# *SECURITY ASSISTANCE PERSPECTIVES*

## Offsets in the International Arms Market

**by**

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**[The following is a reprint of an article which appeared in the U.S. Arms Control and Disarmament Agency's *World Military Expenditures and Arms Transfers 1985*, pp. 35-40. A lengthier and more detailed form of the article appears under the title, "Coproduction, Barter, and Countertrade: Offsets in the International Arms Market," in *Orbis*, Spring 1985, pp. 165-181.]**

"Offsets" are increasingly a subject of discussion within the international community, especially that part of it concerned with arms trade. The discussion is often arcane and sometimes contentious. Offsets exist in many, often quite complex and subtle, varieties, but data are inadequate and the terms used to discuss offsets often confusing. Indeed, one of the problems in discussing offsets and their implications for the international arms market is the diversity of terms involved and the difference in meaning attached to each.

### WHAT ARE OFFSETS?

Essentially, offsets in arms trade are arrangements which use some method of reducing the amount of currency needed to buy a military item or some means of creating revenue to help pay for it. The term "offset" refers to a range of industrial or commercial compensation practices required as a condition of sale for military related exports.[1]

Offsets often involve a reverse trade flow, under which the buyer's cost for a military purchase is at least partially compensated by the seller's acceptance of the buyer's product in return. The literature on such trade arrangements uses "offsets," "barter," "buy-back," "counter-purchase," "countertrade," and "compensation," among other terms, often interchangeably, to the confusion and consternation of those who wish to understand the process. In addition, some form of joint production and technology transfer may also be involved, for example, through licensing, subcontracting, or the establishment of a subsidiary or joint venture in the buyer country. These more complex forms of economic cooperation may also be termed "offsets."

Offset agreements are customarily divided into two categories, direct and indirect offsets. Direct offsets involve compensation in related goods. They may permit the buyer to produce in country certain components or subsystems of a military system being acquired, as a condition of sale. For example, Israel's first F-16 purchase provided for an Israeli firm to produce the plane's composite rudder. Indirect offsets involve compensation in goods unrelated to the defense item being acquired, such as food, raw material, manufactured goods, etc. The seller may agree, as a condition of sale, to purchase the buyer's products, materials, or services up to a certain currency amount, and usually over an extended period of time. In practice, many sales arrangements incorporate both varieties of offsets.

As a result, offset agreements can be fairly complicated. Indeed, the combination of compensation practices and the particulars in each case make military sales involving offsets especially difficult to categorize and analyze even when adequate information is available. Moreover, since most offset agreements are considered sensitive on security or proprietary grounds, there is virtually no data available about their extent.[2] Despite the lack of an orderly, centralized system for collecting pertinent data, however, there is a consensus that the phenomenon of offsets is a growing one.

## HOW EXTENSIVE ARE OFFSETS?

Estimates for the value of military offsets worldwide do not exist, and even approximations of the value of U.S. military offset agreements are keenly debated. Despite manifold uncertainties, rough estimates derived from various preliminary studies by U.S. and international agencies, and information from trade literature, press reports, and interviews give some idea of the size of offsets involved in military sales. A U.S. Treasury Department study based on its survey of the aerospace and electronics industry reports that the 26 U.S. companies responding to its questionnaire had agreed to an average annual $1.5 billion in offsets per year between 1975 and 1981, a figure which many believe to be a conservative one.[3] Congressman Vento, extrapolating from this figure, estimates about $5 billion per year for U.S. industry, a figure which he also believes to be "conservative."[4] If this figure is approximately accurate, it means that of the $14.6 billion in U.S. military sales agreements for 1984[5], approximately one-third is represented by offset agreements.[6]

Most analysts believe that offset agreements are increasing in number and aggregate value, and that they will continue to do so in the future. Interviews with trade specialists, intelligence analysts, and Defense Department officials, as well as the growing number of press reports about offset arrangements, all support this conclusion. The August 1983 DOD Task Group report estimated that, over the next 5 years, about $30 billion in potential U.S. arms sales were expected to involve offsets.[7]

## PARTICIPANTS

The major demand for offsets has come primarily from industrialized countries as a prerequisite for purchasing major U.S defense equipment. About 75 percent of all offset requirements reported in the U.S. Treasury study were in countries with high and medium R&D expenditures.[8] Canada and Japan received the largest dollar amounts regardless of category, Canada accounting for 48 percent and Japan 13 percent of the U.S. military offsets.

This finding is, of course, not surprising. Because the more industrialized states procure more advanced and expensive defense systems, the dollar value of their offsets is also higher than that of other states. Furthermore, the United States supports the concept of rationalization, standardization and interoperability (RSI) of weapon systems in NATO, and thus has given greater encouragement to foreign production as offsets in those countries.

As reported by a General Accounting Office (GAO) study, many foreign purchasers now expect to receive offsets as a matter of course, and some have instituted policies requiring offsets for major military purchases. Examples are: Norway (100%), Australia (30%, considering a rise to 40%), Spain, Greece, and Turkey. Some, such as Australia, are also demanding penalties for nonperformance.[9]

Although the less developed countries (LDCs) made up only 3 percent of all U.S. military offsets reported in the Treasury Department survey for 1975-1981, more LDCs are now requiring offset agreements as a condition of their military purchases. For example, since 1982, Indonesia has established a policy whereby a foreign firm awarded a public sector contract over $750,000 will be paid in cash for the goods or services, but will be obliged under the agreement to buy (or market) Indonesian products equivalent to 100 percent of the value of the sales contract within a certain period of time. A firm failing to purchase all or part of the specified Indonesian products would be liable to pay a penalty of 50 percent of the contract value.

In 1983, Israel established a "Central Authority for Reciprocal Purchases," which required foreign suppliers to the public sector to buy an amount of Israeli products equal to one-quarter of the value of the contracts received, and require 40 percent local content on large government procurement contacts. And during the same year, Malaysia issued a directive that created a unit under the Ministry of Trade and Industry to encourage offset agreements, although they are not mandatory.[10] South Korea has begun to require foreign companies from which it buys military equipment to produce parts in country or to arrange exports of Korean goods.[11]

Egypt, Saudi Arabia, and other U.S. military customers have also begun to request offsets. This development is not confined to U. S. trade, but characterizes LDC agreements with Western Europe and Warsaw Pact countries as well.[12] Another trend, under-researched but apparently growing, is intra-Third World offset agreements. Brazil, Iran, and Mexico, for example, have negotiated offsets involving arms for oil with several Third World countries, while other LDCs are investigating different kinds of opportunities for offsets.[13] Although the demand for offsets is growing, the number of agreements actually consummated may be less than press reports suggest. The limited industrial and technological bases of many of these states, the low marketability of many of their products, and the legal complexities involved make finding mutually acceptable and efficient arrangements difficult. In fact, a recent study of offsets questions the success of the LDCs in implementing their mandated offset policies. It points out that because of high compensatory demands, the Indonesians have signed few contracts. Brazil, eager to obtain oil for its civilian and military manufactured goods, has signed several agreements with poor results. Its barter protocol with Mexico, for example, did not prevent a decline of trade between the two countries in recent years because of recession, and trade with Ecuador has been equally disappointing.[14] Similar problems beset trade between the LDCs and industrialized countries.

Many LDCs have grown wary of offset agreements in which their primary commodities are involved, and are demanding some guarantee that additional markets be created for them. Some LDC governments believe that, in offset trade agreements, their primary products are merely resold in their own traditional markets--a situation which adversely affects their export position in the long run.[15] This issue has further complicated negotiations and arrangements for offset agreements.

## WHY ARE OFFSETS ATTRACTIVE?

Despite difficulties and disappointments, offset agreements appear promising to many buyers of military products and services. In the past, offset agreements were used primarily as an alternative means of financing trade because they represented an effort on the part of the buyers and sellers to make the best of unfavorable economic conditions. Today, they are increasingly used to serve economic development and political purposes as well. As noted earlier, the variety of offset agreements reflects the diversity of the compensation practices incorporated in them. In turn, the particular features of offset agreements reflect the tailoring of terms and conditions to serve both buyer's and seller's specific requirements.

Compensatory agreements trace their origins to the depression of the 1930s. Extensive exchange restrictions combined with large debts, soft currencies, and low foreign exchange reserves of many governments made it difficult, if not impossible, for businesses and governments to pay for imports or finance exports. The situation threatened to bring international trade to a halt during this period and caused governments and firms to look for alternative ways to maintain trade flows.

Similar conditions existed after World War II, when large amounts of U.S. foreign aid were necessary to help Europe regain its economic vitality. Reconstruction in the military sector was also required, and, to that end, the production of U.S. defense items in foreign countries began in the late 1950s and early 1960s. During the period 1960-1975, the use of offset agreements spread, and their numbers multiplied. Agreements were negotiated between the United States and other developed countries (the NATO states, Australia, Japan, Switzerland) and Third World countries (Argentina, Brazil, India, Iran, Korea, Pakistan, the Philippines, Singapore, Taiwan, and Thailand). Currently, almost all sellers of military equipment in the world have negotiated offset agreements with buyers.[16]

Disturbances in the international economy since 1973, such as rising oil prices, high inflation rates, and slow economic and trade growth, have produced large trade deficits and mounting debts, particularly among the non-oil-producing LDCs. According to one study, the trade deficits for oil-importing LDCs jumped from $7.3 billion in 1973 to an estimated $70 billion in 1980.[17] Because oil-exporting countries rarely accept payment in product--arms are an important exception--most oil-importing countries must use their hard currency for oil, and try to use offsets as a means of financing military imports.

In addition, decreased demand has lowered the prices of many LDC commodity exports and thereby reduced revenues and reserves of hard currency. Lacking the foreign exchange necessary to purchase inputs essential for making competitive industrial products, many LDCs have been unable to increase their manufactured exports. This decline in export earnings has exacerbated their cash flow problems.

Borrowing has been one solution. Purchases of Western goods and services by the LDCs increasingly have been financed through the extension of Western credit. As a result, their indebtedness to the West reached record levels, rising from $142 billion in 1974 to $416 billion in 1980. With their hard currency earnings paying for oil and their borrowing capabilities restricted by their large debts, many oil-importing countries have sought offsets as a means of financing new purchases. Moreover, Western banks, fearing defaults, have encouraged them to do so as a means of ensuring their repayment.

These economic problems have been exacerbated by the rising cost of weapons and declining U.S. and Soviet subsidies for foreign military purchases. Between 1968-1972, 90 percent of U.S. military assistance was concessional. Between 1978-1982, this percentage fell to less than 25 percent. In the late 1970s, the Soviet Union raised prices on arms exports. As a result, many countries have been forced to borrow, with the consequent repayment problems described above.

These factors, often in combination, are cited by many arms buyers, particular the LDCs, as the chief reason for seeking offset agreements. In their view, such agreements constitute an important means of reducing the drain on their scarce hard currency reserves and financing the purchase of vital imports.

Moreover, industrialized as well as industrializing countries have come to view offsets as mechanisms to stimulate export earnings and industrial growth. Some states claim that offsets are a way of gaining new markets for their products through the distribution network of the seller country. LDCs largely depend on Europe and the United States for this service; however, European states make similar demands upon U.S. companies. For both industrializing and industrialized countries, gaining access to the marketing network of an industrialized supplier and increasing exports have apparently become a major reason for seeking offset agreements. Some LDCs also claim that these agreements are a way of penetrating protectionist barriers in the industrialized world.

In addition, according to some sources, offset agreements also offer the original buyer a way of disguising the discounting of exports, a means of undercutting the prices set by international commodity agreements, and a method of concealing the dumping of surplus goods. The terms of sale for a military item and the terms of an offset agreement are generally contained in separate documents. If, for example, a country buying military equipment agrees to sell a commodity at world prices as part of an offset agreement, but in a separate contract pays more for the equipment than it would ordinarily have had to pay, in effect it has discounted its commodity export. From the buyer's perspective, this form of disguised price-cutting stimulates sales without upsetting its other customers or incurring the wrath of other commodity exporters, and allows the country to unload surplus goods in the international market without risking the penalties of international anti-dumping measures.[18]

Others suspect that some LDCs are using compensatory trade agreements, some of which may involve military items, as a means of circumventing International Monetary Fund (IMF) restrictions on their imports. They believe that the IMF is contributing to the spread of these agreements by forcing the LDCs to cut imports as part of debt refinancing packages.[19]

Many governments are also using offset agreements to encourage economic growth and industrialization. They see such agreements as offering opportunities to build up their industrial infrastructure and acquire advanced technology in both the military and civilian sectors, to maintain and expand employment, to acquire new technical skills and raise the technological competence of local industry, and to enhance the commercial competitiveness of current and future products. Even though manufacturing an item is often more expensive than buying off the shelf from a supplier, many states consider the associated economic benefits more than adequate compensation. Thus, more states are demanding, not hardware, but manufacturing know-how, and are using offsets to acquire it.[20]

But whether countries produce weapons domestically or not, most states perceive military equipment as vital to their survival. When they cannot afford to buy it and do not have the capacity to make weapons, states feel compelled to find other methods of procurement. Even states which do have internal military industries do not have, in most cases, the resources or the scale to warrant across-the-board defense production. As one specialist observes, "the existence of military offset programs stems from the inelastic demand for military hardware among governments, the need to purchase equipment abroad, and the high prices of these goods."[21]

Various analysts also believe that foreign governments derive political advantage from offsets. Some use them to build domestic support by publicly pointing to the jobs, industrialization and other economic benefits which accrue to the state and its citizens. Other governments use offsets as a symbol of national prestige or solidarity with another state, or as a means to increase their regional or international status. To some, such considerations are the major reasons for arranging offsets. In the opinion of a U.S. State Department official, "it is rare in today's international economy that offsets can be demonstrated to have purely economic advantages for the customer. More often the real gains are found in the political arena."[22]

By contrast, few exporters enter into offset trade arrangements by choice. Rather, they regard them as better than no sale at all. The Treasury Department survey found that many U.S. companies believe offsets provide a competitive edge in a sale. Perceived competition was given as the major reason such arrangements are granted. Competition from other U.S. firms was cited in 62 percent of the offset agreements in arms sales, and competition from foreign companies in 54 percent.[23] Thus, from the sellers' point of view, offsets are a way of maintaining market share or improving sales. In some instances, sellers may also use these agreements to ensure a reliable supply of critical raw materials.[24]

## WHAT ARE THE ISSUES AND IMPLICATIONS OF OFFSETS?

For the user of data on arms transfers . . . , the offset phenomena discussed in this essay present a complex picture of the future. They suggest that arms transfers may involve not only important political, but also broad economic issues over an extended period of time. Arms transfers are generally not one-time commercial transactions between firms, but the result of government-to-government agreements that include quite extensive and enduring forms of economic cooperation which involve the civilian sector as well as the military sector. Offset agreements are then an integral part of a much larger, more complex web of relationships which reflect states' perceptions of their security requirements and interests. In practice, the political and economic agreements which result in arms transfers may thus be both more complicated to arrange and more difficult to break off than a cursory look at arms trade data might suggest.

Until 1978, the Defense Department negotiated offset arrangements between U.S. military equipment manufacturers and other countries in connection with foreign military sales.[25] However, since then, in accordance with DOD's May 4, 1978, directive, the so-called "Duncan Memorandum," the U.S. Government takes no active role in administering or guaranteeing offsets. Current policy provides that (1) the Defense Department will not become directly involved in offsets either as a participant or a guarantor, and (2) Foreign Military Sales credits will not be used directly to finance coproduction or licensed production abroad. When offset agreements are deemed necessary, the following general guidelines will apply: "agreements involving system specific arrangements should specify that the responsibility for fulfilling any commitment rests with the U.S. firms directly benefiting from the sale."[26]

The U.S. Government, however, is inescapably involved in offsets. Government-owned facilities sell licenses which permit countries to manufacture U.S. military items domestically. These sales are often associated with larger procurements and are negotiated as a means of reducing the amount of foreign exchange needed by the buying country for the overall military package. They thus qualify as government sponsored offsets. The relationship of these agreements to stated policy constitutes what some Defense Department officials grant is a "gray area." However, they add that such agreements do not violate the intent of the Duncan Memorandum, since the sale of production licenses is not administered or guaranteed by the U.S. Government, nor are any "buy-backs" involved.

There are other, more indirect ways in which the U.S. Government also becomes involved, for example, by restrictions on certain types of technology transfer, third-country transfer prohibitions,[27] and various legislative and administrative mandates to oversee the effect of offset agreements on U.S. political, economic, and military interests.

However, the increasing demand for offsets has raised concerns that existing policy guidance is inadequate to protect U.S. national interests. As a result, Congress has mandated a study detailing the uses of offsets and their effect on defense preparedness, industrial competitiveness, employment, and U.S. foreign trade. Congress has held hearings, and several Government agencies are now reviewing their policies.

Offset agreements appear to affect U.S. national security interests in different and sometimes contrary ways. When technology transfer is associated with offsets, the issue is particularly sensitive. There is general concern that the transfer of sophisticated technologies will increase the possibility that they will fall into Soviet hands. Others point out that U.S. trade is lost, with an adverse effect on the U.S. economy, when allies acquire systems they would ordinarily not have, manufacture them with the benefit of government subsidies, and then later compete with U.S.

military products in the international market.[28] Spain's bid for a new main battle tank to be built in Spain is cited as an example because Spain wants the right to build the tank for export in direct competition with the supplier.[29]

Indeed, the authors of a recent article on offsets believe that "the export of high technology defense equipment has traditionally been an area of U.S. dominance and giving up the technological advantage to other countries may hinder future export sales as well as place sensitive U.S. technology outside the domain of U.S. legal controls."[30] In this view, political and military power is grounded in a stable, prosperous economy. What threatens the latter, directly or indirectly, threatens the former. Some go further to warn that various forms of joint production abroad can lead to increased American dependence on foreign subcontractors and suppliers, and thereby threaten both the defense industrial base and U.S. military preparedness.

Some analysts, however, regard the issue of technology transfer as overblown. They observe that, for the past 30 years, NATO's trade balance in military equipment has been about six to one in favor of the United States and that offsets have not eroded this advantage. Furthermore, they believe that third party transfer restrictions, which prohibit the retransfer of any U.S. government manufacturing equipment or any major U.S. military component or system without approval, have served to limit the commercial opportunities afforded foreign producers of U.S. military items. And, it is argued, because sensitive U.S. technologies have not been transferred abroad, the opportunities for their leakage to the Soviet Union are not related to offsets. As one government official remarked,

> it is in the exporting company's self-interest not to transfer its most sophisticated technologies. In spite of all the rhetoric about rationalization, standardization, and interoperability, the U.S. has protected itself very well. Offsets give the seller a great deal of flexibility. He decides what he wants to buy and what he wants to give. For the most part, the decision has been to release rather low-level technology.[31]

In this view, offsets do not constitute a dangerous conduit for sensitive technology transfer to the Soviet Union.

Other analysts call attention to advantages of offset agreements, which can, among other things, promote rationalization, standardization, and interoperability among allies and reduce each country's procurement costs. Indeed, they also point out that military sales under offset agreements have had important benefits for the U.S. defense posture. Standardized equipment also contributes to U.S. global strategy by making maintenance and spare parts available throughout the world. The F-16 program, which has coproduction facilities in Egypt, Israel, Norway, Pakistan, South Korea, and several other countries, is offered as one example.[32] The whole question of substitute suppliers, although rarely discussed in this connection, applies here as well.

Some argue that without offsets, U.S. allies might choose not to modernize their forces or might turn to other suppliers to fill their military needs, either of which would adversely affect the Alliance's capability and increase the U.S. defense burden. They also maintain that permitting allies and friends to produce U.S. military items builds up not only their military capabilities, but their economies.

As the demand for military offsets grows, so will the debate over them. Plainly, such offset agreements raise numerous issues which affect broad national interests. Judging from the complexities, the lack of hard data, and the powerful interests involved, consensus on how to deal with military offsets will be slow in coming. Until then, it is unlikely governments will act to restrict them significantly. If not for the long-term, then surely for the foreseeable future, offsets will remain an integral part of the international arms trade.

## ENDNOTES

1. In the United States, the term military-related exports refers to those items obtained through Foreign Military Sales or commercial sales of defense articles and services as defined by the Arms Export Control Act and the International Traffic in Arms Regulations.

2. In the United States, no single agency or department has been charged with the responsibility of collecting information on such offset trade agreements. Since 1978, the responsibility has been left to U.S. industries, which have different interests in discharging it, and the Defense Department no longer becomes involved in guaranteeing the terms of such agreements.

3. Department of the Treasury, *Offsets/Coproduction Requirements in Aerospace and Electronics Trade*, pp. 3-8.

4. Statement of Congressman Bruce F. Vento before the Subcommittee on Economic Stabilization.

5. Department of Defense Security Assistance Agency, *Fiscal Year Series*, as of September 30, 1984. This figure includes $300 million in construction sales.

6. One Defense Department official believes this to be a low estimate since the standard rate for offsets is 30 percent and many run as high as 100 percent or more. (Interview, March 19, 1984.)

7. GAO, *Trade Offsets in Foreign Military Sales*, p. 3.

8. Department of the Treasury, *Offsets/Coproduction Requirements in Aerospace and Electronics Trade*, pp. 3-8.

9. GAO, *Trade Offsets in Foreign Military Sales*, p. 3 and 7.

10. Stephan Pellay "Trade by Exchange," *Development Forum Business Edition*, October 16, 1983, p. 1; Heshem El-Abd and Michael Kenny O'Sullivan, "Encountering Countertrade," *Journal of Defence and Diplomacy*, p. 24.

11. "South Koreans Toughen Terms in Military Sales," *Wall Street Journal*, April 17, 1984, p. 38.

12. See "The Barter Game," *Middle East Magazine* (December 1984), pp. 15-19; *Aviation Week and Space Technology*, February 25, 1985, p. 22. The United Arab Emirates, for example, meets armaments payments to the French Dessault Company with crude oil. Bulgaria is also know to be heavily involved in countertrade. Between 1979-1982, according to one report, shipments of arms from Bulgaria rose fourfold, many of which were bartered for oil. During this period, arms became Bulgaria's top export, and oil and petroleum were second. The latter were re-exported from Libya, Iraq, Iran and the Soviet Union. ("Bulgaria Arms Third World," *Washington Inquirer*, August 31, 1984, p.1.)

13. Egypt is reported to be interested in bartering military hardware to Thailand, mainly in exchange for food and raw materials. (*Jane's Defence Weekly*, December 22, 1984, p. 1093.) Some analysts believe Israel is providing substantial numbers of arms and services to China in exchange for rare metals used in aircraft production such as vanadium, titanium, and tantalum. (Russell Warren Howe, "Israel's Sales to China Believed to Exceed 41 Billion," *Washington Times*, January 1, 1985, p. 1.)

14. INR study, p. 5.

15. "The Barter Game," p. 16.

16. Defense Task Group Study, pp. 4 and 7.

17. USITC Study, 1982, pp. 11-12.

18. Discussions with several government officials and industry representatives. It was suggested that OPEC countries have been offering to use oil in countertrade arrangements in order to circumvent OPEC price and export quota agreements. See also "The Barter Game," *The Middle East*, December 1984, pp. 15-19.

19. Dr. Herbert Stepic, Managing Director of Unico Trading Handelgesellschaft, an Austrian trading company, has expressed these views. (Patrick Blum, "Third World Debt Forces Increase in Countertrading," *Financial Times*, September 21, 1984.)

20. See Defense Task Group study, p. 15; "Saudis Employing Offsets to Expand Industrial Base," *Aviation Week and Space Technology*, May 23, 1983, p. 85.

21. Leo G. B. Welt, "Military Offsets," *National Defense*, March 1984, p. 21.

22. Interview with David Blakemore, April 25, 1985.

23. Department of the Treasury, *Offset/Coproduction Requirements in Aerospace and Electronics Trade*, Table 8. The percentages add up to more than 100 percent because of multiple responses from companies reporting competition from several sources, domestic and foreign. The foreign competition most often mentioned was French, followed by the U.K., Germany, and Italy (p. 12).

24. Dan Haendel, "International Barter and Countertrade," p. 7.

25. The U.S. government withdrew from these arrangements in 1978 for the following reasons:

(1) management complexities and the drain on DOD resources in the negotiation and implementation of these arrangements;
(2) such arrangements created the impression of a U.S. government obligation to purchase systems or components produced in foreign countries, or an interest in requiring U.S. contractors to do so;
(3) conviction that offset commitments were business judgments which should not involve DOD;
(4) the responsibility for fulfilling the offset should be the contractor's, not DOD's. (GAO, *Trade Offsets in Foreign Military Sales*, p. 1.)

26. *General Policy on Compensatory Coproduction and Offset Agreements with Other Nations*, May 4, 1978. The directive states that "DOD shall not normally enter into such agreements. An exception may be made only when there is no feasible alternative to ensure the successful completion of transactions considered to be of significant importance to United States national security interests (e.g., rationalization of mutual defense arrangements)."

27. The Arms Export Control Act, 1976 as amended, provides these prohibitions. Cited in Chapter 2, Section 3, of the Department of Defense *Security Assistance Management Manual*, January 2, 1985, pp. 2.2-2.3.

28. Lisa Rennie, "The Debate over Buy America," *Journal of Defense and Diplomacy*, August 1983, pp. 22-25.

29. "Five Companies Bid for Spain's MBT," *Jane's Defence Weekly*, August 4, 1984, p. 131.

30. Hesham El-Abd and Michael Kennedy O'Sullivan, "Encountering Countertrade," *Journal of Defense and Diplomacy*, July 1984, pp. 22-27.

32. Interview with an official at the Office of Management and Budget, March 19, 1985.

33. El-Abd and O'Sullivan, "Encountering Countertrade," p. 27; interview with State Department official, March 19, 1985.