provided safeguards for the role of Congress in declaring and terminating national emergencies. *Id.*

²⁶ National Emergencies Act of 1977, Pub. L. No. 95-223, § 101(b)-(c), 91 Stat. 1625 (1977) (codified in 50 U.S.C. app. § 5(b) (Supp. II 1978)).

²⁷ 44 Fed. Reg. 53153 (1979).

²⁸ See text accompanying notes 65-75 *infra*.

²⁹ See 50 U.S.C. app. § 5(b) (Supp. II 1978).

³⁰ Ch. 2, § 12, 54 Stat. 4 (1939) (repealed 1954).

³¹ See H.R. REP. NO. 1925, 83d Cong., 2d Sess. 90 (1954); S. REP. NO. 1799, 83d Cong., 2d Sess. 79, reprinted in [1954] U.S. CODE CONG. & AD. NEWS 3175, 3245.

ity.³² Therefore, Congress repealed that section of the Neutrality Act of 1939 and instead enacted the Mutual Security Act of 1954,³³ which authorized the State Department to control exports of munitions and related technology. Although this Act did not define "technology," the Court of Appeals for the Sixth Circuit, in *United States v. Van Hee*,³⁴ broadly construed regulations defining it to include not only blueprints and specific information but also general knowledge and experience.³⁵ Although this broad definition flirts with being an unconstitutional prior restraint on freedom of speech in violation of the first amendment,³⁶ the Court of Appeals for the Ninth Circuit, in *United States v. Elder Industries, Inc.*,³⁷ held that the regulations were not unconstitutional since they prohibited only the export of technical data significantly and directly related to articles on the Munitions List, a list compiled by the State Department pursuant to the Act.³⁸ Thus, these cases have allowed the State Department a wide latitude in controlling exports of technology when they relate to munitions.

The Mutual Security Act of 1954 was replaced by the Arms Export Control Act of 1976,³⁹ and the export control provisions governing munitions are now found in this Act.⁴⁰ There has been little significant change in the regulation of technology related to munitions with this Act. Unfortunately, technology has not been further defined under the Act;⁴¹ therefore, for obvious national security reasons, the broad definitions discussed regarding the Mutual Security Act of 1954 will presumably apply to any technical assistance given to the Soviet Union. Significantly, though, the Arms Export Control Act of 1976 does provide for increased coordination with other agencies which regulate exports of technology as well as greater congressional oversight. In addition to delineating the coordination of controls under the State Department with

³² See H.R. REP. NO. 1925, *supra* note 31, at 89-90; S. REP. NO. 1799, *supra* note 31, at 78-79, reprinted in [1954] U.S. CODE CONG. & AD. NEWS 3175, 3245.

³³ Pub. L. No. 83-665, § 542(12), 68 Stat. 832 (1954). For background on the Mutual Security Act of 1954, see Comment, *Arms Control—State Department Regulation of Exports of Technical Data Relating to Munitions Held to Encompass General Knowledge and Experience*, 9 J. INT'L L. & POL. 91, 96-98 (1976).

³⁴ 531 F.2d 352 (6th Cir. 1976) (conviction for conspiracy to export technical data and building for Portugal an item covered by the State Department's Munitions List (amphibious vehicle) without first having obtained an export license or written approval from the Department).

³⁵ 531 F.2d at 357. This interpretation was highly criticized in Comment, *supra* note 33.

³⁶ "The *Van Hee* decision may hinder the free flow of scientific ideas by raising the possibility that an individual or his firm may be prosecuted if his or her general knowledge is applied to munitions in another country." Comment, *supra* note 33, at 105. See also text accompanying notes 104-108 *infra*.

³⁷ 579 F.2d 516 (9th Cir. 1978).

³⁸ 22 C.F.R. § 121.01 (1979). For the current list, see 15 C.F.R. § 370, Supp. No. 2 (1980).

³⁹ Pub. L. No. 94-329, 90 Stat. 729 (1976) as amended by International Security Assistance Act of 1979, Pub. L. No. 96-92 (to be codified in scattered sections of 22 U.S.C.).

⁴⁰ 22 U.S.C.A. § 2778 (West 1979 & Supp. 1980).

⁴¹ See *id.* § 2794(3)-(7).

the Arms Control and Disarmament Agency⁴² and the Department of Commerce,⁴³ section 211 of the Act provides for congressional veto by concurrent resolution of proposed sales or transfers of military equipment to non-NATO countries.⁴⁴

Regarding NATO countries and other allies, it is obvious that a great degree of coordination is necessary in order to make the United States' arms export restrictions and related restrictions on technology effective. "It has never been supposed that the United States could ensure effective restrictions on the shipment of strategic goods to Communist [and other] destinations without parallel controls exercised by other countries, both to restrict strategic exports from those countries and to prevent transshipments of American exports."⁴⁵ A consultative group was formed in 1949, and this group instituted a multilateral system of export controls on trade and transfer of technology with the Sino-Soviet bloc.⁴⁶ The day to day working group is the Coordinating Committee, or COCOM. The members of COCOM include Japan and all the NATO countries except Iceland.⁴⁷ This group regularly composes lists of items for which export should be monitored, restricted, or denied.⁴⁸ The State Department represents the U.S. interests in COCOM.

The United States institutionalized its participation in COCOM with the Mutual Defense Assistance Control Act of 1951,⁴⁹ commonly called the "Battle Act." Although participation in COCOM was the Act's principal purpose, it also provided authority to restrict U.S. aid to nations that export items listed by the State Department under the Act⁵⁰ to "any nation or combination of nations threatening the security of the United States, including the Union of Soviet Socialist Republics and all countries under its domination"⁵¹ Yet such sanctions, though potentially applicable, were described as "too crude to be effective."⁵² Therefore, the major significance of the Act was the coordination of technology and other arms controls among U.S. allies. Congress recently repealed this Act and replaced it with a similar section in the Export Administration Act of 1979⁵³ in order to simplify the maze of statutes

⁴² *Id.* § 2778(a)(2).

⁴³ *Id.* § 2778(e) (West Supp. 1980). The Export Administration Act of 1979 is governed by the Commerce Department. See text accompanying notes 65-75 *infra*.

⁴⁴ See generally 9 LAW & POL'Y INT'L BUS. 1029 (1977).

⁴⁵ Berman & Garson, *supra* note 20, at 834. For efforts at such coordination in the recent restrictions on exports to the Soviet Union, see text accompanying notes 6-7 *supra*.

⁴⁶ See Berman & Garson, *supra* note 20, at 835.

⁴⁷ S. REP. NO. 169, 96th Cong., 1st Sess. 10, reprinted in [1979] U.S. CODE CONG. & AD. NEWS 1147, 1156.

⁴⁸ See Berman & Garson, *supra* note 20, at 835.

⁴⁹ Pub. L. No. 82-213, 65 Stat. 644 (1951) (repealed 1979).

⁵⁰ See DEP'T. OF STATE, MUTUAL DEFENSE ASSISTANCE CONTROL ACT OF 1951 (BATTLE ACT) REPORTS (1952-1979).

⁵¹ Pub. L. No. 82-213, § 101, 65 Stat. 644 (1951) (repealed 1979).

⁵² Berman & Garson, *supra* note 20, at 837.

⁵³ See text accompanying notes 65-75 *infra*.

relating to export controls. However, the authority for participation in COCOM is unchanged.⁵⁴ The relevant U.S. controls on munitions are those currently administered under the Arms Export Control Act of 1976.⁵⁵

Although the Arms Export Control Act of 1976 strictly regulates the transfer of technology relating to military equipment, the Export Control Act of 1949⁵⁶ was the first legislation designed specifically to regulate nonmilitary exports. It was described as "the first comprehensive system of export controls ever adopted by the Congress in peacetime. Even that Act was initially conceived as a temporary measure, and might well have been allowed to lapse in 1951 but for the Korean War."⁵⁷ Instead, the Export Control Act of 1949 was the primary means of regulating transfer of technology outside the United States until 1969. Presidential authority under the Export Control Act of 1949 was extremely broad. In 1967, a study of export controls was of the view that:

Probably no single piece of legislation gives more power to the President to control American commerce. Subject to only the vaguest standards of "foreign policy" and "national security and welfare," he has authority to cut off the entire export trade of the United States, or any part of it, or to deny "export privileges" to any or all persons. Moreover, the procedures for implementing this power are left almost entirely to his discretion, and at the same time heavy administrative and criminal sanctions may be imposed for violation of any export regulations he may introduce.⁵⁸

Furthermore, the Congress had specifically broadened the Act's potential impact on technology transfer in 1965 by extending Presidential authority to prohibit or curtail exports to cover "any other information" in addition to technical data.⁵⁹ The breadth of the statute reflects the underlying premise of restricting virtually all trade to Communist countries prior to 1969.⁶⁰

By 1969, gradual changes in national policy had led to a loosening of trade restrictions with Communist countries. Thus, the Export Control Act of 1949 was replaced by the less onerously named Export Administration Act of 1969.⁶¹ This Act, like the 1949 Act, was administered

⁵⁴ Export Administration Act of 1979, Pub. L. No. 96-72, § 5(i) (to be codified in 50 U.S.C. app. § 2404). See S. REP. NO. 169, 96TH CONG., 1ST SESS. 15-16, reprinted in [1979] U.S. CODE CONG. & AD. NEWS 1147, 1162.

⁵⁵ See text accompanying notes 39-44 *supra*.

⁵⁶ Pub. L. No. 81-11, 63 Stat. 7 (1949) (expired 1969).

⁵⁷ Berman & Garson, *supra* note 20, at 792.

⁵⁸ *Id.*

⁵⁹ Pub. L. No. 89-63, § 4(a), 79 Stat. 210 (1965) (expired 1969). This addition was made "in connection with the new policy provisions relating to boycotts, since controls over furnishing of information may be deemed appropriate as a part of the regulations issued in connection with this new policy provision." S. REP. NO. 363, 89th Cong., 1st Sess. 8, reprinted in [1965] U. S. CODE CONG. & AD. NEWS 1826, 1832.

⁶⁰ See E. PHILBIN, *SOVIET TECHNOLOGY: STATUS, TRENDS AND STRATEGIES* 122 (1978) (Air War College Report No. 445).

⁶¹ Pub. L. No. 91-184, 83 Stat. 841 (1969) (expired 1979). For criticisms of the Export Control Act of 1949 and its administration, see Berman & Garson, *supra* note 20; Rubin, *United States Export Controls: An Immodest Proposal*, 36 GEO. WASH. L. REV. 633 (1968).

by the Secretary of Commerce by means of general and validated licenses,⁶² but was better coordinated with the State and Defense Departments. Congress itself exercised stricter oversight regarding the administration of this Act than it had over the Export Control Act of 1949. This change was due primarily to congressional concern over the secrecy of operations, lack of formal procedural rules and enforcement powers, and the belief that the rules were not uniformly interpreted under the 1949 Act. Erratic enforcement was detrimental to those businesses against whom the Act was strictly applied and generally promoted ineffectiveness in preventing the exports of technology which were proscribed by the Act.⁶³ Congress thus sought to alleviate these problems in the 1969 Act.

While the 1969 Act was in force, the original premise of restricting exports and technology transfer solely to Communist countries was abandoned. It was recognized that a country need not be Communist to pose a security threat to the United States and that some Communist countries were not so threatening as to require a sweeping prohibition of technology exports. In 1977, Congress amended the Act to broaden the scope of its coverage and decrease its "pigeonholing" application to Communist countries. Greater emphasis was placed on identifying the technology and commodities likely to contribute to foreign threats to U.S. national security.⁶⁴ It is not insignificant that this change in perspective followed a period of increasing trade with the Soviet Union, although increased trade is only one factor explaining the change in emphasis.

In 1979, Congress allowed the 1969 Act to expire and substituted the Export Administration Act of 1979.⁶⁵ The purposes of the 1979 Act include extending the authority of the 1969 Act and the appropriations thereunder, improving the efficiency of export licensing that had suffered from increasing procedural delays, providing for a systematic review and revision of export control procedures, revising the list of goods and technology subject to export control, and fostering consistency in U.S. export control policies and closer cooperation with allies.⁶⁶ Much of the 1969

⁶² See 15 C.F.R. §§ 370-372 (1980). All goods and technical data with few exceptions require general or validated licenses from the Commerce Department for export. *Id.* § 370.3. A general license is a broad authorization requiring neither the filing of an application nor the issuance of a license document. *Id.* § 371.1. The exporter need only adhere to the regulations. *Id.* § 371.2. Exports to the Soviet Union require a validated license. *Id.* § 371.2(c)(2). A validated license is a formal document issued by the Commerce Department after written application by the exporter that authorizes exports only within the confines of the document. *Id.* § 372.2.

⁶³ See PHILBIN, *supra* note 60, at 123 (noting similar concerns before the 1977 amendments).

⁶⁴ Export Administration Amendments of 1977, Pub. L. No. 95-52, 91 Stat. 235 (expired 1979). See H.R. REP. NO. 190, 95th Cong., 1st Sess. 3-4, reprinted in [1977] U.S. CODE CONG. & AD. NEWS 362, 364-65.

⁶⁵ Pub. L. No. 96-72 (1979) (to be codified in 50 U.S.C. app. §§ 2401-2420).

⁶⁶ S. REP. NO. 169, 96th Cong., 1st Sess. 2-3, reprinted in [1979] U.S. CODE CONG. & AD. NEWS 1147, 1149.

Act was left intact, and the authority of the regulations issued thereunder was continued.⁶⁷ President Carter chose the authority granted by the 1979 Act to embargo high technology exports to the U.S.S.R.

The authority of the President to control exports for foreign policy purposes is extremely broad under the 1979 Act with respect to the triggering purpose.⁶⁸ Section 3(2) of the Act states that:

It is the policy of the United States to use export controls only after full consideration of the impact on the economy of the United States and only to the extent necessary

(B) to restrict the export of goods and technology where necessary to further significantly the foreign policy of the United States or to fulfill its declared international obligations⁶⁹

The standards are no less vague than those described in the Export Control Act of 1949. However, the 1979 Act does prescribe the specific criteria that are to be considered by the President when imposing such export controls. These criteria are: whether the controls are likely to achieve their purpose in light of availability of goods from other countries; whether the controls are compatible with U.S. foreign policy in general and specifically with regard to the target country; what international reaction there might be to the controls; what impact controls would have on U.S. exports, on the competitive position of the United States in the international economy, on the U.S. economy in general, and on particular businesses and their employees and surrounding communities; what the U.S. ability to enforce the controls effectively is; and what the foreign policy consequences of not imposing controls are.⁷⁰

In addition to these criteria, the Act requires a prior determination that reasonable efforts have been taken to achieve the desired foreign policy goal through negotiation or other alternative means.⁷¹ It also requires a notification to Congress explaining the controls, the President's conclusions with respect to the specific criteria, alternative means attempted, and how it is expected that the controls will achieve the foreign policy purpose.⁷² Finally, the Act requires prior consultation with affected industries on such relevant criteria as the Secretary of Commerce

⁶⁷ Pub. L. No. 96-72, § 21(a) (1979) (to be codified in 50 U.S.C. app. § 2420).

⁶⁸ Section 6(a) of the Act provides:

AUTHORITY. (1) In order to carry out the policy set forth in paragraph (2)(B)(7), or (8) of section 3 of this Act, the President may prohibit or curtail the exportation of any goods, technology, or other information subject to the jurisdiction of the United States, to the extent necessary to further significantly the foreign policy of the United States or to fulfill its declared international obligations. The authority granted by this subsection shall be exercised by the Secretary, in consultation with the Secretary of State and such other departments and agencies as the Secretary considers appropriate, and shall be implemented by means of export licenses issued by the Secretary.

Id. § 6(a) (to be codified in 50 U.S.C. app. § 2405(a)).

⁶⁹ *Id.* § 3 (2) (to be codified in 50 U.S.C. app. § 2402(2)).

⁷⁰ *Id.* § 6(b) (to be codified in 50 U.S.C. app. § 2405(b)).

⁷¹ *Id.* § 6(d) (to be codified in 50 U.S.C. app. § 2405(d)).

⁷² *Id.* § 6(e) (to be codified in 50 U.S.C. app. § 2405(e)).

considers appropriate⁷³ (which is why the embargo regulation was issued in interim form).⁷⁴ Thus, while the purposes for which the foreign policy oriented export controls may be used are broad under the Act, the Congress has defined the criteria to be considered in imposing such controls and now requires greater justification for imposing them than under previous Acts.

To summarize, the broad policy of allowing the use of export controls for foreign policy purposes has not been changed. Like the 1969 Act, the Export Administration Act of 1979 provides that it is the general "policy of the United States to use its economic resources and trade potential to further the sound growth and stability of its economy as well as to further its national security and foreign policy objectives."⁷⁵ Yet, Congress has progressively tightened the procedures for executive use of authorized export controls in all areas. Under the Trading With the Enemy Act of 1917, in the succession of Acts governing munitions controls, and in the Export Administration Acts, Congress has systematically limited plenary executive use of export controls and has increasingly required greater justification and public participation in their use. Congress has also been successful in coordinating the maze of authority for export controls into fewer Acts and has thereby simplified procedures in order to promote greater public understanding of these controls.

Congress has not been the only branch of government which has fostered changes in export control policies. The executive branch has made specific changes in the substantive policies for controlling exports of high technology as well as procedural changes. The substantive policies of the executive branch in controlling exports of technology must finally be considered in order to round out the evaluation of the embargo.

The United States has a comparative advantage in most areas of scientific technology, making the transfer of such technology valuable to the Soviet Union. As discussed, the United States has increasingly allowed the transfer of technology to the Soviet Union where it does not have a direct military application. Most technology, however, is capable of some military application. Therefore, "the control of exports of design and manufacturing know-how . . . is absolutely vital to the maintenance of U.S. technological superiority and continued comparative qualitative

⁷³ *Id.* § 6(c) (to be codified in 50 U.S.C. app. § 2405(c)).

⁷⁴ See text accompanying notes 96-98 *infra*.

⁷⁵ Pub. L. No. 96-72 § 3(4) (1979) (to be codified in 50 U.S.C. app. § 2402(4)); Export Administration Act of 1969, Pub. L. No. 91-184, § 3(4), 83 Stat. 842 (expired 1979).

That this is still the policy of the United States is significant in light of the recent trend to separate trade policy administration from foreign policy administration so that tradeoffs between the two do not undermine the country's balance of trade. State Department authority in trade matters has continually been transferred to other departments. See, e.g., Reorganization Plan No. 3 of 1979, Consolidation of Federal Trade Functions, 125 CONG. REC. H8462, *reprinted in*, [1979] U.S. CODE CONG. & AD. NEWS 3396.

superiority in deployed weaponry."⁷⁶ This concern is illustrated by an admission of the Defense Department that a grave error was made in allowing the sale of U.S. computers to the Soviet Union which has since used them in the Kama River manufacturing plant to build trucks and other military equipment for the Soviet army.⁷⁷ Clearly effective export controls on high technology sales are necessary in order to preserve the U.S. comparative advantage in the military arena.

Rather than prohibiting technology transfer completely, the current goal of the Defense Department has been to maintain the leadtime required to develop new technologies.⁷⁸ The Department of Defense seeks to achieve a delay until replacement or replenishment of critical technology is in sight.⁷⁹ For example, if it were believed at a particular instance that the United States was five to eight years ahead of the Soviet Union in computer technology and that it would take three years for the United States to achieve the next technological advance, then the U.S. goal would be to delay Soviet achievement of present U.S. capability for at least three years. If left to their own capabilities, the Soviets would take five to eight years to reach that point.⁸⁰ Applying the delay strategy to the example, the Department of Commerce would deny licenses to export the then most advanced computers to the Soviet Union until at least three years from their development, provided that such technology was not otherwise available to the Soviets.

In order to achieve the goal of preserving the U.S. comparative advantage by means of maintaining leadtime, the export controls have traditionally focused on the control of end products. Thus, export controls on technology have generally been tied to specific items. The emphasis on end products has shifted recently to controlling critical technologies⁸¹ themselves with a focus on controlling "revolutionary" rather than "evolutionary" developments. In this way the U.S. comparative advantage

⁷⁶ DEFENSE SCIENCE BOARD TASK FORCE REPORT ON EXPORT OF TECHNOLOGY (1976) (quoted in *Department of Defense Policy Statement on Export Controls of United States Technology: Hearings Before the Subcomm. on International Economic Policy and Trade of the Comm. on International Relations*, 95th Cong., 1st Sess. 4 (1977)) [hereinafter cited as *Hearings before the Subcomm. on International Economic Policy*].

⁷⁷ Trucks manufactured at the Kama River manufacturing plant have been used in the Soviet invasion of Afghanistan. See Wall St. J., Feb. 8, 1980, at 14, col. 1. For a full congressional discussion of the Kama River manufacturing plant, see 125 CONG. REC. S10126-46 (daily ed. July 21, 1979). See also U.S. NEWS & WORLD REP., March 17, 1980, at 51-52.

⁷⁸ *Hearings before the Subcomm. on International Economic Policy*, *supra* note 76, at 11 (statement of Dr. Ellen Frost, Deputy Assistant Secretary of Defense for International Economic Affairs).

⁷⁹ E. PHILBIN, *supra* note 60, at 128.

⁸⁰ *Hearings before the Subcomm. on International Economic Policy*, *supra* note 76, at 12 (statement of Dr. Ruth Davis, Deputy Director for Research and Advanced Technology for the Department of Defense).

⁸¹ DEFENSE SCIENCE BOARD TASK FORCE ON EXPORT OF U.S. TECHNOLOGY, AN ANALYSIS OF EXPORT CONTROL OF U.S. TECHNOLOGY—A DoD PERSPECTIVE 27-33 (1976). The term "critical technologies" is used to describe those technologies which are identified as strategic and in need of control for a variety of reasons, most important of which is the relative advancement with respect to other nations.

can be maintained in areas of important scientific breakthroughs.⁸² The Defense Department found that:

based both on information provided by the intelligence community and industry, as well as observations of the military strengths of our adversaries, there was an excessive flow of technology that needed to be controlled and that the end product controls were not adequate to stop them.⁸³

Therefore, the current effort is to develop methods of controlling the critical technologies themselves rather than end products and to promote this concept into COCOM coordinated controls.⁸⁴

The change in emphasis has come for two major reasons. First, at low levels of trade involving critical subsystems,⁸⁵ there is limited ability for the Soviets to develop efficient technological systems from them. It is generally difficult for the Soviets to do the "reverse engineering" necessary to make the most efficient use of such subsystems.⁸⁶ The subsystems are thus valued more for their use than for the small potential of applying the technology embodied therein to other areas. Therefore, transfer of the technology itself poses the relatively greater threat because it can be more directly applied to military and other uses.

Second, the greatest comparative advantage of the United States relative to the Soviet Union is the ability to assemble, organize, and operate integrated systems of advanced technology. Transfers of entire systems of technology have the greatest impact on the Soviet Union because it can exploit the technology to its full potential rather than struggle inefficiently to assimilate critical subsystems.⁸⁷ "The U.S.S.R. [has shown] a preference for 'turnkey' projects, thus emphasizing their interest in procuring large-scale systems of foreign technology rather than critical subsystems."⁸⁸ This in turn creates a need to control the critical technologies embodied in these projects rather than the end products and to scrutinize even more strictly large scale technology transfers.⁸⁹ There-

⁸² *Id.* at 9-14. This difference in focus is based on the view that when both the U.S. and the U.S.S.R. are on the same evolutionary track in a given field, the gap narrows regardless of export controls. *Id.* at 12.

⁸³ *Hearings before the Subcomm. on International Economic Policy, supra* note 76, at 18 (statement of Dr. Frost).

⁸⁴ *Id.* at 17.

⁸⁵ The term "critical subsystems" describes technological systems such as computers or other items which can be integrated into an ongoing operation as opposed to an entire turnkey system of technology such as a plant. The subsystem is the end product and does not necessarily include the technology which makes it up.

⁸⁶ H. KAHN & W. SCHNEIDER, *supra* note 15, at 6-9 to 6-10.

⁸⁷ *Id.* at 6-8.

⁸⁸ *Id.* at 5-6.

⁸⁹ A Hudson Institute report has recommended, however, that the government should encourage certain large scale transfers which create a heavy infrastructure burden on the Soviet Union such that resources will be reallocated which would otherwise have military effects. The report has suggested that by negotiating threat reduction tradeoffs and revising export controls, the United States might develop a policy mixture that could mitigate the risks in extensive technology transfers while maintaining a political framework for improving trade and political relationships with the Soviet Union. *Id.* at 6-11 to 6-14. It is not known to what extent the United States has consciously pursued such a policy.

fore, with both large scale technology transfers involving turnkey projects and also small scale transfers involving critical subsystems, the preferred means of controlling technology exports is by controlling the transfer of the technologies themselves.

Developing and implementing the critical technology approach is a difficult task, however. It involves an immense reorganization of existing export controls on technology. It also requires parallel efforts by U.S. allies coordinated through COCOM if the approach is to be effective. At the time the Export Administration Act of 1979 was passed, a critical technology approach had yet to be devised and implemented, although the Defense Science Board Task Force on the Export of Technology had recommended it three years earlier in 1976.⁹⁰ Nevertheless, President Carter's recent embargo should enable the government to accelerate implementation of this approach within the context of reassessing technological exports to the Soviet Union. Thus, an accelerated implementation of a major change in administrative policy could be a side benefit of the technology embargo.

The administrative strategies developed to control exports of technology to the U.S.S.R. and other countries have involved a curious mixture of policies—defense, business, and politics. Recently, efforts have been made to separate foreign policy and political influence from trade policy⁹¹ and to define the role of defense in relation to business.⁹² Yet all three elements have interlocked completely in this area. Such controls on business for foreign policy purposes have only been strongly questioned in recent times, however. "During the 1950's and early 1960's there was little, if any, substantial opposition to the systematic use of export controls as a foreign policy weapon, either in Congress or in the business community."⁹³ In contrast, the recent embargo has created a great deal of opposition from the business community.⁹⁴

Clearly, the political nature of technology transfer creates uncertainty for the businessmen involved, but this is inevitable where large scale trade in high technology items is so prevalent. Selling complete systems of advanced technology to the Soviets is not a commercial decision. It is a political decision to confer an advantage that could not be reproduced within the Soviet Union, given their existing resources and

⁹⁰ S. REP. NO. 169, 96th Cong., 1st Sess. 3, *reprinted in* [1979] U.S. CODE CONG. & AD. NEWS 1147, 1149.

⁹¹ See note 75 *supra*.

⁹² "With the advent of detente, . . . [commercial] interests have become increasingly important; consequently, strategic interest barriers have been reduced and East-West trade greatly expanded." *Hearings on S. 1890 and S. 3282 Before the Subcomm. on International Finance of the Senate Comm. on Banking, Housing and Urban Affairs*, 93d Cong., 2d Sess. 155-57 (1974) (statement of Frederick Dent, Secretary of Commerce).

⁹³ Berman & Garson, *supra* note 20, at 800. "Whatever congressional debate accompanied the successive extensions of the Export Control Act [of 1949] was directed largely to the Administration's failure to secure a greater degree of cooperation from friendly foreign nations in the implementation of multilateral trade controls." *Id.*

⁹⁴ See note 6 *supra*.

organizational constraints, at any time in the foreseeable future without wrenching reallocations of resources.⁹⁵ Thus, the government must exercise a more pervasive role in this area than it normally does in transfer of technology decisions made by businesses.

It is in this perspective that one must analyze President Carter's decision to revoke and discontinue the authorizations for transfer of technology under the Export Administration Act of 1979.⁹⁶ Business interests as well as political and defense interests were considered before the President reached his decision. This is reflected by the fact that the Secretary of Commerce allowed for comments before the embargo regulations were to become final on March 11, 1980, even though section 13(a) of the Export Administration Act of 1979 exempts regulations promulgated under the Act from public participation in the rulemaking procedures of the Administrative Procedure Act.⁹⁷ Permitting this period of public comment conformed with congressional intent as expressed in section 13(b) of the Act.⁹⁸ Yet, this embargo is a block to these business interests, and its primary impetus is to dissuade the Soviet Union from continuing its intervention into Afghanistan and from future such interventions. The decision must be analyzed broadly in light of the Soviet need for U.S. technology, the nature of U.S. export controls, and the methods of implementing them which have been discussed.

It is clear that the Soviet Union views imports of advanced technology from the United States and other nations as vital to modernization of its industry. The Soviet Union has increasingly allowed and promoted such imports as an integral part of its industrial expansion. At the same time, the United States has gradually loosened restrictions on trade with the Soviet Union. The efforts of Congress in the successive Acts discussed have been aimed at assuring workable export controls that alleviate unnecessary problems for business interests while liberalizing exports to Communist countries and circumscribing presidential authority to restrict such exports. In the same vein, the executive branch has changed from a policy of few exports to Communist countries to a policy of allowing exports which do not jeopardize U.S. leadtime in the military arena. In this perspective, the recent embargo is a retrenchment. Although its prime motive was to compel the U.S.S.R. to withdraw its troops from Afghanistan and to demonstrate the costs that will result if similar future actions are taken, the *embargo* will also force the U.S. government to rethink its continued liberality on exports of technology to the U.S.S.R. in view of the possibility of an impending major Soviet offensive.

It must first be determined, however, whether the embargo is likely

⁹⁵ H. KAHN & W. SCHNEIDER, *supra* note 15, at 6-9.

⁹⁶ See text accompanying notes 1-7 *supra*.

⁹⁷ Pub. L. No. 96-72, § 13(a) (1979) (to be codified in 50 U.S.C. app. § 2412). See 45 Fed. Reg. 3027-29 (1980).

⁹⁸ *Id.* § 13(b) (to be codified in 50 U.S.C. app. § 2412).

to be effective in achieving its initial purpose of compelling the Soviets to remove their troops from Afghanistan and to halt their intervention in that geopolitical area. It is clear that the Soviets consider the U.S. high technology necessary to their modernization program. Therefore, even if the embargo is not joined by other Western countries and the Japanese, it will put a damper on these plans. Until the time of the embargo, the United States believed it had subsidized industrial development in the Soviet Union and had attempted to provide the Soviets with a stake in continuing trade.⁹⁹ To the extent that this view is correct and the policy successful, the embargo on high technology transfer should correspondingly compel the Soviet Union to rethink its geopolitical strategies regarding Afghanistan specifically, and to reexamine its overall relationship with the United States. If a true dependency relationship between the United States and the Soviet Union has been established regarding technological trade, the embargo will alter planned development in the Soviet Union and should thus cause the Soviets to consider carefully whether their activities in Afghanistan should be curtailed. Although the Soviet Union is unlikely to back down on this specific issue in the face of the current public challenge by the United States, the Soviets may consider these costs more carefully before taking similar actions in the future.

This analysis does not suggest that the Soviets will decide that the price is not worth paying. The comparative technological advantage of the United States over the Soviet Union has clearly narrowed in the military arena in recent years.¹⁰⁰ It is clear that the Soviets have been successful in circumventing some U.S. controls on export of technology or that such controls have not been effective in preventing military use of authorized technology transferred.¹⁰¹ Most important, however, is the fact that those Soviet plans that the embargo will damage are long term plans. Therefore, the detriment to the Soviet Union will only be truly felt over the long run. This latter fact allows the Soviets to consider the possible effect of the embargo and their potential reaction to it in a cautious manner.

Given such time for the Soviets to weigh the risks and lost benefits, they may find alternative sources for lost U.S. contracts. Firm cooperation and coordination of such controls with the COCOM nations will be the keystone of U.S. success in this particular effort. Although the NATO countries did pledge not to undermine the embargo when it was first announced,¹⁰² this solidarity may weaken over time. On the other hand, if others join in the embargo and it is effective in shutting off most high technology exports to the Soviet Union, the Soviet's ultimate deci-

⁹⁹ See text accompanying note 18 *supra*.

¹⁰⁰ See *Dep't of Defense Appropriations for 1978, Hearings Before a Subcomm. of the House Comm. on Appropriations*, 95th Cong., 1st Sess., Part 3, at 183 (1977); E. PHILBIN, *supra* note 60, at 22-27.

¹⁰¹ See text accompanying notes 77 & 83 *supra*.

¹⁰² See note 7 *supra*.

sion to halt further intervention after Afghanistan or to continue such action and forego trade benefits as well as risk other potential costs will shed some light on the importance that they place on their involvement in Afghanistan and on their priorities for the 1980s. The Soviets will be faced with a choice of whether to continue trade with Western nations and the strong international relations indicated by such trade¹⁰³ or to pursue more hostile endeavors.

The United States, too, is immediately faced with a choice. That choice is how to pursue controls over technology exports to the Soviet Union in the future. President Carter has clearly indicated a harder line with the embargo, but this is only a short term measure. Indeed, the United States could discontinue technology exports to the Soviet Union indefinitely, but such a policy would only be superficial and would hurt U.S. industry needlessly, given the fact that the Soviets can find alternative sources for at least some losses. A coordinated, multilateral effort is the key to tightening up controls. Implementing the critical technology approach and coordinating such an approach through COCOM will be necessary to stabilize such controls in the future. Although the critical technology approach is not a panacea, it should enable the United States and COCOM nations to follow a more restrictive policy of export controls if necessary given the Soviet proclivity to use transferred technology for military ends. It appears likely that this embargo will mark a turning point in what has been increasingly liberal trade with the U.S.S.R. because export controls on transfer of technology will be administered in the near future under the grave light of a potential war.

There is a danger in a more restrictive approach that has only been alluded to, however. Increasing the restrictions on technological exports raises strong first amendment considerations. Restricting technology transfer, especially if done via the critical technology approach, limits freedom of speech and the dissemination of ideas, and may also, by limiting the practice of one's occupation, be a deprivation of liberty without due process.¹⁰⁴ While such restrictions may be justified when the welfare or safety of the nation requires it and all citizens are equally affected,¹⁰⁵

[R]estrictions upon the export of technology inevitably involve a far greater intervention by the Government in operations of business and scientific enterprise and also raise far more acute questions of constitutional freedom than do restrictions upon the export of goods. Thus the national interest in preventing the development of the widget industry in the Soviet Union must be weighed against the national interest in preserving the American industry and science from excessive interference, as well as against the national interest in freedom of international communication.¹⁰⁶

¹⁰³ The Soviets view trade as the barometer of U.S.-Soviet relations. See text accompanying notes 15-17 *supra*.

¹⁰⁴ See Comment, *supra* note 33, at 109.

¹⁰⁵ See *Zemel v. Rusk*, 381 U.S. 1, 13-16 (1965).

¹⁰⁶ Berman & Garson, *supra* note 20, at 824.

Although such first amendment considerations are clearly overridden by national security interests in the field of munitions,¹⁰⁷ the more attenuated the connection between the restrictions and their military nature becomes, the greater will be the relative interest in freedom of transfer.¹⁰⁸

While the current embargo has a close nexus with the national security interest, the Government cannot afford to stretch the connection too far. Foreign policy alone, divorced from the national security issue, appears to be too vague a ground on which the Government can restrict transfer of technology constitutionally. Although future restrictions discussed above will also have an overriding purpose of delaying improvements of the Soviet military force, this constitutional limitation must be borne in mind by both legislators and administrators in designing and applying such restrictions. Finally, even if further restrictions are constitutional, it must also be asked whether they are wise domestic policy and whether they comport with U.S. values of scientific freedom.

In conclusion, the recent embargo on transfer of technology to the Soviet Union is an action taken for a justified foreign policy purpose. It will be effective at least in compelling the Soviets to rethink their position after the Afghanistan invasion although not enough by itself to make them withdraw from that country. The embargo will certainly indicate to the Soviet Union that the United States will not continue to cooperate and aid in Soviet domestic modernization efforts while the Soviet Union pursues its aggressive international policies.

The embargo appears to mark what will be a retrenchment on the recent policy of increased restrictions on exports of technology to the U.S.S.R. While the critical technology method of implementing such controls should make controls more effective if the method is implemented, it will also involve a more pervasive intervention into business and scientific operations. During times of war and similar circumstances, exceptions to what might otherwise be a first amendment infringement are too readily found. Therefore, this embargo should be pursued with a careful analysis of reasons for heightened continued restrictions, the critical technological approach to export controls should be implemented, and first amendment freedoms must be guarded rationally.

—BENJAMIN H. FLOWE, JR.

¹⁰⁷ See text accompanying notes 34-38 *supra*.

¹⁰⁸ Even if this be considered commercial speech, the government must show a justification for suppressing speech in this context. See *In re Primus*, 436 U.S. 412 (1978); *Bates v. State Bar of Arizona*, 433 U.S. 350 (1977); *Virginia Pharmacy Board v. Virginia Consumer Council*, 425 U.S. 748 (1976).

