

The State of the Trade: Global Arms Transfer Patterns in the 1980s

By

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After years of heady growth, the international trade in conventional arms experienced a sharp downturn in the mid-1980s, with orders for new equipment running as much as 50 percent behind the rate of the late 1970s. To a great extent, this decline reflects the global economic recession of 1982-1984 and the crippling debt burden carried by many Third World countries. But close analysis suggests that some of this decline may be a simple matter of statistics, reflecting the inability of current accounting methods to keep pace with structural changes in the global arms market. These changes, though difficult to evaluate in quantitative terms, appear to be effecting a permanent realignment of the weapons trade--a realignment that is likely to frustrate future arms control efforts and increase the intensity of local conflicts in the Third World.

A SURVEY OF PAST TRANSFER PATTERNS

To appreciate the magnitude of the current slump and the significance of these structural changes, it is necessary to survey the basic arms transfer patterns of the past fifteen years.[1] In conducting this survey, I will employ the standard statistical sources covering international arms transfers--*World Military Expenditures and Arms Transfers*, published annually by the U.S. Arms Control and Disarmament Agency (ACDA), the *SIPRI Yearbook*, published annually by the Stockholm International Peace Research Institute (SIPRI), and the annual report on conventional arms transfers published by the Congressional Research Service (CRS) of the U.S. Library of Congress. Each of these sources provides useful statistics on various arms export patterns. It is important to recognize, however, that they do not employ the same accounting methods or cover the same commodities, and thus cannot be used interchangeably. In assessing different patterns, therefore, I will cite those sets of figures which best illustrate a particular trend.[2]

Prior to 1970, world military exports rarely exceeded \$5 billion per year (in current dollars), and Third World countries accounted for less than half of these transactions. Starting in 1972, however, the arms trade experienced a sharp upward thrust, with the less-developed countries (LDCs) generating the bulk of new orders. According to ACDA, total world arms imports jumped from \$5.9 billion in 1970 to \$23.8 billion in 1979 (in current dollars). Even when these figures are adjusted for inflation, the ACDA data reveal a substantial boost in world arms transfers: from \$9.8 billion in 1970 to \$21.9 billion in 1979 (in constant 1978 dollars). More significant, the increase was most pronounced for Third World nations: total imports for the LDCs (in constant 1978 dollars) rose from \$6.9 billion in 1970 to \$17.7 billion in 1979, an increase of 157 percent, while imports by the industrialized nations grew by only 45 percent, from \$2.9 billion to \$4.2 billion.[3] [See Table 1.]

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TABLE 1
Conventional Arms Transfers to the Third World
as Talled by Various Sources
(In billions of U.S. dollars)

<u>Year</u>	<u>CRS:</u> <u>Orders</u> <u>(current</u> <u>dollars)</u>	<u>CRS:</u> <u>Deliveries</u> <u>(current</u> <u>dollars)</u>	<u>ACDA: Deliveries:</u> <u>(current</u> <u>dollars)</u>	<u>Deliveries:</u> <u>(1982</u> <u>constant</u> <u>dollars)</u>	<u>SIPRI:</u> <u>Deliveries</u> <u>(1975</u> <u>dollars)</u>
1973	10.45	6.67	10.26	20.12	3.63
1974	20.26	7.26	8.86	15.97	5.06
1975	19.72	8.04	9.25	15.30	6.30
1976	24.26	12.01	12.35	19.32	7.31
1977	23.28	16.05	15.35	22.68	9.70
1978	20.27	20.72	18.61	25.61	11.15
1979	30.56	23.77	22.62	28.69	9.60
1980	46.28	25.17	23.75	27.65	10.45
1981	33.45	30.69	29.66	31.59	9.09
1982	45.12	34.04	32.08	32.08	9.27
1983	28.29	31.95	28.67	27.50	9.56
1984	32.26	30.48	--	--	7.52

Source: CRS = Congressional Research Service, US Library of Congress, *Trends in Conventional Arms Transfers to the Third World, 1977-84* (Washington, D.C.: 1985) & earlier eds.; ACDA = U.S. Arms Control & Disarmament Agency, *World Military Expenditures & Arms Transfers, 1985* (Washington, DC: 1985) & earlier eds.; SIPRI = Stockholm International Peace Research Institute, *SIPRI Yearbook 1985* (Stockholm: 1985)

Accompanying this surge in arms buying by the LDCs was a corresponding increase in the *sophistication* of the weapons being acquired. Prior to 1972, the major suppliers generally provided their Third World clients with obsolete equipment no longer needed by their own forces, or less capable versions of current systems that were specifically configured for export purposes. Beginning in the early 1970s, however, one began to see major sales of modern, high-performance equipment to selected Third World buyers. This shift was inaugurated in 1972, with the U.S. decision to provide the Shah of Iran with eighty top-of-the-line F-14 Tomcat jet fighters, and was followed in succeeding years by sales of sophisticated U.S. aircraft and missiles to Israel, Saudi Arabia, and Egypt. These sales were complemented, moreover, by Soviet and French sales of late-model MiGs and Mirages, respectively, to other countries in the Middle East. As a result of these and other such sales, the inventories of many Middle Eastern nations have come to resemble those of the frontline states in NATO and the Warsaw Pact.[4]

Despite this increase in both the quantity and quality of arms exports, the world arms market remained the preserve of a relatively small number of major suppliers. According to the CRS, just six nations--the United States, the Soviet Union, France, Great Britain, West Germany, and Italy--together accounted for 91 percent of all military sales to the Third World between 1973 and 1980. And even among these six, the arms traffic was highly concentrated, with the two superpowers jointly supplying two-thirds of all Third World imports.[5]

These general trends persisted into the early 1980s, with 1982 setting a record of \$38.5 billion in total world arms transfers.[6] Beginning in 1982-1983, however, these patterns began to change. The most dramatic shift, perhaps, was in the dollar value of new *orders* for military gear (as distinct from weapons *deliveries*, which tend to lag behind orders because of the long lead time

involved in the production of modern armaments). According to the CRS, new arms purchases by Third World countries plunged from \$45.1 billion in 1982 to \$28.3 billion in 1983, a drop of nearly 50 percent. Third World orders rose slightly in 1984, to \$32.3 billion, then dropped to \$29.9 billion in 1985; at this point, it does not appear likely that they will climb back to the 1980-1982 level in the immediate future.[7]

The principal cause of this decline, in the view of most analysts, was the worldwide economic recession of the early 1980s and the mounting debt burden of Third World countries. "This downward trend has been largely determined by economic factors," Michael Brzoska and Thomas Ohlson wrote in the 1985 *SIPRI Yearbook*. "Many countries are facing budget constraints, and many countries, particularly in the Third World, are burdened by debts and can no longer allocate so much funding to armaments." [8] This assessment is confirmed by the fact that several of America's major arms customers, including Egypt, Morocco, the Sudan, Turkey, and Zaire, have fallen behind in their payments to U.S. government-guaranteed military loans or have had to have such payments rescheduled.[9]

Even the oil-exporting countries, which have generally accounted for a large share of Third World orders, have been affected by the economic crunch. With the demand for imported petroleum diminished because of global economic hardship and tightened credit, the oil producers naturally have less cash with which to purchase arms. This is particularly true of countries which tend to acquire their arms from the United States, since the high value of the dollar has boosted the relative cost of American munitions. As Richard Grimmett of the CRS observed in an interview, "Even those [oil-exporting] nations with the resources to continue buying arms have had to be more judicious in their expenditures." [10]

Another factor underlying the decline in new military orders is the apparent *saturation* of many Third World arms inventories. As the large quantities of sophisticated weapons ordered in the 1977-1982 period began arriving in these nations' arsenals, their military forces have had to be retrained in order to operate, maintain, and repair all of these new [and largely unfamiliar] systems. This process can take several years--especially in those LDCs which have not previously had much experience with high-tech military gear--and thus temporarily inhibit the demand for new arms.[11]

CHARACTERISTICS OF THE MARKET

These economic and institutional factors may begin to ease in the years ahead, producing a renewed demand for imported arms. However, while the current slump in military orders may prove temporary, some of the changes we are seeing in the structure of the arms trade may not. Indeed, the statistical tallies reveal some important shifts in the composition of the market, and other data point to a number of even more significant realignments.[12]

Looking at the statistical data first, we can see a substantial long-term decline in the relative market share retained by the major suppliers, and a corresponding growth in sales by the second-tier suppliers--including some Third World countries which have only recently begun producing for the international market.

As noted earlier, six major suppliers--the two superpowers plus the "big four" Western European suppliers (France, Great Britain, West Germany, and Italy)--have long dominated the international trade in armaments. But while these primary suppliers still account for a large proportion of international sales (and will probably continue to do so for a long time to come), their total market share has been declining since the late 1970s. This shift is particularly noticeable in the CRS data on new military purchases. Whereas the six "majors" accounted for 90 percent of Third World orders in the 1970s, their total share dropped to 75 percent in 1981-1984.[13] A similar long-term decline in market share can be seen in the ACDA figures on arms deliveries:

while the six majors accounted for 84 percent of total world transfers in 1976-1980, their share declined to 76 percent in 1982-1983.[14]

Accompanying this contraction in the market share of the major producers has been a shift in their standing relative to one another, and particularly between the two superpowers on one hand and the four European suppliers on the other. (See Table 2.)

TABLE 2
Major Suppliers of Conventional Arms to the Third World
Arms Transfer Agreements, 1977-84
(In billions of current U.S. dollars)

Supplier	1977	1978	1979	1980	1981	1982	1983	1984	Total 1977- 1984
Soviet Union	10.05	3.61	10.81	16.70	7.93	13.67	4.57	10.45	77.78
United States	4.59	5.45	9.85	9.15	6.84	12.96	9.66	7.25	65.75
Total: U.S.S.R. & U.S.	14.64	9.06	20.66	25.85	14.77	26.63	14.23	17.70	143.53
(Percent of Grand Total)	62.9	44.7	67.6	55.9	44.2	59.0	50.3	54.9	55.3
France	2.91	1.98	3.85	8.23	1.63	7.41	1.68	9.09	36.85
United Kingdom	1.41	2.52	1.27	2.11	1.45	1.37	0.81	0.39	11.32
Italy	1.04	1.40	0.61	2.88	0.36	1.19	1.65	0.70	9.81
West Germany	1.23	2.51	0.87	0.80	1.81	0.50	0.48	0.22	8.41
Total: Big-4 W. Europeans	6.59	8.41	6.70	14.02	5.25	10.47	4.62	10.40	66.39
(Percent of Grand Total)	28.3	41.5	21.9	30.3	15.7	23.2	16.3	32.2	25.6
Total: Big-4, U.S.S.R. & U.S.	21.23	17.47	27.36	39.87	20.02	37.10	18.85	28.10	209.92
(Percent of Grand Total)	91.2	86.2	89.5	86.1	59.9	82.2	66.6	87.1	80.9
Other, Non-Communist	1.14	1.44	2.07	4.08	6.12	3.55	6.21	2.55	27.15
Other, Communist	0.94	1.37	1.14	2.34	7.33	4.49	3.24	1.63	22.45
GRAND TOTAL	23.28	20.27	30.56	46.28	33.45	45.12	28.29	32.26	259.50

Source: Congressional Research Service, U.S. Library of Congress, *Trends in Conventional Arms Transfers to the Third World by Major Supplier, 1977-1984* (Washington, D.C.: 1985).

Between 1973 and 1980 the United States and the Soviet Union jointly received 66 percent of all Third World arms orders while the big four European suppliers received only 25 percent; in 1984, however, the superpowers' share had dropped to 55 percent while the Europeans' share had risen to 32 percent.[15] This shift appears to reflect more vigorous marketing efforts on the part of the Europeans, as well as efforts by some Third World buyers to diminish their military dependency on one or another of the superpowers by turning to European sources of supply. Particularly noteworthy in this regard is the steady growth in sales by France: whereas exports by

the United States and the Soviet Union exceeded those of France by a hefty margin for most of the 1970s and early 1980s, France reached parity with the superpowers in sales to the Third World in 1984.[16] And although French sales are not expected to remain at this elevated level year after year, it is likely that the major European suppliers will continue to make further inroads into the market dominance of the United States and the Soviet Union.

If one can trace a steady decline in the relative standing of the superpowers vis-a-vis that of the Europeans, we cannot detect any comparable shifts in status between the two leading suppliers themselves. For the past fifteen years, the United States and the Soviet Union have both jockeyed for first place in the arms trade, with Washington leading in some years and Moscow in others. Thus, according to the CRS, the Soviet Union led in new sales to the Third World in 1977, 1979-1982, and 1984, while the United States led in 1974-1976, 1978, and 1983.[17] Depending on which items are counted, moreover, different sets of statistics can produce contradictory ratings in the same year.[18] (See Table 3.) In 1978, for instance, the ACDA (which tallies transfers of arms, ammunition, and support equipment) reported a Soviet lead of \$7.7 to \$6.5 billion for the U.S. (in current dollars) in deliveries to all countries, while SIPRI (which tallies deliveries of major military items only) found the United States ahead, \$4.7 billion to \$3.5 billion (in constant 1975 dollars) in deliveries to the Third World.[19] Given this background, and in the absence of any signs pointing to a sharp break in global export patterns, it seems safe to predict that the two superpowers will continue to account for a large proportion of world arms transfers in the years ahead without either emerging as the clearcut leader.

TABLE 3
U.S. and Soviet Arms Transfers, 1973-1984
as Tallied by Various Sources
(Billions of U.S. dollars)

YEAR	CRS				ACDA		SIPRI	
	Orders		Deliveries		USA	USSR	USA	USSR
	USA	USSR	USA	USSR				
1973	4.41	3.71	1.32	3.55	5.40	5.30	1.06	1.54
1974	8.72	5.97	2.79	2.53	5.00	4.10	1.40	1.93
1975	9.62	3.66	3.09	2.39	4.90	4.00	2.34	2.16
1976	12.49	6.55	4.65	3.45	5.90	5.30	3.89	1.55
1977	4.59	10.05	6.14	5.07	6.70	6.60	4.83	2.16
1978	5.45	3.61	6.75	7.22	6.50	7.70	4.73	3.53
1979	9.85	10.81	5.87	11.45	6.00	12.50	2.04	4.57
1980	9.15	16.70	5.88	10.08	6.50	11.60	3.03	5.27
1981	6.84	7.93	6.64	9.68	8.60	11.20	2.59	3.51
1982	12.96	13.67	8.71	10.82	9.30	11.30	2.97	2.99
1983	9.66	4.57	10.00	8.69	10.60	9.80	2.68	3.40
1984	7.25	10.45	6.43	8.50	n.a.	n.a.	2.07	1.86

Sources:

CRS = Congressional Research Service, U.S. Library of Congress, *Trends in Conventional Arms Transfers to the Third World by Major Supplier, 1977-1984* (Washington, D.C.: 1985) and earlier editions. Represents transfers to the Third World in current dollars.

ACDA = U.S. Arms Control & Disarmament Agency, *World Military Expenditures and Arms Transfers, 1985* (Washington, D.C.: 1985). Represents transfers to all countries in current dollars.

SIPRI = Stockholm International Peace Research Institute, *SIPRI Yearbook 1985* (Stockholm: 1985). Represents transfers of major weapons to the Third World in constant 1975 dollars.

NEW ARMS EXPORTERS

Perhaps the most striking phenomenon of the recent period is the steady growth in sales by the second tier of arms producers--the countries which cannot compete on an equal basis with the superpowers and the big four European powers, but which have nevertheless secured an appreciable portion of the international arms traffic. Included in this category are Japan and Canada, along with a number of countries in Eastern and Western Europe (notably Belgium, Czechoslovakia, Holland, Poland, Spain, Sweden, and Switzerland). These countries lack the comprehensive arms industries of the major producers, but are important suppliers of certain categories of munitions for which they have developed a reliable market. Sweden, for instance, is known for its Bofors anti-aircraft guns, while Belgium's Fabrique Nationale is known for its rifles and submachine guns. This group of industrialized nations has been joined, moreover, by a number of aggressive new suppliers in the Third World--particularly Brazil, China, Egypt, India, Israel, North Korea, and South Korea. Ten years ago, these suppliers hardly figured in the standard statistical sources; today they loom as significant actors in the international marketplace.[20] (See Table 4.)

TABLE 4
Major Second-Tier Suppliers of Conventional Arms
Transfers to All Countries, 1979-1983
 (Current U.S. dollars in millions)

<u>Country</u>	<u>Transfers</u>	<u>Percent of World Total</u>
Czechoslovakia	3,950	2.3
China	3,320	2.0
Poland	3,100	1.8
Switzerland	2,030	1.2
Korea, South	2,010	1.2
Romania	1,980	1.2
Korea, North	1,805	1.1
Israel	1,360	0.8
Yugoslavia	1,340	0.8
Spain	1,115	0.7
Netherlands	920	0.5
Belgium	890	0.5
Bulgaria	840	0.5
Brazil	830	0.5
Canada	800	0.5

Source: U.S. Arms Control & Disarmament Agency, *World Military Expenditures and Arms Transfers, 1985* (Washington, DC: 1985). Represents value of arms exports by top fifteen suppliers after the United States, U.S.S.R., France, U.K., Italy, and West Germany.

The emergence of these second-tier suppliers is clearly documented in the statistics compiled by the CRS. From 1973 to 1980 the six major suppliers accounted for 90 percent of all sales to the Third World, while all other suppliers divided up the remaining 10 percent. From 1981 to 1984, however the "other" category jumped to one-fourth of all new orders. This increase was noted in both the "Free World" and "Communist" categories (as the CRS figures are tallied). The Free World "other" category rose from 6 percent of Third World orders in 1973-1980 to 13 percent in 1981-1984, while the Communist "other" category (which includes China, North Korea, Vietnam and the Eastern European countries) rose from 4 percent to 12 percent.[21]

Unfortunately, the CRS figures do not provide a breakdown between European and non-European suppliers in the "other" category. From other sources, however, we know that arms sales by the Third World have risen dramatically in recent years. According to the ACDA, military exports by the LDCs grew by 543 percent between 1973 and 1983 (from \$600 million to \$4.05 billion in constant 1982 dollars), while exports by the developed countries increased by only 33 percent. As a result of this surge, Third World exports represented 11 percent of all world arms transfers in 1983, compared to 2 percent in 1973.[22]

Further examination of the ACDA data suggests that much of this surge represents the efforts of a relatively small number of Third World nations to become major military suppliers. Of the \$16.1 billion in arms transfers made by Third World countries in 1979-1983, some \$12.4 billion, or 77 percent, were supplied by ten countries--Brazil, Bulgaria, China, Egypt, Israel, Pakistan, Saudi Arabia, Turkey, and the two Koreas.[23] In some cases, these sales represent the re-export of arms previously acquired from the major industrialized powers; in others, however, they represent the export of indigenously designed and produced weapons systems. What we are seeing, in effect, is the emergence of a significant South-to-South and South-to-North arms flow.[24]

The potential of these new trade patterns was first demonstrated in the war between Iran and Iraq, which has been under way since 1980. Although both belligerents have continued to receive some arms and equipment from their traditional suppliers (France and the Soviet Union in the case of Iraq, the United States in the case of Iran), they have become highly dependent on imports from the second-tier suppliers to compensate for losses in ammunition and equipment. While there are no reliable figures on the extent of these transactions, SIPRI reports that both belligerents have purchased billions of dollars worth of arms and equipment from other Third World countries, including Argentina, Brazil, Egypt, Israel, the two Koreas, and South Africa.[25]

The Iran-Iraq experience has drawn particular attention to Brazil, which has supplied both belligerents in the Persian Gulf conflict and has become a major supplier to other countries in the Third World. By concentrating on the lower end of the technology scale, the Brazilians have found a ready overseas market for a wide variety of their military products, including the EE-9 Cassavel armored car, the EE-11 Urutu armored personnel carrier, the EMB-312 Tucano trainer plane, the EMB-110 Bandeirante light transport, and the EMB-326 Xavante counterinsurgency plane.[26] A similar strategy has been pursued by Israel, which also produces a wide variety of arms and equipment for the Third World market, and is also being emulated by such aspiring producers as Egypt, India, Singapore, and South Korea.[27] While these suppliers will probably continue to export most of their products to other Third World countries, a number of them have succeeded in finding buyers among the advanced industrialized nations.[28]

The emergence of Third World arms suppliers has many important implications for any assessment of the contemporary arms trade. To begin with, it has a significant impact--in obvious and not-so-obvious ways--on the dollar value of international sales as reported in the standard statistical sources.

Because a number of the more affluent and developed nations of the Third World--i.e., those nations which have heretofore accounted for a substantial share of the world's arms *imports*--are now producing weapons themselves, it is likely that a certain segment of the world's military market has been permanently closed off to the traditional suppliers. Although these LDCs continue to rely on the major suppliers for high-performance jet aircraft and other sophisticated systems which surpass their indigenous manufacturing capabilities, they have become relatively self-sufficient in the production of small arms, artillery, trainer and counterinsurgency aircraft, and other basic items. According to SIPRI, twelve LDCs now produce combat aircraft, thirteen

produce major fighting ships, eleven produce armored vehicles of some sort, and ten produce artillery systems; in addition, a much larger number produce small arms and ammunition.[29]

Clearly, LDC enterprises of this sort have diverted substantial funds from the international arms market to domestic production. But just how much has been diverted is not easy to calculate. Michael Brzoska and Thomas Ohlson of SIPRI have estimated that the total value of all major weapons produced in the Third World between 1980 and 1984 amounted to \$8.5 billion (in constant 1975 dollars), but this figure excludes small arms, ammunition, and other low-tech items which constitute the bulk of LDC military production.[30] On the other hand, many of these enterprises have been undertaken for nationalistic or developmental reasons (i.e., to spur the growth of modern industrial enterprises), so we cannot be certain that all of the \$8.5 billion actually would have been spent on imported arms in the absence of these domestic programs. Nevertheless, it seems reasonable to conclude that at least some of the decline in North-to-South arms trafficking that has occurred since 1983 can be attributed to domestic arms production in the Third World.[31]

There is, however, another side to this equation. As many analysts have commented, these Third World producers are generally dependent to a greater or lesser degree on imports of technology--in the form of blueprints, technical assistance, specialized machinery and parts, and so forth--from the major industrial powers. Most of the combat planes produced in the Third World, for instance, are powered by jet engines manufactured in Europe or the United States, while most LDC-manufactured warships contain imported electronics and gun systems.[32] Thus, even among those LDCs with domestic arms programs, "the Third World remains heavily dependent on the developed countries," as Stephanie Neuman noted in 1984. "The more complex components are often beyond prevailing LDC technical skill levels or prove to be uneconomical to produce domestically." As a result, "natural resources, production equipment, designers, technicians, and sometimes managers and labor are provided from abroad." [33]

This dependency on imported skills and technology has become a significant--if hard to measure--factor in the global military trade. For the most part, sales of technical data, blueprints, production equipment, and raw materials are not incorporated into the statistical data compiled by SIPRI, the CRS, and the ACDA. These sources also tend to exclude data on the export of kits for the repair, modification, and modernization of imported weapons already in the inventories of Third World countries. While no one yet has attempted to put a dollar value on all these technology and equipment flows, there is no doubt that they are compensating to some degree for the decline in exports of military goods. As noted by SIPRI, there is "an increasing flow to recipient countries of weapons-related items, such as spare parts, components, upgrading and modification kits, and so on. These items are imported instead of ready weapons systems and are omitted from SIPRI's and most other estimates of the size of the global arms trade.[34]

BLACK AND GRAY MARKETS

There is another component of the international arms trade that is almost always excluded from the standard statistical tallies: the sale of black- and gray-market arms and equipment.

These categories require a bit of explanation. *Black-market sales* generally represent illegal sales of military hardware stolen or misappropriated from government stockpiles, and then shipped via devious and clandestine routes to their ultimate destination. *Gray-market sales* generally represent the transfer of "dual-use" equipment (i.e., helicopters, computers and other systems that can be used for both military and civilian purposes) to military users through legitimate government channels, usually on the pretext that it is intended for civilian and not military use. Black-market transfers are normally conducted by criminal bands or underground organizations operating in contravention to established government authorities. Gray-area transfers, on the other hand, often involve some sort of government collaboration or acquiescence, if only through a failure or

disinclination to impede illicit transactions (there is considerable evidence, for example, that the U.S. Government has turned a blind eye to transfers of military-related technology to South Africa).[35]

None of the established research organizations like SIPRI or the ACDA provides systematic data on illegal military shipments comparable to that provided on official government-to-government transactions. Nevertheless, it is possible to gain an awareness of the scope and magnitude of this trade from newspaper accounts of some of the more significant arms-smuggling schemes that have recently come to light in the United States.

- In February 1985, the U.S. Commerce Department revealed that up to eight U.S. military helicopters, worth a total of some \$2 billion, had been illegally diverted from Western Europe (their declared destination) to North Korea.[36]
- In May 1985, the owner of a small electronics firm in Huntington Beach, California, was indicted for illegally supplying 800 "krytons"--highly sophisticated timing devices that could be used in the manufacture of nuclear devices--to Israel.[37]
- In July 1985, seven persons, including several U.S. Navy supply officers, were indicted for conspiring to ship an estimated \$75 million worth of F-14 aircraft parts to Iran.[38]
- In August 1985, a U.S. Army lieutenant colonel and five other people were arrested in a \$75 million scheme to smuggle thousands of sophisticated U.S. missiles to Iran.[39]
- In April 1986, seventeen suspects, including a retired Israeli general, were arrested for plotting to sell an estimated \$2 billion worth of American aircraft, tanks, and missiles to Iran.[40]

Even these few examples--and they represent but a small fraction of the major smuggling cases exposed in recent years--suggest that we are looking at a very significant flow of advanced military hardware.[41] Indeed, most law-enforcement officials involved in combating this trade admit that the cases which come to light probably represent only a small fraction of the total underground traffic. "The latest arrests (in the F-14 smuggling operation) are only the tip of the iceberg," observed special agent Tom Neill of the U.S. Customs Service in August 1985.[42] Nor is the United States the only source of black-market arms. Articles in the international press suggest that an equivalent trade exists in Western Europe. Thus Great Britain and Italy have often been mentioned as the source of gray- and black-market arms shipped to South Africa, and West Germany has figured in illegal sales to the Middle East.[43]

For obvious reasons, it is impossible to put an exact dollar figure on the total volume of this traffic. Some analysts believe, however, that it amounts to many billions of dollars per year.[44] Much of this apparently can be attributed to purchases by Iran and Iraq, both of which reportedly are spending as much as \$1 billion per month to obtain arms and spare parts for the war.[45] Other major customers for such arms include Libya, South Africa, the sectarian militias in Lebanon, and the anti-Sandanista "contras" and other irregular forces in Central America.[46]

These findings on technology transfers and black-market transactions suggest that the basic data sources on international military sales may be significantly misrepresenting the true "state of the trade." Black-market sales of \$5 to \$10 billion per year, coupled with a substantial trade in arms-making technology, could--if factored into the standard statistical tallies--eliminate much of the decline noted in military exports since 1983. While the accurate measurement of such auxiliary transactions is probably beyond the capacity of researchers operating outside of the intelligence community, it is obvious that more analytical attention needs to be addressed to these phenomena.

There is another aspect of the current arms traffic that is inadequately expressed in the standard reference data: the growing emphasis being placed by many buyers on procurement of small arms, ammunition, logistical and communications equipment, and other low-tech systems of little glamour.

In the boom years of the 1970s and early 1980s, many Third World countries made significant purchases of high-performance jet fighters, tanks, and fighting ships. These were the "big ticket" items the sale of which drove up the export tallies and produced so many newspaper headlines. Since 1982, however, there have been far fewer reports of such transactions as the LDCs cut back on their purchases of costly, high-tech combat systems. But while the data are scanty, there is some evidence that many of these countries have been stepping up their procurement of ammunition, spare parts, and support vehicles.[47]

To some extent, of course, this shift in priorities reflects the lack of cash or credit with which to buy large quantities of costly, high-technology weapons, along with the "saturation" factor noted earlier. But it also appears to reflect a number of other critical factors: the growing intensity of internal and regional conflicts in the Third World (conflicts which tend to be fought mostly with small arms and counterinsurgency gear, rather than with high-performance aircraft and armored vehicles); the need to replace arms and ammunition expended in the Iran-Iraq conflict and the 1982 wars in Lebanon and the Falklands; and a degree of disenchantment regarding the combat utility of some costly, high-tech armaments.

Although reliable figures are lacking, it is increasingly apparent that the "small" wars of the 1980s--the internal and regional conflicts in Central America, Southern Africa, the Middle East, and Southeast Asia--have generated a substantial market for small arms, ammunition, and basic support systems. To support military operations in El Salvador, for instance, the Reagan administration proposed to spend an estimated \$1 billion in Fiscal 1984-1986 alone.[48] The Iran-Iraq war, as already noted, has provided an even larger market for such hardware, and both Israel and Syria have spent many billions of dollars to rebuild stocks of arms and ammunition lost or consumed in the 1982 Lebanon conflict.[49]

Heavy procurement of basic combat gear is a natural concomitant to high levels of international tension and conflict. But there is something else going on here. Many of the belligerents in recent conflicts have discovered that their high-tech weapons have not always performed as well in combat as in peacetime exercises, have consumed spare parts faster than those parts can be replaced, or have required elaborate maintenance of a sort not available under rugged wartime conditions--and so have come to place more and more reliance on older, simpler, and hardier weapons. These conflicts have also demonstrated the importance of adequate logistical support (Britain's victory in the Falklands, for instance, is partly attributed to its superior ability to deliver fighting power to a rather distant battle zone), and of advanced electronic gear to detect, track, confuse, and disable enemy combat systems.[50]

These experiences, which have been widely discussed in the military press, have led many governments to place a premium on the acquisition of basic combat systems and the large quantities of spare parts and supplies needed to operate them under the demanding conditions of protracted warfare. Similarly, many countries have chosen to upgrade existing equipment with modern guns and electronics rather than to invest in entirely new and unfamiliar systems.[51] Acquisitions of this sort are generally less costly than the more sophisticated items favored in earlier transactions, and so heavy purchases of such hardware may not be reflected in the CRS data on the *dollar value* of new military purchases. Some of the electronic and support systems, moreover, are excluded from the basic statistical sources cited in this essay, thus further accounting for the apparent decline in military orders observed in 1983.

It is possible, of course, that many recipients will again place orders for advanced weapons systems when economic conditions prove more favorable. Given the lessons learned in recent conflicts, however, it is likely that Third World buyers will approach future purchases of sophisticated arms with somewhat more caution and skepticism than they did in the 1972-1982 period. If there is a compelling need for such weapons, and if the funds are available, these countries are likely to go ahead and procure late-model equipment; but when the same mission can be performed almost as well by a less advanced model, or by an upgraded version of an existing product, they may opt for the less costly option.[52]

This shift in priorities has important implications for the long-term composition of the arms trade. In all probability, we will witness fewer of the large, multibillion dollar sales of high-performance aircraft and missiles from the major suppliers that were so common in the late 1970s and early 1980s. Instead, we are likely to see a somewhat larger trade in infantry weapons, ammunition, electronic and communications gear, and combat-support equipment. And because such hardware can often be acquired more easily and economically from the second-tier suppliers, we are likely to see a continuing decline in the market share held by the major suppliers.

Indeed, all of what we have learned suggests a fundamental restructuring of the international arms traffic. Summarizing for a moment, we can say that in the 1970s this traffic was dominated by a handful of major suppliers that generally sold finished military goods--including large numbers of sophisticated, front-line systems--to avid customers in the Third World. Today, we see a much more heterogeneous trade involving a larger number of suppliers offering a wider assortment of products, a more cautious pool of buyers, and a growing emphasis on technology transfers, modification and upgrade kits, logistical gear, and other non-weapons items.[53]

CONSEQUENCES OF THE CHANGES

This restructuring has many important repercussions, some of which are only just beginning to be understood.

One of the more obvious consequences is a sharp increase in the intensity of supply-side competition. The major producers are placing far more emphasis on marketing and advertising, and the pressure to secure new orders is reported to be intense. There has been an increase in the number and frequency of military trade fairs (or "arms bazaars," as they are sometimes called), and more and more companies have been exhibiting products at such events.[54] Commenting on the competitive atmosphere at the 1985 meeting of the Paris Air Show, one aerospace executive observed that "the food is flowing, the wine is flowing, and the blood is flowing." [55] Even if the demand for arms takes off again in the late 1980s, this competitive climate will not recede because more and more new suppliers are likely to enter the marketplace.

With the increase in competition, many of the restrictions on arms exports once imposed by some Western European governments have gone by the wayside. Thus, France, which played down the military side of its aerospace trade when socialist President Francois Mitterrand took office in 1981, has since lifted its restrictions on sales to all countries save Chile and South Africa.[56] West Germany, which previously maintained tight controls on the sale of military gear to Third World combat zones, significantly relaxed its export controls in 1982.[57] And despite considerable domestic opposition, Britain has relaxed its restrictions on military sales to Chile and other countries cited for human rights violations.[58]

Another apparent consequence of a more competitive market situation is a growing incidence of bribery charges involving major U.S. arms producers. In July 1985, the *St. Louis Post-Dispatch* revealed that the U.S. Securities and Exchange Commission and the Turkish government were investigating charges that the General Dynamics Corporation had paid up to \$23 million in

bribes to Turkish officials to help clinch the 1983 sale of 160 F-16s to Turkey.[59] Three months later, General Dynamics was again charged with making bribes to secure new weapons orders, this time in connection with sales to South Korea. Several other U.S. arms firms, including General Electric, United Technologies, LTV, and Martin Marietta, were also named in the South Korean case.[60] Although these charges still await confirmation by U.S. investigators, the sketchy details now available suggest a pattern of bribes and kickbacks very similar to that employed by Northrop, Lockheed, and other U.S. firms to procure major foreign sales contracts in the Nixon era.[61] American companies are not the only ones suspected of such behavior. Several recent reports from Western Europe suggest that bribery and kickbacks have also figured in major European sales to Third World buyers.[62]

Increased competition among the suppliers has also had an effect on recipient behavior in the international marketplace. As Brzoska and Ohlson observed in the 1985 *SIPRI Yearbook*, "Today the arms market is a buyers' market," endowing recipients with greater leverage when negotiating terms for new purchases. This leverage has been used in a number of significant ways: to secure concessions in price and credit terms; to obtain "offset" agreements (whereby the seller agrees to purchase a certain amount of goods in the recipient country, or to help market that country's products in overseas markets); and to gain access to advanced military production technologies (for use in developing domestic arms projects).[63]

Given the enormous debt burden carried by many Third World countries, it is hardly surprising that credit allowances of various sorts have figured in recent arms transactions. Countries which at one time were obliged to pay cash for their purchases, or to borrow the funds at regular market rates, are now able to buy on long-term credit--often at concessionary interest rates that represent an indirect subsidy by the supplier.[64] Offsets represent another type of subsidy, in that the supplier agrees to purchase a certain quantity of goods in the recipient country and market them elsewhere, or to otherwise contribute to industrial development in that country. In some cases, such offsets can amount to 100 percent of the purchase price of the arms involved, thus providing the buyer with significant economic benefits. And while many suppliers are reluctant to enter into such agreements, they are finding it harder to conclude a major sale without agreeing to some type of offset.[65]

When the buyer involved is among those countries that seek to develop a domestic arms industry, these offsets often take the form of technology transfers from supplier to recipient. Specifically, the buyer may insist that the weapon in question be partly manufactured or assembled in its own factories, or that it be allowed to serve as a subcontractor to the original supplier by producing certain key parts, thereby gaining experience in modern production techniques. Coproduction and licensing arrangements of this sort now figure in most major military sales to Brazil, Egypt, India, and Israel, and are increasingly setting the pattern for sales to other semi-industrialized Third World countries.[66] Thus, Turkey secured agreement for some degree of domestic assembly work on the F-16 fighters it has ordered from the United States, while Singapore will assemble at least some of the S-211 trainers and AS-332 helicopters ordered from Italy and France, respectively.[67]

DIVERSIFYING SOURCES

Accompanying these features of a buyer's market is the growing tendency for recipient countries to diversify their sources of arms, rather than to depend on one or two main suppliers.

This pattern first became evident in the 1960s, when some of the major Latin American countries began buying European arms in order to signal their independence from Washington, and has since become the pattern throughout the Third World.[68] Many countries in the Middle East, for instance, have turned increasingly to France and Great Britain for their major equipment, rather than persist in a pattern of dependence on one or another of the two superpowers (which tend to

exact a higher price in terms of political subservience than do their European counterparts). Thus Saudi Arabia in 1985 finally decided to acquire 72 Tornado strike aircraft from Britain--a \$4 billion purchase--rather than to continue an uphill battle to gain U.S. congressional approval for the purchase of additional F-15s.[69] A similar pattern is evident in such countries as Libya, Algeria, and Iraq, which have turned increasingly to French and Italian suppliers rather than maintain a sole-source relationship with the Soviet Union.[70]

The process of diversification has been aided, of course, by the entry of more and more suppliers into the world arms market. Although manufacture of the most advanced and sophisticated equipment--modern jet fighters, guided missiles and the like--tends to remain the domain of the major suppliers, production of less complex systems is now under way in a much larger number of countries and thus potential buyers have a wide number of sources to choose from.[71] Because the newer suppliers tend to offer more attractive economic terms (i.e., lower prices, easier credit terms or superior offsets) than the traditional suppliers, it is not surprising that many Third World recipients are increasingly turning to these secondary suppliers when acquiring less sophisticated equipment. Thus, according to the 1985 *SIPRI Yearbook*, customers for Brazilian arms have included Algeria, Bolivia, Chile, Colombia, Egypt, Gabon, Guyana, Honduras, Libya, Nigeria, Paraguay, Saudi Arabia, Suriname, Uruguay, Venezuela, and Zimbabwe.[72]

The proliferation of suppliers has also made it easier for countries exposed to some form of embargo to obtain a large assortment of military equipment. As noted earlier, Iran and Iraq have both turned to Third World suppliers to obtain arms and ammunition for their continuing conflict, and this also tends to be the case for such countries as South Africa, Chile, and Taiwan, which have been denied arms by many of the major suppliers.[73] As suggested by Stephanie Neuman, this multinational traffic demonstrates the "increasingly porous nature of today's arms supply patterns," with traditional supply lines being supplanted by new and unconventional channels.[74]

IMPLICATIONS OF ARMS CONTROL

The proliferation of arms suppliers, the diversification of acquisition patterns, and the breakdown of established trading patterns all have profound implications for the future of international conflict and the prospects for conventional arms control. To begin with, it is obvious that belligerents in future conflicts--even those lacking an arms industry of their own--will find it much easier than might have been the case in the past to circumvent international embargoes to obtain the arms and equipment needed to sustain high levels of combat over a long period of time. This is perhaps the outstanding lesson of the Iran-Iraq conflict--which has continued for six grueling years despite the nominal efforts of both superpowers to limit arms transfers to the belligerents--and is equally manifest in the ongoing struggles in Central America, Lebanon, and southern Africa. And with competition among the suppliers on the increase, any inclination they may have to limit sales to potential belligerents is likely to be eroded over time.

The growing emphasis on the acquisition of basic combat gear and ammunition is equally ominous. While many of the high-performance jets acquired in the 1970s are likely to spend much of their time in any future conflict on the ground (because of uncertainties regarding access to spare parts and maintenance), the stockpiles of less capable systems now being acquired are not likely to sit idle. Indeed, the whole emphasis on such hardware suggests conscious planning for sustained, high-intensity conflict on the part of many governments.

Despite all this, the issue of conventional arms transfers has been regarded as a secondary problem by those concerned with international peace and stability. Ever since NATO announced its decision to deploy Pershing II and ground-launched cruise missiles in Europe, nuclear arms issues have tended to dominate the worldwide debate on security affairs. But while extensive discussion of nuclear issues is certainly called for, it would be a tragic mistake to exclude conventional arms export issues from such discussions. Indeed, such issues bear on global security in

two critical ways: by enhancing the war-making capabilities of potential belligerents, and by increasing the destructive intensity of future conflicts. Both, in turn, aggravate the risk of a global nuclear holocaust.

It would be foolish to argue that increased arms transfers automatically increase the risk of war--too many factors go into the war/no-war decision, and it is almost impossible to calculate the relative importance of one factor. It is also true that arms transfers can *inhibit* conflict in some situations, by balancing out the capabilities of regional rivals and thus preventing any one of them from acquiring enough of an advantage to consider a preemptive attack (as, for example, U.S. and Soviet transfers to the two Koreas have prevented either from gaining a significant advantage). But it is also true that the widespread availability of modern arms has made it *easier* for potential belligerents to choose the military rather than the diplomatic option when settling local disputes. Examples of this phenomenon could include Argentina's 1982 decision to occupy the Falklands, Libya's 1983 decision to intervene in Chad's civil war, the bloody 1986 factional conflict in South Yemen, and, most notably, the continuing conflict between Iran and Iraq.

Arms transfers have also contributed to the destructive *intensity* of many recent conflicts, particularly those fought with large numbers of sophisticated munitions. The war in the Falklands, for instance, entailed relatively high levels of destruction (twelve ships sunk or damaged, 124 planes shot down) despite the limited nature of the conflict, while the 1982 conflict in Lebanon produced an estimated 50,000 casualties in just one month of fighting. This trend towards higher levels of combat intensity is so worrisome because it increases the risk that future Third World conflicts will escalate to the point where they threaten global as well as local interests, thus inviting intervention by the superpowers and, in consequence, escalation to higher--and perhaps even nuclear--levels of violence. As suggested by then Senator Walter Mondale in 1973, "the greatest danger to world peace may well lie not so much in the sudden outbreak of nuclear warfare between the superpowers, but in the step-by-step escalation of a conventional war fought with conventional weapons into an international war fought with conventional weapons into an international war fought with nuclear weapons." [75]

All of this suggests a growing need for new initiatives in the area of arms export control, such as those considered by U.S. and Soviet negotiators in the Conventional Arms Transfer (CAT) talks of 1977-1978. [76] Unfortunately, the increased potential for regional conflict noted above has been accompanied by a declining potential for arms control. In 1978, when the CAT talks were suspended, the two superpowers together accounted for approximately two-thirds of all international arms transfers; today, their share has dropped to about 55 percent, and many new suppliers are producing for the international market. As time goes on, therefore, the task of negotiating multilateral arms restraints will prove more and more difficult, while it will become that much easier for belligerents to find alternative sources of supply. If we are to have any success in controlling the arms trade, therefore, it is imperative that the major suppliers move quickly towards the adoption of new constraints.

What is called for, in effect, is the resumption of the CAT talks *with the addition* of other major suppliers, especially France. Indeed, Senator Mark O. Hatfield of Oregon made just such a proposal in a 1985 letter to President Reagan. Noting that the worldwide recession had produced a decline in global arms exports and that the three major suppliers (the United States, France, and the Soviet Union) had reached near-parity in their overseas sales, Hatfield suggested that we had a unique "window of opportunity" within which to launch "trilateral negotiations which can pave the way toward a workable multilateral framework to limit and control the sales of arms to the less developed world." [77] A resolution to this effect, offered by Hatfield on 15 May 1985, was subsequently adopted by the U.S. Senate. [78]

Despite the urging of Hatfield and others, President Reagan has not taken concrete steps to revive the CAT talks. Given the uncertain state of U.S.-Soviet relation, moreover, it seems

unlikely that any such initiatives can be expected in the near future. Nonetheless, both super-powers have expressed considerable anxiety over the escalatory potential of regional conflicts, and it is possible that a future Reagan-Gorbachev summit could result in an agreement to resume negotiations on conventional arms export control. Such talks, if broadened to include France and the other major suppliers, probably represent our best hope for the adoption of meaningful international restraints on the global arms traffic.

ENDNOTES

1. For further discussion of these patterns, see Michael T. Klare, *American Arms Supermarket* (Austin: University of Texas Press, 1984), pp. 1-25; Stephanie Neuman, "The Arms Trade and American National Interests," in Vojtech Mastny, ed., *Power and Policy in Transition* (Westport, Conn.: Greenwood Press, 1984), pp. 147-182; and Andrew J. Pierre, *The Global Politics of Arms Sales* (Princeton, N.J.: Princeton University Press, 1982), p. 1-38.
2. The full citation for the most recent editions of these documents are: U.S. Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers, 1985* (Washington D.C.: U.S. Government Printing Office, 1985); International Institute for Strategic Studies, *The Military Balance 1985-1986* (London: International Institute for Strategic Studies, 1985); Stockholm International Peace Research Institute, *World Armaments and Disarmament: SIPRI Yearbook, 1985* (London and Philadelphia: Taylor and Francis, 1985); and Richard F. Grimmett, *Trends in Conventional Arms Transfers to the Third World by Major Suppliers 1977-1984* (Washington D.C.: Congressional Research Service, Library of Congress, 1985). In succeeding notes the following citations for these sources will be employed: ACDA, *WME&AT 1985*; IISS, *Military Balance 1984-1985*; SIPRI *Yearbook 1985*; and CRS, *Trends 1977-1984*. For discussion of the methodological problems associated with arms transfer data, see Frank Blackaby and Thomas Ohlson, "Military Expenditures and the Arms Trade: Problems of Data," *Bulletin of Peace Proposals* 13 (1982): 291-308; and Laurel A. Mayer, "U.S. Arms Transfers: Data Sources and Dilemmas," *International Studies Notes* 7 (Summer 1980): 1-7.
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4. The growing sophistication of Third World arms inventories can be tracked by consulting the country-by-country arms listing in successive editions of *The Military Balance*. For discussion see Leslie Gelb, "The Mideast Arms Race: New Weapons, Old Fears," *The New York Times*, 24 January 1982; and Calib S. Rossiter, *U.S. Arms Transfers to the Third World: The Implications of Sophistication* (Washington, D.C.: Congressional Research Service, Library of Congress, 1982).
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6. ACDA, *WME&AT 1985*, p. 89.
7. CRS, *Trends 1978-1985*, p. 30.
8. SIPRI *Yearbook 1985*, p. 345.
9. See U.S. General Accounting Office, *Military Loans: Repayment Problems Mount as Debt Increases* (Washington, DC: Government Printing Office, 1985); and John J. Fialka, "Easy U.S. Credit Helps Sell Arms: Repayment Can Be Another Matter," *The Wall Street Journal*, 13 June 1984.
10. Telephone interview with the author, 7 June 1984.
11. For discussion see Michael Brzoska and Thomas Ohlson, "The Future of Arms Transfers: The Changing Patterns," *Bulletin of Peace Proposals* 16 (1985): 131; and Lawrence Ingrassia, "World Weapons Sales Slow, and Competition by Suppliers Heats Up," *The Wall Street Journal*, 30 May 1984.
12. The author first explored these shifts in "New Merchants in the Arms Bazaar," *Bulletin of the Atomic Scientists* (January 1985): 15-17. For other analyses of these shifts see Brzoska and Ohlson, "The Future of Arms Transfers," pp. 129-137; and Neuman, "The Arms Trade and American National Interests," pp. 163-170.
13. CRS, *Trends 1977-1984*, p. 24.
14. ACDA, *WME&AT 1985*, p. 89-130.
15. CRS, *Trends 1977-1984*, p. 24.
16. *Ibid.*
17. CRS, *Trends 1977-1984*, p. 24; and prior editions.
18. For discussion see Blackaby and Ohlson, "Military Expenditures and the Arms Trade," pp. 291-308; and Klare, *American Arms Supermarket*, pp. 206-207.
19. ACDA, *Trends 1985*, pp. 123, 127; SIPRI *Yearbook 1985*, pp. 370-371.

20. For example, see Neuman, "The Arms Trade and American National Interests," pp. 155-158; and Jean Klein, "Arms Sales, Development, Disarmament," *Bulletin of Peace Proposals* 14, no. 2 (1983): 157-159.
21. CRS, *Trends 1977-1984*, p. 24; and prior editions.
22. ACDA, *WME&AT* 1985, p. 89.
23. *Ibid.*, pp. 94-130. For profiles of the major Third World arms producers, see Michael Brzoska and Thomas Ohlson, *Arms Production in the Third World* (London and Philadelphia: Taylor & Francis, 1986), pp. 35-250.
24. For discussion, see Neuman, "The Arms Trade and American National Interests," pp. 155-158. For a comprehensive register of arms exports by Third World producers, see Brzoska and Ohlson, *Arms Production in the Third World*, pp. 351-360.
25. *SIPRI Yearbook 1984*, pp. 195-201. See also Leslie H. Gelb, "Iran Said to Get Large-Scale Arms from Israel, Soviet and Europeans," *The New York Times*, 8 March 1982.
26. See the "Register of Arms Transfers" in *SIPRI Yearbook 1985*, pp. 389-439, and in prior editions. See also Brzoska and Ohlson, *Arms Production in the Third World*, pp. 79-104 and 352-355.
27. For discussion see *SIPRI Yearbook 1985*, pp. 329-339; Geoffrey Aronson, "The Third World's Booming New Industry: Weapons," *The Washington Post*, 16 June 1985; Brzoska and Ohlson, *Arms Production in the Third World*, esp. pp. 35-77 and 105-231; and Klare, *American Arms Supermarket*, pp. 173-180.
28. Brazil, for instance, has sold significant numbers of its EMB-312 Tucano trainer plane to Canada and the United Kingdom. See *SIPRI Yearbook 1985*, p. 376.
29. *SIPRI Yearbook 1985*, pp. 331-333.
30. Brzoska and Ohlson, *Arms Production in the Third World*, p. 8.
31. Klein, "Arms Sales, Development, and Disarmament," pp. 157-158; and Aronson, "Booming New Industry."
32. See, for example, *SIPRI Yearbook 1985*, pp. 336-341; and Klare, *American Arms Supermarket*, pp. 175-176.
33. Neuman, "The Arms Trade and American National Interests," p. 162.
34. *SIPRI Yearbook 1985*, p. 345.
35. For background on black- and gray-market sales, see the two-part series on clandestine arms exports by Joel Brinkley and Jeff Gerth in *The New York Times*, 25 and 26 September 1985. See also Gaylord Shaw and William C. Rempel, "Billion-Dollar Iran Arms Search Spans U.S. Globe," *The Los Angeles Times*, 4 August 1985; William C. Rempel and Larry Green, "London Center of Iran Arms Smuggling," *The Los Angeles Times*, 3 September 1985; and Caryle Murphy, "Papers, Testimony Shed Light on Murky World of Arms Ring," *The Washington Post*, 21 August 1985. On illicit U.S. sales to South Africa, see Thomas Conrad, "South Africa Circumvents Embargo," *Bulletin of the Atomic Scientists* (March 1986): 8-13; and Michael T. Klare, "Evading the Embargo: Illicit U.S. Arms Transfers to South Africa," *Journal of International Affairs* 35, no. 2 (Spring/Summer 1981): 15-28.
36. *The Wall Street Journal*, 4 February 1985; and *The Washington Post*, 4 February 1985.
37. *The New York Times*, 16 May 1985; and *The Washington Post*, 14, 15 and 17 May 1985.
38. *The New York Times*, 15 and 23 July 1985; and *The Washington Post*, 16 July 1985.
39. *The New York Times*, 2 and 3 August 1985; and *The Washington Post*, 2 August 1985.
40. *The New York Times*, 23 April 1986.
41. The breadth and scale of this trade is suggested by "Significant Export Control Cases, January 1981 to June 1985," a list of illegal arms and technology transfer cases under investigation by the U.S. Department of Justice (supplied to the author by the U.S. Customs Service).
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45. The \$1-billion-per-month estimate was provided by unidentified government sources cited by Herbert H. Denton, *The Washington Post*, 13 July 1984.
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48. U.S. Department of Defense, Congressional Presentation: Security Assistance Programs, FY 1986 (Washington, D.C., 1985), pp. 387-389.

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53. A similar analysis is provided by Stephanie Neuman in "The Arms Trade and American National Interest," pp. 157-158.
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60. Kai Bird and Max Holland, "South Korea: The Big Payoff," *The Nation* (26 October 1985): 401; and *The Washington Post*, 3 October 1985.
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66. For discussion see Klare, *American Arms Supermarket*, pp. 173-180; and Neuman, "The Arms Trade and American National Interests," pp. 164-65.
67. *SIPRI Yearbook 1985*, pp. 386, 416.
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69. *The Washington Post*, 10, 17, and 27 September 1985.
70. *SIPRI Yearbook 1984*, p. 188.
71. For a register of the indigenous and licensed production of arms in the Third World, see Brzoska and Ohlson, *Arms Production in the Third World*, pp. 305-350.
72. *SIPRI Yearbook 1985*, 389-423.
73. *Ibid.*
74. Neuman. "The Arms Trade and American National Interests," pp. 157-158.
75. Quoted in *Aerospace Daily*, 22 June 1973.
76. For discussion, see Klare, *American Arms Supermarket*, pp. 94-95, 230-231; Pierre, *The Global Politics of Arms Sales*, pp. 285-290; and U.S. Congress, Senate Committee on Foreign Relations, *Prospects for Multilateral Arms Export Restraint*, Staff Report, 96th Cong., 1st Sess., 1979, pp. 19-24.
77. Hatfield letter, 13 May 1985.
78. For text, see *Congressional Record-Senate*, 15 May 1985, pp. S6197-98.

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