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Military Balance in the Middle East - XIII

The Southern Gulf : Saudi Arabia, the UAE, and Yemen

**Military Expenditures and Arms Transfers, Major Arms by
Country and Zone, Conventional Forces, and Qualitative Trends**

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December 28, 1998

Table of Contents

SAUDI MILITARY FORCES	4
SAUDI ARABIA - OVERVIEW	5
SAUDI GROSS NATIONAL PRODUCT, CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, TOTAL IMPORTS AND ARMS IMPORT DELIVERIES: 1984-1996	6
SAUDI CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1984-1995	7
SAUDI TOTAL EXPORTS, TOTAL IMPORTS AND ARMS IMPORT DELIVERIES: 1984-1996	8
SAUDI MILITARY EFFORTS AS A PERCENT OF GNP, GOVERNMENT EXPENDITURES, IMPORTS AND TOTAL POPULATION: 1984-1996	9
SHIFT IN SAUDI MILITARY EXPENDITURES AND ARMS DELIVERIES AS A PERCENT OF 1984 TOTAL: 1984-1994	10
SAUDI GNP PER CAPITA VERSUS MILITARY EXPENDITURES PER CAPITA	11
SAUDI ARABIAN ARMS SALES: 1987-1997	12
SAUDI ARABIAN NEW ARMS SALES AND DELIVERIES: 1987-1997	13
TREND IN DELIVERIES TO SAUDI ARABIA: 1973-1994	14
SAUDI ARABIAN ARMS DELIVERIES: 1992-1994	15
NEW SAUDI ARABIAN ARMS SALES BY MAJOR SUPPLIER: 1987-1997	16
KEY SAUDI EQUIPMENT DEVELOPMENTS - PART ONE	17
FORCE TRENDS IN SAUDI ARABIA - PART ONE	19
FORCE TRENDS IN SAUDI ARABIA - PART TWO	20
SAUDI: MILITARY MANNING: 1979-1999	21
SAUDI MAJOR MILITARY EQUIPMENT IN 1999	22
<i>Land Forces</i>	22
SAUDI ARABIA: ARMORED WEAPONS STRENGTH: 1979-1999	23
SAUDI: ARTILLERY WEAPONS STRENGTH: 1985-1999	24
SAUDI ARABIA: FIXED WING AND ROTARY WING COMBAT AIR STRENGTH: 1979-1999	25
UAE MILITARY FORCES	26
UAE - OVERVIEW	27
UAE GROSS NATIONAL PRODUCT, CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1983-1996	28
UAE CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1983-1995	29
UAE TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1983-1995	30
UAE MILITARY EFFORTS AS A PERCENT OF GNP, GOVERNMENT EXPENDITURES, IMPORTS AND TOTAL POPULATION: 1984-1996	31
UAE MILITARY EXPENDITURES AND ARMS TRANSFERS AS A PERCENT OF 1984 TOTAL: 1984-1994	32
UAE GNP PER CAPITA VERSUS MILITARY EXPENDITURES PER CAPITA	33
UAE ARMS AGREEMENTS AND DELIVERIES BY MAJOR SUPPLIER: 1987-1997	34
TREND IN DELIVERIES TO UAE: 1973-1994	35
TREND IN SUPPLIER'S SHARE OF UAE ARMS MARKET BEFORE AND AFTER THE GULF WAR	36
KEY UAE EQUIPMENT DEVELOPMENTS - PART ONE	37
FORCE TRENDS IN THE UAE - PART ONE	40
FORCE TRENDS IN THE UAE - PART TWO	41
UAE: MILITARY MANNING: 1979-1999	42
UAE MAJOR MILITARY EQUIPMENT IN 1999	43
<i>Land Forces</i>	43
UAE: ARMORED WEAPONS STRENGTH: 1979-1999	44
UAE: ARTILLERY WEAPONS STRENGTH: 1979-1999	45
UAE: FIXED WING AND ROTARY WING COMBAT AIR STRENGTH: 1979-1999	46
YEMENI MILITARY FORCES	47
YEMEN GROSS NATIONAL PRODUCT, CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1986-1996	48

YEMEN CENTRAL GOVERNMENT EXPENDITURES, MILITARY EXPENDITURES, TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1986-1995..... 49

YEMEN TOTAL EXPORTS, AND ARMS IMPORT DELIVERIES: 1986-1996..... 50

YEMEN MILITARY EFFORTS AS A PERCENT OF GNP, GOVERNMENT EXPENDITURES, IMPORTS AND TOTAL POPULATION: 1986-1996 51

YEMEN: GNP PER CAPITA VERSUS MILITARY EXPENDITURES PER CAPITA 52

YEMENI ARMS AGREEMENTS AND DELIVERIES BY MAJOR SUPPLIER: 1987-1997 53

TREND IN SUPPLIER’S SHARE OF THE YEMENI ARMS MARKET BEFORE AND AFTER THE GULF WAR..... 54

FORCE TRENDS IN YEMEN – PART ONE..... 55

FORCE TRENDS IN YEMEN - PART TWO..... 56

YEMENI MAJOR MILITARY EQUIPMENT IN 1999 57

Land Forces..... 57

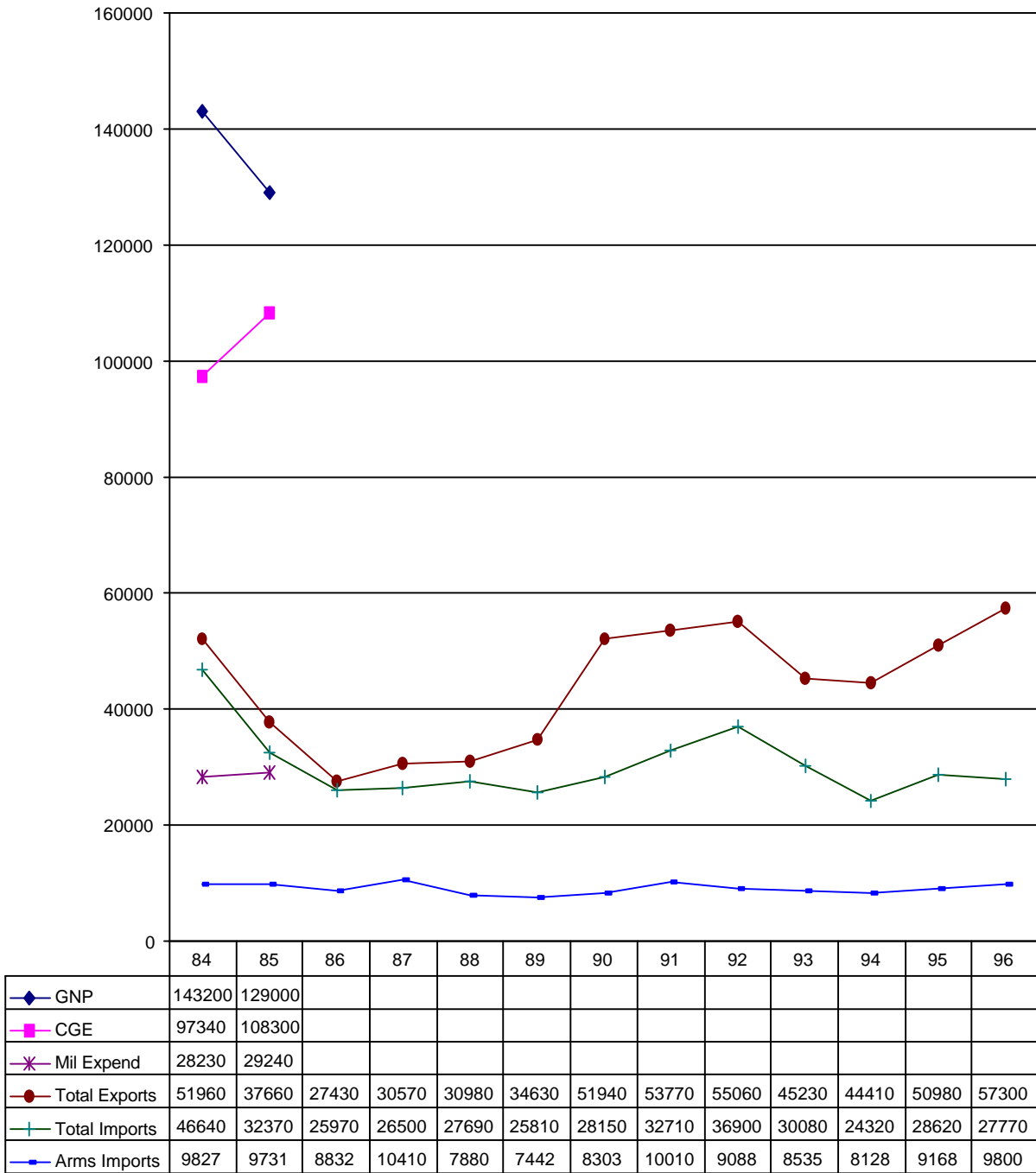
Part One

Saudi Military Forces

Saudi Arabia - Overview

- The longer term trends in Saudi per capita military expenditure relative to GDP per capita reflect the increasing strains high population growth place on the Saudi economy at a time of constant or declining real GDP. Military expenditures per capita have declined over time, but reflect a sudden surge to pay for the Gulf War, and have increased as a share of GDP per capita because of population growth and limited economic growth.
- Saudi Arabia's economy reflects the same dip in GDP during much of the 1980s and early to mid-1990s as that of the other oil exporting states. Oil riches recovered in the mid-1990s, but dropped sharply in late, 1997.
- Saudi Arabia has sharply cut central government expenditures as a share of total GDP since the mid-1980s -- although this has not prevented sustained budget deficits.
- Saudi military expenditures are very high relative to the size of the total Saudi central government budget. No other Southern Gulf state, and few other states world-wide, maintain this scale of military effort. As a result, Saudi military spending does compete directly with civil spending.
 - Saudi Arabia increased central government expenditures and military spending as a result of the Gulf War, but this increase was far smaller as a percent of total GDP than in the case of Kuwait.
 - However, Saudi Arabia was able to make major increases in oil export revenues as a result of the Gulf War -- which increased both oil prices and Saudi Arabia's share of the oil market. The burden of paying for the Gulf War -- while significant -- did not by itself have a critical impact on the Saudi economy.
- US estimates placed Saudi defense spending at over \$17 billion in 1996.
- The IISS estimates that military expenditures were \$17.2 billion in 1995, \$17.4 billion in 1996, and \$18.2 billion in 1997.
- Although Saudi Arabia is one of the world's largest arms importers, its actual annual expenditures are surprisingly constant over time. This seems to reflect a Saudi tendency to place very large orders, and then schedule deliveries and payments over long periods that prevent sudden shifts in spending.
- Saudi arms imports have not increased as a result of the Gulf War. In fact, new arms import agreements during 1991-1994 were only about two-thirds of the total during 1987-1990. These orders do, however, reflect a major shift to the US market and a decline in orders from Europe and the PRC.
- The most recent data on Saudi arms imports reflect major cuts in the volume of new agreements and deliveries since the surge resulting from the Gulf War.
 - New arms agreements dropped from \$26.7 billion during 1989-1992 to \$20.3 billion during 1993-1996.
 - New arms deliveries rose from \$29.6 billion during 1989-1992 to \$29.8 billion during 1993-1996.
 - Saudi Arabia buys roughly the same amount of arms from the US and the major West European countries, plus substantial arms from other suppliers. It has, however, concentrated virtually all of its major new agreements on buys from the US, UK, France, Germany, and Italy since 1991.
 - Saudi Arabia now has a massive backlog of orders and serious training, conversion, O&M, and sustainability problems. Although it still has extremely ambitious future purchase plans, it is temporarily saturated in terms of cash flow, manpower, and absorption capabilities.
- A detailed review of Saudi arms buys reveals a serious lack of standardization and over-lapping buy from different suppliers that greatly increase its sustainability and interoperability problems.
- These problems have been compounded by over-ambitious Saudi modernization and expansion plans, and an effort to ensure Saudi Arabia buys from all strategically important suppliers. Saudi Arabia needs to concentrate on conversion and sustainment, but further major new buys are likely.

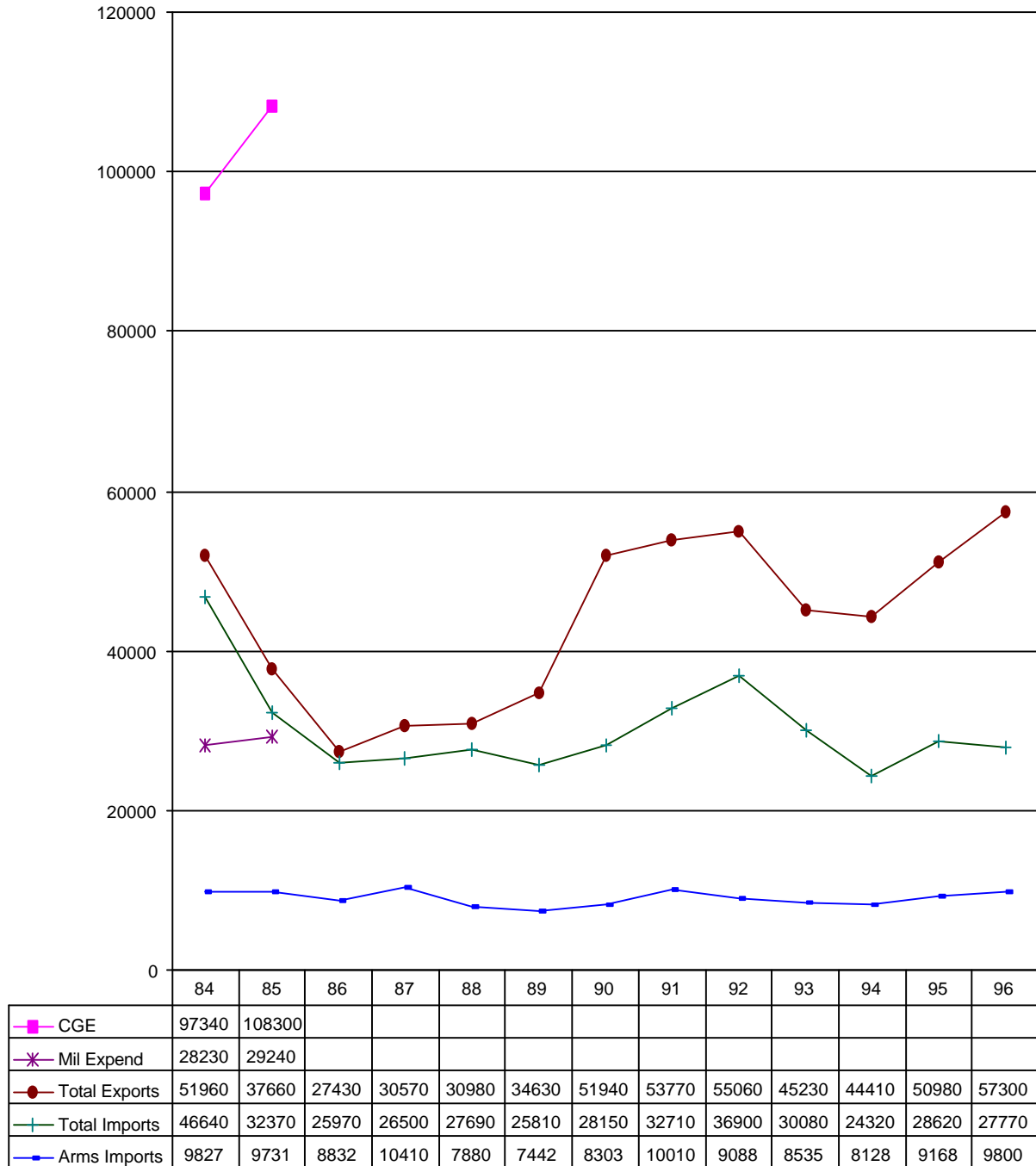
Saudi Gross National Product, Central Government Expenditures, Military Expenditures, Total Exports, Total Imports and Arms Import Deliveries: 1984-1996 (Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

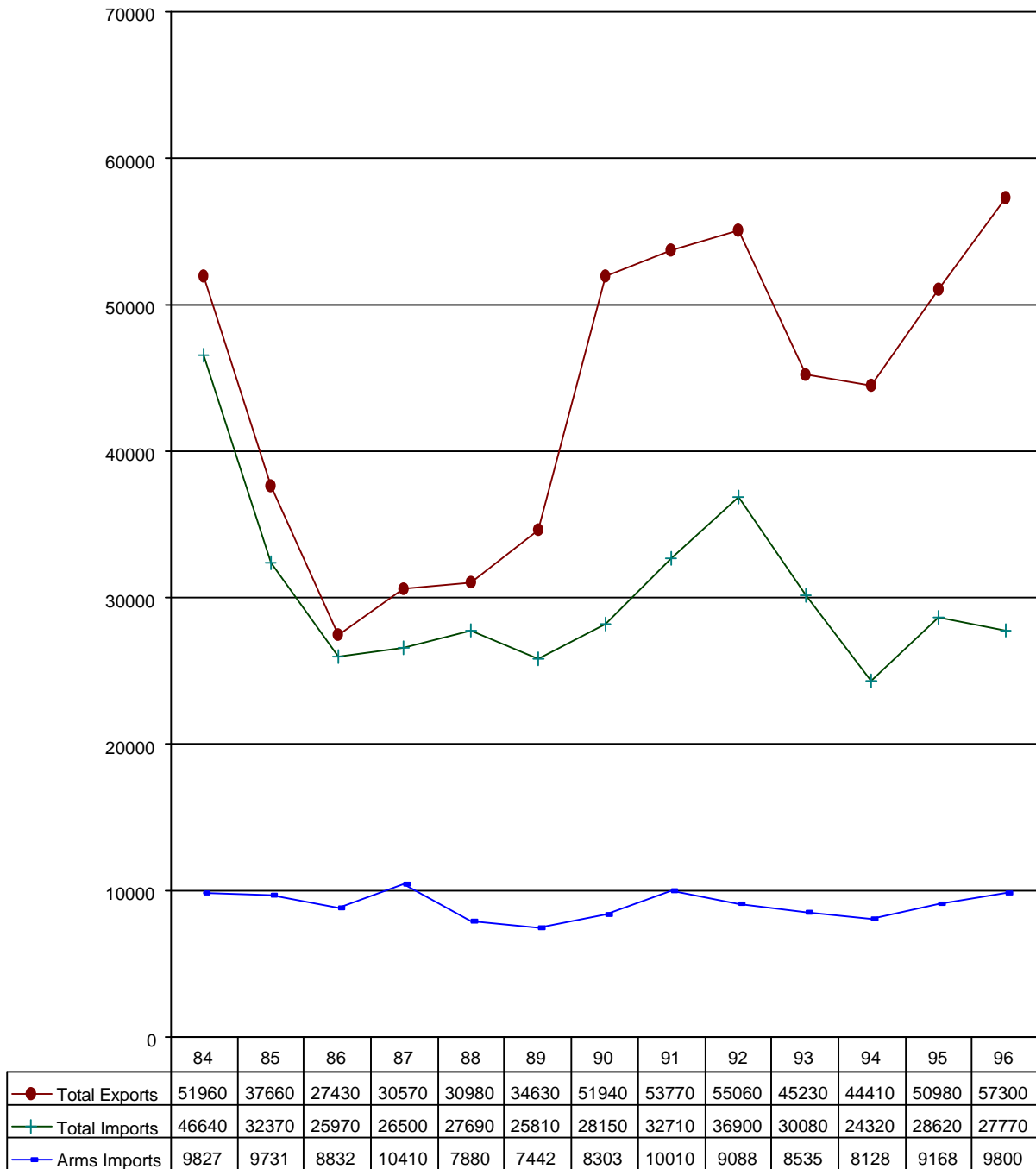
Saudi Central Government Expenditures, Military Expenditures, Total Exports, and Arms Import Deliveries: 1984-1995

(Constant \$96 millions)



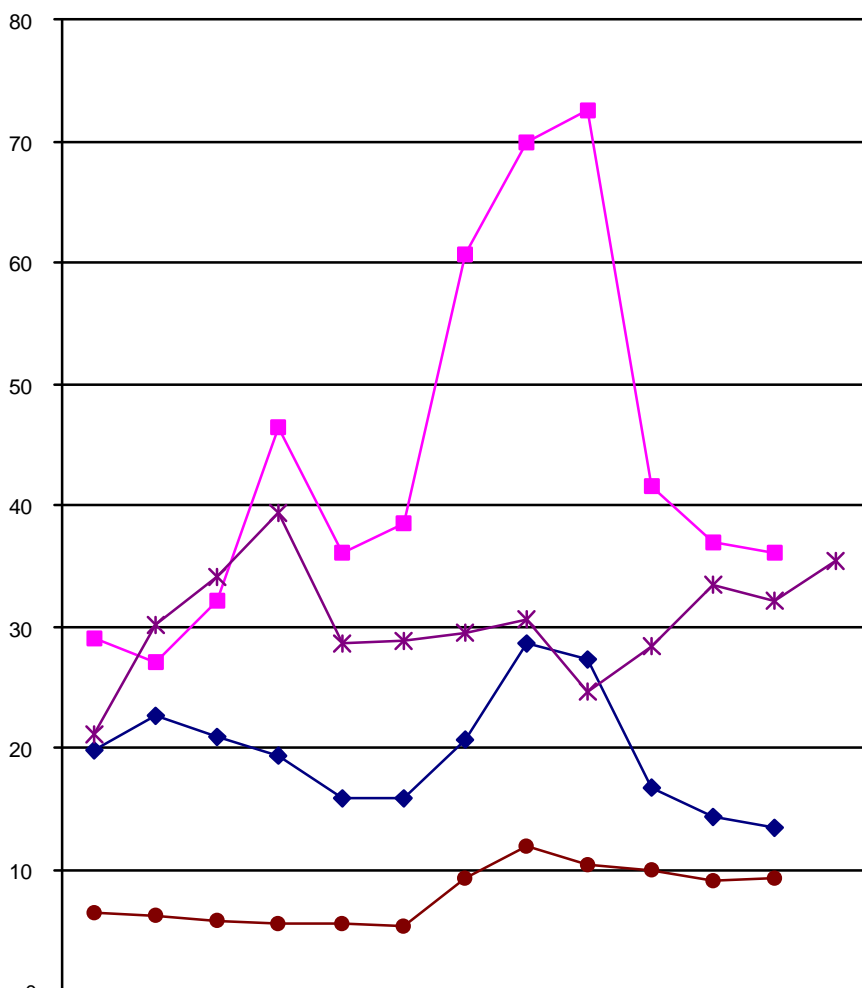
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Saudi Total Exports, Total Imports and Arms Import Deliveries: 1984-1996
(Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Saudi Military Efforts as a Percent of GNP, Government Expenditures, Imports and Total Population: 1984-1996

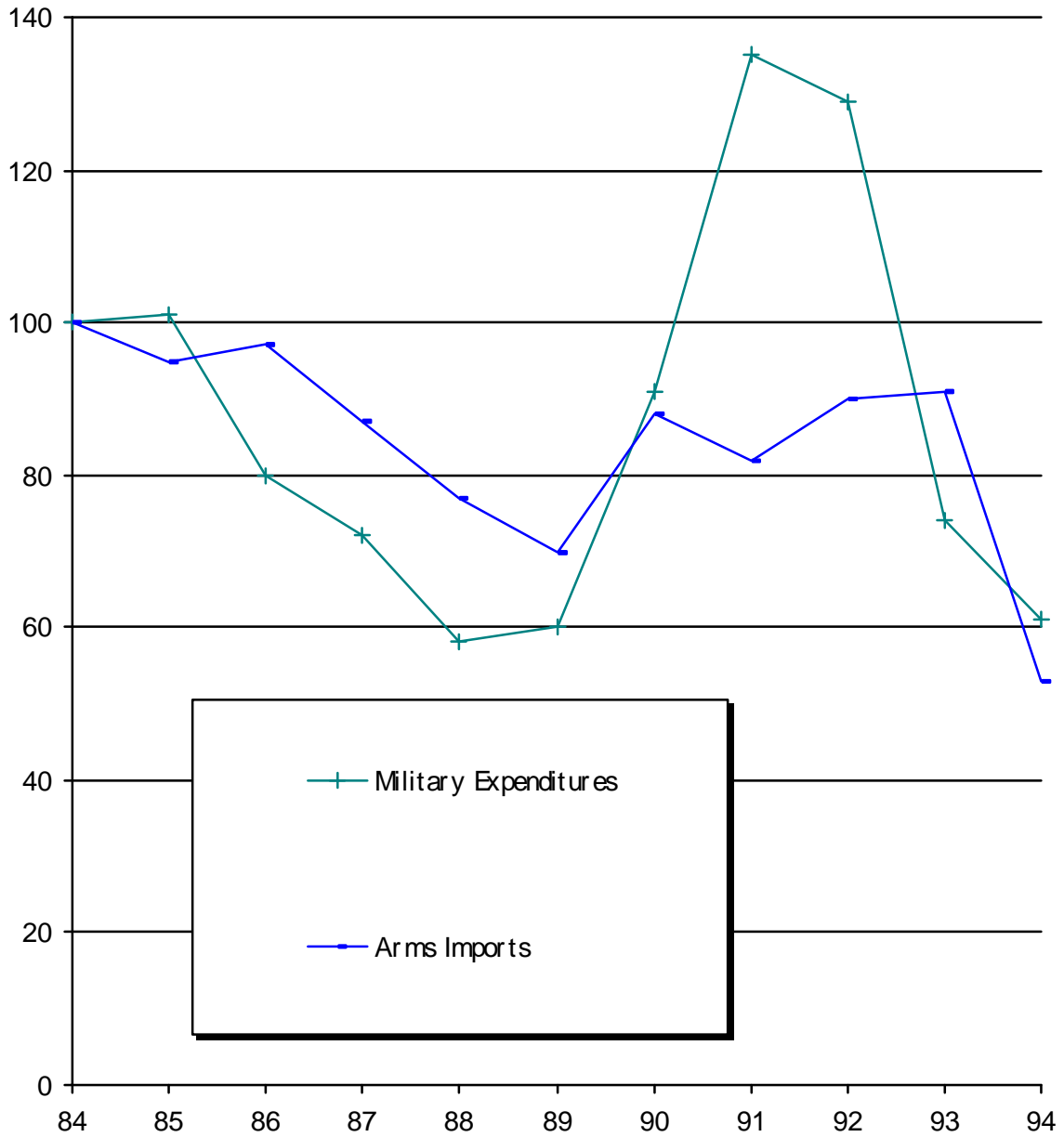


	84	85	86	87	88	89	91	92	93	94	95	96
◆ Military Spending as a Percent of GNP	19.7	22.7	20.9	19.4	15.8	15.9	28.5	27.2	16.7	14.2	13.5	
■ Military Spending as a Percent of Central Government Expenditures	29	27	32	46.3	36.1	38.5	70	72.5	41.5	37	36	
* Arms Imports as a Percent of Total Imports	21.2	30.1	34	39.3	28.5	28.8	30.6	24.6	28.4	33.4	32	35.3
● Active Military Manpower per 1,000 People	6.4	6.1	5.8	5.5	5.5	5.3	11.9	10.3	9.9	9.1	9.3	

Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

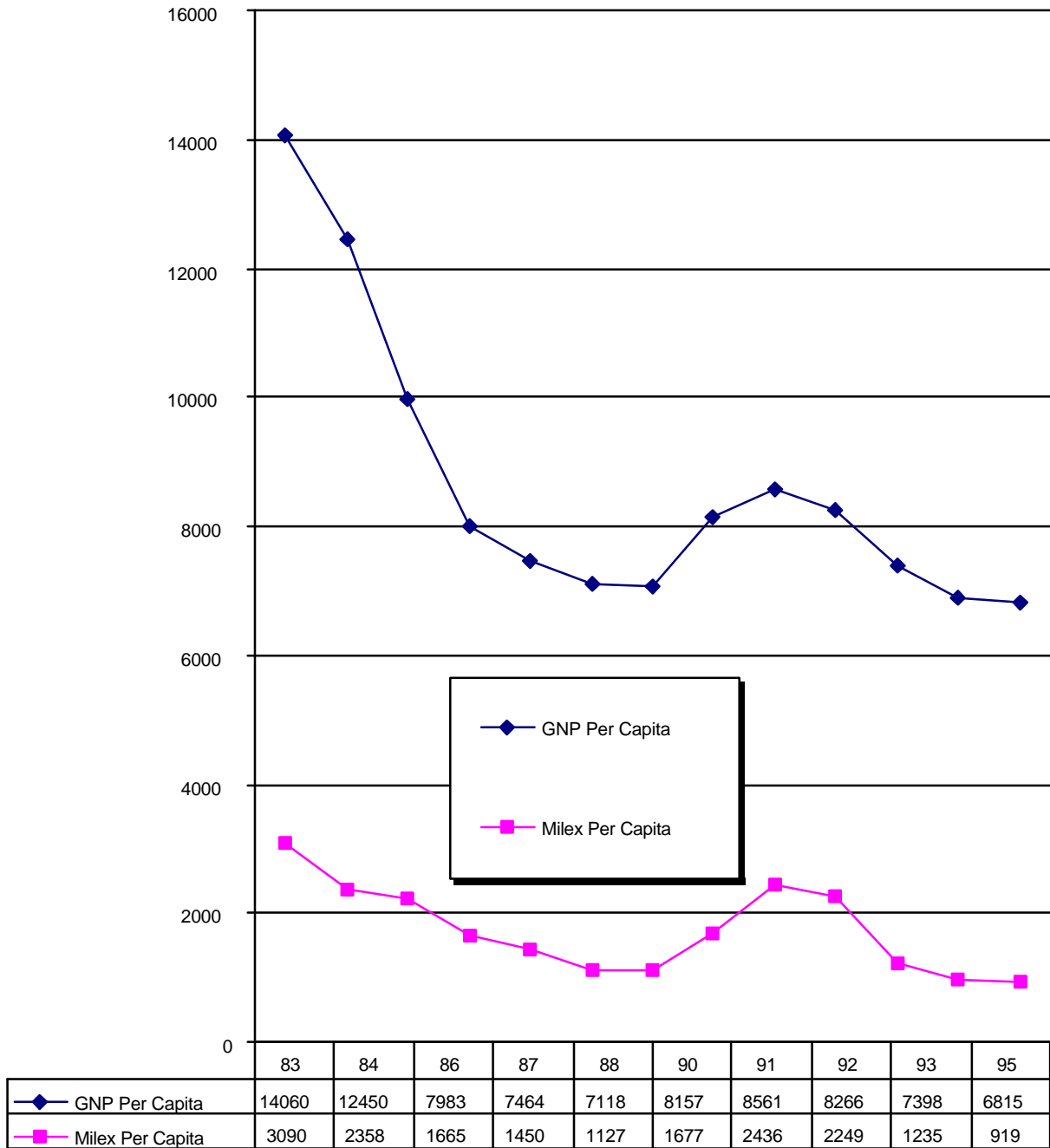
Shift in Saudi Military Expenditures and Arms Deliveries as a Percent of 1984 Total: 1984-1994

(\$94 Constant Millions)



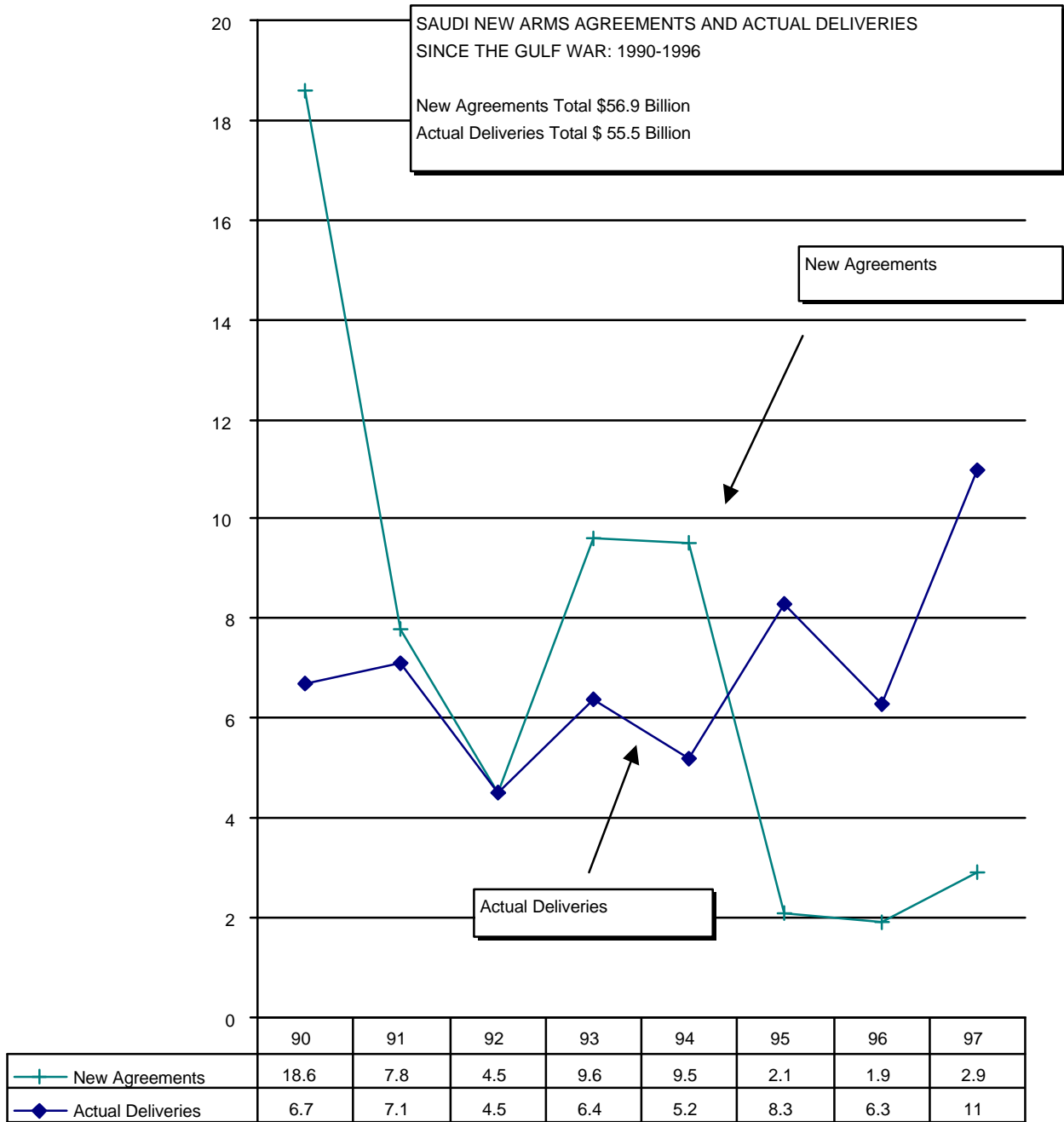
Source: Adapted by Anthony H. Cordesman from US Arms Control and Disarmament Agency, World Military Expenditures and Arms Transfers, 1995, GPO, Washington, 1996.

Saudi GNP Per Capita versus Military Expenditures Per Capita (Constant \$95)



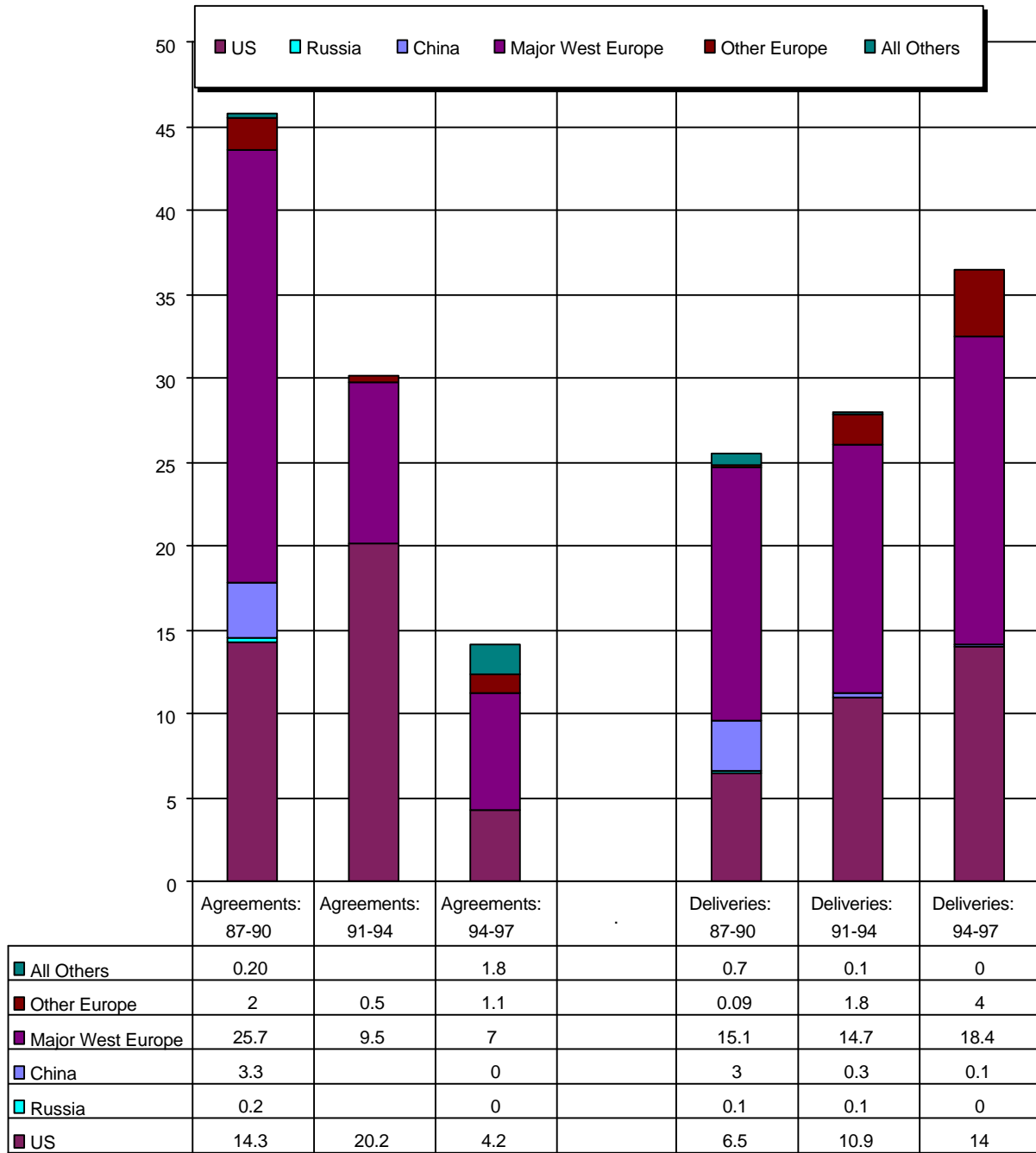
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Saudi Arabian Arms Sales: 1987-1997 (\$US Current Billions)



Source: Adapted by Anthony H. Cordesman from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Saudi Arabian New Arms Sales and Deliveries: 1987-1997 (\$US Current Millions)

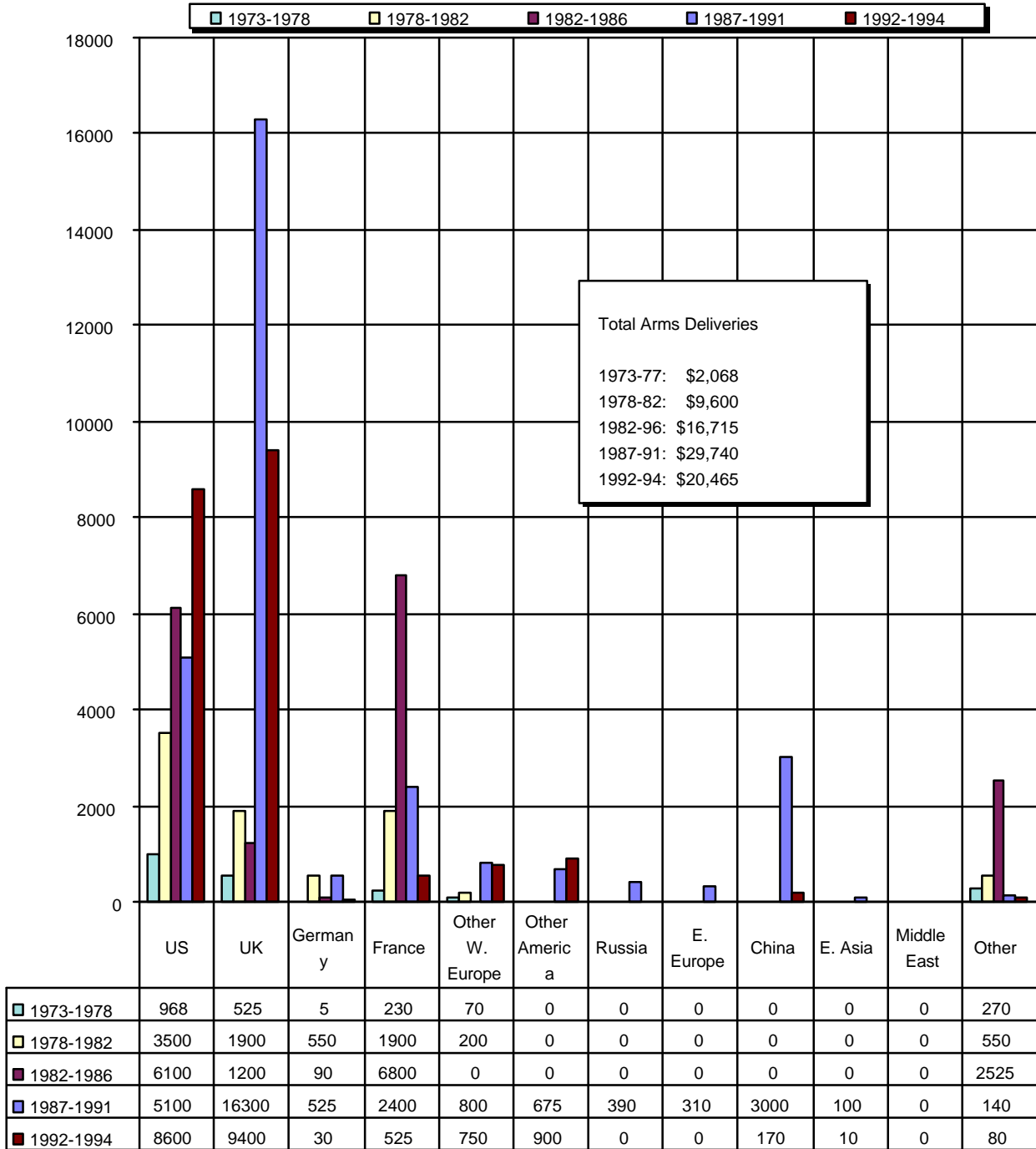


Total \$45,700 \$30,200 \$20,300 \$26,300 \$27,900 \$29,800

0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

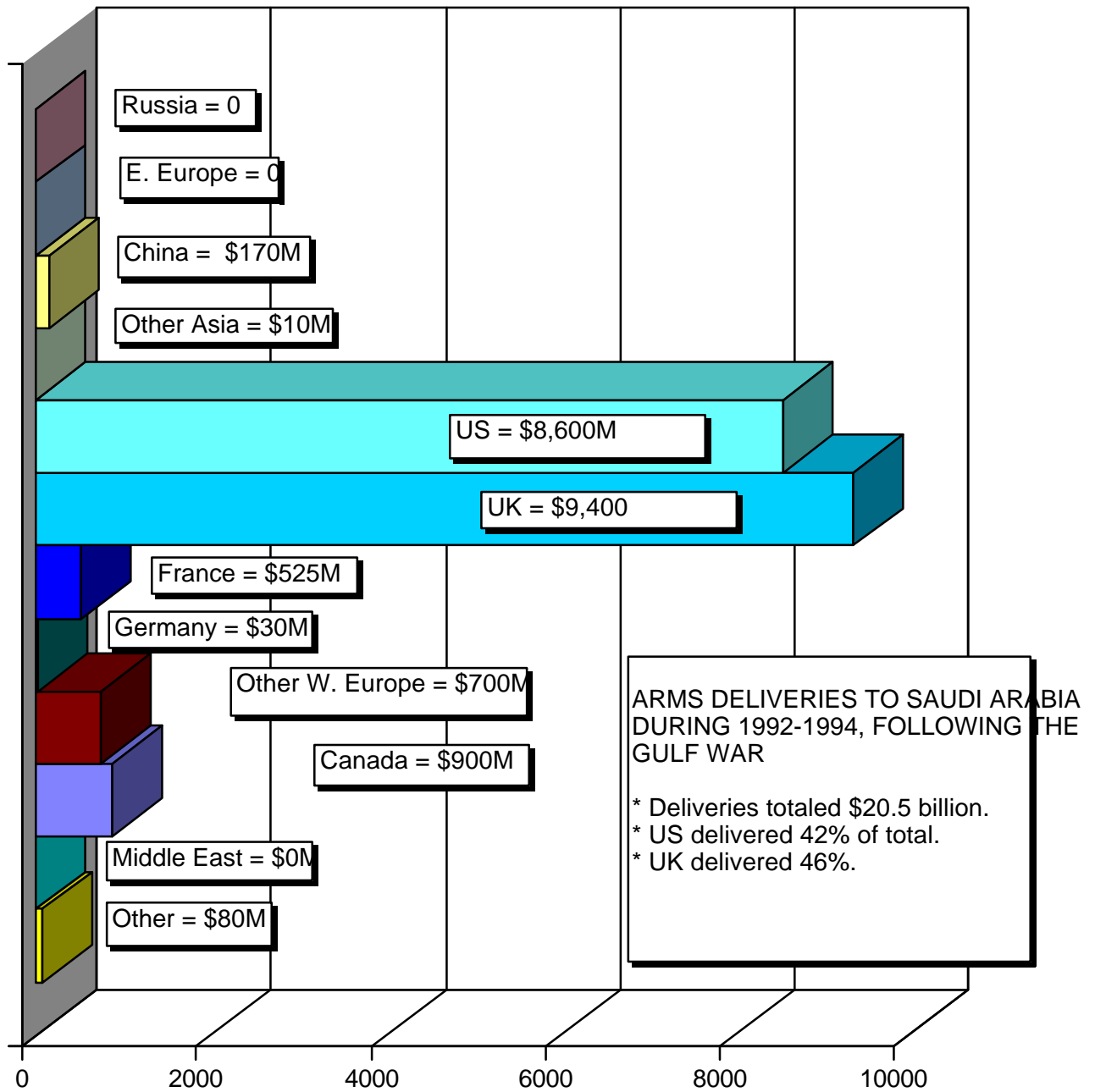
Source: Richard F. Grimmert, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Trend in Deliveries to Saudi Arabia: 1973-1994 (In \$US Current Millions)



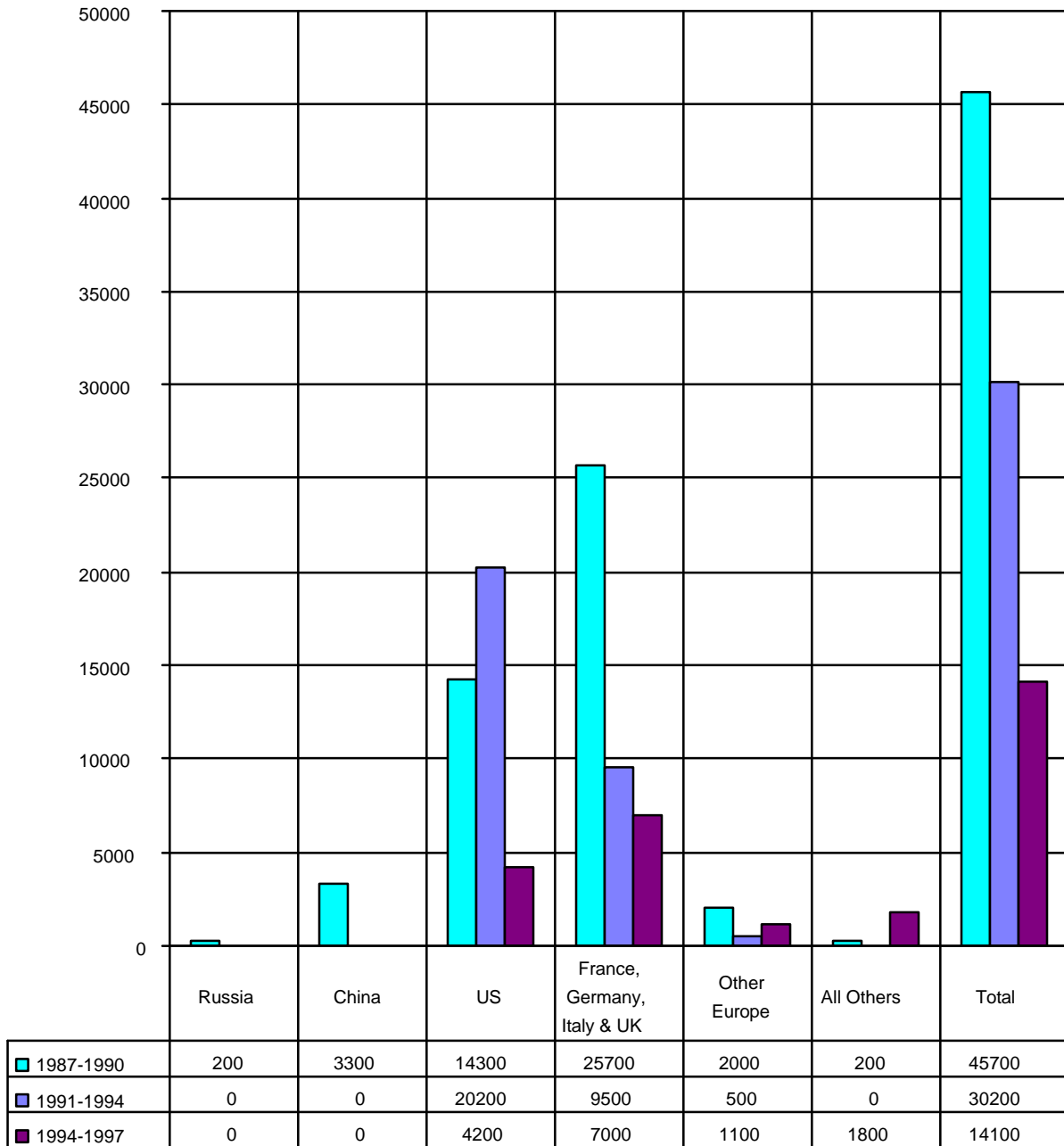
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, various editions.

Saudi Arabian Arms Deliveries: 1992-1994 (Deliveries in \$US Current Millions)



Source: Adapted by Anthony H. Cordesman from ACDA, *World Military Expenditures and Arms Transfers, 1995*, ACDA/GPO, Washington

New Saudi Arabian Arms Sales by Major Supplier: 1987-1997 (New Agreements in \$US Current Millions)



0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

Source: Adapted by Anthony H. Cordesman from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Key Saudi Equipment Developments - Part One

- Improved oil revenues have reduced, not eliminated deficits, but is still spending roughly \$13 billion annually on defense.
- Has talked of going from two armored and four mechanized brigades to 7-8 divisions.
- During Gulf War bought 315 M-1A2s, 30 M-88A1 tank recovery vehicles, 175 M-998 utility trucks, 224 heavy tactical trucks, 29 heavy equipment transporters, 268 five ton trucks, spares and support equipment, logistics support, ammunition, facilities design and construction, training aids and devices, and US military training services. Now have roughly 200 M-1s in storage awaiting crews.
- Has plans to buy 235-350 additional M-1A2s, Challenger 2s, or Le Clercs by 2000, but funding plan unclear.
- Bought 400 M-2A2s, 200 M-113 armored personnel carriers, 50 M-548 cargo carriers, 17 M-88A1 recovery vehicles, and 43 M-578 recovery vehicles.
- January 1997, signed a contract to convert 235 M113A1s and A2s to A3 standard. 65 vehicles have been delivered by July 1998. Completion expected for next year. Follow-on orders could include all 1,500 M113s.
- Has plans to buy 200 more infantry fighting vehicles by 2000, but funding plan unclear.
- Talking about replacing 110 M-109A/A2s with M-109A6, VSEL AS90, and Giat GCT-1. Funding plan even more uncertain.
- Additional ASTROS II and M-198s on order, better mobile fire-control and ammunition-supply equipment, and new target acquisition radars -- such as the AN/PPS-15A, MSTAR, or Rasit 3190B.
- Considered order for 9 Multiple Launch Rocket Systems (MLRS), including vehicle mounted rocket launchers, 2,880 tactical rockets, 50 practice rockets, 9 MV-755A2 command post carriers, training and training equipment, but canceled in 1993. Need to supplement present strength of four 180 mm SS-40s and 127 mm SS-30s.
- Army has 12 AH-64 Apache attack helicopters, 155 Hellfire missiles, 24 spare Hellfire launchers, six spare engines and associated equipment. Has discussed possible total of 48 AH-64s.
- Army aviation formed in 1986, and now has 15 OH-58D scouts and 70 AB-212s, AB-206s, and KV-107s in addition to AH-64s. Considering buy of 88 Westland WS-70 Black Hawks or similar lift helicopters.
- Building new military city near Jizan, which is on Red Sea coast near border with Yemen. Some cost estimates range up to \$8 billion.
- Saudi National Guard (SANG) has bought 400 to 450 versions of the Piranha light armored vehicle.
- SANG bought 1,117 LAV-25s (light armored vehicles) from General Motors of Canada through the US Army Tank Automotive Command (TACOM) at cost of \$3.4 billion. Package included 116 TOW launchers with 2000 missiles, 27 M-198 155 mm howitzers, support systems, training, and facilities.
- The SANG is expected to take delivery of the first of 73 120 mm armored mortar systems in 1998.

Key Saudi Equipment Developments - Part Two

- Refitting four F-2000 frigates with roughly 50 “item” changes, 40 minor. Are adding NBC protection and improving Otomat missile system to enhance search patterns and add re-attack capability. Not improving Crotale to use latest VT1 rounds, but improving Airsys Castor 2B X-band fire control radar to Castor 2C standard. Will complete during 1997-2001.
- Buying two new Lafayette-class F-3000 frigates as part of \$3.5 billion November 1994 agreement. To be delivered in 1999 and 2002.
- Ordered a third La Fayette class anti-aircraft frigate equipped with the new Aster 15 missile
- Four Sandown minelayers entering service, beginning in 1995.
- Considered buy of several AEGIS-class warships to give it advanced battle management, Harpoon anti-ship missiles, Tomahawk strike capability, ASW, anti-aircraft, and anti-ship missile defense capabilities. Too expensive.
- Refitting two logistic replenishment tankers.
- Has considered buying coastal submarines.
- 24 F-15S aircraft designed for air combat, and 48 F-15S aircraft dual-capable in both the air defense and strike/attack missions: 24 spare engines, 48 targeting and navigation pods, 900 AGM-65D/G Maverick air-to-surface missiles, 600 CBU-87 bombs, 700 GBU-10/12 bombs, and special mission planning systems.
- Buying 1,500 upgraded AIM-9 air-to-air missiles for the F-15S.
- Buying 20 more Hawk 65 jets and 20 more Swiss Pilatus PC-9 turboprop trainers.
- Examining replacement for roughly 100 F-5s. Possible candidates include F-16C/DBlock 60, and JAS39X Saab Gripen with advanced air-to-air missiles.
- Longer term requirements for replacement for 60 F-15s in 2005-2010 time frame. F-22, EF-2000, Rafale possible candidates.
- Plans to buy up to 70 C-130J-like transports during next decade, and up to 10 additional airborne tankers to supplement its 8 KC-130Hs.
- Has bought 21 Patriot batteries (2 training) with 1,055 missiles.
- New Peace Shield system becoming fully operational, and installation completed in November 1995. Has central C4I center, five regional centers, and 17 long-range radars.
- Upgrading 17 MIM-23B I-Hawk batteries.
- Considering upgrade of 170 Shahine mobile and static light SAMs. Possibly with Crotale NG.
- Examining replacement of French AMX-30 SA air defense guns.

Force Trends in Saudi Arabia - Part One

<u>Category/Weapon</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1999</u>
Manpower						
Total Active	63,000	67,000	62,500	102,500	161,500	162,500*
Regular	47,000	47,000	52,500	67,500	105,500	105,500
National Guard & Other	16,000	20,000	10,000	35,000	57,000	57,000
Reserve	-	-	15,000	20,000	20,000	20,000
Paramilitary	6,500	6,500	8,500	10,500	15,500	15,500
Army and Revolutionary						
Manpower	56,000	51,000	45,000	75,000	127,000	127,000
Regular Army Manpower	40,000	31,000	35,000	40,000	70,000	70,000
Reserve	-	-	10,000	20,000	20,000	20,000
Active Main Battle Tanks	175	380	450	550	910	710-910
Total Main Battle Tanks**	175	380	450	550	910	1,055
AIFV/Recce, Lt. Tanks	60	400	575	740	1,467	1,665
APCs	200	200	1,570	2,380	3,670	3,380
Self Propelled Artillery	-	-	275	275	200	200
Towed Artillery	-	-	191	200-270	270	260-338
MRLs	-	-	0	14	60	60
Mortars	-	-	-	360+	400+	510+
SSM Launchers	-	-	-	10	10	10
Light SAM Launchers	-	-	-	500+	650	650
AA Guns	-	-	248+	-	-	-
Air Force Manpower	5,500	14,500	14,000	18,000	18,000	18,000
Air Defense Manpower	-	-	-	4,000	4,000	4,000
Total Combat Aircraft	95	136	205	189	295	432
Bombers	0	0	0	0	0	0
Fighter/Attack	30	65	65	78	112	1608
Fighter/Interceptor	35	17	79	61	122	191
Recce/FGA Recce	0	0	0	10	10	10
AEW C4I/BM	0	0	4	5	5	5
MR/MPA	0	0	0	0	0	0
OCU/COIN/CCT	30	54	57	40	36	21
Other Combat Trainers	23	39	39	64	66	50
Transport Aircraft***	7	67	59	70	49	72
Tanker Aircraft	0	-	-	16	16	15
Total Helicopters	22	38	36	55+	150	157
Armed Helicopters***	0	0	0	0	12	12
Other Helicopters***	22	38	36	55+	138	145
Major SAM Launchers	37	-	-	128	128	128
Light SAM Launchers	-	-	-	141	181-249	181-249
AA Guns	-	-	-	198	234(+150)	270-420

Force Trends in Saudi Arabia - Part Two

Category/Weapon	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1999</u>
Total Naval Manpower	1,500	1,500	3,500	9,500	13,500	13,500
Major Surface Combatants						
Missile	0	0	8	8	8	8
Other	0	0	0	0	0	0
Patrol Craft						
Missile	0	0	9	9	9	9
Other	3	4	4	12	20	21
Submarines	0	0	0	0	0	0
Mine Vessels	0	0	4	5	7	6
Amphibious Ships	-	0	(3)	0	0	0
Landing Craft	-	6	16	16	8+	8+
Marines	0	0	-	(1,500)	(1,800)	(3,000)
Naval Guards	0	0	0	0	0	-
Naval Air	0	0	-	-	-	-
Naval Aircraft						
Fixed Wing Combat	0	0	0	0	0	0
MR/MPA	0	0	0	0	0	0
Armed Helicopters/SAR	0	0	24	24	24	25
Other Helicopters	-	-	-	-	-	6

Note: Equipment in storage shown as higher figure in range. Air Force totals include all helicopters, and all heavy surface to air missile launchers.

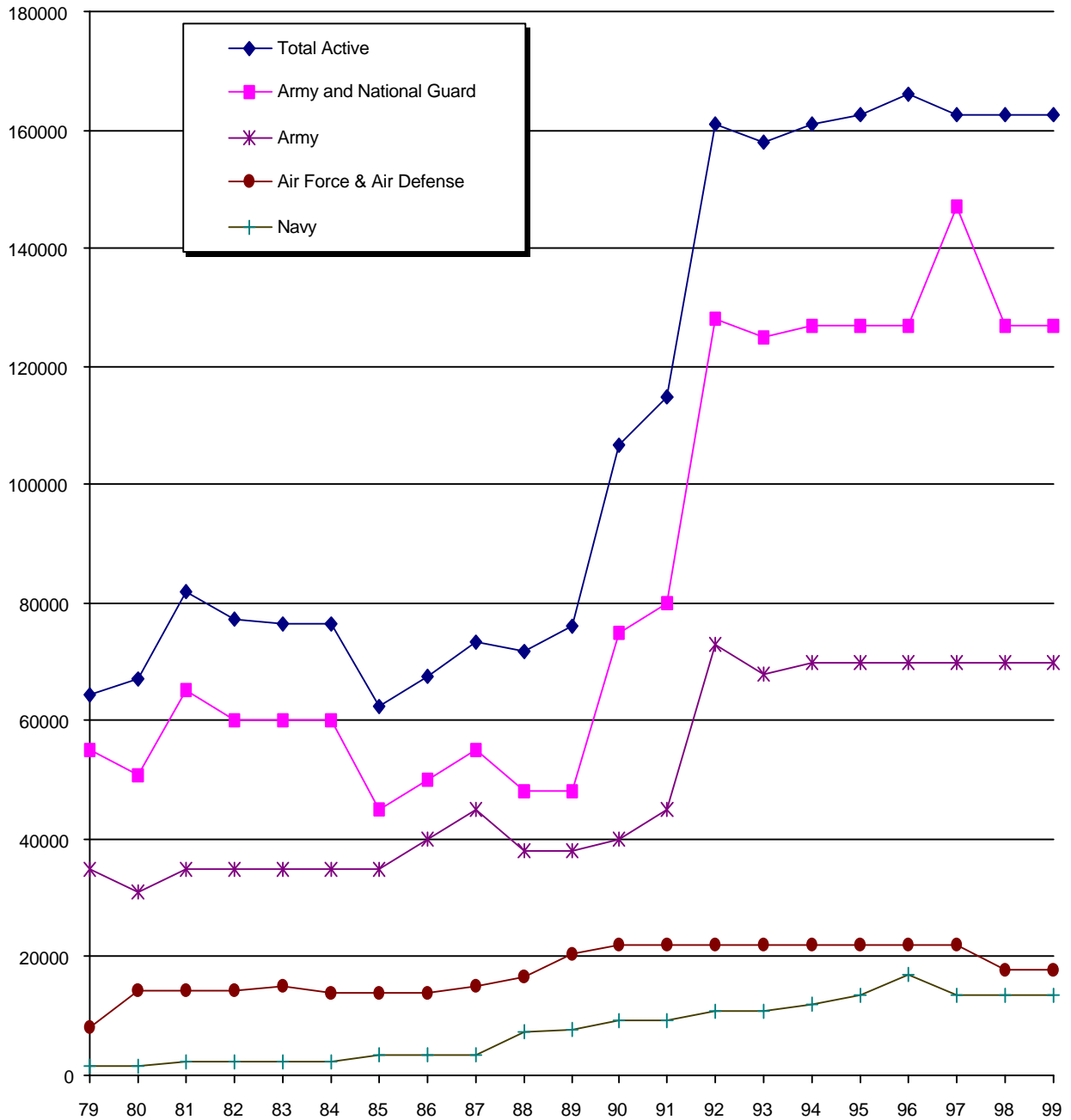
* Saudi Totals for 1998 include 60,000 reserves are National Guard Tribal Levies. The total for land forces includes active National Guard equipment. These additions total 262 AIFVs, 1,165 APCs, and 70 towed artillery weapons.

** Total tanks include tanks in storage or conversion.

*** Includes navy, army, National Guard, and royal flights, but not paramilitary.

Adapted by Anthony H. Cordesman from interviews, International Institute for Strategic Studies, Military Balance (IISS, London); various data available from Jane's, Military Technology, World Defense Almanac; and Jaffee Center for Strategic Studies, The Military Balance in the Middle East (JCSS, Tel Aviv)

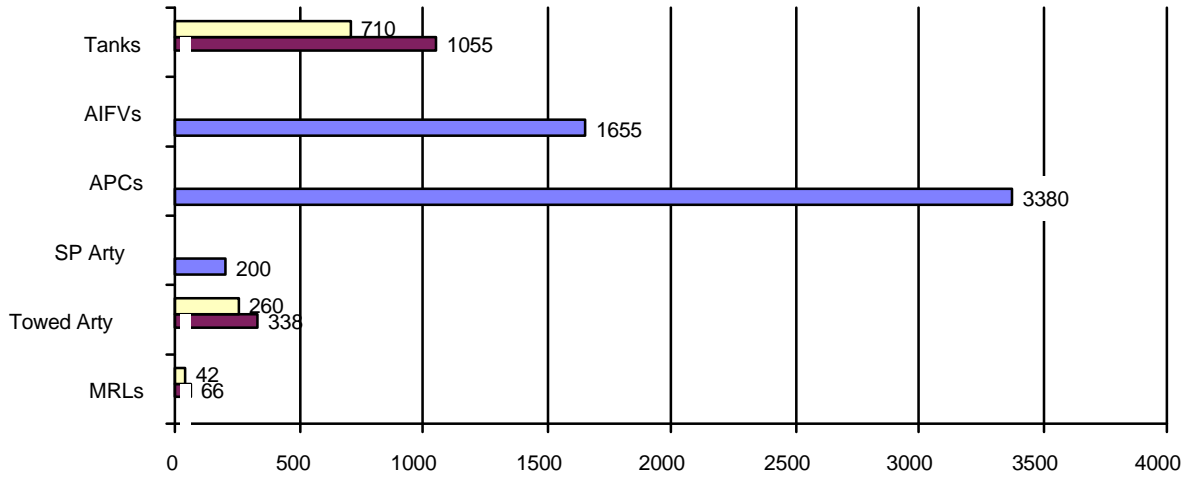
Saudi: Military Manning: 1979-1999



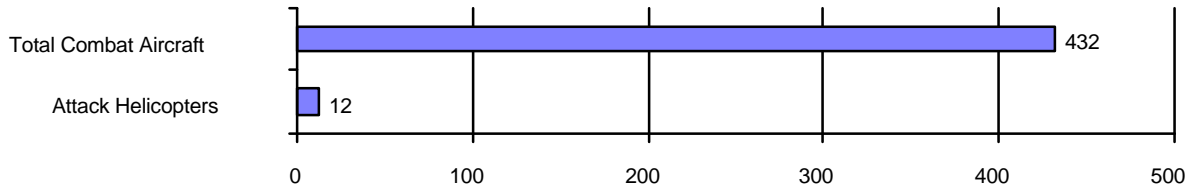
Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

Saudi Major Military Equipment in 1999

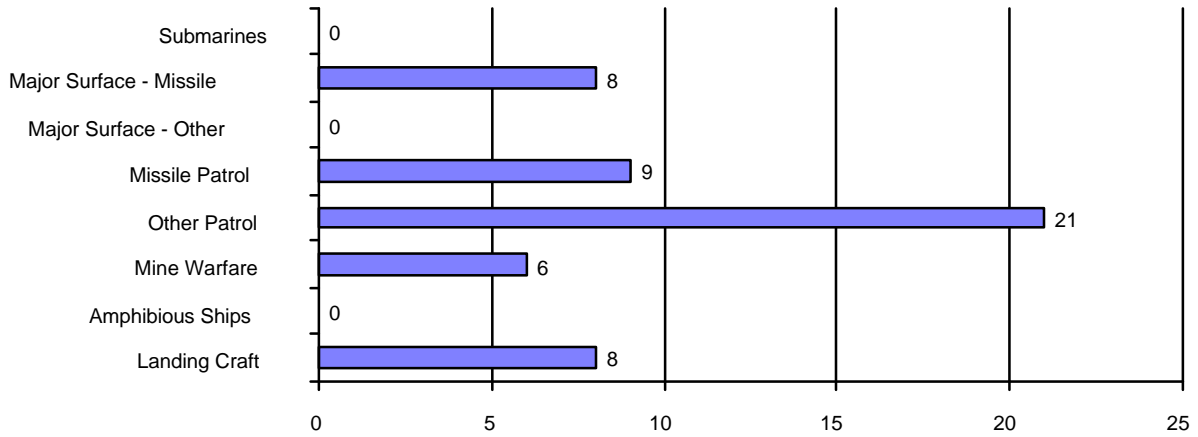
Land Forces



Air Forces

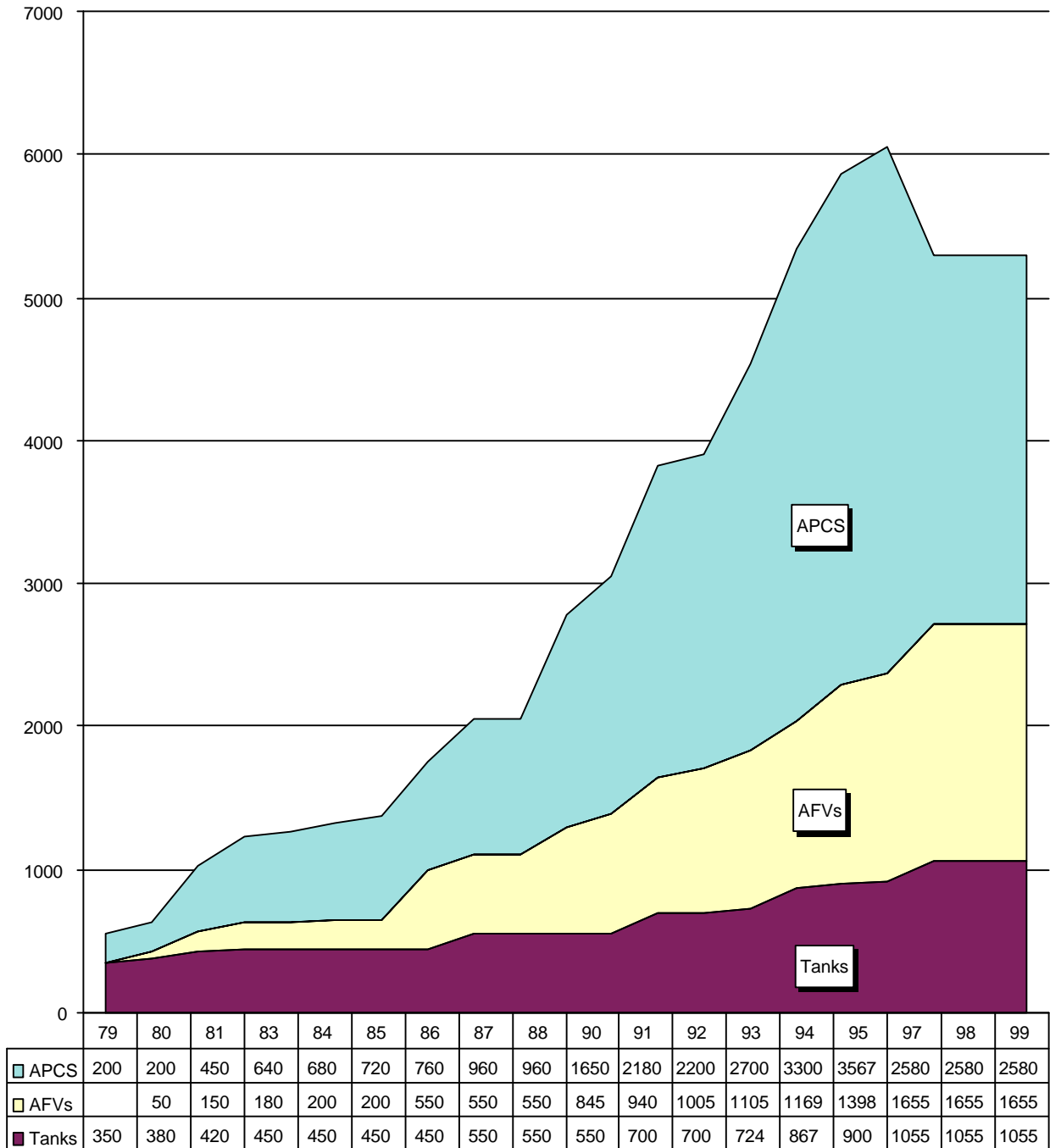


Naval Forces



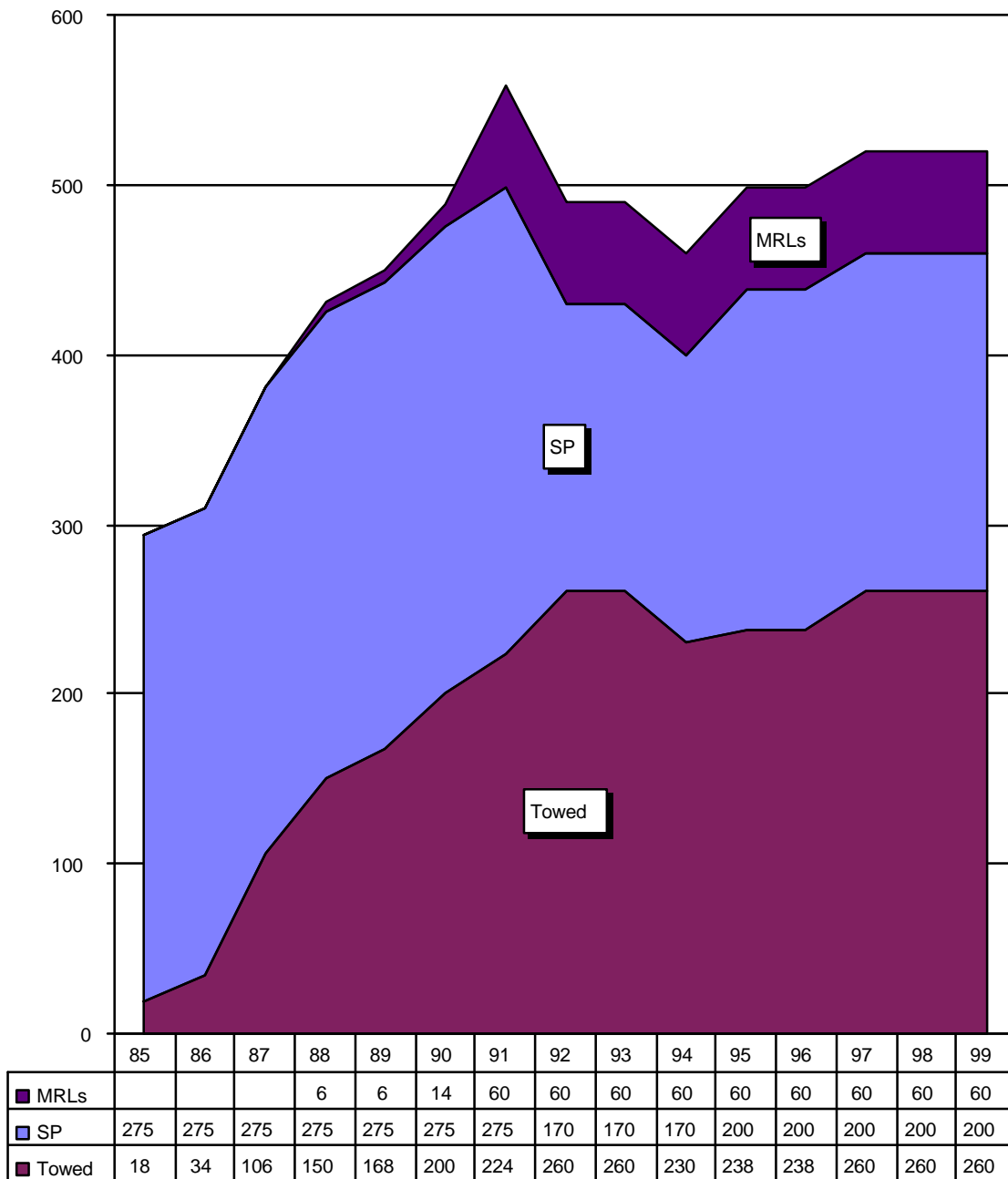
Source: Adapted by Anthony H. Cordesman from data provided by US experts, and the IISS, Military Balance

Saudi Arabia: Armored Weapons Strength: 1979-1999



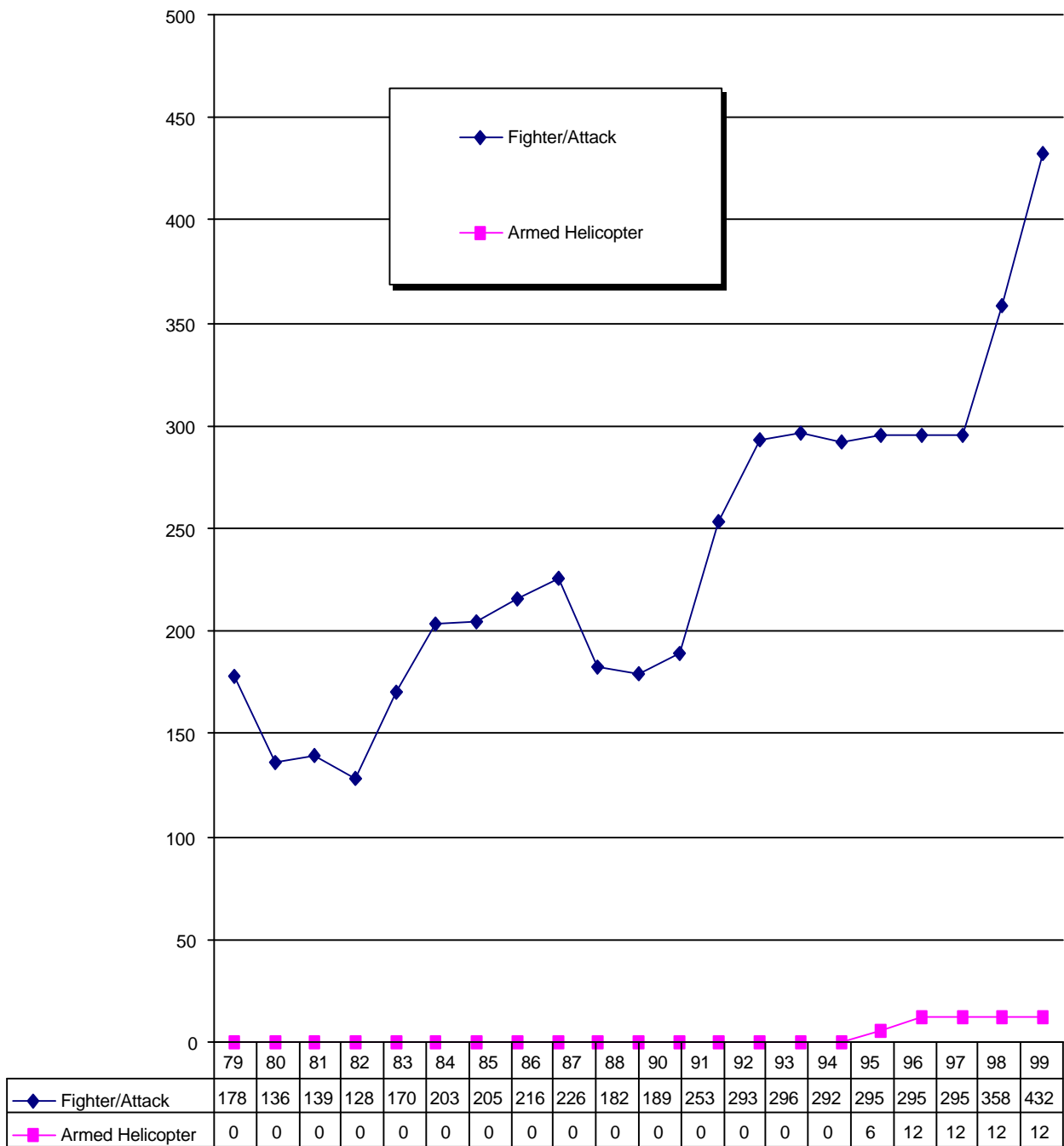
Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

Saudi: Artillery Weapons Strength: 1985-1999



Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

Saudi Arabia: Fixed Wing and Rotary Wing Combat Air Strength: 1979-1999



Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

Part Two

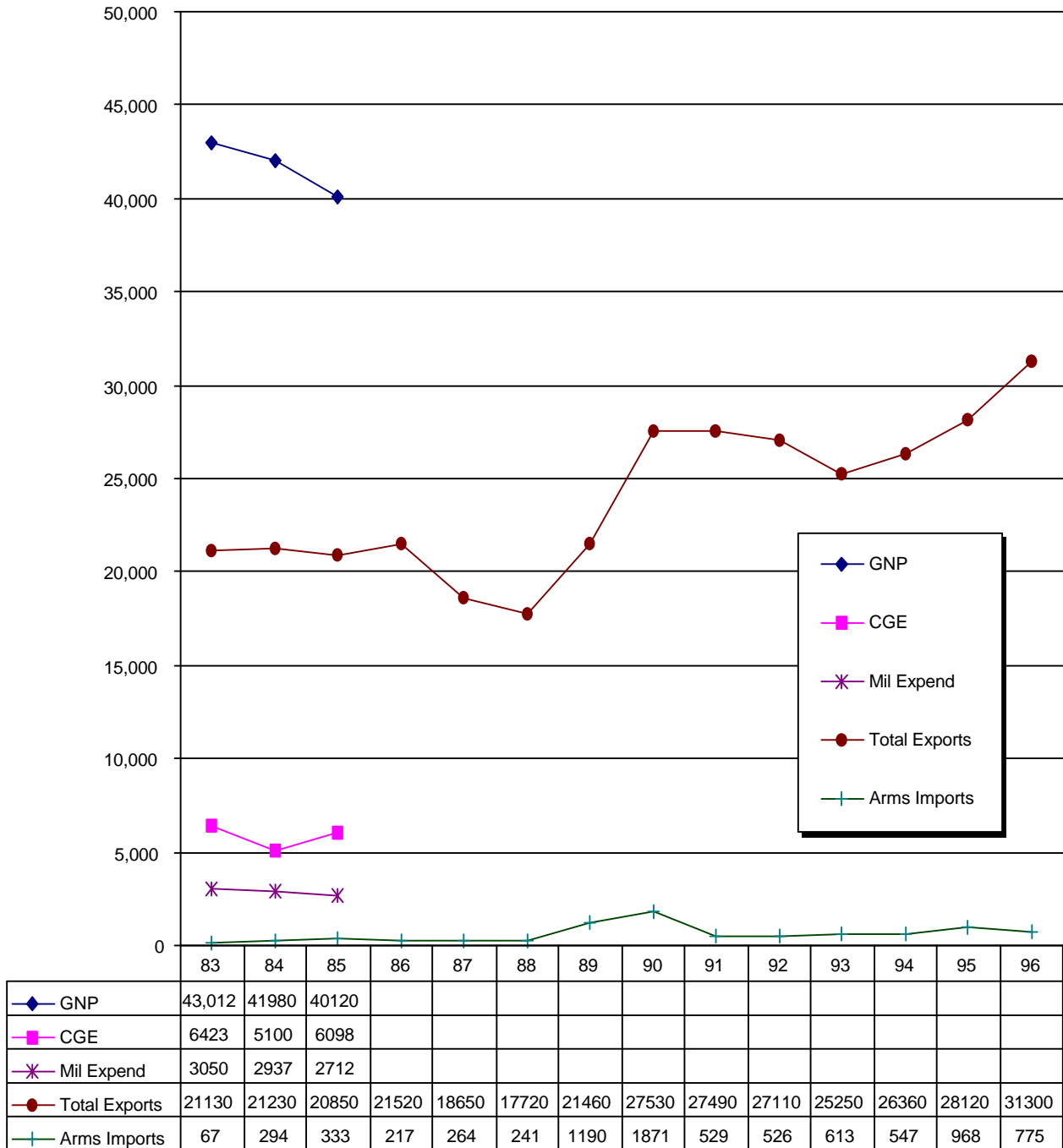
UAE Military Forces

UAE - Overview

- The UAE has shown little real economic growth over the last decade. It has, however, kept central government expenditures a relatively low share of the total GDP, and neither military spending nor arms imports have placed a major burden on the economy.
 - 1996 defense expenditures rose to \$2.1 billion from \$2 billion in 1995.
- Wealth does not mean military effectiveness. A detailed review of UAE arms buys reveals deep divisions between the Emirates that make up the UAE, a serious lack of standardization and over-lapping buys from different suppliers that greatly increase its sustainability and interoperability problems, and an acute tendency to make “glitter factor” one of kind buys. There is little evidence of any effort to achieve standardization with other GCC states or the US, or to support weapons buys with the
- The trends in GDP per capita income in the UAE reflect the increasing impact of high population growth at a time of constant or declining real GDP. However, the UAE’s per capita GDP still remains high for a developing country.
- As is the case in Saudi Arabia, the trends in GDP per capita in the UAE reflect the increasing impact of high population growth on GDP per capita at a time of constant or declining total real GDP. In the case of the UAE, however, military expenditures per capita have remained relatively low, and are only a small fraction of GDP per capita.
- The UAE made a significant increase in military spending for the Gulf War, although this surge was much lower than in Kuwait and significantly lower than in Saudi Arabia.
 - Between 1993 and 1996 defense accounted for 48% of federal government spending
 - US estimates indicate that 1996 defense expenditures rose to \$2.1 billion from \$2 billion in 1995.
 - The IISS estimates that military expenditures were \$2.0 billion in 1995, \$2.1 billion in 1996, and \$2.1 billion in 1997.
- New UAE arms orders during 1991-1994 reflected a nearly five-fold increase over orders during 1987-1990. The UAE and Qatar have made the largest increases in arms imports as a result of the Gulf War of any Gulf states, and this will inevitably have some impact on the burden arms import places on their economies. At the same time, the initial level of UAE orders was so low that a carefully phased pattern of deliveries and payments should make such orders comparatively easy to afford.
- The UAE buys most of its arms from the major West European countries, although it buys substantial arms from other suppliers. Most of its major new agreements following the Gulf War came from the UK, France, Germany, and Italy (\$3.9 billion) and Russia (\$1.3 billion).
- The most recent data on UAE arms imports reflect major cuts in the volume of new agreements and deliveries since the Gulf War.
 - New arms agreements rose from \$2.0 billion during 1989-1992 to \$5.2 billion during 1993-1996, most from major West European countries.
 - New arms deliveries dropped from \$2.9 billion during 1989-1992 to \$2.3 billion during 1993-1996, because of delivery backlogs.
 - The end result is that UAE has a serious backlog of orders and conversion problems, but still has ambitious future purchase plans. It does not to modernize its fighter force, but will then approach saturation in terms of cash flow, manpower, and absorption capabilities.
 - advanced C4I/BM capabilities the UAE needs for air defense and maritime surveillance.

UAE Gross National Product, Central Government Expenditures, Military Expenditures, Total Exports, and Arms Import Deliveries: 1983-1996

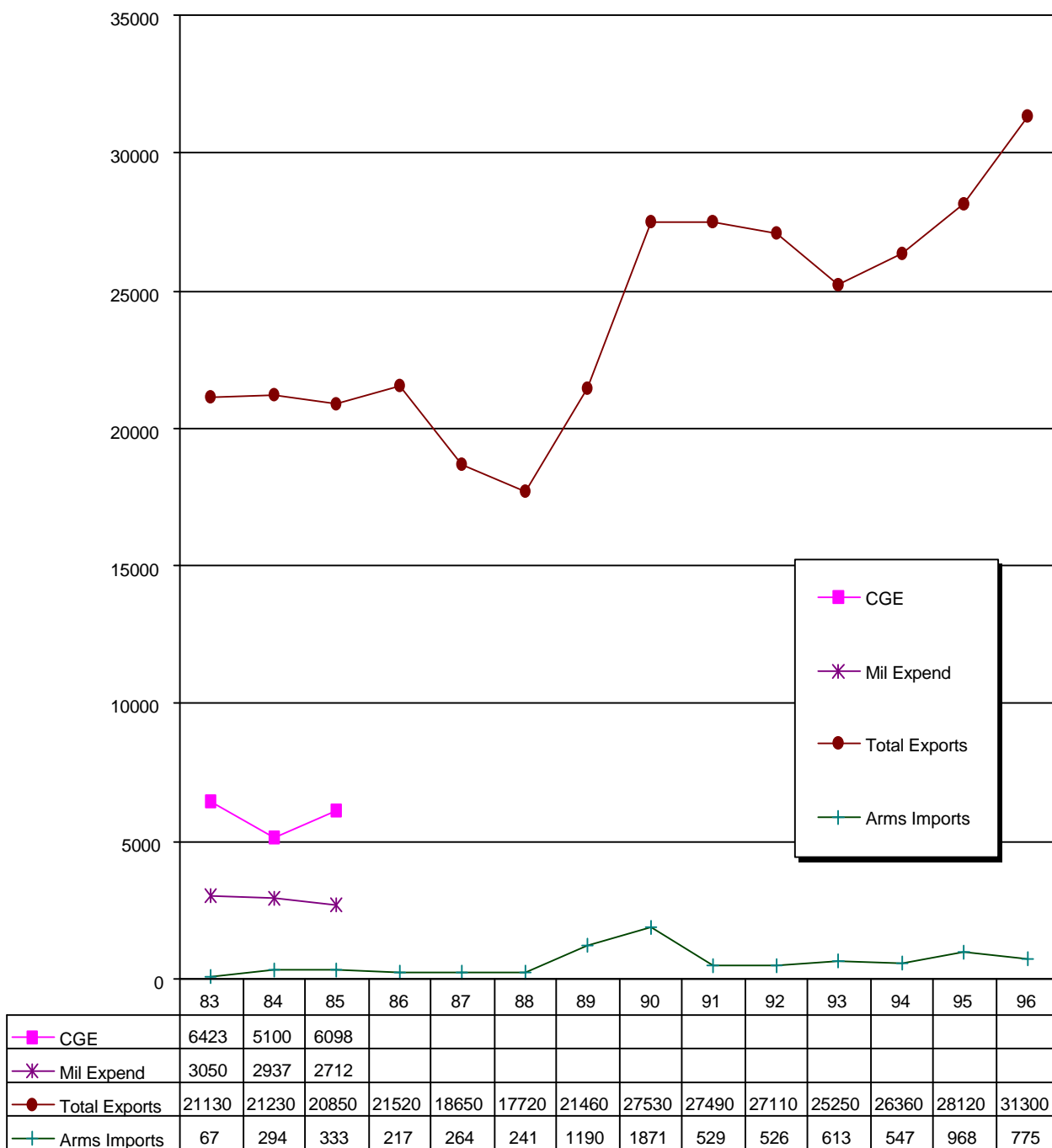
(Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

UAE Central Government Expenditures, Military Expenditures, Total Exports, and Arms Import Deliveries: 1983-1995

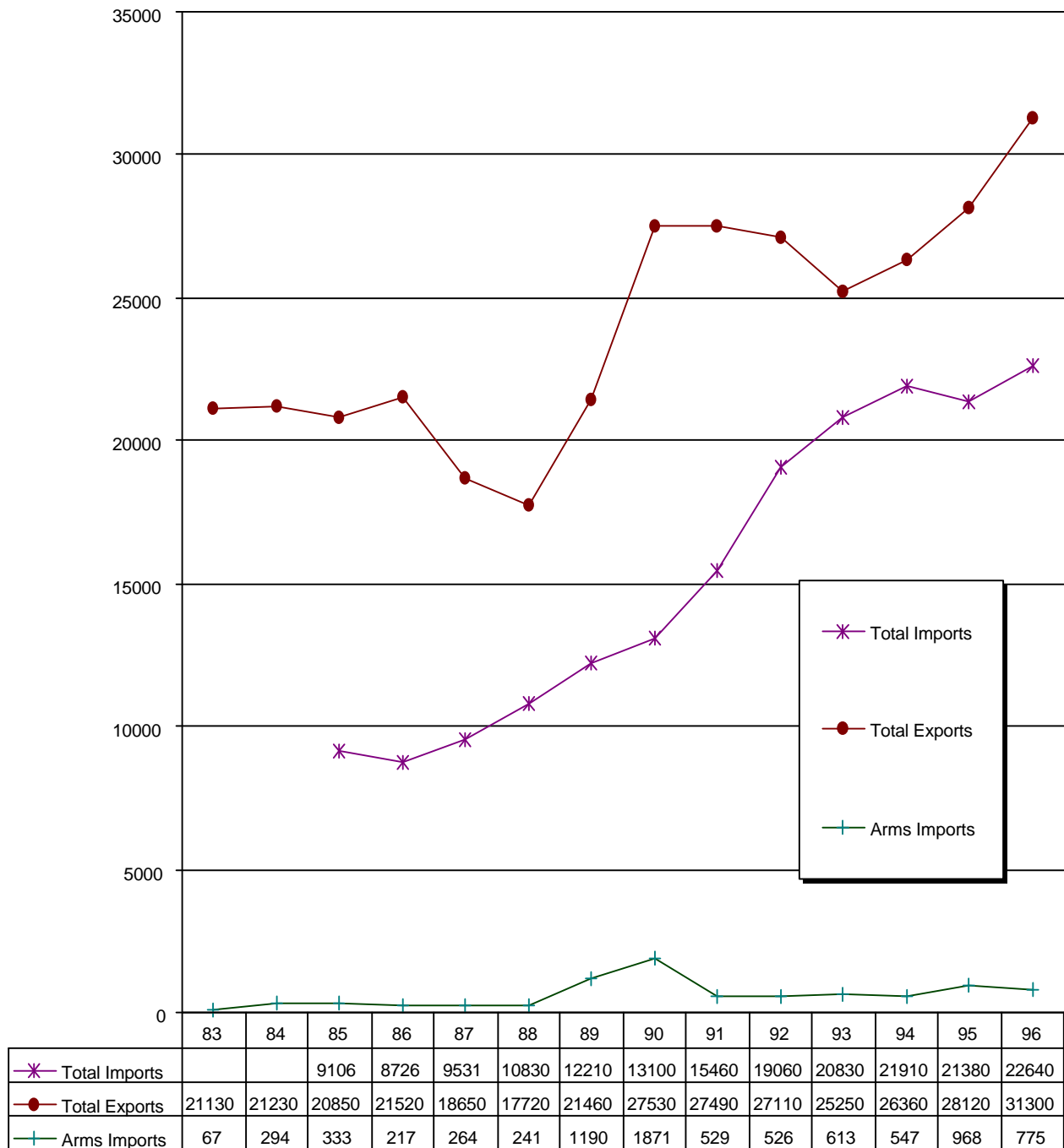
(Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

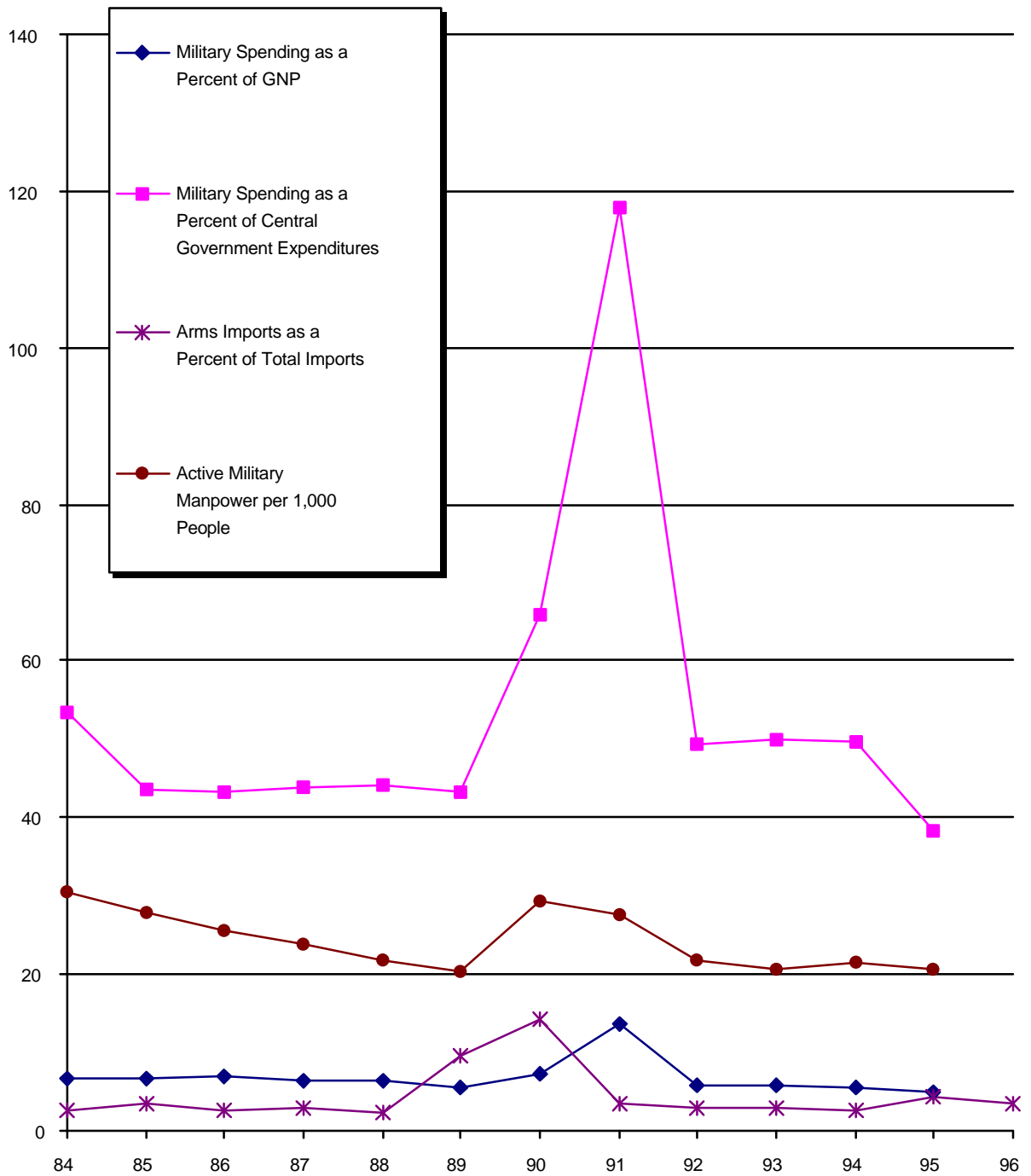
UAE Total Exports, and Arms Import Deliveries: 1983-1995

(Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

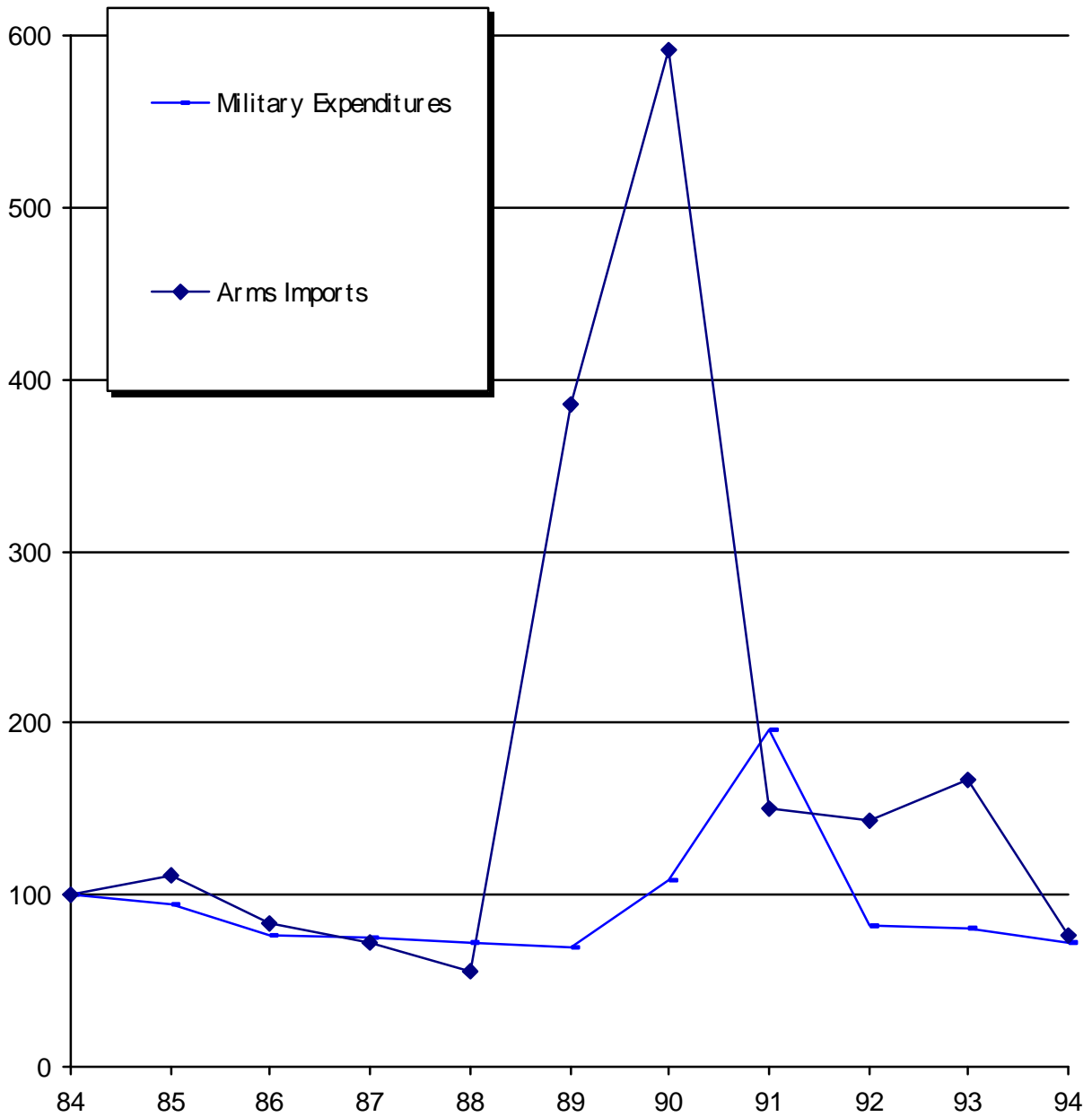
UAE Military Efforts as a Percent of GNP, Government Expenditures, Imports and Total Population: 1984-1996



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

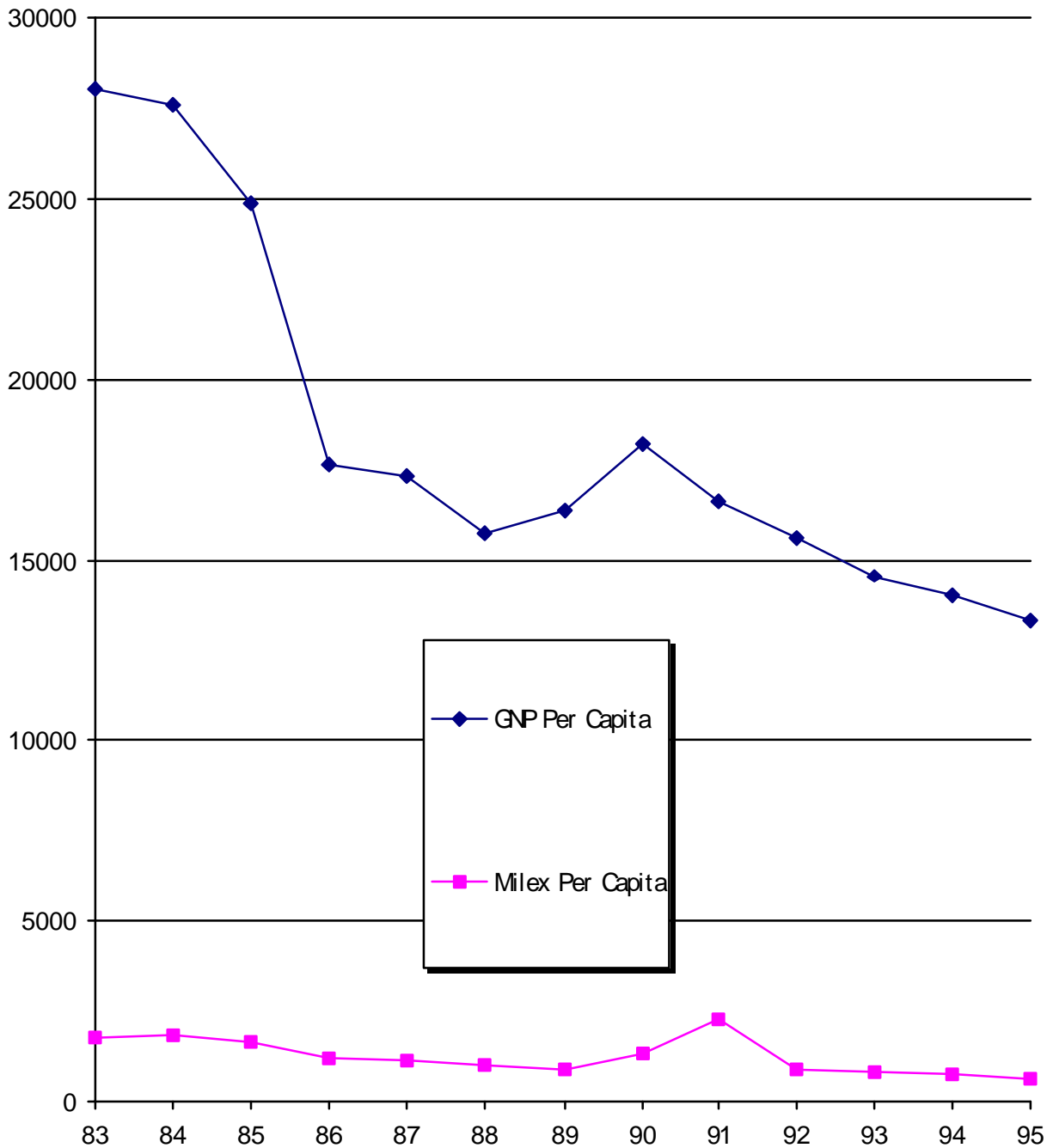
UAE Military Expenditures and Arms Transfers as a Percent of 1984 Total: 1984-1994

(Measured in \$94 Constant Millions)



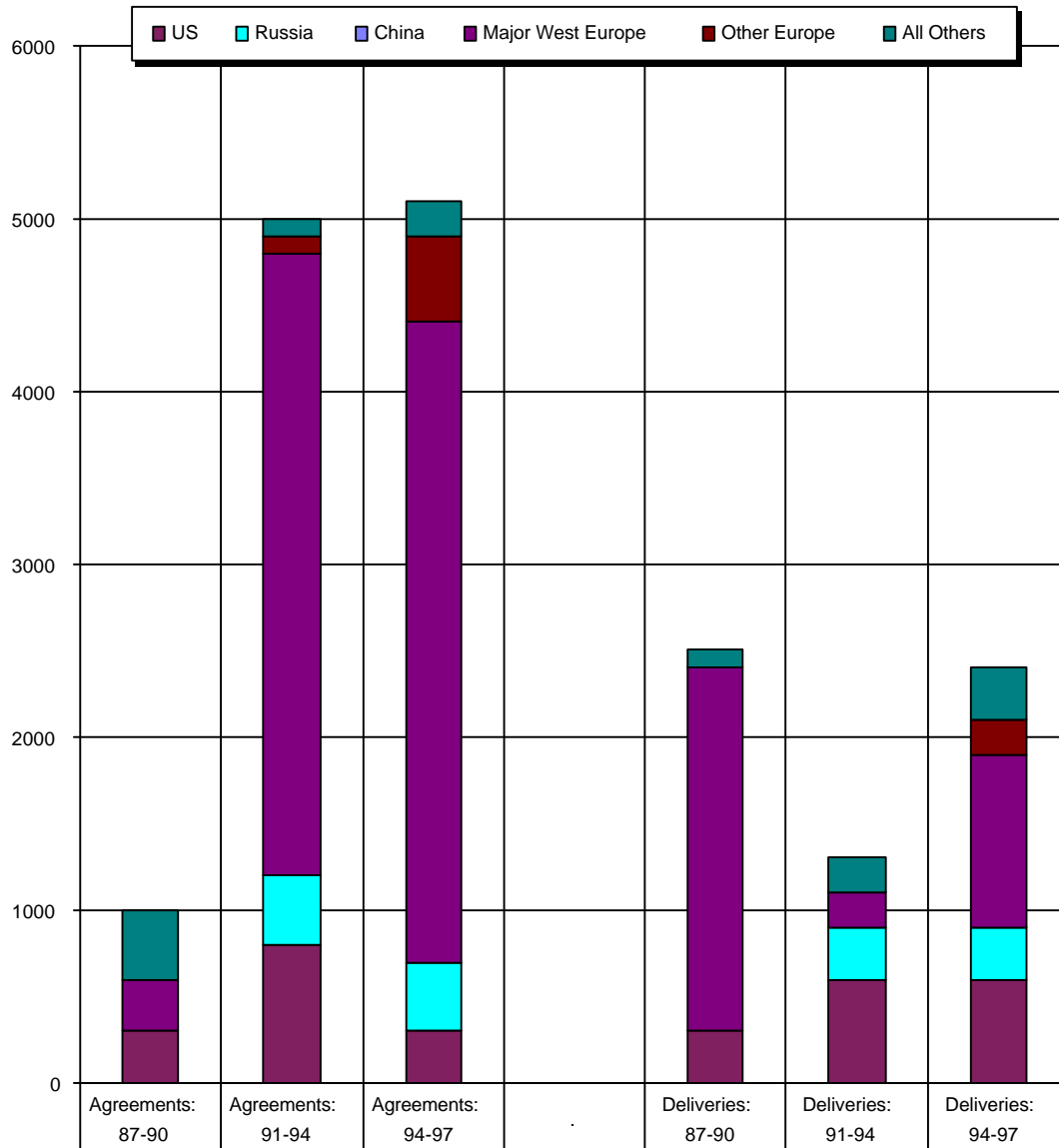
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, 1996, ACDA/GPO, Washington, 1997.

UAE GNP Per Capita versus Military Expenditures Per Capita (Constant \$95)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

UAE Arms Agreements and Deliveries by Major Supplier: 1987-1997 (\$Current Millions)



All Others	400	100	200	100	200	300
Other Europe		100	500		0	200
Major West Europe	300	3600	3700	2100	200	1000
China					0	
Russia		400	400		300	300
US	300	800	300	300	600	600

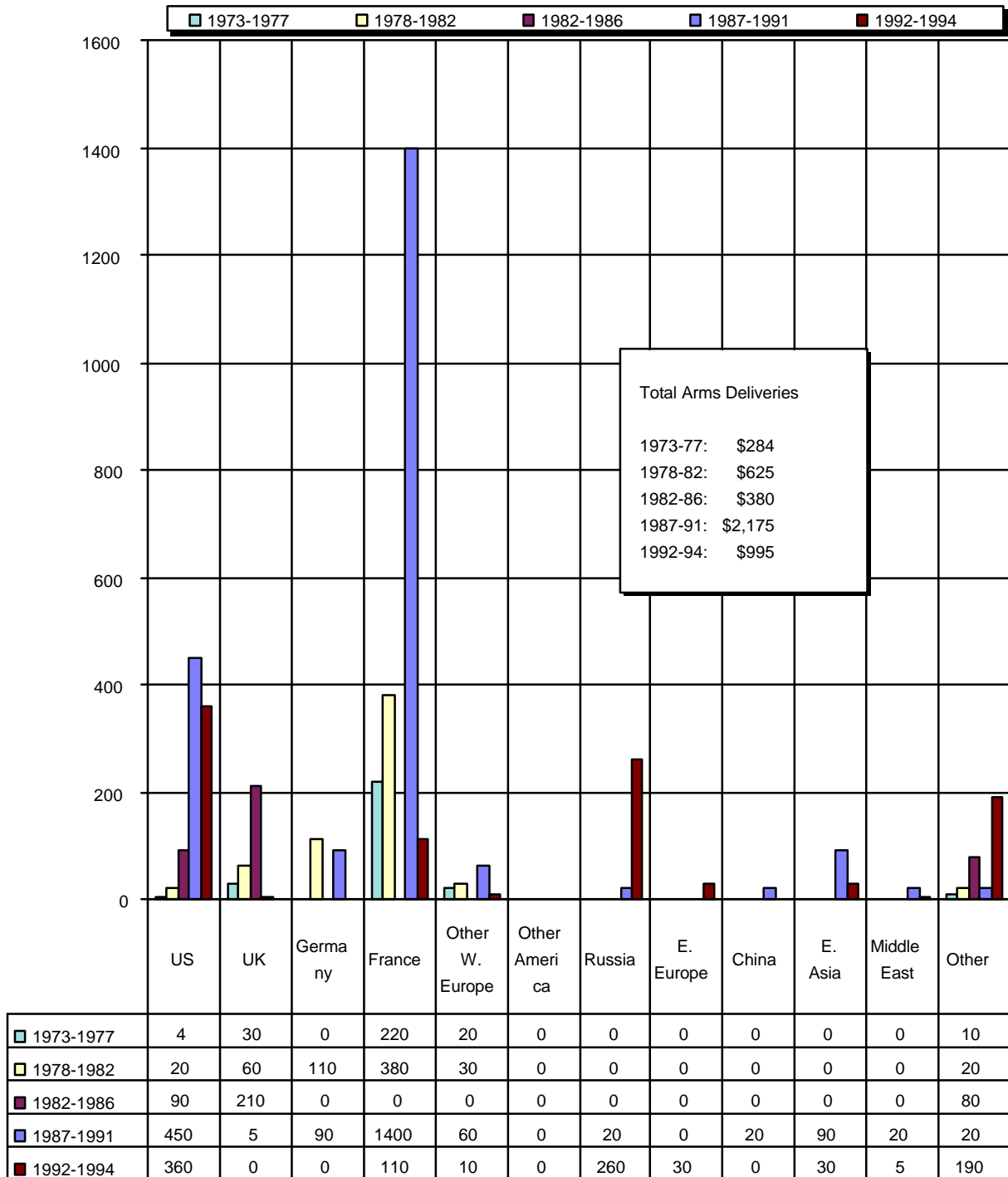
Total 1,000 5,000 5,100 2,500 1,300 2,400

Includes Gulf states, Arab-Israeli states, North Africa, and Yemen

0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

Source: Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

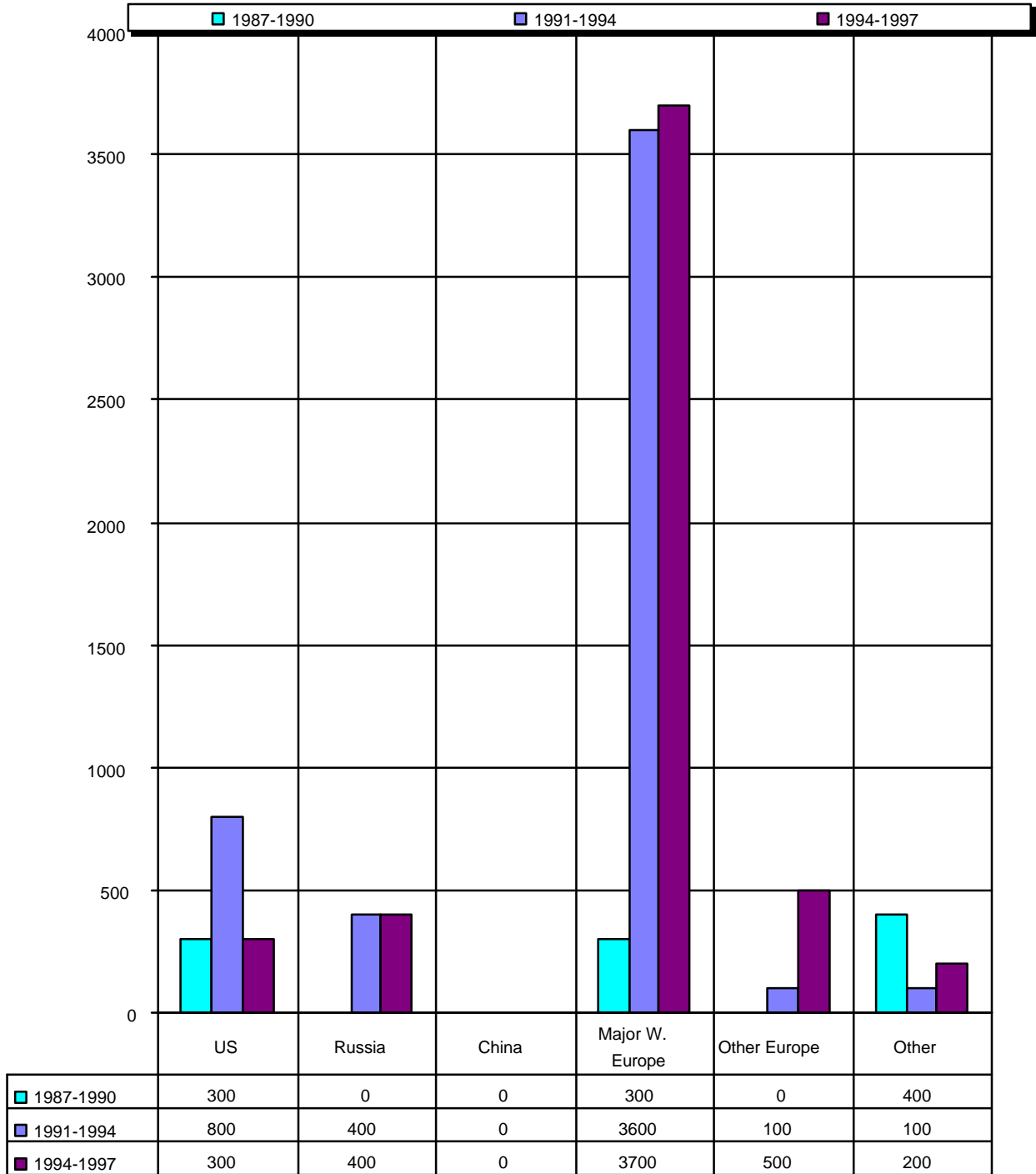
Trend in Deliveries to UAE: 1973-1994 (In \$US Current Millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, various editions.

Trend in Supplier's Share of UAE Arms Market Before and After the Gulf War

(New Arms Sales Agreements in \$US Current Millions)



0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

Source: Adapted by Anthony H. Cordesman from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Key UAE Equipment Developments - Part One

- Plans to spend up to \$7 billion on arms acquisitions by the year 2000.
- Examining the option of joining Saudi Arabia in accepting a West German proposal to up-engine the AMX-30, and install a new fire control system, and make other improvements
- On February 21, 1993, announced would purchase 390 “tropicalized” Le Clerc tanks -- and 46 recovery vehicles and logistic support. Le Clercs will have advanced thermal sights. Training for conversion to the Le Clerc began in January 1995, and deliveries of tanks and ammunition will continue through 1999. Package will include Giat squadron-level command systems with regimental, command systems under development, and digitally sorted mapping systems within the tank.ⁱ
 - In June 1998, 300+ vehicles have been completed so far. (JDW 3 June 1998) no delivery date mentioned
- Dubai considering the purchase of 72-100 additional tanks for its forces to replace its 36 aging OF-40s, and expand its forces from one armored battalion to three -- creating an armored brigade. It is also considering the
- South African LIW 155 mm G6(6 x 6) 155 mm/45 caliber self propelled gun or two GKN Defense Desert Warrior or two Russian BMP-3 infantry fighting vehicles.

In May 1992, Abu Dhabi ordered 240-250 Russian BMP-3 mechanized infantry combat vehicles, with an
-
- Savunma Sanayii.
- Abu Dhabi ordered 78 155-mm self-propelled G-6 gun systems from Denel of South Africa in 1990. Has now taken full delivery.

The UAE has acquired 18 LAU-97 70 mm and 24-40 FIROS-25 122 mm multiple rocket launchers.

UAE has purchased 85-87 surplus M-109A3 self-propelled 155 mm howitzers from the Netherlands, which will kilometers with an assisted range round
- Examining possible purchases of 120 mm towed rifled mortars from France, French self-propelled or towed 155 mm howitzers, and Russian BM-9A52 Smerch 300 mm multiple rocket launch systems

Abu Dhabi has ordered the advanced twin launcher version of the French Mistral air defense systems mounted also needs longer range systems, and is currently studying possible purchases of systems like the Crotale

Key UAE Equipment Developments - Part Two

- Planning the construction of two new air bases.
- Has considered purchase of up to 70-80 F-16Us, Mirage-2000Cs, Mirage 2000-5s, Rafales, MiG-29s, Su-25TKs, Su-27Bs, Su-30MK5s, or Su-35s. Seeks aircraft tailored to improve BVR combat capability, as well as attack capability.
 - UAE announced in May 1998 that it is buying 80 of Lockheed Martin's F-16 Block 60 at cost of \$6.7. As late as December the deal has not been signed because of technical obstacles involving the transfer of software source codes.
 - Has announced the purchase of 30 Mirage 2000-5 fighters from France's Dassault over the next three years and also signed for the upgrading of its existing force of 33 Mirage 2000 SAD-8s to 2000 SAD-9 standard, shifting from a primarily air defense configuration to a multi-role configuration.
- Procured a family of precision guided munitions, the most sophisticated of which have been integrated onto the UAE's fleet of 22 Dassault Mirage 2000 strike aircraft.
- Reports say that the Mirage deal includes missiles: MICA air-to-air missiles, Hakeem air-to-surface missiles, and the Black Shahine long-range cruise missiles (air-to-ground missiles). Black Shahine deal approved by UK, but the US has problems with this deal.
- Reports say that the F-16 deal includes 491 AIM-120B Advanced Medium-Range Air-to-Air Missiles, 1,163 AGM-65D/G Maverick air-to-air missiles, 267 AIM-9m Sidewinder air-to-air missiles, 52 AGM-84 Harpoon anti-ship missiles, 163 AGM-88 High Speed Anti-Radiation Missiles (HARMs), and 3,500 Mk82/84 general purpose bombs
- UAE has selected the CN-235-220 Maritime Patrol Aircraft (MPA) manufactured by IPTN of Indonesia. Four aircraft have been purchased. Will carry out surveillance in UAE waters.
- Considering the purchase of up to 40 more Hawk 100 trainers, including 40 for Dubai. May buy 12-18 Hawk 100s in 1998.
- Has 20 AH-63 Apache attack helicopters, which it purchased with 4,000 Hydra rockets and 360 Hellfire missiles
- France's Eurocopter clinched a \$26 million order to supply two Panther and five Gazelle helicopters.
- Some reports indicate that the UAE has 30 A-129 Mangustas and Lynx helicopters on order. Other reports indicate that the UAE is considering plans to acquire up to 40 Augusta AB-412HP Griffins, 10 IAR 330-L Pumas, and/or a significant number of AS-532 Cougar or Westland WS-70 Black Hawk helicopters. The UAE also seems to be considering purchase of more C-130s, or CASA/IPTN CN-235 aircraft
- Evaluating the purchase of 10 Patriot missile launchers or three batteries of Russian SV-300 (SA-10/12) missiles.
- Purchased a far more sophisticated C⁴I/BM system from Westinghouse. It purchased this system in February, 1993, and it will include radars, computers, communications systems, and software -- including radars mounted on tethered balloons to provide some of the range and look-down capabilities of an AWACS. The UAE is also examining the possible purchase of Lockheed Martin FPS-117(E)1, Marconi Martello 743-D, Westinghouse W-2100, Thomson-CSF TRS 22-XX, and Alenia RAT-31SL long range surveillance radars.

Key UAE Equipment Developments - Part Three

- Planning the construction of at least two naval bases.
- Issued a statement of requirements in mid-1993 for four to eight frigates of about 2,500 tons, equipped with a helicopter with dipping sonar, surface-to-surface missile, surface-to-air missile, and ASW capability.
- In April, 1996 announced was taking over two Dutch Kortenaer- class S frigates as part of \$350 million contract. The Piet Heyn and Abraham Crijnsen were commissioned in 1981 and 1983, and will provide an interim bridge to acquiring advanced frigates.
- The Dutch will train two 140 man crews, and add new Goalkeeper CIWS and 10 Scout low probability of intercept radars. Will construct Goalkeeper maintenance facility and NBC defense school in Abu Dhabi, and deliver two tugs.
- The UAE is also examining the purchase of ASW systems to refit its existing ships
- Considering a purchase of UK-made Piranha class mini-submarines.
- Has a LEWA-1 program for an ocean capable patrol boat and LEWA-2 for a 90 meter corvette and LEWA-3 for a smaller coastal patrol craft.
 - Has accepted bids for up to six ocean-going fast patrol boats.
 - Vosper Thornycroft is bidding for the six LEWA, ocean capable fast patrol boats, up to six corvettes and the DAS minehunter (Gulf News 16 March 1998)
- Considering the purchase of mine warfare vessels like the Eridan and Sandown class vessels. Also considering purchase of rapid interception craft. Accepting proposals for up to six minehunters and sweepers.
- Asked to buy 24 Harpoon anti-ship missiles and 72 Sea Sparrow anti-aircraft missiles from US in 1997.
- Obtained thirty million dollars worth of naval torpedoes from France's Eurotorp.
- Seeking 100-200 fast interceptor craft of between 15-20 meters in length.
- Has actively investigated ordering C-130s equipped for electronic warfare, ordering E-2C Hawkeyes for the AWACS and maritime surveillance role, and ordering two BN-Defender AEW aircraft.
- UAE has selected the CN-235-220 Maritime Patrol Aircraft (MPA) manufactured by IPTN of Indonesia. Four aircraft have been purchased.
- Bought seven new AS-565SA Panthers and will retrofit five AS-552 Cougar helicopters to upgrade its naval air forces with ASW and improved anti-surface capability. Panthers will be delivered in mid-1998, and will have AS15TT anti-ship). The Cougars will have AM39 Exocet missiles
- France's Eurocopter clinched a \$26 million order to supply two Panther and five Gazelle helicopters.

Force Trends in the UAE - Part One

<u>Category/Weapon</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1999</u>
Manpower						
Total Active	-	25,150	43,000	44,000	70,000	64,500
Regular	-	25,150	43,000	44,000	70,000	64,500
National Guard & Other	-	0	0	0	0	0
Reserve	-	0	0	0	0	0
Paramilitary	-	-	-	-	2,700	2,700
Army and Revolutionary						
Manpower	-	23,500	40,000	40,000	65,000	59,000
Regular Army Manpower	-	23,500	40,000	40,000	65,000	59,000
Reserve	-	-	-	-	-	0
Active Main Battle Tanks	-	6	136	131	133	231
Total Main Battle Tanks*	-	0	136	131	133	231
AIFV/Recce, Lt. Tanks	-	6	173	196	515	558-578
APCs	-	150	360	510	380	570
Self Propelled Artillery	-	10	12	20	90	175
Towed Artillery	-	22	50	77	82	46
MRLs	-	0	0	58	48	42-66
Mortars	-	-	-	101	101	135
SSM Launchers	-	-	-	-	6	6
Light SAM Launchers	-	-	-	-	36	100
AA Guns	-	-	-	60	62	62
Air Force Manpower	-	750	1,500	2,500	3,500	4,000
Air Defense Manpower	-	0	0	0	0	0
Total Combat Aircraft	-	52	42	100	97	99
Bombers	-	0	0	0	0	0
Fighter/Attack	-	9	3	29	41	43
Fighter/Interceptor	-	32	29	34	22	22
Recce/FGA Recce	-	0	0	11	8	8
AEW C4I/BM	-	0	0	0	0	0
MR/MPA**	-	0	0	0	0	0
OCU/COIN/CCT	-	11	10	26	15	26
Other Combat Trainers	-	0	5	6	35	-
Transport Aircraft****	-	16	26	8?	20	22
Tanker Aircraft	-	0	0	0	0	0
Total Helicopters	-	29	47	55	84	97
Armed Helicopters*****	-	-	7	19	42	49
Other Helicopters*****	-	29	40	36	42	47
Major SAM Launchers	-	-	(?)	(30)	30	36
Light SAM Launchers	-	-	-	24	36	31
AA Guns	-	-	-	-	-	-

Force Trends in the UAE - Part Two

<u>Category/Weapon</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1999</u>
Total Naval Manpower	-	900	1,500	1,500	1,500	1,500
Major Surface Combatants						
Missile	-	0	0	2	3	4
Other	-	0	0	0	0	0
Patrol Craft						
Missile	-	0	6	6	8	8
Other	-	12	9	9	9	9
Submarines	-	0	0	0	0	0
Mine Vessels	-	0	0	0	0	0
Amphibious Ships	-	0	0	0	0	0
Landing Craft	-	0	-	2	4	5
Marines	-	0	0	0	0	0
Naval Guards	-	0	0	0	0	0
Naval Air	-	0	0	0	0	0
Naval Aircraft						
Fixed Wing Combat	-	0	0	0	0	0
MR/MPA	-	0	0	0	0	0
Armed Helicopters/SAR	-	0	0	0	4	(5)
SAR Helicopters	-	0	0	0	0	(6)
Other Helicopters	-	-	-	-	-	-

Note: Equipment in storage shown as higher figure in range. Air Force totals include all helicopters, and all heavy surface to air missile launchers.

* Iranian total includes roughly 100,000 Revolutionary Guard actives in land forces and 20,000 in naval forces.

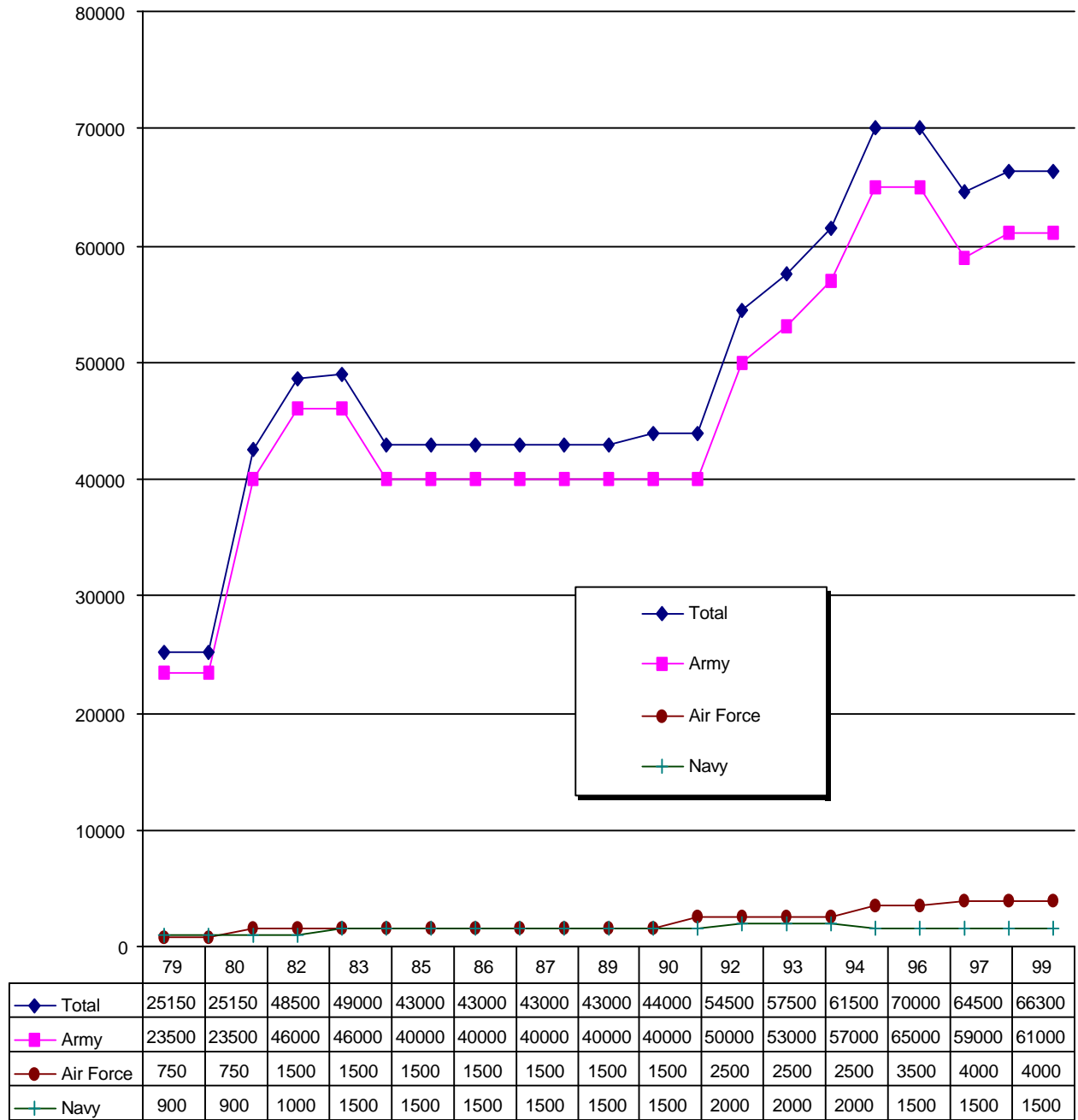
** Saudi Totals include 60,000 reserves are National Guard Tribal Levies. The total for land forces includes active National Guard equipment. These additions total 262 AIFVs, 1,165 APCs, and 70 towed artillery weapons.

*** Total tanks include tanks in storage or conversion.

**** Includes navy, army, National Guard, and royal flights, but not paramilitary.

Adapted by Anthony H. Cordesman from interviews, International Institute for Strategic Studies, Military Balance (IISS, London); various data available from Jane's, Military Technology, World Defense Almanac; and Jaffee Center for Strategic Studies, The Military Balance in the Middle East (JCSS, Tel Aviv)

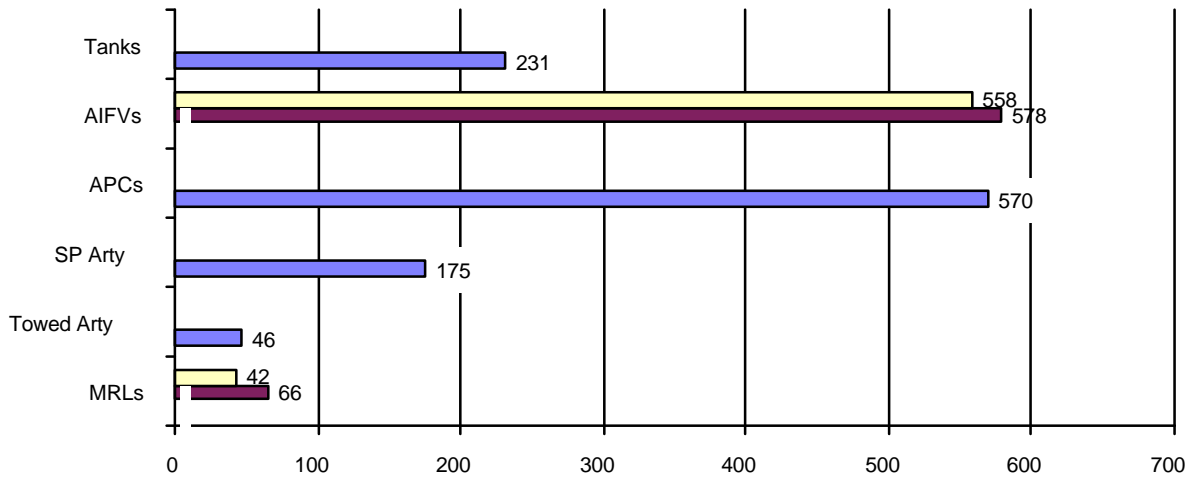
UAE: Military Manning: 1979-1999



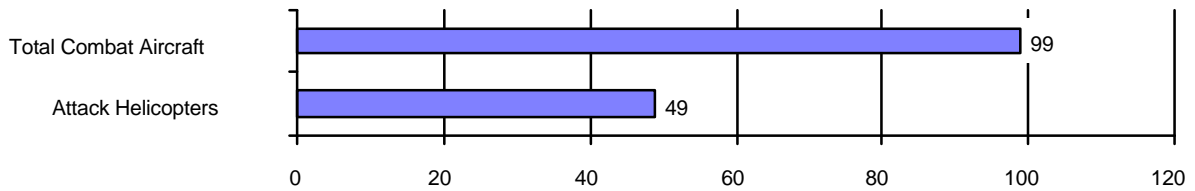
Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

UAE Major Military Equipment in 1999

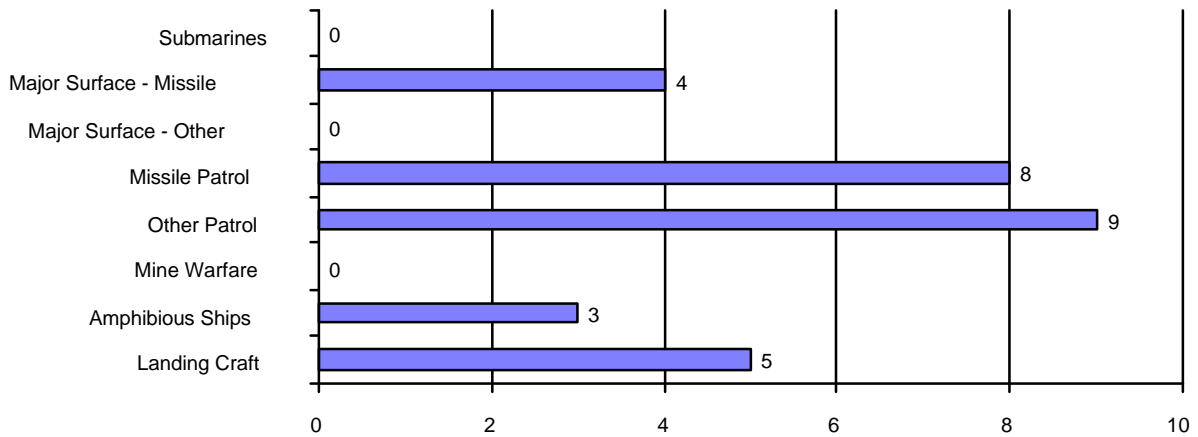
Land Forces



Air Forces

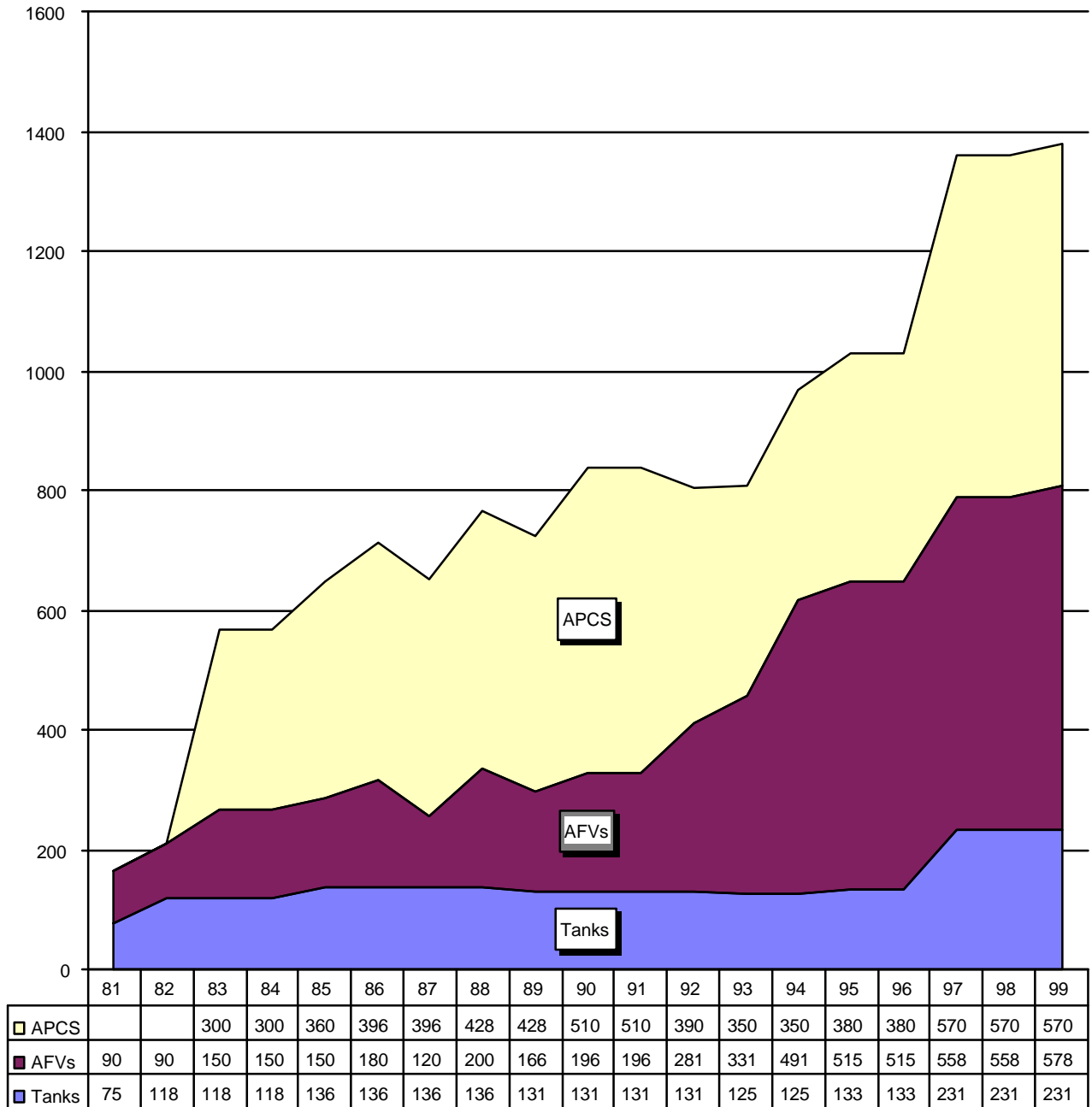


Naval Forces



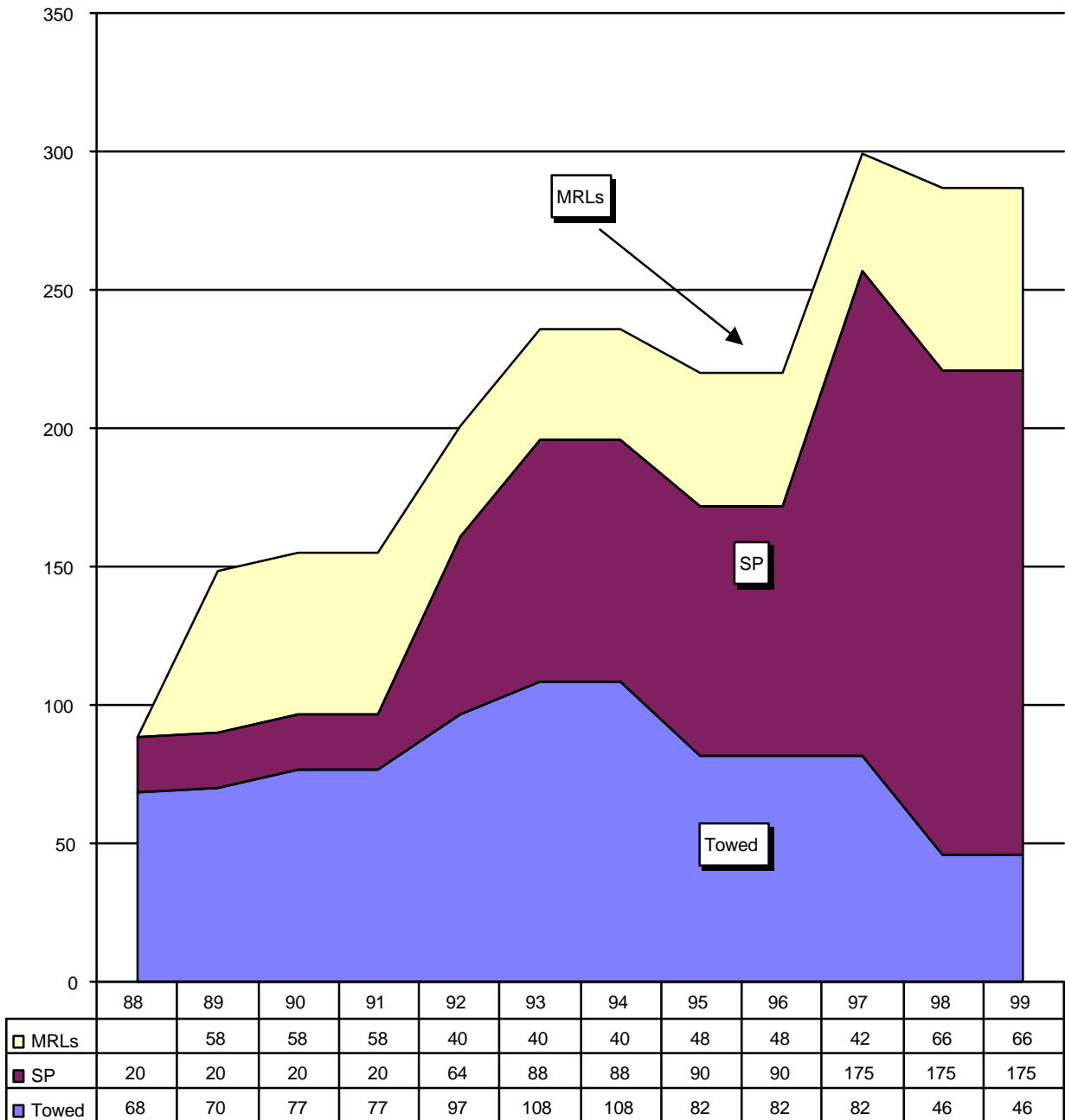
Source: Adapted by Anthony H. Cordesman from data provided by US experts, and the IISS, [Military Balance](#)

UAE: Armored Weapons Strength: 1979-1999



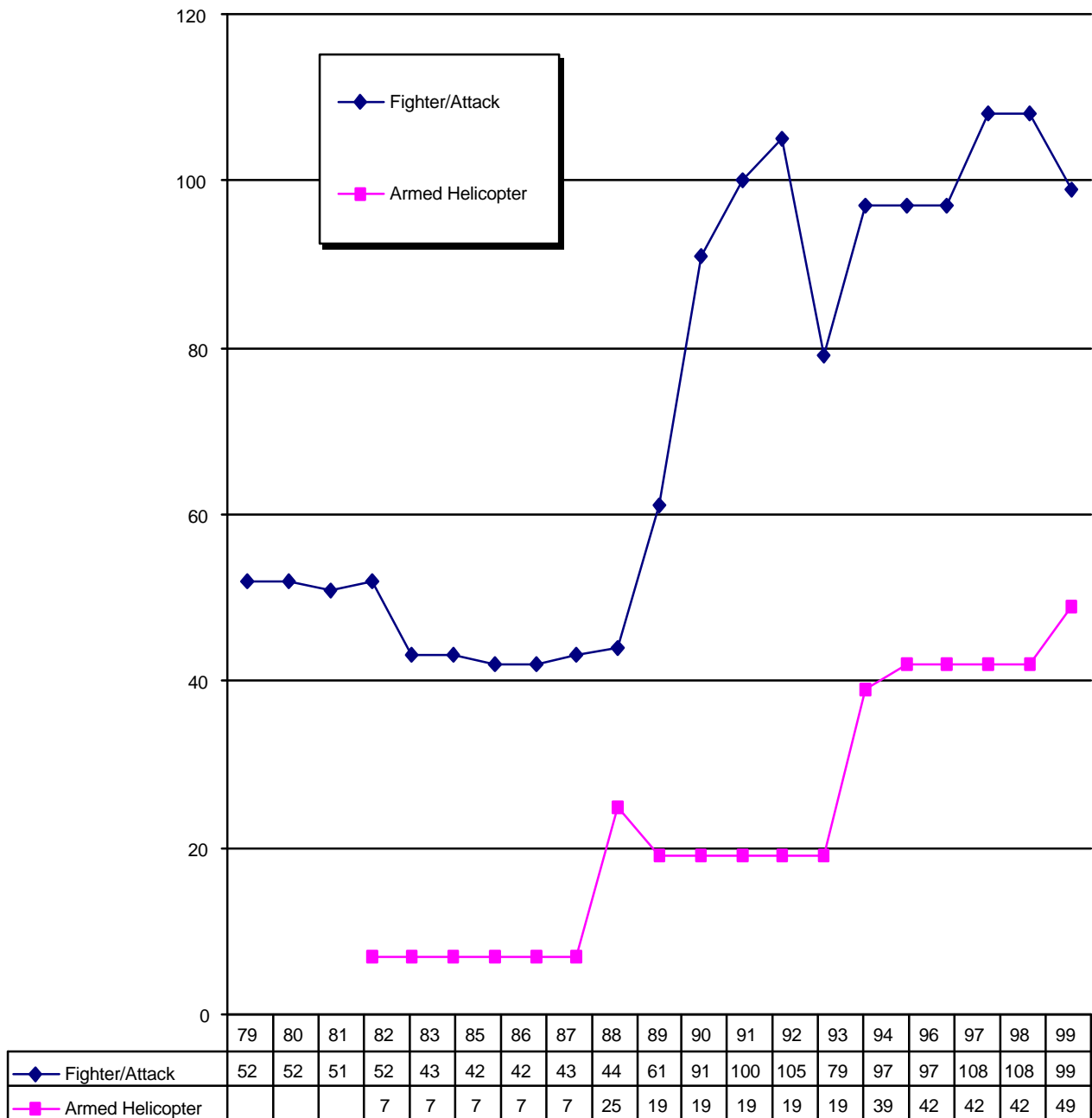
Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

UAE: Artillery Weapons Strength: 1979-1999



Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

UAE: Fixed Wing and Rotary Wing Combat Air Strength: 1979-1999



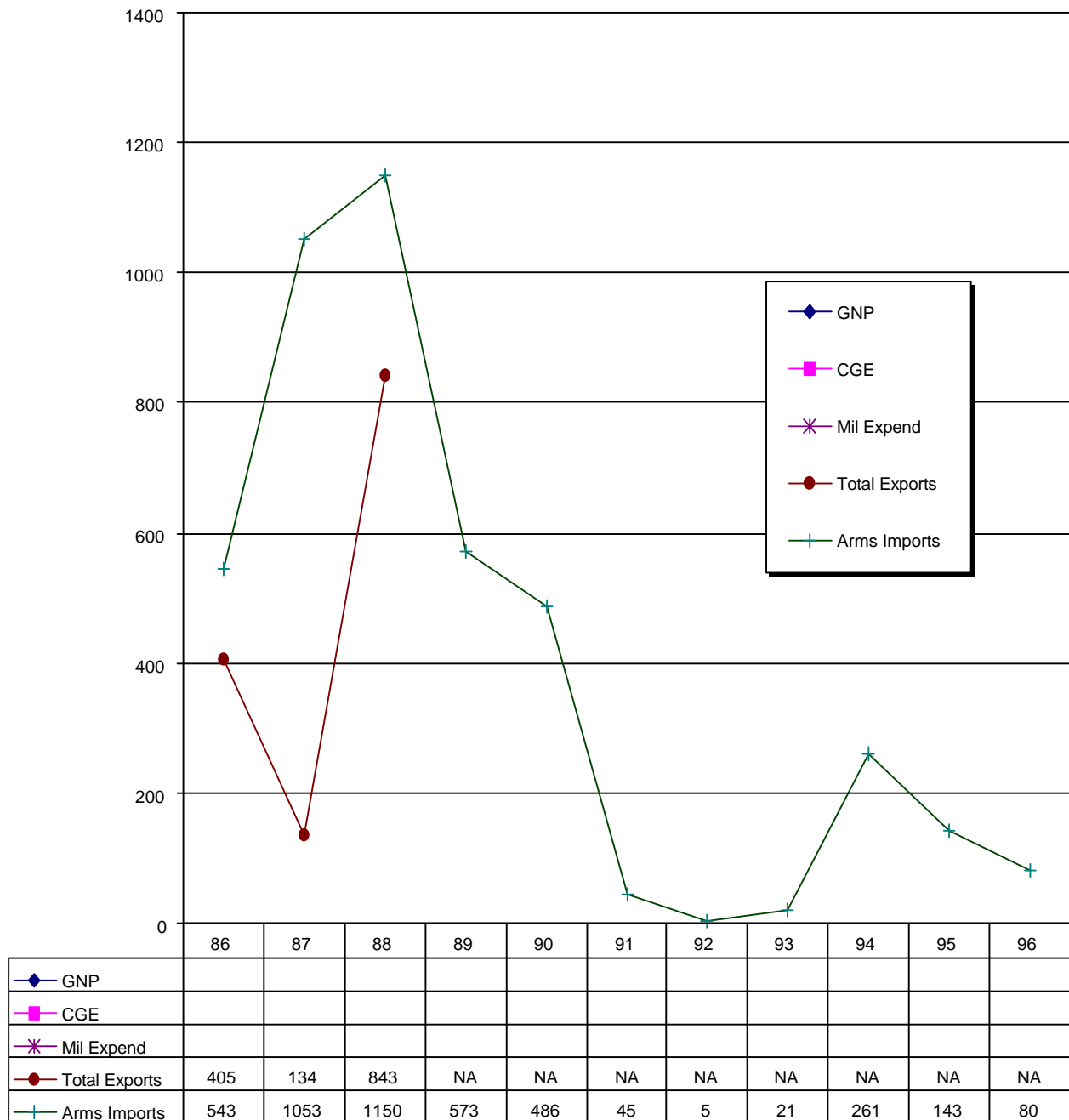
Source: Adapted by Anthony H. Cordesman from various editions of the IISS, Military Balance, the JCSS, Military Balance in the Middle East, and material provided by US experts.

Part Three

Yemeni Military Forces

Yemen Gross National Product, Central Government Expenditures, Military Expenditures, Total Exports, and Arms Import Deliveries: 1986-1996

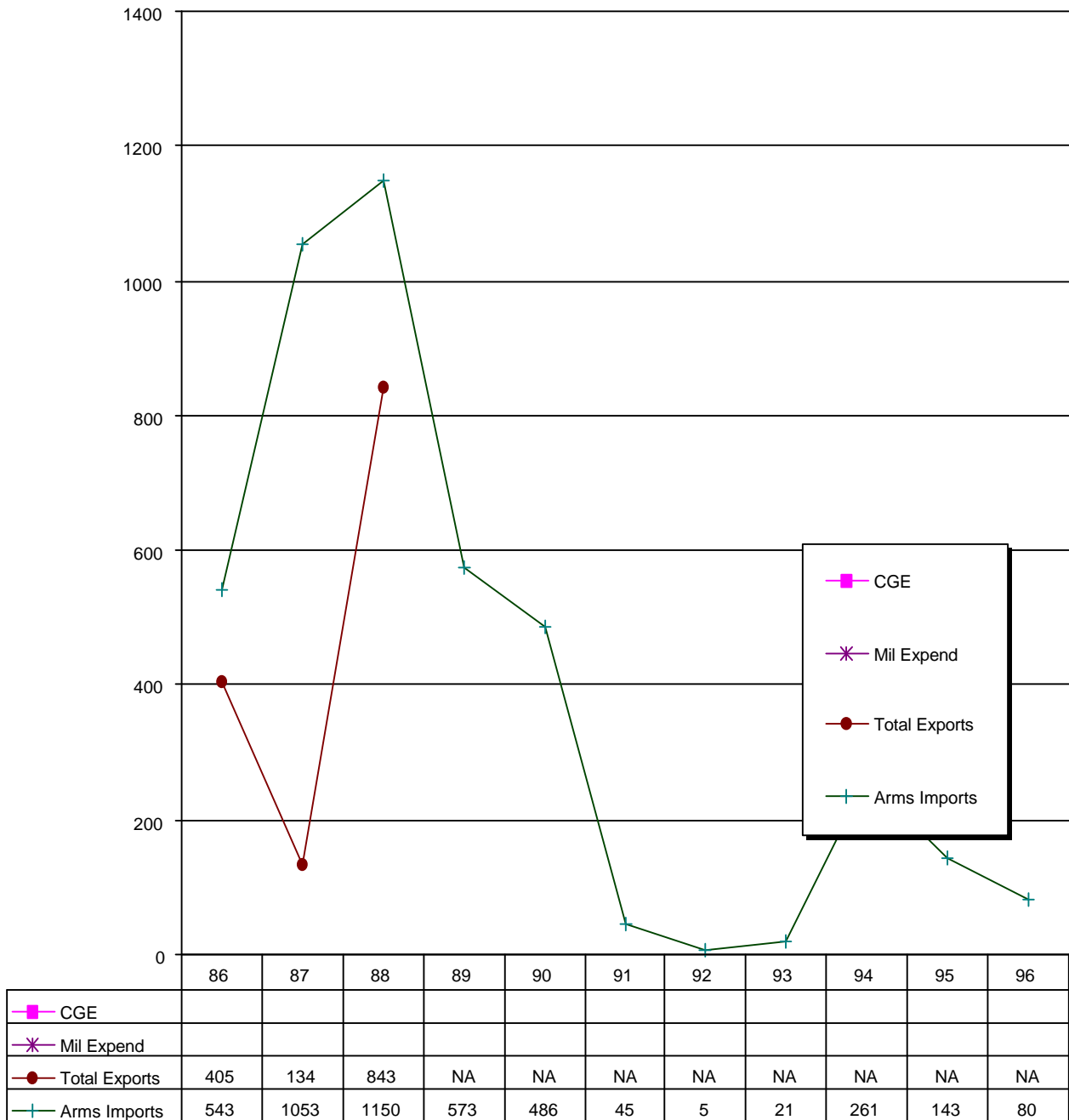
(Constant \$96 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

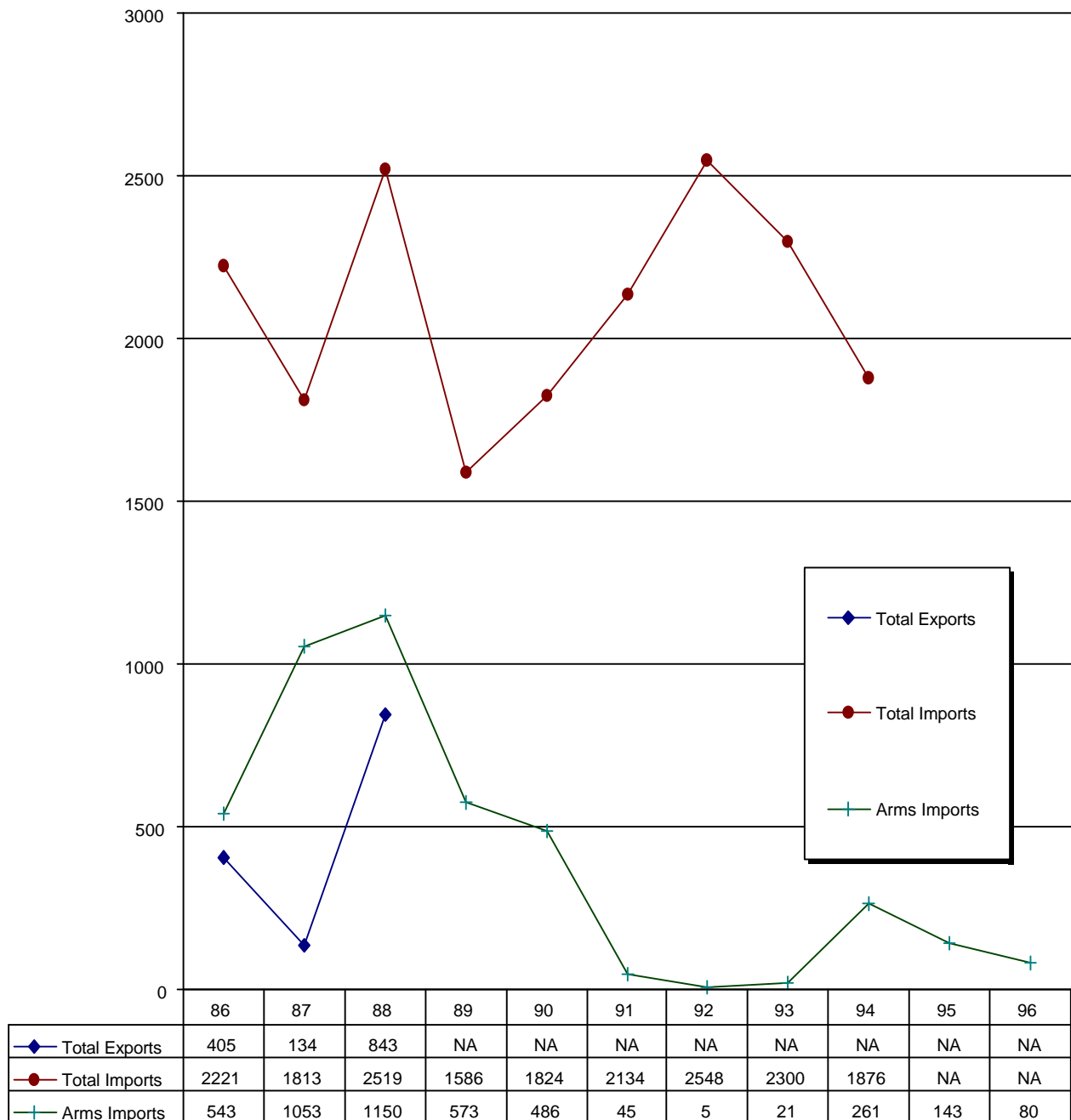
Yemen Central Government Expenditures, Military Expenditures, Total Exports, and Arms Import Deliveries: 1986-1995

(Constant \$96 millions)



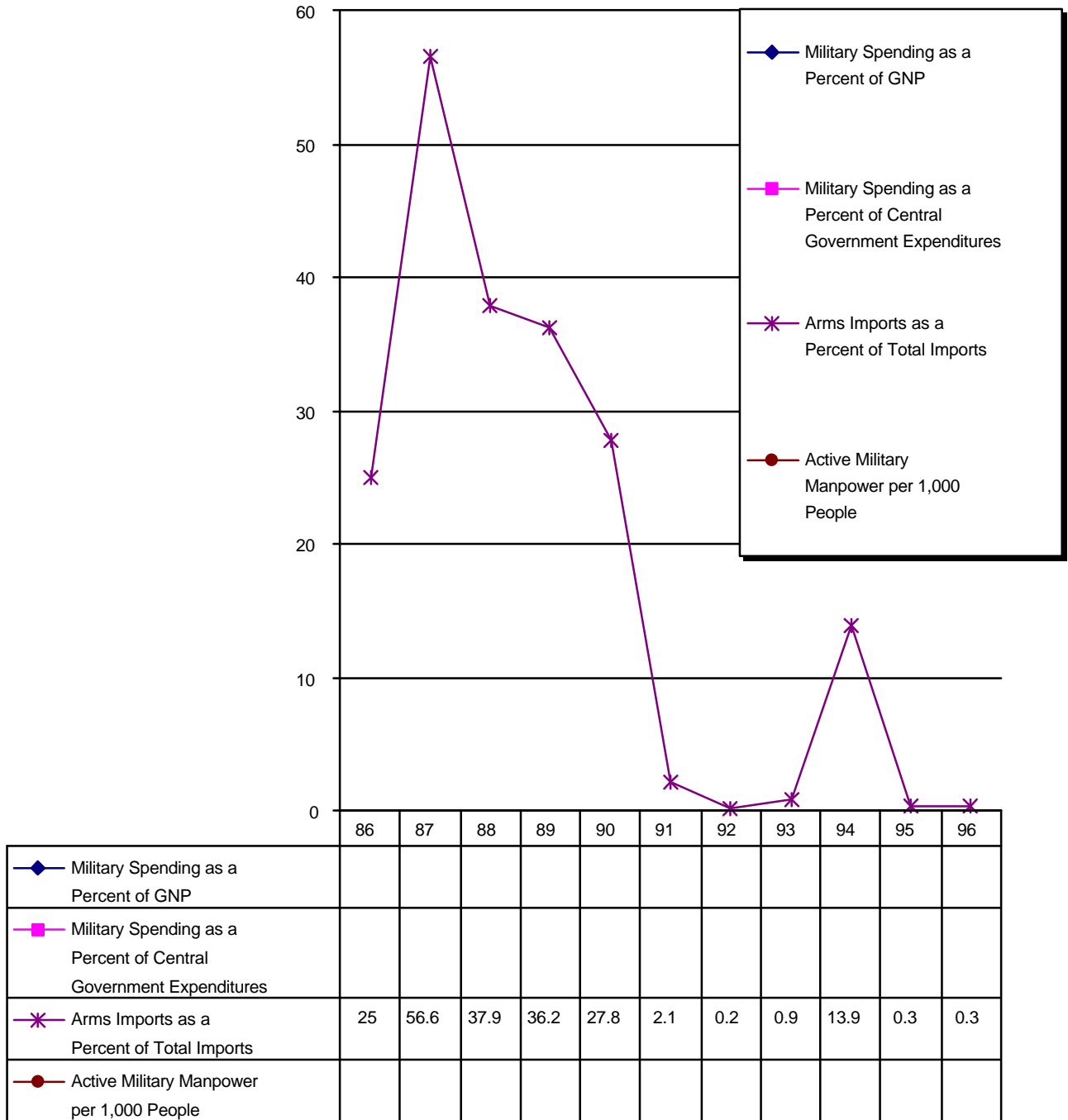
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Yemen Total Exports, and Arms Import Deliveries: 1986-1996 (Constant \$96 millions)



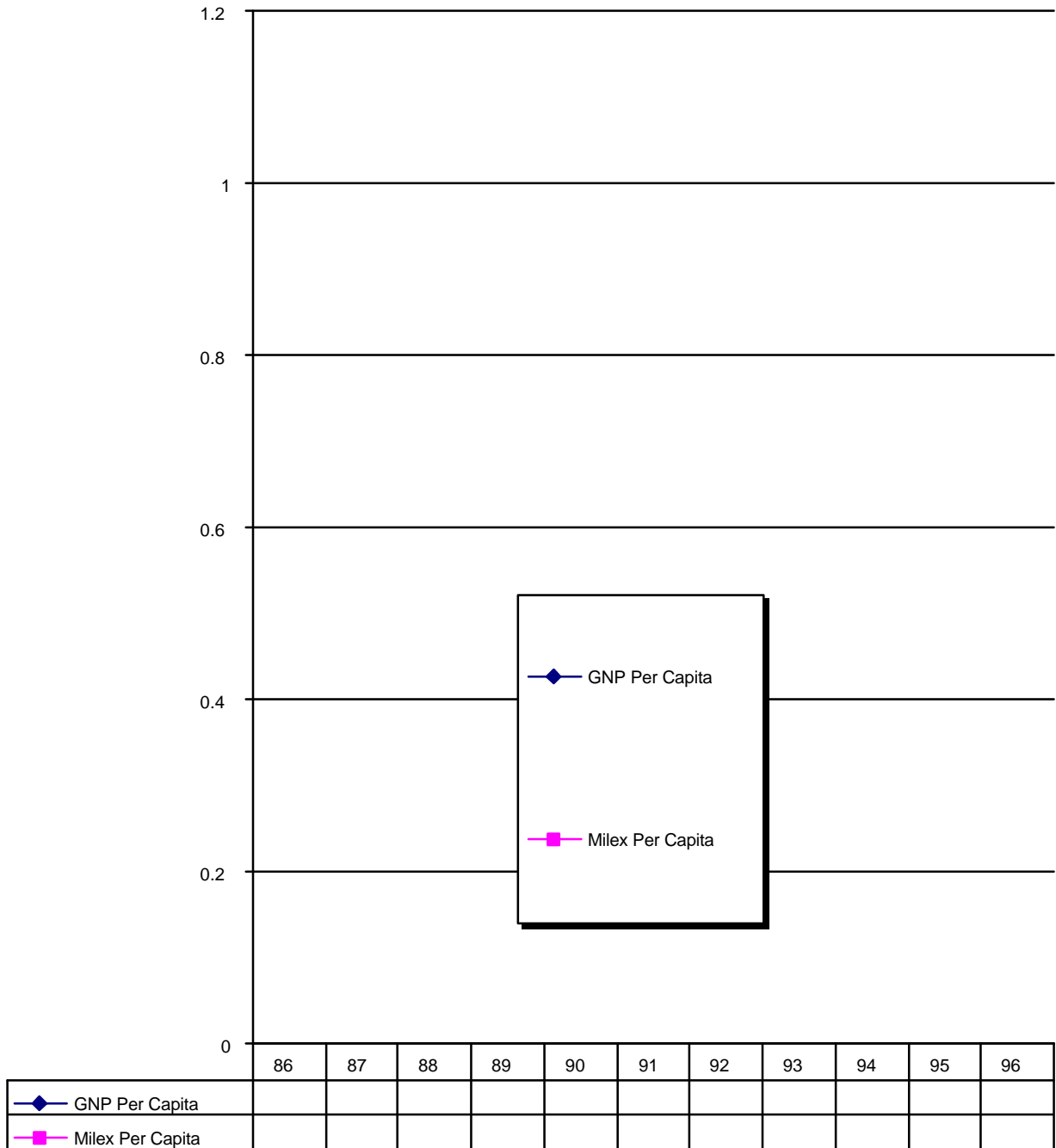
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Yemen Military Efforts as a Percent of GNP, Government Expenditures, Imports and Total Population: 1986-1996



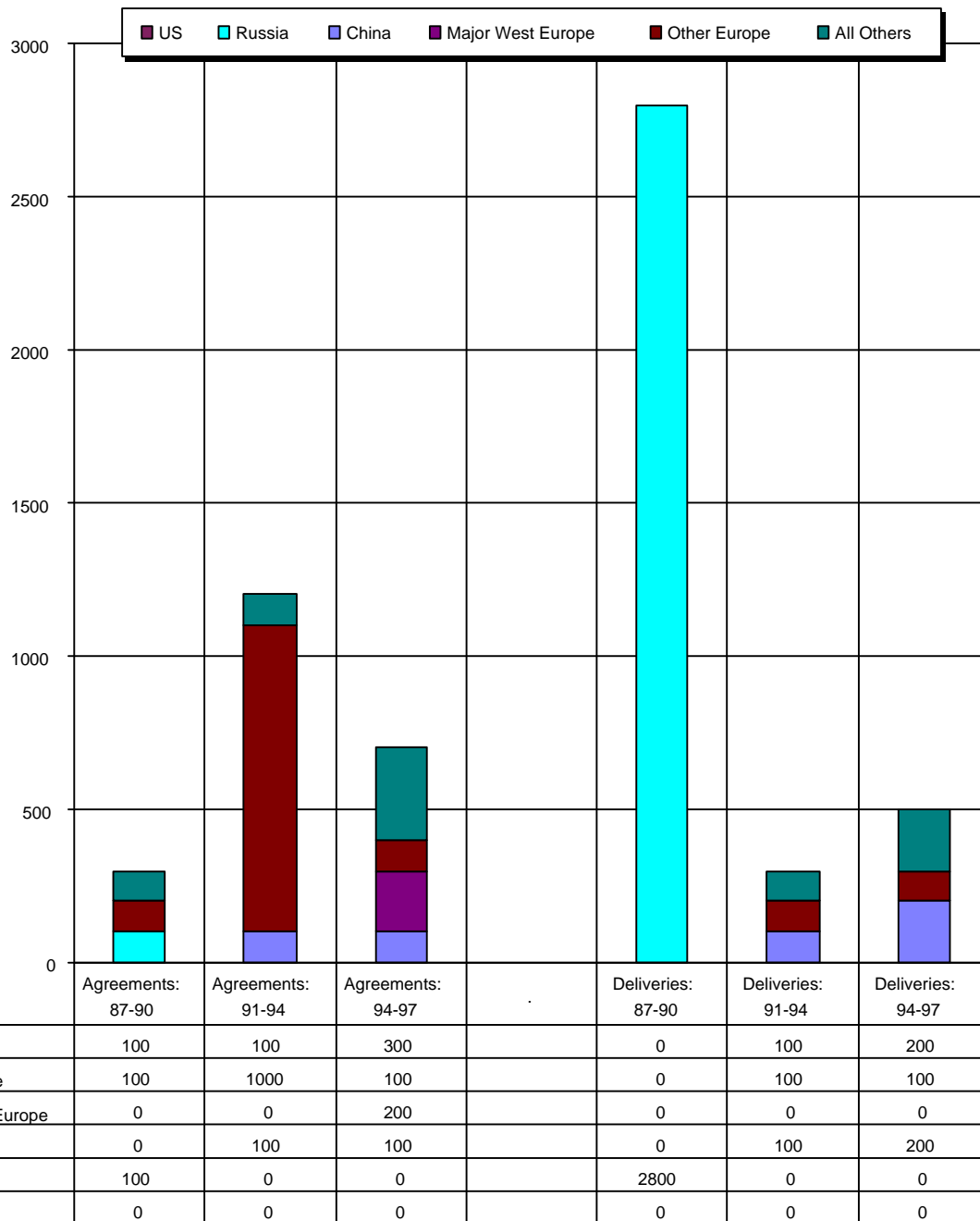
Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Yemen: GNP Per Capita versus Military Expenditures Per Capita (Constant \$US 96)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, ACDA/GPO, Washington, Tables I & II, various editions.

Yemeni Arms Agreements and Deliveries by Major Supplier: 1987-1997 (\$US Current Millions)

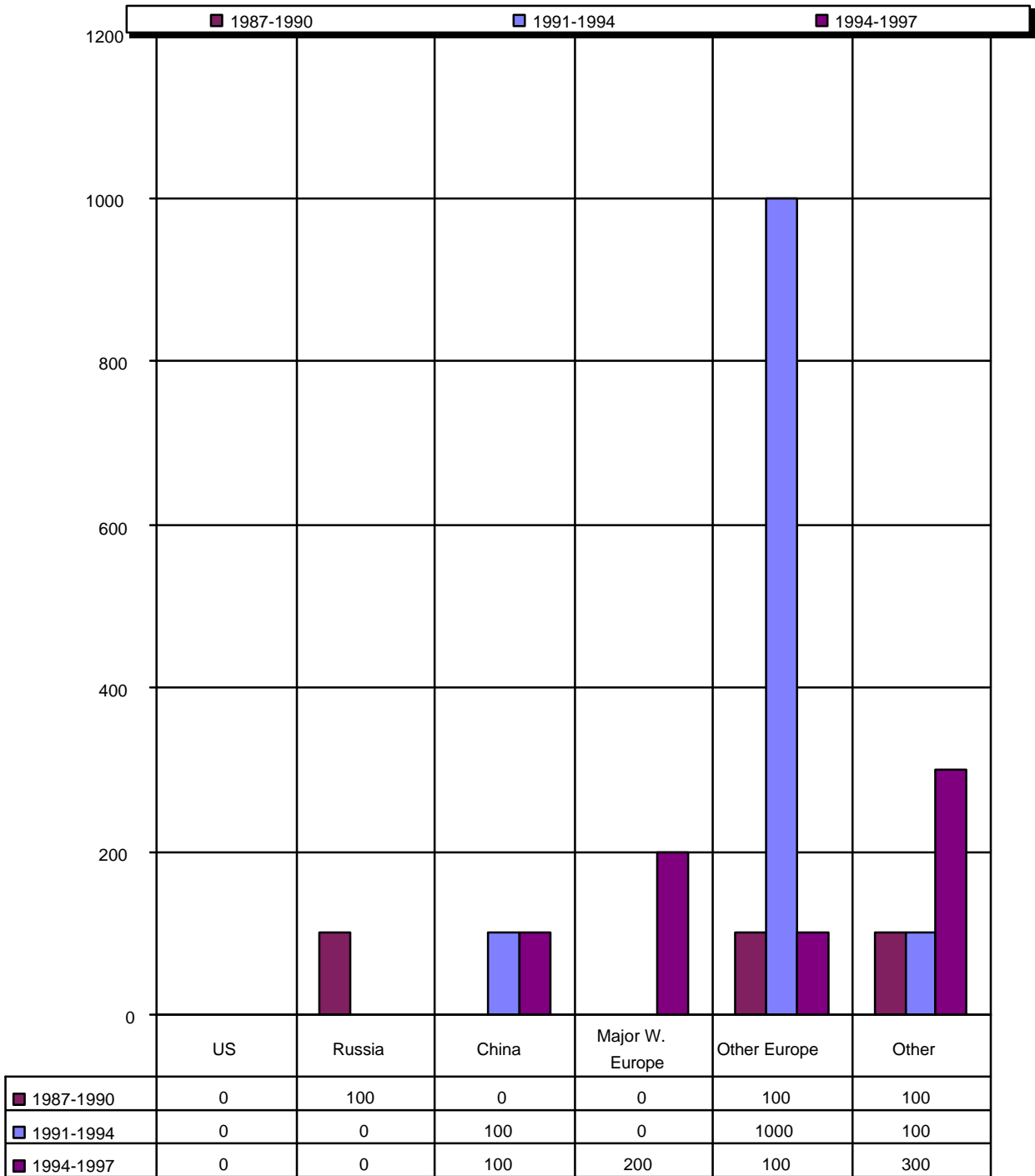


Includes Gulf states, Arab-Israeli states, North Africa, and Yemen
0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

Source: Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Trend in Supplier's Share of the Yemeni Arms Market Before and After the Gulf War

(New Arms Sales Agreements in \$US Current Millions)



0 = less than \$50 million or nil, and all data rounded to the nearest \$100 million.

Source: Adapted by Anthony H. Cordesman from Richard F. Grimmett, Conventional Arms Transfers to the Developing Nations, Congressional Research Service, various editions.

Force Trends in Yemen – Part One

(The Yemen Arab Republic and People's Democratic Republic of Yemen were unified on May 22, 1990)

Category/Weapon	1975	1980	1985	1990	1995	1998	1999
Manpower							
Total Active	-	-	-	65,000	39,500	66,300	66,300
Regular	-	-	-	65,000	39,500	66,300	66,300
National Guard & Other	-	-	-	0	0	0	0
Reserve	-	-	-	40,000	40,000	40,000	40,000
Paramilitary	-	-	-	40,000	30,000	80,000	80,000
Army and Revolutionary							
Manpower	-	-	-	60,000	37,000	61,000	61,000
Regular Army Manpower	-	-	-	60,000	37,000	61,000	61,000
Reserve	-	-	-	-	40,000	40,000	40,000
Active Main Battle Tanks	-	-	-	1,275	1,125	1,125	1,030
Total Main Battle Tanks*	-	-	-	1,275	1,125	1,125	1,320
AIFV/Recce, Lt. Tanks	-	-	-	635	580	620	650
APCs	-	-	-	670	560	560	540
Self Propelled Artillery	-	-	-	90	30	36	36
Towed Artillery	-	-	-	547	483	512-548	452
MRLs	-	-	-	405	220	220	220
Mortars	-	-	-	460?	800	500	600
SSM Launchers	-	-	-	35	30	18	30
Light SAM Launchers	-	-	-	-	700	700	700
AA Guns	-	-	-	592	372	362	362
Air Force Manpower	-	-	-	2,000	1,000	3,500	3,500
Air Defense Manpower	-	-	-	0	0	0	0
Total Combat Aircraft	-	-	-	101	69	69	49-89
Bombers	-	-	-	0	0	0	0
Fighter/Attack	-	-	-	48	27	27	27
Fighter/Interceptor	-	-	-	47	30	28	16
Recce/FGA Recce	-	-	-	0	0	0	0
AEW C4I/BM	-	-	-	0	0	0	0
MR/MPA**	-	-	-	0	0	0	0
OCU/COIN/CCT	-	-	-	6	0	0	0
Other Combat Trainers	-	-	-	-	12	6	0
Transport Aircraft**	-	-	-	28	19	20	16
Tanker Aircraft	-	-	-	0	0	0	0
Total Helicopters	-	-	-	67	29	22	25
Armed Helicopters**	-	-	-	20	8	6	8
Other Helicopters**	-	-	-	47	21	16	17
Major SAM Launchers	-	-	-	87	87	87	87
Light SAM Launchers	-	-	-	-	-	200	200
AA Guns	-	-	-	-	-	-	-

Force Trends in Yemen - Part Two

<u>Category/Weapon</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>1998</u>	<u>1999</u>
Total Naval Manpower	-	-	-	3,000	1,500	1,800	1,800
Major Surface Combatants							
Missile	-	-	-	2	0	0	0
Other	-	-	-	0	0	0	0
Patrol Craft							
Missile	-	-	-	6	7	7	7
Other	-	-	-	19	3	7	8
Submarines	-	-	-	0	0	0	0
Mine Vessels	-	-	-	6	3	5	
Amphibious Ships	-	-	-	2-3	2	2	3
Landing Craft	-	-	-	2	2	1	-
Marines	0	0	0	0	0	0	0
Naval Guards	0	0	0	0	0	0	0
Naval Air	0	0	0	0	0	0	0
Naval Aircraft							
Fixed Wing Combat	0	0	0	0	0	0	0
MR/MPA	0	0	0	0	0	0	0
Armed Helicopters/SAR	0	0	0	0	0	0	0
Other Helicopters	-	-	-	-	-	-	-

Note: Equipment in storage shown as higher figure in range. Air Force totals include all helicopters, and all heavy surface to air missile launchers.

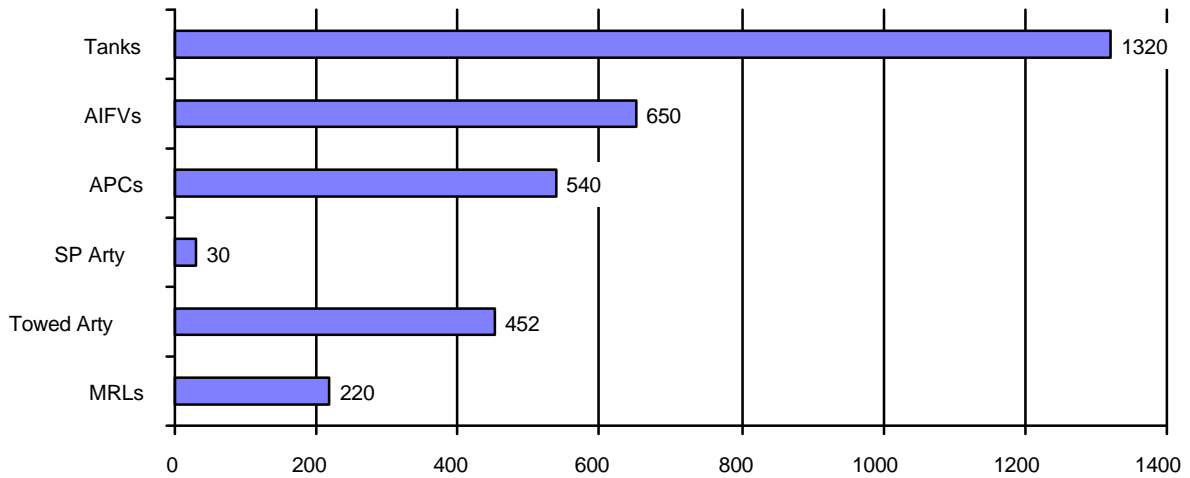
* Total tanks include tanks in storage or conversion.

** Includes navy, army, National Guard, and royal flights, but not paramilitary.

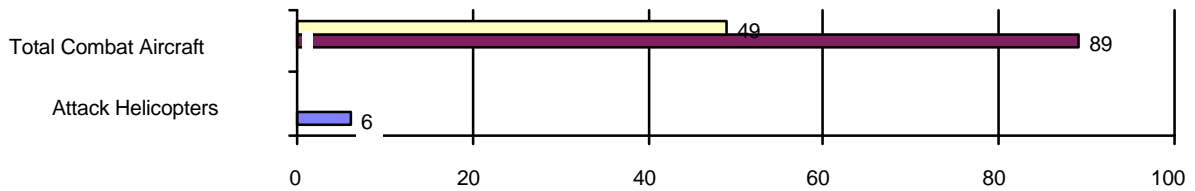
Adapted by Anthony H. Cordesman from interviews, International Institute for Strategic Studies, Military Balance (IISS, London); various data available from Jane's, Military Technology, World Defense Almanac; and Jaffee Center for Strategic Studies, The Military Balance in the Middle East (JCSS, Tel Aviv)

Yemeni Major Military Equipment in 1999

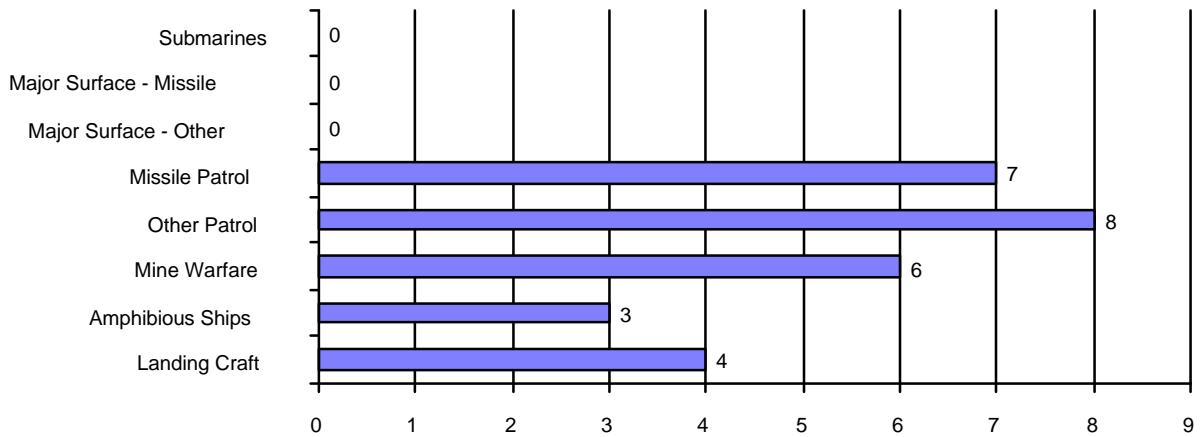
Land Forces



Air Forces



Naval Forces



Source: Adapted by Anthony H. Cordesman from data provided by US experts, and the IISS, [Military Balance](#)

ⁱ Defense News, April 22, 1991, p. 1; September 16, 1991, p. 1; December 9, 1991, p. 1, November 16, 1992, p. 36, April 12, 1993, July 4, 1994; Jane's Defense Weekly, August 7, 1993, p. 28, March 18, 1995, p. 49; Washington Times, February 15, 1993, p. A-9; Armed Forces Journal, June, 1993, p. 50; Washington Post, February 15, 1993, p. A-3; Reuters, February 14, 1993; Financial Times, February 15, 1993.