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# Offsets In Defense Trade

Prepared By The

U.S. Department of Commerce

[The following material is extracted from an August 1997 U.S. Department of Commerce study entitled, *Offsets in Defense Trade: A Study Conducted under Section 309 of the Defense Production Act of 1950, As Amended*. The report was produced by the Strategic Analysis Division in the Office of Strategic Industries and Economic Security of the Bureau of Export Administration (BXA). This is the second in a series of Congressionally required annual reports on defense-related offset agreements. (Excerpts from the first such report were published in the Fall 1996 issue of *The DISAM Journal*, pp. 30-56.) A copy of the complete report is available through BXA. Phone: 202-482-4060; Fax: 202-482-5650; E-mail: <[bbotwin@bxa.doc.gov](mailto:bbotwin@bxa.doc.gov)>.]

## EXECUTIVE SUMMARY

This is the second report on offsets in defense trade prepared by the Department of Commerce's Bureau of Export Administration (BXA), as authorized under the 1992 amendments to Section 309 of the Defense Production Act of 1950, as amended. The report includes data on both new offset agreements struck in 1995, and transactions completed to fulfill agreements made in previous years. The same data is also provided for the years 1993-1994 to put the new numbers in perspective and highlight trends.

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In 1995, U.S. prime contractors entered into 45 new offset agreements valued at over \$6 billion. The defense export contracts which these agreements facilitated were worth \$7.4 billion. This represented a substantial increase in new obligations over previous years, both in value and as a percentage of export contracts. European governments demanded by far the largest portion of offsets at \$5.2 billion, or 86 percent of the value of all new U.S. offset agreements. New agreements made with this region rose to 104.3 percent of the value of defense export contracts. A total of 21 of the 26 new offset agreements entered into with Europe were for 100 percent or more. With the removal of one country's new agreements, the European average declines to 96.2 percent.

The decrease in defense budgets, large national debts, and significant unemployment which plague Europe appear to be driving increased offset demands in that region. Such figures are also a symptom of the increasingly competitive international arms market, where the buyer wields a great deal of leverage. In addition, major declines in U.S. defense procurement of aircraft in recent years have placed U.S. aerospace companies in a position of greater reliance on international sales for their revenues. Consequently, the importance of offsets as a marketing tool has apparently increased in the current environment.

Prime contractors reported a total of 671 offset transactions in 1995 valued at \$2.7 billion. This figure represented an increase over previous years as well. Europe was the major demander of these transactions, receiving over 70 percent of the value of transactions. About 40 percent were direct offsets (related to the exported defense system), which is somewhat higher than the previous two years, but not a significant reversal of the general trend toward more indirect offsets. Over 75 percent of 1995 transactions were comprised of purchases,

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subcontracting, and credit transfers. The transfer of technology accounted for another eight percent. The same categories composed slightly less of the total in 1993-1994.

Among the beneficiaries of offset transactions were 738 different public and private foreign organizations. The great majority were private firms. Most were involved in only one or two transactions, though one firm received 35 offsets valued at \$216 million. The entity which gained the greatest value received 16 transactions worth \$248 million, or 3.8 percent of the total. Foreign public concerns to whom offsets were transferred included defense ministries, individual branches of the armed forces, and other entities such as ministries of economic affairs, research institutes, and industrial development agencies.

According to the surveyed prime contractors' 1995 offset transaction reports, over 90 percent of existing offset agreements arose from the export of aerospace systems. However, only 50 percent of offset transactions were aerospace-related. The balance cut a wide cross section across the rest of the economy. This supports the contention made last year that indirect offsets are increasing both in volume and in scope.

The goods and services used to fulfill existing offset obligations for 1993-1995 were distributed among 172 industrial sectors, with 45 new sectors added in the final year of the survey. Nearly 81 percent of the offsets were manufactured products, especially concentrated in certain sectors. The broadly defined transportation equipment sector comprised almost 51 percent of the value of all offset transactions. Another 13 percent involved electrical machinery and equipment, and ten percent were non-electrical machinery. These three manufacturing sectors accounted for nearly 75 percent of transactions. Within the transportation equipment sector, aircraft and parts comprised 43 percent of total transactions, and commercial shipbuilding and repair, five percent. In the service sector, bank credit accounted for six percent of offset transactions.

The impact of offsets upon three specific industries was analyzed: machine tools, commercial shipbuilding, and gears. Viewed from an industry-wide perspective, the immediate impact appeared small in absolute dollar values. However, there can be some indirect impacts of offsets. For example, foreign suppliers are strengthened and introduced to new customers. At the level of the individual company, the impact of offsets may also be significant. Offsets can also cause purchasing decisions to be based on contractual criteria, where specific suppliers must be identified in buyer countries to meet the offset demands. As a result, U.S. firms lose work to foreign companies when production is transferred overseas. These circumstances are evident in the machine tool and gear industries.

Based on separate information collected by BXA, 114 U.S. defense subcontractors (out of a population of 703) reported being directly involved or impacted by offsets. Almost 80 percent of the 114 respondents stated that the impact was negative. Additional analysis of the data indicated that larger subcontractors with higher defense market shares were more likely to report any impacts. The 20 percent that reported being positively impacted by offsets were primarily the largest firms, while smaller firms were more likely to report negative impacts.

## OVERVIEW

### Legislation

In 1984 Congress enacted amendments to the Defense Production Act of 1950, as amended, which included the addition of Section 309. This new section required the President to submit annually to the Committee on Banking, Finance, and Urban Affairs of the House of Representatives and the Committee on Banking, Housing, and Urban Affairs of the Senate a report on the impact of offsets on the defense preparedness, industrial competitiveness, em-

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ployment, and trade of the United States. Additional minor modifications to Section 309 have been made in subsequent years by the Congress.

When Section 309 was first enacted, the Office of Management and Budget (OMB) was appointed as the interagency coordinator in the preparation of the annual offsets report for the Congress. These reports were to be prepared in consultation with the Departments of Commerce, Defense, and Labor, and the Office of the United States Trade Representative. This interagency reporting requirement continued, with minor adjustments, until 1992, when Section 309 underwent major modifications. The interagency coordination role was transferred from OMB to the Secretary of Commerce. In addition, the Secretary was given authority to develop and administer regulations to collect from industry the offset data required for the report. This responsibility was later delegated to the Department's Bureau of Export Administration (BXA). A change was also made in Section 309, adding a sales reporting threshold previously cited in the National Defense Authorization Act for fiscal year 1991. The offset agreement threshold was reduced from \$50 million to \$5 million for U.S. firms entering into foreign defense sales contracts subject to offset agreements. On a per-transaction level, firms must report all offset transactions for which they receive offset credits of \$250,000 or more.

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## Background

Offsets are industrial compensation practices mandated by many foreign governments when purchasing defense articles. Definitions of offsets used by industry and government are sometimes inconsistent. Most parties, however, use the following definition which was developed by a U.S. Government interagency group in 1986: offsets are industrial compensation practices required as a condition of purchase in either government-to-government or commercial sales of defense articles and/or defense services as specified in the International Traffic in Arms Regulations. In defense trade, offsets include mandatory co-production, licensed production, subcontractor production, technology transfer, countertrade, and foreign investment. Offsets may be direct, indirect, or a combination of both. Direct offsets refer to compensation, such as co-production or subcontracting, "directly" related to the system being exported. Indirect offsets apply to compensation unrelated to the exported item, such as foreign investment or countertrade.

Countries require offsets for a variety of reasons: to ease (or "offset") the burden of large defense purchases on their economy; to increase or preserve domestic employment; to obtain desired technology; and to promote targeted industrial sectors. In extensive discussions with BXA, U.S. prime contractors reported that defense exporters often must fulfill these demands or risk losing a valuable sale. Moreover, industry informed BXA that, in most cases, defense exporters cannot even submit a bid proposal without including an offset package.

Since World War II, U.S. defense industries have been major players in the international arms market. Co-production/licensed production in defense trade were initially encouraged by the U.S. Government to help rebuild the war-ravaged economies and industrial bases of Western Europe and Japan. Co-production/licensed production of U.S. weapon systems in foreign countries began in the late 1950s and early 1960s. The NATO countries and Japan were the first to enter into such agreements with the United States.

During the Cold War, it was in the best interests of the U.S. to ensure that allied countries were strong militarily as well as economically. Historically, offsets have served important foreign policy and national security objectives of the United States, such as increasing the industrial capabilities of allied countries, standardizing military equipment, and modernizing allied forces. The use of offsets is now commonplace. Today, virtually all U.S. defense trading

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partners impose some type of offset requirement, and at times the stated value of the offset exceeds that of the sales contract.

The type of offsets that buyer countries demand is changing as many countries face decreasing security threats and excess capacity in their arms industries. Foreign governments typically use direct offsets involving co-production to justify expensive arms purchases, claiming that the purchase will boost local employment and national security by helping to maintain domestic defense industries.

Increased competition for a declining number of international arms contracts and weak domestic defense markets should continue to foster offset agreements. U.S. technology and weapon systems, notably aerospace, are some of the best available on the world market, and the U.S. economy is the largest and most diverse. These factors confer general competitive advantages on U.S. defense firms over foreign concerns in the range of direct and indirect offsets they can provide.

While offsets are used as a "marketing tool" by arms exporters, buying governments now have greater market leverage and expanded choice. In cases where buyers recognize that the costs outweigh the benefits of a particular direct offset, industry noted that the buyers are more than likely to emphasize indirect offsets rather than stop demanding them altogether. Many buyer countries now prefer indirect offsets as a means to promote economic development, to diversify arms industries, or to improve their balance of trade. The BXA offset data for 1993-95 illustrates this trend overall, with some variation by industry and region.

The *Offsets in Military Exports* reports prepared by OMB from 1985 to 1990 highlighted a growing trend in offset demands by purchasing countries around the world, both for direct offsets (related to the weapon sale) and indirect offsets (not related to the sale). Indirect offset demands have expanded dramatically beyond defense/aerospace to affect other industries such as automobiles, semiconductors, software, and telecommunications. Last year's Department of Commerce report found that one-third of the offsets were direct (related to the weapon systems sold) and two-thirds were indirect (not related to the weapon systems sold); three-fourths of total offsets (direct and indirect) involved the purchase or subcontracting of goods and services or the transfer of technology. This year's report indicates that direct were 39.8 percent of the total and 60.2 percent were indirect. Almost 70 percent of total offsets involved the purchase or contracting of goods and services or the transfer of technology.

In the 1993-95 data shown in section 2 of this report, 172 different industries are affected by direct and indirect offsets, an increase of 45 over the 1993-94 data presented last year. However, the data remains heavily clustered in aerospace and related areas.

From an industry perspective, most companies would prefer to compete on the basis of quality and price of their primary product, rather than participate in offset agreements. In general, U.S. defense firms are not in the consulting, technology transfer, risk capital, or trading business. However, because of foreign government demands, offsets have become a recognized part of doing business with customers, and U.S. defense firms are responding to these demands.

Offsets are a viable method for foreign governments to advance national economic goals and are part of almost every military export transaction. U.S. companies would be pleased to see the disappearance of most offset requirements, particularly direct offsets that impact their supplier infrastructure. However, offsets provide a marketing advantage to U.S. firms. As the U.S. has the world's largest economy, it can be argued that the U.S. can absorb offset requirements, including some purchases from the customer country, with less of an impact on the overall economy, more readily than competitor countries. This marketing advantage is

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particularly important to the U.S. defense industry given the absence of U.S. government subsidies for defense products.

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## Offsets Definitions

Listed below are offset definitions as outlined in the *Federal Register* (Vol. 59, No. 23 1) dated December 2, 1994, prepared by BXA (codified at 15 CFR Part 701); and *Offsets in Military Exports*, OMB, dated December 1988.

**Offsets:** Industrial compensation practices required as a condition of purchase in either government-to-government or commercial sales of defense articles and/or defense services as defined by the Arms Export Control Act and the International Traffic in Arms Regulations.

**Military Export Sales:** Exports that are either Foreign Military Sales (FMS) or commercial (direct) sales of defense articles and/or defense services as defined by the Arms Export Control Act and International Traffic in Arms Regulations.

**Direct Offsets:** Contractual arrangements that involve defense articles and services referenced in the sales agreement for military exports.

**Indirect Offsets:** Contractual arrangements that involve goods and services unrelated to the exports referenced in the sales agreement.

**Co-production:** Overseas production based upon government-to-government agreement that permits a foreign government(s) or producer(s) to acquire the technical information to manufacture all or part of a U.S. origin defense article. It includes government-to-government licensed production. It excludes licensed production based upon direct commercial arrangements by U.S. manufacturers.

**Licensed Production:** Overseas production of a U.S. origin defense article based upon transfer of technical information under direct commercial arrangements between a U.S. manufacturer and a foreign government or producer.

**Subcontractor Production:** Overseas production of a part or component of a U.S. origin defense article. The subcontract does not necessarily involve license of technical information and is usually a direct commercial arrangement between the U.S. manufacturer and a foreign producer.

**Overseas Investment:** Investment arising from the offset agreement, taking the form of capital invested to establish or expand a subsidiary or joint venture in the foreign country.

**Technology Transfer:** Transfer of technology that occurs as a result of an offset agreement and that may take the form of: research and development conducted abroad; technical assistance provided to the subsidiary or joint venture of overseas investment; or other activities under direct commercial arrangement between the U.S. manufacturer and a foreign entity.

**Countertrade:** In addition to the types of offsets defined above, various types of commercial countertrade arrangements may be required. A contract may include one or more of the following mechanisms:

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**Barter:** A one-time transaction only, bound under a single contract that specifies the exchange of selected goods or services for another of equivalent value.

**Counter-purchase:** An agreement by the initial exporter to buy (or to find a buyer for) a specific value of goods (often stated as a percentage of the value of the original export) from the original importer during a specified time period.

**Compensation (or Buy-Back):** An agreement by the original exporter to accept as full or partial repayment products derived from the original exported product.

## STATISTICAL ABSTRACT

New data collected for this report covers calendar year 1995. In many cases, this new data has been added to the 1993 and 1994 data published in last year's report. The data is also compared to previously collected data (1980-1987) to see if any longer term trends are discernable.

New offset agreements rose to 81.5 percent of the export contract values in 1995, the third highest level since 1981 and 1987, when new offset agreements were 90 percent and nearly 100 percent of export contract values, respectively. The new agreements were valued at over \$6.0 billion and included two new destinations, both in Europe. The new agreements were nearly three times the level in 1994, and 25 percent larger than 1993 levels. New offset agreements with European nations in 1995 were 104.3 percent of export contract values. The European total of \$5.2 billion in new offset obligations was almost 86 percent of the world total, dominating this year's numbers.

A total of 671 offset transactions valued at \$2.7 billion were reported in 1995, the greatest number and amount for the three years. Of these, European nations accounted for more than \$1.9 billion, or 71 percent. Direct offsets rose to almost 40 percent in 1995, after ranging around 31 percent in each of the two prior years. This was largely accounted for by a substantial increase in subcontractor activity, especially in Europe and the "Other Areas" region.

Also, the 1995 offset transactions reports were based on 80 different exported weapon systems, seven of which appeared for the first time. For the three years, transactions were based on a total of 139 different weapon systems to a total of 32 nations worldwide.

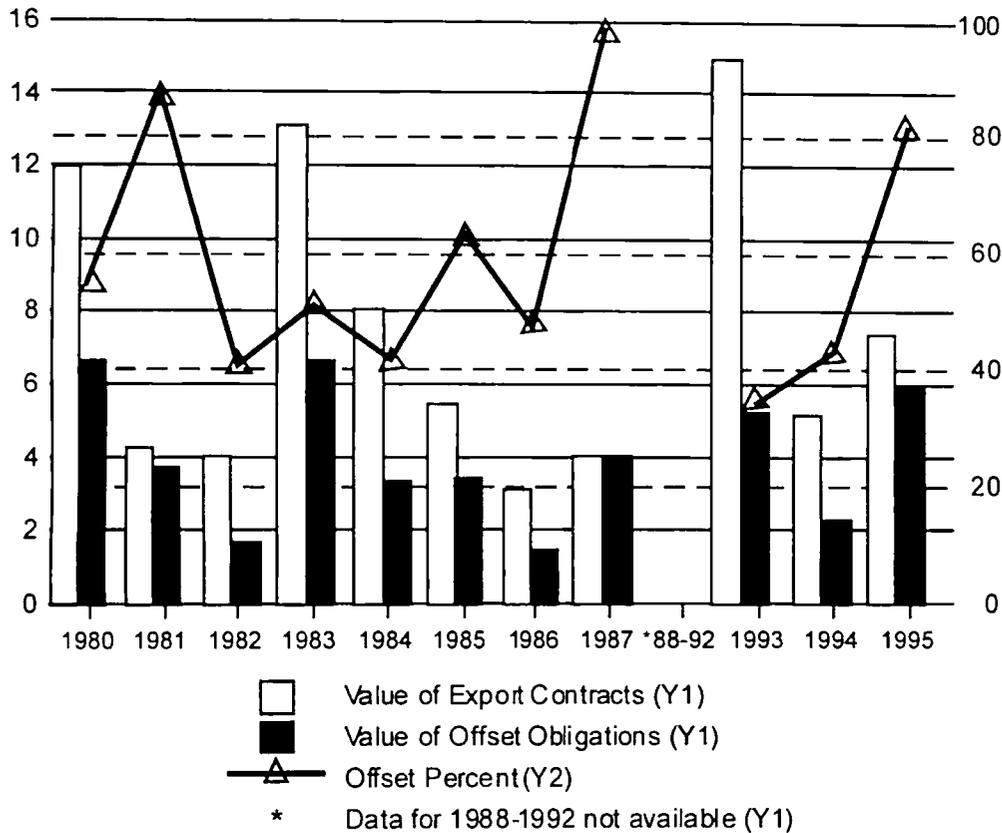
All figures are in actual dollars; no attempt has been made to correct for inflation. Also, some numbers shown in last year's report have been corrected to account for errors in reporting and interpretation.

## Historical Perspective

Offsets data previously collected by the U.S. Government under Section 309 of the Defense Production Act of 1950, as amended, is reflected in *Graph 1* below to provide a historical perspective. This graph compares the OMB 1980 to 1987 offset data with the BXA 1993 to 1995 data. No data was collected for the years 1988 through 1992. Three elements are shown on the graph: the value of export sales contracts (the gray bar); the value of offset obligations (the black bar); and the percent of the offsets to sales agreements (the line with arrowheads).

**Graph 1: Offset Obligations: Selected Years**

(in billions of constant \$96)



Source: *Offsets in Military Exports*, OMB, and BXA's Offset Reporting Data

The percentages of offset obligations to new export contract values fluctuate widely from year to year, as do the values of the export sales contracts and offset obligations. The lowest percentage occurred in 1993, at slightly under 35 percent, and the highest in 1987, at over 98 percent.<sup>1</sup> The most dramatic increase in the value of obligations as a percentage of contract values occurred between 1986 and 1987, with a jump of almost 50 percent. The second greatest year-to-year increase for which data is available occurred between 1994 and 1995, with an increase of almost 40 percent. In 1994 the percentage was 42.8 percent, while in 1995 it rose to 81.5 percent of contract values. (For a more detailed review of OMB's 1980-87 data, please see the 1996 *Offsets in Defense Trade* report.)

<sup>1</sup> Note that in 1993, there was one export sale to Taiwan of nearly \$6 billion with limited offsets. If this particular sale were removed, the overall percentage of new offset obligations would increase from 34.5 percent to 52.1 percent in 1993. Similarly, removal of a major Middle Eastern sale would push the offset obligation in 1993 to nearly 70 percent.

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## BXA Statistics, 1993-1995

### Summary

This section of the report analyzes offset obligations and offset transactions data provided by U.S. defense prime contractors for the years 1993-1995. Future BXA *Offsets in Defense Trade* reports will add annual increments to this data. The data cited for 1993 and 1994 was reported in last year's BXA report. It is repeated here, in addition to the newly collected 1995 information, to establish patterns for the three-year period.

- In 1995, offset obligations were \$6.0 billion on sales of \$7.4 billion. New offset obligations in 1993 were \$4.8 billion based on sales contracts of \$13.9 billion. In 1994, the new offset obligations were \$2.0 billion based on sales contracts of \$4.8 billion.
- Offset transactions in fulfillment of existing offset agreements totaled about \$1.9 billion in both 1993 and 1994. In 1995, that figure increased to almost \$2.7 billion.
- Roughly one-third of offset transactions for 1993 and 1994 were direct (related to the defense system listed on the export sales contract). In 1995, direct offsets were 39.8 percent.
- About three-fourths of all transactions (direct and indirect) were comprised of purchases, subcontracts, or transfers of technology.

European and NATO allies imposed the highest value of offset obligations in each year from 1993-1995. As a percentage of related export sales, Europe led the world in offset demands in 1993 and 1995. Overall, for the three-year period, Europe's offset demanded 88 percent in offset obligations to support its purchases of U.S. weapon systems.

The value of offsets as a percentage of export contract values reported for Europe as a whole for the 1993-1995 period was 88 percent. In 1995, this average was 104.3 percent, with one transaction requiring an offset of nearly 150 percent. The percentages for the Middle East and Pacific Rim were much lower, although individual countries in these regions had rates above 60 percent.

**Table 1** below lists selected Standard Industrial Classification (SIC) industry groups reported in offset transactions for 1993-95. These groups represent the largest total values of offsets reported by industry. The percentages do not total exactly to 100 percent, as there is overlap among the different classifications. For example, SIC codes 372 (aircraft and parts) and 3731 (ship building and repair) are both included under code 37 (transportation equipment).

<b>SIC Code</b>	<b>Industry Description</b>	<b># of Trans.</b>	<b>Actual Value (in \$000)</b>	<b>Percent of Total<sup>1</sup></b>
37	Transportation Equipment	733	3,310,540,080	50.86%
many	Aerospace related products and services	752	3,230,105,780	49.63%
372	Aircraft and Parts	684	2,786,373,831	42.81%
36	Electrical Machinery and Equipment	290	831,037,382	12.77%
35	Industrial Machinery, except Electrical	223	649,449,413	9.98%
367	Electronic Components	198	545,223,047	8.38%
61	Bank Credit	25	390,013,427	5.99%
3731	Ship Building and Repair	20	346,683,000	5.33%
366	Communications Equipment	35	139,703,152	2.15%

<sup>1</sup> Percentages do not total to 100 percent because there is overlap among the SIC codes shown.

Source: BXA's Offset Reporting Data

During the 1993-1995 review period, the export of aerospace weapon systems (such as aircraft, engines, and missiles) dominated sales deals in which offsets were required. In fact, over 90 percent of the actual value of all offsets in this period arose from deals which exported American-made aerospace products. Of these offsets' cumulative total value, however, only 49.63 percent is directly related to aerospace sectors. The remainder is allocated across dozens of other, mostly commercial industry sectors, including anything from metal working machine tools to foreign-made fertilizer.

Goods and services classified under SIC Major Group 37, Transportation Equipment, accounted for over 50 percent of the value of total offsets during the review period. Much of the value of aerospace-related products and services, including aircraft and parts, is captured within the broad two-digit SIC category. The subcategory 372, aircraft and parts, alone accounts for 42.9 percent of the total value of offsets. Another transportation equipment subcategory, shipbuilding and repair (SIC code 3731), comprised 5.3 percent of the actual value of offsets.

Other notable industry classifications were involved in reported offset transactions during the review period. Electrical machinery and equipment represents 12.8 percent of the total offsets value. This classification includes a subcategory for electronic components, which by themselves account for 8.4 percent of the total value, and another subcategory for communications equipment, which represents 2.2 percent of the total. Bank credit accounted for an additional 6.0 percent of the total value of offsets.

### **New Offset Agreements**

Table 2 provides an overview of new offset obligations by region for the years 1993, 1994, and 1995. In 1995, an additional 45 new agreements were reported by 19 companies. In 1993 there were 29 new agreements reported by 18 companies. The number of new agreements was higher in 1994, with 49 agreements reported by a total of 18 companies.

<b>Table 2. New Offset Obligations by Region, 1993</b>					
<b>Region</b>	<b># Deals</b>	<b>Sale (\$000s)</b>	<b>Offset (\$000s)</b>	<b>% Offset</b>	<b># Months (average)</b>
Europe	14	2,985,017	2,338,053	78.3%	91
Middle East	4	4,143,861	1,462,100	35.3%	96
Pacific Rim	7	6,717,659	943,766	14.0%	78
Other Areas	4	98,467	50,515	51.3%	83
<b>World Total</b>	<b>29</b>	<b>13,945,004</b>	<b>4,794,434</b>	<b>34.4%</b>	<b>87</b>
<i>World w/o large sales*</i>	<i>27</i>	<i>4,045,004</i>	<i>2,794,434</i>	<i>69.1%</i>	
* The well publicized multi-billion dollar sales of F-16s to Taiwan and F-15s to Saudi Arabia had an unusually large influence on the World totals for offsets. The numbers in italics are perhaps more representative of the true incidence of offsets.					
<b>New Offset Obligations by Region, 1994</b>					
<b>Region</b>	<b># Deals</b>	<b>Sale (\$000s)</b>	<b>Offset (\$000s)</b>	<b>% Offset</b>	<b># Months (average)</b>
Europe	20	1,508,234	764,830	50.7%	88
Middle East	6	819,200	417,300	50.9%	88
Pacific Rim	9	1,915,447	508,138	26.5%	72
Other Areas	14	549,539	358,448	65.2%	63
<b>World Total</b>	<b>49</b>	<b>4,792,420</b>	<b>2,048,716</b>	<b>42.8%</b>	<b>78</b>
<b>New Offset Obligations by Region, 1995</b>					
<b>Region</b>	<b># Deals</b>	<b>Sale (\$000s)</b>	<b>Offset (\$000s)</b>	<b>% Offset</b>	<b># Months (average)</b>
Europe	26	4,944,349	5,159,249	104.3%	132
Middle East	2	68,700	26,410	38.4%	70
Pacific Rim	8	1,010,090	301,324	29.8%	103
Other Areas	9	1,378,907	547,135	39.7%	96
<b>World Total</b>	<b>45</b>	<b>7,402,046</b>	<b>6,034,118</b>	<b>81.5%</b>	<b>127</b>

Source: BXA's Offset Reporting Data

**Europe**—In 1995, the absolute value of new offset agreements, and their percentage of the exported sales value were up dramatically with European countries. These sales were made to the following ten countries: Belgium, Denmark, France, Germany, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Total new agreements for that region were offset by 104 percent, the greatest offset percentage for any region in three years of reporting. The average time in which the agreements are to be fulfilled is 132 months.

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Almost half of the new offset obligations in 1993 were with European countries, while export sales to the region accounted for only 21 percent of the total 1993 sales value. These countries collectively also account for the highest 1993 offset percentage, at 78 percent. On average the 1993 European agreements were to be met within 91 months.

In 1994, European countries accounted for 41 percent of the number of new offset obligations entered into that year, and represent 31 percent of the total dollar value of new sales, the offset percentage for the new sales to Europe in 1994 was almost 51 percent. On average these agreements are to be met within 88 months.

**Middle East**—In 1995, only two new agreements were reported with Middle Eastern countries, Kuwait and Turkey.<sup>2</sup> The value of these new obligations was also relatively low in comparison to other regions, accounting for only one percent of total 1995 reported sales. The average offset requirement was less than in 1994, at 38 percent of the sales value. The average time in which the agreements are to be completed is also shorter, at 70 months.

In 1993, Middle Eastern countries accounted for 15 percent of the number of new offset obligations but [this represented] almost 30 percent of reported 1993 total export sales, making the region second only to the Pacific Rim in terms of dollar value of sales that year. The offset requirement averaged 35 percent of that region's sales. The average time to fulfillment for 1993 Middle Eastern agreements was 96 months, the longest time frame for any region.

In 1994, the number of new offset agreements increased (from four in 1993) to six, but the actual dollar value of these new obligations was over 70 percent lower. The percentage of offsets rose, however, from 35 percent in 1993 to almost 51 percent in 1994. The average fulfillment time of these new agreements for 1994 was 88 months.

**Pacific Rim**—In 1995, the number of new agreements was fairly consistent with previous years, with eight new agreements reported. This is the first year during the review period (1993-1995) in which Malaysia entered into an offset agreement. The 1995 sales were collectively smaller in dollar value than those sales made in 1993 and 1994. The Pacific Rim accounted for only 14 percent of world total 1995 sales reported. The average offset percentage rose to almost 30 percent, but sales to this region still have the lowest offset requirements of any region, as was the case in 1993 and 1994. The average number of months for the new 1995 agreements to reach completion rose to 103.

Pacific Rim nations accounted for nearly half of the value of 1993 export sales, while accounting for the smallest overall offset percentage, 14 percent of the value. For 1993, Pacific Rim agreements also have the shortest average completion time, 78 months.

In 1994, new offset agreements with Pacific Rim nations increased to nine from seven in 1993. The total dollar value of these agreements dropped by 46 percent in comparison to 1993. The average number of months to fulfill the agreements was 72 months, down from 78 months in 1993.

**Other Areas**—The final regional category is defined as "Other Areas", based upon either the unique geographic or trade relationships the United States has with these countries. Countries included in this region were Australia, Canada, Israel, and New Zealand. In 1995 nine new obligations were reported in this category. The actual value of these sales was much higher than those in 1994, and accounted for almost 19 percent of total 1995 sales. By dollar value this grouping was second only to Europe in sales in 1995. The offset percentage was

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<sup>2</sup> Although a member of NATO, for purposes of this report Turkey is included in the Middle Eastern category.

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lower for these obligations, at 40 percent. The average number of months to fulfill these agreements rose to 96.

In 1993, there were only four new agreements reported for this region, based on new sales that represented only 0.7 percent of total sales in that year. The average offset percentage was 51.3 percent, second to the percentage for Europe. In 1994 the number of new agreements rose to 14. The total value of these offset agreements grew seven-fold in comparison to their 1993 value. These sales represented only 11 percent of the 1994 world total. The offset percentage for these new obligations rose to 65 percent, which was highest of any region for the year. The average number of months to fulfill the 1994 agreements was 63.

**World Total**—Note that the exports and related offsets to the Middle East and Pacific Rim fell in 1994 and 1995. Also, the Other Areas region rose in exports and offsets each year. Europe led each year in the value of offsets demanded but was the leading export market only in 1995.

Collectively, the number of new offset agreements entered into was higher in 1994 than in 1993, and then declined slightly in 1995. The total value of the offsets varied greatly from year to year, dropping significantly from \$4.79 billion in 1993 to \$2.05 billion in 1994, and then sharply rising in 1995 to just over \$6 billion. This is accounted for mostly by the fluctuation in Europe, which fell from \$2.34 billion in offsets in 1993 to only \$765 million in 1994, and then climbed to \$5.16 billion in 1995. The value of export sales overall declined nearly by half during the 1993-1995 period, dropping sharply from \$14 billion in 1993 to \$4.8 billion in 1994, and then recovering to \$7.4 billion in 1995. The average offset percentage more than doubled during the review period, climbing from 34.4 percent in 1993 to 42.8 percent in 1994 and 81.5 percent in 1995. The average length of time to fulfill these new offset agreements varied by year, averaging 87 months (7.25 years) for those new obligations in 1993, 78 months (6.5 years) for those in 1994, and 127 months (10.6 years) in 1995. These time frames are shorter than the average for the 1980-1987 period, which was 132 months (11 years).

**Offset Transactions:** The previous section provided an overview of the new agreements reported for 1995 and reviewed new agreements reported for 1993 and 1994. This section provides a detailed view of actual offset transactions, in fulfillment of earlier agreements, that were reported during the three-year review period. Industry reported almost 1,700 transactions for this period. The great majority of these offset transactions are not connected with the new agreements addressed in the last section. They are primarily fulfillments of offset obligations agreed to in earlier years. Each transaction contains over a dozen data elements as reported by industry. Some of the more important data elements include the referenced export system, direct and indirect offsets, type of offset, country, and a categorization by industrial sector . . . The data is presented in various ways in a series of tables in this section.

**Transactions Overview:** Table 3 summarizes information gathered on offset transactions completed during 1993-1995, including the number of companies reporting, the number of different defense systems that were exported, and their destinations. As shown in the table, during the 1993-1995 review period, a total of 30 firms submitted data concerning offset transactions in which they were involved. A total of 23 reported such transactions in 1993, 21 in 1994, and 20 in 1995. The transactions are related to 139 different defense systems exported to 32 different countries. European nations were the most common recipients: 59 percent of the destinations were in that region, and 16 percent were exported to countries of the Pacific Rim. The Middle East and the nations included in the "Other Areas" category both received 12.5 percent of these systems.

**Table 3. U.S. Exported Systems by Destination, 1993-1995**  
(based on previous and existing offset agreements)

<b>Data Category:</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1993-1995</b>
Companies Reporting	23	21	20	30
# of Different Exported Systems	66	65	80	139
# of Different Export Destinations	27	26	26	32
<b># of Different Destinations by Region:</b>				
Europe	16	16	17	19
Middle East	2	3	2	4
Pacific Rim	5	4	4	5
Other Areas	4	3	3	4

Source: BXA's Offset Reporting Data

An overview of all reported transactions in fulfillment of previous and existing obligations appears in Table 4. As mentioned above, during the 1993-1995 time period, 30 different firms reported making a total of 1,681 offset-related transactions. A total of 738 different public or private organizations were reported as having been a recipient of an offset transaction during the period.

These organizations ranged from very large to small firms, and included several dozen foreign government agencies, mostly from South Korea, Australia, and Greece. Most of the government entities were national defense ministries and individual branches of the armed forces. Other government entities included the Ministry of Economic Affairs, Department of Industrial Development, Committee for Aviation and Space Industry Development, and several scientific research institutes.

The majority of the recipients (560) were involved in only one or two offset transactions that totaled \$2.68 billion, or 41.3 percent of the three-year total. Nineteen entities were recipients of 10 transactions or more. One firm received 35 transactions equal to \$216 million. In terms of value, the largest recipient, with 16 transactions, received \$248 million (3.81 percent of total) in offset transactions.

Of the top four transactions in terms of dollar value, three were indirect transactions while one was direct. The two largest transactions were indirect purchases of industrial machinery and computer hardware respectively. The third largest transaction was an indirect technology transfer involving welding techniques for the ship building industry, while the fourth was a direct purchase of aerospace items shipped to "various" entities not enumerated by the reporting company.

Of the total number of offset-related transactions reported, the vast majority (66 percent, or 1,109 transactions) involved Europe. Countries included in the "Other Areas" category (Australia, Canada, Israel, and New Zealand) accounted for the second largest number of transactions, with 20 percent, or 337 transactions. The Pacific Rim was involved in 184 transactions, accounting for 11 percent of total transactions, while the Middle East accounted for only 51 transactions, or 3 percent of total.

<b>Table 4. Offset Transactions Summary, 1993-1995</b> (in fulfillment of previous and existing offset agreements)				
<b>Transaction Data</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1993-1995</b>
Companies Reporting	23	21	20	30*
Reported Offset Transactions	445	565	671	1,681
# of Different Offset Transaction Recipients	268	331	385	738*
Offset Transactions by Region:				
Europe	302	370	437	1,109
Middle East	15	22	14	51
Pacific Rim	45	79	60	184
Other Areas	83	94	160	337
Offset Transactions by Region: Actual Value, Total:				
	\$1,898,880	\$1,935,325	\$2,674,670	\$6,508,875
Europe (in \$000s)	\$1,454,531	\$1,193,724	\$1,903,740	\$4,551,995
Middle East (in \$000s)	\$52,730	\$47,290	\$13,268	\$113,288
Pacific Rim (in \$000s)	\$172,784	\$412,026	\$273,704	\$858,514
Other Areas (in \$000s)	\$218,835	\$282,285	\$483,958	\$985,078
Offset Transactions by Region: Credit Value, Total:				
	\$2,214,620	\$2,205,875	\$3,350,759	\$7,771,254
Europe (in \$000s)	\$1,686,509	\$1,321,847	\$2,216,352	\$5,224,708
Middle East (in \$000s)	\$91,730	\$109,920	\$37,804	\$239,454
Pacific Rim (in \$000s)	\$179,379	\$490,459	\$616,888	\$1,286,726
Other Areas (in \$000s)	\$257,002	\$283,649	\$479,714	\$1,020,365

\* Represents the number of different companies or recipients represented in the database.

Source: BXA's Offset Reporting Data

The actual value of transactions over the three-year period totaled \$6.5 billion. Note Europe's dominance, with \$4.5 billion (or 70 percent) of the total value destined for that region. The nations of the "Other Areas" category received \$985 million, or 15 percent of the total; \$859 million or 13 percent of the total went to the Pacific Rim, and \$113 million, or two percent to the Middle East. The countries were similarly ranked when the number of transactions was considered.

The average dollar value per offset transaction across all regions for the 1993-1995 review period was \$3.9 million. For the Pacific Rim, it was \$4.7 million per transaction. In Europe, the average dollar per transaction figure was \$4.1 million, \$2.9 million in the countries of the "Other Areas" category, and \$2.2 million in the Middle East.

The last section of **Table 4** reports the credit values associated with the transactions in the rest of the table. Credit values are dollars credited by the foreign government, though not actually spent by the company, toward the firm's fulfillment of offset obligations. They are incentives offered by foreign governments often so that the company might meet its obligations with an especially favorable type of offset, such as technology transfer or business creation.

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The total credit value for all transactions reported during the 1993-1995 period was \$7.8 billion, exceeding the actual total value by \$1.3 billion, or 19 percent. The value of offsets credited to American firms by Europe exceeded the actual value by \$672 million, or by 15 percent. In the Pacific Rim, American firms were credited \$428 million in excess of the value they actually transferred, which equaled half again what was spent. The Middle East accorded U.S. firms \$126 million in credit over and above what was spent, or 111 percent. The nations comprising the "Other Areas" category credited only \$35 million or 3.5 percent above the actual dollar value.

**Offset Transactions by Type for Total, Direct, Indirect, and Both:** Offset requirements can be fulfilled in a number of ways. These include:

- Purchase
- Technology Transfer
- Co-production
- Subcontractor Activity
- Training
- Licensed Assembly
- Credit Transfer
- Investment
- Others

The "others" category includes marketing assistance, equipment maintenance agreements, rentals, unspecified sales, investment analysis, and other miscellaneous items. Definitions of the remaining types of offset transactions can be found in chapter 1 of this report.

**Table 5** presents an overview of industry-reported transactions by offset type for 1993, 1994, and 1995. The actual value of the transactions and the amounts credited toward the offset obligations incurred before 1995 are detailed for the nine types of offsets.

During 1995, the total value of offsets rose substantially and there were significant shifts among categories. The data indicate that the total actual value of offsets rose 38 percent in 1995 by more than \$700 million, from \$1.9 billion in 1994 to almost \$2.7 billion. Many categories experienced significant shifts in their value during the 1993-1995 period when compared to their reported 1993 and 1994 values. For example, the offset type "credit transfer" ranked third by value in 1993, with a reported total value of \$278 million. This type dropped to ninth in 1994, with a reported value of only \$3.5 million, a drop of almost 99 percent. In 1995, credit transfer transactions once again increased in value, climbing to \$374 million, moving this type back to third by value. These significant shifts in value are repeated in other categories such as technology transfer, co-production, and investment. This process is inherent due to the fact that there were relatively few transactions in 1994: a single large contract can thus greatly impact the values of a given year. This pattern is seen in the credited values of offsets as well; these appear in the bottom half of Table 5. More data is needed to confirm this trend.

The volatility is further explained by the steady attrition of transactions on completed older agreements and an increase of new ones. Annual regional variations may also explain some of the volatility. As outlined in Table 9 later in this text, Europe dropped from \$1.45 billion in offset transactions in 1993 to \$1.19 billion in 1994, down about 18 percent, yet climbed significantly to \$1.9 billion in 1995. The Pacific Rim rose dramatically from \$173 million in 1993 to \$412 million in 1994, then fell to \$274 million in 1995. Over the three-year period, offset transactions with the Middle East have declined from \$52 million to \$12 million, while those to the "Other Areas" category have grown slowly and constantly, leading to that category's rise from 12 to 18.1 percent of the total.

The actual value for offsets from 1993-1995 totaled \$6.5 billion, while total credited value was \$7.8 billion. Purchasing has been consistently one of the two largest types of offsets, both in terms of actual and credited values. By percentage of total actual value, this type of offset

transaction has experienced an overall decline during the three-year period, decreasing from 35.1 percent to 30.6 percent, influenced by a sharp increase in subcontractor activity reported in 1995. Viewed in terms of actual dollar amounts, purchases grew during the 1993-1995 period, with an overall increase of 23 percent for actual values (from \$666 million in 1993 to \$819 million in 1995) and 11.6 percent for credited values (from \$795 million in 1993 to \$887.5 million in 1995). These fluctuations by year, and the greater annual value of credited versus actual offsets, are typical of the other types of offset transactions, as shown.

**Table 5. Total Offset Transactions by Type, 1993-1995**

Offset Type	Actual Transaction Values, in \$000s							
	1993		1994		1995		1993-1995	
	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total
<b>Total</b>	<b>1,898,880</b>	<b>100%</b>	<b>1,935,325</b>	<b>100%</b>	<b>2,674,671</b>	<b>100%</b>	<b>6,508,875</b>	<b>100%</b>
Purchase	665,839	35.1%	601,701	31.1%	818,813	30.6%	2,086,353	32.1%
Subcontractor Activity	375,919	19.8%	360,323	18.6%	824,011	30.8%	1,560,253	24.0%
Credit Transfer	278,221	14.7%	3,494	0.2%	374,248	14.0%	862,800	13.3%
Technology Transfer	183,307	9.7%	462,569	23.9%	216,924	8.1%	665,962	10.1%
Other	119,840	6.3%	149,602	7.7%	127,881	4.8%	397,323	6.1%
Training	167,994	8.8%	107,912	5.6%	104,645	3.9%	380,552	5.9%
Investment	34,358	1.8%	92,405	4.8%	117,152	4.4%	243,915	3.8%
Co-production	35,550	1.9%	111,895	5.8%	85,887	3.2%	233,332	3.6%
Lic. Prod./Assembly	37,851	2.0%	45,424	2.3%	5,110	0.2%	88,385	1.4%
Offset Type	Values Credited Toward Offsets, in \$000s							
	1993		1994		1995		1993-1995	
	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total
<b>Total</b>	<b>2,214,620</b>	<b>100%</b>	<b>2,205,875</b>	<b>100%</b>	<b>3,350,759</b>	<b>100%</b>	<b>7,771,254</b>	<b>100%</b>
Purchase	794,975	35.9%	682,829	30.9%	887,520	26.5%	2,365,325	30.4%
Subcontractor Activity	477,190	21.5%	372,379	16.9%	881,577	26.3%	1,731,145	22.3%
Credit Transfer	304,523	13.8%	21,639	1.0%	468,930	14.0%	962,553	12.4%
Technology Transfer	203,504	9.2%	495,849	22.5%	263,201	7.9%	795,091	10.2%
Other	137,042	6.2%	164,230	7.4%	214,170	6.4%	515,442	6.6%
Training	186,027	8.4%	191,520	8.7%	180,953	5.4%	558,501	7.2%
Investment	34,358	1.6%	97,614	4.4%	363,556	10.8%	495,528	6.4%
Co-production	35,550	1.6%	112,185	5.1%	85,887	2.6%	233,622	3.0%
Lic. Prod./Assembly	41,451	1.9%	67,629	3.1%	4,965	0.1%	114,045	1.5%

Source: BXA's Offset Reporting Data

**Offset Transactions by Region for Direct, Indirect and Both:** Table 9 breaks down offset totals by percent of world and region for direct, indirect, and combination offsets. The data shows that European offset transactions make up more than 63 percent of each category for two out of three years, dominating the world totals. The one exception: transactions with "Other Areas" made up almost two-thirds of the value for combination offsets in 1994. The Pacific Rim and Middle East accounted for a smaller percentage of total offsets in 1995, in comparison to 1994, while the share of offsets to "Other Areas" rose. As mentioned earlier, no combination offsets were reported for 1995.

The portion of total offsets accounted for by direct offset transactions varied by region. Europe captured nearly two-thirds of all direct offset transactions for all three years of the review period, although direct offsets made up a relatively small portion of total offsets for that region. The 1993 data for Europe shows that direct offsets made up only 25.8 percent of the total European offsets value of \$1.45 billion, while in the Pacific Rim, direct offsets accounted for 55.5 percent of that region's total. The 1994 figures show an even wider difference. Direct offsets accounted for almost 65 percent of all Middle Eastern offsets, while in "Other Areas" direct offsets were only 27.4 percent of the total. As a percentage of total European transactions, direct offsets in 1995 increased only slightly over 1994 levels.

Similar variations appear in the data collected for indirect offsets for each region. As Table 9 shows, in 1993 indirect offsets made up 36.9 percent of the Pacific Rim's total offset value, while they accounted for 68.7 percent of Europe's total. In 1993, Europe accounted for 84 percent of all indirect offsets reported, the highest percentage of any category for the three year period. In 1994, the Pacific Rim's share of indirect offsets grew, accounting for 66.7 percent of offsets within that region; this figure rose to 76.3 percent in 1995. In Europe, indirect offsets accounted for 63.7 percent of the total for the region in 1994, a slight decrease, and then dipped only slightly, to 63.5 percent, in the following year. Both the Middle East and "Other Areas" experienced fluctuations in their percentage of indirect offsets: indirect transactions with these regions never totaled more than 11.1 percent of total world offsets.

Combination offsets played the largest role in the "Other Areas" region, accounting for 15 percent of the area's total offsets in 1993 and 37.6 percent in 1994. In contrast, there were no combination offsets reported for the Middle East for any of the three years, and combination offsets never rose above 8 percent of the total value for Europe and the Pacific Rim. There were no reported 1995 combination offsets.

**Table 9. Offset Transactions by Region, 1993, 1994, and 1995  
(in \$000s)**

		Europe: Actual Transaction Values			Pacific Rim: Actual Transaction Values			Middle East: Actual Transaction Values			Other Areas <sup>1</sup> : Actual Transaction Values		
Year	Category	Value (\$000)	% of Total world category	% of region total	Value (\$000)	% of Total world category	% of region total	Value (\$000)	% of Total world category	% of region total	Value (\$000)	% of Total world category	% of region total
1993	Total	\$1,454,531	76.6%	100.0%	\$172,784	9.1%	100.0%	\$52,190	2.7%	100.0%	\$218,835	11.5%	100.0%
1993	Direct	\$374,687	54.3%	25.8%	\$95,886	16.5%	55.5%	\$23,017	4.0%	44.1%	\$88,847	15.3%	40.6%
1993	Indirect	\$999,739	84.0%	68.7%	\$63,766	5.4%	36.9%	\$29,173	2.5%	55.9%	\$97,159	8.2%	44.4%
1993	Both	\$80,105	63.5%	5.5%	\$13,132	10.4%	7.6%	\$0	0.0%	0.0%	\$32,829	26.0%	15.0%
1994	Total	\$1,193,724	62.9%	100.0%	\$412,026	21.7%	100.0%	\$11,266	0.6%	100.0%	\$282,285	14.9%	100.0%
1994	Direct	\$390,406	65.1%	32.7%	\$124,825	20.8%	30.3%	\$7,263	1.2%	64.5%	\$77,473	12.9%	27.4%
1994	Indirect	\$760,658	64.8%	63.7%	\$274,986	23.4%	66.7%	\$4,003	3.4%	35.5%	\$98,757	8.4%	35.0%
1994	Both	\$42,660	26.5%	3.6%	\$12,215	7.6%	3.0%	\$0	0.0%	0.0%	\$106,055	65.9%	37.6%
1995	Total	\$1,903,740	71.2%	100.0%	\$273,704	10.2%	100.0%	\$12,624	0.5%	100%	\$484,602	18.1%	100.0%
1995	Direct	\$694,178	65.2%	36.5%	\$64,822	6.1%	23.7%	\$0	0.0%	0.0%	\$305,128	28.7%	63.0%
1995	Indirect	\$1,209,562	75.1%	63.5%	\$208,882	13.0%	76.3%	\$12,624	0.8%	100.0%	\$179,474	11.1%	37.0%
1995	Both <sup>2</sup>	\$0	0.0%	0.0%	\$0	0.0%	0.0%	\$0	0.0%	0.0%	\$0	0.0%	0.0%

<sup>1</sup> Other Areas = Canada, Australia, New Zealand, and Israel

<sup>2</sup> No combination offsets were reported for 1995

Source: BXA's Offset Reporting Data

## COMEPETITIVE ENHANCEMIENT AND DIVERSIFICATION NEEDS ASSESSMENT

BXA is involved in a number of defense diversification activities designed to maintain and enhance the U.S. defense subcontractor base. One such program, initiated by BXA in 1994, is the Competitive Enhancement and Diversification Needs Assessment Survey. This voluntary survey is directed toward small- and medium-sized businesses, and seeks to match the defense conversion and competitive enhancement needs of these firms with assistance programs available through various federal agencies and state governments. It has been mailed to U.S. subcontractors of major defense prime contractors. The survey gathers basic information about the subcontractors' operations, including sales, employment, and exports.

The survey includes several questions about offsets and their impact on the subcontractors as follows:

1. *Has your firm been involved in an offset agreement?*
2. *Has your firm been negatively affected by offset agreement practices? (For example: have you ever lost a sale because of an offset agreement, or have new competitors been created due to offset agreements)*
3. *Has your firm been positively affected by offset agreements?*

The question about *offsets involvement* in the needs survey could be interpreted as meaning participating in the formulation of offsets agreement(s), or involved at arms length without any real say in the terms of the agreement(s). Respondents were also asked to provide written comments if they responded to any of these questions. These responses provide BXA with the subcontractors' perspective on the offset issue, whether positive or negative, complementing the offset information received from the defense prime contractors. The Defense Production Act, Section 309(b) allows the inclusion of offset data gathered from other studies. It also requires that an analysis of the effects of offsets on lower tier subcontractors be included in the report.

Last year's *Offsets in Defense Trade* study reported that the total number of respondents to the BXA Needs Assessment survey was 1,153 firms. This number is now revised to 1,151 companies, and average employment is revised to 102 employees per firm, with the addition of three companies not counted last year, and the removal of five very large companies that greatly skewed the numbers. The information in last year's report was collected over a two-year period ending in April 1996.

Since the 1996 report to Congress, a total of 703 additional Needs Assessment surveys were received. Of that total, 659 companies or about 94 percent of the survey population responded to the offset questions listed above. When asked about direct involvement in offsets, 614 companies reported no direct involvement while 45 firms reported that they were directly involved.

A total of 114 companies, or slightly over 17 percent of the respondents, reported that their businesses were impacted by offsets. Of these, 89, or 78 percent reported offsets adversely impacted their business. The other 25 companies (22 percent) reported that they were positively affected by offsets. In last year's study, a total of 202 companies (20 percent) of respondents reported an impact. Of these companies, 168 (83 percent) were negatively impacted, while 34 (17 percent) reported a positive impact.

Table 20 presents the overall categorical summary of responses to the Needs Assessment Survey questions on offsets. The percentages in the right two columns are based on the total responses to the offset questions.

<b>Table 20. Needs Assessment Survey Responses to Offset Questions</b>				
<b>Response Category</b>	<b>Number of Firms Reporting</b>		<b>Percent Distribution</b>	
	<b>previous</b>	<b>new</b>	<b>previous</b>	<b>new</b>
Total Survey Population	1151	703	-	-
Total Responding to Offset Questions	987	659	100.0%	100.0%
Total Reporting Direct Offset Involvement	148	45	15.0%	6.8%
Total Reporting Impacts:				
Total Reporting Negative Impact	168	89	17.0%	13.5%
Total Reporting Positive Impact	34	25	3.4%	3.8%

Source: U.S. DOC/BXA Competitive Enhancement & Diversification Needs Assessment Survey

The company data from the Needs Survey were compared with respect to: 1) defense sales as a portion of total revenues, 2) average employment, and 3) average shipments. The result, companies with larger defense market shares, more employees, and greater shipments were more likely to be involved directly or impacted by offsets. This would appear to mean that offsets generally impact larger subcontractor firms more than smaller ones. With respect to smaller firms, several inferences may be drawn:

1. Smaller firms could have a degree of immunity. For example, the scale of their operations would make offsetting less efficient, and thus less desirable.
2. Smaller firms may not recognize the impact. Assuming smaller firms are generally positioned deeper in the supply chain, communications beyond their immediate customer may be poor, or non-existent.
3. Smaller firms in general, may not be impacted by offsets. Offsets only occur when defense systems are exported, a small percentage relative to overall DoD procurement.
4. Smaller firms are versatile and offsets do not matter. Offsets are irrelevant to their success; business opportunities are available elsewhere.

Table 21 displays the relationship of offsets to defense sales. The information was calculated based on firms that reported defense business. This included 967 companies out of the 987 that responded as reported in last year's report and 512 out of 659 responses to the offset questions received after April 1996. The average defense share of the population's business was 36.7 percent last year and 32.9 percent this year. The 160 companies reporting a negative impact had larger shares at 50.1 percent last year, and the 83 new respondents for this year averaged 43.4 percent. The overall needs population shows a steady decline in defense business over a five year period. The data in the table reflects the same trend. Positive impacts dropped from 57.3 percent defense shares last year to 45.9 percent this year. The number of companies involved in offsets showed a slight increase. The relationship indicates that firms with greater defense shares are more likely to be involved or impacted by offsets.

**Table 21. Relationship of Offsets to Defense Sales**

Offset Response Category	Number of Firms		% Defense Revenues	
	previous	new	previous	new
Total Population Reporting Defense Sales	967	512	36.7%	32.9%
-Negative Impact	160	83	50.1%	43.4%
-Positive Impact	33	22	57.3%	45.9%
-Involvement	143	42	48.4%	49.6%

Source: U.S. DOC/BXA Competitive Enhancement & Diversification Needs Assessment Survey

The relationship of offsets to employment (Table 22) indicates that larger firms are more likely to experience offset involvement or impacts than smaller firms. The table that follows provides the number of firms in each offset response category and their average employment. Average employment for the total population was 105 in last year's data and 80 for more recent respondents. In both years the negative impact includes smaller firms than those either involved or positively impacted. This may mean that smaller firms are more likely to be negatively impacted by offsets, although the information is inconclusive. The positively impacted firms are much larger in terms of average employment than the negatively impacted firms, which lends support to the last hypothesis. It also may indicate that larger firms have better defenses (patents, critical items, etc.), other business, more oversight, and greater influence on the offset and how it affects them. Further, the prime contractors may recognize the larger firms as critical first-tier subcontractors, and not wish to compromise or jeopardize their relationship. Finally, the positive impacts most likely indicate that the given offsets generated export business for the prime(s) and sales for the subcontractor reporting the positive impact.

**Table 22. Relationship of Offsets to Employment**

Offset Response Category	Number of Firms		Avg. Employees	
	previous	new	previous	new
Total Population Reporting Employment	967	636	105	80
-Negative Impact	164	85	165	93
-Positive Impact	33	23	274	156
-Involvement	145	42	242	237

Source: U.S. DOC/BXA Competitive Enhancement & Diversification Needs Assessment Survey

The relationship of offsets to total sales is presented in Table 23. The shipment information was reported by Needs Survey respondents as a number from 1 to 6, 6 being the highest annual sales at more than \$10 million. The sales numbers were very difficult to estimate, but based on average point totals (between 1-6), they support the conclusions reached from the previous two tables. It is clear that those firms reporting involvement or impacts were larger in sales volume than those firms reporting nothing.

### Subcontractor Comments on Offsets

Comments were received from many of the Needs Assessment Survey respondents regarding offsets. Companies providing comments represent a wide cross-section of products, including aircraft and parts, electronic components, fabricated metal products, metal working

machinery and equipment, and numerous other items. While this information is only anecdotal, it provides a perspective on the impact of offset agreements on the subcontractor base.

Several companies mentioned that small- and medium-sized firms do not have the resources to meet the requirements of offset agreements, thereby placing them at a competitive disadvantage. However, several comments indicated that offsets made a positive impact. One company indicated that an offset agreement enabled them to become involved in international business for the first time. Another firm indicated that a certain amount of business was the result of receiving orders from prime contractors involved in offset agreements and without the offsets that business may not have materialized.

**Table 23. Relationship of Offsets to Total Sales**

Offset Response Category	Number of Firms		Avg. Shipments (in \$millions)	
	previous	new	previous	new
Total Population Reporting Employment	969	637	\$10.5	\$8.0
-Negative Impact	166	87	\$16.5	\$9.3
-Positive Impact	33	24	\$27.4	\$15.6
-Involvement	146	44	\$24.2	\$23.7

Source: U.S. DOC/BXA Competitive Enhancement & Diversification Needs Assessment Survey

*Comments Received Since April 1996*

The new comments were similar to those of previous years. The most frequent comment referred to a loss of business to foreign companies that have been promised contracts as a result of offset agreements. Often, offsets would result in the foreign buyer shifting certain components and subassemblies from U.S. subcontractors to subcontractors in his own country. One respondent produced an internal wing subassembly for a major airframe manufacturer at \$10,000 per unit. After producing 200 units the business was relocated to a company in Western Europe. The prime contractor reportedly transferred the business to a European company to facilitate an offset agreement in the export sale of military aircraft. Another U.S. subcontractor lost business after a U.S. prime contractor gave a European country \$ 10 million in annual gear actuator contracts.

Technology transfer is often used as an offset, potentially creating foreign competitors who may then use the process technology to block future (component) exports into their market or to enter U.S. markets. The newly created foreign competitor may also be subsidized by its government, a common practice in many foreign aerospace markets.

The following table presents survey comments on the impact of offsets. In addition to the comments, a brief business description of each company is given with the geographic location by region (East Coast, Midwest, South West, or West Coast).

**Table 24. Needs Assessment Company Comments on Offsets**

Region	Business Description	Company Comments on the Impact of Offsets
East Coast	Engine components for aviation industry.	"Prime manufacturers incur incredible economic loss; transfer of U.S. jobs overseas leads to unemployment of more productive people; transfer of U.S. technology overseas is frightening."
East Coast	Manufacturer of sensing devices for aircraft engines.	"If the U.S. produced end product was purchased by [a foreign country], components for that product would be given to [the foreign purchaser's] sub-contractors. On several occasions in the past, contracts were decided based on offset requirements."
East Coast	Engineering and research	"[A U.S. prime contractor] awarded a project to our firm with Korean offset dollars."
East Coast	Manufacturer of electronic connectors and components.	"Competing company was foreign owned and involved in offset credits. Contracts in the past have included offset terms. [Offsets] can influence a competitive bid."
East Coast	Manufacturer of electronic modules for defense systems.	"Without certain offset agreements, the contract of the prime of which we are involved as a subcontractor, may not have materialized."
East Coast	Aircraft composites manufacturer.	"Aerospace business is going offshore due to offsets. our company is losing many opportunities."
East Coast	Manufacturer/fabricator of aerospace components.	"In a couple of Pacific Rim areas, competitors have established offset agreements to eliminate the sale of our product."
East Coast	Aircraft gear and shaft manufacturer.	"A vast percentage of U.S. DoD gearing requests are coming from offset agreements to eliminate the sale of our product."
East Coast	Manufacturer of electronic high frequency communications products.	"Offset requirements in international contracts sometimes demand that we not participate in an opportunity or project."
East Coast	Manufacturer of aircraft instrumentation, automotive products, and military ordnance.	"We have lost contracts because of offset agreements . . ."

<b>Table 24-Continued. Needs Assessment Company Comments on Offsets</b>		
<b>Region</b>	<b>Business Description</b>	<b>Company Comments on the Impact of Offsets</b>
Midwest	Manufacturer of mechanical support equipment for military aircraft, surface ships, missiles, and weapon systems.	"Various governments' decisions to purchase [U.S. built] aircraft have mandated the purchase of some equipment from their respective countries' suppliers."
Midwest	Manufacturer of process control instrument.	". . . Offset agreements between large companies domestically and those in Europe or [the] Pacific Rim tend to monopolize the process industry. Ventures like these and money spent allow for large groups to dictate their ideas to all others."
Midwest	Product design and engineering of electro-mechanical subassemblies.	"[We have] lost business opportunities on aircraft sub-assembly of our current technologies and manufacture, to companies within foreign countries that have been promised offset business."
Southwest	Aircraft components.	"Lost contract opportunity to supply exterior lights on a new transport aircraft. We were best in price and technical proposal but the manufacturer of the aircraft chose to place contract in country where sales of new aircraft demanded that work load on that aircraft be placed in that country."
Southwest	Electrical connectors.	"Somewhat positively affected by offset agreements."
Southwest	General Machine Shop - High quality parts using computer numerical control equipment.	"We lost a rib assembly to foreign company because of offset."
Southwest	Machine shop.	"Material work for machined honeycomb core was given to foreign companies."
Southwest	Chemical milling of aluminum, titanium, and steel.	"[U.S.] offset agreements with Pacific Rim buyers have cost U.S. jobs."
West Coast	Manufacturer of gears for aerospace.	"Offset agreements have cost my company millions in lost revenue."
West Coast	Composites producer for aerospace.	"[We] will experience negative impact due to offset agreements since our customers are typically large prime contractors who use offset agreements to help sell their products. Advanced composites fabrication technology has often been used as an offset, thus creating a foreign competitor who then uses the process technology to enter the U.S. markets to compete unfairly."

**Table 24-Continued. Needs Assessment Company Comments on Offsets**

Region	Business Description	Company Comments on the Impact of Offsets
West Coast	Manufacturer of structural airframe/aerospace components.	"[U.S. prime contractor] offsets to Korea, Japan, etc., have affected our product support."
West Coast	Design and manufacture on-board aircraft systems.	"We participated with [a U.S. prime contractor] in an aircraft related Australian offset program. We provided kits for assembly and test of electronic control modules. We benefited by expanding our international business."
West Coast	Manufacturer of industrial computer systems.	"Larger companies have the resources to go after offset agreements. It is difficult for us to compete in this area."
West Coast	Manufacturer of aerospace fasteners.	"Offshore competitors have literally been put into business to effectively compete against us."
West Coast	Electronic components.	"Foreign purchase of tactical computer system required use of a foreign produced component instead of ours."
West Coast	Industrial machinery distributor.	"I have lost equipment sales to a Swiss company that had an offset agreement with [a U.S. prime aerospace contractor]."
West Coast	Precision drawn tubing.	"The reciprocal agreement of [U.S. prime aerospace contractors] with Japan fostered competition from that country, adversely impacting our business and setting up subsidized competition."
West Coast	Plating on aerospace and aircraft engine hardware.	"[A U.S. prime aerospace contractor] moved purchases for manufacturing and plating of aircraft engine hardware to Turkey in an offset agreement. In view of the downturn in the aerospace business in Southern California, the negative impact of lost business is even more apparent."
West Coast	Manufacturer of systems for electronic warfare.	"It is difficult for small businesses to meet the requirements of offset agreements which puts us at a competitive disadvantage."
West Coast	Provides testing services to the advanced materials and electronics industries.	"Offset agreements in the aircraft manufacturing area have reduced subcontracting here."
West Coast	Manufacturer of precision gears.	"[A U.S. prime contractor] is one of my biggest accounts. They have had an offset program with Spain sending gear work there that normally I would have seen. [Prime contractor] is sending gear work to a foreign country due to an offset"

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		agreement.”
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Table 24. Needs Assessment Company Comments on Offsets		
Region	Business Description	Company Comments on the Impact of Offsets
West Coast	Manufacturer of electronic connector accessories.	"Offsets typically create competitors in a prospective market, obstructing future business to the region."
West Coast	Manufacturer of flight critical hardware.	"Offset programs have affected our prime OEM which has been affected by offset purchase agreements between the aerospace and airline industries."
West Coast	Production, machining and assembly of metals and plastics.	"Offsets have taken work out of our shop and put it into other countries around the world."
West Coast	Manufacturer of aerospace fasteners, pins, bushings, and machined parts.	"Offshore competitors have literally been put into business to effectively compete against us."

Source U.S. DOC/BXA Competitive Enhancement & Diversification Needs Assessment Survey

## RECOMMENDATIONS

The May 1996 report *Offsets in Defense Trade* listed three recommendations:

1. Implement consultations with major U.S. arms producers, both primes and subcontractors, and with labor to gather representative views on minimizing the adverse effects of offsets in defense trade.
2. Consult with our trading partners on offsets in defense trade and related military procurement issues.
3. Review and modify as necessary current U.S. Government policy on offsets in defense trade to respond to the changing nature of offset demands, reflecting both the need for U.S. firms to remain competitive in international arms markets and the need to maintain our defense industrial base. The United States should be cautious in making any decision to unilaterally limit offsets.

The Trade Promotion Coordinating Committee, in the Offsets chapter of its October 1996 *National Export Strategy* . . . developed a similar list of recommendations.

In implementation of these recommendations:

1. **Effort to Build Domestic Consensus:** On June 9, 1997, the Bureau of Export Administration co-sponsored a workshop entitled *Policy Issues in Aerospace Offsets*. The workshop was hosted by the National Research Council's Board on Science, Technology, and Economic Policy. This workshop served as a forum for exchanging views and building a consensus as to what would constitute an appropriate U.S. policy on offsets. The participants focused on many important issues such as pressures faced by industry in international competition for business, trends in countries' demands for offsets, and the long-term consequences for U.S. competitors of offsets as industrial policy tools. Once a domestic consensus is achieved, a

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multilateral offset policy is more likely to ensue that will reflect a common set of mutually beneficial interests.

2. **Consultations with U.S. Primes and their Representatives:** Based on the information gathered at the meetings and consultations, we will determine the best strategy for international discussions. Bureau of Export Administration Officials have and will continue talks with the Aerospace Industry Association and other groups, including U.S. prime contractors, to understand their concerns as major offset stakeholders, and to gain their participation in formulating a policy.
3. **Consultations with Government Agencies, Subcontractors and Other Concerned Parties:** We have scheduled a series of meetings through the fall at Commerce with interested groups to learn from them what their concerns are, to broaden their understanding of the complexity of the issue, and to begin to build support in the U.S. for an international initiative. Those with whom we will meet would include the agencies of the U.S. government, affected subcontractors or suppliers, unions, congressional staff members, and representative associations.
4. **Develop Strategy for Multilateral Consultations:** We will plan a meeting of Washington-based defense attachés to discuss the results of our meetings with interested parties. We also plan to pursue, as appropriate, bilateral and multilateral consultations on offsets in defense trade.