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# **Western Military Balance and Defense Efforts**

## **A Comparative Summary of Military Expenditures; Manpower; Land, Air, Naval, and Nuclear Forces**

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**With the Assistance of Jennifer K. Moravitz**

# **CSIS**

**January, 2002**

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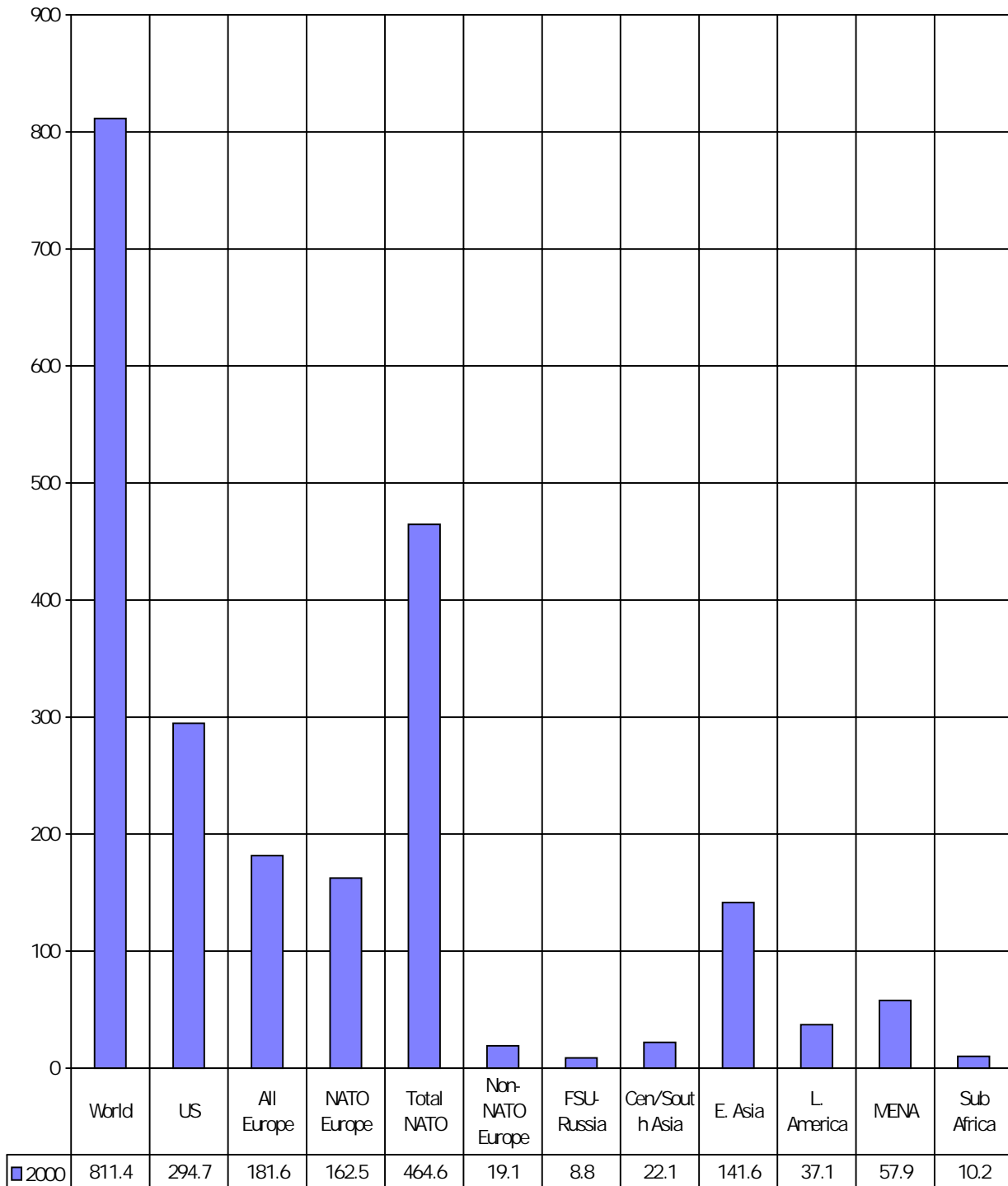
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# Part One

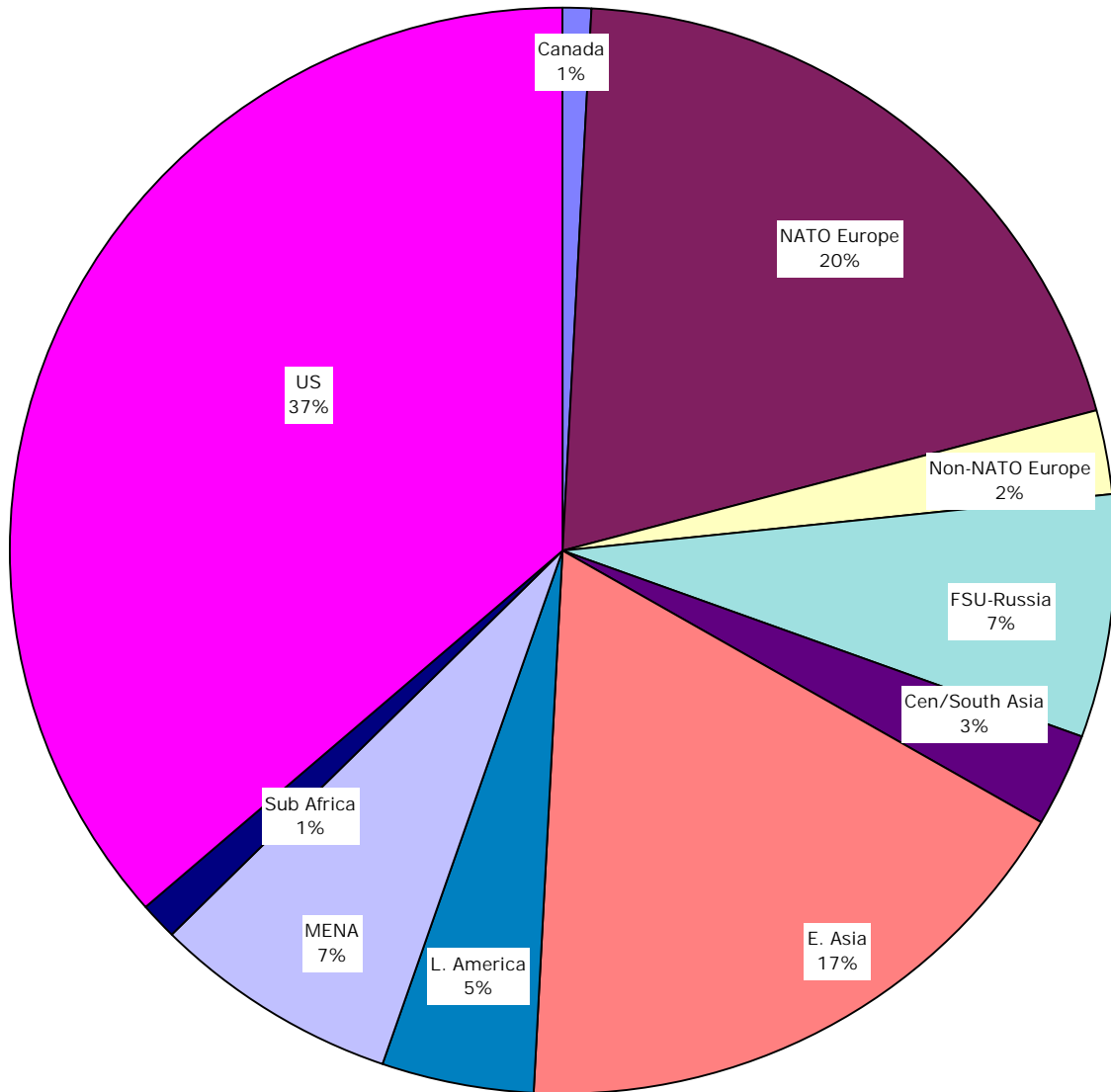
# Military Spending and Manpower

**World Defense Spending: 2000**  
(Spending In \$US Billions)



Source: Adapted by Anthony H. Cordesman from IISS, Military Balance, 2001-2002.

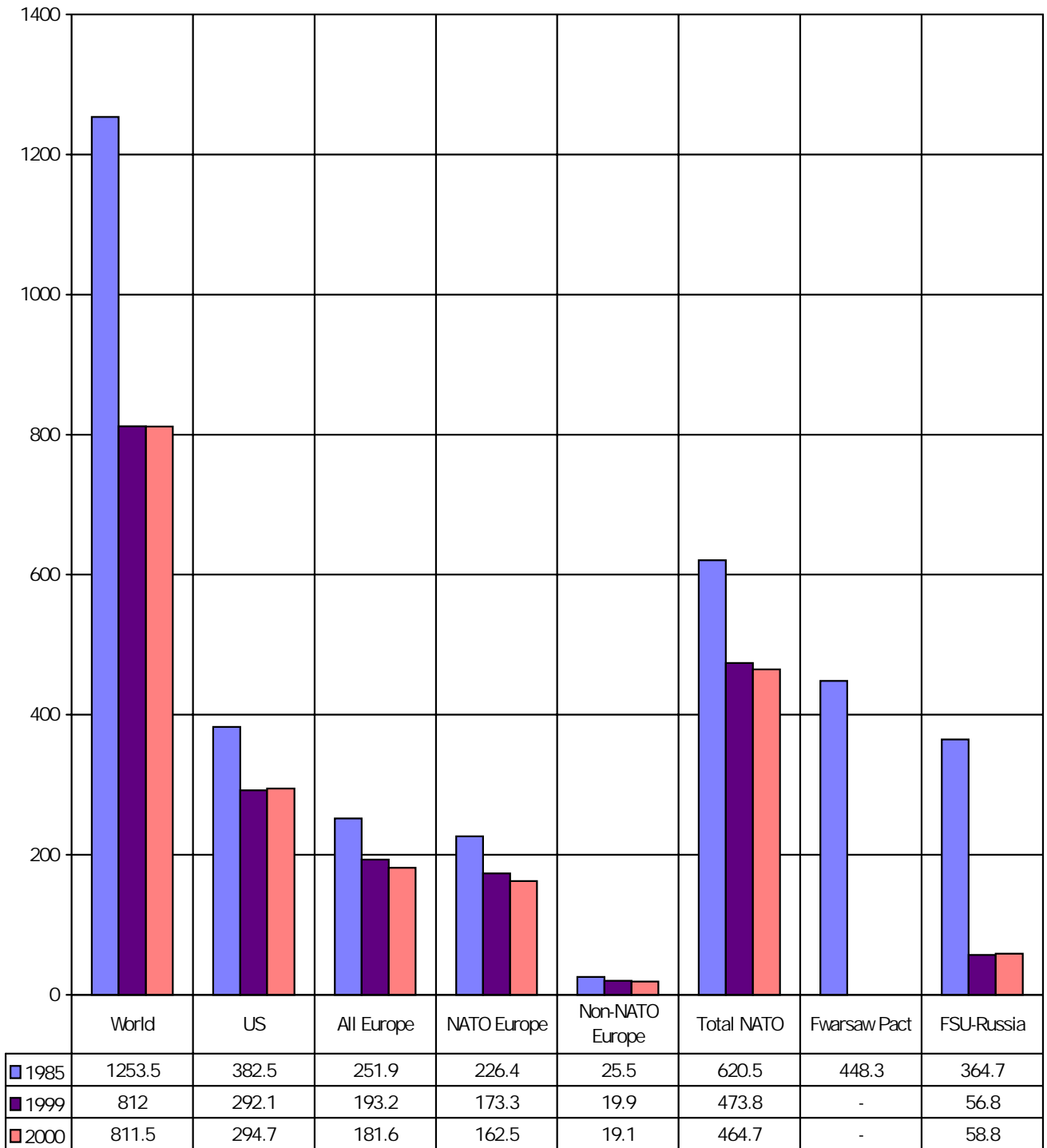
### Percentage of World Defense Spending: 2000 (Spending In \$US Billions)



Source: Adapted by Anthony H. Cordesman from IISS, Military Balance, 2001-2002.

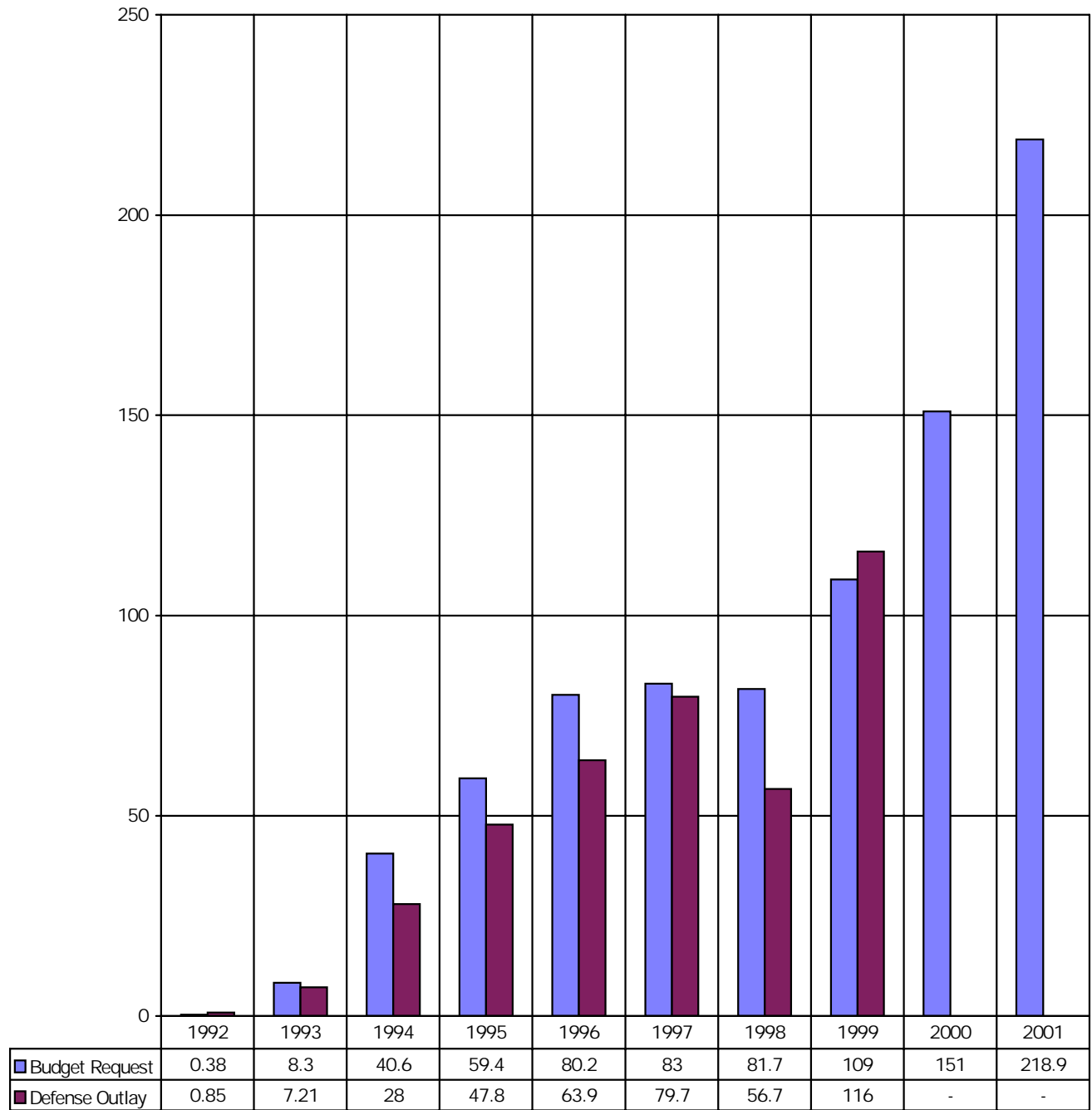


**US Military Spending Compared to Total NATO, Europe, the Former Warsaw Pact, and Russia: 1985-2000**  
(Spending In \$US Billions)



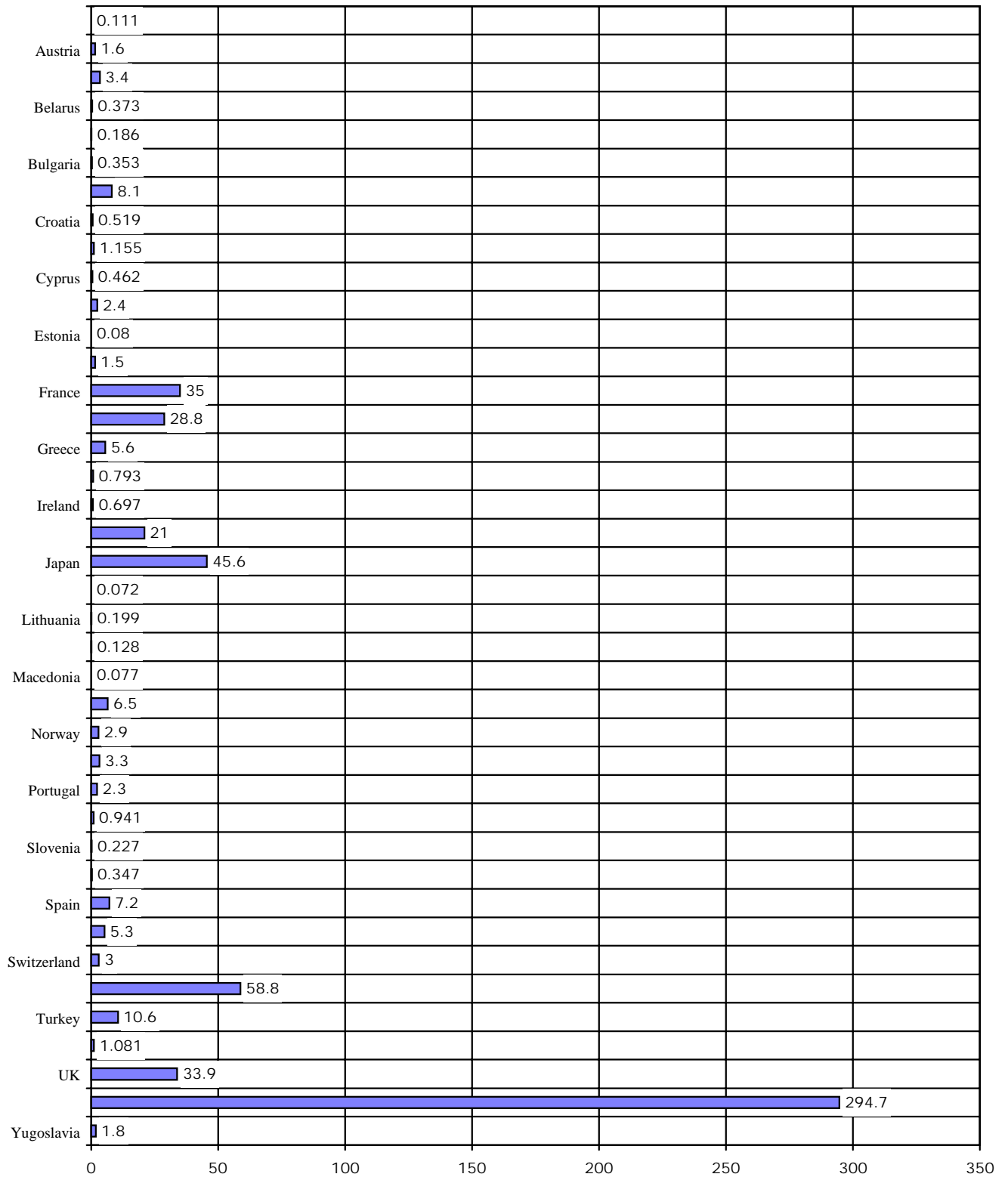
Source: Adapted by Anthony H. Cordesman ACDA, World Military Expenditures and Arms Transfers, 1996, Washington, GPO, 1997 and IISS, Military Balance, 2001-2002.

**Russian Defense Spending: A Russian View: 1992-2001**  
(Spending In Billions of Rubles)



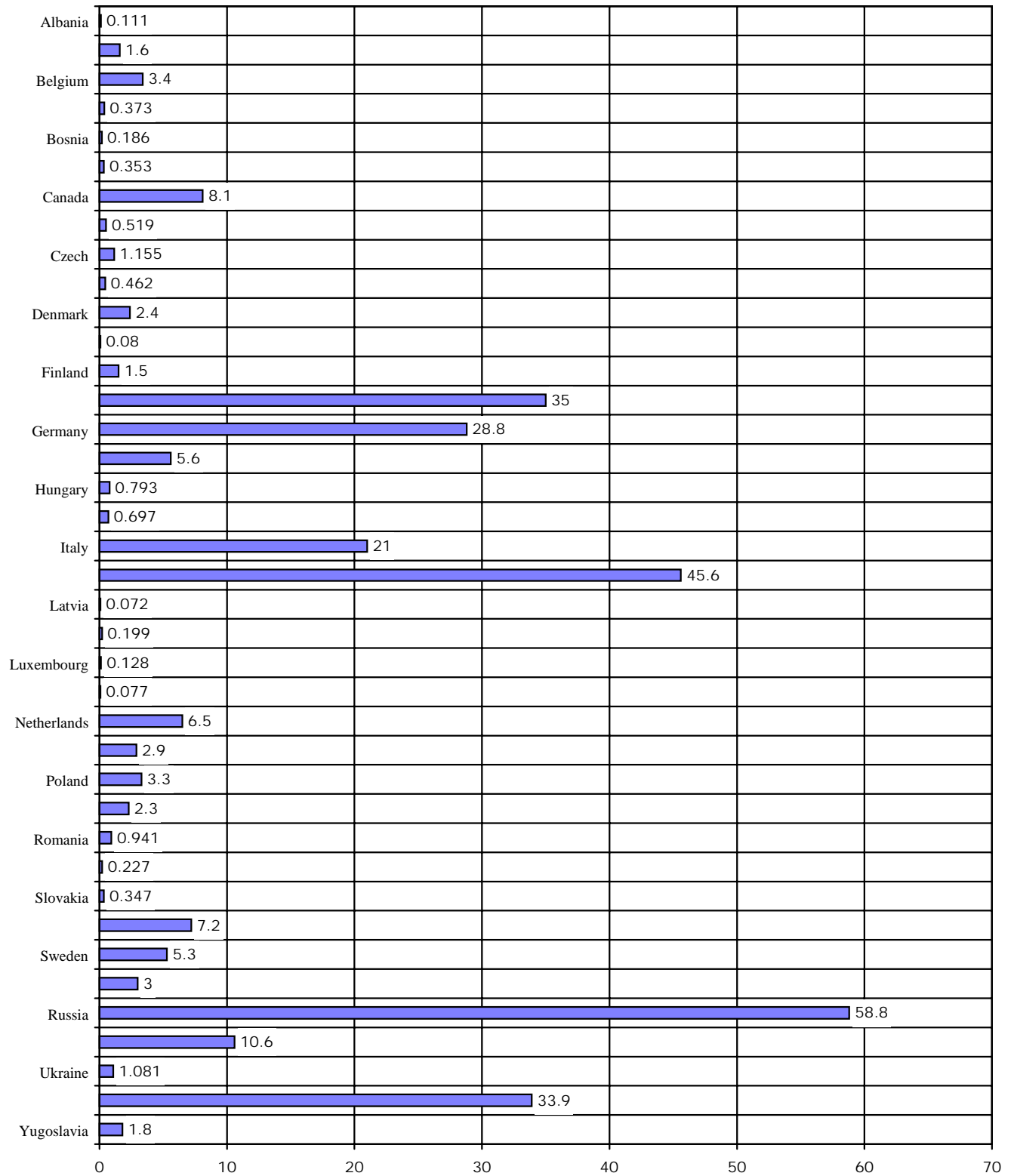
Source: Adapted by Anthony H. Cordesman from material provided by Sergei Rogov and IISS, Military Balance, 2001-2002.

### Western Defense Spending (2000 Spending In \$US Current Millions)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

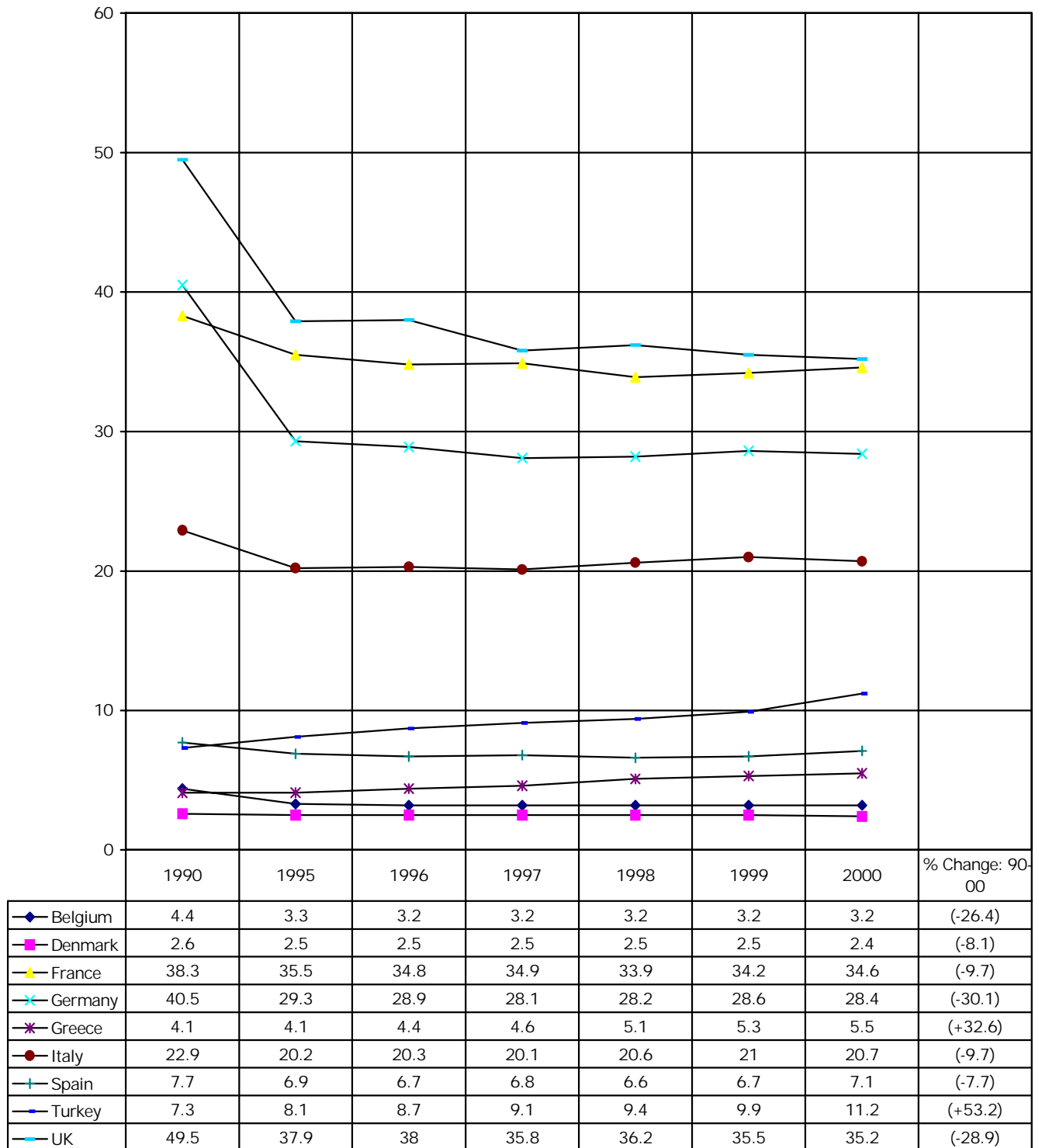
### Western Defense Spending Less US (2000 Spending In \$US Current Billions)



Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

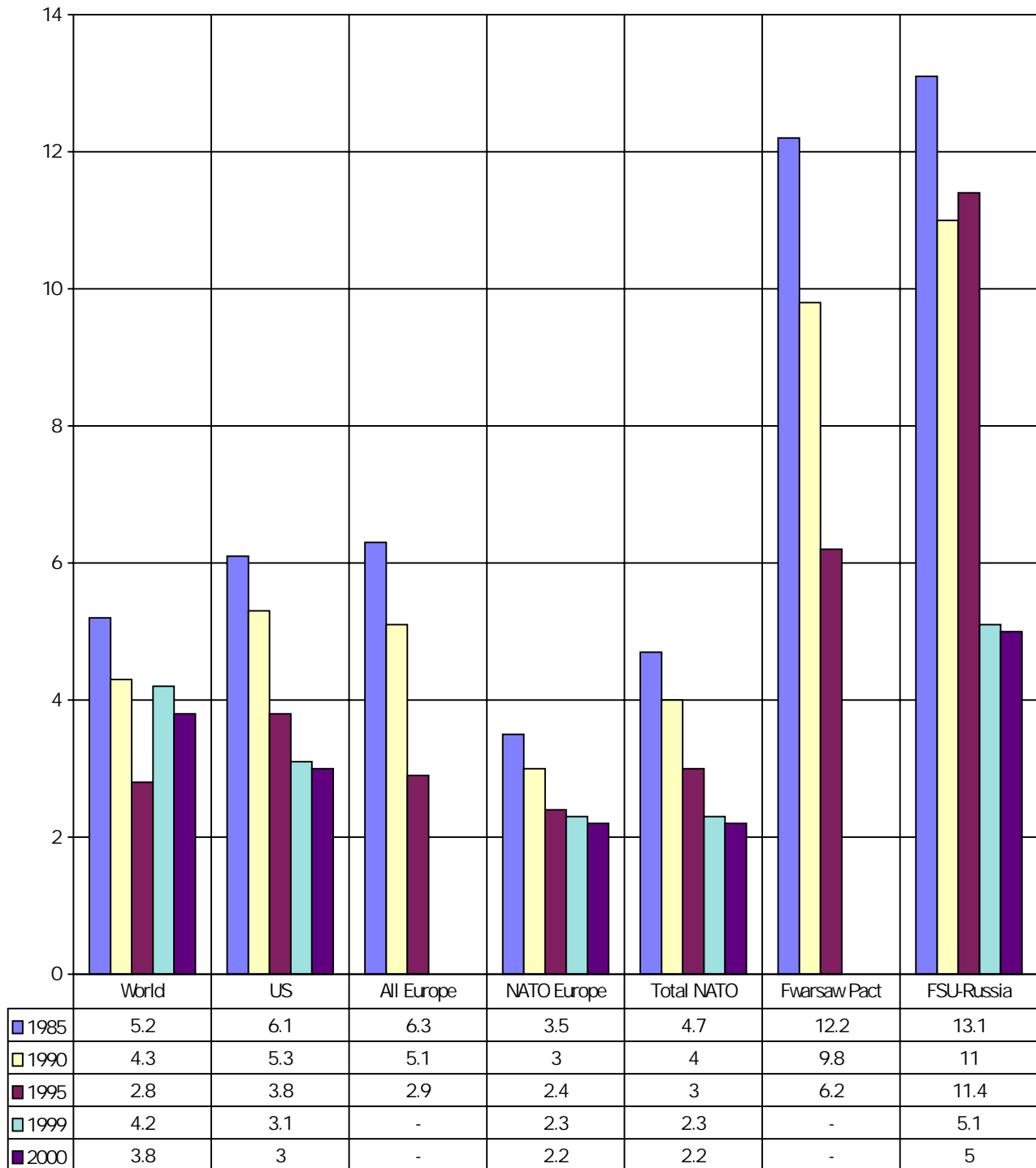
### Trends in Defense Spending of Selected European Powers: 1990-2000

(Spending In \$US Constant 2000 Billions at 2000 Exchange Rates)



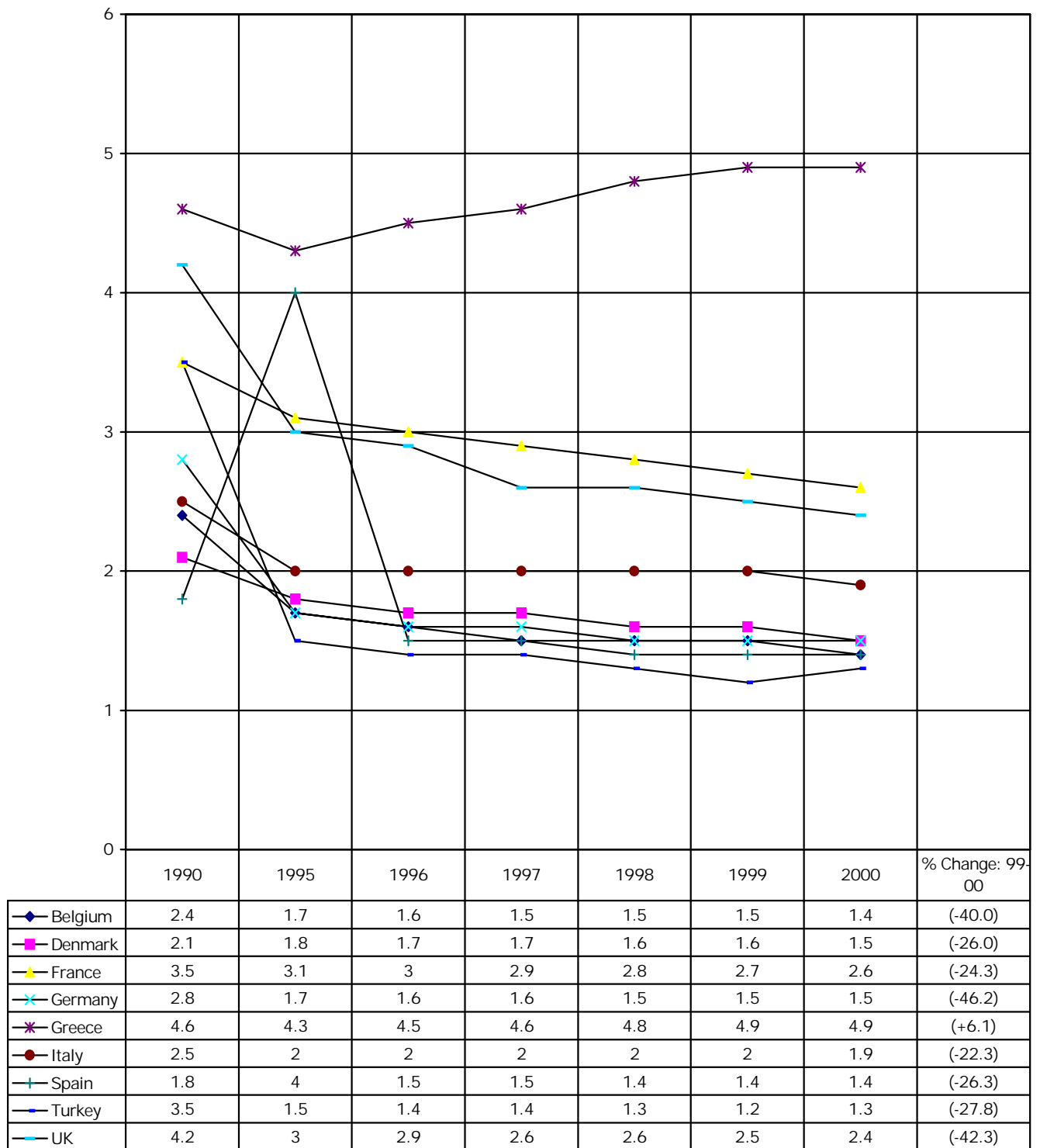
Source: Adapted by Anthony H. Cordesman from *Allied Contributions to the Common Defense: A Report to Congress* by the Secretary of Defense, March 2001, Table E-4.

**US Military Spending as a Percent of GNP Compared to Total NATO, Europe, the Former Warsaw Pact, and Russia: 1985-2000**  
(In Percent)



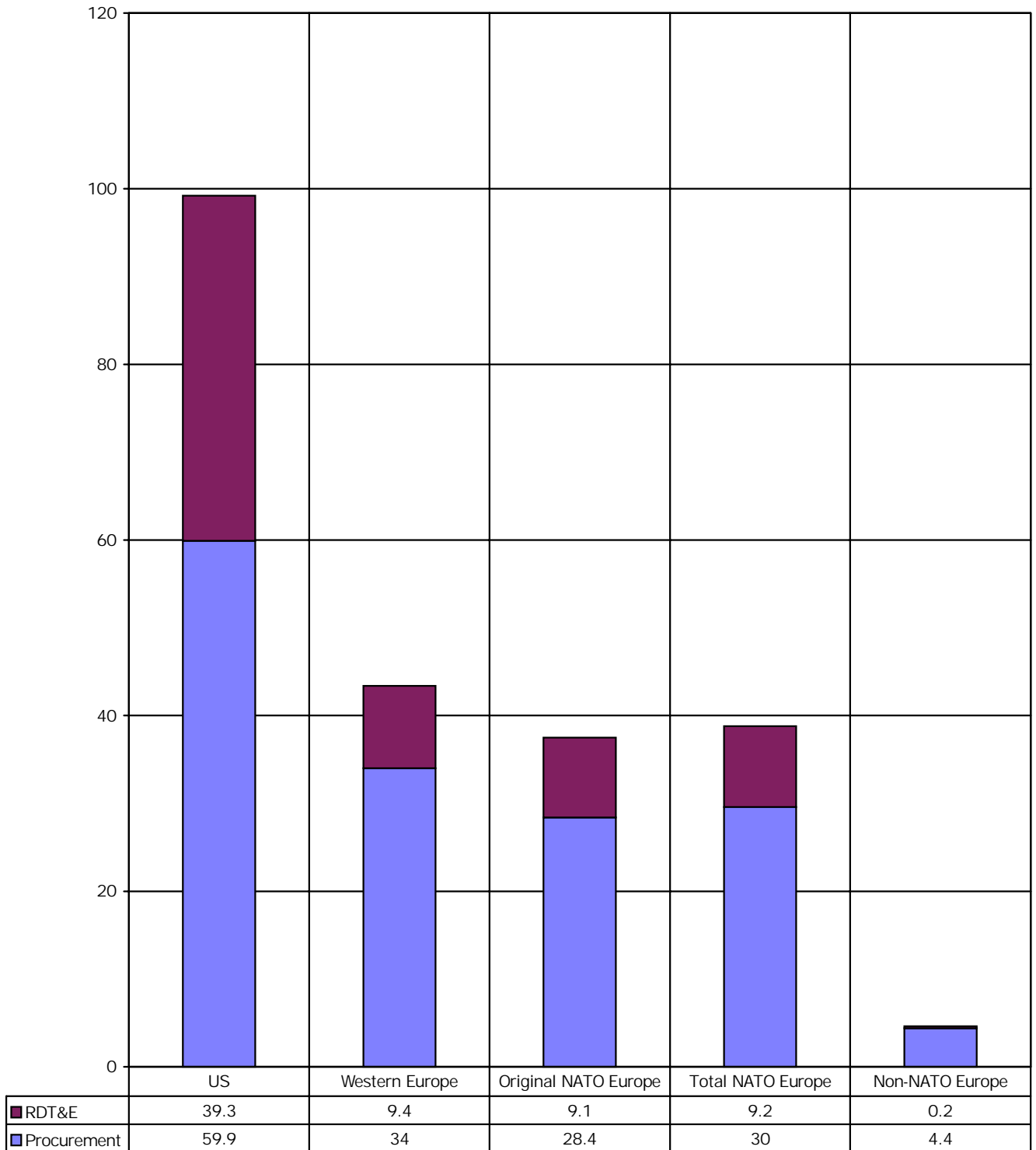
Source: Adapted by Anthony H. Cordesman ACDA, World Military Expenditures and Arms Transfers, 1996, Washington, GPO, 1997, and IISS, Military Balance, 2000-2001 and 2001-2002.

### Trends in Defense Spending as a Percentage of GDP of Selected European Powers: 1990-2000



Source: Adapted by Anthony H. Cordesman from Allied Contributions to the Common Defense: A Report to Congress by the Secretary of Defense, March 2001, Table E-5.

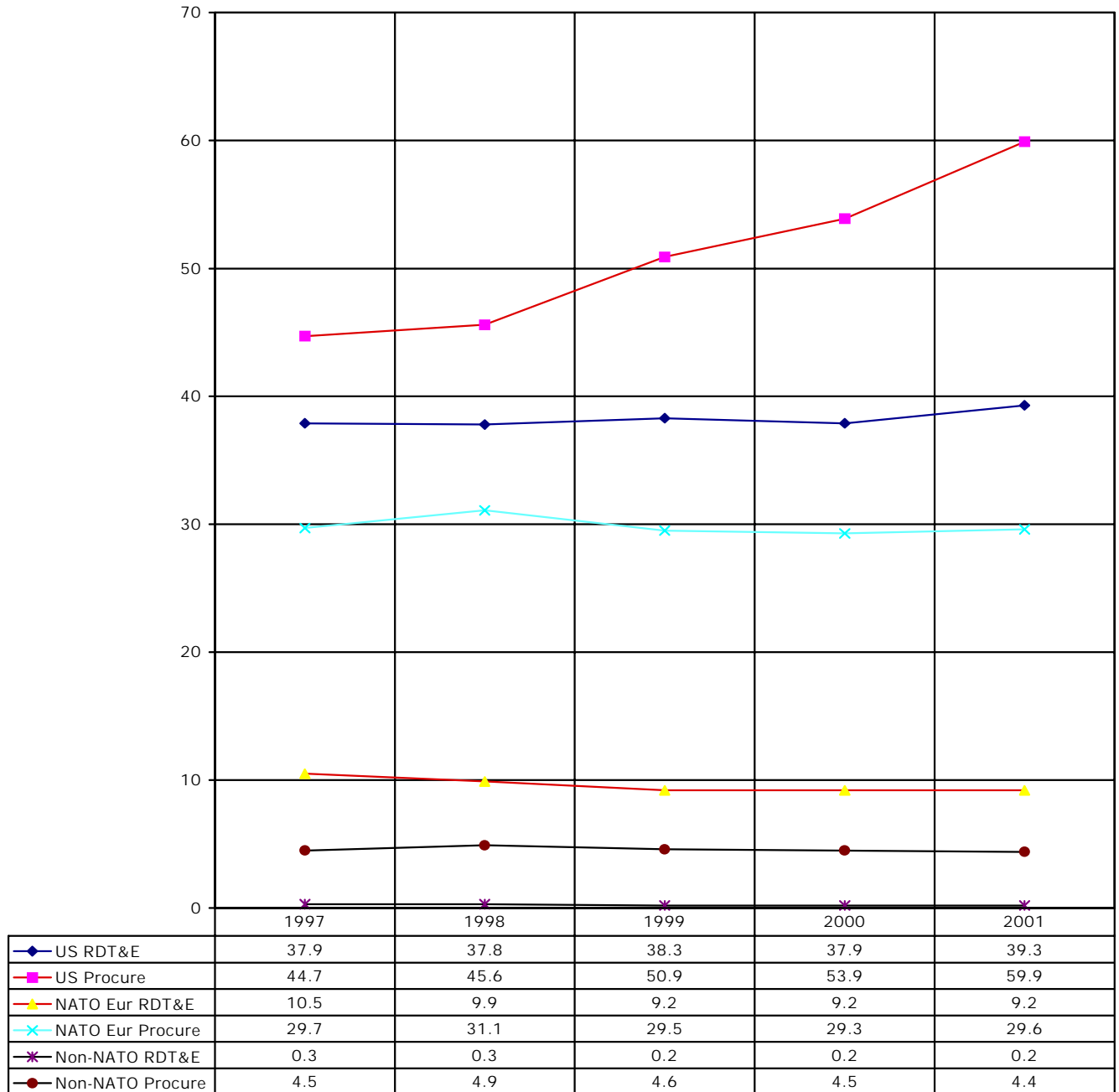
**Western Defense Investment in Procurement and RDT&E by Region**  
 (2001 Spending In \$US Current Billions)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

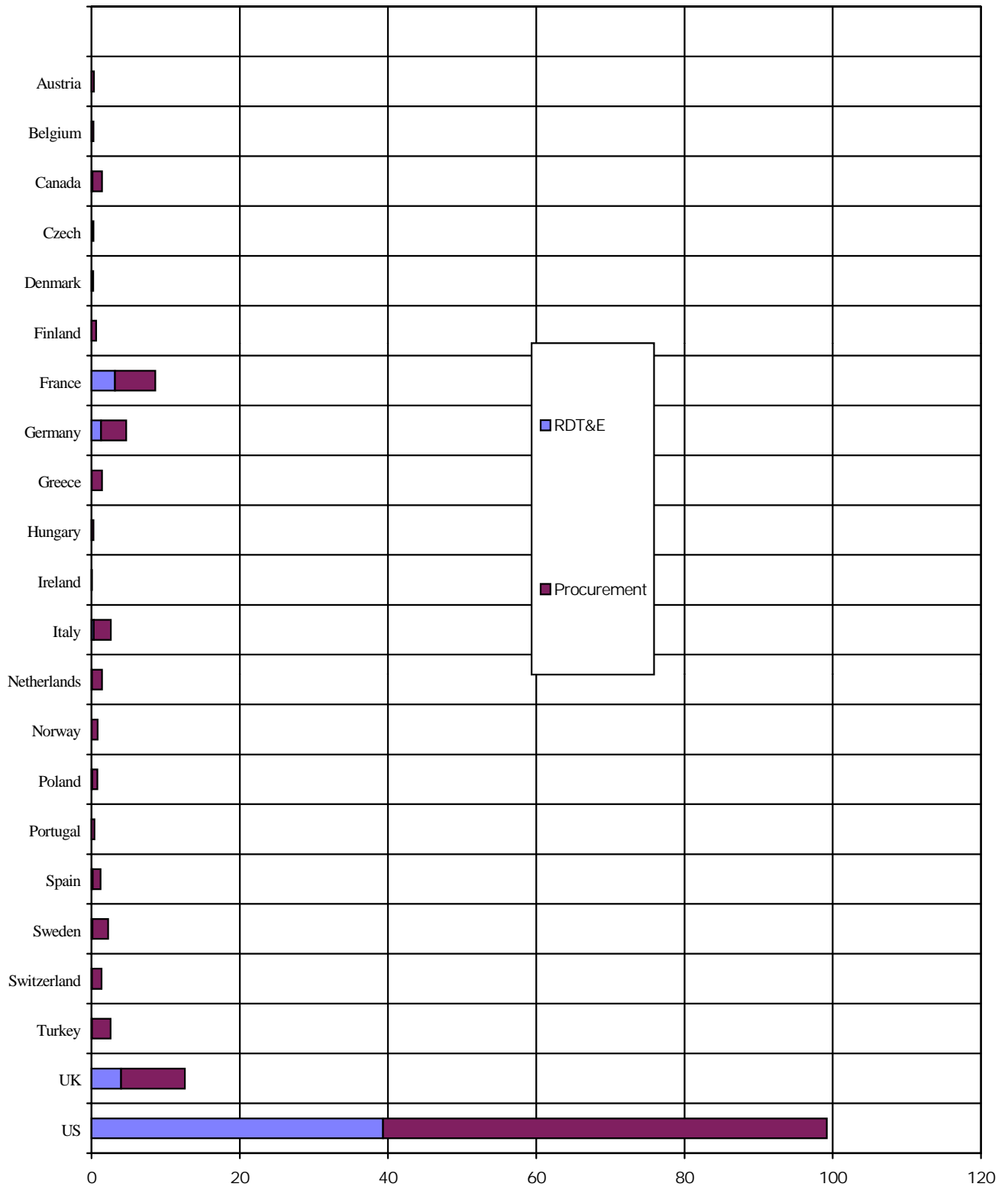


**Comparative Western Trends in Procurement and RDT&E: 1997-2001**  
 (Spending In \$US Current Billions)



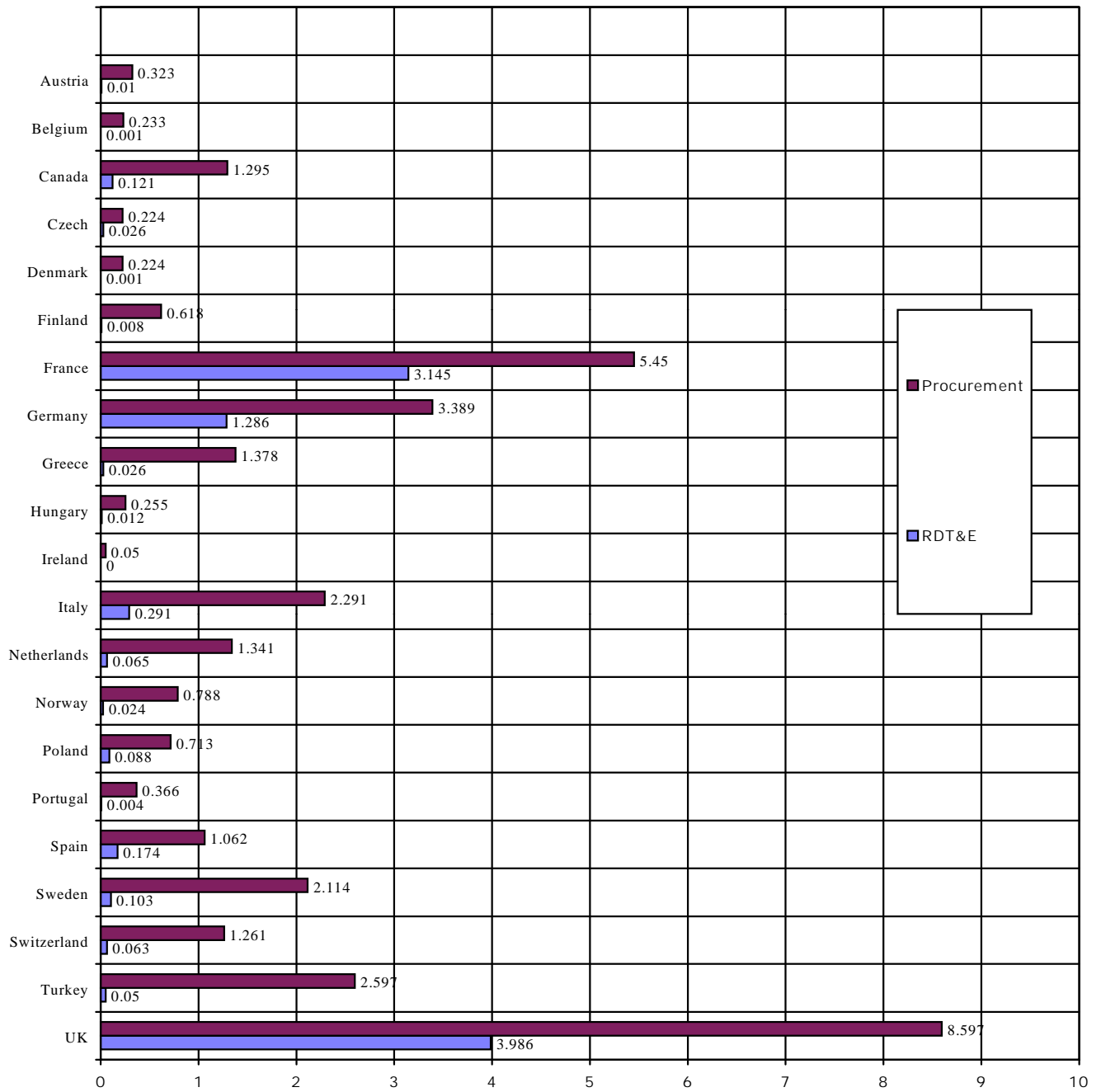
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

**Western Defense Investment in Procurement and RDT&E by Country**  
 (2001 Spending In \$US Current Billions)



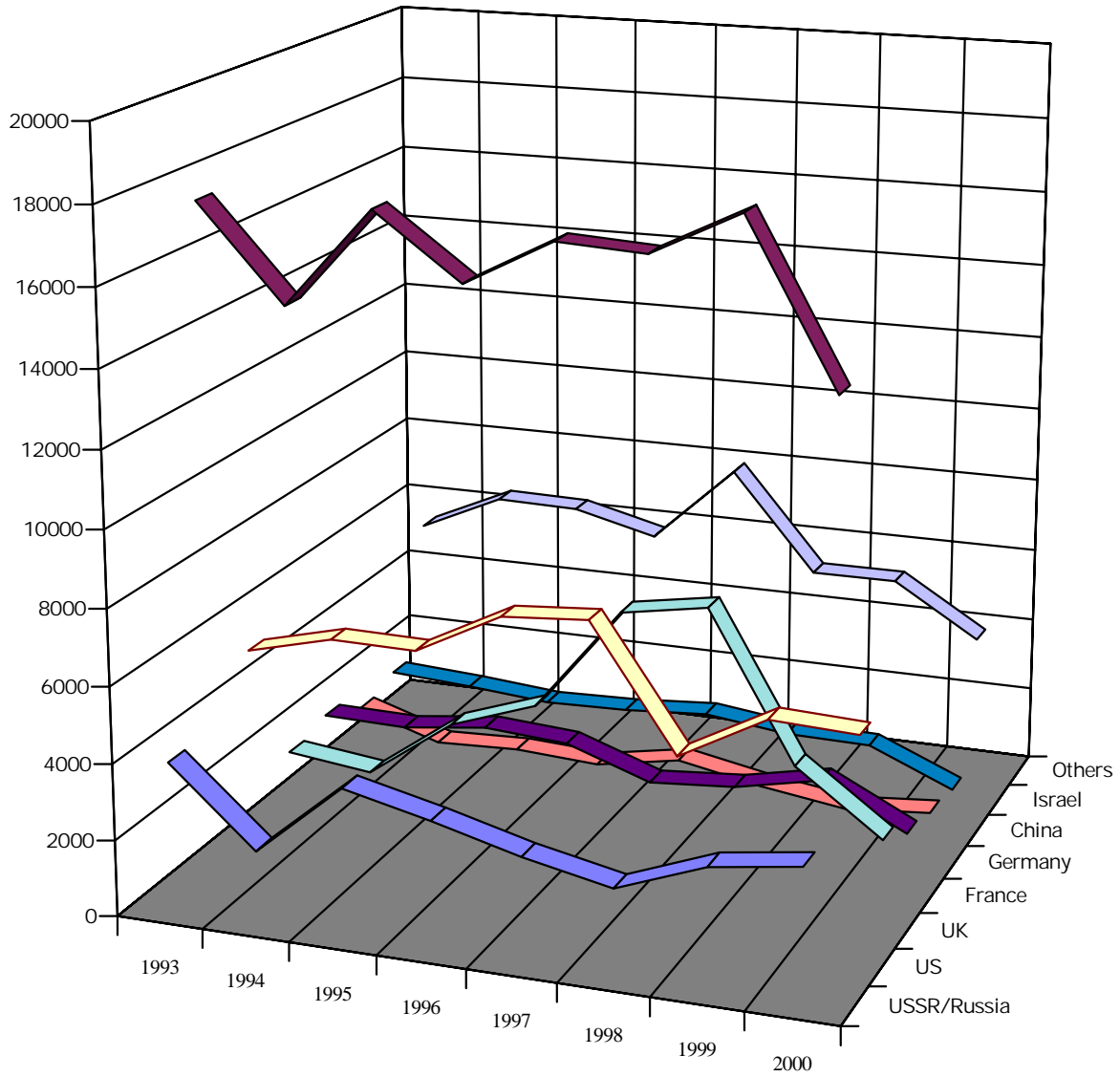
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

**Western Defense Investment in Procurement and RDT&E by Country Less US**  
 (2001 Spending In \$US Current Billions)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Comparative Western Trends in Arms Sales: 1993-2000 (Spending in \$US Constant 2000 Millions)

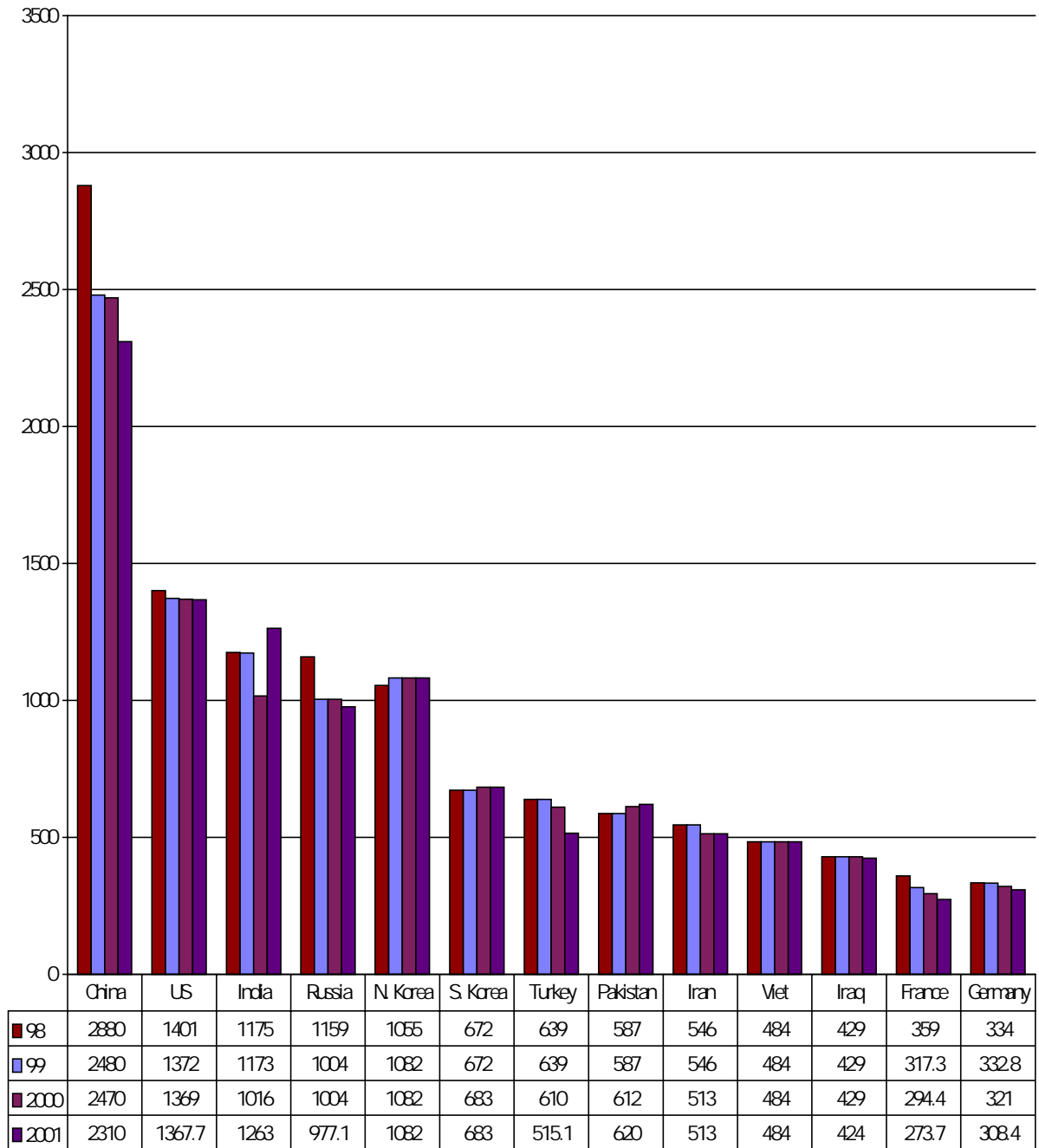


	1993	1994	1995	1996	1997	1998	1999	2000
USSR/Russia	3941	1930	3875	3361	2760	2289	3163	3500
US	17584	15148	17703	16068	17273	17148	18298	14187
UK	5331	5902	5867	7047	7218	3954	5203	5100
France	1739	1476	3100	3903	6687	7075	3163	1500
Germany	1970	1930	2214	2060	1274	1457	1938	800
China	1391	681	775	651	1061	624	306	500
Israel	1671	1541	1345	1411	1582	1303	1264	300
Others	5331	6356	6310	5746	7854	5202	5203	3800

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000, 2000-2001 and 2001-2002.

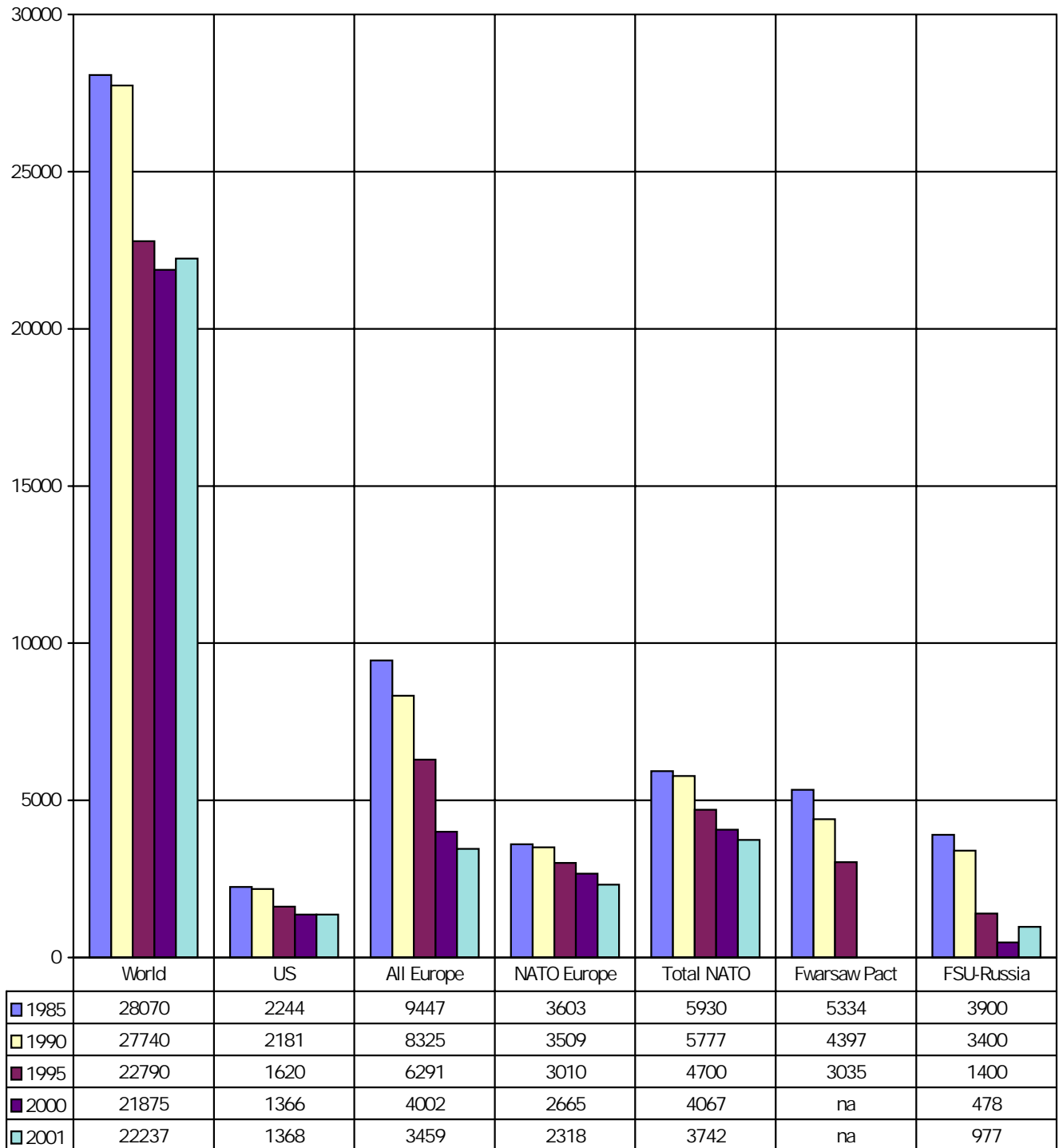
### Military Manpower in Selected Major Military Powers in 2002

(In 1,000s)



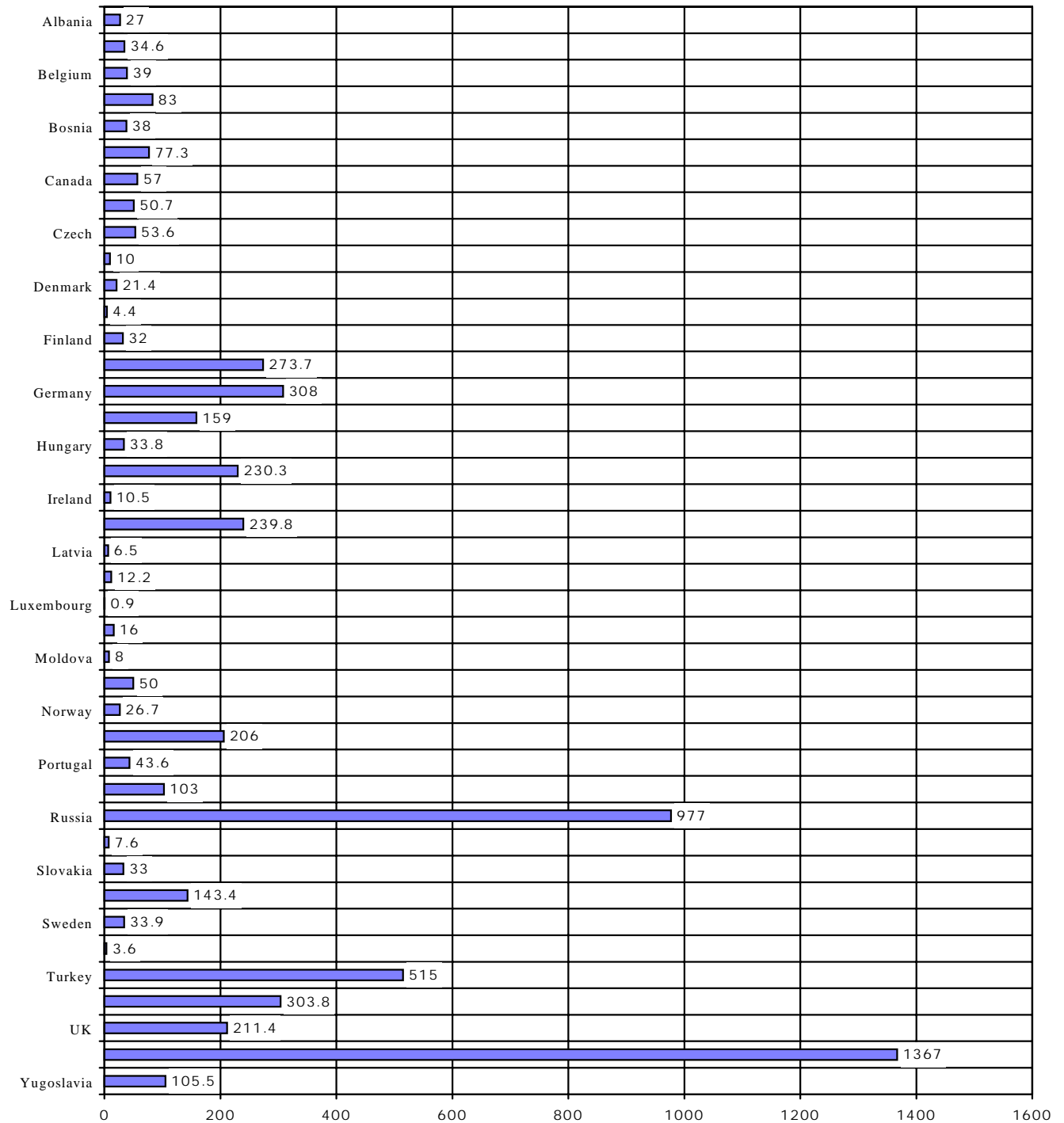
Source: Adapted by Anthony H. Cordesman from the IISS Military Balance, 1999-2000, 2000-2001 and 2001-2002.

**US Military Manpower Compared to Total NATO, Europe, the Former Warsaw Pact, and Russia: 1985-2001**  
(1,000s)



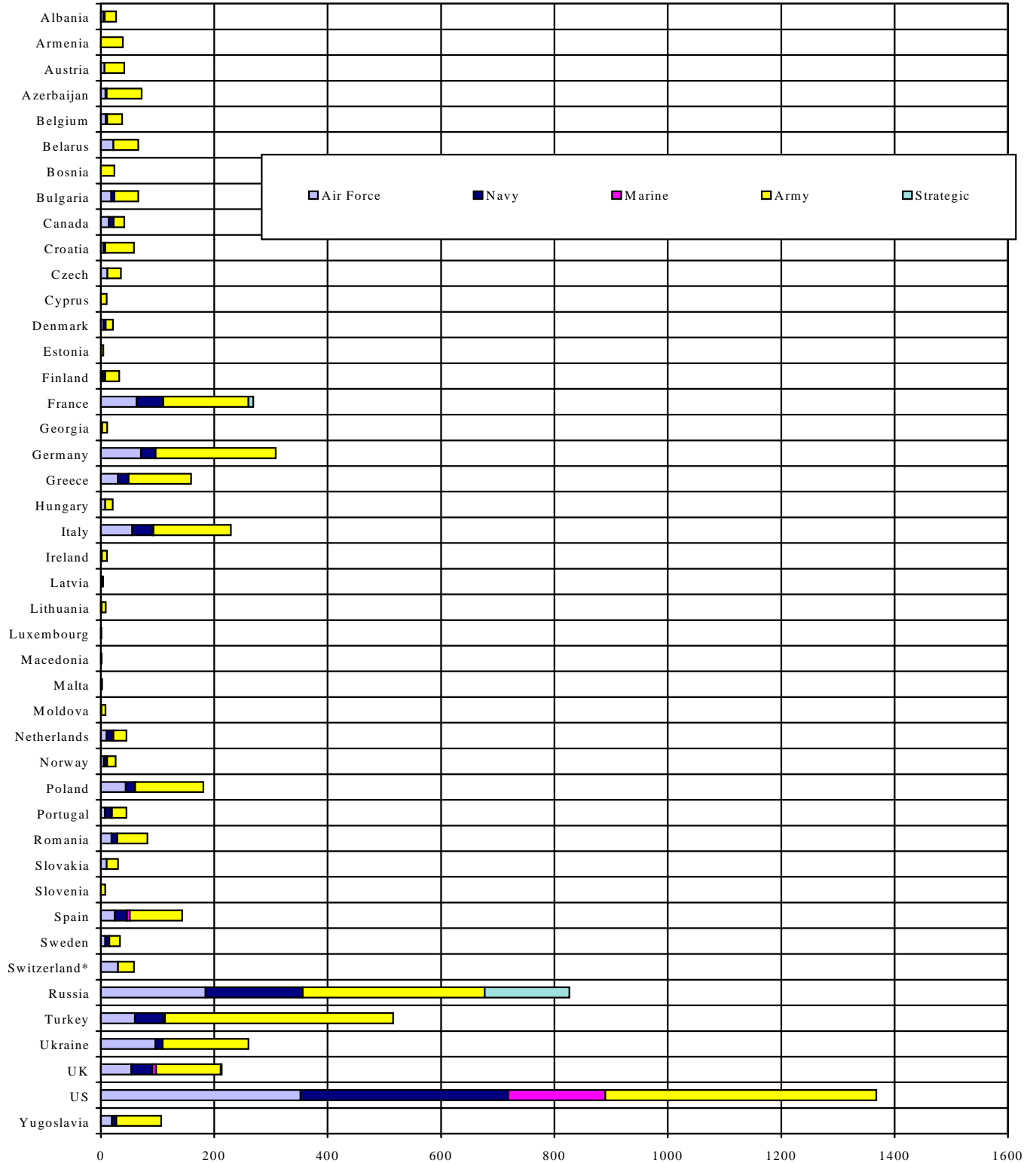
Source: Adapted by Anthony H. Cordesman ACDA, World Military Expenditures and Arms Transfers, 1996, Washington, GPO, 1997, and IISS, Military Balance, various editions.

### Western Total Regular Active Military Manpower in 2001 (1,000s)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Active Manpower by Service in 2001 (in 1,000s)

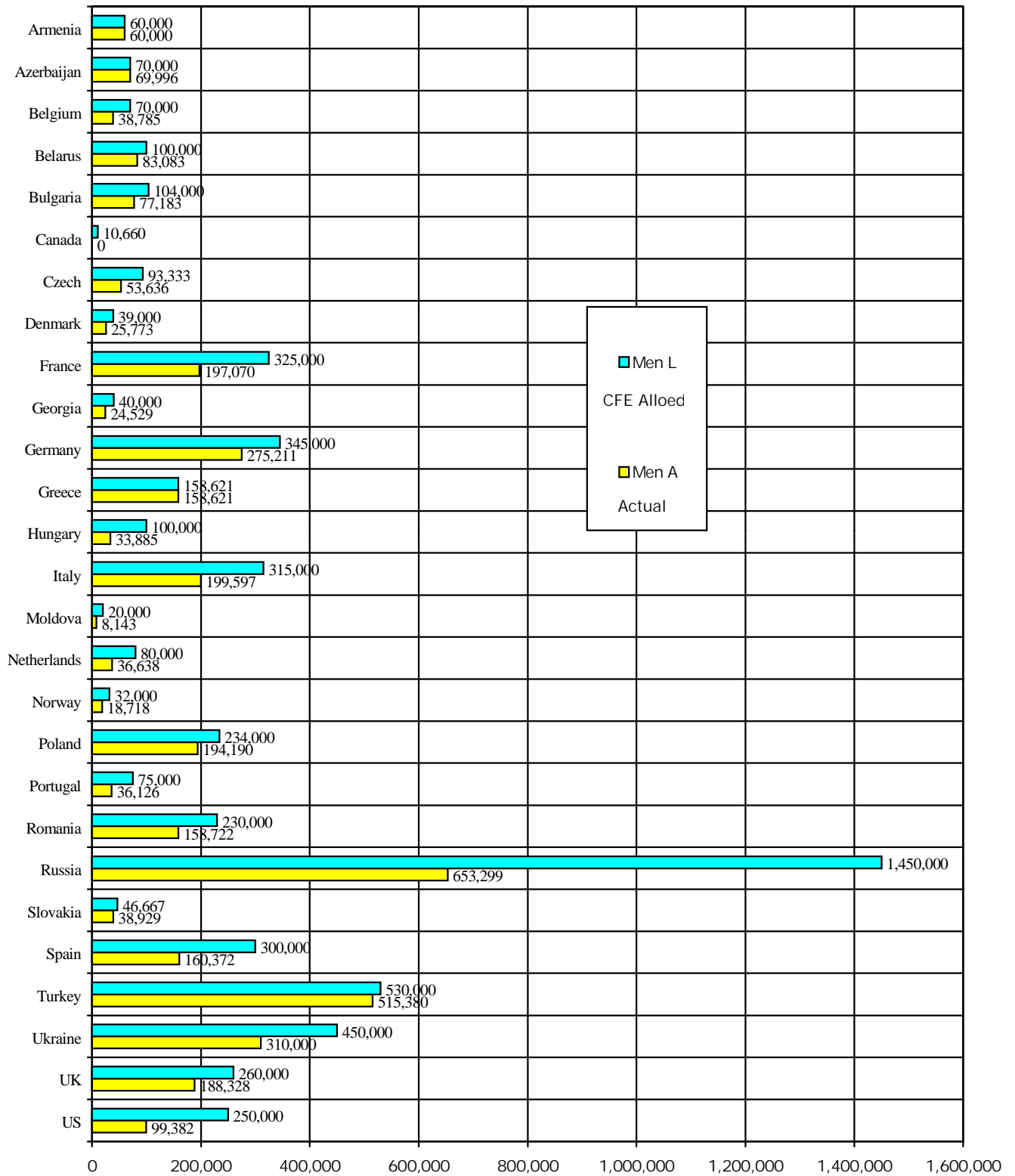


\* Please note that totals include active and key mobilized manpower. Only 3,600 officers and NCOs are in full-time active armed forces.

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.



### Military Manpower: Actual versus CFE Limit in 2001 (As of January 1, 2001)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

# **Part Two**

# **Land Forces**

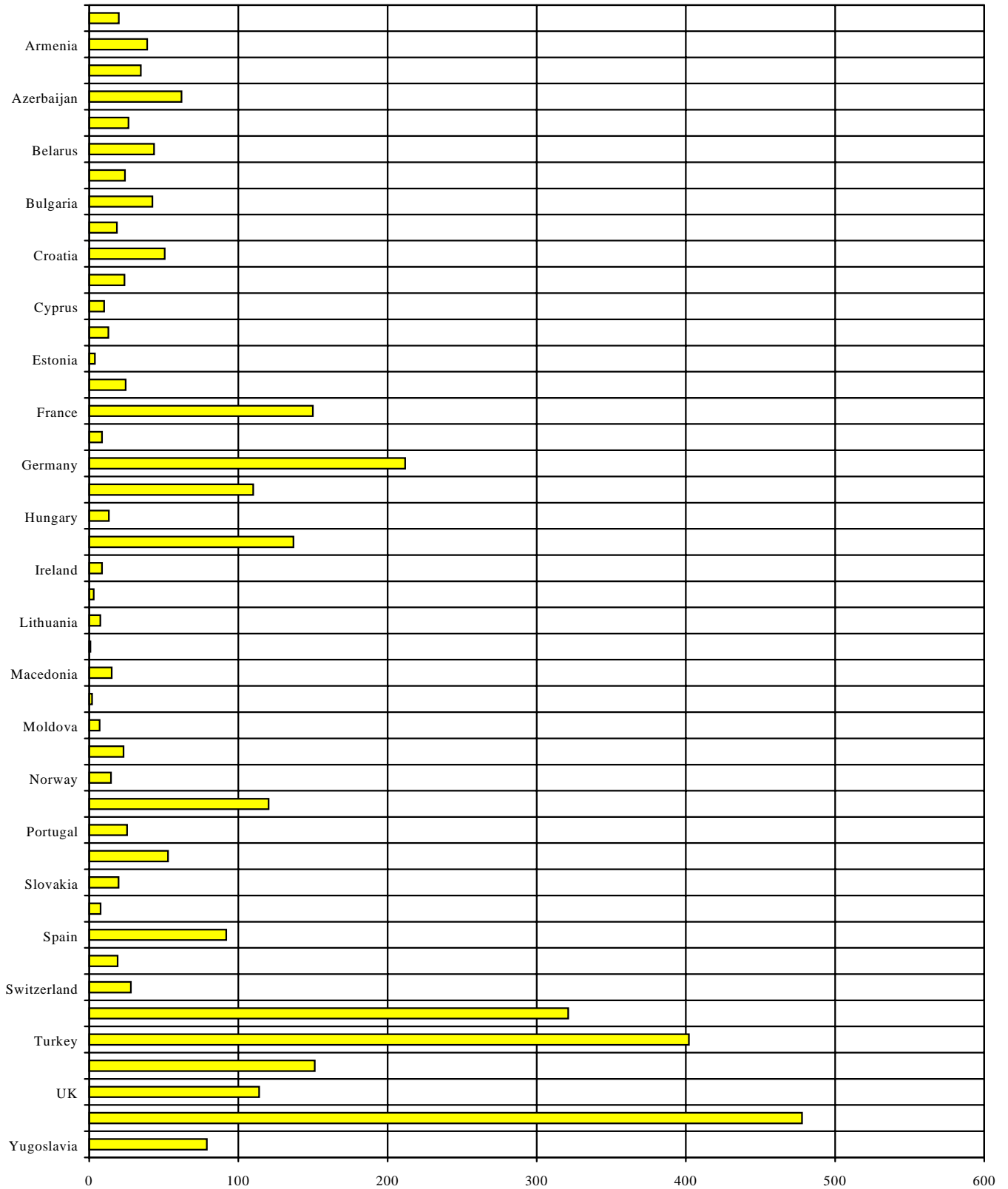
### Western Active Army Strength in 2001

	Manpower (1,000s)	Armor		Artillery			MRL
		Tanks	AIFVs	APCs	SP	Towed	
Yugoslavia	791016	557	204	82	976	123	
US	477.8	7620	6820	15400	2476	1547	881
UK	113.9	636	1054	2398	179	233	63
Ukraine	151.2	3937	3678	1782	1301	1130	603
Turkey	402	4205	650	3643	868	679	84
Russia	321	21820	16850	11275	4705	10065	2606
Switzerland	3.6*	556	754	827	558	-	-
Sweden	19.1368	1291	540	23	585	-	
Spain	92688	376	2023	194	310	18	
Slovenia	7.676	59	38	8	36	52	
Slovakia	19.8272	605	175	211	75	90	
Romania	52.91373	298	1316	48	708	177	
Portugal	25.4187	15	370	6	134	-	
Poland	120.31677	1869	726	652	440	258	
Norway	14.7170	157	189	126	46	12	
Netherlands	23.1	320	361	345	123	112	22
Moldova	7.1-	53	156	9	71	11	
Malta	2.1 -	-	112	-	74	12	
Macedonia	1598	51	112	-	271	37	
Luxembourg	0.9	-	-	-	-	-	-
Lithuania	7.5-	10	81	-	-	-	
Latvia	3.13	2	13	-	26	-	
Ireland	8.5-	47	54	-	66	-	
Italy	1371349	26	2777	269	325	22	
Hungary	13.2753	680	1109	151	532	56	
Greece	1101733	630	1977	413	729	134	
Germany	211.8	2521	2776	2666	605	350	229
Georgia	8.690	185	-	3	79	16	
France	150809	2147	3900	273	97	61	
Finland	24.5230	266	840	90	918	94	
Estonia	4.0-	7	32	-	19	-	
Denmark	12.9238	36	609	76	231	8	
Cyprus	10145	209	402	12	144	18	
Czech	23.8652	983	975	322	124	109	
Croatia	50.7301	123	37	8	412	232	
Canada	18.6114	403	1357	58	213	-	
Bulgaria	42.4	1475	272	1750	692	473	222
Bosnia	24205	74	160	7	379	106	
Belarus	43.61683	1577	919	570	428	344	
Belgium	26.4132	337	491	108	14	-	
Azerbaijan	62262	253	381	14	153	56	
Austria	34.6114	180	488	209	104	-	
Armenia	38.9110	110	36	38	121	51	
Albania	20400	50	103	-	823	50	

\* Please note that total includes active and key mobilized manpower. Only 3,600 officers and NCOs are in full-time active armed forces.

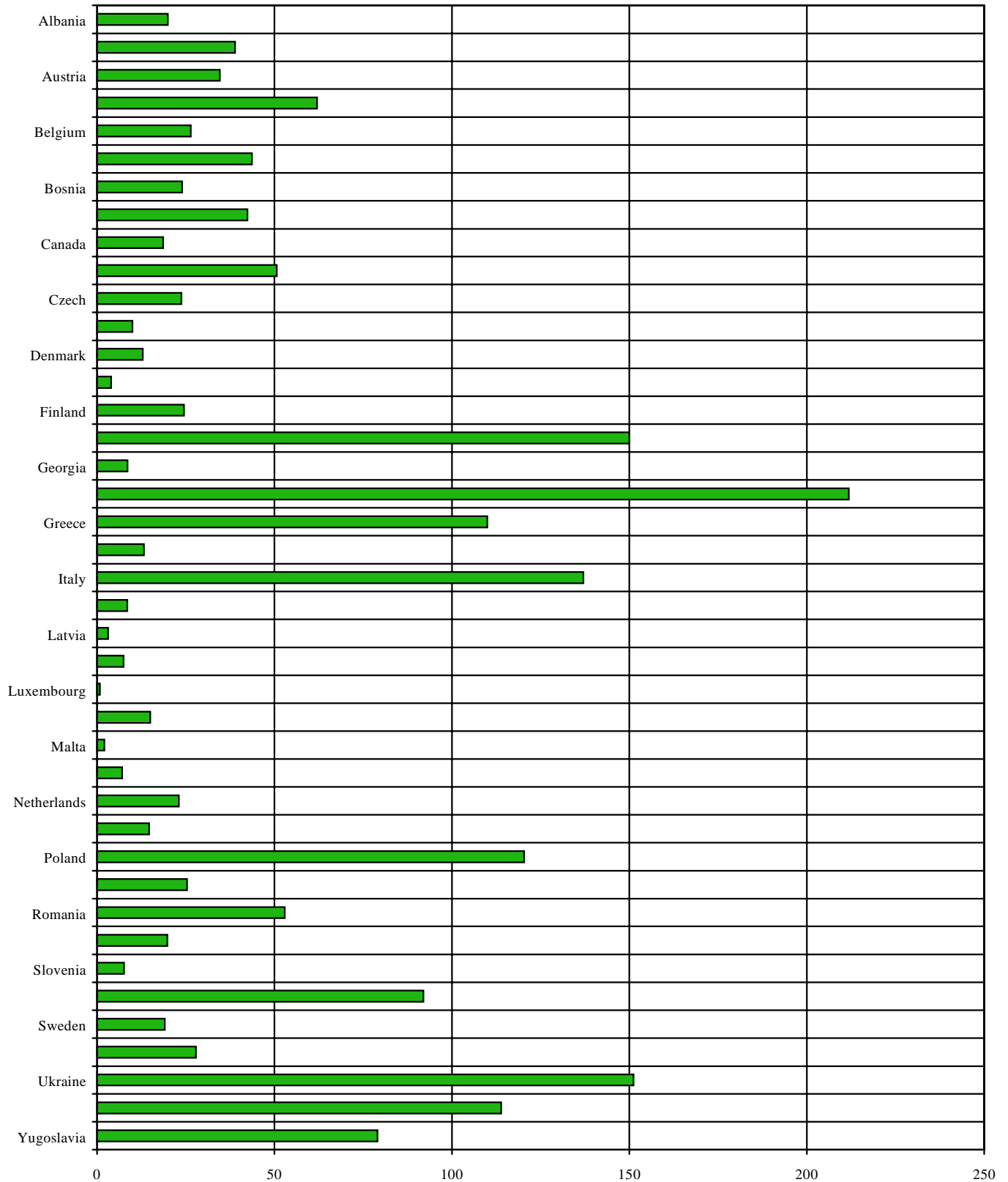
Source: IISS, Military Balance, 2001-2002.

**Army Active Manpower in 2001 (in 1,000s)**



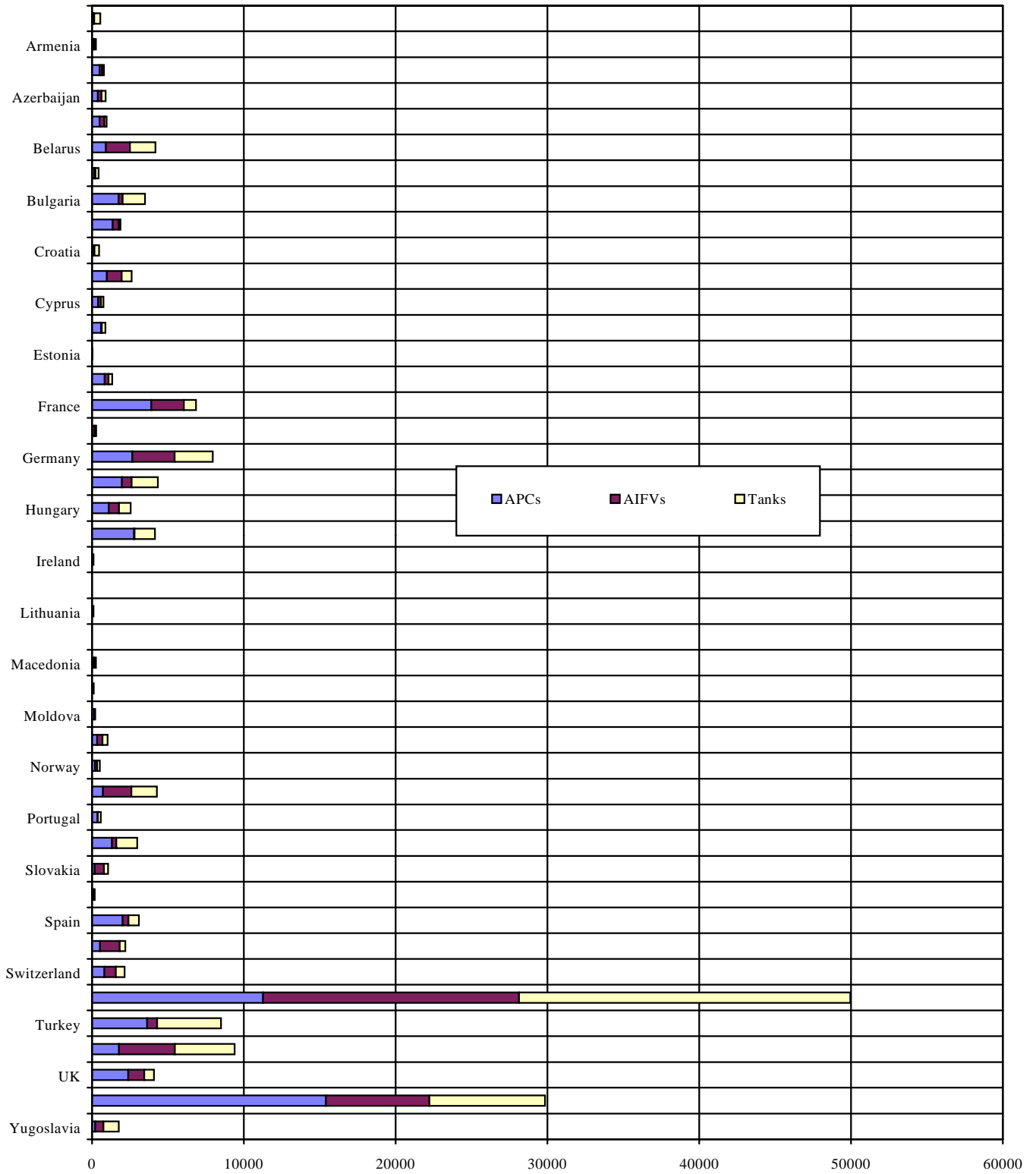
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

**Army Active Manpower in 2001 (in 1,000s) Less Russia, Turkey, and US**



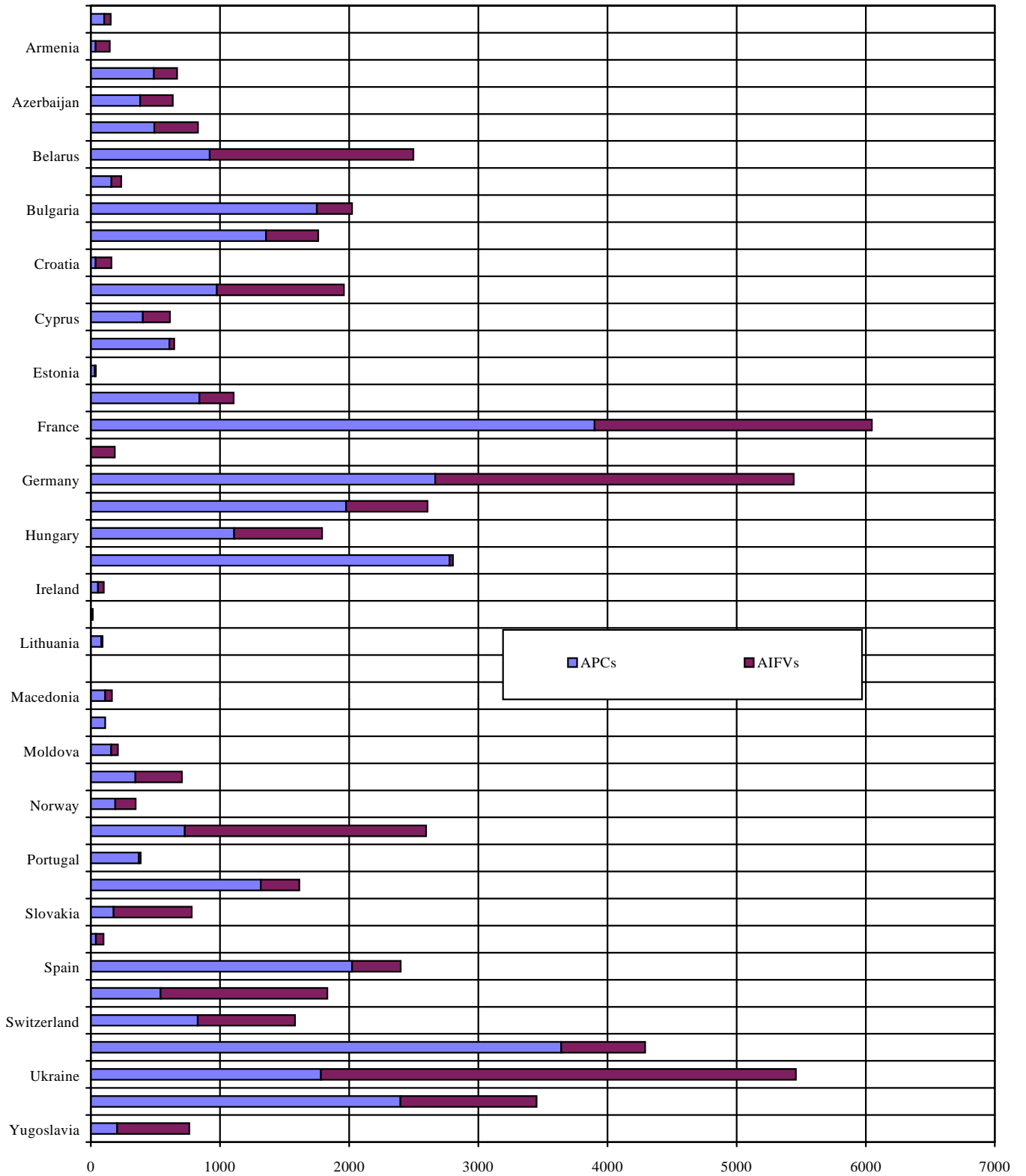
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Armor in Army Forces in 2001



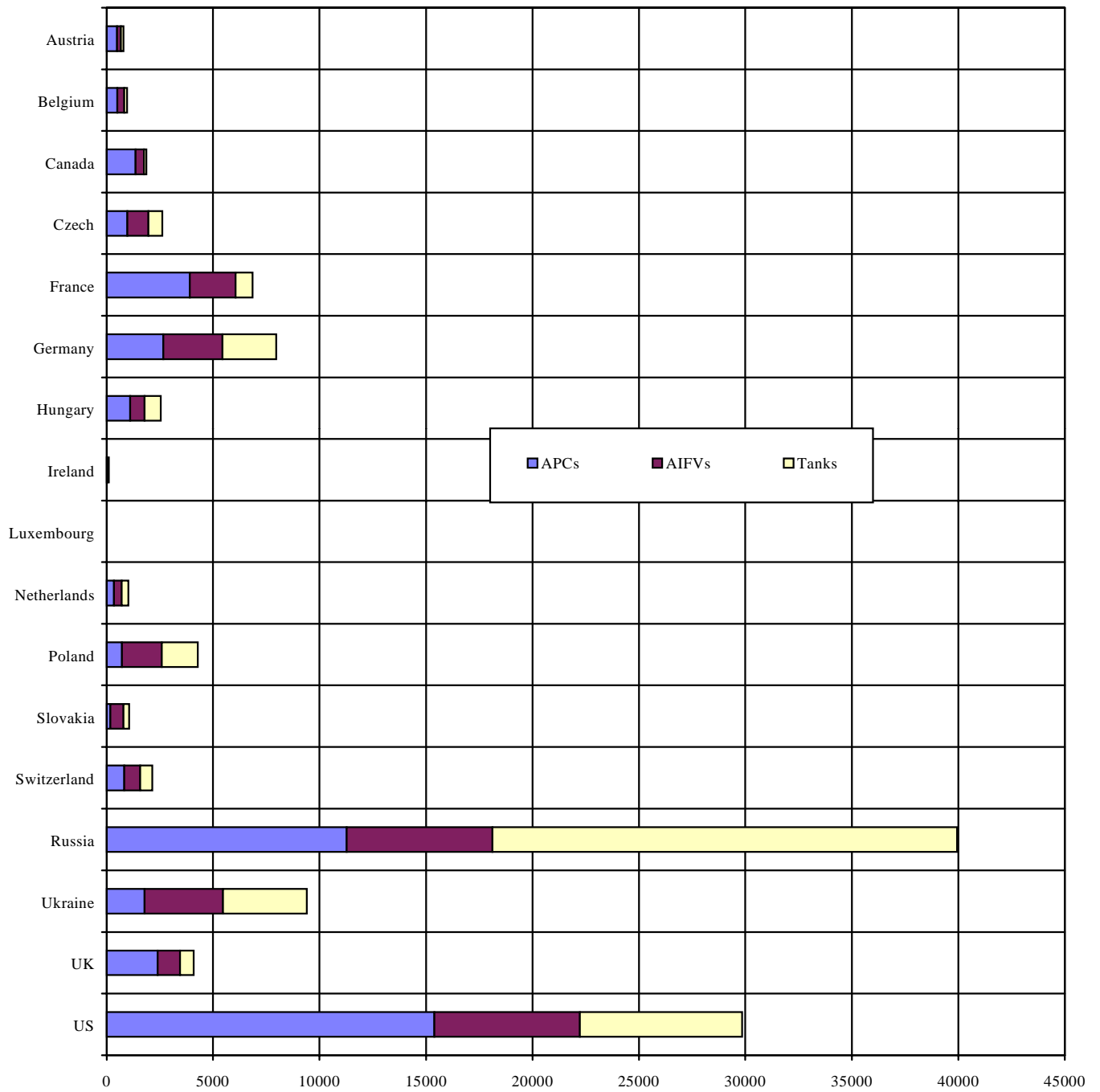
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Armor in Army Forces in 2001 – Less US and Russia



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Armor in Central Area Army Forces in 2001

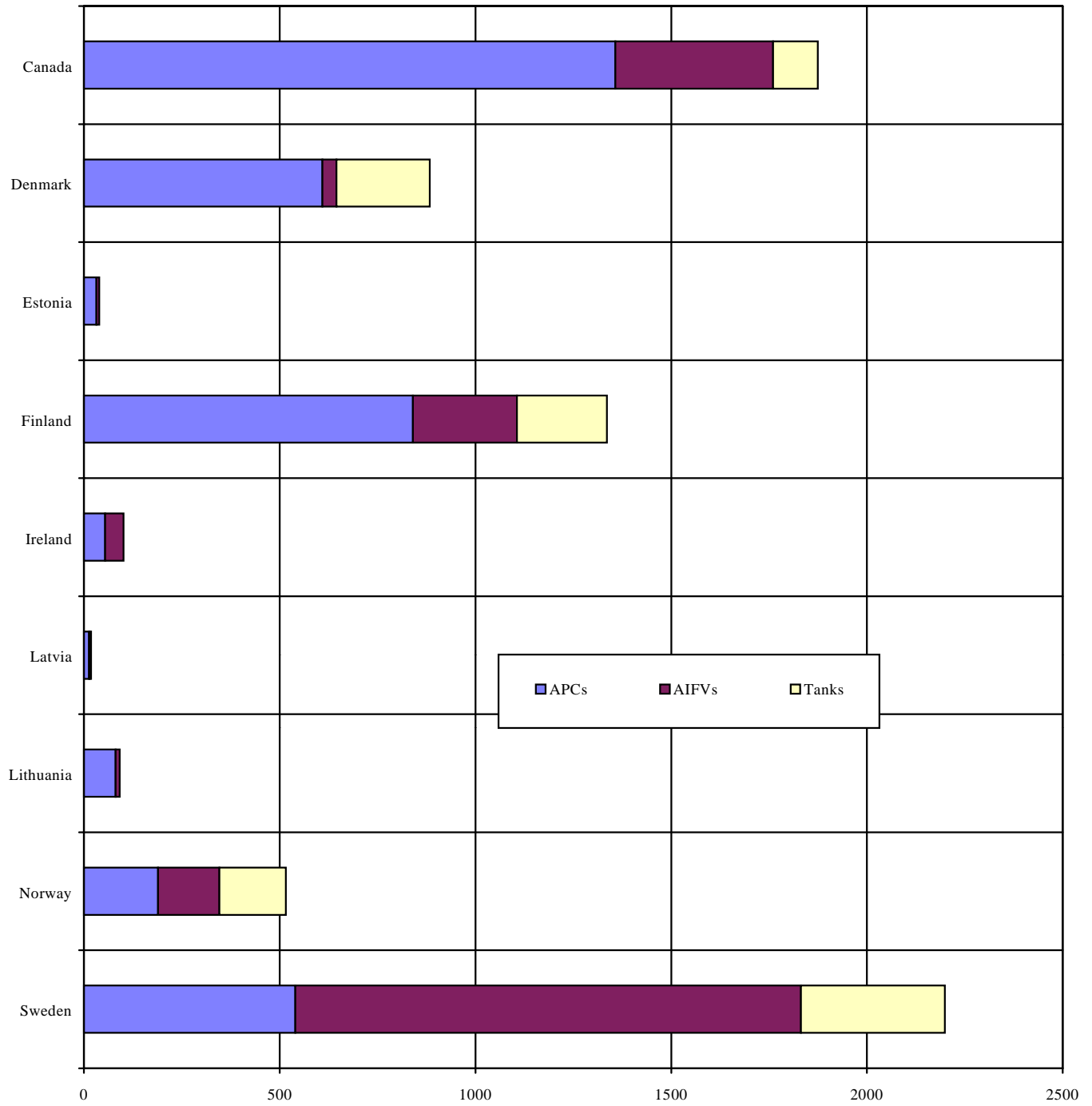


	US	UK	Ukraine	Russia	Switzerland	Slovakia	Poland	Netherlands	Luxembourg	Ireland	Hungary	Germany	France	Czech	Canada	Belgium	Austria
Tanks	7620	636	3937	21820	556	272	1677	320			753	2521	809	652	114	132	114
AIFVs	6820	1054	3678	6850	754	605	1869	361		47	680	2776	2147	983	403	337	180
APCs	15400	2398	1782	11275	827	175	726	345		54	1109	2666	3900	975	1357	491	488

Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.



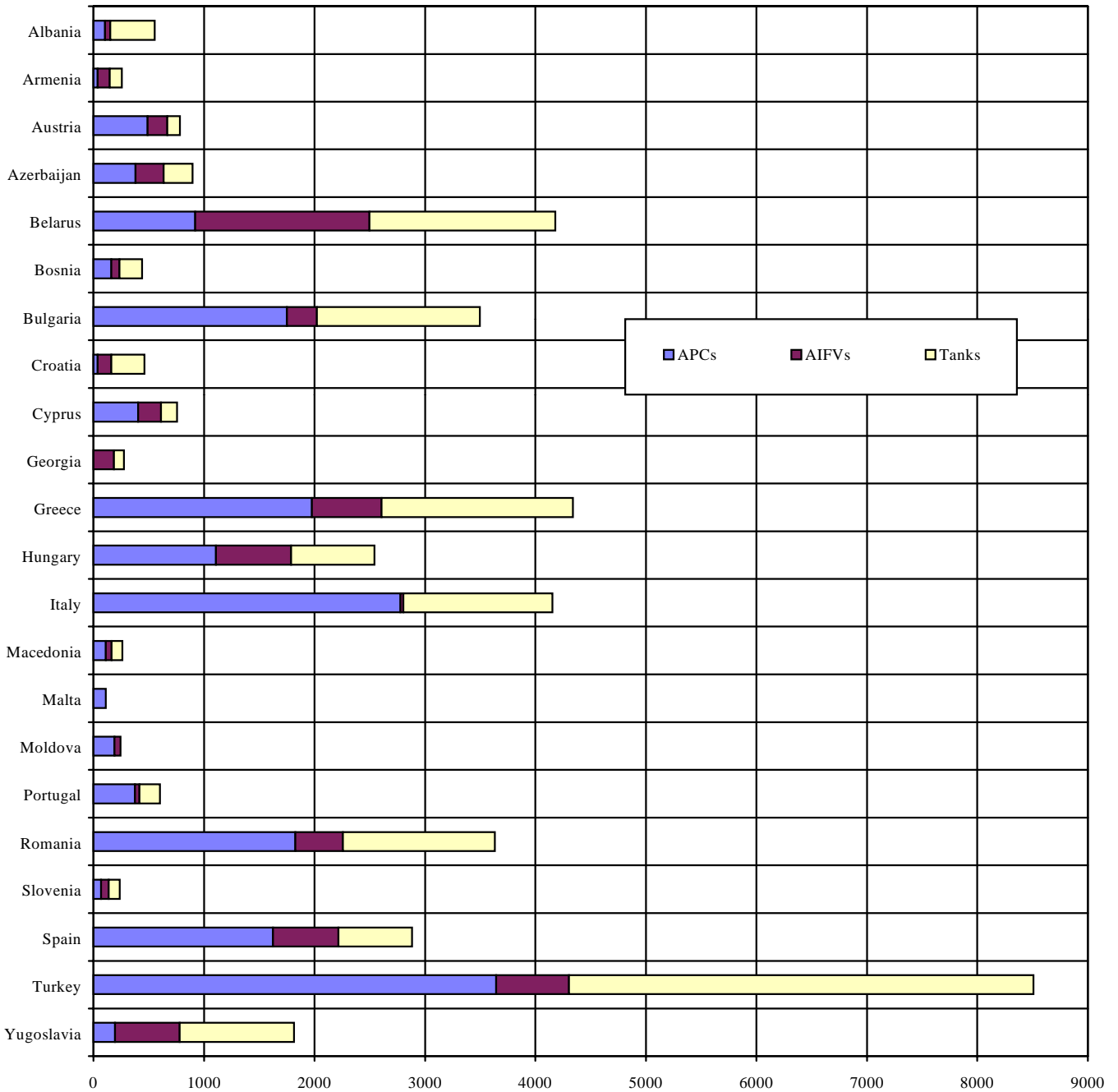
### Armor in Northern Area Forces in 2001



	Sweden	Norway	Lithuania	Latvia	Ireland	Finland	Estonia	Denmark	Canada
Tanks	368	170		3		230		238	114
AIFVs	1291	157	10	2	47	266	7	36	403
APCs	540	189	81	13	54	840	32	609	1357

Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

### Armor in Southern Area Forces in 2001

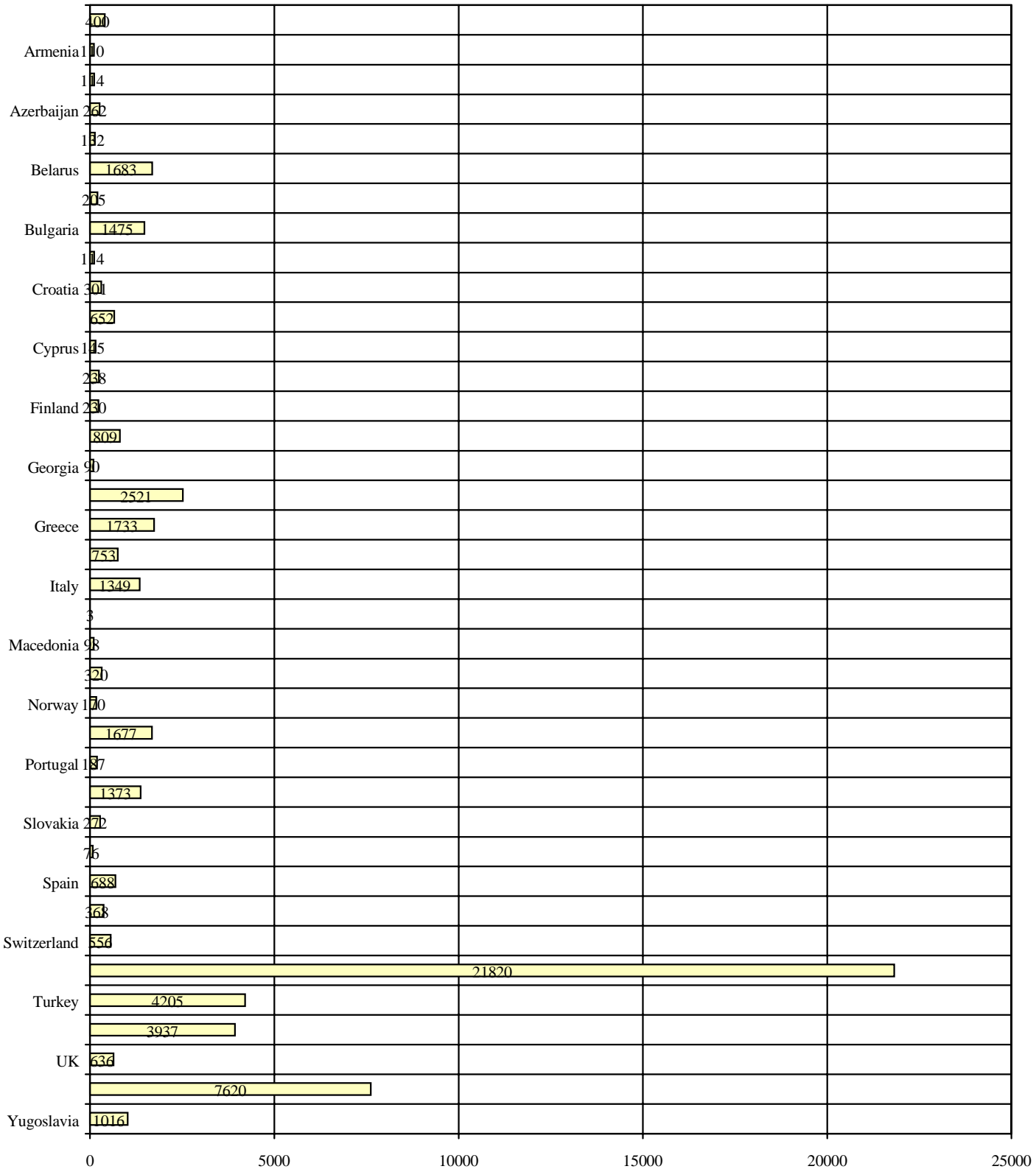


	Yugo slavia	Turke y	Spain	Slove nia	Roma nia	Portu gal	Mold ova	Malta	Mace donia	Italy	Hung ary	Greec e	Geor gia	Cypr us	Croat ia	Bulga ria	Bosni a	Belar us	Azer baija n	Austr ia	Arme nia	Alba nia
Tanks	1035	4205	665	100	1373	187			98	1349	753	1733	90	145	301	1475	205	1683	262	114	110	400
AIFVs	585	660	594	68	431	40	54		51	26	680	630	185	209	123	272	74	1577	253	180	110	50
APCs	195	3643	1624	70	1827	374	190	112	112	2777	1109	1977		402	37	1750	160	919	381	488	36	103

Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

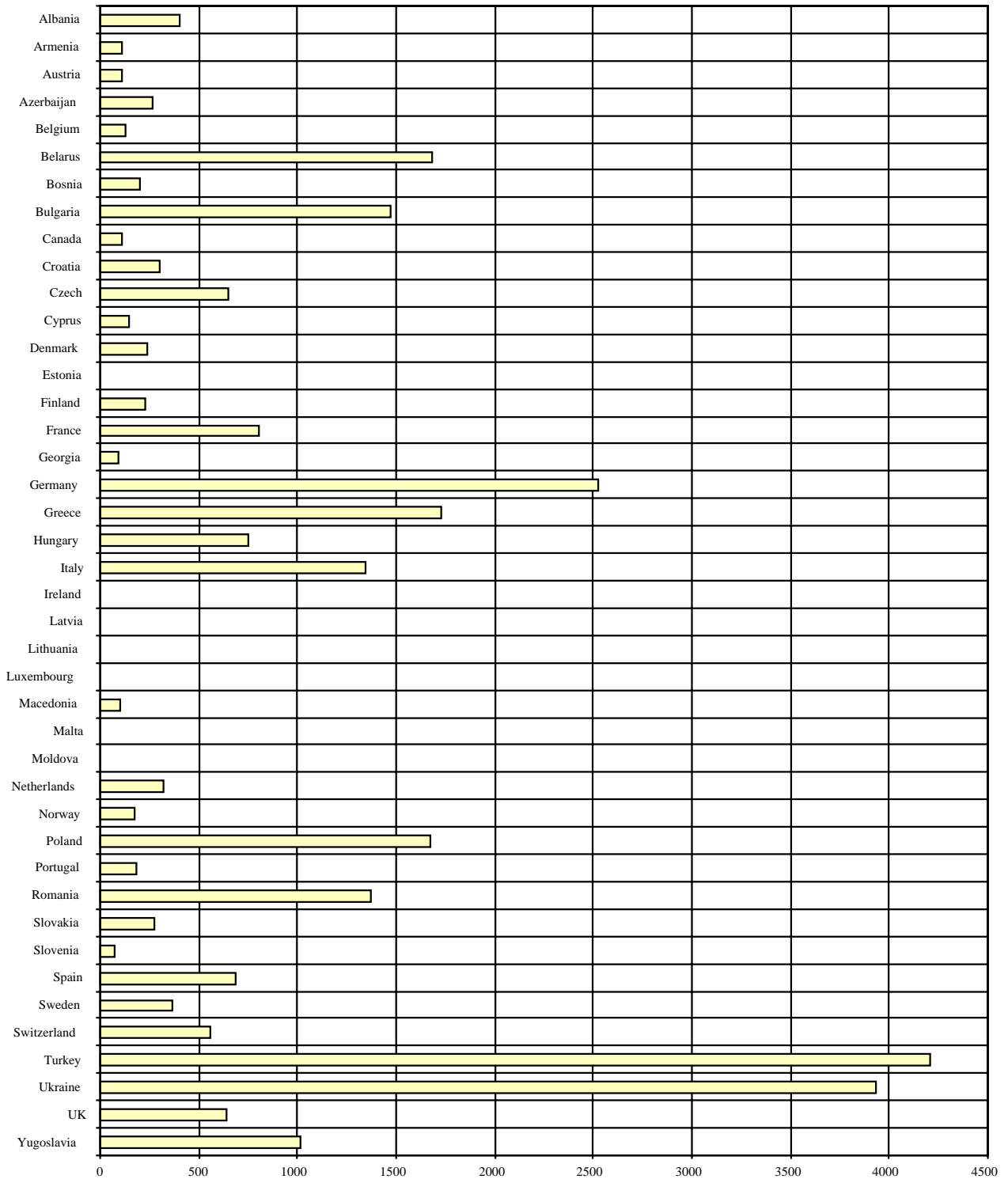
### Tanks in Army Forces in 2001

(Includes only countries with tanks in service)



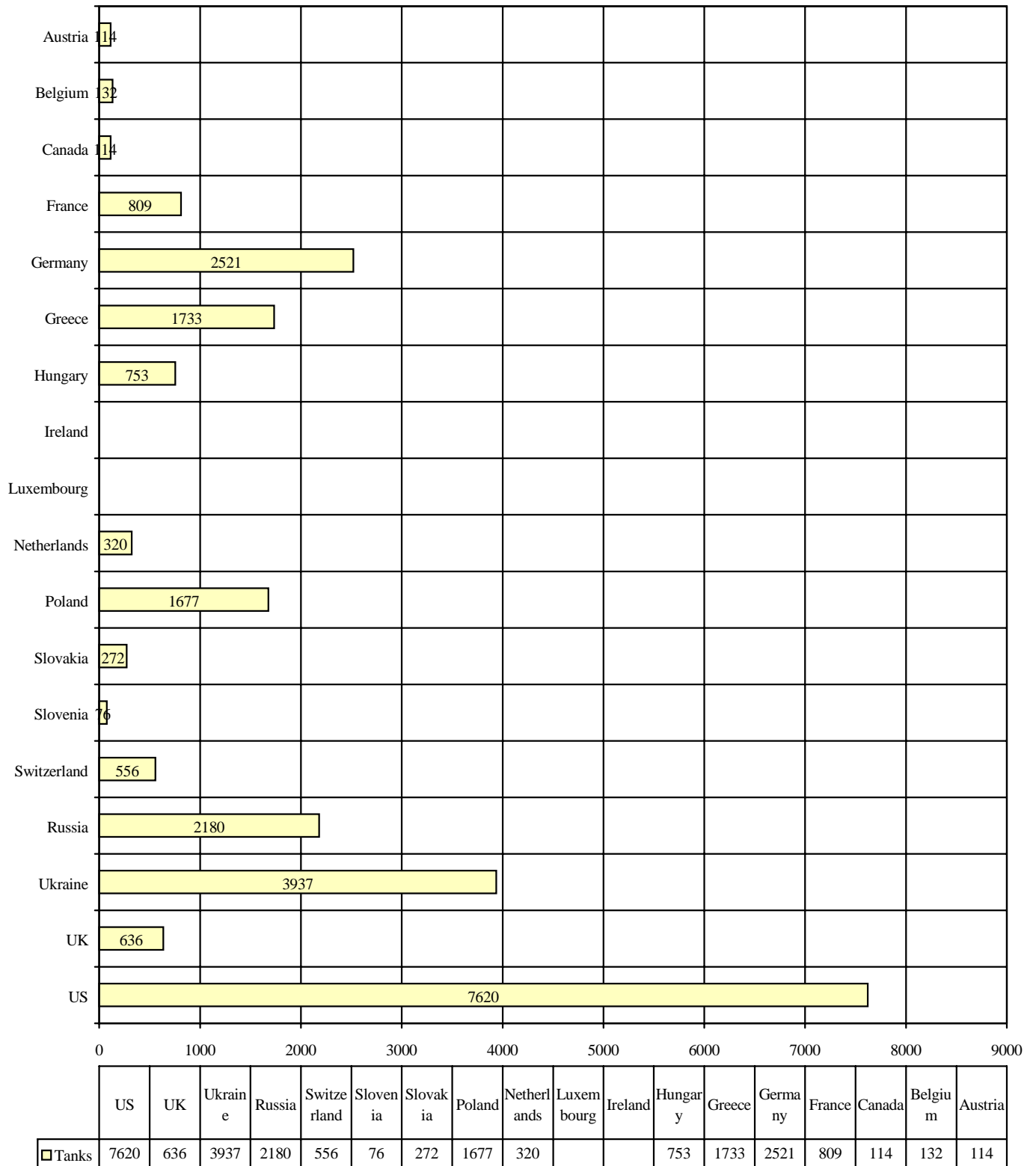
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Tanks in Army Forces in 2001 – Less US and Russia



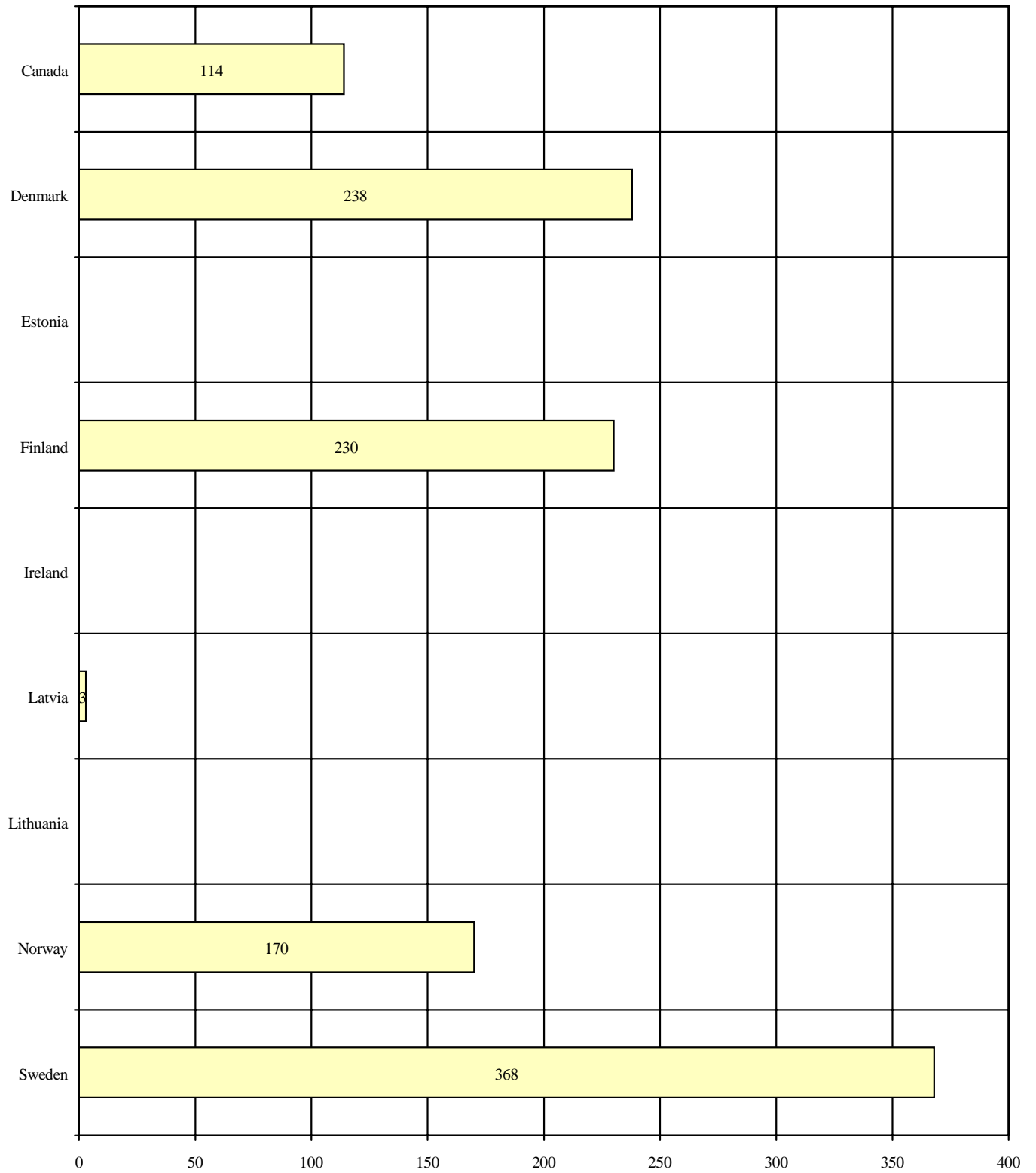
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Tanks in Central Area Army Forces in 2001



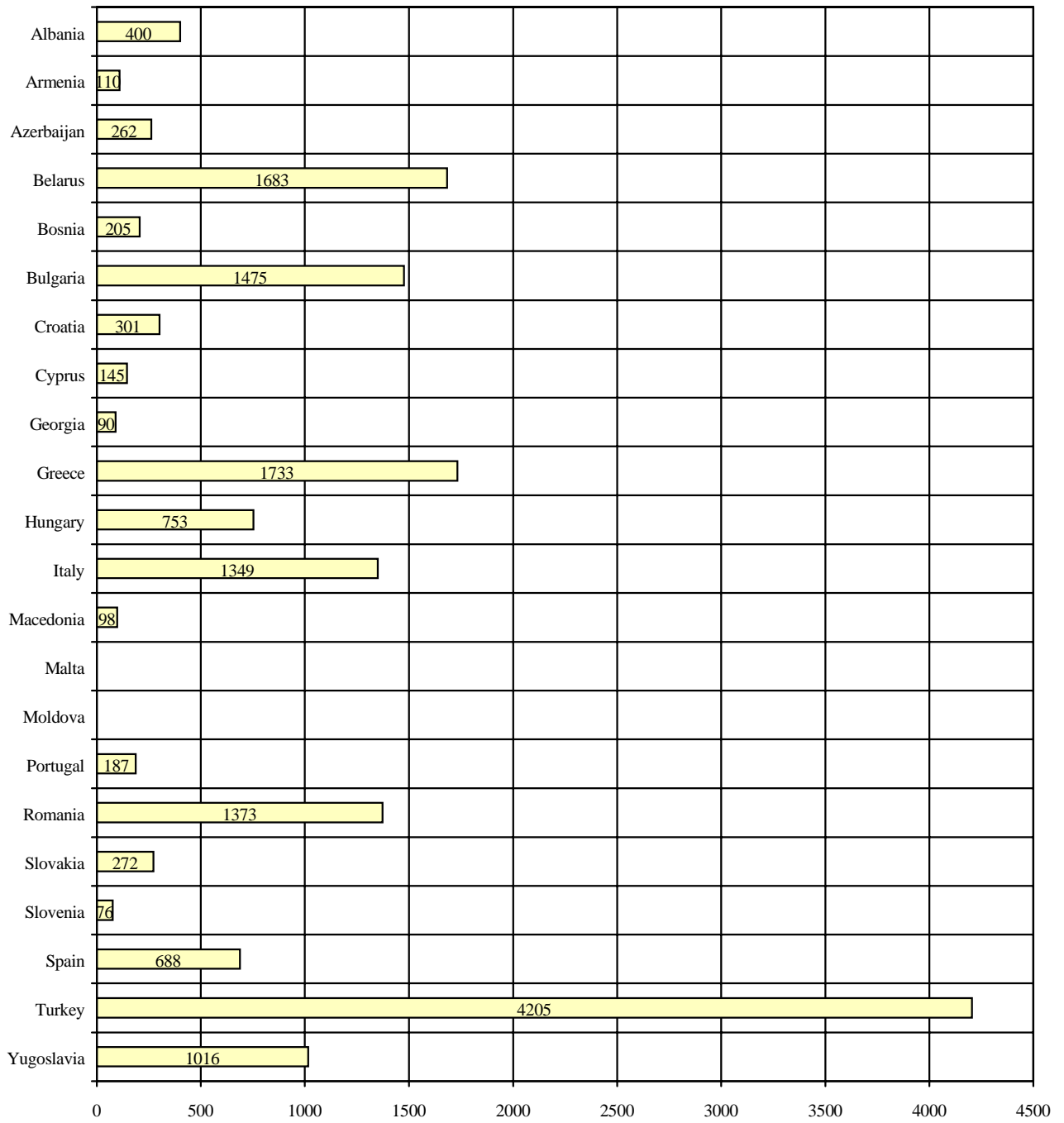
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Tanks in Northern Area Forces in 2001



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Tanks in Southern Area Forces in 2001

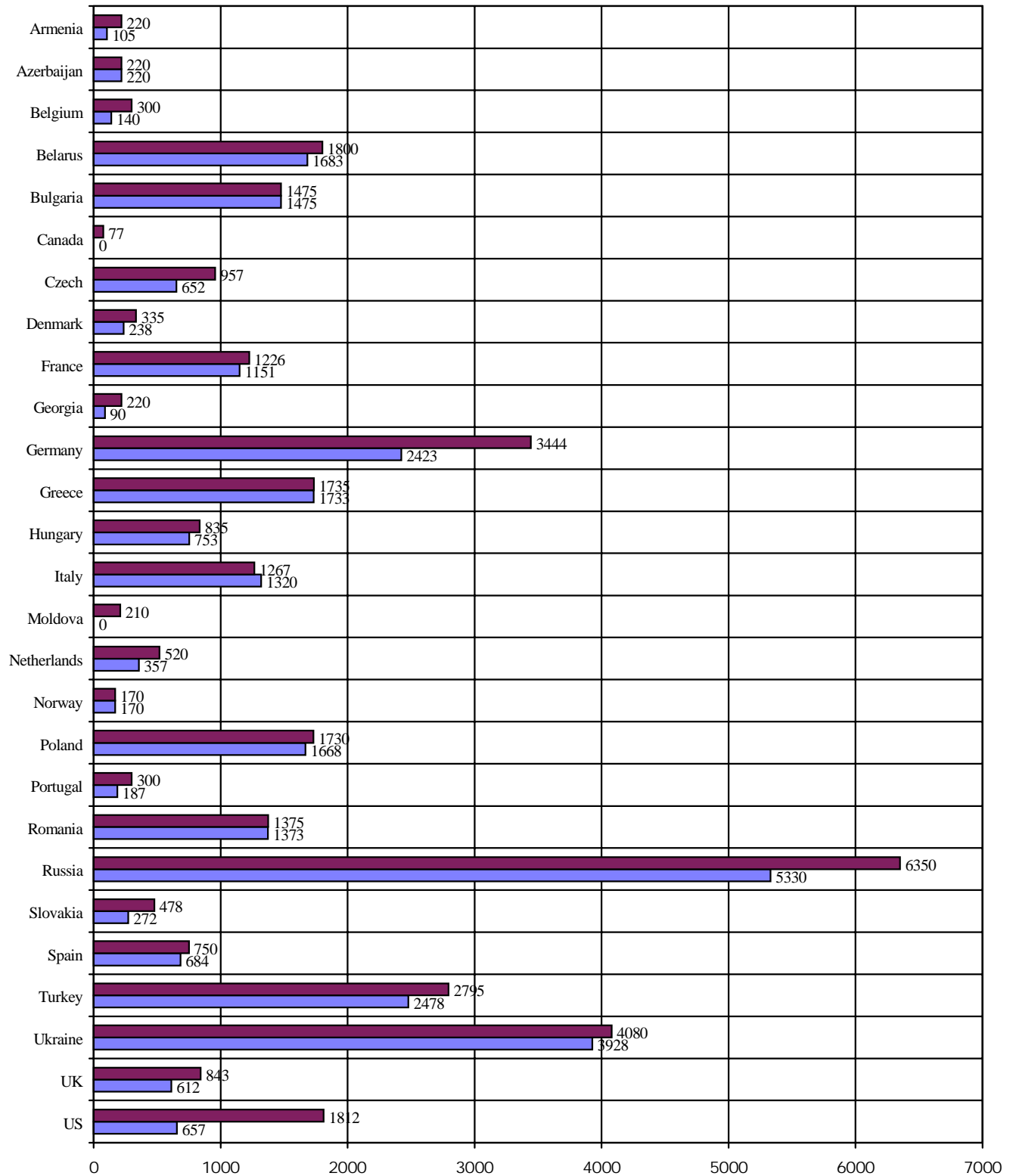


	Yugo slavi a	Turk ey	Spai n	Slov enia	Slov akia	Rom ania	Portu gal	Mold ova	Malt a	Mace donia	Italy	Hung ary	Gree ce	Geor gia	Cypr us	Croat ia	Bulg aria	Bosn ia	Belar us	Azer baija n	Arm enia	Alba nia
█ Tanks	1016	4205	688	76	272	1373	187			98	1349	753	1733	90	145	301	1475	205	1683	262	110	400

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Tanks: Actual versus CFE Limit in 2001

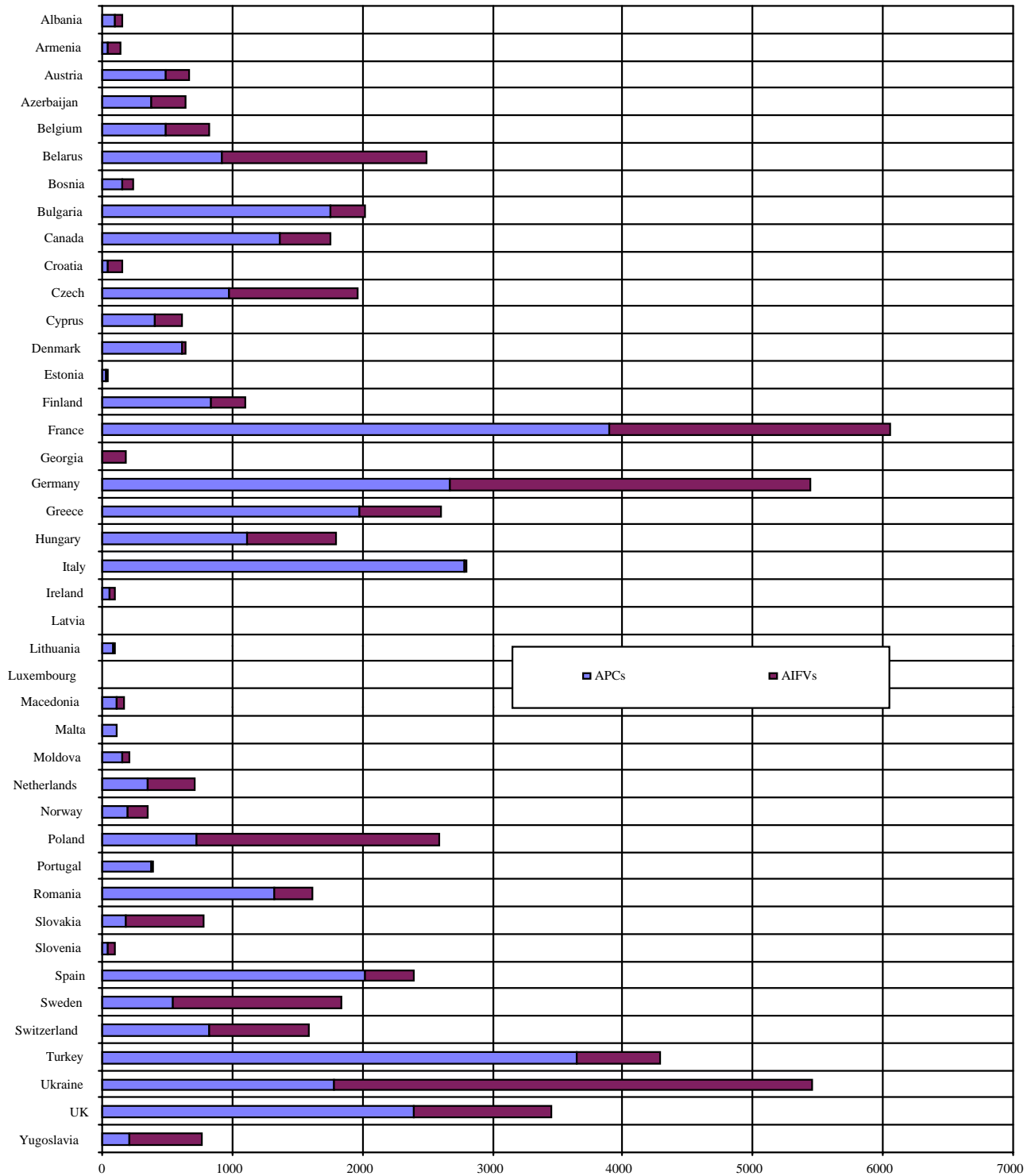
(As of January 1, 2001)



Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

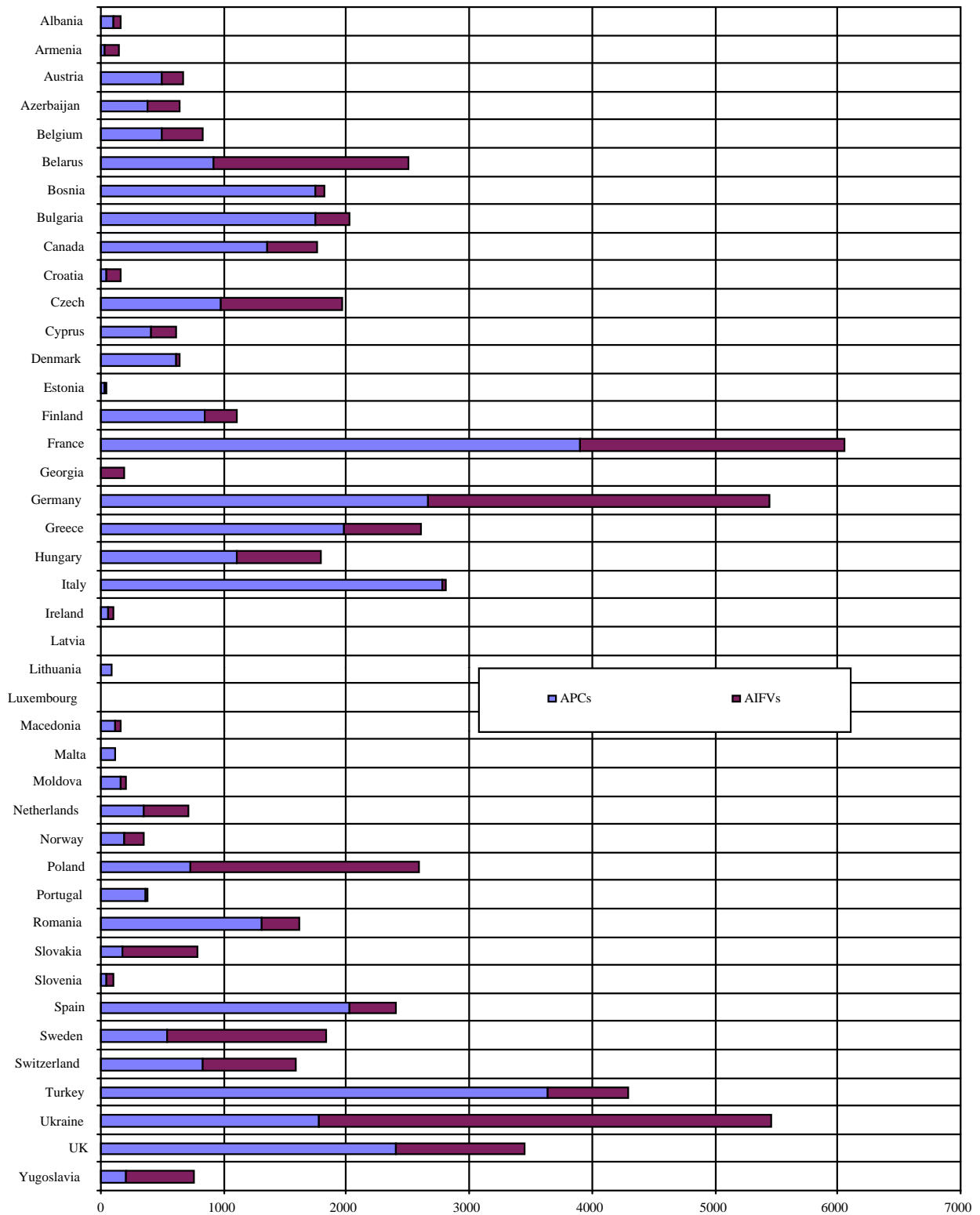


### Western Armor in Army Forces in 2001 – Less US and Russia



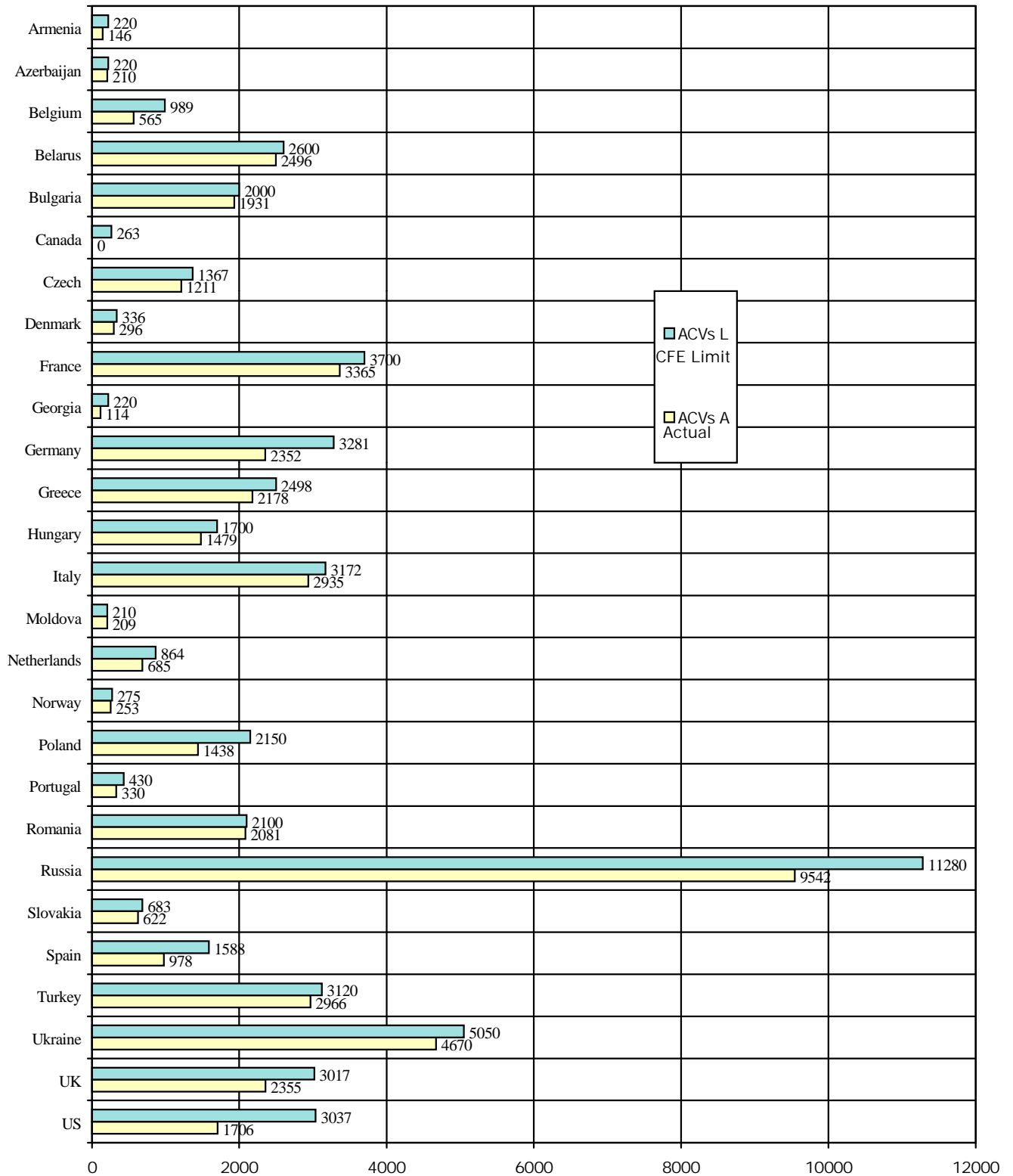
Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

**Western ACVs (AIFVs and APCs) in Army Forces in 2001 – Less US and Russia**



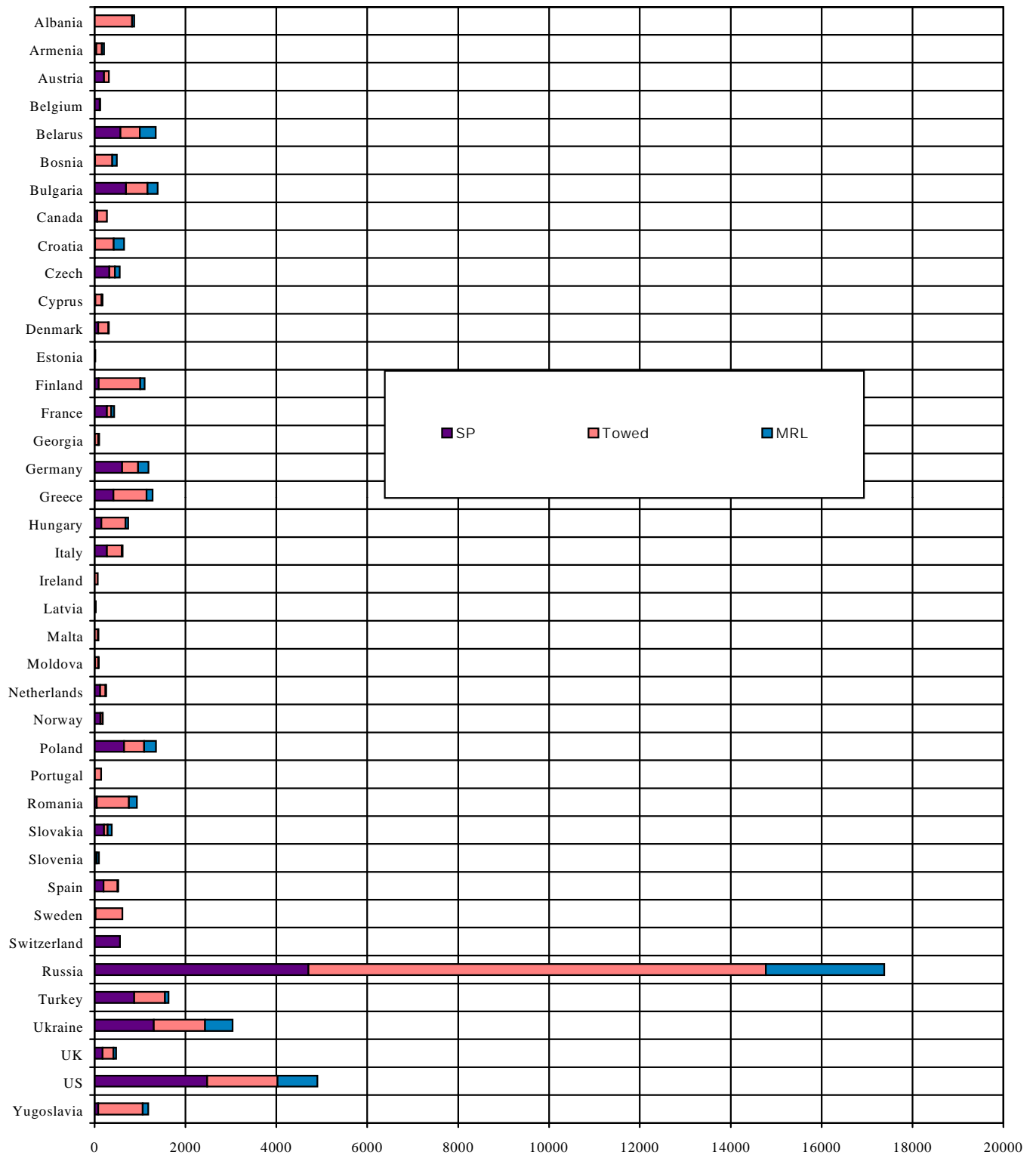
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

**ACVs (AIFVs and APCs): Actual versus CFE Limit in 2001**  
 (As of January 1, 2001)



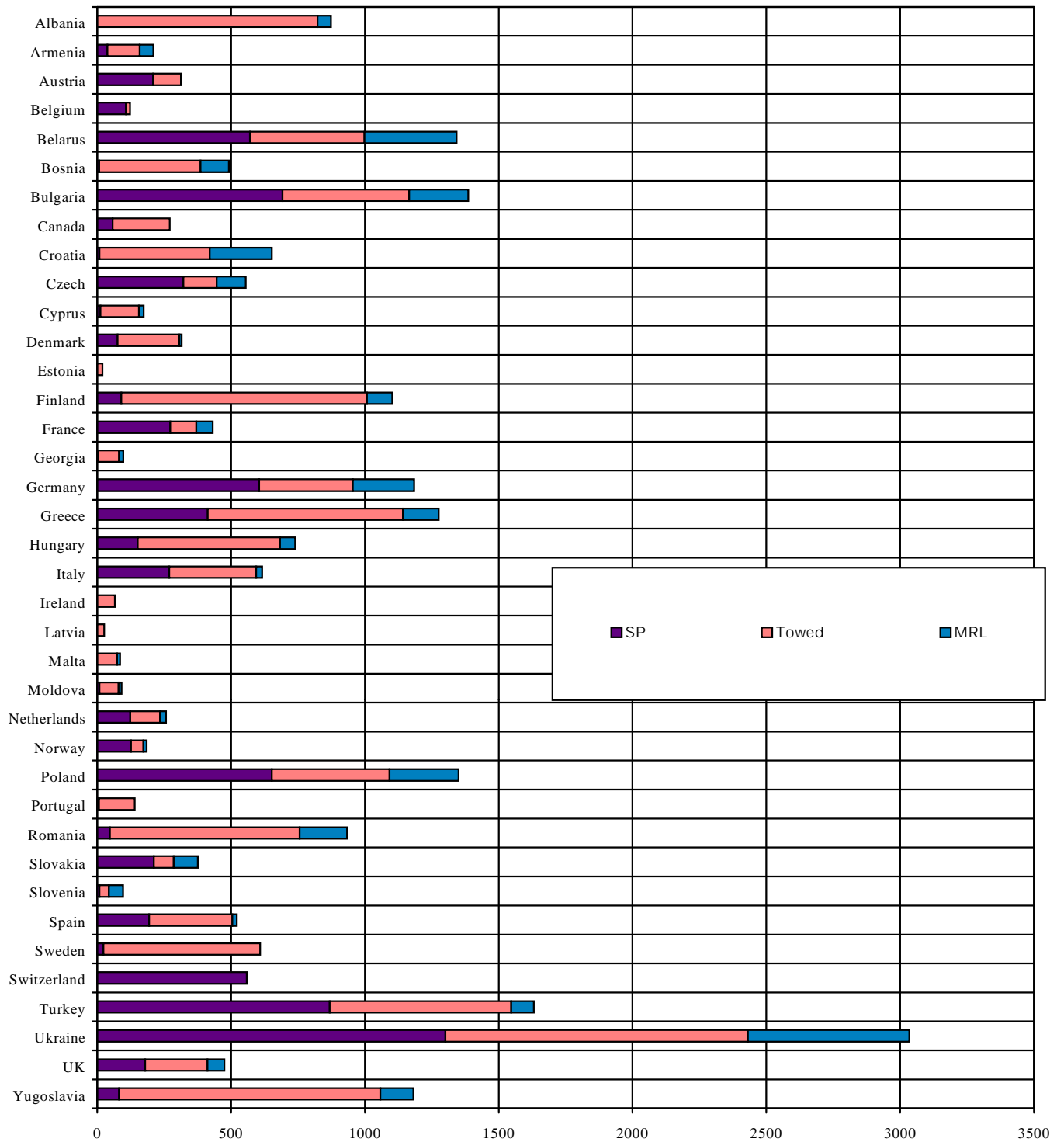
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Artillery in Army Forces in 2001 (Excludes countries without weapons)



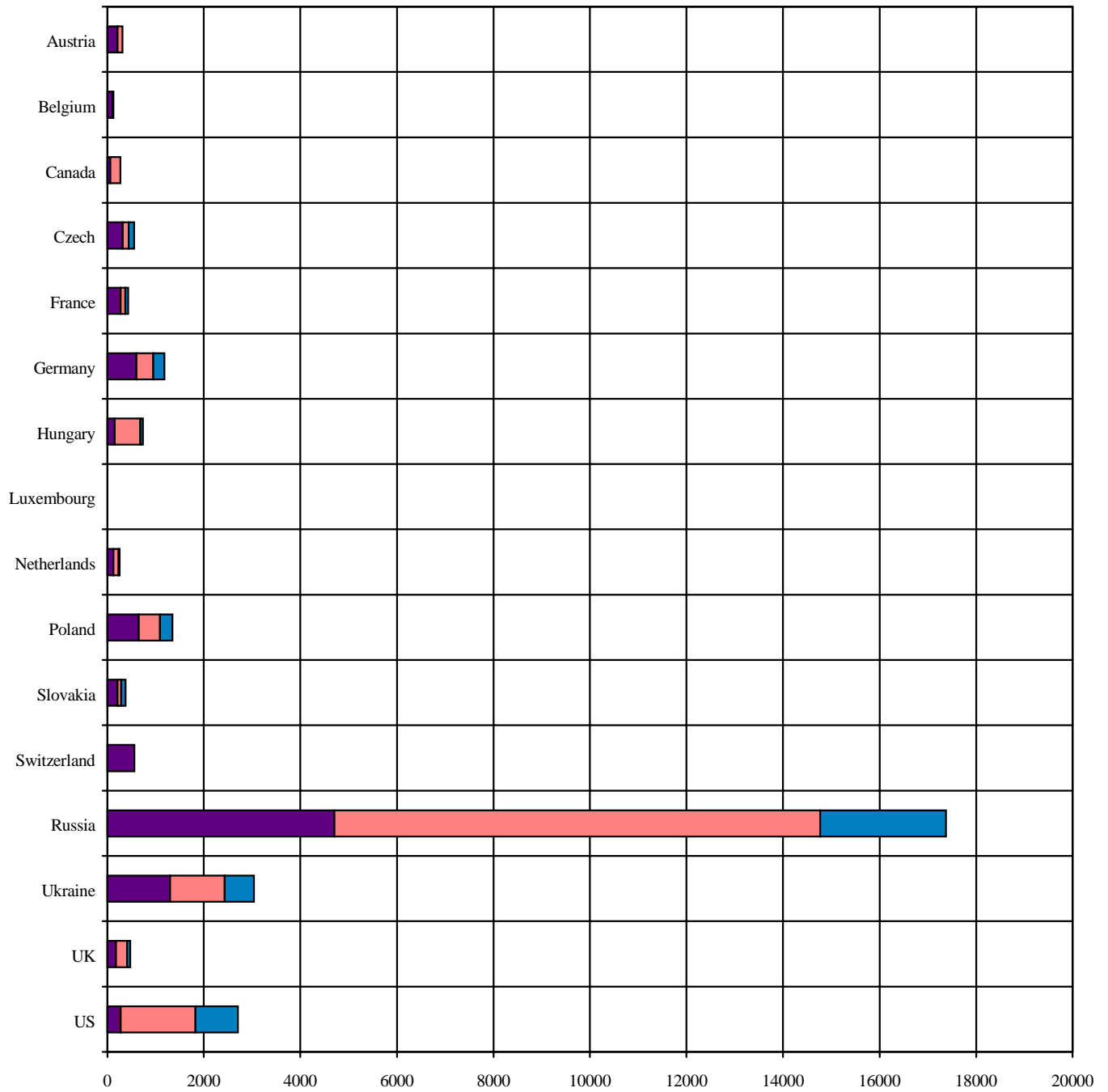
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Western Artillery in Army Forces in 2001: Less Russia and US (Excludes countries without weapons)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

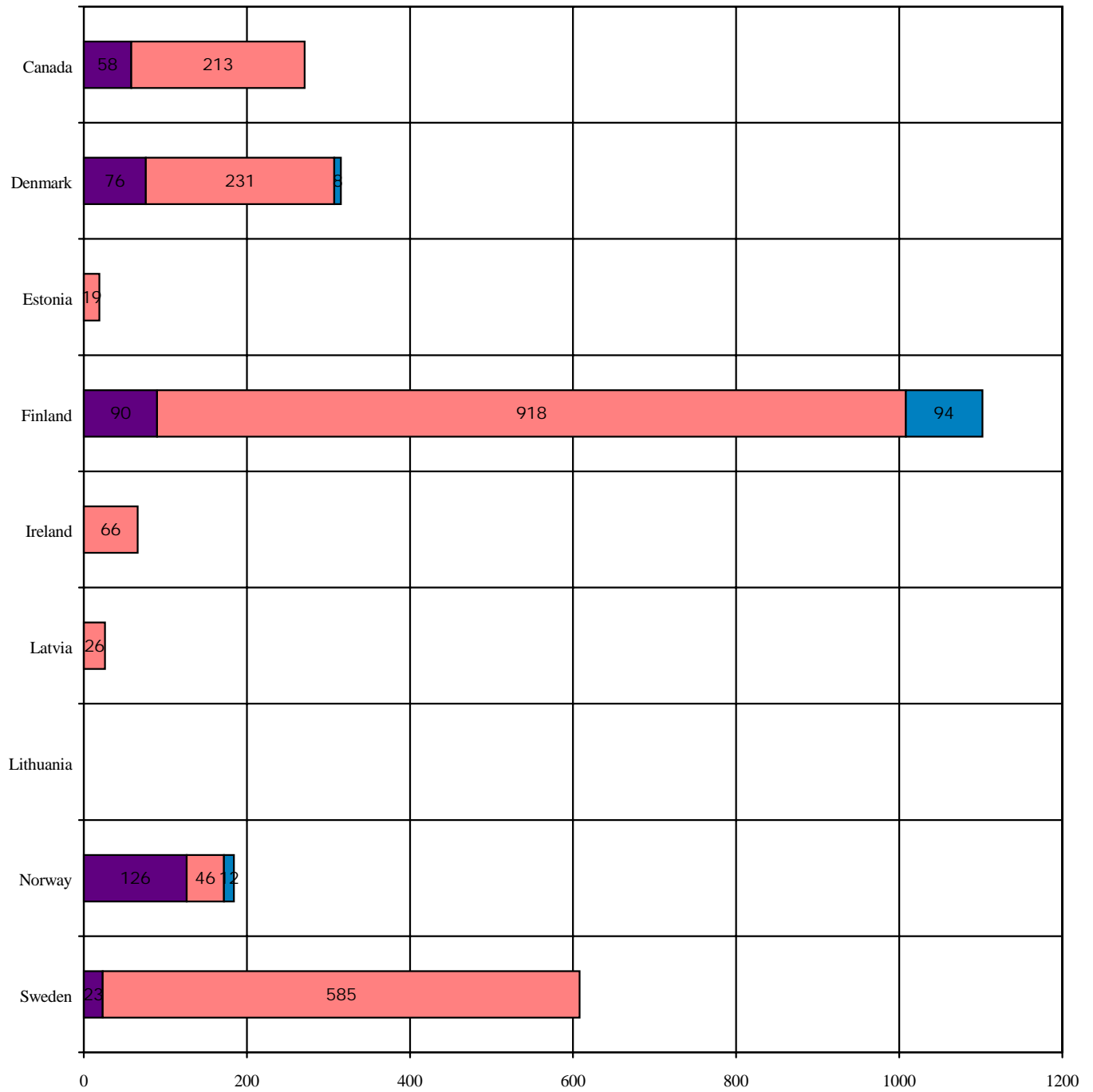
### Artillery in Central Area Forces in 2001



	US	UK	Ukraine	Russia	Switzerland	Slovakia	Poland	Netherlands	Luxembourg	Hungary	Germany	France	Czech	Canada	Belgium	Austria
MRL	881	63	603	2606		90	258	22		56	229	61	109			
Towed	1547	233	1130	10065		75	440	112		532	350	97	124	213	14	104
SP	276	179	1301	4705	558	211	652	123		151	605	273	322	58	108	209

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

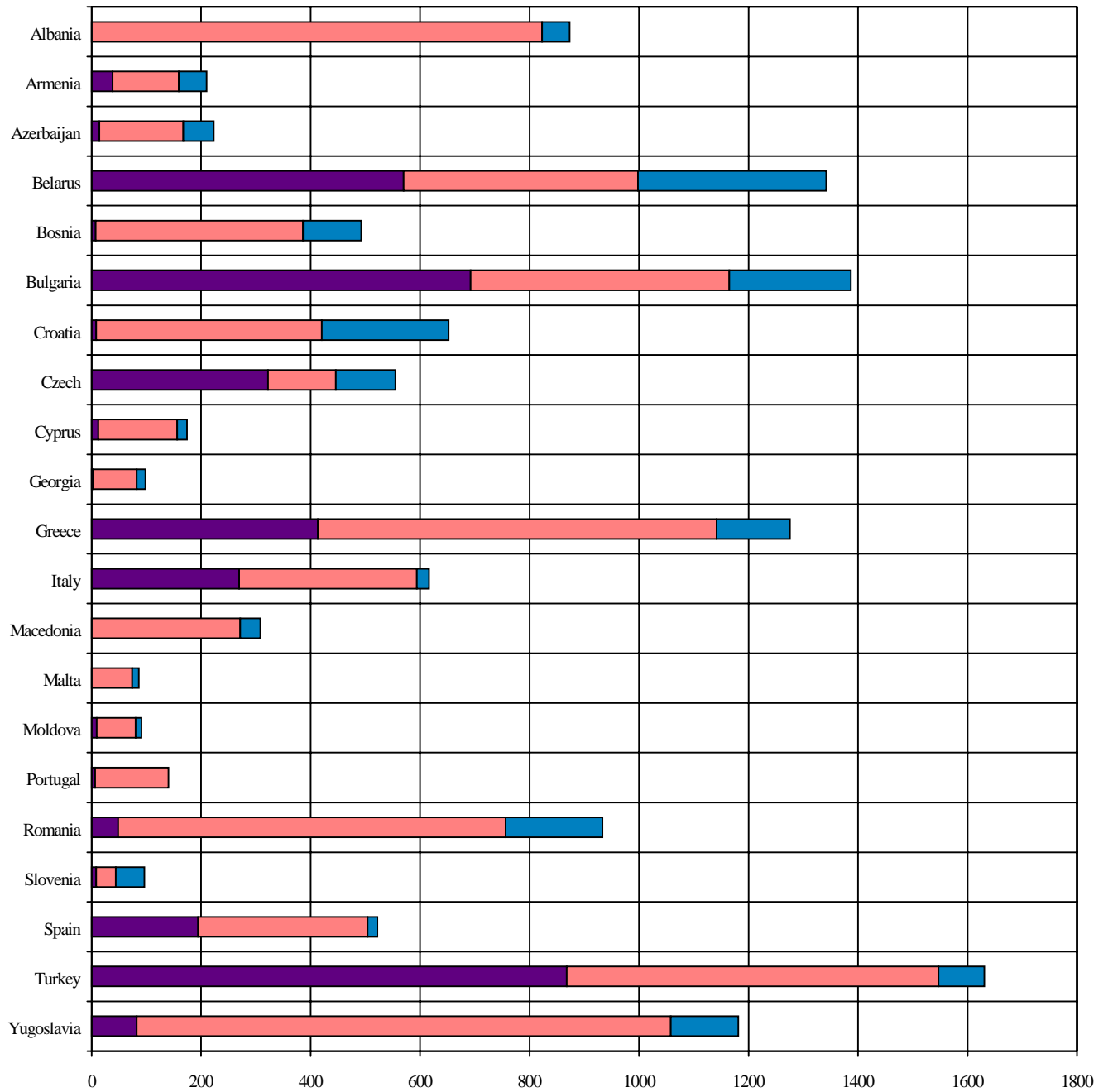
### Artillery in Northern Area Forces in 2001



	Sweden	Norway	Lithuania	Latvia	Ireland	Finland	Estonia	Denmark	Canada
MRL		12				94		8	
Towed	585	46		26	66	918	19	231	213
SP	23	126				90		76	58

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Artillery in Southern Area Forces in 2001



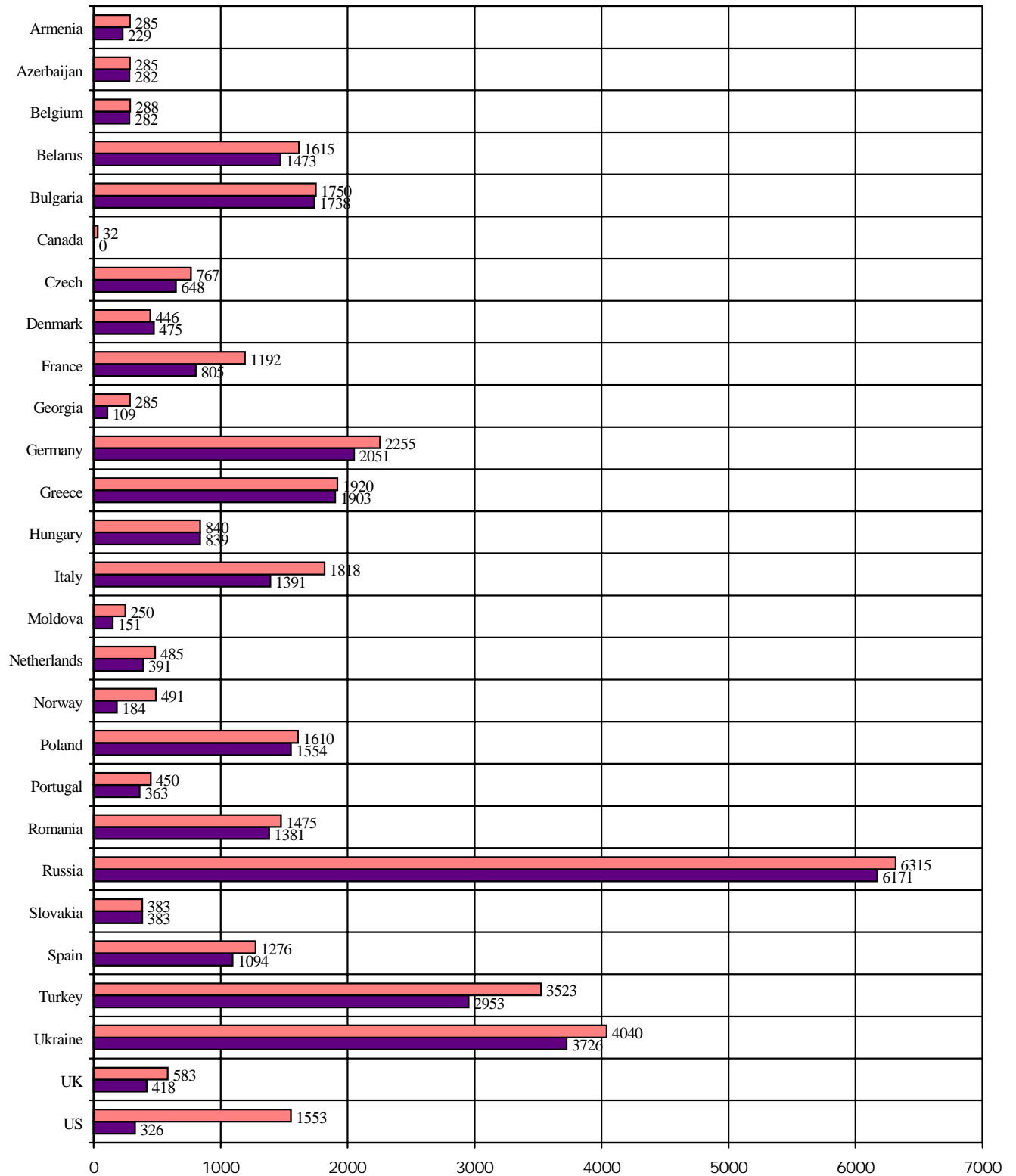
	Yugos lavia	Turke y	Spain	Slove nia	Roma nia	Portug al	Moldo va	Malta	Mace donia	Italy	Greec e	Georg ia	Cypru s	Czech	Croati a	Bulga ria	Bosni a	Belaru s	Azerb aijan	Arme nia	Alban ia
■ MRL	123	84	18	52	177		11	12	37	22	134	16	18	109	232	222	106	344	56	51	50
■ Towed	976	679	310	36	708	134	71	74	271	325	729	79	144	124	412	473	379	428	153	121	823
■ SP	82	868	194	8	48	6	9			269	413	3	12	322	8	692	7	570	14	38	

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.



### Artillery: Actual versus CFE Limit in 2001

(As of January 1, 2001)

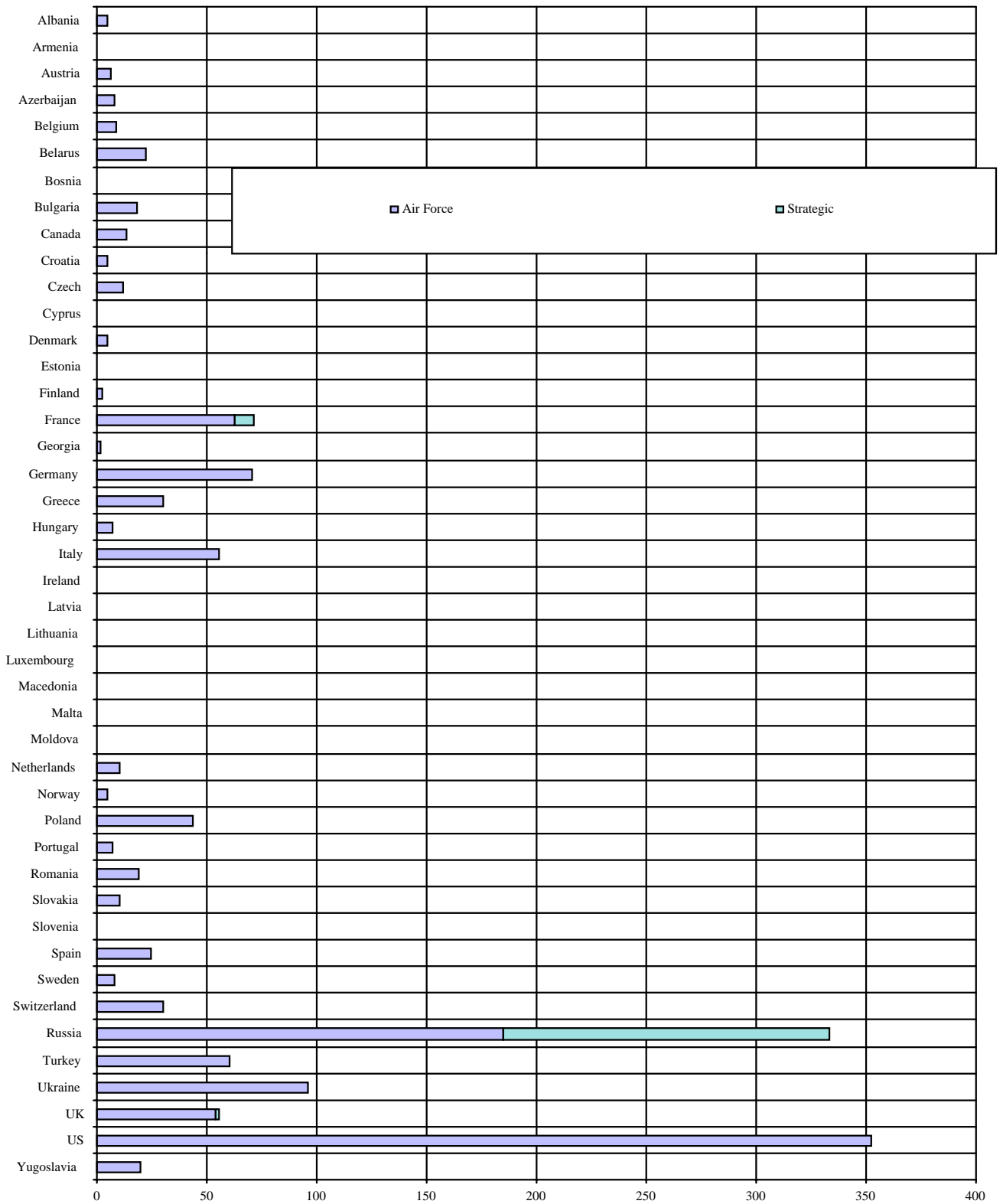


Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

# **Part Three**

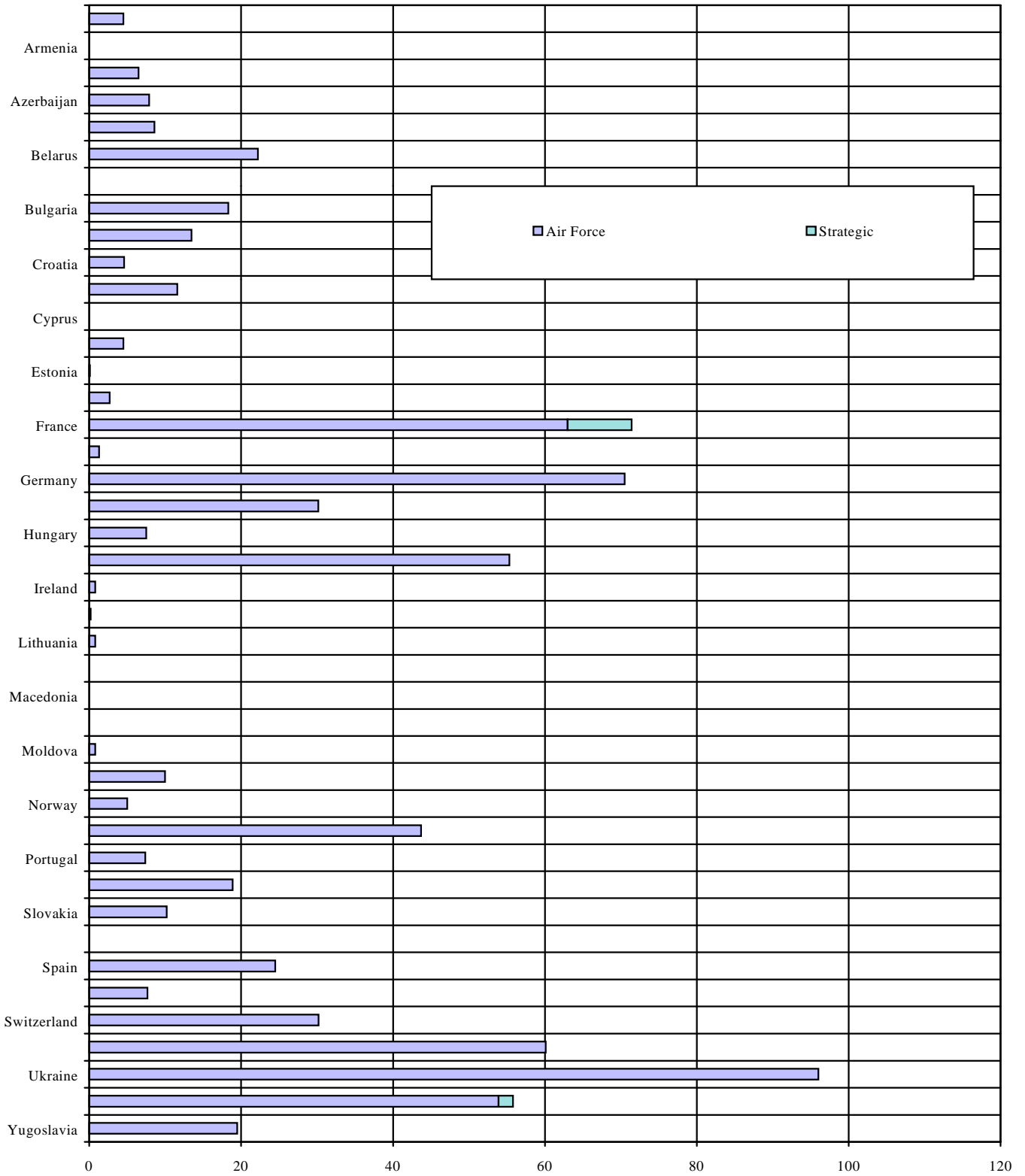
# **Western Air Forces**

### Western Active Air Force Manpower in 2001 (in 1,000s)



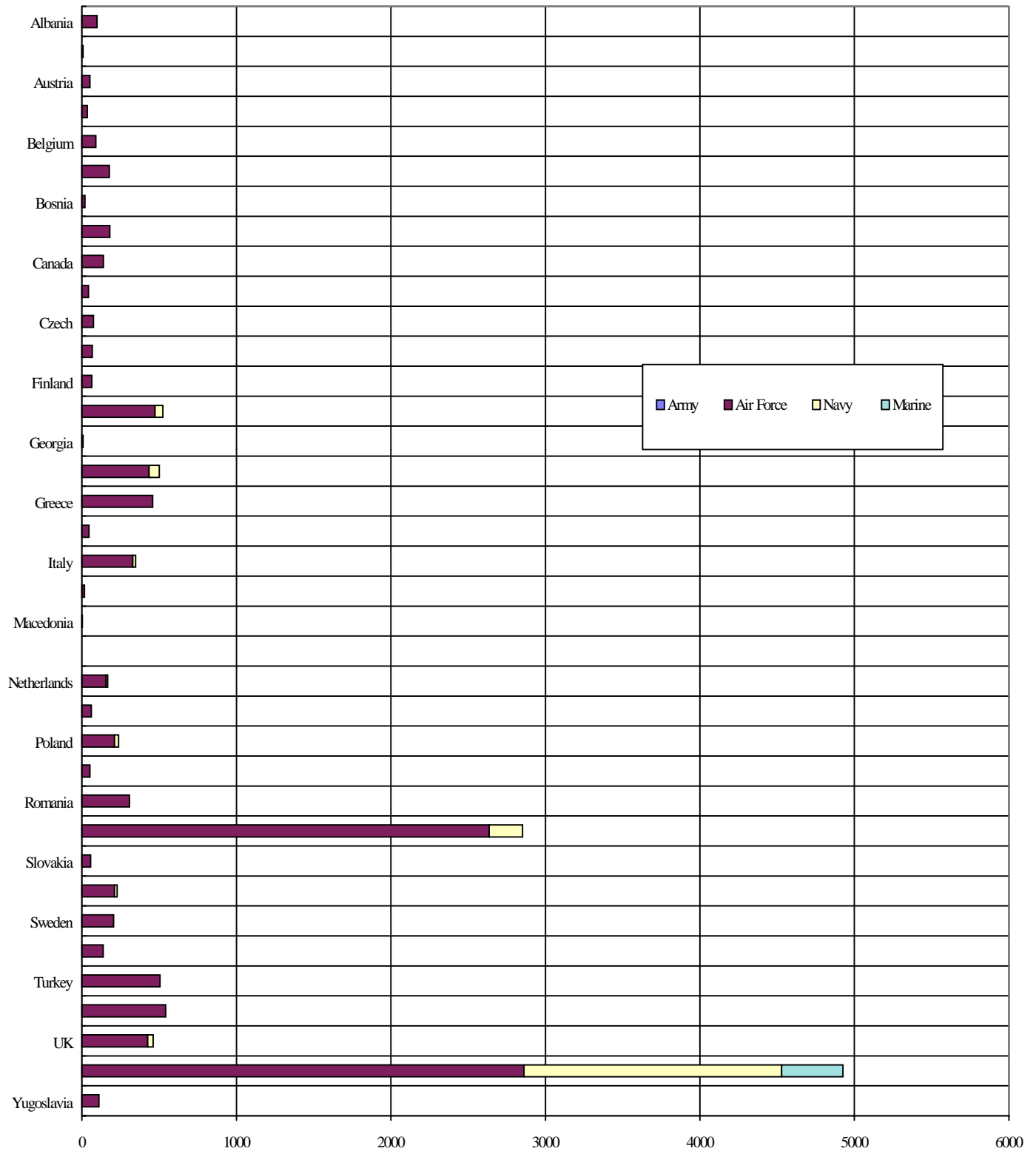
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

**Western Active Air Force Manpower in 2001 (in 1,000s) Less Russia and US**



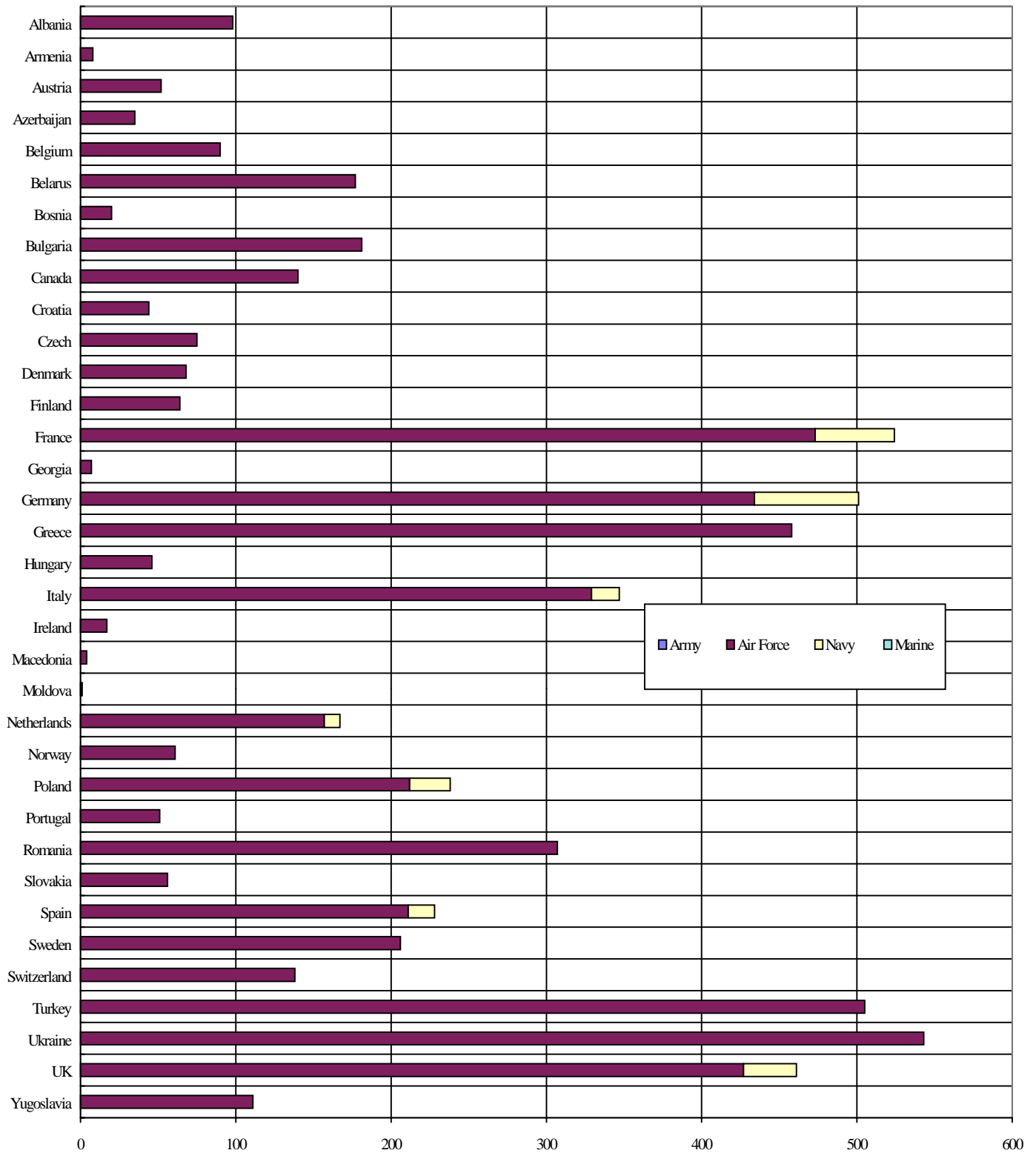
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Fixed Wing Combat Aircraft in Western Forces in 2001 (Includes only countries with such aircraft)



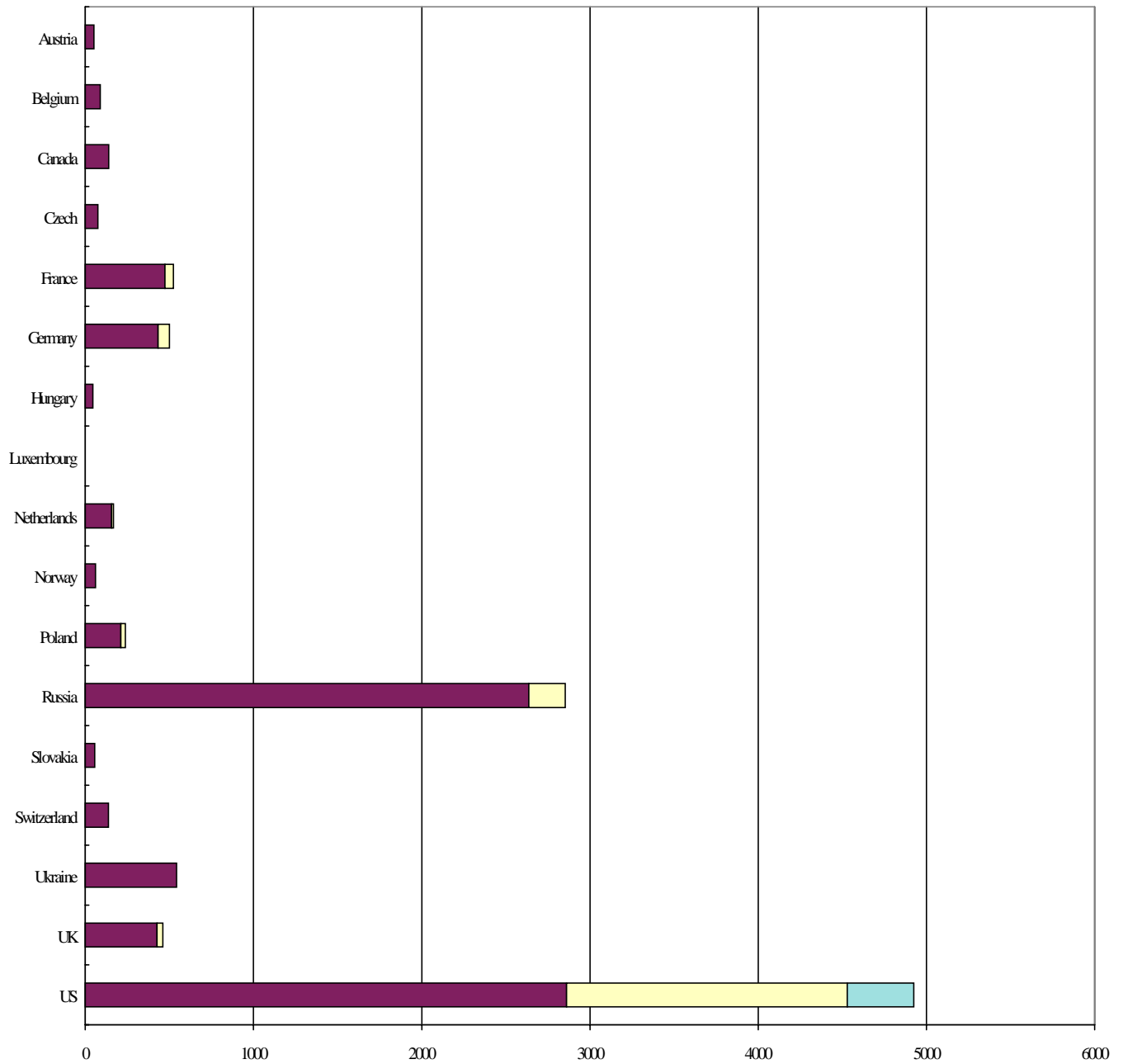
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Fixed Wing Combat Aircraft in Western Forces in 2001 – Less Russia and US (Includes only countries with such aircraft)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

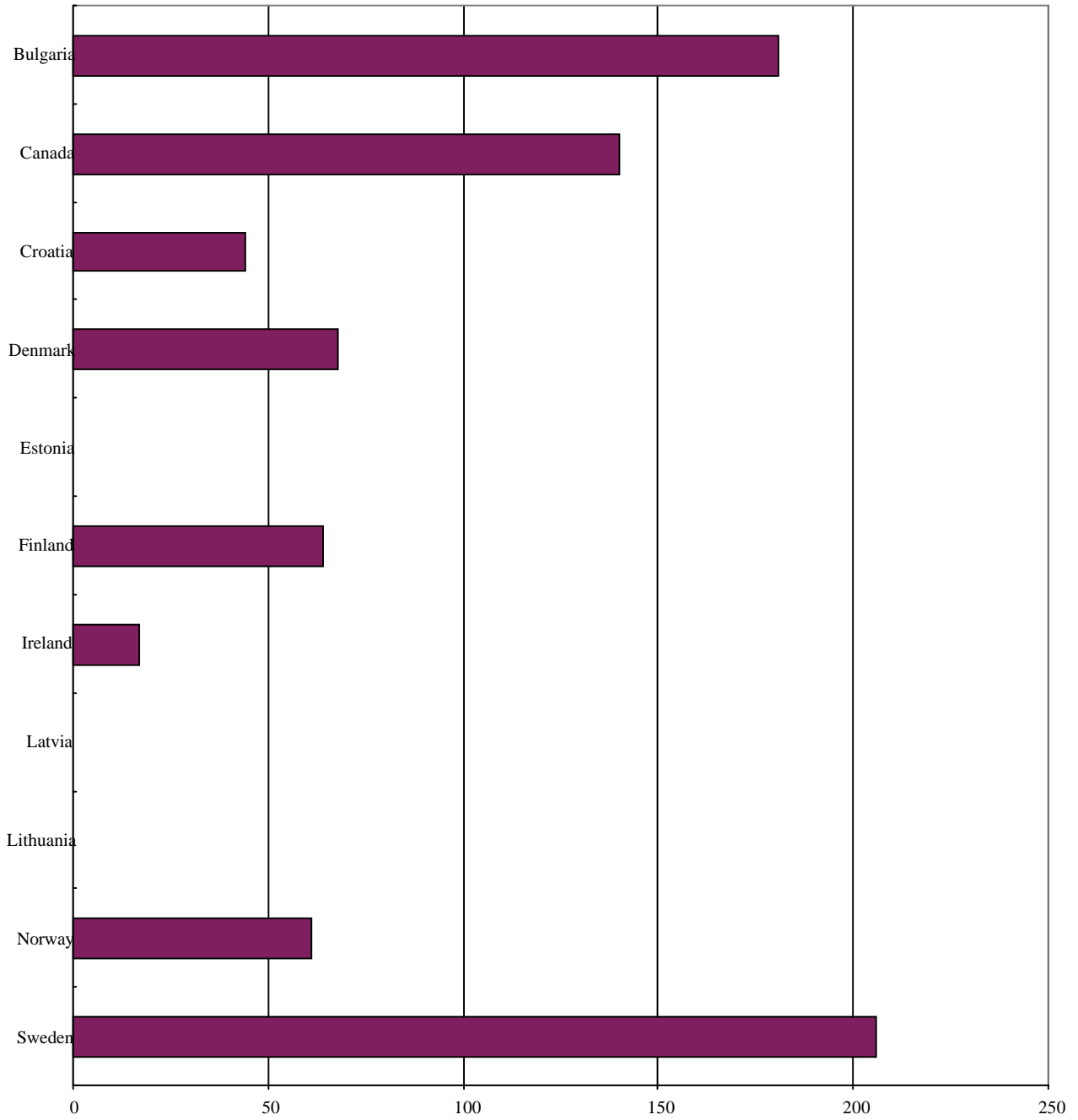
### Fixed Wing Combat Aircraft in Central Area Forces in 2001



	US	UK	Ukraine	Switzerland	Slovakia	Russia	Poland	Norway	Netherlands	Luxembourg	Hungary	Germany	France	Czech	Canada	Belgium	Austria
Marine	396																
Navy	1669	34				217	26		10			67	51				
Air Force	2860	427	543	138	56	2636	212	61	157		46	434	473	75	140	90	52
Army																	

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Fixed Wing Combat Aircraft in Northern Area Forces in 2001



	Sweden	Norway	Lithuania	Latvia	Ireland	Finland	Estonia	Denmark	Croatia	Canada	Bulgaria
■ Marine											
□ Navy											
■ Air Force	206	61			17	64		68	44	140	181
■ Army											

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.



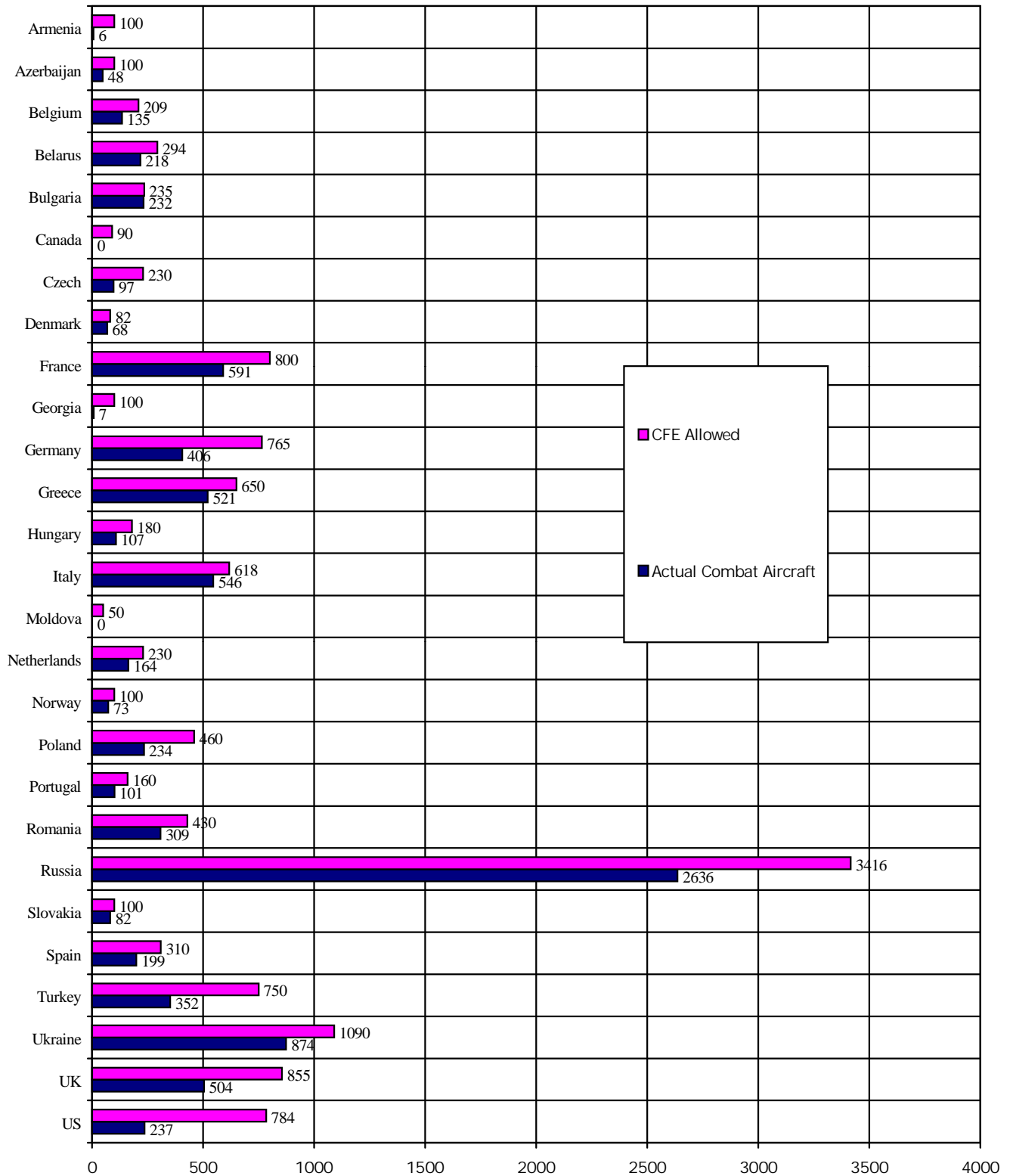
### Fixed Wing Combat Aircraft in Southern Area Forces in 2001



	Yugoslavia	Turkey	Spain	Slovenia	Romania	Portugal	Moldova	Malta	Macedonia	Italy	Greece	Georgia	Cyprus	Croatia	Bulgaria	Bosnia	Belarus	Azerbaijan	America	Albania	
■ Marine																					
□ Navy			17							18											
■ Air Force	111	505	211		307	51	1		4	329	488	7		44	181	20	177	35	8	98	
■ Army																					

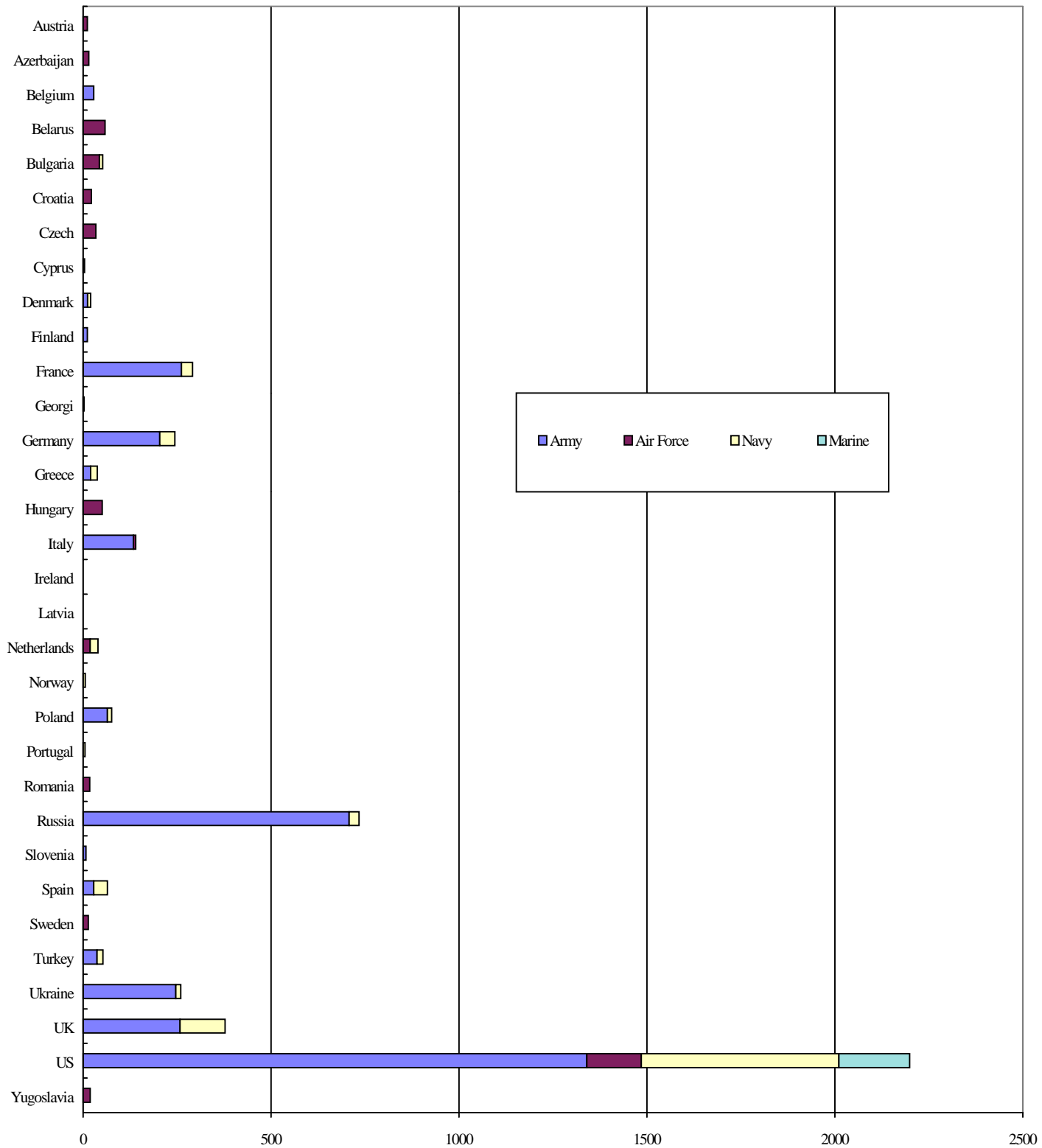
Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

### Fixed Wing Combat Aircraft: Actual versus CFE Limit in 2001 (As of January 1, 2001)



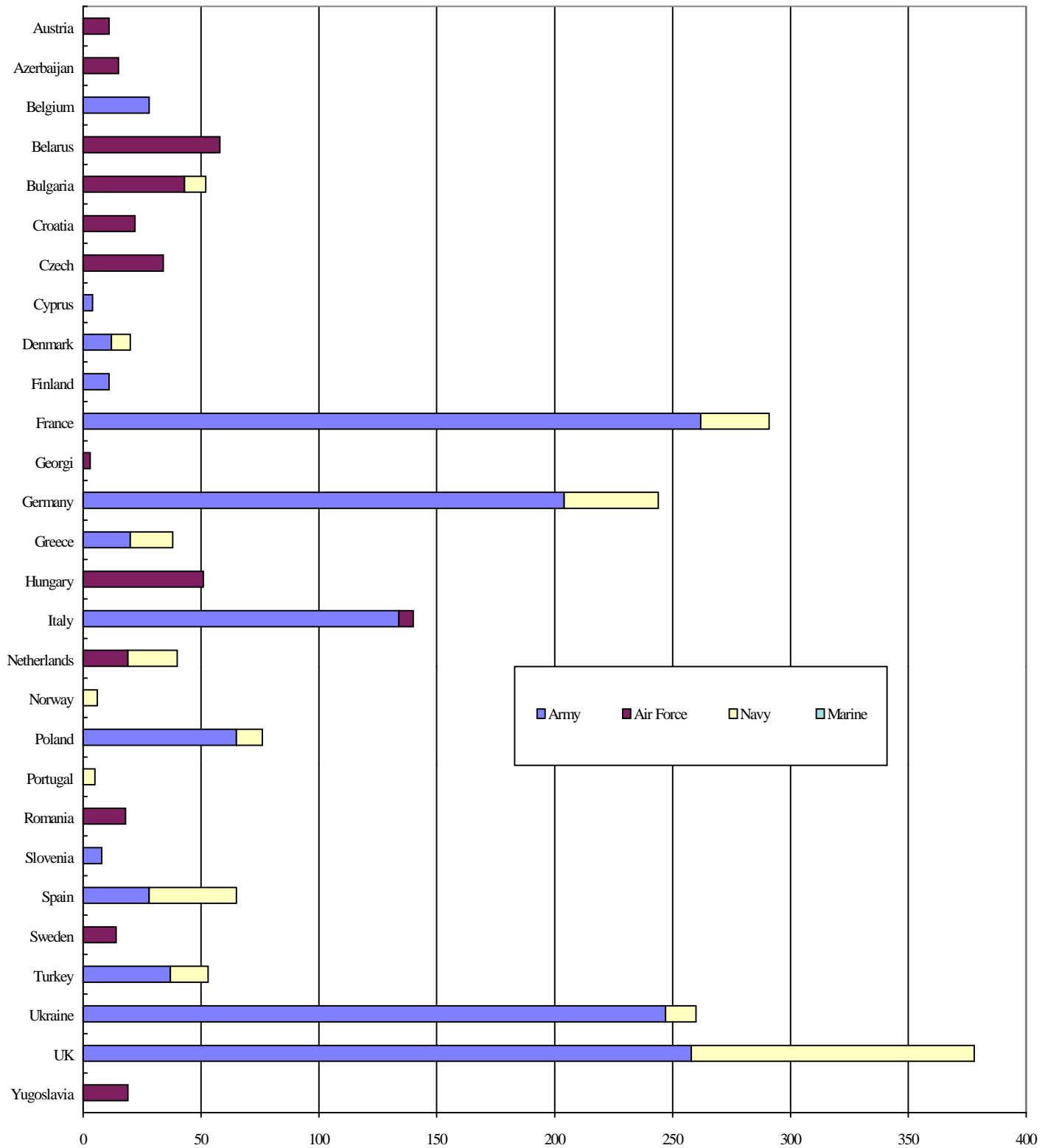
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Armed Helicopters in Western Forces in 2001 (Includes only countries with armed helicopters)



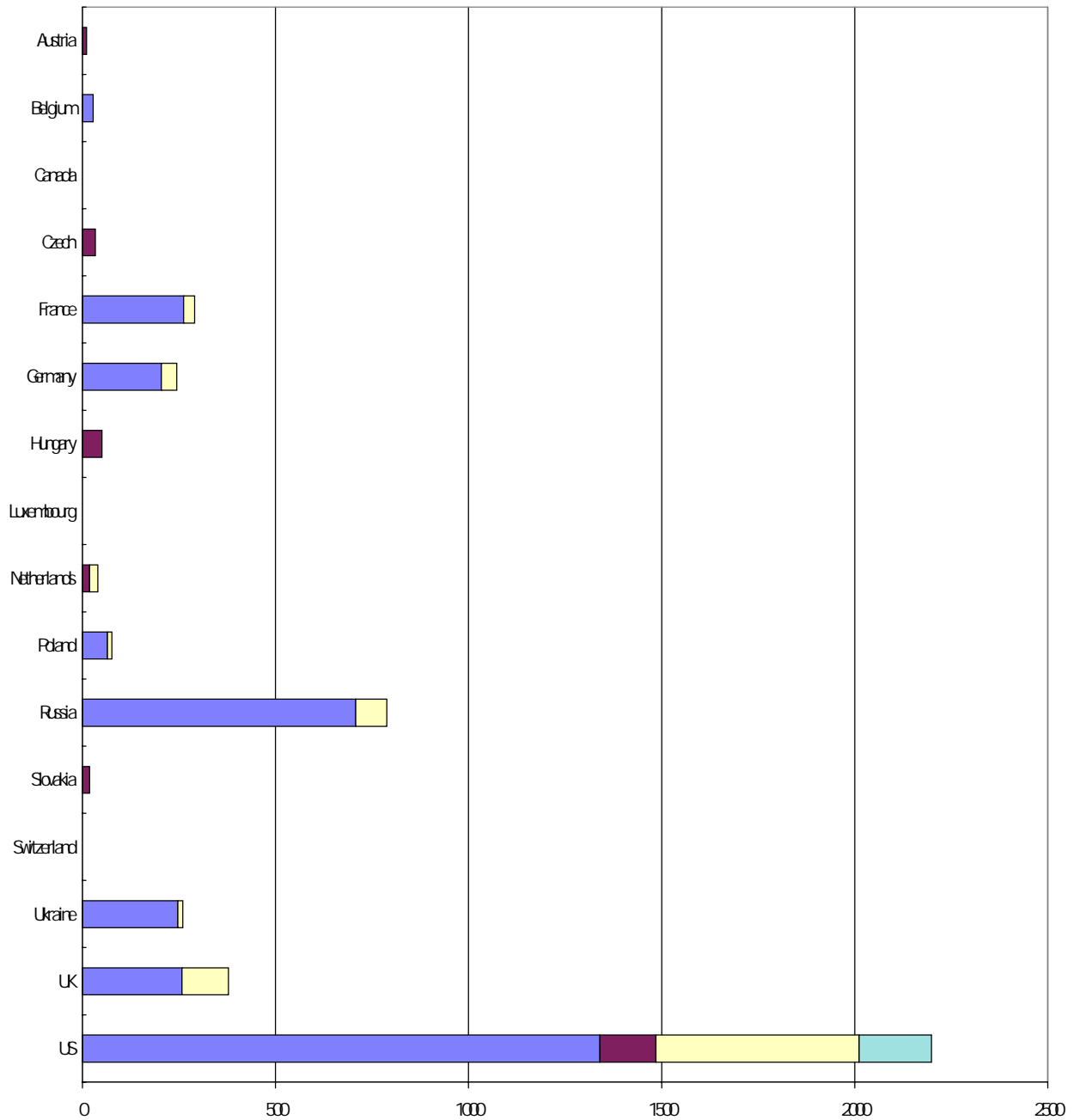
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Armed Helicopters in Western Forces in 2001 – Less Russia and US (Includes only countries with armed helicopters)



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

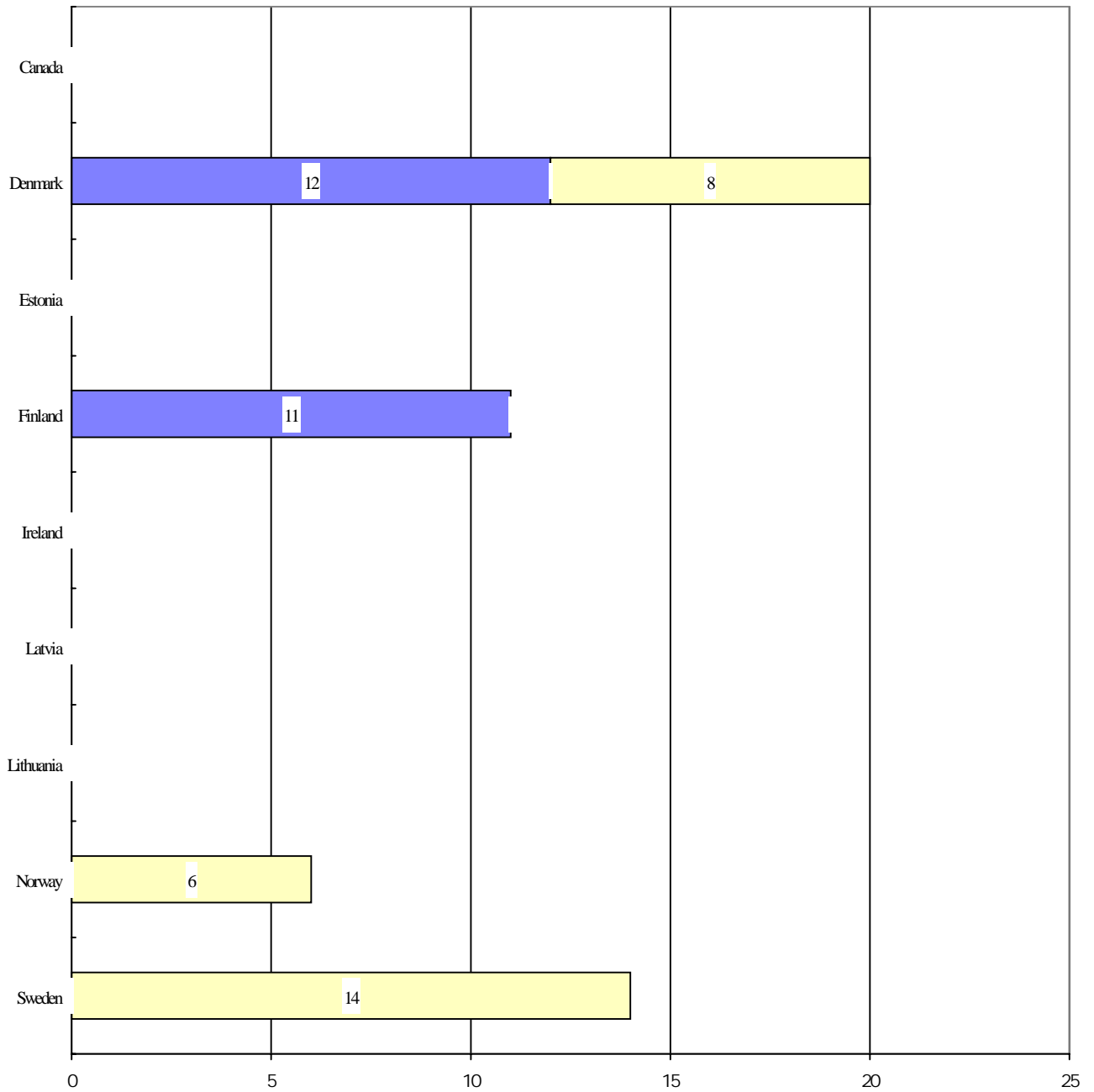
### Attack Helicopters in Central Area Forces in 2001



	US	UK	Ukraine	Switzerland	Slovakia	Russia	Poland	Netherlands	Luxembourg	Hungary	Germany	France	Czech	Canada	Belgium	Austria
Marine	188															
Navy	526	120	13			80	11	21			40	29				
Air Force	145				19			19		51			34			11
Army	1340	258	247			708	65				204	262			28	

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

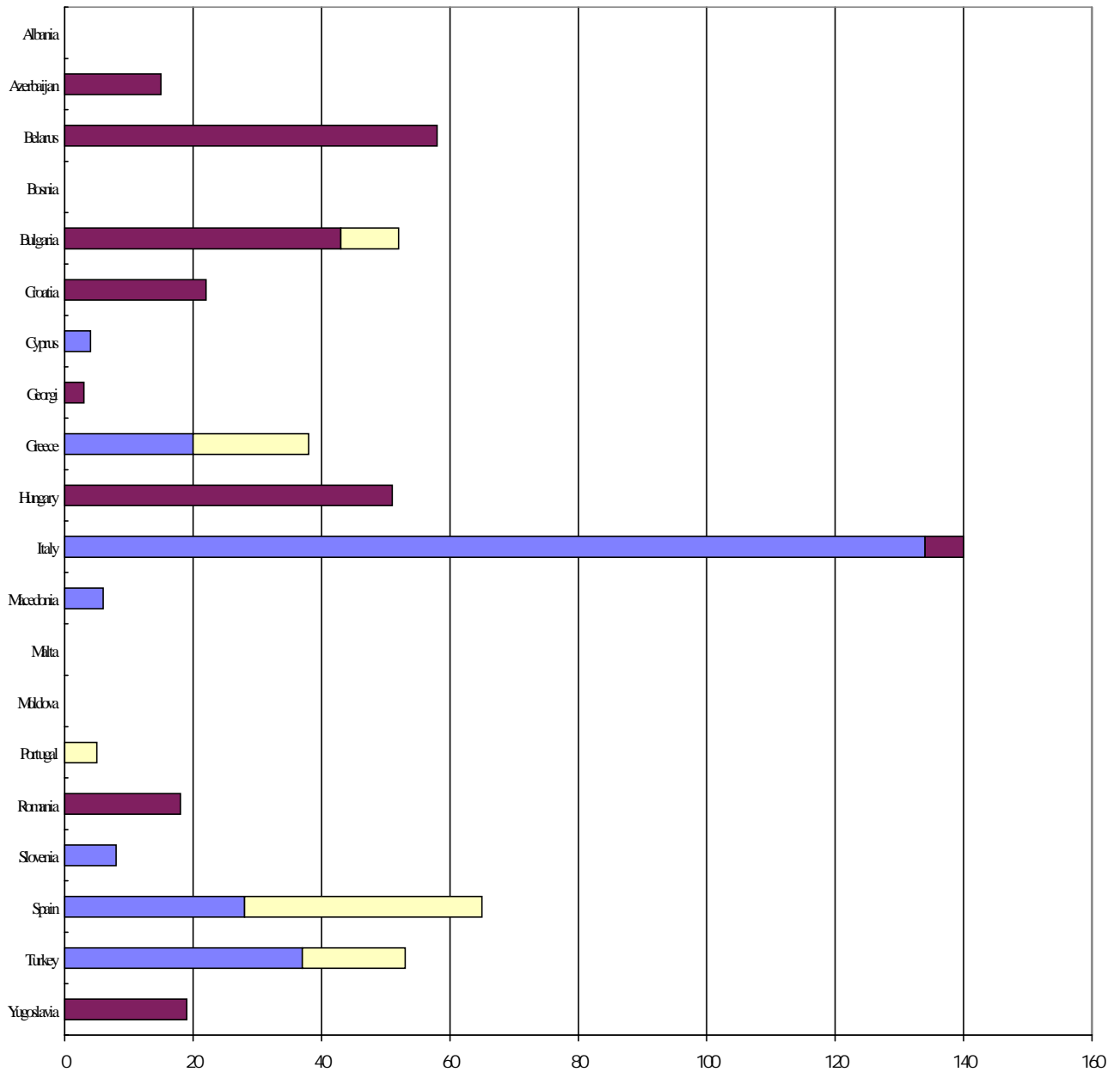
### Armed Helicopters in Northern Area Forces in 2001



	Sweden	Norway	Lithuania	Latvia	Ireland	Finland	Estonia	Denmark	Canada
Marine									
Navy	14	6						8	
Air Force									
Army						11		12	

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

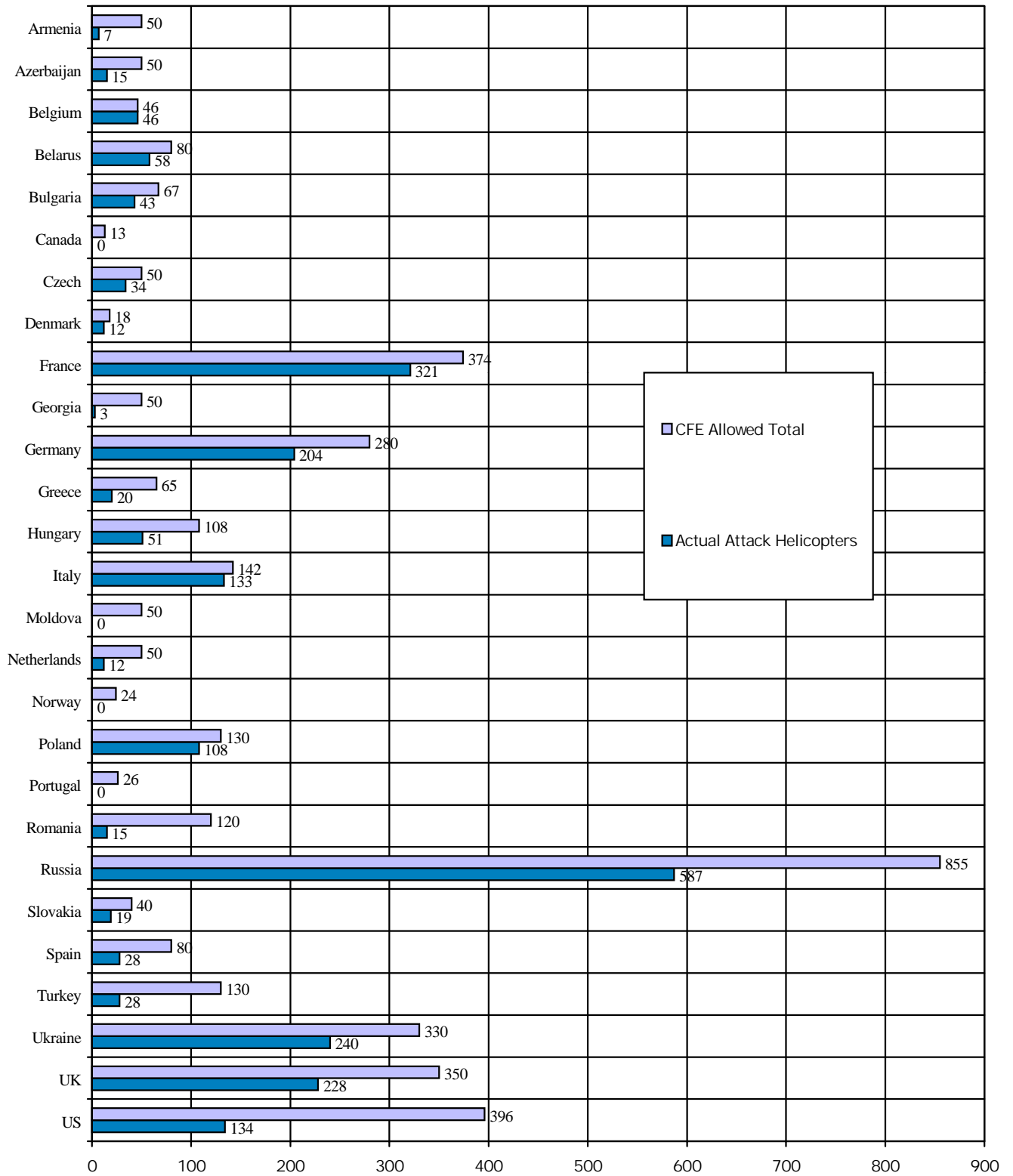
### Armed Helicopters in Southern Area Forces in 2001



	Yugoslavia	Turkey	Spain	Slovenia	Romania	Portugal	Moldova	Malta	Macedonia	Italy	Hungary	Greece	Georgia	Cyprus	Croatia	Bulgaria	Bosnia	Belarus	Azerbaijan	Albania	
Army		37	28	8					6	134		20		4							
Navy		16	37			5						18				9					
Air Force	19				18					6	51		3		22	43		58	15		
Marine																					

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Attack Helicopters: Actual versus CFE Limit in 2000 (As of January 1, 2001)



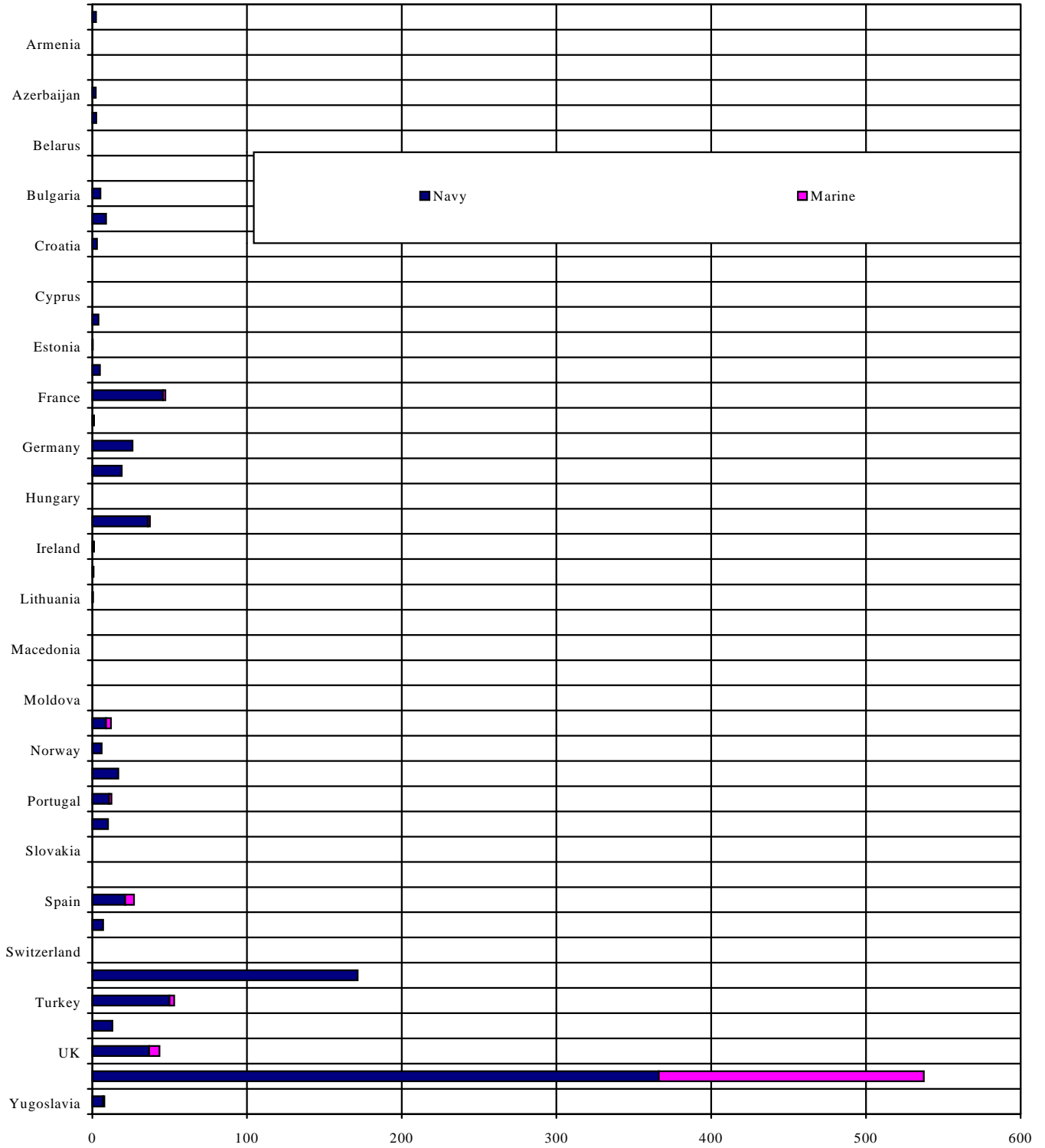
Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.



# **Part Four**

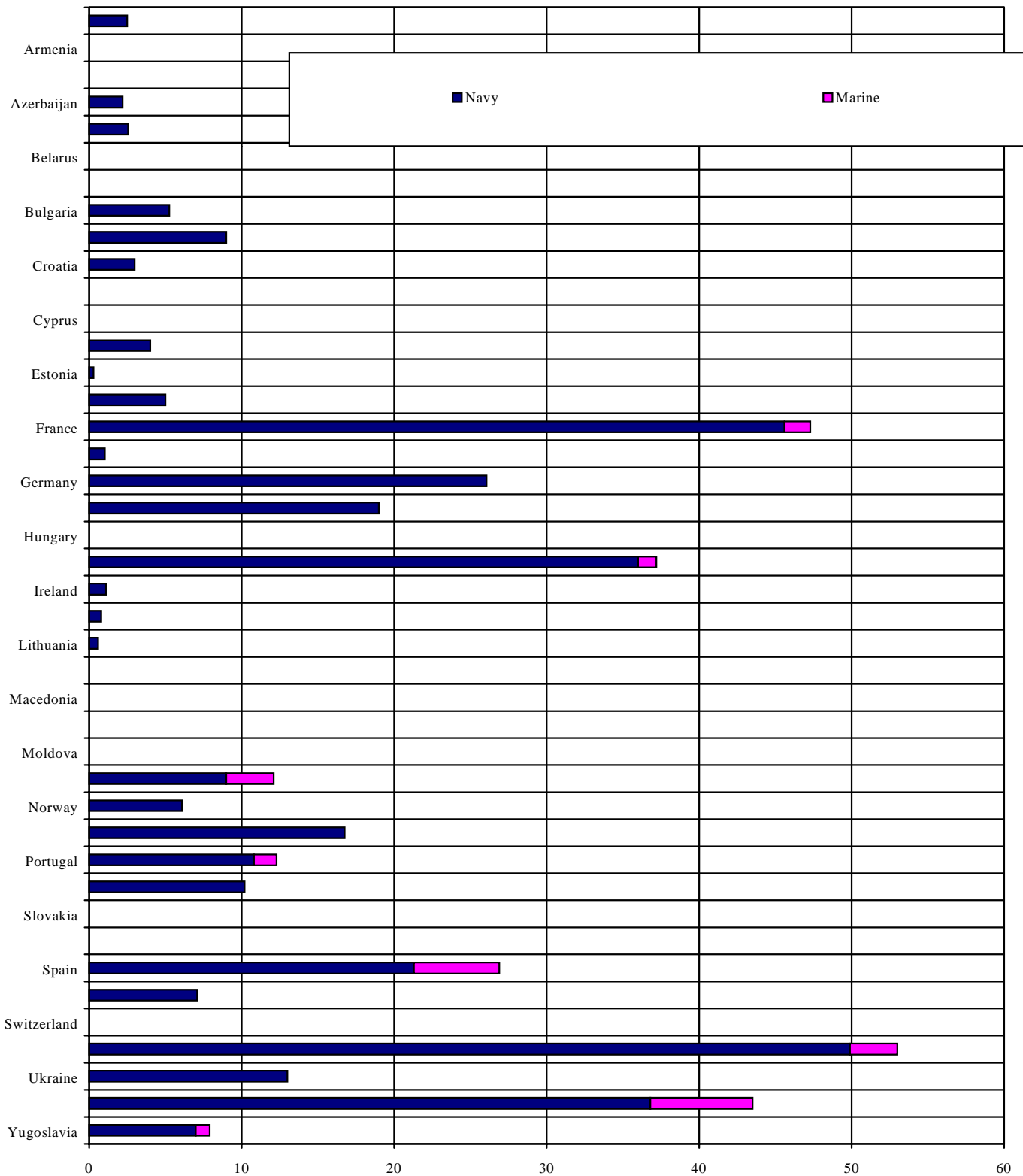
## **Naval and Marine Forces**

**Western Naval, Marine, and Naval Infantry Manpower in 2001 (in 1,000s)**



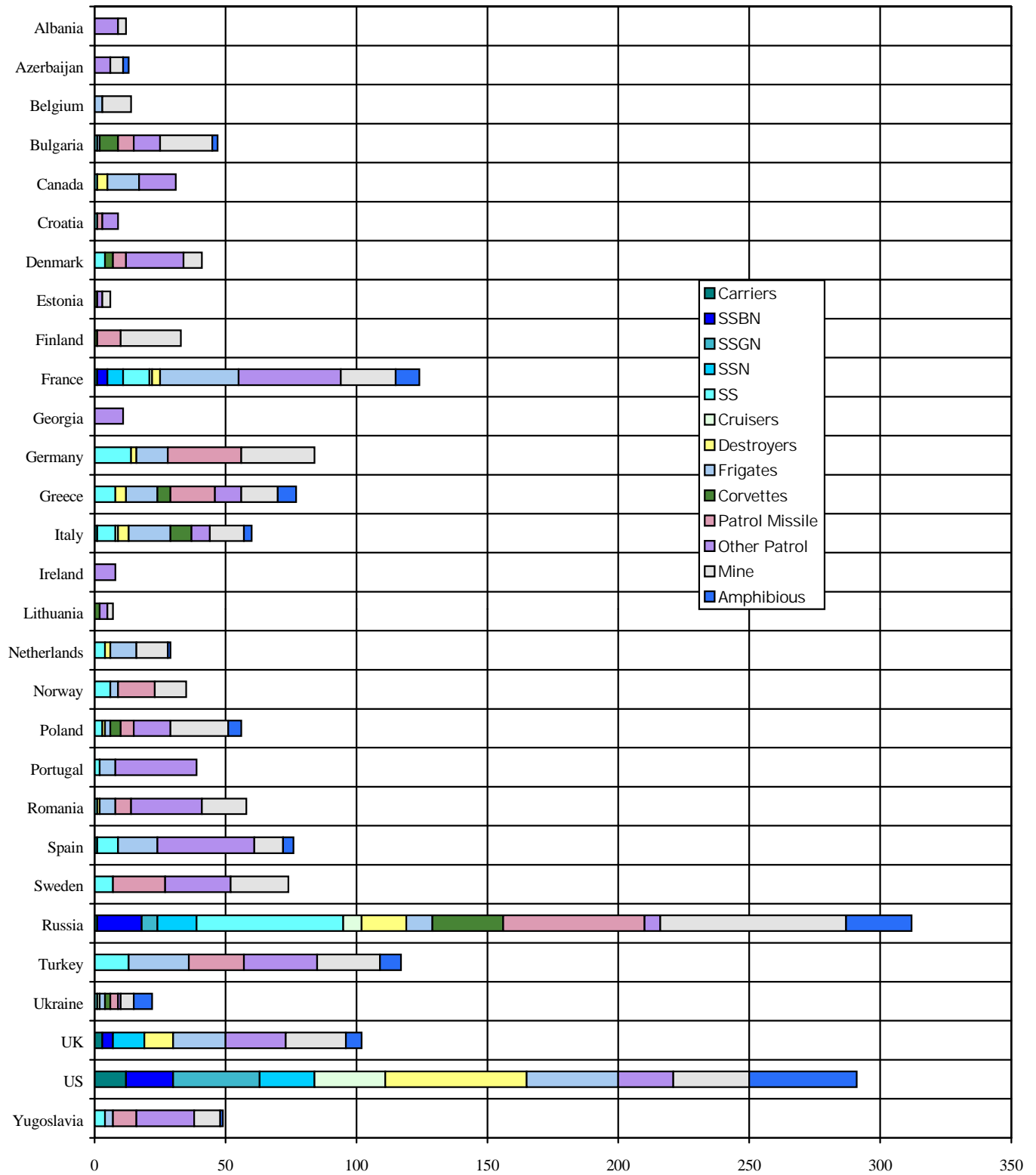
Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

### Western Naval, Marine, and Naval Infantry Manpower in 2001 (in 1,000s): Less US and Russia



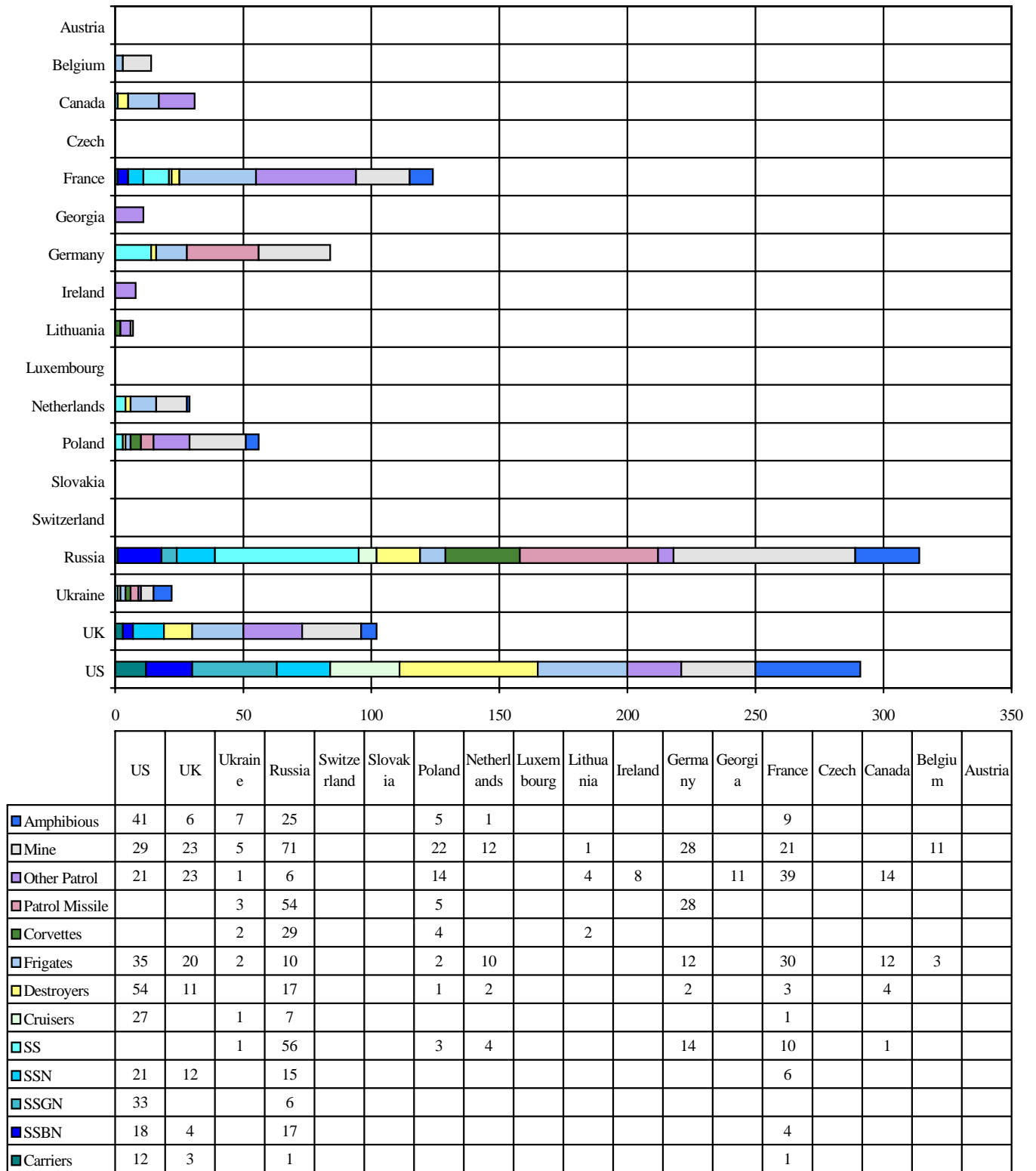
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

### Naval Ships in 2001 (Includes only countries with naval forces)



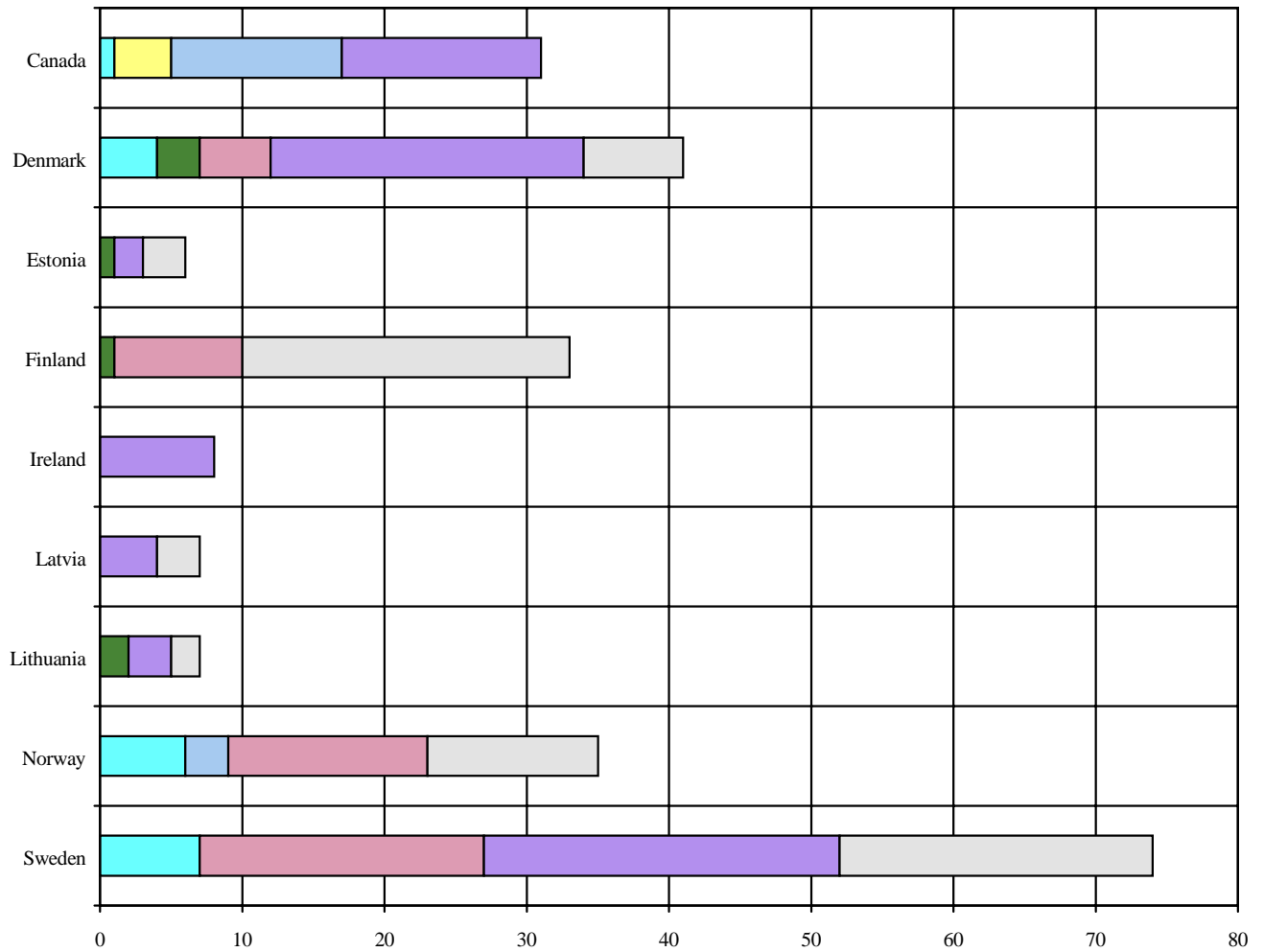
Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

### Central Area Ships in 2001



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002

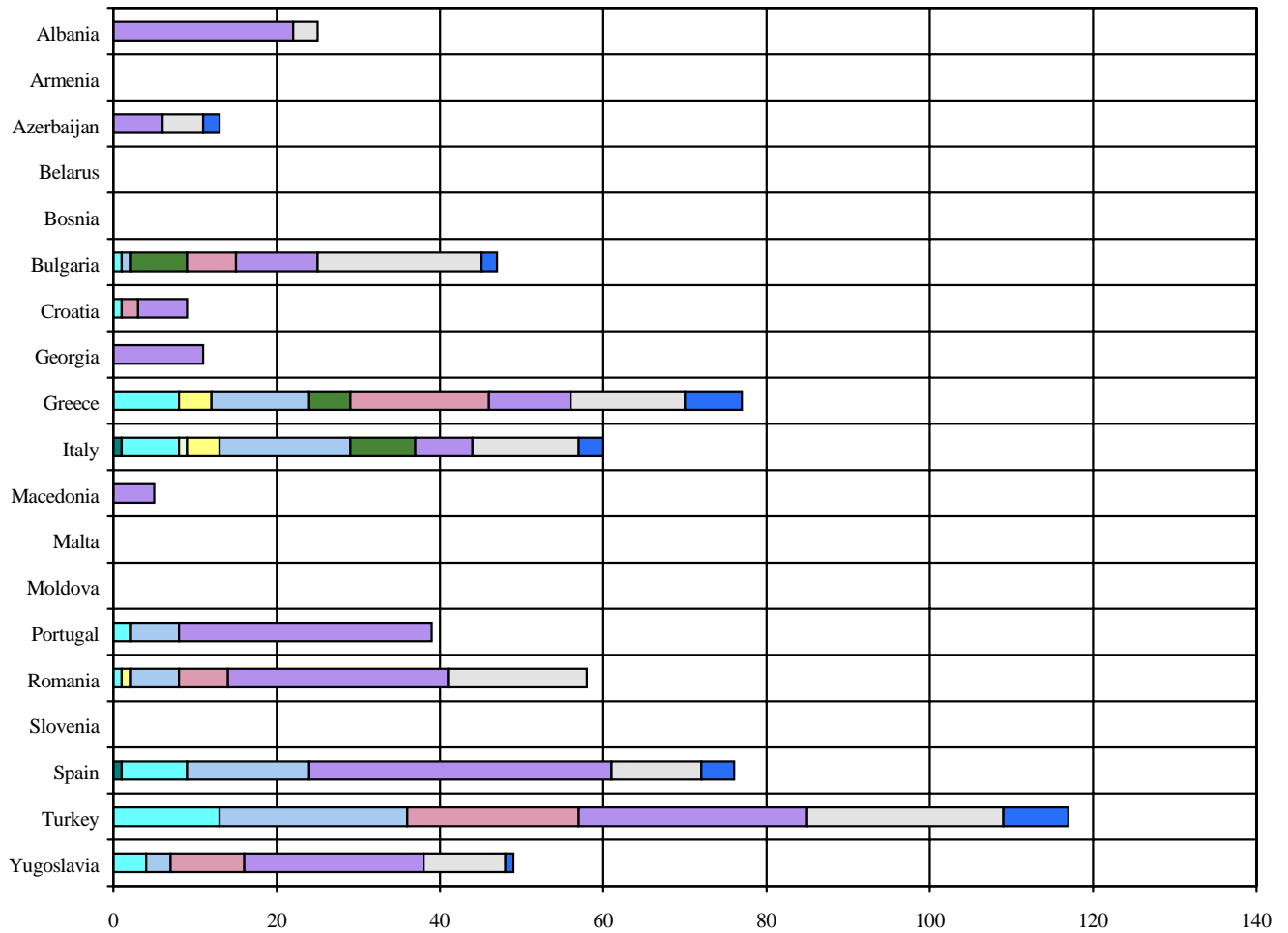
### Northern Area Ships in 2001



	Sweden	Norway	Lithuania	Latvia	Ireland	Finland	Estonia	Denmark	Canada
Amphibious									
Mine	22	12	2	3		23	3	7	
Other Patrol	25		3	4	8		2	22	14
Patrol Missile	20	14				9		5	
Corvettes			2			1	1	3	
Frigates		3							12
Destroyers									4
Cruisers									
SS	7	6						4	1
SSN									
SSGN									
SSBN									
Carriers									

Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

### Southern Area Ships in 2001



	Yugoslavia	Turkey	Spain	Slovenia	Romania	Portugal	Moldova	Malta	Macedonia	Italy	Greece	Georgia	Croatia	Bulgaria	Bosnia	Belarus	Azerbaijan	Armenia	Albania
Amphibious	1	8	4							3	7			2			2		
Mine	10	24	11		17					13	14			20			5		3
Other Patrol	22	28	37		27	31			5	7	10	11	6	10			6		22
Patrol Missile	9	21			6						17		2	6					
Corvettes										8	5			7					
Frigates	3	23	15		6	6				16	12			1					
Destroyers					1					4	4								
Cruisers										1									
SS	4	13	8		1	2				7	8		1	1					
SSN																			
SSGN																			
SSBN																			
Carriers			1							1									

Source: Adapted by Anthony H. Cordesman from the IISS, *Military Balance, 2001-2002*.

# **Part Five**

# **Nuclear Forces**



### The Nuclear Dimension – Part One

<u>Country</u>	<u>Sea-Based</u>	<u>Land Based</u>	<u>Air Force</u>
<u>US</u>	(33,500 nuclear weapons)*		
18 SSBM/432 SLBM	550 Missiles Total (+1/16 Poseidon C-3 tubes in ex-SSBN)	208 Active.  50 Peacekeeper MX	315 START accountable
	10 SSBN-734 with up to 24 Trident D-5 (240 SLBM)	500 Minuteman III	2/20 B-2A
	8 SSBN-726 with up to 24 Trident C-4 (192 SLBM)		5/92 B-52H with up to 20 ALCM (AGM-86) each (57 combat ready)
			8/91 B-1B
-----			
<u>Russia</u>	(62,500 nuclear weapons)*		
	17 SSBN/280 SLBM (Start Accountable)	740 ICBM/3,380 Whd.	74 Hvy Bomber
		180 SS-18 (RS-20) 74 START-accountable Mostly Mod4/5 w/ 10 MIRV	
	3 Typhoon with 20 SS-N-20 each (60)		74 Tu-95H6 with AS-15 ALCM 15 Tu-160
	6 Delta IV with 16 SS-N-23 each (96)	140 SS-19 (RS-18) Mostly Mod 3, 6 MIRV	
	7 Delta III with 16 SS-N-18 each (112)	24 SS-27 Topol M2 with 20 entering service	7 Tu-95 & 1 Tu-160 test aircraft.
	1 Delta I with 12 SS-N-8 each (12)	36 SS-24 (RS22) with 10 MIRV 36 Rail in Russia	117 Tu-22M/MR (more in storage)
	In addition, 10 SSBN and 156 missiles remain START accountable: 2 Typhoon/40 SS-N-20 1 Delta IV/16 SS-N-23 4 Delta III/64 SS-N-18 3 Delta I/36 SS-N-8	360 SS-25 (RS-12M) single warhead mobile (360) & silo launch (10) in Russia 36 SH-11 Galosh & 64 SH-08 Gazelle	
	6 Oscar II SSGN/ 24 SS-N-19		
	8 Akula SSN/ SS-N-21 1 Sierra SSN/ SS-N-21 1 Yankee SSN/SS-N-21 5 Victor III SSN/SS-N-15		

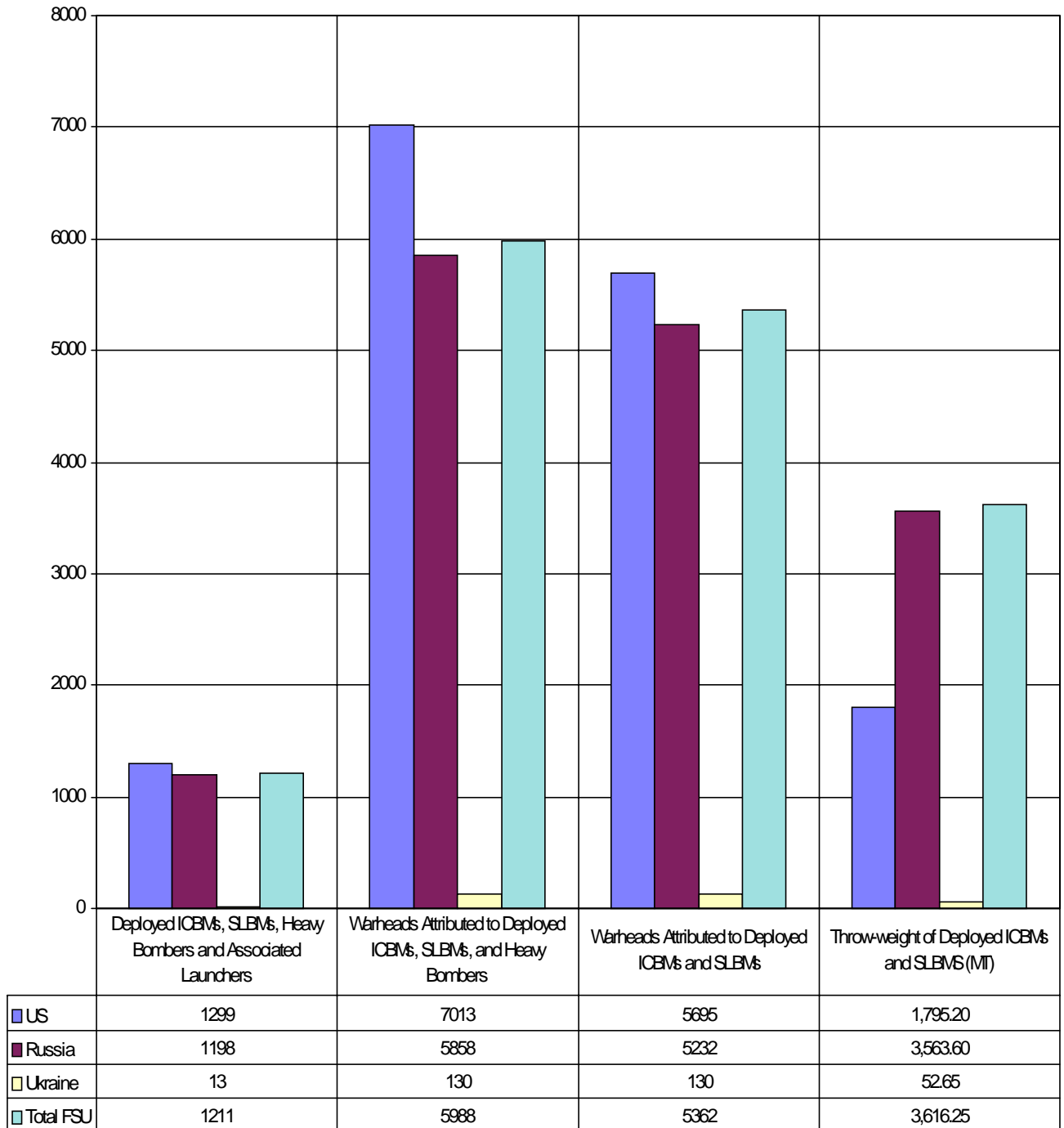
\* Without nuclear warhead or weapons.

## The Nuclear Dimension – Part Two

<u>Country</u>	<u>Sea-Based</u>	<u>Land Based</u>	<u>Air Force</u>
<u>France</u>	(1,400 nuclear weapons)* 4 SSBN/64 SLBM None 2 L'Inflexible with 16 M-4?TN-70 or 71 2 Le Triomphant with 16 M-45/TN-75 each	None	3/60 Mirage-2000N (ASM P) 28 Super Etendard AMSP plus 16 in storage
<hr/>			
<u>United Kingdom</u>	(1,100 nuclear weapons)* 4 SSBN/58 SLBM 4 Vanguard SSBN with up to 16 Trident D-5 each and maximum of 48 warheads per boat. (Each missile can be MIRV'd to 12 warheads, But some had only 1. Total is less than 200 operational warheads.	None	None
<hr/>			
<u>China</u>	(500-1,300 nuclear weapons)* 1 Xia SSBN with 12 CSS-N-3 (J-1) MIRV ICBM 1 Romeo SSGN?	20+ CSS-4 (DF-5) Some nuclear capable. 20+ CSS-3 (DF-4) ICBM 60-80 CSS-2 (DF-3 IRBM) 50+ CSS-5 DF-21 IRBM 25L/200M DF-15 CSS-6/M-9 SRBM (600 km) 25 DF-11 CSS-7/M-11	Up to 126 H-6, 200+ H-5? SRBM (120-300 KM)

Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 2001-2002.

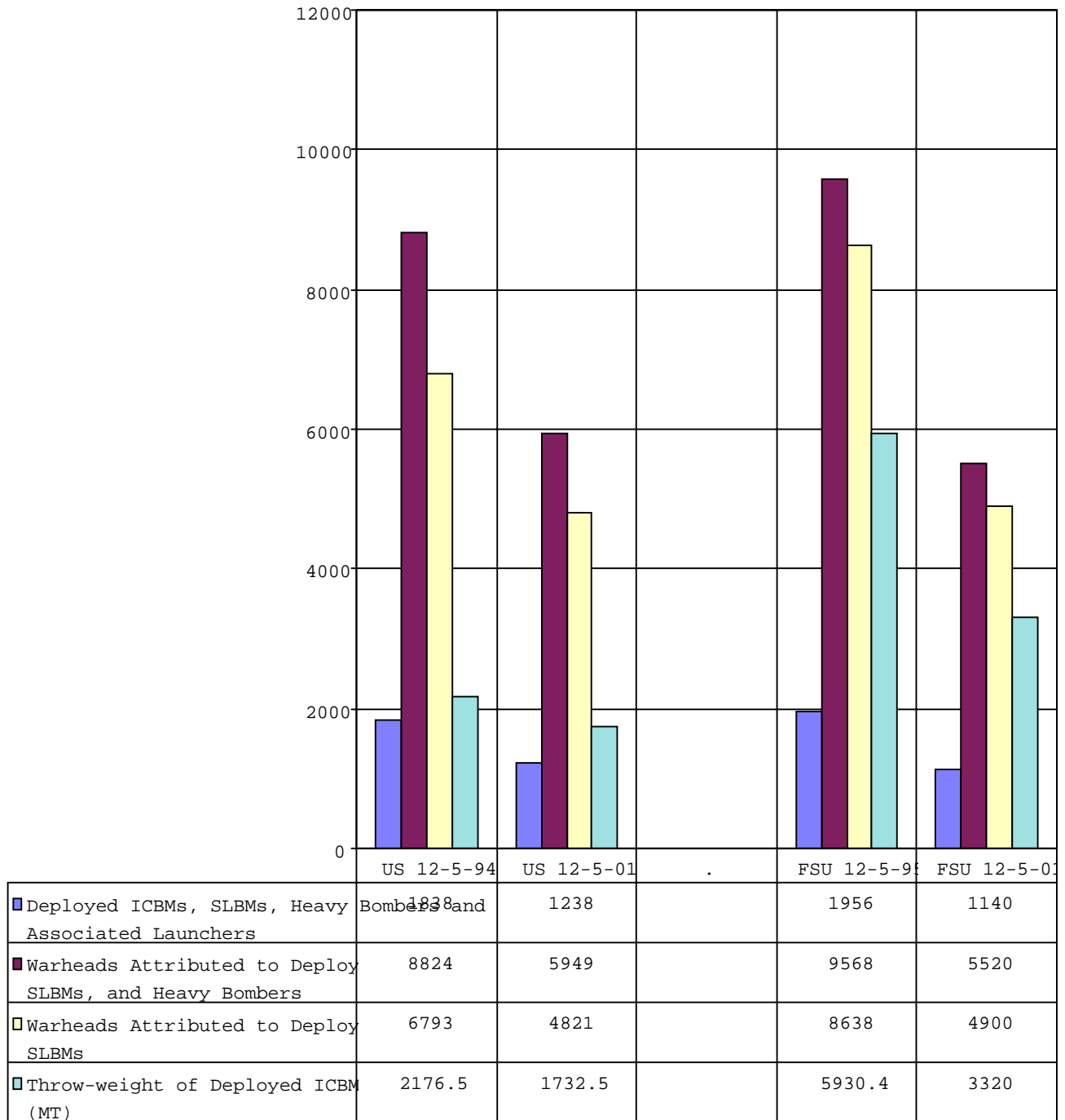
### US, Russian, and Ukrainian Strategic Nuclear Forces Declared for Start I (Declarations as of July 31, 2001)



Source: Adapted by Anthony H. Cordesman from data provided by US State Department on July 31, 2001. Belarus and Kazakhstan report zero in every category. All data reflect START counting rules.

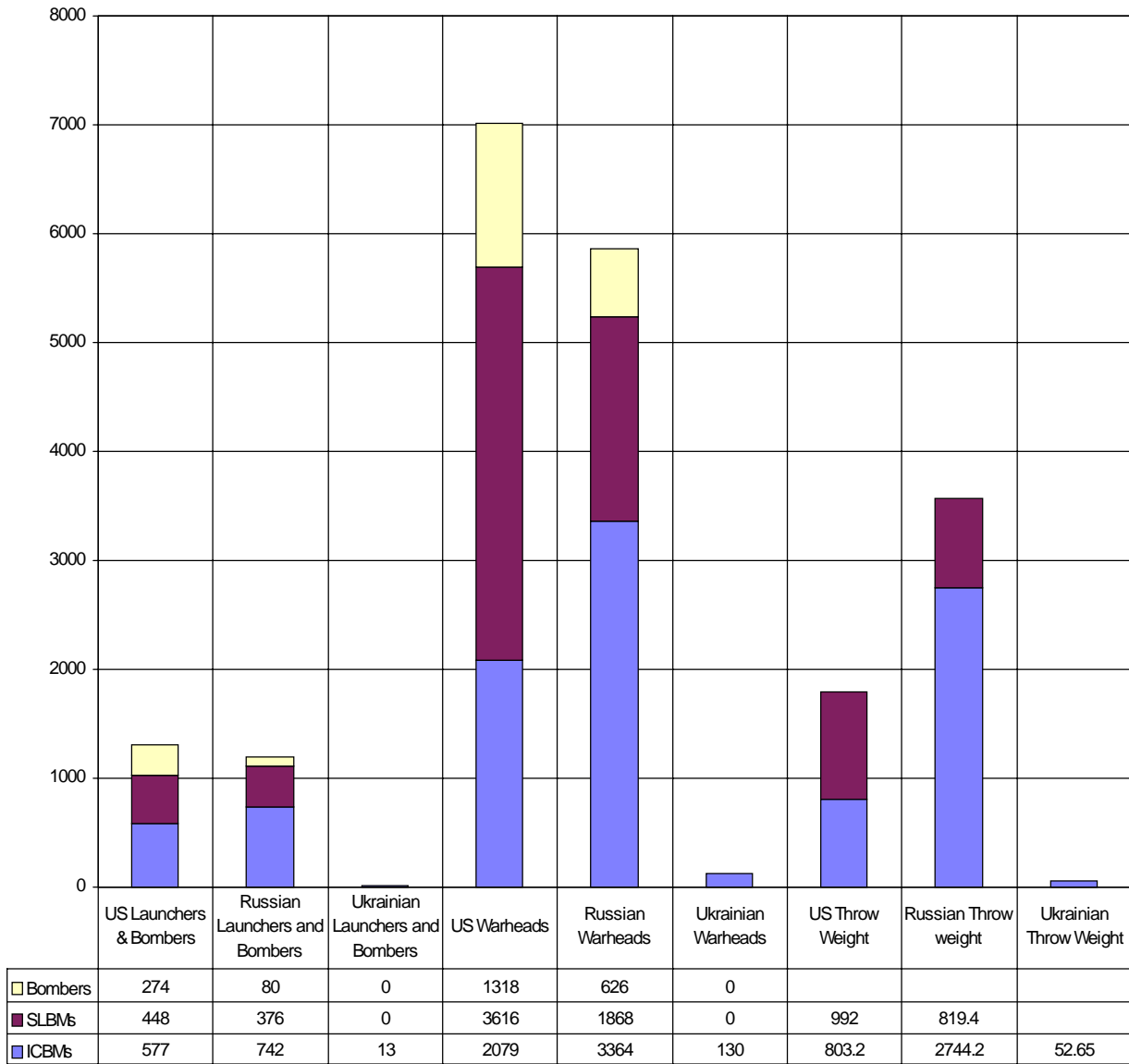
### US and Russian Strategic Nuclear Forces At the Completion of Start I

(US State Department estimate as of December 5, 2001)



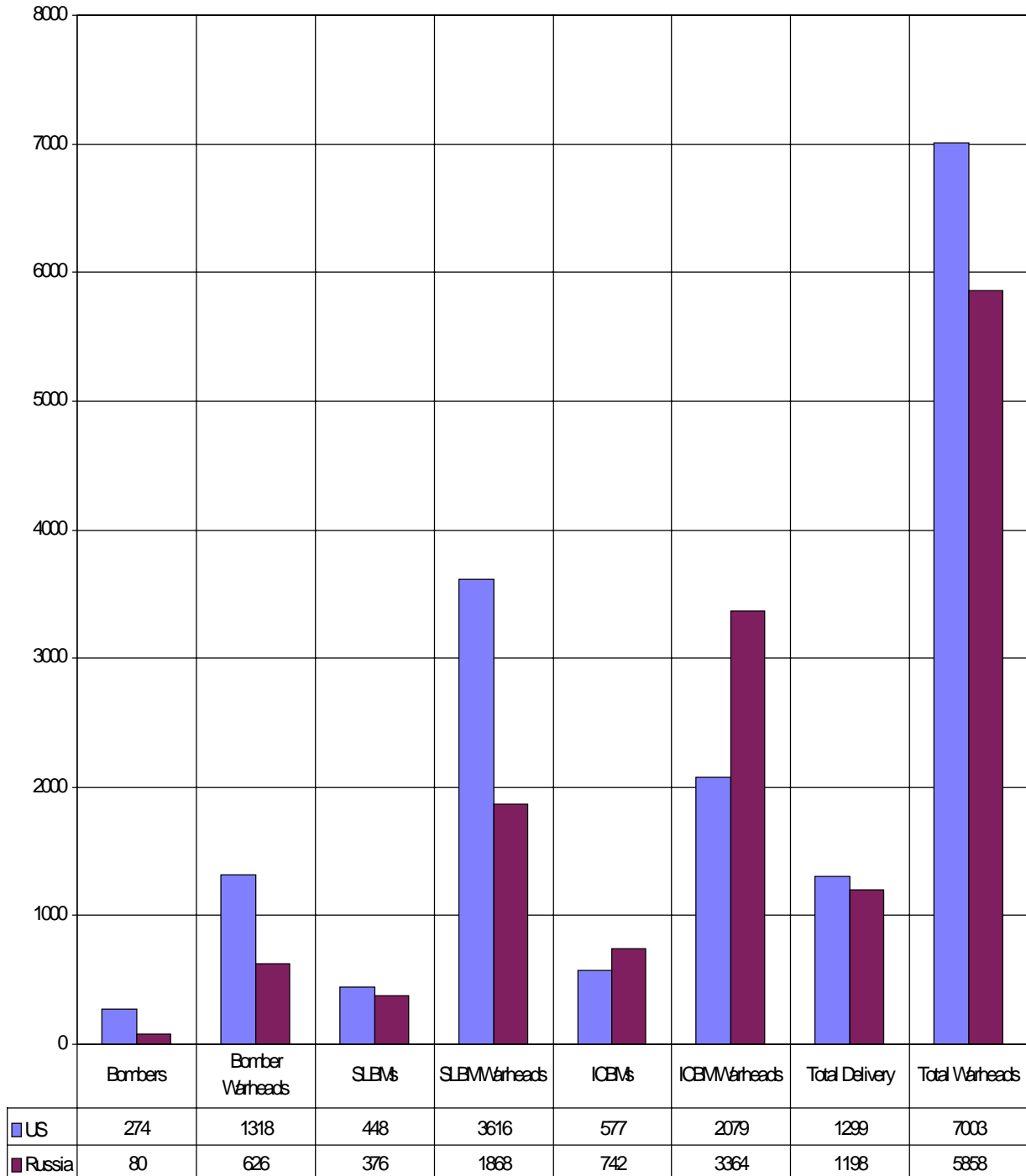
Source: Adapted by Anthony H. Cordesman from data provided by US State Department on July 31, 2001. Belarus and Kazakhstan report zero in every category. All data reflect START counting rules.

### The US, Russian, and Ukrainian Strategic Nuclear Triad Declared for Start I (Declarations as of July 31, 2001)



Source: Adapted by Anthony H. Cordesman from data provided by US State Department, Bureau of Arms Control on July 31, 2001. Belarus and Kazakhstan report zero in every category.

### US and Russian Deployed Strategic Nuclear Forces (Declarations as of July 31, 2001)



Source: Adapted by Anthony H. Cordesman from data provided by US State Department, Bureau of Arms Control on July 31, 2001. Belarus and Kazakhstan report zero in every category.

### The True Nature of US and Russian Nuclear Arms Reductions

The reporting of START accountable warheads has led to serious confusion between START accountable warheads and actual warheads.

The attached table provides a rough estimate of the immense difference between START accountable and actual warheads put together with the informal aid of one of the US weapons labs. Please note that no detailed accounting is made of theater nuclear weapons, which are not the subject of START reductions, or total weapons assemblies and fissile material holdings which would include many more potential weapons than are counted as deployed.

Country	Total		NSNF			Strategic		
	Inventory	Reserve	Deployed	Deployed	Deployed	START I	START II	Day to Day
Russia	Up to 20,000	Approx.10,000	9,200	3,600	5,600	6,094	6,366	2,000-3,000
United States	10,820	*2,000	8,820	1,670	7,150	7,295	7,534	2,000-3,000

\* The Department of Energy also holds 12,000 intact plutonium "pits" from nuclear warheads, and between 5,000-6,000 "canned subassemblies", this being the secondary stage of a two stage nuclear weapon.

## **Planned Shifts in the US Strategic Force Posture US Nuclear Offensive Force Plans as of January 2001**

### FORCE STRUCTURE AND CAPABILITIES

Until START II enters into force, the United States is protecting options to maintain a strategic nuclear arsenal at essentially START I levels. If START II is implemented as amended by the Helsinki Summit letters, accountable warheads will be reduced by the end of 2007 to a level of 3,000 to 3,500, of which no more than 1,750 may be carried on SLBMs. Strategic nuclear delivery vehicles that will be eliminated under START II will be deactivated by December 31, 2003, providing the benefits of a reduced force structure four years prior to the agreed 2007 date for full elimination.

### READINESS

Selected elements of U.S. strategic forces maintain the highest state of readiness to perform their strategic deterrence mission. And while these forces can respond promptly to aggression if necessary, they can only be used with proper authorization from the National Command Authorities. A credible and effective nuclear deterrent requires proper support for all of its components: attack platforms, other weapons systems, command and control elements, the nuclear weapons stockpile, research and development capabilities, the supporting industrial base, and well trained, highly motivated people.

U.S. ICBMs and SLBMs on day-to-day alert are not targeted against any specific country. The missiles, however, can be assigned targets on short notice. The United States maintains two full crews for each SSBN, with about two-thirds of operational SSBNs routinely at sea. At least one and often two U.S. SSBNs are undergoing long-term overhauls at any given time and are not available for immediate use.

All 550 ICBMs, with the exception of a few undergoing routine maintenance, are maintained on a continuous day-to-day alert. The bomber force is no longer maintained on day-to-day alert, although it can be returned to alert status within a few days if necessary. No nuclear weapons can be executed except by direction of the President. This has been a longstanding U.S. policy and remains so.

### NUCLEAR MISSION MANAGEMENT

The Department relies upon the Nuclear Mission Management Plan (NMMP) to provide an integrated approach for the support of the nuclear mission. The NMMP provides the policy backdrop for the maintenance of the nation's nuclear forces, describes their integrated architecture as it exists today, and summarizes the efforts of the Services and defense agencies to sustain and modernize a credible deterrent. A concise, comprehensive reference on DoD programs supporting the nuclear deterrent, the NMMP is a valuable tool for decision making in the Department.

### STOCKPILE STEWARDSHIP

The President declared that maintenance of a safe and reliable nuclear weapon stockpile is a supreme national interest of the United States. The Department of Energy's Stockpile Stewardship Program (SSP) is the United States' primary means of ensuring the safety and reliability of its nuclear deterrent, absent nuclear testing. The SSP develops new tools to supplant nuclear explosive testing as the means to sustain the confidence obtained in the past from nuclear explosive testing. There was high confidence in the enduring stockpile when the United States entered into a nuclear testing moratorium in 1992. Since that time, the SSP, principally its surveillance program, has uncovered problems including those associated with aging. Through the SSP, an understanding of those problems has been developed, coupled with programs to address them. The SSP still faces challenges; but as long as it continues to get the resources it needs, it will keep pace with the complex problems likely to be encountered in the future to resolve a safety or reliability issue relating to a warhead critical to the U.S. deterrent. Should annual certification reveal a problem that can only be resolved by nuclear explosive testing, the Secretaries of Defense and Energy will inform the President and Congress of the need to resume nuclear testing.

### FUNDING AND MODERNIZATION

Funding for strategic nuclear forces—ICBMs, SLBMs, and nuclear bombers—has significantly declined in recent years, as has the fraction of the total defense budget that is devoted to nuclear forces. A few modernization programs for strategic forces are currently under way: B-2 modifications, primarily for conventional missions; D-5 SLBM life extension activities and procurement; conversion of four SSBNs from the C-4 to the D-5 missile systems; and Minuteman III life extension activities. With most nuclear modernization efforts complete, programs to sustain nuclear forces and their readiness now account for most strategic nuclear funding.

### LAND-BASED INTERCONTINENTAL BALLISTIC MISSILES

At the end of FY 2000, the United States had 500 Minuteman III ICBMs and 50 Peacekeeper missiles. If START II enters into force, the United States will modify all Minuteman III missiles to carry only one warhead and will retire all Peacekeeper missiles.

In this transition, DoD will redeploy the Mark 21 reentry vehicle (RV), currently deployed on Peacekeeper, on a portion of the single RV Minuteman force. Mark 21 RVs contain features that further enhance nuclear detonation safety and reduce the risk of plutonium dispersal in the unlikely event of a fire or other mishap.



The United States is not developing or producing any new ICBMs. This makes it difficult to sustain the industrial base needed to maintain and modify strategic ballistic missiles. To maintain the Minuteman ICBM system and to preserve key industrial technologies needed to sustain ICBMs and SLBMs, the Department plans to replace guidance and propulsion systems, as well as to preserve a core of expertise in the areas of reentry vehicle and guidance system technology. Further, the Air Force is exploring plans for a replacement to the Minuteman III around 2020.

#### SEA-BASED BALLISTIC MISSILES

The Ballistic-Missile Submarine (SSBN) fleet has reached its planned total of 18 Ohio-class submarines. The first eight Ohio-class submarines each carry 24 Trident I (C-4) missiles; the final ten are each equipped with 24 Trident II (D-5) missiles.

The SSBN fleet's survivability and effectiveness are enhanced through the D-5 missile's improved range, payload, and accuracy. The Future Year Defense Plan (FYDP) provides for continued procurement of D-5 missiles to support the conversion of four SSBNs from the C-4 to the D-5 missile system. Backfits during regularly scheduled ship depot maintenance periods began in 2000.

The United States will retain 14 SSBNs armed with D-5s, while the four oldest Ohio-class SSBNs will be eliminated or converted. D-5 missiles aboard the 14 boats, capable of carrying eight warheads a piece, will be downloaded consistent with START II limits. The FYDP also supports Navy planning for a life extension to the D-5 SLBM to match missile life to the recently extended Trident submarine service life of 44 years.

#### HEAVY BOMBERS

The U.S. bomber force consists of 93 B-1s, 94 B-52s (includes 18 attrition/reserve aircraft), and 21 B-2s. Operational B-2s, all deployed from Whiteman AFB, Missouri, are Block 30 configuration aircraft. B-2 and B-52 bombers can be used for either nuclear or conventional missions. The B-1 force is dedicated to, and has been equipped exclusively for, conventional operations.

#### THEATER NUCLEAR FORCES

As reaffirmed by NATO in its April 1999 Strategic Concept, theater nuclear forces, in the form of dual-capable aircraft, in the United States and NATO are an essential political and military link between the European and North American members of the Alliance. They also contribute to the spectrum of response options to deter aggression. The United States will continue to maintain these weapons in NATO, but at levels significantly below Cold War levels. All naval theater nuclear weapons are in storage. Nuclear weapons capability on surface ships has been eliminated, but the capability to deploy Tomahawk Land Attack Missiles armed with a nuclear weapon on submarines has been maintained.

Source: Adapted by Anthony H. Cordesman from Secretary of Defense William Cohen, Annual Report to the President and the Congress, FY2001, Washington, Department of Defense, 2001, Chapter 6.

## The US Nuclear Policy Review – January 2002: Key Quotes

In a letter to Congress, Defense Secretary Donald Rumsfeld set down the case for the changes: "We have concluded that a strategic posture that relies solely on offensive nuclear forces is inappropriate for deterring the potential adversaries we will face in the 21st century," Rumsfeld wrote. "Terrorists or rogue states armed with weapons of mass destruction will likely test America's security commitments to its allies and friends. In response, we will need a range of capabilities to assure friend and foe alike of U.S. resolve."

J.D. Crouch, assistant defense secretary for international security policy stated in a January 9, 2002 briefing that Nuclear Posture Review changes the strategy from a threat- based approach to a capabilities-based approach. It recognizes that the Cold War is over and that the mutually assured destruction strategy paramount in the stand-off with the Soviet Union has no place in the new relationship between the United States and Russia.

"This means we will deploy the lowest number of nuclear weapons consistent with U.S. security requirements...The Cold War approach to deterrence that was highly dependent on offensive nuclear weapons is no longer appropriate. Nuclear weapons are still a key part of the deterrent strategy, "but we also believe that other kinds of capabilities will be needed in the future. These other capabilities include advanced conventional capabilities, missile defense and better command, control, intelligence and planning."

"We believed it was important to include new kinds of capabilities in this approach, including active and passive defenses and nonnuclear capabilities...Nonnuclear strike forces ... have the potential, if fully exploited and fully developed, to reduce our dependency on nuclear forces for the offensive strike leg of the nuclear component."

"The capabilities-based approach argues that there may be multiple contingencies and new threats that we have to deal with. We're focusing on how we will fight, how we will have to fight, not who or when, and we don't really know. We expect to be surprised, and so we have to have capabilities that would deal with a broad range of the potential capabilities that adversaries may array against us."

"These capabilities are not required to be country-specific. Indeed, in some cases, it's -- it would be difficult for them to be country-specific. You know, one example out of -- out of today's situation, obviously, is Afghanistan, where we would not have expected to be in Afghanistan maybe six months earlier."

"We also believed it was very important to include new components or new kinds of capabilities in this approach, including active and passive defenses and non-nuclear capabilities. The non-nuclear strike forces, we believe, have the potential, if fully exploited, fully developed, to reduce our dependency on nuclear forces for the offensive-strike leg of the -- of the component. And even defenses give us more options and will allow us to do the same."

"We believe that by improving the effectiveness of command control, intelligence and adaptive planning -- investing in these areas and improving in these particular areas we're going to create a more efficient capability, one that, in fact, will allow us to reduce our forces overall but to maintain the overall capability that will be necessary as we move forward in the 21st century. "Further, the unilateral move means the reduction can take place without long, involved and complicated arms control treaties."

"The new policy will place greater emphasis on many arrows in the U.S. quiver. It will mean credible nuclear and non- nuclear responses to support the United States and allies."

"There may be multiple contingencies and new threats we have to deal with...We're focusing on how we will have to fight, not who or when. We don't really know. We expect to be surprised, so we have to have capabilities that would deal with a broad range of the capabilities adversaries may array against us."

Source: Jim Garamone, "**Review Changes Status of Nuclear Deterrent,**" American Forces Press Service Washington, Jan. 9, 2002

## The Nature of the US Nuclear Posture Review: January 10, 2002

- **Conducted in an atmosphere of strategic change**
- Multiple potential opponents, sources of conflict, and unprecedented challenges versus past focus on Soviet Union.
- New friendly relationship with Russia versus known ideological peer opponent.
- Spectrum of uncertain contingencies versus focus on prolonged conflict, defined blocs, limited number of contingencies.
- Varying and unequal risks and stakes versus existential threats and survival as stakes.
  - 12 nations have nuclear weapons programs,
  - 28 nations have ballistic missiles,
  - 13 nations have biological weapons
  - 16 nations have chemical weapons.
- **Implications**
- Uncertain deterrence and need to assure, dissuade, deter and defeat versus emphasis on high confidence deterrence.
- Synergy of nuclear/non-nuclear & offense/defense versus reliance on offensive nuclear forces exclusive of other forces.
- Nuclear planning is:
  - Capabilities versus threat based.
  - Great flexibility for range of contingencies versus some flexibility for a few contingencies.
  - Unilateral arms reductions to preserve flexibility and transparency versus arms levels fixed by elaborate treaties and verification.
- **Presidential Guidance**
- Encourage and facilitate a “new framework” of cooperation with Russia.
- Cold War approach to deterrence no longer appropriate.
- End relationship with Russia based on MAD.
- Deploy lowest number of nuclear weapons consistent with the security requirements of the US, its allies, and friends.
- Achieve reductions without requirement for Cold War-style treaties.
- Develop and field missile defenses more capable than ABM Treaty permits,
- Place great emphasis on advanced conventional weapons.
- Source: Department of Defense background briefing of January 9, 2002

## **The Results of the US Nuclear Posture Review: January 10, 2002**

- **Transition to a New Triad in Mid to Far Term**
  - Go from Bombers+ICBMs+SLBMs to mix of non-nuclear and nuclear strike capabilities + defenses + responsive infrastructure.
  - Command and control, intelligence and planning given equal weight with forces.
  - Offers a portfolio of capabilities and the flexibility require to address a spectrum of contingencies.
- **Sizing the Nuclear Force**
  - Size to address the spectrum of immediate and potential contingencies.
  - Operationally deployed force for immediate and unexpected contingencies.
  - Responsive force for potential contingences. This is not a separate force, but the ability to augment the operationally deployed force in a way where, over weeks, months and even years, that could respond to changes such as changes in the security environment that were more adverse than expected, technological surprise, and changes in assumptions about how well the US can introduce or field new elements of the new triad
  - Preplanning for immediate and potential contingencies.
  - Trying to achieve these reductions without having to wait for Cold War arms-control treaties, and placing greater emphasis both on missile defense capabilities and also on the development of advanced conventional capabilities.
- **Strategic Background**
  - Force sizing not driven by an immediate contingency involving Russia.
  - Force structure and down-loaded warheads preserved for the responsive force..
  - End relationship with Russia based on MAD.
  - Deploy lowest number of nuclear weapons consistent with the security requirements of the US, its allies, and friends.
  - Achieve reductions without requirement for Cold War-style treaties.
  - Develop and field missile defenses more capable than ABM Treaty permits,
  - Place great emphasis on advanced conventional weapons.
  - No change in the administration's policy at this point on nuclear testing.
  - Continue to oppose CTBT [comprehensive test ban treaty] ratification.
  - Continue to adhere to a testing moratorium.
  - There are a number of weapons in that stockpile. Many of them are in the queue for dismantlement and destruction.

Source: Department of Defense background briefing of January 9, 2002

## Projected US Force Size and Character

- United States has about 6,000 warheads in its nuclear arsenal.
- Under the new plan, that arsenal would drop to around 3,800 warheads by fiscal 2007 and to between 1,700 and 2,200 operationally deployed warheads by fiscal 2012.
  - Go with the existing force of ICBMs -- submarine-launched ballistic missiles on SSBNs [ballistic missile submarines] and bombers.
  - Fully fund the Trident D-5 SLBM life-extension program in this five-year defense plan, Accelerate its test-readiness program.
  - SSBN fleet of 14 submarines. Two of those submarines will be in overhaul at all times, and those submarines will not have missiles available to fire, and they will not be part of the operationally deployed nuclear weapons.
- START I will continue to be in force, and all of its applicable rules, including the verification provisions as well as the counting rules, are still in force. However, when we talk about 1,700 to 2,300 operationally deployed systems, we are talking -- this is what we might call truth in advertising. There are no phantom warheads here. This is the actual number of weapons that we will deploy on the force.
- In addition to the 1,300 START accountable warheads that will come off the force as a result of the retirement of Peacekeeper, the Tridents and the like, US will take additional operationally deployed warheads off existing ICBMs and SLBMs down to a level of about 3,800 by fiscal 2012.
- Goal of 1,700-2,200 operational deployed warheads by 2012 to meet requirements of new defense policy goals.
  - Retire Peacekeeper ICBMs beginning 2002.
  - Remove four Trident submarines from strategic service.
  - The Air Force's B-1 bomber would not be nuclear capable
  - "most important, the United States would remove some warheads from operationally deployed ICBMs and submarine-launched missiles."
- The inactive stockpile will be separate. Typically the limited-life components that go into a nuclear warhead, such as tritium, neutron generators, things that live for a relatively short period of time in comparison with the weapon, are typically removed, and when the weapon is transitioned to the active stockpile from the inactive, those components are reinstalled in the weapon. So the inactive weapon consists of those weapons that are not fielded with limited-life components.

Source: Department of Defense background briefing of January 9, 2002

## **US Department of Defense Estimate of Russian Actions and Intentions Involving Nuclear, Biological, and Chemical Weapons**

### **Capabilities, Intentions, and Trends**

Russia retains a significant strategic nuclear force capability, despite the decline in overall force size since the dissolution of the Soviet Union, and despite apparent defense budgetary shortfalls and system aging. Russia also inherited sizeable biological and chemical warfare establishments from the FSU, and some components of these programs remain largely intact. Russian entities have exported various nuclear and ballistic missile technologies to states of proliferation concern, and Russia also remains a source for offensive biological and chemical warfare technologies and expertise.

There is little threat from FSU-sponsored NBC weapons and missiles in Eastern Europe. Regional states are focused on joining the Western community, and former Warsaw Pact states in neighboring Central Europe have already joined the North Atlantic Treaty Organization (NATO). Thus, most states in the region have eliminated or will eliminate all NBC weapon or missile capabilities that they had as members of the Warsaw Pact. (Serbia is an exception, and it may retain some chemical warfare capabilities). In addition, all tactical nuclear weapons were returned to Russia by 1992.

### **Objectives, Strategies, and Resources**

The Russian leadership generally agrees that Moscow should maintain strong nuclear forces particularly in light of the reduced capability of Russian conventional forces in recent years. The overall reduction in Russian military capabilities, especially the conventional forces, has caused Russian military planners to emphasize Moscow's threat to use nuclear weapons to deter a large-scale conventional attack, a policy that Moscow stated in its military doctrine published in October 1999 and reiterated in January 2000 and again in April 2000.

Russia is prepared to conduct limited nuclear strikes to warn off an enemy or alter the course of a battle. Russia's strategic offensive forces are experiencing serious budget constraints but will nonetheless remain the cornerstone of its military power. These forces will remain formidable through and beyond 2015, although the overall size of the force will likely continue to decrease, primarily as a result of economic factors and system aging. Despite its ratification of biological and chemical weapons conventions, there are serious concerns about remaining offensive Russian biological and chemical warfare capabilities.

The Russian government has passed new export control legislation to punish wrongdoers and created institutional foundations to implement it. The challenge is whether the Russian leadership can build on that foundation, ensure that dangerous transfers stop, and use these new tools to crack down on violators. Russia's defense spending also has declined steadily since the late 1980s. Although evidence of the need for reform is overwhelming, the key question is whether the Putin government will show the requisite political will to implement long-overdue reform measures. Macroeconomic improvements are already visible, but these will not address the underlying problems of the Russian economy unless matched by a strong push on structural reforms. Consequently, Russian funding for its strategic forces, and any remaining biological and chemical warfare efforts, will in part be limited by the state of its economy.

### **Russian Nuclear Forces**

Moscow increasingly has stated it will rely more heavily on its nuclear forces for deterrent purposes, especially given the serious deterioration of their conventional forces' capability. Russia conditionally ratified (START II) in May 2000, which, once it enters into force, will limit the number of operational launchers and deployed warheads to 3,000-3,500. In June 1999, former President Yeltsin proposed discussions with the United States for further force reductions in the context of a START III Treaty, with proposed force levels of 1,500-2,000.

The Russian nuclear warhead stockpile is being reduced as a result of tactical nuclear warhead reduction initiatives, while the START I treaty (which entered into force in December 1994) and system aging have resulted in the reduction of deployed strategic warheads. In December 2000, the stockpile was estimated to be well under 25,000 warheads, a reduction of over 11,000 warheads since eliminations began in 1992. By the end of 2010, the overall stockpile likely will be further reduced, depending on the economic situation in Russia, Moscow's willingness and ability to abide by tactical nuclear warhead reduction pledges, and future arms control agreements. Moscow has consolidated many of its strategic and tactical warheads at central storage locations, and numerous warhead storage sites for holding warheads have been deactivated since the early 1990s. While this consolidation has improved

security, current resource shortages have subjected the nuclear storage system to stresses and risks for which it was not designed. Indeed, warhead reductions have had the collateral effect of increasing near- to mid-term fissile material storage requirements, pending the long-term elimination relevant weapons-usable fissile materials.

### **Strategic Nuclear Forces**

While Russia's strategic nuclear forces will retain considerable capability over the next ten years and will serve as its primary means of deterrence, the overall force is expected to continue to decrease because of arms control, economic constraints, and aging equipment. Within ten years, the number of operational strategic warheads will continue to decline. At the same time, however, production of warheads will continue into the 21st century as new strategic missile systems are deployed and obsolete warheads replaced.

For strategic delivery, Russia retains a significant strategic ballistic missile force of some 1,130 operational ICBMs and SLBMs. There no longer are any operation-ally deployed ICBMs in Ukraine, Kazakhstan, and Belarus. More than 1,250 FSU ICBMs and SLBMs have been removed from the overall force since 1991. This force is likely to decline further as a result of systems aging, chronic funding problems, and arms control agreements. On the other hand, Russia has begun deployment of a new ICBM, the SS-27 (TOPOL-M), and has other missiles planned for deployment in the 21st century. Russia has ratified the NPT and the CTBT.

### **Tactical Nuclear Forces**

Because of economic and other difficulties facing Russia and its armed forces, tactical nuclear weapons will remain a viable component of its general purpose forces for at least the next decade. Russia likely believes that maintaining tactical nuclear forces is a less expensive way to compensate for its current problems in maintaining conventional force capabilities. In late 1991 and early 1992, Russia agreed in the Presidential Nuclear Initiatives to a dramatic reduction in its tactical nuclear forces, including the elimination of its ground-launched tactical weapons. Russia still has significant numbers and types of delivery systems capable of performing the tactical nuclear mission. For example, Russia continues to have large inventories of tactical SRBMs (SS-21s), deactivated SCUDs, and a variety of artillery capable of delivering NBC weapons. In fact, Russia employed its tactical SRBMs (with conventional warheads) against the Chechens in the fall of 1999. Air systems include fighter aircraft and bombers. Naval tactical nuclear systems include torpedoes, anti-shiping and anti-sub-marine warfare missiles, and air-launched munitions carried on naval aircraft. Further, Russia's industrial base can support production of the full range of solid-and liquid-propellant ballistic missiles, space launch vehicles, and all associated technologies.

In November 1993, the Russian Ministry of Defense formally dropped its wholly declaratory "no first use" of nuclear weapons policy. In its place, the Ministry of Defense published its Basic Provisions of the Military Doctrine of the Russian Federation, in which it articulated its current nuclear policy: "The Russian Federation will not employ its nuclear weapons against any state party to the treaty on the nonproliferation of nuclear weapons, dated 1 July 1968, which does not possess nuclear weapons except in the cases of (a) an armed attack against the Russian Federation, its territory, armed forces, other troops, or its allies by any state that is connected by an alliance agreement with a state that does not possess nuclear weapons or; (b) joint actions by such a state with a state possessing nuclear weapons in the carrying out or in support of any invasion or armed attack upon the Russian Federation, its territory, armed forces, other troops, or its allies."

The current Russian doctrine and strategy involving the use of nuclear weapons, reiterated in October 1999, states that "the possibility of the use of nuclear weapons has not been excluded if the situation deteriorates during the course of conventional war." A revised version of this document was approved by then-Acting President Putin in January 2000, which further lowers the threshold for nuclear use in order to protect Russia's national interests and territorial integrity; it states: "The application of all forces and means, including nuclear weapons, if necessary to repel armed aggression, if all other measures for resolving the crisis situation have been exhausted or proven ineffective." In April 2000, the Russians elaborated on this threshold, stating that "the Russian Federation retains the right to use nuclear weapons in response to the use of nuclear weapons, or other types of weapons of mass destruction against itself or its allies, and also in response to large scale aggression with the use conventional weapons in situations critical to the national security of the Russian Federation."

### **Biological Warfare**

The FSU offensive biological program was the world's largest and consisted of both military facilities and civilian research and development institutes. According to Ken Alibek, the former Deputy Director of BIO-PREPARAT, the

principal Soviet government agency for biological weapons research and development, by the early 1970s, the Soviet Union had developed a bio-logical warfare employment doctrine, where biological weapons were categorized as strategic or operational. Alibek stated that they were not to be employed as tactical weapons. Strategic biological agents, those to be used on “deep targets,” such as the continental United States, were the lethal variety and included smallpox, anthrax, and plague. Operational agents, those intended for use on medium-range tar-gets, but well behind the battlefield, were the incapacitating variety and included tularemia, glanders, and Venezuelan equine encephalitis.

For both strategic and operational employment, the Soviet goal was to create large numbers of casualties and extensive disruption of vital civilian and military activities. The Former Soviet Biological Warfare Program was a massive program involving tens of thousands of personnel. Thousands of tons of agent reportedly produced annually, including anthrax, smallpox, plague, tularemia, glanders, and Venezuelan equine encephalitis. Perceived for strategic use against targets in the United States. Dual-use nature of virtually all materials involved in production process makes it difficult to determine conclusively the exact size and scope of the former Soviet program, or any remaining effort

The former Deputy Director further stated that although the Soviet Union became a signatory to the 1972 BWC, it continued a massive program to develop and manufacture biological weapons. Alibek claims that in the late-1980s and early-1990s, over 60,000 people were involved in the research, development, and production of biological weapons in the Soviet Union. The annual production capacity of all of the facilities involved was several thousand tons of various agents.

The Russian government has publicly committed to ending the former Soviet biological weapons program and claims to have ended the program in 1992. Nevertheless, serious concerns remain about Russia’s offensive biological warfare capabilities and the status of some elements of the offensive biological warfare capability inherited from the FSU. Since the breakup of the Soviet Union, more extensive downsizing and restructuring of the program have taken place. Many of the key research and production facilities have taken severe cuts in funding and personnel. However, some key components of the former Soviet program may remain largely intact and may support a possible future mobilization capability for the production of biological agents and delivery systems. Despite Russian ratification of the BWC, work outside the scope of legitimate biological defense activity may be occurring now at selected facilities within Russia, and the United States continues to receive unconfirmed reports of some ongoing offensive biological warfare activities.

### **Chemical Warfare**

Moscow has acknowledged the world’s largest stock pile of chemical agents of 40,000 metric tons of agent. The Russian chemical warfare agent inventory consists of a comprehensive array of blister, choking, and nerve agents in weapons and stored in bulk. These agents can be employed by tube and rocket artillery, bombs, spray tanks, and SRBM warheads. In addition, since 1992, Russian scientists familiar with Moscow’s chemical warfare development program have been publicizing information on a new generation of agents, sometimes referred to as “Novichoks.” These scientists report that these compounds, some of which are binaries, were designed to circumvent the CWC and to defeat Western detection and protection measures. Furthermore, it is claimed that their production can be hidden within commercial chemical plants. There is concern that the technology to produce these compounds might be acquired by other countries.

As a state party to the CWC, Russia is obligated to declare and destroy its chemical weapons stockpile and to forego the development, production, and possession of chemical weapons. However, we believe that the Russians probably have not divulged the full extent of their chemical agent and weapon inventory. Destruction facilities are being planned at Shchuch’ye and Gornyy, two of the seven declared storage locations for the Russian chemical warfare stockpile; these efforts are being funded in large part by foreign assistance programs.

Nevertheless, Russia admitted it could not meet its first obligation to destroy one percent of its stockpile by April 2000. Subsequently, the Organization for the Prohibition of Chemical Weapons (OPCW) granted Russia an extension until April 2002, but with the stipulation that it must also meet 20 percent destruction deadline by the same date, as called for under the CWC. However, international experts agree that it will be extremely difficult for Russia to destroy its huge chemical arsenal by 2007 as mandated by the CWC. Even if Russia were to be granted a five-year extension by the OPCW, it is unlikely that Russia’s declared stockpile will be completely destroyed because of serious technical, ecological, financial, and political problems.

### **Cruise Missiles and Other Means of Delivery**



Russia has a variety of land-, sea-, and air-launched cruise missiles. Many are designated as short-range anti-ship weapons, although other tactical cruise missile systems have ranges of up to 500 kilometers. All of these systems were produced by the FSU and many were exported to numerous countries worldwide. Russia also has long-range land-attack nuclear capable cruise missiles. While Russia may have plans to develop new land-, sea- or air-launched cruise missiles, funding problems and other priorities likely will delay deployments. In addition, Russia has a variety of fighter aircraft, helicopters, artillery, rockets, and SRBMs available as potential means of delivery for NBC weapons

### **Role as Supplier**

Russia expresses public support for various nonproliferation regimes and treaties and has ratified key arms control treaties. Some Russian entities have provided ballistic missile and nuclear technology to states of proliferation concern. Entities also have been a source of dual-use biological and chemical expertise and technology. Russia has been a key supplier for civilian nuclear pro-grams in Iran, primarily focused on the Bushehr nuclear power plant project. This assistance provides cover for Iran's nuclear weapons development efforts. Because of the dual-use nature of many nuclear technologies involved, even the transfer of civilian technology may be of use in Iran's nuclear weapons program. In addition, Russia supplied India with technologies and mate-rials for its unsafeguarded civilian nuclear program. Russian entities have been key sources of biotechnology and chemicals for Iran. Russia's world-leading expertise in biological and chemical weapons makes it an attractive source for Iranians seeking technical information and training on biological and chemical warfare agent production processes. During the last two years, Russian entities supplied a large quantity and variety of ballistic missile-related goods and technical know-how to countries such as Iran and India.

For example, Iran's earlier success in gaining technology and materials from Russian and North Korean companies accelerated Iranian development of the Shahab-3 MRBM, which was flight tested in July 1998 and again in July and September 2000. Russian entities provided substantial missile-related technology, training, and expertise to Iran, which has helped to accelerate Iranian efforts to build new indigenous ballistic missile systems. As a result, during 1998 and 1999 the United States imposed penalties against ten Russian entities for their assistance to the Iranian missile and nuclear programs. These penalties remain in place. Further, during the 1999 Moscow air show, the Russians unveiled a missile called the Iskander-E, which may be the export version of a new SRBM. The Russians claim that it has a range of 280 kilometers and a payload below 500 kilograms and therefore, sales would not violate the MTCR. Since the breakup of the Soviet Union, Russia has not sold any finished ballistic missiles to any country.

In recent years Russia has issued export control measures—including a July 1999 law-prohibiting the export of items that can be used for the development of NBC weapons- or missile-related materials. It has begun developing the foundation for a modern export control system. Despite these actions, Moscow's commitment, willingness, and ability to curb proliferation-related transfers remain uncertain. Moreover, economic conditions at many facilities continue to deteriorate, putting more pressure on Russian entities to circumvent export controls to gain hard currency.

### **Conclusion**

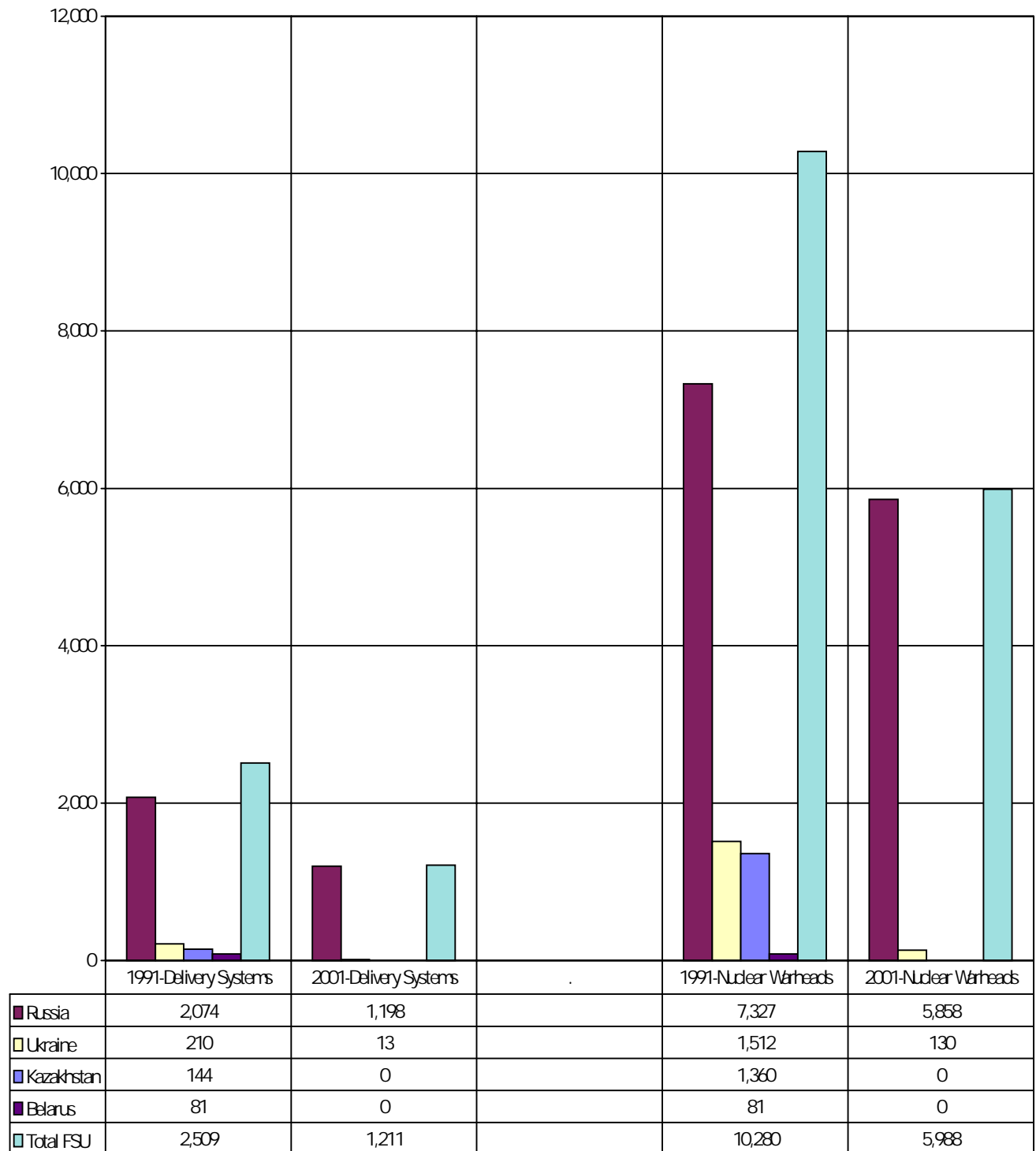
Despite the significant decline in the number of its operational strategic nuclear warheads and associated delivery vehicles since 1991, Russia retains sizeable and capable strategic nuclear forces. However, Russia has indicated a desire for additional reductions of strategic forces in the future. On the other hand, Russia has thousands of tactical nuclear warheads that it is unlikely to dismantle soon and that are not subject to current arms control agreements. Recent Russian pub-lic

statements about their willingness to use nuclear weapons indicate that Russia's threshold for the use of these weapons is lower, due to the decline of the capabilities of its conventional forces. Although Russia has ratified the BWC and the CWC, there are still serious questions about the former Soviet biological and chemical warfare programs. At the same time, Russian military leaders may view the retention of at least some of these capabilities as desirable, given the decline in Russia's conventional forces. Russia's large NBC weapon and missile arsenals, even if deactivated, together with questionable security for at least a portion of these weapons, make Russia a prime source for technologies, materials, expertise and information for states of proliferation concern, such as those examined in previous chapters. The ongoing economic and political turmoil in Russia, together with questions about the central government's ability to enforce export controls, adds another dynamic to. the serious potential for the proliferation of NBC-and missile-related technologies from Russia.

Source: Department of Defense, Proliferation and Response, Washington, DC, January 2001, p. 54-56

### Cuts in Russian and FSU Strategic Nuclear Delivery Systems and Warheads: 1991-2001

(Declarations as of July 31, 2001)



Source: Adapted by Anthony H. Cordesman from data provided by US State Department on July 31, 2001. Belarus and Kazakhstan report zero in every category. All data reflect START counting rules.

**Estimate of Russian Nuclear Forces - 2001**

<u>Type/Name</u>	<u>Launcher/ SLBMs</u>	<u>Year Deployed</u>	<u>Warheads x yield (kt)</u>	<u>Total warheads</u>	<u>Throwweight</u>	<u>In</u>
<u>Megatons</u>						
ICBMs						
SS-18 Satan (RS-20)	166	1979	10 x 550/750	1,660	1,460.8	
SS-19 Stiletto (RS-18)	150	1979	6 x 550	900	652.5	
SS-24 Scalpel (RS-22)		1987	10 x 550			
Silo	6			60	24.3	
Rail Mobile	36			360	145.8	
Total	42			420	170.1	
SS-25 Sickle (RS-12M)	360	1985	1 x 550	360	360	
(SS-27 (Topol-M)	15	1997	1 x 550	10)*		
Total	733(180 Heavy)			3,350	2643.4	
SLBMs						
SSN-8 Sawfly	36			36	39.6	
SS-N-18 Stingray (RSM-50)	128	1978	3 x 500	384	211.20	
SS-N-20 Sturgeon (RSM-52)	100	1983	10 x 200	1000	255.0	
SS-N-23 Skiff (RSM-54)	112	1986	4 x 100	448	313.60	
Total	376			1,868	819.4	
BOMBERS						
Tu-95/Bear-ALCM	65	1984	6 AS-15A ALCMs	174		
Tu-95/Bear-Non-ALCM	2	1984	16 AS-15A ALCMs or bombs	560		
Tu-160/Blackjack	15	1987	AS-15B ALCMs or AS-16 SRAMs or bombs		72	
Total	68			202	806	
NON-STRATEGIC WEAPONS						
Strategic Defense						
ABM	64 SH-08 Gazelle, 36 SH-11 Gorgon			100		100
SAM	SA-5B Gammon, SA-10 Grumble				1900	1100
Land-based Non-strategic						
Bombers and Fighters						
Backfire(188), Fencer (432)	620	1600				
Naval Non-strategic						
Attack aircraft	Backfire (63), Fencer (359)	422	400			
SLCMs	SS-N-9, SS-N-12, SS-N-19, SS-N-21, SS-N-22			500		
ASW Weapons	SS-N-15, SS-N-16, torpedoes	300				
Total				~4,000		
OTHER WEAPONS						
Reserve/Awaiting Dismantlement				~12,000		
GRAND TOTAL			~2,400 MT (strategic weapons)	~22,250		

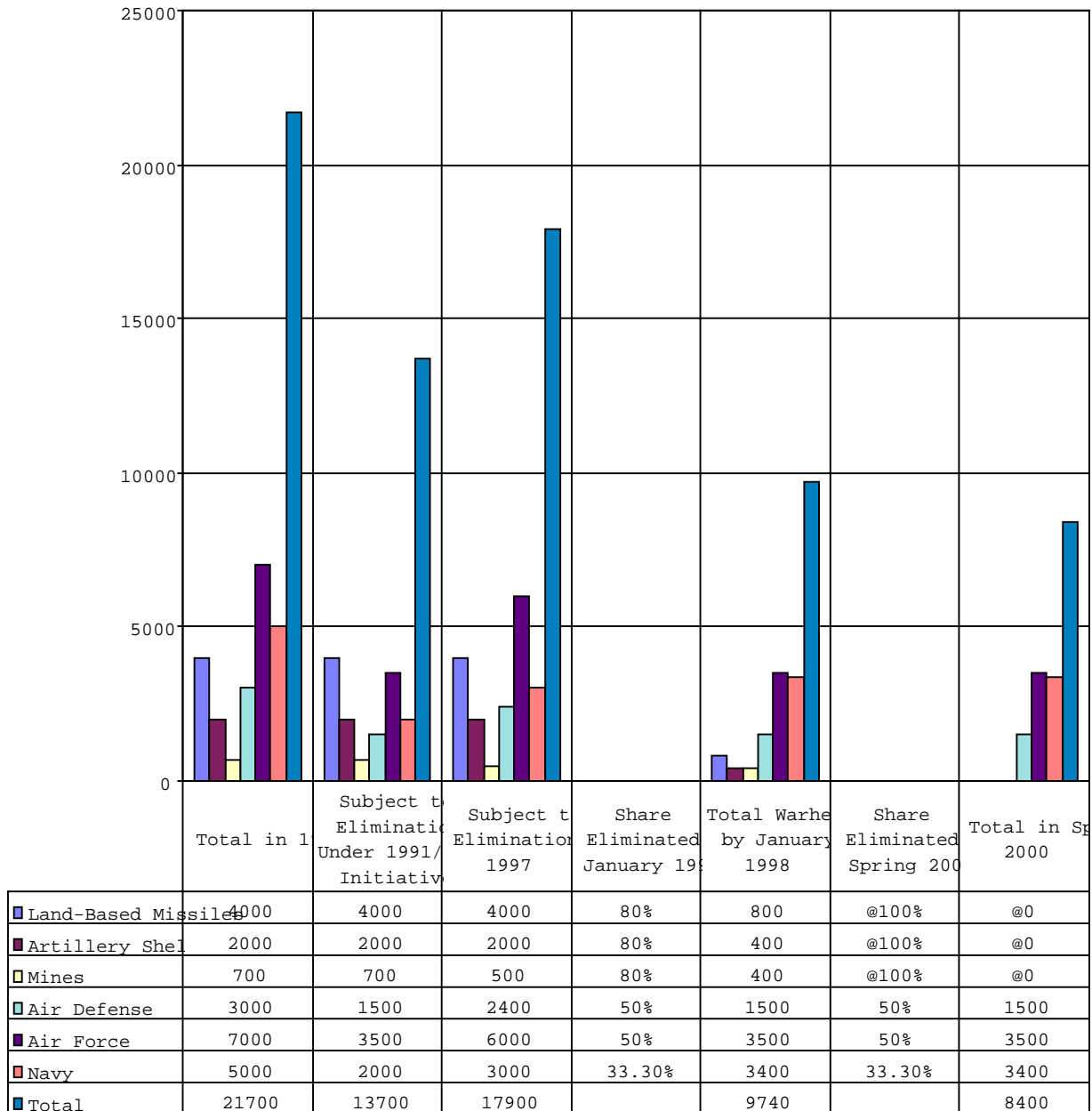
## NOTES

\* Shown in some Western sources but not in State Department estimate.

1. Figures in this table represent total operational forces, not just forces accountable under START I.

2. Principle sources for this table include: The US State Department Fact Sheet on Aggregate Numbers of Strategic Offensive Arms, July 31,2001, Washington, DC, US Department of State. The numbers have been updated in part by Anthony H. Cordesman, using the International Institute for Strategic Studies, *The Military Balance, 1999-2000, 2000-2001, and 2001-2002*, (London: Oxford University Press) and data from the Carnegie Endowment.

### Russian Theater Nuclear Forces (Declarations as of January 1, 2000)



These figures are the authors' best estimate drawn from their calculations of the range of deployed and non-deployed warheads. The figures for columns 1, 2 and 3 are based on Alexei Arbatov, *Yadernye Vooruzheniya Bezopasnost Rossi*, IMEMO, 1997. Column 4 is based on the Russian Delegation Paper at the Experts Meeting at NATO on February 25, 1998. Column 5 = 1+4. Column 6 is based on H.E. Grigory Berdennikov at the 3<sup>rd</sup> Session of the Preparatory Committee for the 200 Review Conference of the NPT, May 10, 1999 and the National Report on the Implementation of the Nuclear Non-Proliferation Treaty by the Russian Federation, April 25, 2000.

Source: Adapted from work by William C. Potter and Dr. Nikolai Sokov, and Dr. Potter's draft of "Reducing the Threat of Tactical Nuclear Weapons, Problems and Prospects."

### **Bush-Putin Meetings: November 2001**

#### **Strategic Nuclear Weapons Reductions:**

- **President Bush offered to make a unilateral reduction of between 1,700 and 2,200 warheads.**
- **U.S. reduction would include the 500 warheads deployed on the MX Peacekeeper missiles.**
- **President Putin also announced proposed reductions in the Russian nuclear arsenal. Although no exact figure was given, Putin has in the past used 1,500 warheads as a goal by the end of the decade.**
  - **Given Russia's economic difficulties, 1,000 warheads may be a more realistic estimate.**
- **These reductions are similar in size to those proposed by Presidents Clinton and Yeltsin as a basis for the START III agreement.**
- **If put into effect these measures would bring the Start II agreement to an end.**
  - **This would allow for the use of MIRVs on land-based ICBMs.**

#### **Modernization:**

- **Both sides will continue to modernize the nuclear weapons that they will retain.**
- **Russia is building new warheads for existing missiles.**
- **Russian SS-27 production will continue at a reduced pace of 10 missiles a year, due largely to economic difficulties.**

## US Nuclear Testing and Reliability Problems

The Pentagon and the Energy Department must annually certify to the president that the nuclear weapons stockpile is safe and reliable and that there is no need to resume tests involving the detonation of nuclear warheads and bombs. This was done in underground caverns until 1992.

- Inspector General Gregory H. Friedman reported to Energy Secretary Spencer Abraham on his review of nuclear weapons safety and reliability on December 21, 2001. The report noted backlogs in flight and laboratory test schedules for five of nine nuclear missile warheads and bombs in the operational stockpile. The results were made public on January 2, 2001.
- The inspector general determined that the problems associated with the safety and reliability of US nuclear weapons have become a "most serious challenge area" for the National Nuclear Security Agency that runs the weapons complex unless nuclear testing takes place..
- Another review was completed in December 2001 and showed backlogs of more than 18 months in correcting defects or malfunctions that were discovered in testing of older weapons systems.
- The inspector general reported that, "Without a robust and complete surveillance testing program, the department's ability to assess the reliability of some nuclear weapons is at risk."

Sen. John W. Warner (Va.), ranking Republican on the Senate Armed Services Committee, stated that some lawmakers and senior officials inside the nuclear weapons complex and the Pentagon have been talking about the need to resume underground testing, said "If the surveillance program can't do the job, we will have to resume testing to make sure our [nuclear] weapons work."

The Washington Post reported on January 3, 2002, that the US government's process of certifying "high confidence" in the nuclear stockpile involves randomly selecting for testing about 11 units from each of the nine deployed nuclear warheads on land- and submarine-based intercontinental missiles and bombs on aircraft. Nuclear warheads, missiles and bombs are flight-tested by being launched or dropped to see if the propellants and guidance systems work.

The Inspector General 's report showed that, over the past four years:

- There were delays in five of 16 tests scheduled for the W-80 warhead used on cruise missiles and in three of 12 tests scheduled for the W-88, which is carried by the sub-launched Trident II missiles.
- Laboratory tests to see whether handling, aging or manufacturing problems have developed in components such as radars showed delays in eight of 30 tests related to the B-61 nuclear bombs and in eight of 31 tests planned for the W-76 warhead used on sub-launched Trident I missiles.
- Component tests -- which include looking at "pits," or nuclear triggers and detonators -- are also running behind, with four pit tests delayed out of 13 that were scheduled for the four-year period.
- The Inspector General Reported the successful testing over four years fell below 75 percent of planned tests, and that this means that "there is significant concern that anomalies or defects in the stockpile might have been missed,".

When testing shows a defect or malfunction, DOE procedures require immediate notification of the nuclear weapons lab that developed the weapon.

- The lab involved is supposed to determine whether the problem is significant within five days of notification.

- If it is, the lab has 45 days to determine through tests whether a major investigation should be initiated since the reliability and performance of the weapon could be involved.
- The Inspector General reported that about 10 percent of He also found, however, that the 45-day period for determining the significance of problems had grown, in some instances, to 300 days.
- "Over two-thirds of the 64 active investigations remained unresolved beyond the department's one-year benchmark for completion."
- As of March 2001, 18 of 24 such investigations remained unresolved after 18 or more months at Los Alamos National Laboratory, which spent the past two years adapting to tighter security rules in the wake of allegations of Chinese espionage. "If these delays continue, the department may not be in a position to unconditionally certify the aging nuclear weapons stockpile."

Based on a report by *By Walter Pincus, Washington Post*, January 3, 2002; Page A15



## **US Announcement of Withdrawal from the ABM Treaty December 13, 2001** **Statement by the White House Press Secretary**

The circumstances affecting U.S. national security have changed fundamentally since the signing of the ABM Treaty in 1972. The attacks against the U.S. homeland on September 11 vividly demonstrate that the threats we face today are far different from those of the Cold War. During that era, now fortunately in the past, the United States and the Soviet Union were locked in an implacably hostile relationship. Each side deployed thousands of nuclear weapons pointed at the other. Our ultimate security rested largely on the grim premise that neither side would launch a nuclear attack because doing so would result in a counter-attack ensuring the total destruction of both nations.

Today, our security environment is profoundly different. The Cold War is over. The Soviet Union no longer exists. Russia is not an enemy, but in fact is increasingly allied with us on a growing number of critically important issues. The depth of United States-Russian cooperation in counterterrorism is both a model of the new strategic relationship we seek to establish and a foundation on which to build further cooperation across the broad spectrum of political, economic and security issues of mutual interest.

Today, the United States and Russia face new threats to their security. Principal among these threats are weapons of mass destruction and their delivery means wielded by terrorists and rogue states. A number of such states are acquiring increasingly longer-range ballistic missiles as instruments of blackmail and coercion against the United States and its friends and allies. The United States must defend its homeland, its forces and its friends and allies against these threats. We must develop and deploy the means to deter and protect against them, including through limited missile defense of our territory.

Under the terms of the ABM Treaty, the United States is prohibited from defending its homeland against ballistic missile attack. We are also prohibited from cooperating in developing missile defenses against long-range threats with our friends and allies. Given the emergence of these new threats to our national security and the imperative of defending against them, the United States is today providing formal notification of its withdrawal from the ABM Treaty. As provided in Article XV of that Treaty, the effective date of withdrawal will be six months from today.

At the same time, the United States looks forward to moving ahead with Russia in developing elements of a new strategic relationship.

- In the inter-related area of offensive nuclear forces, we welcome President Putin's commitment to deep cuts in Russian nuclear forces, and reaffirm our own commitment to reduce U.S. nuclear forces significantly.
- We look forward to continued consultations on how to achieve increased transparency and predictability regarding reductions in offensive nuclear forces.
- We also look forward to continued consultations on transparency, confidence building, and cooperation on missile defenses, such as joint exercises and potential joint development programs.
- The United States also plans to discuss with Russia ways to establish regular defense planning talks to exchange information on strategic force issues, and to deepen cooperation on efforts to prevent and deal with the effects of the spread of weapons of mass destruction and their means of delivery.

The United States intends to expand cooperation in each of these areas and to work intensively with Russia to further develop and formalize the new strategic relationship between the two countries.

The United States believes that moving beyond the ABM Treaty will contribute to international peace and security. We stand ready to continue our active dialogue with allies, China, and other interested states on all issues associated with strategic stability and how we can best cooperate to meet the threats of the 21st century. We believe such a dialogue is in the interest of all states.

# **Part Six**

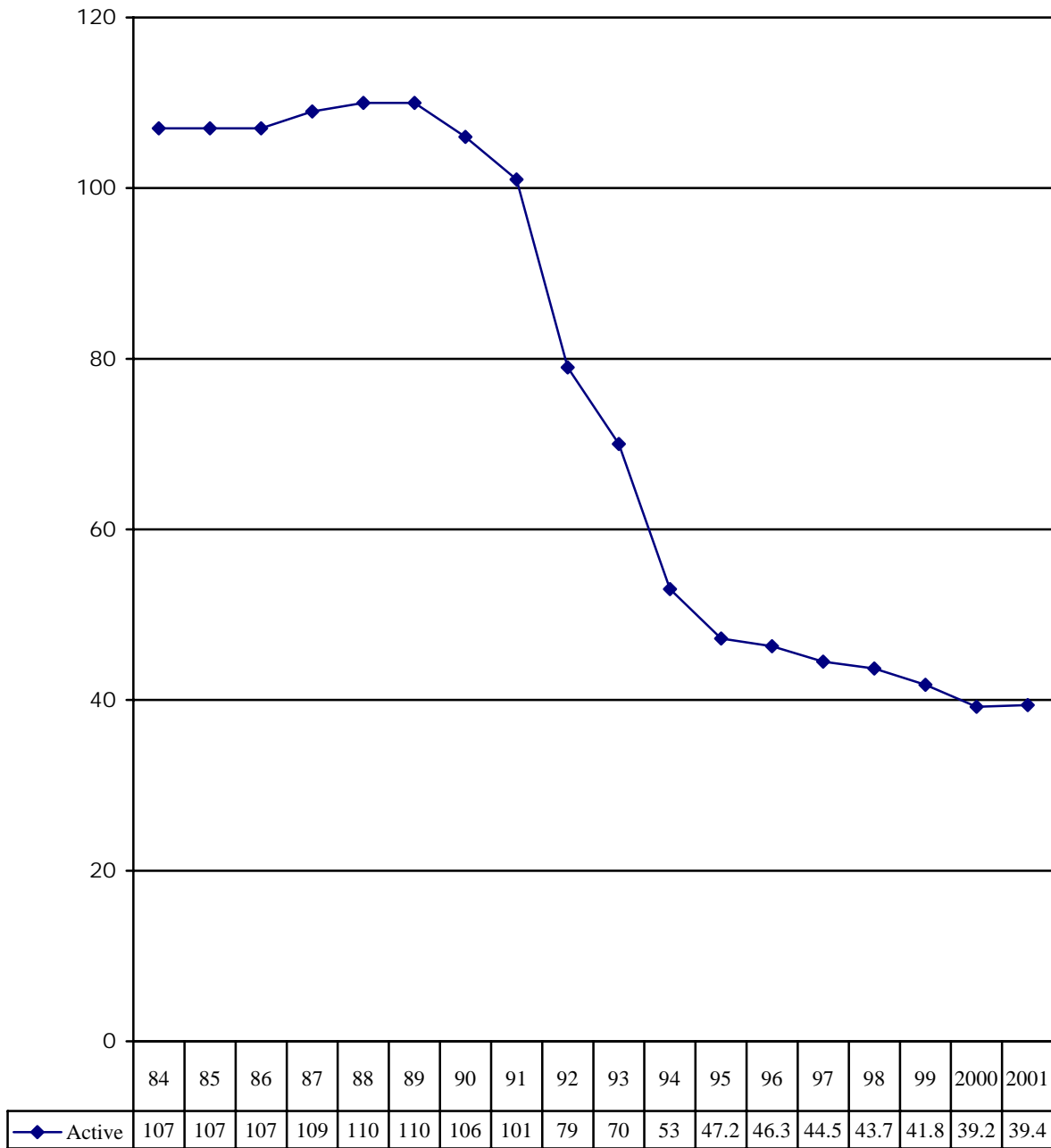
# **Trends in Selected National Forces**

### Trends in Belgian Defense Spending: 1984-2001 (in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Belgian Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in the Belgian Force Strength: 1990-2001 - Part One

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	92,000	46,300	39,250	39,420
<u>Army Forces</u>				
Active Manning	68,700	30,100	26,800	26,400
Reserves & Medical	123,000	40,300	105,200	87,200
Main Battle Tanks	334	183 (151)	140	132
Lt. Tanks	158	0	0	0
Recce)	153	141 (29)	141(29)	119
MICVs/AIFVs	520	214 (24)	283	218
APCs)	1,348	539 (221)	502	332
Total Artillery	379	278	242	272
SP Artillery	207	168	132	108
Towed Artillery	21	8 (10)	19	14
MRLs	0	0	0	0
SSMs	5	0	0	0
Attack Helicopters	0	0	28	28
Other Helicopters	51	78	48	46
Heavy SAMs	39	0	0	0
Light SAMs	-	118	118	118
<u>Navy</u>				
Active Manning	4,500	2,650	2,600	2,560
Reserve Manning	4,500	3,300	6,250	3,300
Armed Helicopters	3	3	3	3
Principal Surface Combatants	4	2	3	3
Frigates	4	2	3	3
Patrol and Coastal Combatants	0	0	0	0
Mine Warfare	27	11	11	11
Amphibious Ships	0	0	0	0
Support & Miscellaneous	3	4	12	11

### Trends in the Belgian Force Strength: 1990-2001 - Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	18,800	12,300	8,600	8,600
Reserve Manning	19,000	16,400	20,700	10,000
Combat Aircraft	126(38)	132 (70)	90	90
F-16	108 (12)	132 (32)	90(32)	129(39)
Mirage V	36 (36)	0 (38)	0(67)	0(6)
Alphajet	31	31	29	29
Transport Aircraft	42	35	22	
Other Helicopters	5	5	5	5
Heavy SAMs	0	0	0	0
Light SAMs	-	24	24	24

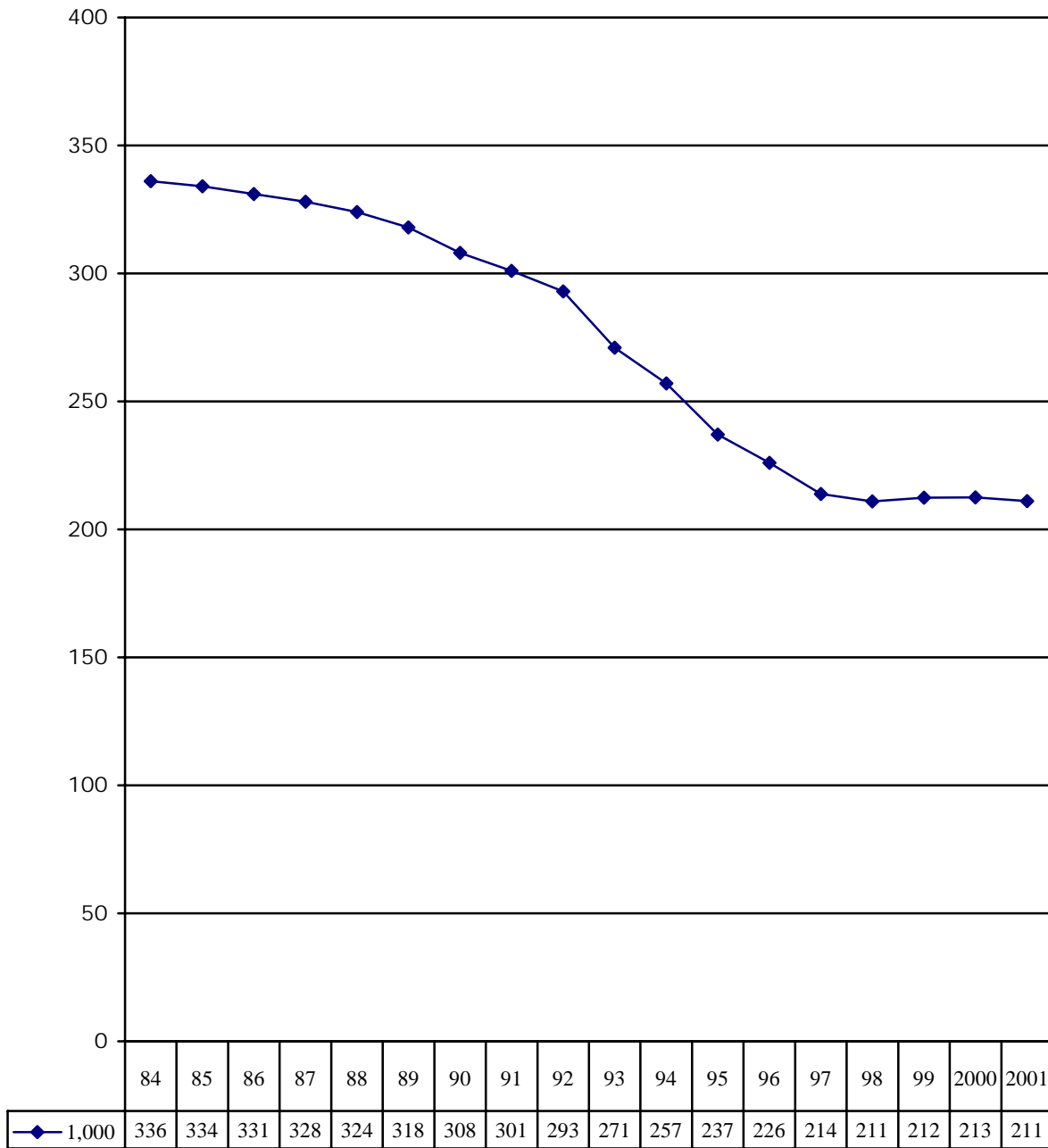
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance.  
 Figures in parenthesis are additional equipment in storage.

**Trends in British Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in British Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.



### Trends in British Force Strength: 1990-2001 - Part One

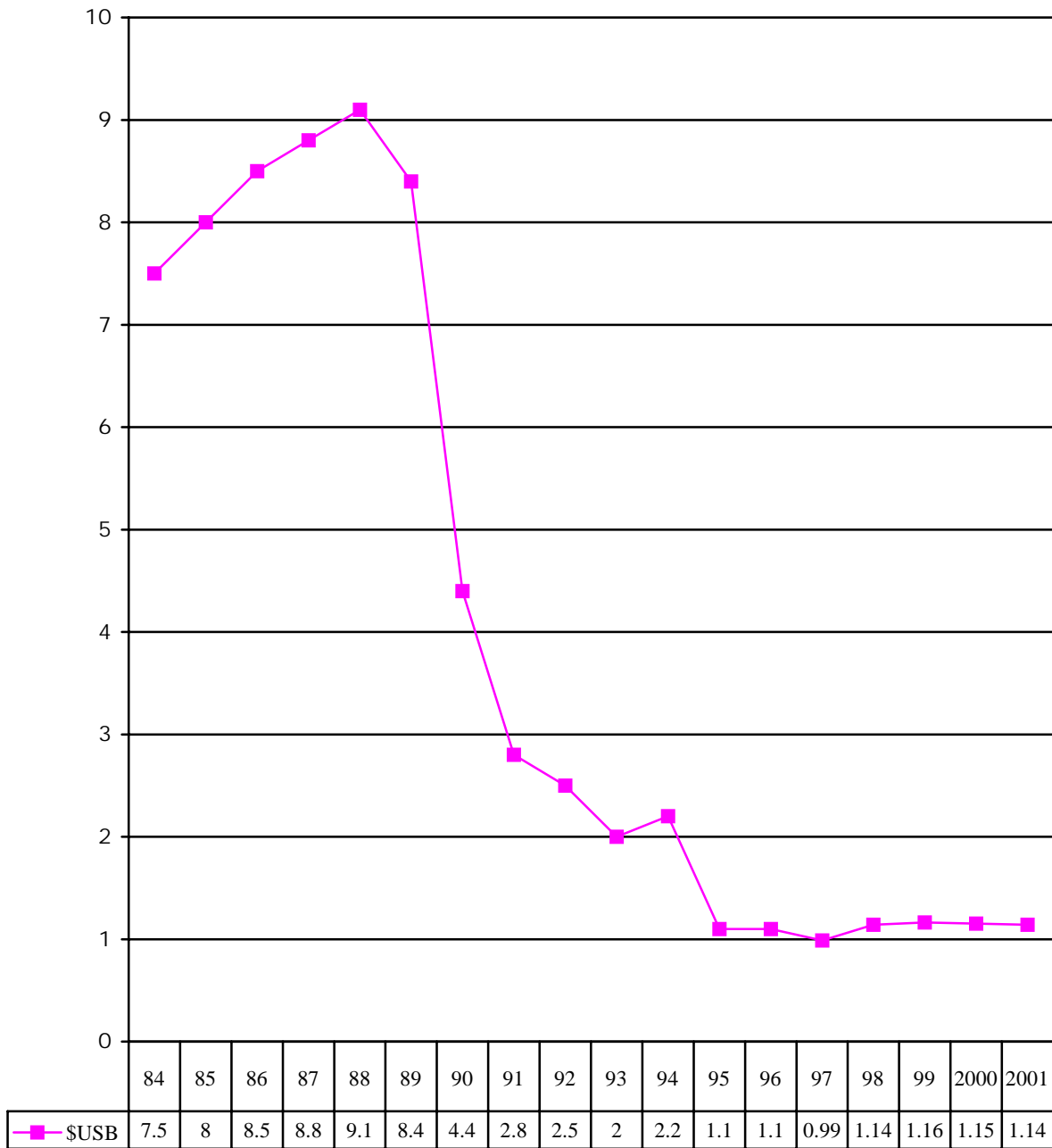
<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	306,000	226,000	212,450	211,430
<u>Strategic Forces</u>				
Manpower	2,100	1,900	1,900	1,900
SLBMs	4/64	2/32	4/58	4/58
<u>Army Forces</u>				
Active Manning	152,900	113,000	113,950	113,950
Reserves	264,000	254,700	187,200	177,400
Main Battle Tanks	1,330 (570)	462 (79)	616	636
Lt. Tanks	355	8 (30)	11	1
Recce	1,002	431	481	467
MICVs/AIFVs	360	566	737	586
AP	3,950	2,792	3,278	2,398
Total Artillery	717	522 (2)	457	475
SP Artillery	367	179	179	179
Towed Artillery	346	279	214	233
MRLs	-	-	63	63
Attack/Army Helicopters	341	296	269(249)	258
<u>Navy</u>				
Active Manning	63,500	48,000	43,7700	43,530
Reserve Manning	35,400	26,350	28,500	26,350
Fleet Air Arm		5,200	6,740	6,740
Combat Aircraft		26 (18)	34(21)	34
Armed Helicopters		108 (37)	92	120
Royal Marines	7,600	6,750	6,740	6,740
SSBN	4	2	4	4
SSN	17	12	12	12
SS	11	0	0	0
Principal Surface Combatants	50	38	34	34
Carriers	2 (1)	3	3	3
DDE	13	12	11	11
Frigates	35	23	23	20
Patrol and Coastal Combatants	44	32	24	23
Mine Warfare	38	18	21	23
Amphibious	7	11	6	6
Support & Miscellaneous	35	23	24	20

### Trends in British Force Strength: 1990-2001 - Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	89,600	65,000	54,730	53,950
Reserve Manning	40,700	46,300	43,850	247,100
Combat Aircraft	538 (319)	512 (48)	429(137)	427
Tornadoes	234	286 (19)	214(89)	217 (67)
Buccaneer	34 (30)	0	0	0
Jaguars	44 (71)	65 (14)	53(26)	53
Harriers	64 (40)	84 (11)	64(22)	60(26)
Phantom	54 (98)	0	0	0
Hawks	144	110	125(16)	121 (16)
Training	-	50	-	-
Armed Helicopters	0	0	0	0
Other Helicopters	169	185	167	135
Heavy SAMs	64	0	0	0
Light SAMs	6 sqn.	6 sqn.	5/4 sqn.	6/4 sqn.

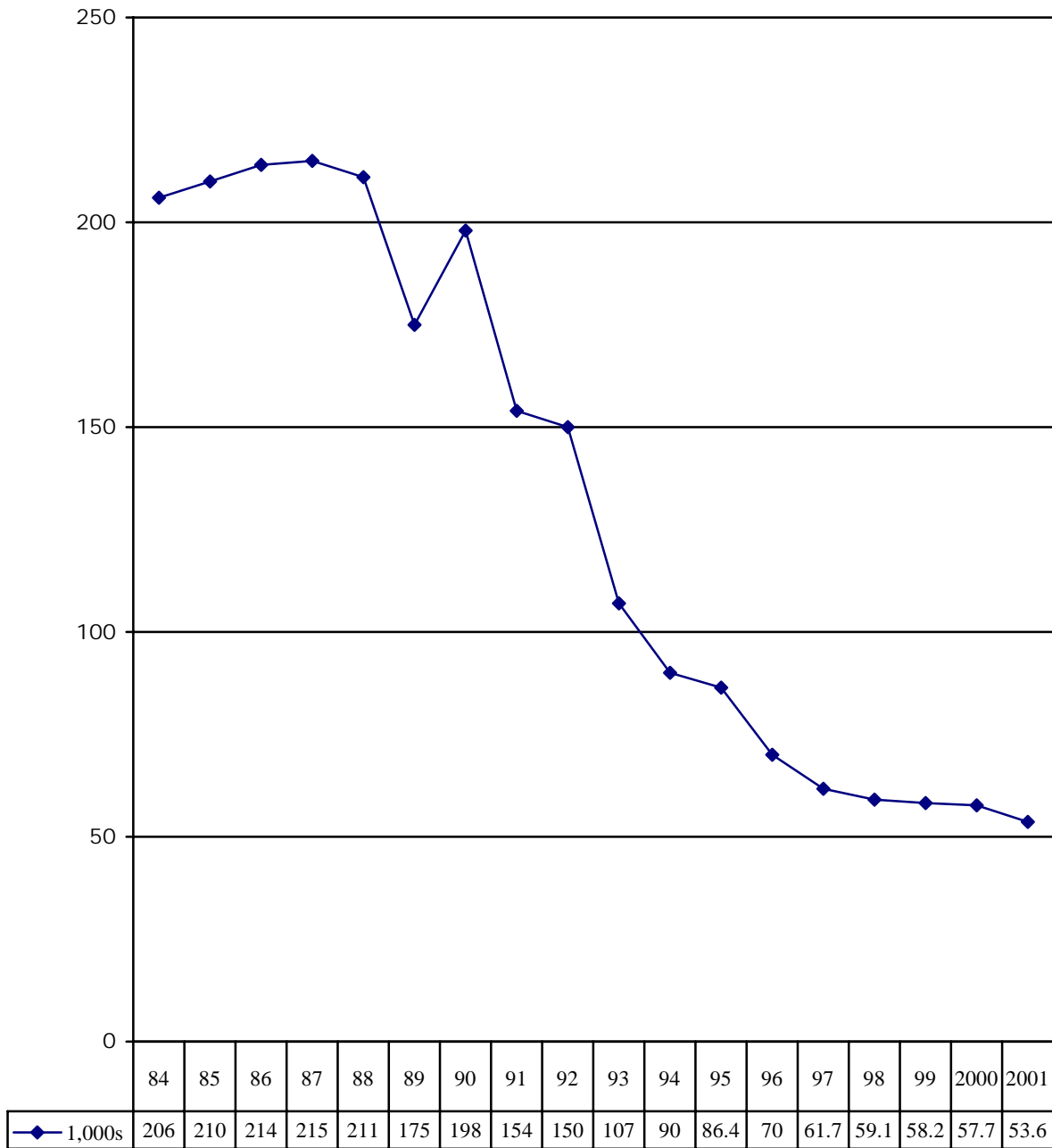
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance. Figures in parenthesis are additional equipment in storage.

### Trends in Czech Defense Spending: 1984-2001 (in \$US Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Czech Active Military Manpower: 1984-2001**  
(in 1,000s)



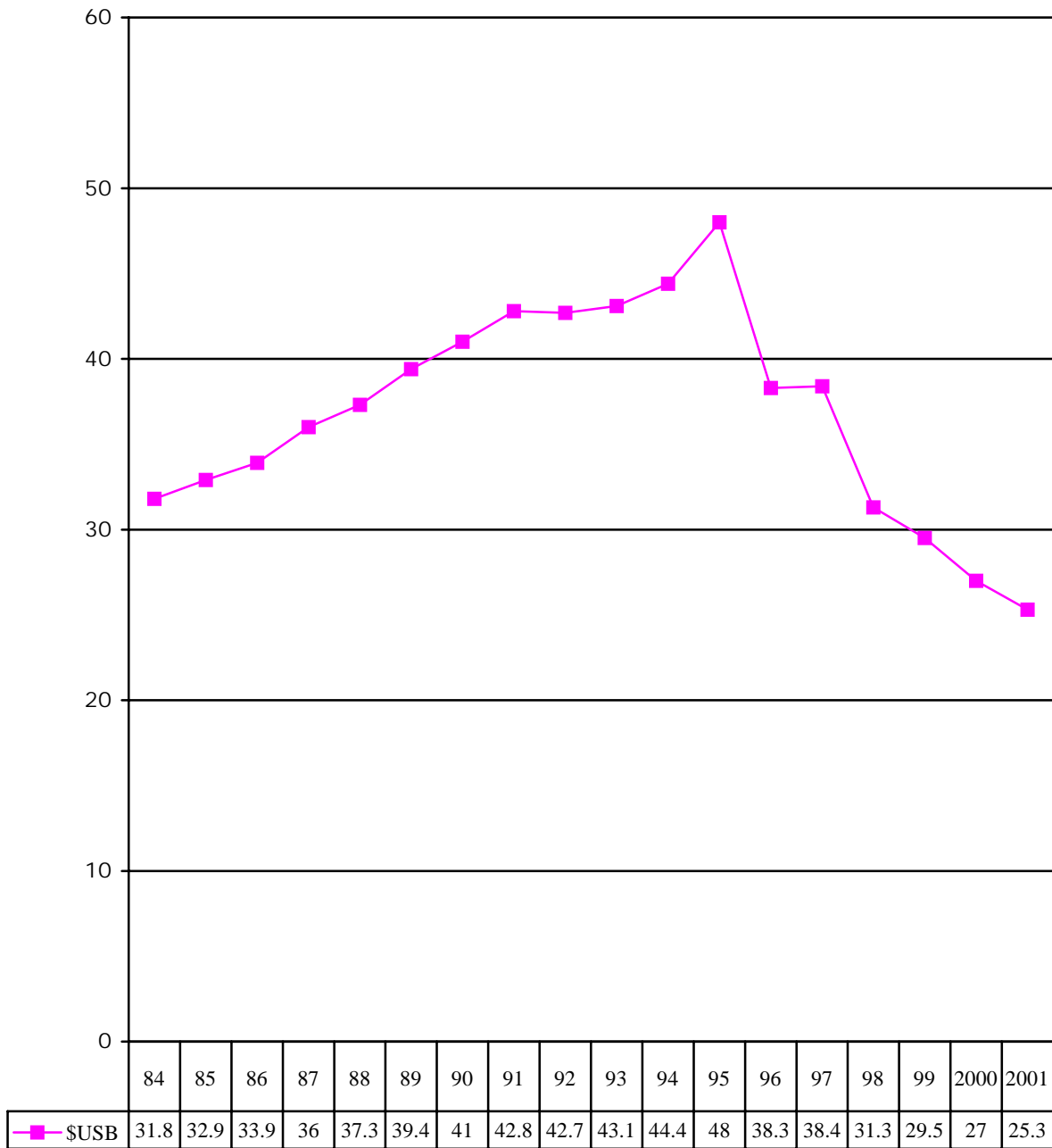
Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Czech Force Strength: 1990-2001**

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	198,200	70,000	57,700	53,600
<u>Army Forces</u>				
Active Manning	125,700	28,000	25,100	23,800
Reserves	250,000	-		
Main Battle Tanks	3,995	953	792(176)	650
Lt. Tanks	0	0	0	0
Recce	1,250	182	182	182
MICVs/AIFVs	2,495	951	801	801
APCs	3,333	412	980	975
Total Artillery	3,865	830	740	648(120)
SP Artillery	520	370	364	322
Towed Artillery	2,093	209	148	124
MRLs	854	150	135	109
Attack Helicopters	0	0	0	0
Other Helicopters	0	0	0	0
Heavy SAMs	0	0	0	0
Light SAMs	210	140	140	140
SSM	66	44	0	0
<u>Air Force</u>				
Active Manning	4,800	16,000	13,400	11,600
Reserve Manning	45,000	0	0	0
Combat Aircraft	312	126	110	75
Su-7/Su-22 FGA	20	35	0	0
MiG-23 FG	35	0	0	0
MiG-21 FGA	25	0	37	37
Su-25 FGA	35	25	0	24
MiG-21 Fighter	150	27	24	37
MiG-23 Fighter	35	25	0	0
MiG-21 Recce	16	0	0	0
L-159	0	0	21	7
Su-22 Recce	10	0	32	0
L-29 Recce	5	0	0	0
L-29ZQ	0	0	7	0
Armed Helicopters	135	36	34	34
Other Helicopters	130	88	96	76
Heavy SAMS	250	0	0	0
Light SAMS	0	0	0	0

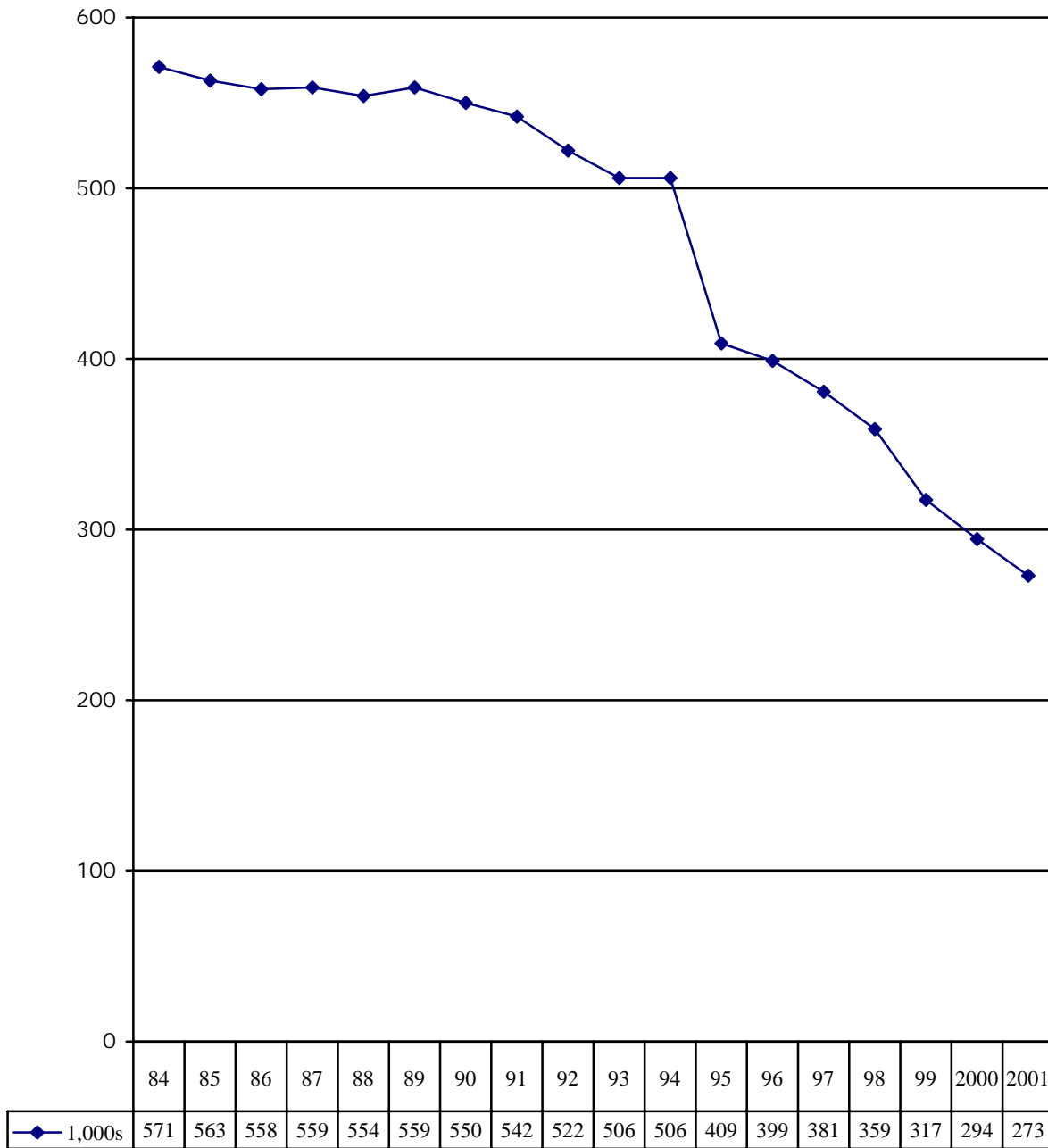
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance. Figures in parenthesis are additional equipment in storage.

**Trends in Real French Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in French Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in French Force Strength: 1990-2001- Part One**

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	461,250	398,900	294,400	273,740
<u>Strategic Forces</u>				
Manpower	18,710	10,400	8,400	8,400
SLBMS	6/96	5/80	4/64	4/64
IRBMs	18	18	0	0
Medium Range Bombers	18	15 (3)	(3/60)	3/60
<u>Army Forces</u>				
Active Manning	288,550	236,600	169,300	150,000
Reserves	325,000	240,000	242,500	242,500
Main Battle Tanks	1,340	890	834	809
Lt. Tanks	153	0	0	0
Recce	730 (300)	1,713 (300)	1,428	1,548
MICVs/AIFVs	817	713	713	599
APCs	4,131	3,840	3,900	3,900
Total Artillery	1,337	1,306	802	794
SP Artillery	377	290	273	273
Towed Artillery	394	347	105	97
MRLs	2	53	61	61
Attack Helicopters	682	373	339	262
Other Helicopters	0	72	159	148
Heavy SAMs	69	69	69	26
Light SAMs	221	523	536	429
SSM	40	0	0	-
<u>Navy</u>				
Active Manning	65,300	63,300	49,490	45,600
Reserve Manning	24,000	27,000	97,000	97,000
Fleet Air Arm	11,000	7,600	3,500	6,800
Combat Aircraft	96	69 (38)	52(30)	51(28)
Armed Helicopters	44	40 (15)	32(8)	29(18)
Marines	2,600	3,100	2,000	1,700
SSBN	6	5	4	4
SSN	4	6	7	6
SS	10	6	-	10
Principal Surface Combatants	44	43	35	35
Carriers	2	2	1	1
Cruisers	2	1	1	1
DDE/DDG	5	4	4	3
Frigates	35	36	29	30
Patrol and Coastal Combatants	24	36	40	39
Mine Warfare	23	22	21	21
Amphibious	9	9	9	9
Support & Miscellaneous	39	38	30	30



### Trends in French Force Strength: 1990-2001 - Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	93,100	88,600	60,500	63,000
Reserve Manning	70,000	70,000	79,500	79,500
Combat Aircraft	597	547	517	473
Mirage III	118	0	0	0
Mirage IV	20	0	0	0
Mirage V	0	0	0	0
Mirage F-1	166	115	84	113
Mirage-2000	125	210	234	214
Jaguars	111	106	66(54)	22(98)
Alphajet	107	110	99(29)	99(29)
E-3F	0	4	4	4
Armed/Other Helicopters	121	88	0	89
Heavy SAMS	0	0	0	0
Light SAMS	0	0	0	0

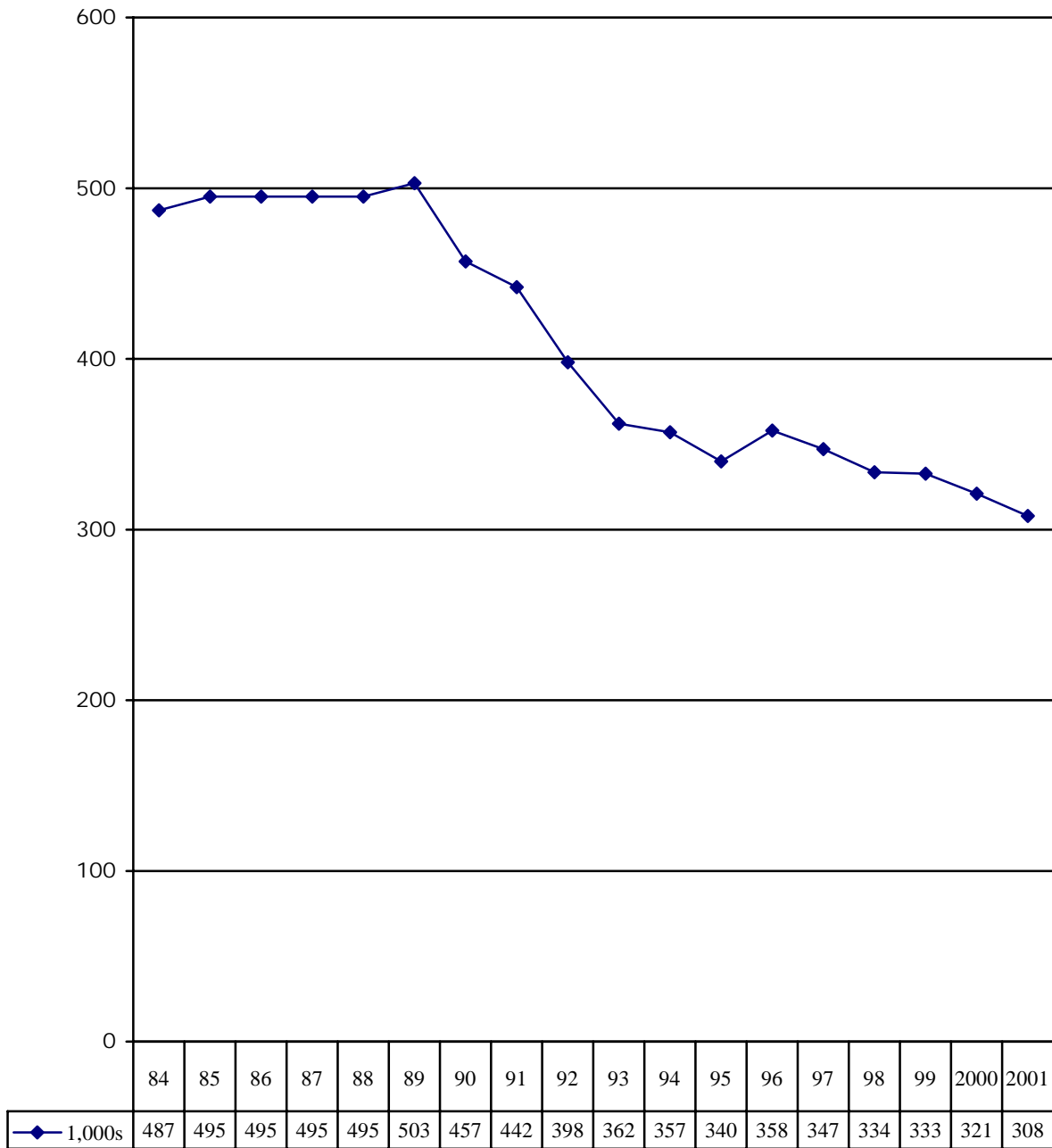
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance. Figures in parenthesis are additional equipment in storage.

### Trends in Real German Defense Spending: 1984-2001 (in \$US Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in German Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in German Force Strength: 1990-2001 - Part One\*

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	469,000	358,400	332,800	308,400
<u>Army Forces</u>				
Active Manning	308,000	252,800	221,300	211,800
Reserves	717,000	256,200	295,400	294,800
Main Battle Tanks	5,045	2,988	2,815**	2,521
Lt. Tanks	0	0	0	0
Recce	590	523	523	523
MICVs/AIFVs	2,136	2,465	2,253	2,100
APCs	3,636	3,913	3,026	807
Total Artillery	2,492	2,068	2,115	2,073
SP Artillery	812	571	612	605
Towed Artillery	460	353	353	350
MRLs	215	234	232	229
SSM	26(2)	0	0	0
Attack Helicopters	210	205	204	204
Other Helicopters	540	429	388	126
<u>Navy</u>				
Active Manning	32,000	28,500	26,600	26,050
Reserve Manning	26,000	9,850	9,600	9,500
Fleet Air Arm	-	4,500	4,200	4,200
Combat Aircraft	104 (5)	54	50	67
Armed Helicopters	19	17	40	40
SS	24	17	14	14
Principal Surface Combatants	14	14	14	14
DDE/DDG	6	3	2	2
Frigates	8	11	12	12
Patrol and Coastal Combatants	45	36	28	28
Mine Warfare	53	40	35	28
Amphibious Craft	20	8	(5)	5
Support & Miscellaneous	52	42	45	43

### Trends in German Force Strength: 1990-2001 - Part Two\*

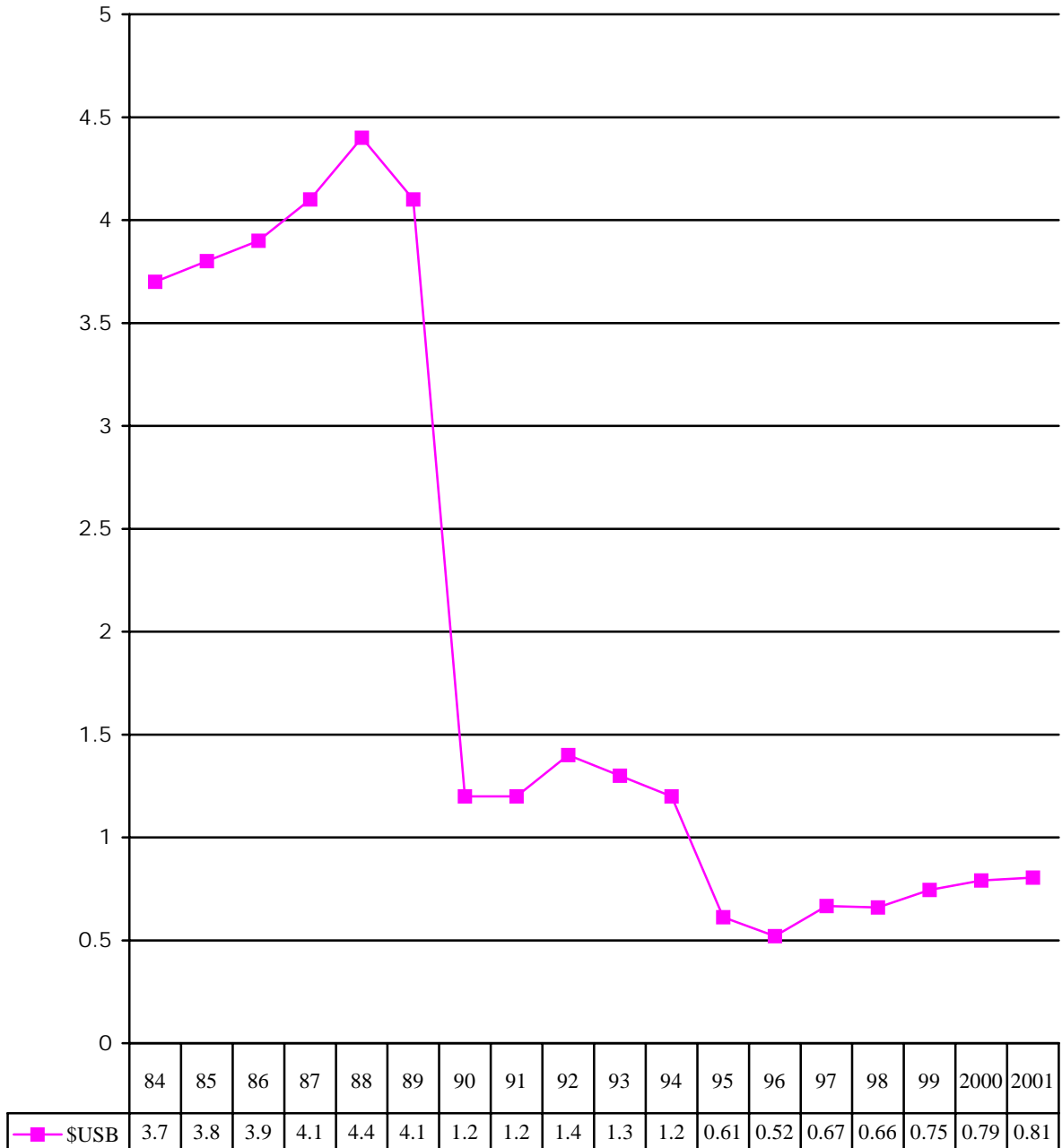
<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	106,000	77,100	73,300	70,500
Reserve Manning	106,000	38,800	60,000	59,200
Combat Aircraft	503 (28)	489	457(102)	434
Tornadoes	194	276	267	267
F-4	224	155	154	131
MiG-29	0	24	23	23
Su-22	-	-	1	1
MiG-23	-	-	3(2)	3(2)
MiG-21	-	-	1	1
Alphajet	165	34 (72)	92 (89)	0
Training	-	-	-	4
Transport	155	104	103	102
Armed Helicopters	0	0	0	0
Other Helicopters	110	106	102	101
SSMs	0	0	0	0
Heavy SAMS	216	108	-	-
Light SAMS	68	84	-	-

\* Only includes West German forces before unification.

\*\* 249 to be destroyed.

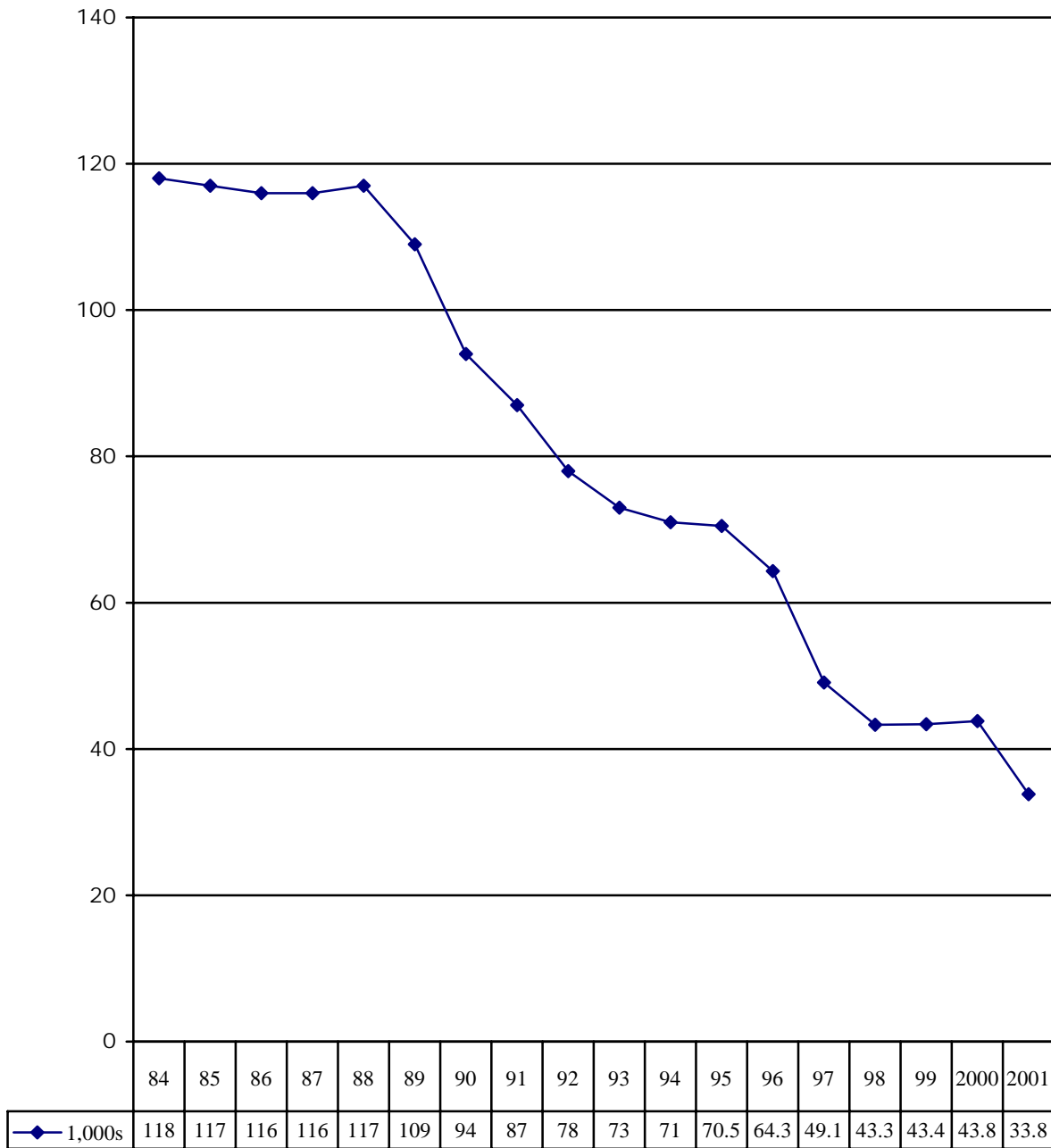
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance.  
 Figures in parenthesis are additional equipment in storage.

**Trends in Real Hungarian Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Hungarian Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

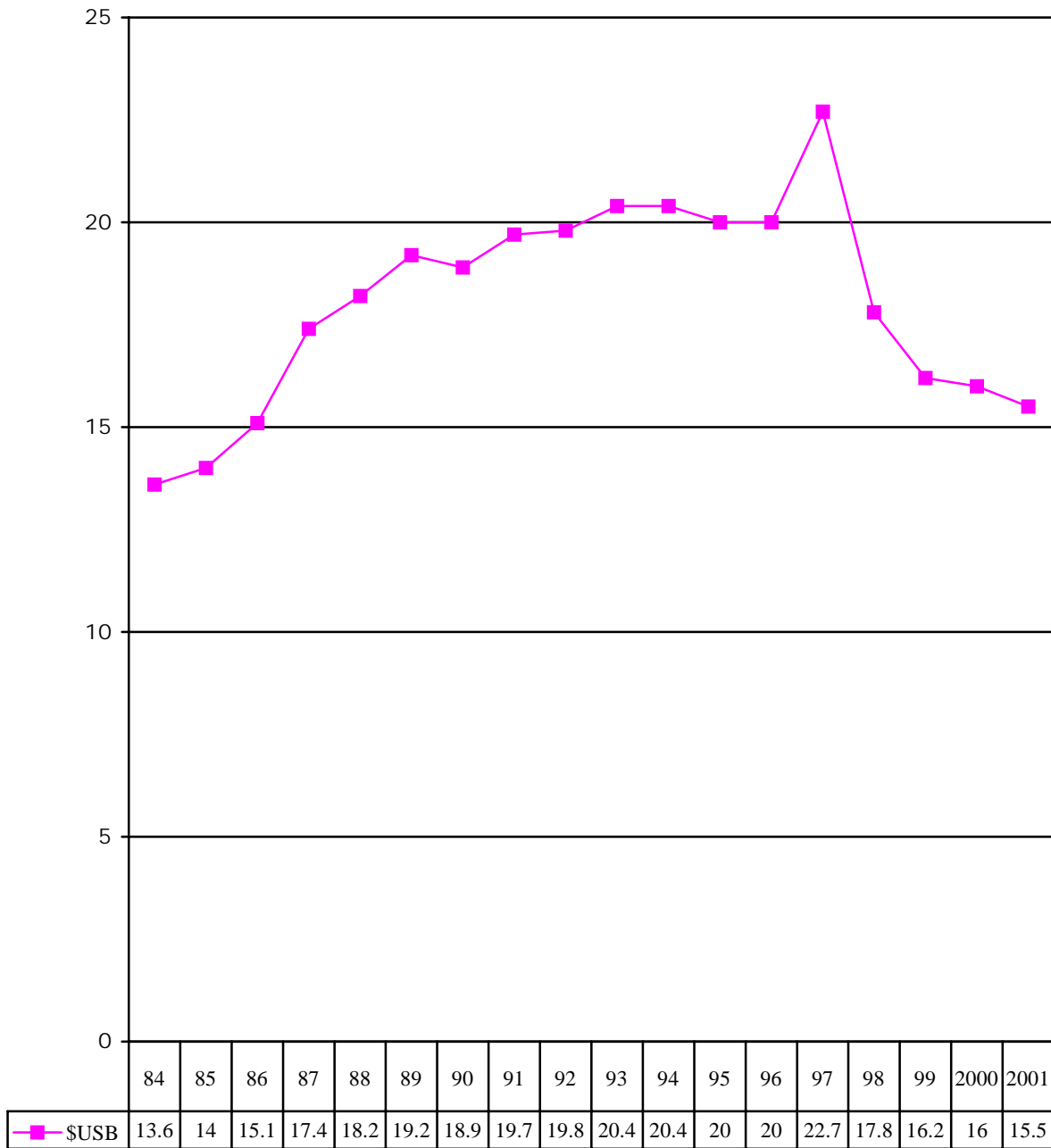
### Trends in Hungarian Force Strength: 1990-2001

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	94,500	64,300	43,790	33,810
<u>Army Forces</u>				
Active Manning	72,000	48,000	23,500	13,160
Reserves	125,000	161,100	74,900	74,900
Main Battle Tanks	1,516	658 (177)	8067(209)	753(108)
Lt. Tanks	0	0	0	0
Recce	500	161	104	104
MICVs/AIFVs	542	503	572	680
APCs	1,816	998 (40)	1,155(83)	799(83)
Total Artillery	1,084	840	839	839
SP Artillery	172	149 (2)	151(18)	151
Towed Artillery	594	406 (126)	532(242)	532
MRLs	58	56	56	56
Attack Helicopters	0	0	0	0
Other Helicopters	-	-	-	0
Heavy SAMs	0	0	0	0
Light SAMs	110	60	348	348
SSM	27	-	-	-
<u>Air Force</u>				
Active Manning	22,000	16,300	11,500	7,500
Reserve Manning	9,400	11,400	15,400	15,400
Combat Aircraft	87	127	68	46
Su-7/Su-22 FGA	0	0	-	(10)
MiG-23 FGA	0	0	-	(9)
MiG-21 FGA	0	0	-	(61)
Su-25 FGA	0	0	-	-
MiG-21 Fighter	50	76	22	-
MiG-23 Fighter	10	11	-	(9)
MiG-29 Fighter	0	28	27	27
MiG-21 Recce	0	0	-	-
Su-22 Recce	11	12	(12)	-
L-29 Recce	0	0	-	-
Armed Helicopters	64	59	24(15)	51
Other Helicopters	97	66	41	26
Heavy SAMS	120	122	98	98
Light SAMS	-	67	-	-

Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance. Figures in parenthesis are additional equipment in storage.

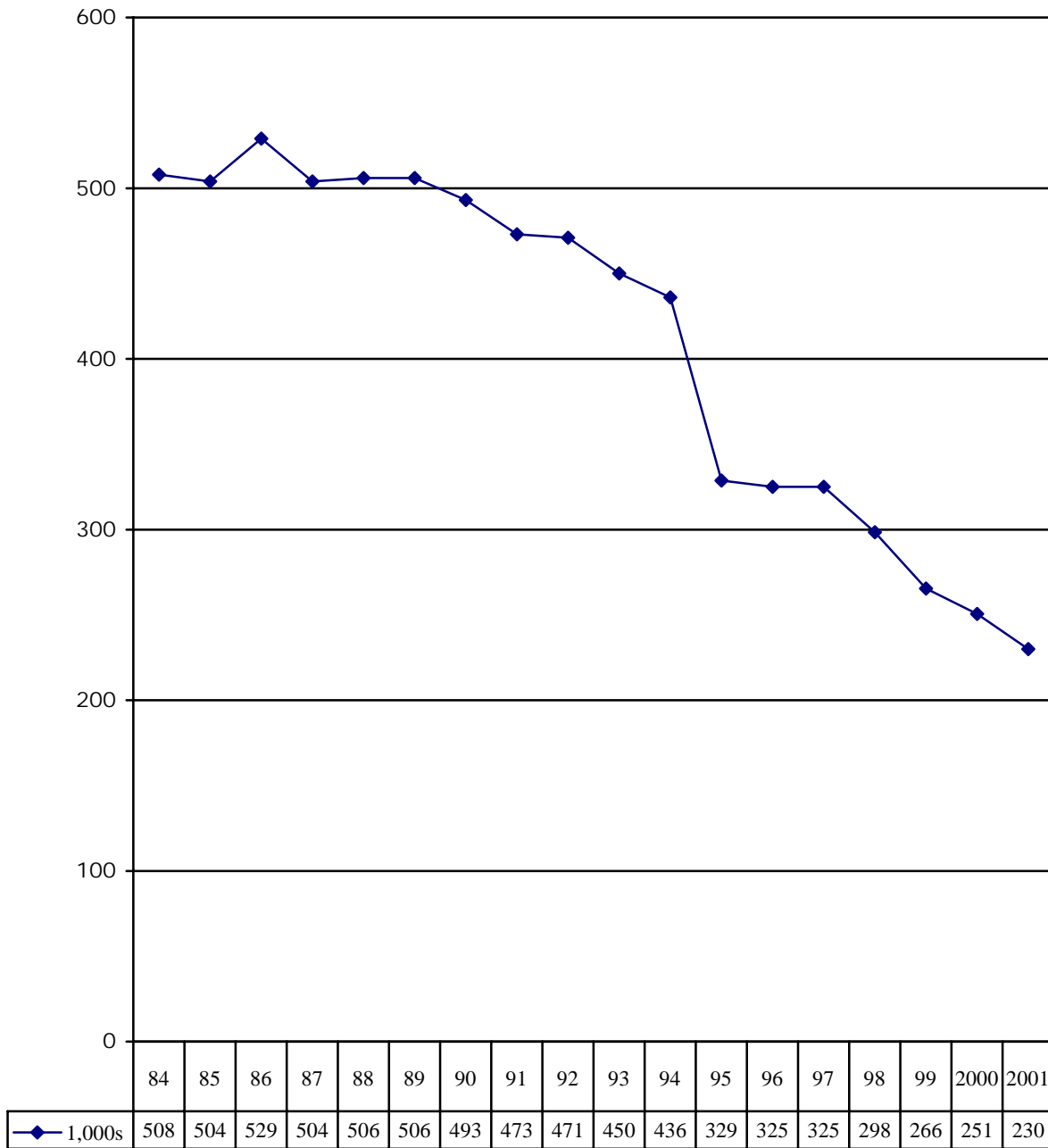


**Trends in Real Italian Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Italian Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in Italian Force Strength: 1990-2001 - Part One\*

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	389,600	325,150	250,6000	230,350
<u>Army Forces</u>				
Active Manning	260,000	167,250	153,000	137,000
Reserves	520,000	240,000	11,900	11,900
Main Battle Tanks	1,533 (140)	1,164	669	1,349
Lt. Tanks	0	0	0	0
Recce	6	0	0	0
MICVs/AIFVs	0	0	15	26
APCs	4,784	1,162	1,765	2777
Total Artillery	1,955	1,939	895	1390
SP Artillery	283	286	192	260
Towed Artillery	970	857	222	325
MRLs	2	22	22	22
SSM	6	0	0	0
Attack/Assault Helicopters	0	62	45	134
Other Helicopters	356	268	316	227
Heavy SAMs	126	126	60	60
Light SAMs	-	12	144	144
<u>Navy</u>				
Active Manning	50,000	44,000	38,000	38,000
Reserve Manning	36,000	36,000	23,000	23,000
Marines	800	1,000	1,000	1,200
Fleet Air Arm	1,500	1,600	2,500	2,500
Combat Aircraft	0	5	18	18
Armed Helicopters	98	74	80	80
SS	10	8	7	7
Principal Surface Combatant	30	32	30	22
Carriers	1	1	1	1
Cruisers	2	1	1	1
DDE/DDG	4	4	4	4
Frigates	23	26	24	16
Patrol and Coastal Combatants	17	16	9	15
Mine Warfare	15	14	13	13
Amphibious Ships	2	3	3	3
Support & Miscellaneous	24	42	32	29

### Trends in Italian Force Strength: 1990-2001 - Part Two\*

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	79,600	68,000	59,600	55,350
Reserve Manning	28,000	28,000	30,300	30,300
Combat Aircraft	425 (80)	314	336	329
Tornadoes	82 (15)	95	116	95(20)
F-104	156 (30)	90(87)	91	66(21)
AMX	156	89	104	74(32)
MB-339	59	69 (19)	11	14(1)
G-91	104 (35)	0	0	0
Atlantic	18	18	14	10(8)
Training	-	-	-	-
Transport	84	66	63	67
Armed Helicopters	0	0	0	6
Other Helicopters	91	129	101	105(16)
Heavy SAMS	96	-	-	-
Light SAMS	-	-	-	-

\* Only includes West German forces before unification.

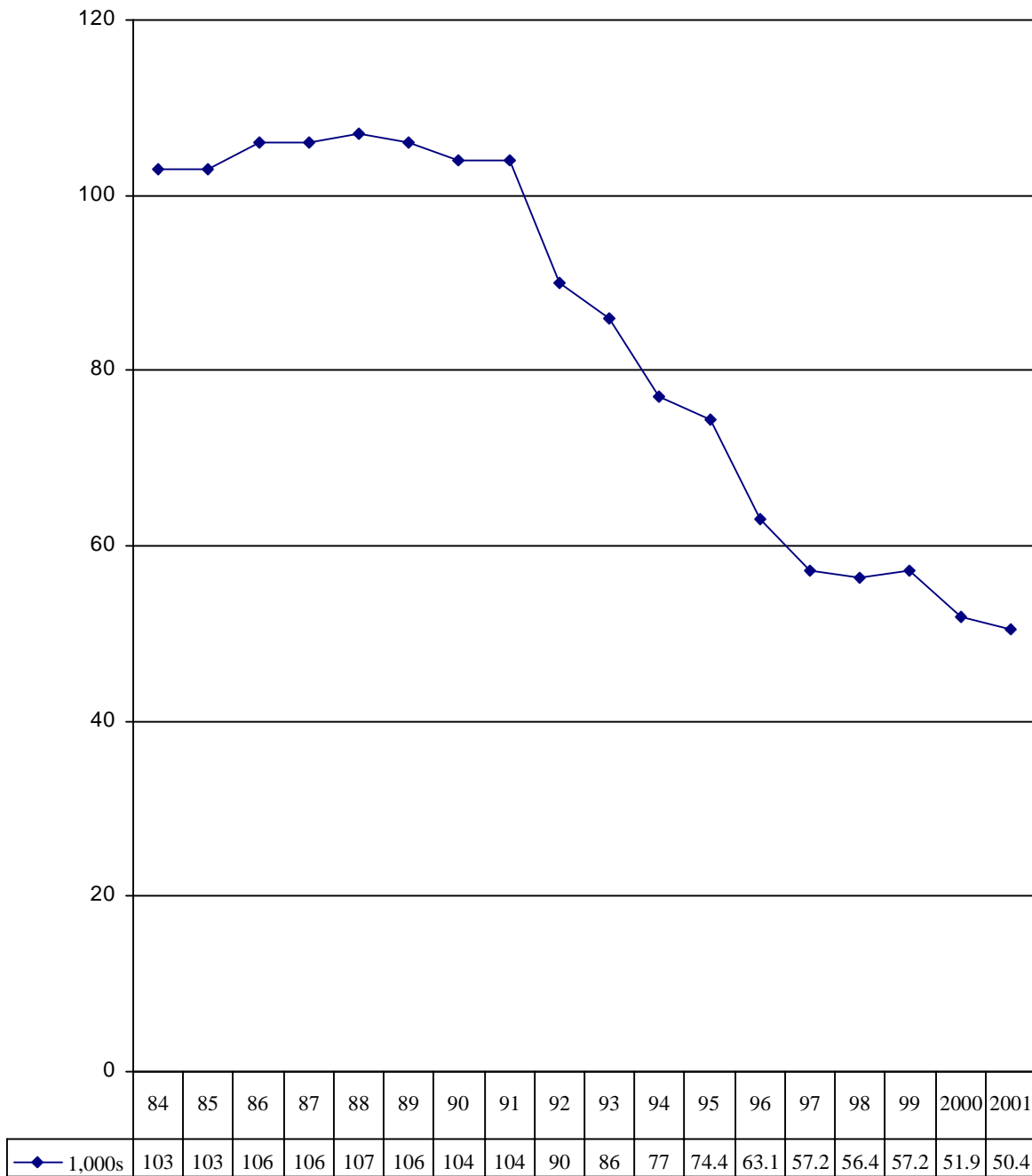
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 Figures in parenthesis are additional equipment in storage.

**Trends in Netherlands Defense Spending: 1984-2001**  
(in \$US Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in the Netherlands Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in the Netherlands Force Strength: 1990-2001 - Part One

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	102,600	63,100	51,940	50,430
<u>Army Forces</u>				
Active Manning	63,000	32,350	23,100	23,100
Reserves & Medical	135,100	66,000	22,200	22,200
Main Battle Tanks	750 (163)	445 (289)	330**	320***
Lt. Tanks	0	0	0	0
Recce	0	0	0	0
MICVs/AIFVs	831 (142)	375	448	361
APCs	1,614 (623)	978	830	345
Total Artillery	849	431	397	369
SP Artillery	298	153 (63)	116	123
Towed Artillery	183	66 (9)	95	112
MRLs	22	22	22	22
SSMs	7 (1)	0	0	0
Attack Helicopters	0	0	0	0
Other Helicopters	93	0	0	0
Heavy SAMs	0	0	0	0
Light SAMs	-	-	312	
<u>Navy</u>				
Active Manning	16,500	14,000	12,340	12,130
Reserve Manning	9,400	5,000	5,000	5,000
Marines	2,800	2,900	3,100	3,100
Naval Air	1,400	1,100	950	950
Aircraft - MR/ASW	13	12	13	10
Helicopters - ASW/SAR	22	22	21	21
Submarines	5	4	4	4
Principal Surface Combatants	14	16	15	12
Destroyers	4	4	3	2
Frigates	10	12	12	10
Patrol and Coastal Combatants	0	0	0	0
Mine Warfare	26	12	14	12
Amphibious Ships	0	0	1	1
Support & Miscellaneous	12	11	8	8

### Trends in the Netherlands Force Strength: 1990-2001- Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	17,400	12,350	11,300	10,000
Reserve Manning	11,200	10,000	5,000	5,000
Combat Aircraft	193 (23)	108	157	157
F-16	174	108 (36)	157	157
NF-5	37 (23)	0	0	0
Transport Aircraft	14	14	11	1
Armed Helicopters	-	12	42	19
Other Helicopters	-	65 (23)	68	33
Heavy SAMS	80	53	53	48
Light SAMS	-	-	100	105

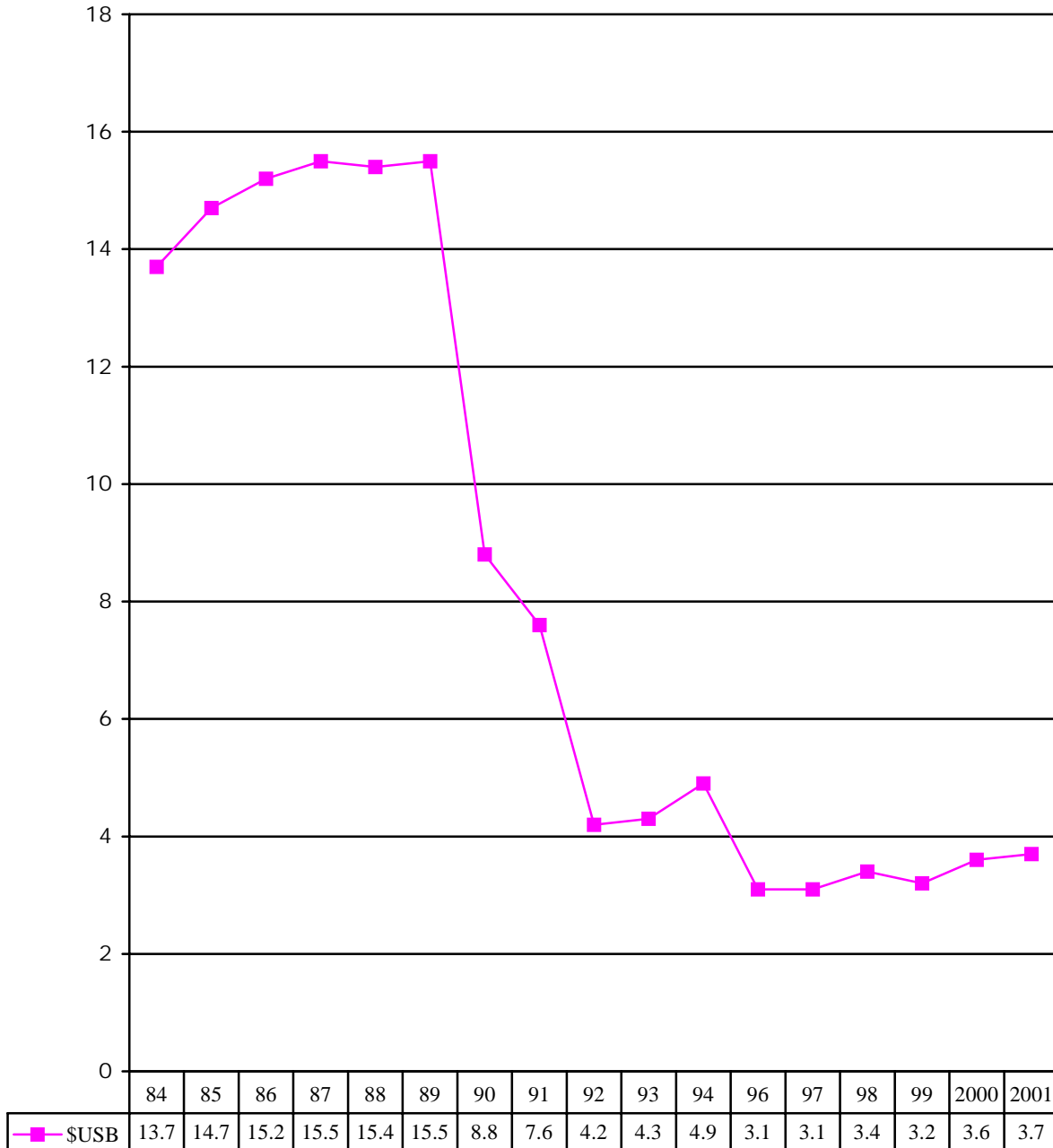
\*\* 180 to be converted to A5, 136 for sale.

\*\*\*180 to be converted to A5, 140 for sale.

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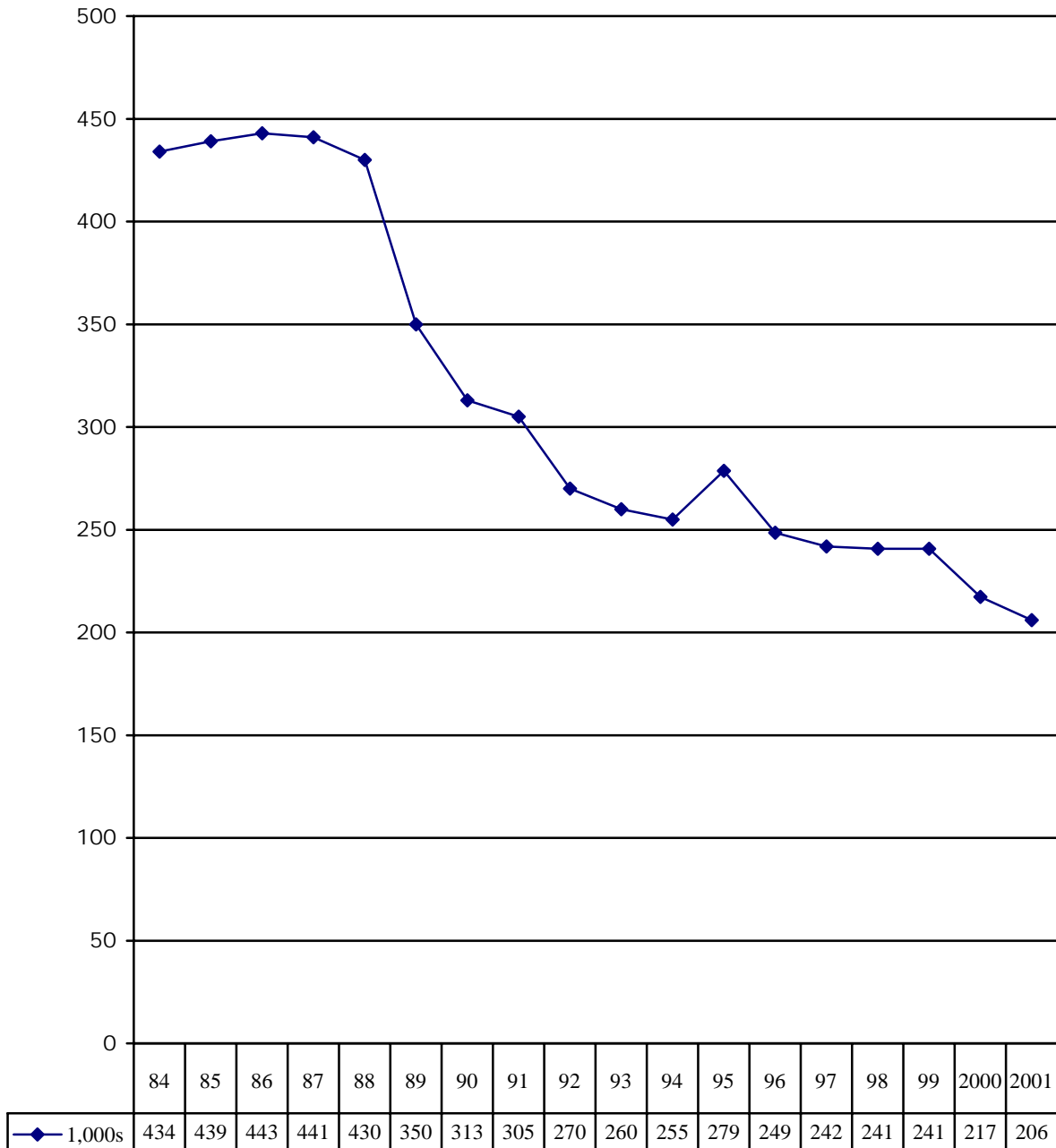


**Trends in Polish Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Polish Active Military Manpower: 1984-2001**  
(in 1,000s)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in Polish Force Strength: 1990-2002 - Part One

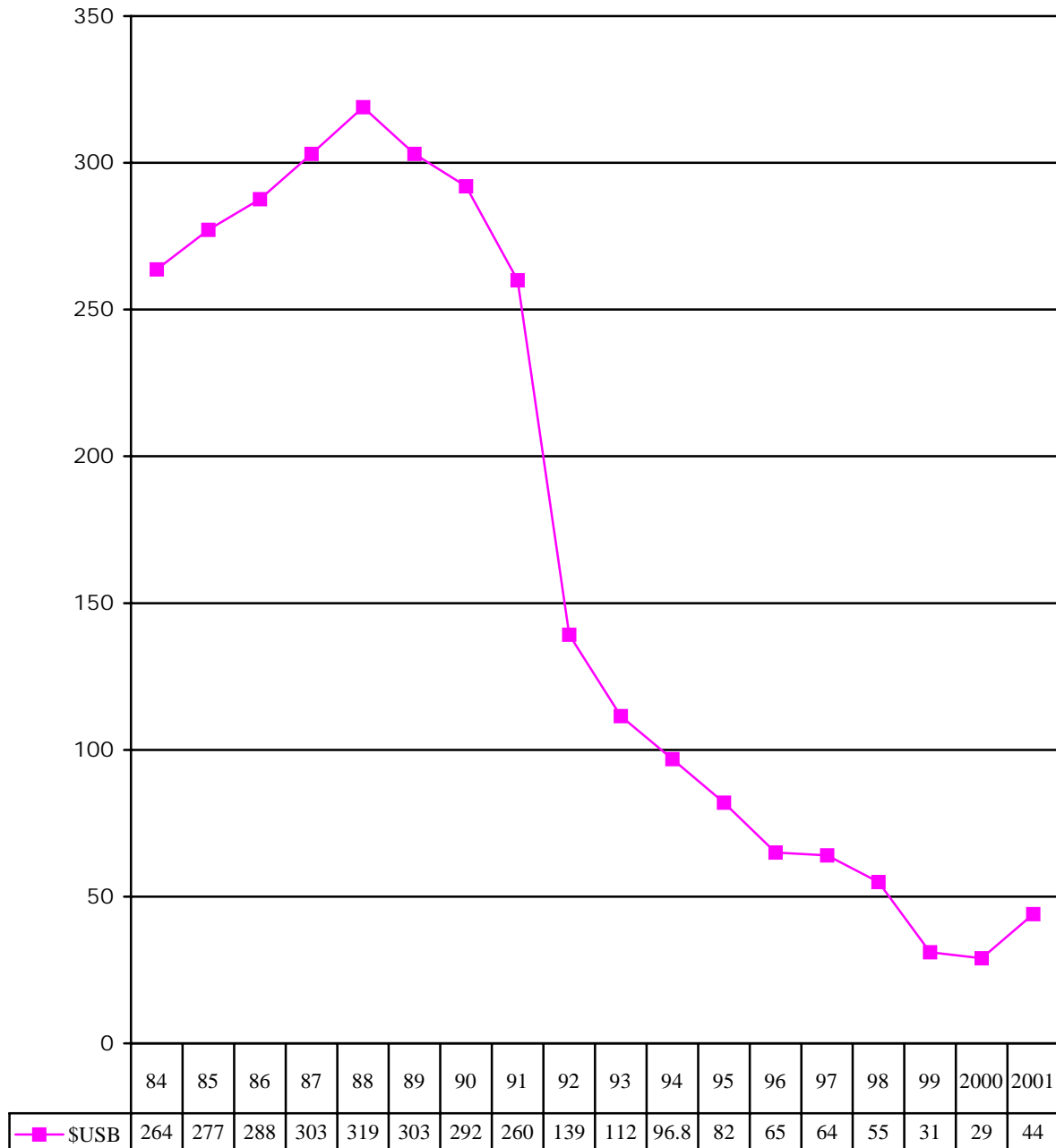
<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	312,800	248,500	217,290	206,045
<u>Army Forces</u>				
Active Manning	206,600	178,700	132,750	120,300
Reserves	420,000	382,000	343,400	343,000
Main Battle Tanks	2,900	1,721	1,704	1,677
Lt. Tanks	60	0	0	0
Recce	900	510	510	465
MICVs/AIFVs	1,250	1,405	1,405	1,404
APCs	2,000	728	726	726
Total Artillery	2,359	1,580	1,558	1,580
SP Artillery	593	652	658	652
Towed Artillery	948	440	412	440
MRLs	262	258	258	258
Attack Helicopters	-	70	96	65
Other Helicopters	-	103	82	109
Heavy SAMs	-	0	0	0
Light SAMs	-	1,290	979	1,012
SSM	82	35	32	32
<u>Navy</u>				
Active Manning	20,000	17,800	16,860	16,760
Reserve Manning	10,000	18,000	14,000	14,000
Fleet Air Arm	2,300	2,800	2,500	2,500
Combat Aircraft	-	30	28	26
Armed Helicopters	4	10	11	11
SS	3	3	3	3
Principal Surface Combatants	2	2	3	3
DDE/DDG	1	1	1	1
Frigates	1	1	2	2
Patrol and Coastal Combatant	23	33	25	23
Mine Warfare	32	25	24	22
Amphibious Ships	25	5	5	5
Support & Miscellaneous	10	12	19	18

### Trends in Polish Force Strength: 1990-2001 - Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Air Force</u>				
Active Manning	86,200	52,000	46,200	43,735
Reserve Manning	75,000	66,000	49,000	49,000
Combat Aircraft	516	437 (14)	267	212
Su-7 FGA	30	0	0	0
Su-22 FGA	100	99	99	99
MiG-23 FGA	0	0	0	0
MiG-21 FGA	0	0	0	0
Su-20 FGA	35	16	0	0
Su-25 FGA	0	0	0	0
MiG-21 Fighter	300	240	114	91
MiG-23 Fighter	40	37	25	0
MiG-29 Fighter	11	22	22	22
MiG-21 Recce	35	23	0	0
Su-22 Recce	0	0	7	22
L-29 Recce	0	0	0	99
Armed Helicopters	100	22	-	0
Other Helicopters	160	122	50	98
Heavy SAMS	-	200	200	28
Light SAMS	-	-	-	0

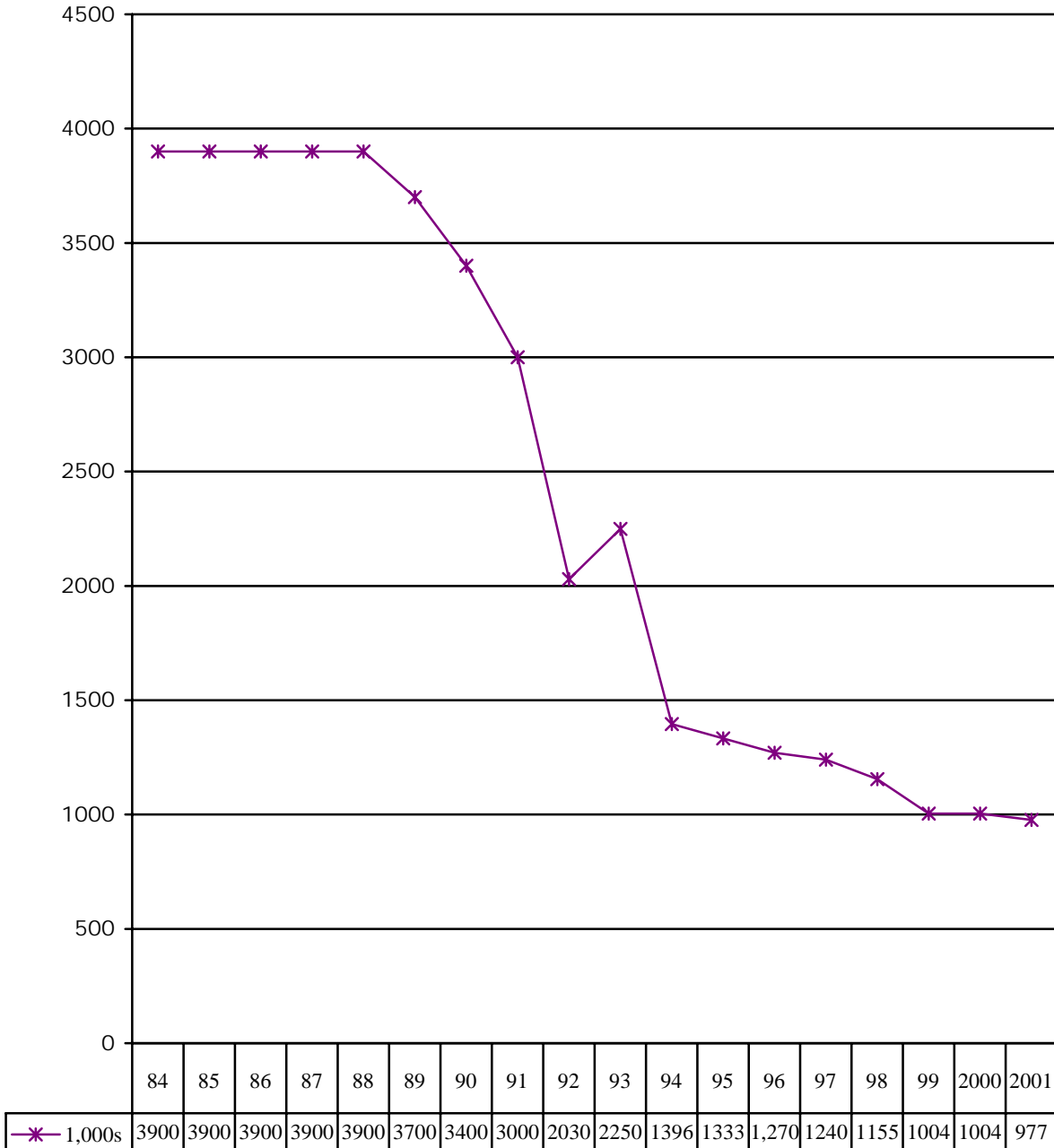
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance.  
 Figures in parenthesis are additional equipment in storage.

**Trends in Soviet Union and Russian Defense Spending: 1984-2001**  
(in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Soviet Union and Russian Active Military Manpower: 1984-2001**  
(in 1,000s of Men)



Source: ACDA for 84-94, IISS for 95-2001.

### Trends in Russian Force Strength: 1990-2001 - Part One

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>	3,988,000	1,270,000	1,004,100	977,100
<u>Strategic Forces</u>				
Manpower	376,000	149,000	149,000	149,000
SLBMs	63/930	34/540	19/324	
ICBMs	1,398	800	776	740
IRBM/MRBMs	174	-	-	-
Long Range Bombers	175	66	74	-
Medium Range Bombers	390	-	-	-
Short Range Bombers	0	-	-	-
Recce	0	-	-	-
Fighters	0	-	-	-
ECM	0	-	-	-
Tankers	0	-	-	-
ABMs	100	100	100	100
<u>Army Forces</u>				
Active Manning	1,473,000	460,000	348,000	321,000
Reserves	3,000,000	2,400,000	2,400,000	2,400,000
Main Battle Tanks	51,500 (10,000)	16,800 (11,000)	21,820(5,725)	21,820
Lt. Tanks	1,000	200	150	150
Recce	8,000	2,000	2,000	2,000
MICVs/AIFVs	28,000	6,933	17,700(6,308)	14,700(6,148)
APCs	50,000+	18,767	11,275(3,234)	11,275(2,775)
Total Artillery	66,880	18,400 (13,000)	20,476(6,199)	20,746(5,991)
SP Artillery	9,000	2,571	4,705(2,238)	4,705(2,395)
Towed Artillery	33,000	1,833	10,065 (6,159)	10,065(1,972)
MRLs	8,000	981	2,606(904)	2,606(921)
Gun/Mortars	-	348	820+(358)	820+(349)
SSM	1,723	144	200	200
GLCM	0	-	-	0
Attack Helicopters	950	950	900	700
Transport/GP Helicopters	2,390	1,500	1,200	1,000
Heavy SAMs	920	500	900	900
Light SAMs	3,050	1800	1,400	1,370

### Trends in Russian Force Strength: 1990-2001 - Part Two

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
Navy				
Active Manning	410,000	190,000	171,500	171,500
Reserve Manning	540,000	-	-	-
Fleet Air Arm	68,000	45,000	35,000	35,000
Combat Aircraft	750	396	329	382
Armed Helicopters	320	250	387	531
Marines/Naval Infantry	15,000	14,000	9,500	9,500
SSBN	63	34	19	17
SSGN	46	18	8	30
SSN	70	50	19	15
SSG	14	0	0	0
SS	130 (42)	5	21	56
Principal Surface Combatants	227	166	35	35
Carriers	5	1	1	1
Cruisers	43	24	7	7
DDE/DDG/ASW	31	21	17	17
Frigates	148	120	10	10
Patrol and Coastal Combatants	395	134	108	108
Mine Warfare	331	182	72	71
Amphibious	77	80	25	25
Support & Miscellaneous	699	606	436	436
Air Force/AVPO/VVPO				
Active Manning	920,000	145,000	184,600	184,600
Reserve Manning	775,000	-	-	-
Combat Aircraft	6,650	2,600		2,636
LRA bomber	-	215 (30)	74(92)	206
FGA	2,510	775	575	586
Tac Fighter	1,825	425	880	952
AVPO Fighters	2,315	825 (300)	-	980
Recce	530	180	135	226
AEW/Control	-	-	16	20
ECM	60	60	60	60
Transports	669	350 (250)	280	354
Armed Helicopters	-	-	-	0
Other Helicopters	-	-	-	0
Heavy SAMS	8,650	2,350	2,150	1,937
Light SAMS	-	-	-	-

Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance. Figures in parenthesis are CFE declared numbers).

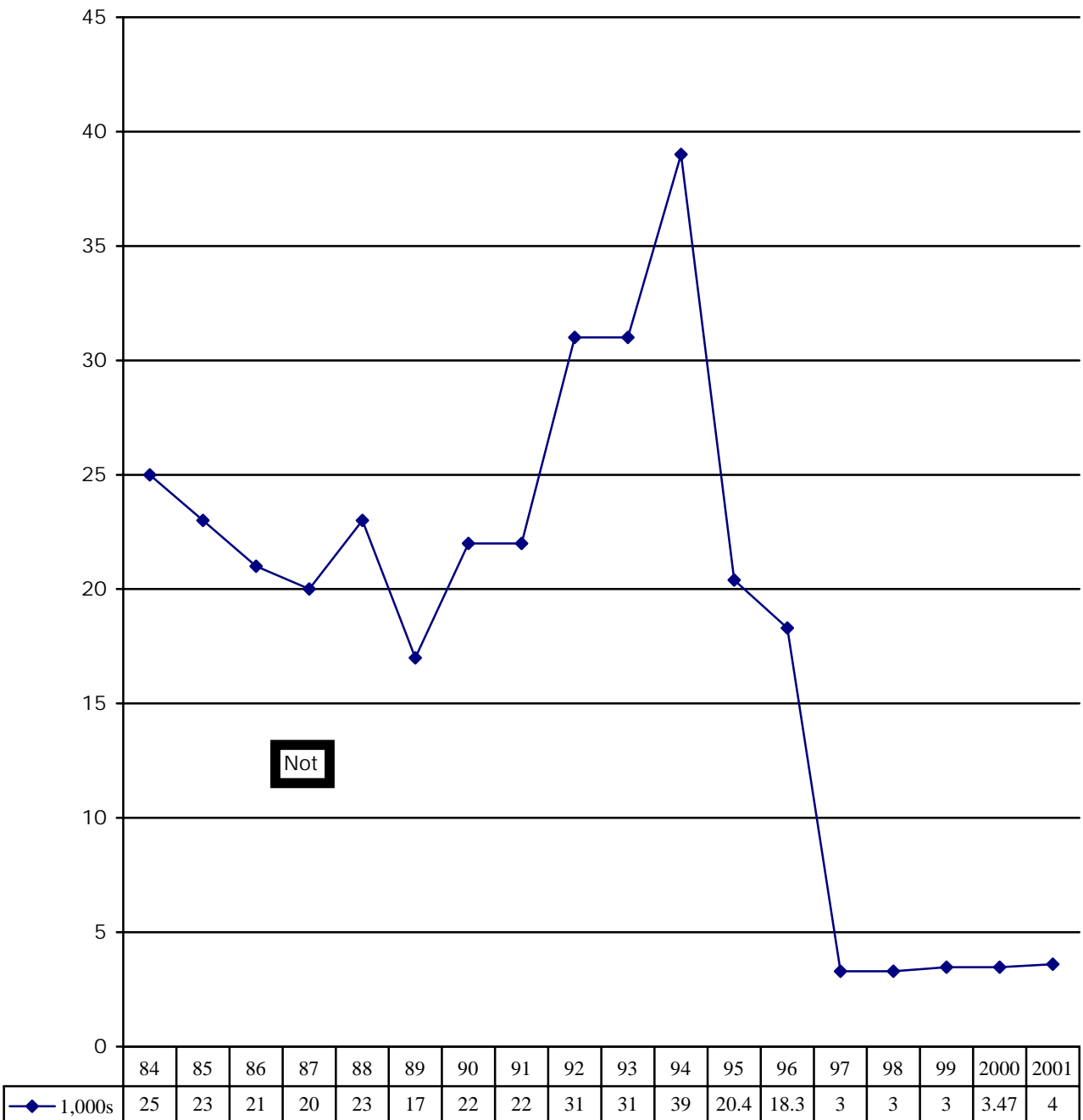


### Trends in Swiss Defense Spending: 1984-2001 (in US \$Billions)



Source: ACDA for 84-94, IISS for 95-2001.

**Trends in Swiss Active Military Manpower: 1984-2001**  
(in 1,000s)



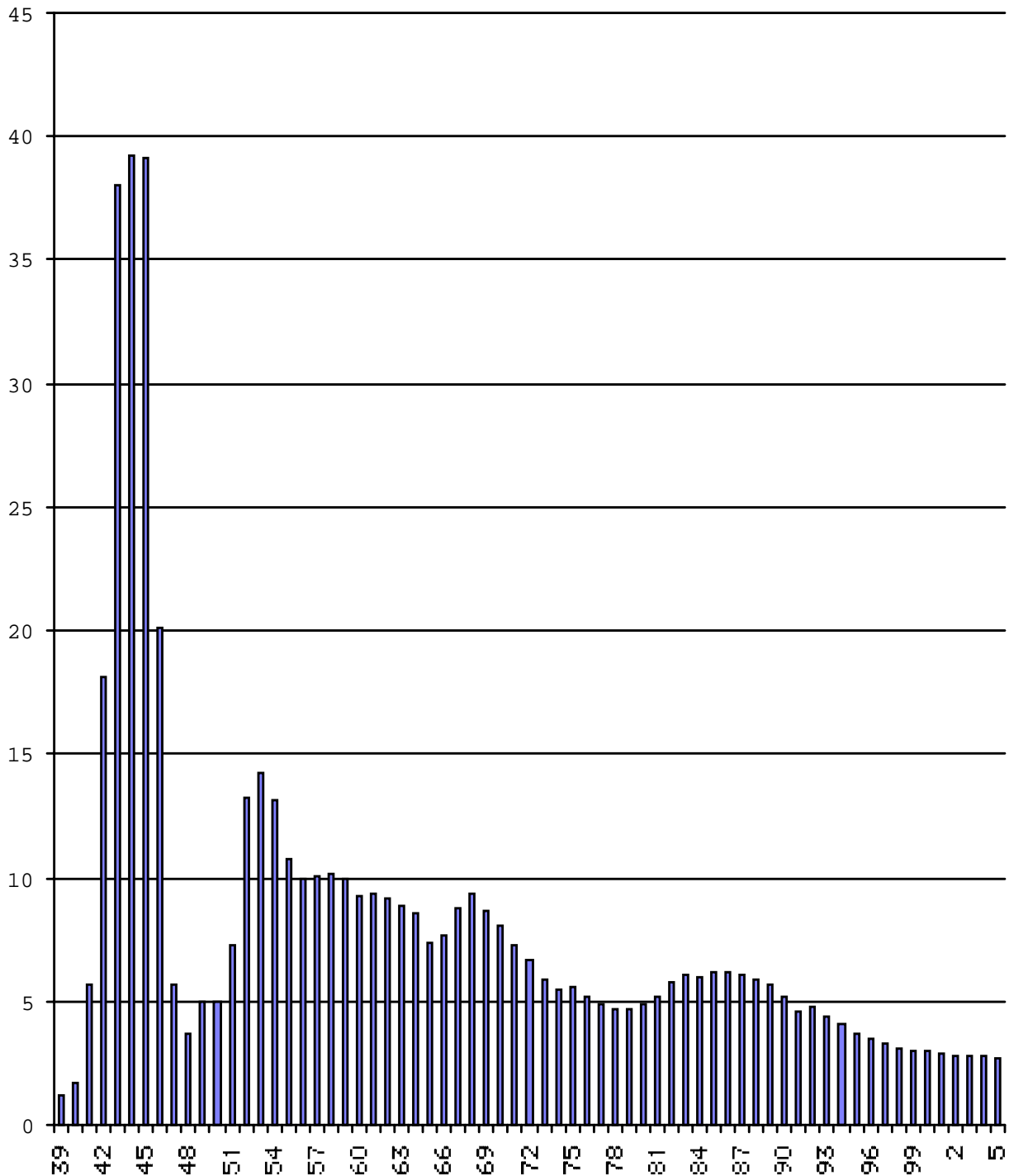
Source: ACDA for 84-94, IISS for 95-2001.

### Trends in Swiss Force Strength: 1990-2001

<u>Category</u>	<u>1990</u>	<u>1996</u>	<u>2000</u>	<u>2001</u>
<u>Total Active Manpower</u>				
Core Regulars	3,500	3,300	3,470	3,600
Semi-Annual Conscript Call Up	18,000	9,000-15,000	24,500	23,270
Total Reserves	625,000	363,400	351,200	320,600
<u>Army Forces</u>				
On Mobilization	565,000	363,400	321,000	320,600
Main Battle Tanks	870	742	556	556
Lt. Tanks	0	0	0	0
Recce	0	0	233	319
MICVs/AIFVs	625	507	435	435
APCs	725	836	1,103	827
Total Artillery	1,373	796	558	558
SP Artillery	473	580	558	558
Towed Artillery	900	216	0	0
MRLs	0	0	0	0
Attack Helicopters	0	0	0	0
Transport/GP Helicopters	0	60	60	60
<u>Air Force</u>				
On Mobilization	60,000	32,600	30,200	30,600
Combat Aircraft	271	153	154	138
FGA	126	-	-	-
Fighter	134	135	134	118
Recce	18	18	20	20
ECM	0	0	0	0
Transports/SAR	-	22	20	20
Armed Helicopters	0	0	0	0
Other Helicopters	99	27	25	73
Heavy SAMS	64	64	0	0
Light SAMS (Army)	60	60	59	

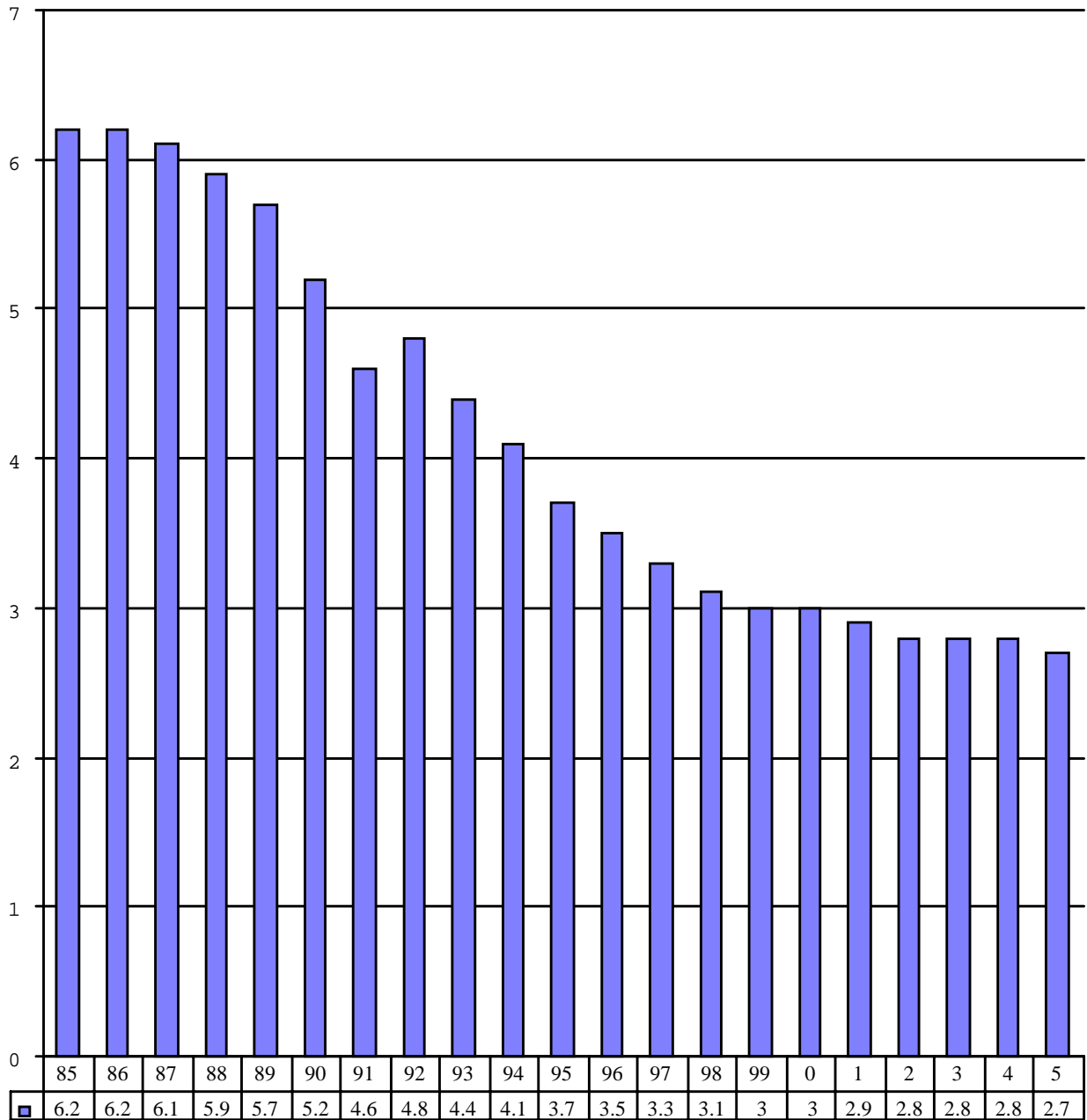
Adapted by Anthony H. Cordesman from various editions of Jane's Defense Weekly and the IISS, Military Balance.  
 Figures in parenthesis are additional equipment in storage.

### US National Defense Spending as a Percent of GNP: 1939-2005



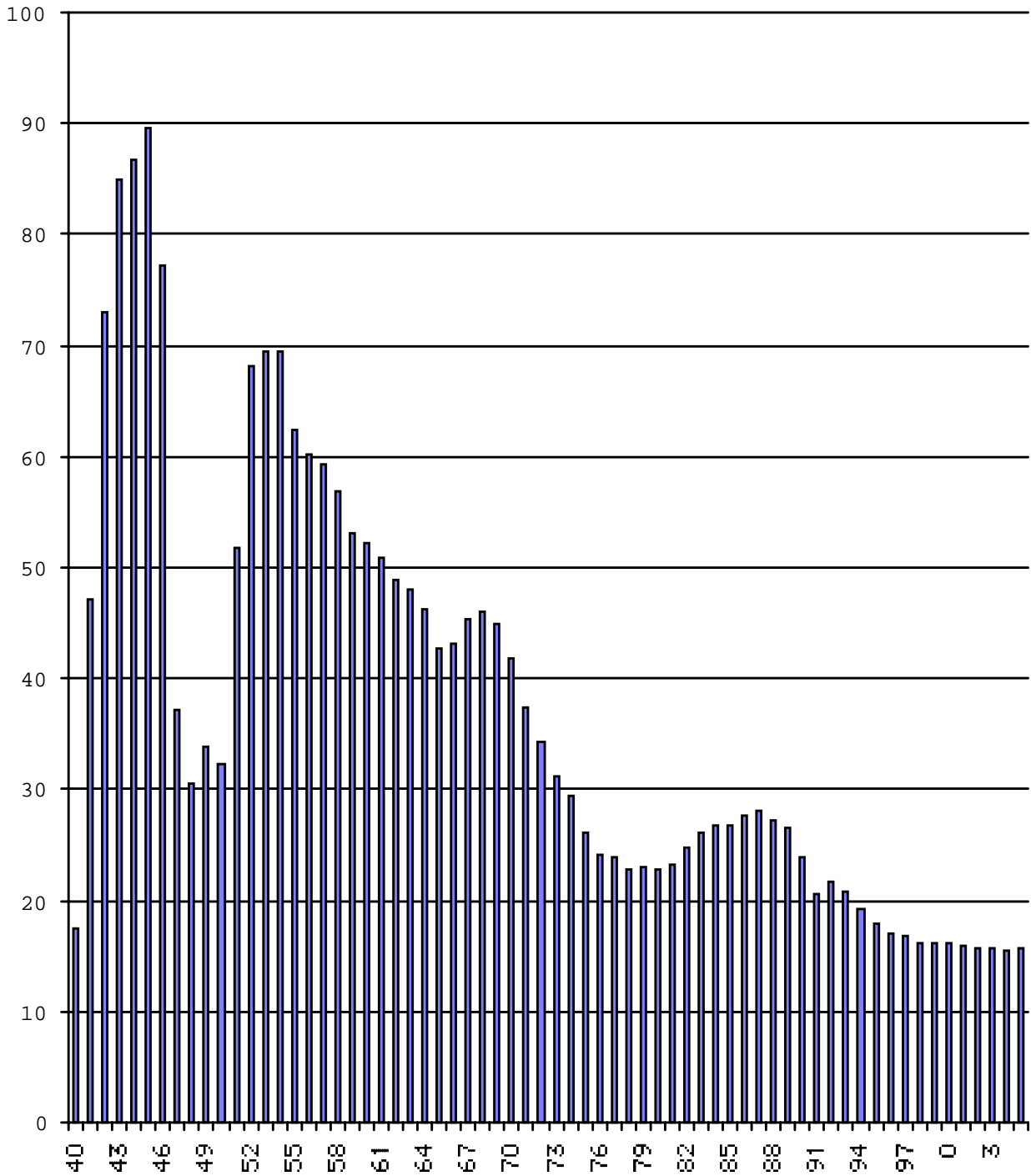
Source: Adapted by Anthony H. Cordesman from data provided by OMB.

**Cuts in US Defense Spending as a Percent of GNP since the End of the Cold War**  
 (FY1985 Peak of 6.2%)



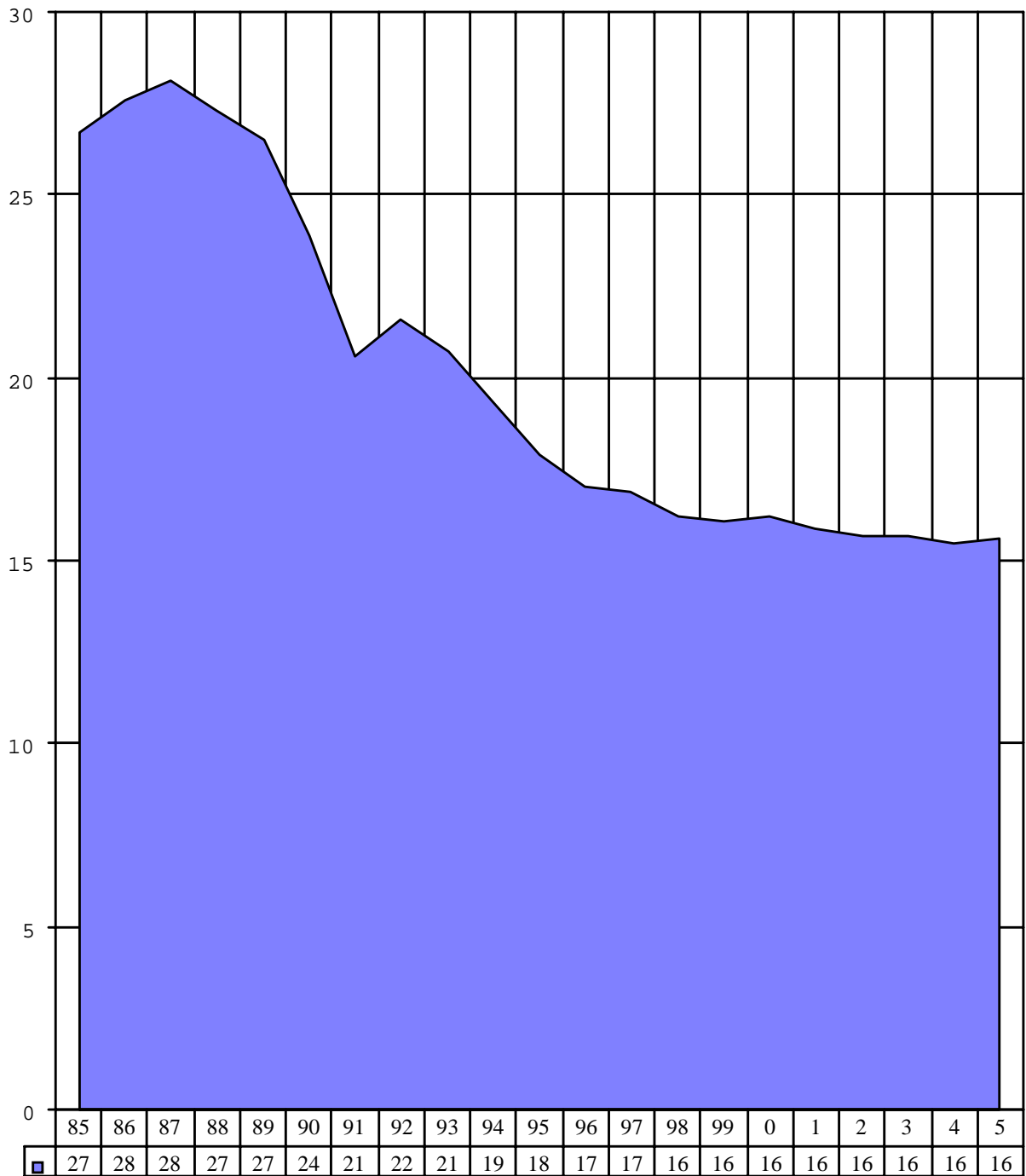
Source: Adapted by Anthony H. Cordesman from data provided by OMB.

### US Defense Spending as a Percent of Total Federal Budget: 1939-2005



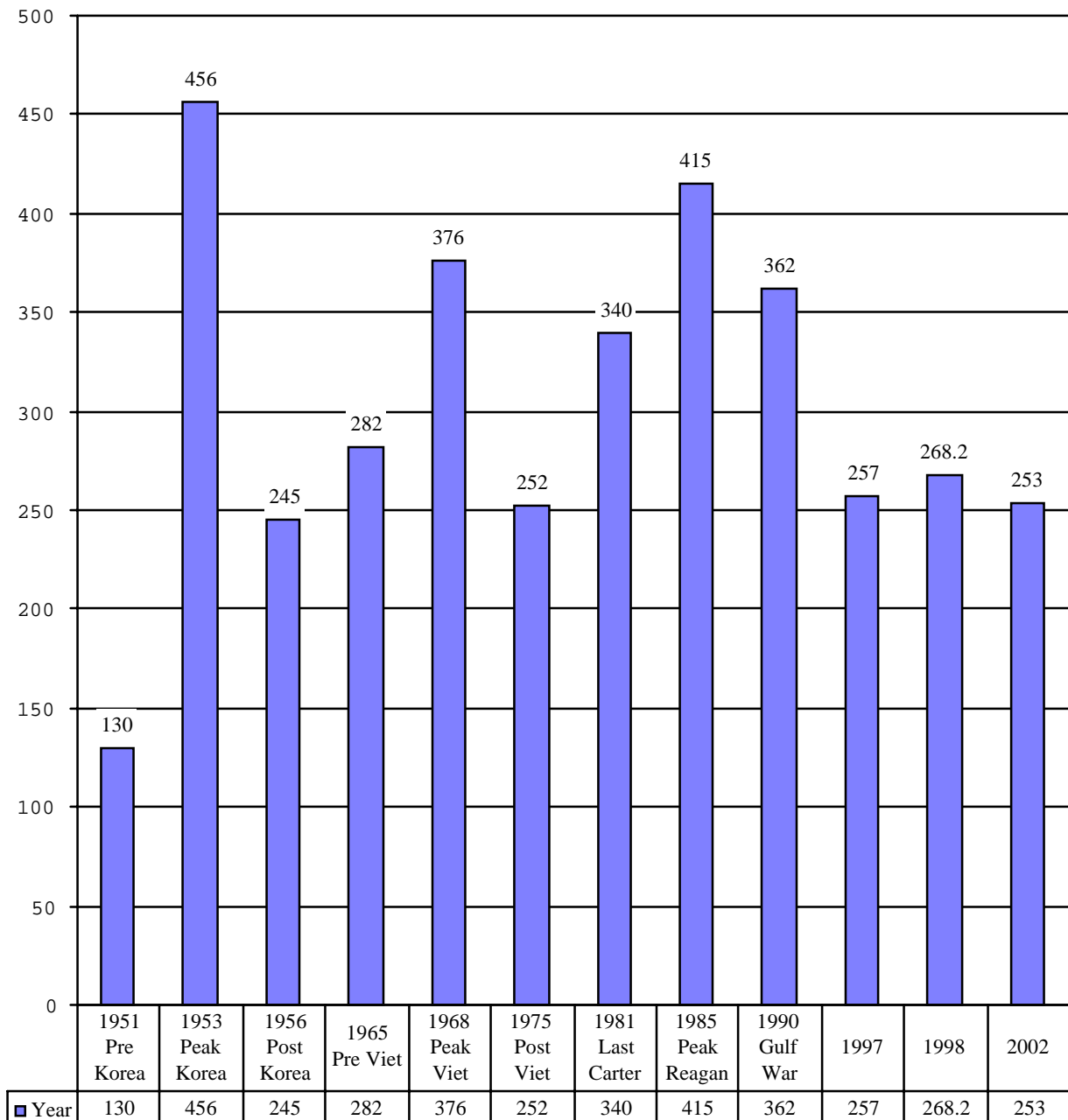
Source: Adapted by Anthony H. Cordesman from data provided by OMB.

**Cuts in US Defense Spending as a Percent of Federal Budget since the End of the Cold War**  
 (FY1987 Peak of 28.1%)



Source: Adapted by Anthony H. Cordesman from data provided by OMB.

**Spending Cycles in the US Department of Defense Military Budget**  
(DoD Military BA for Fiscal Year in Constant 1998 \$US Billions)

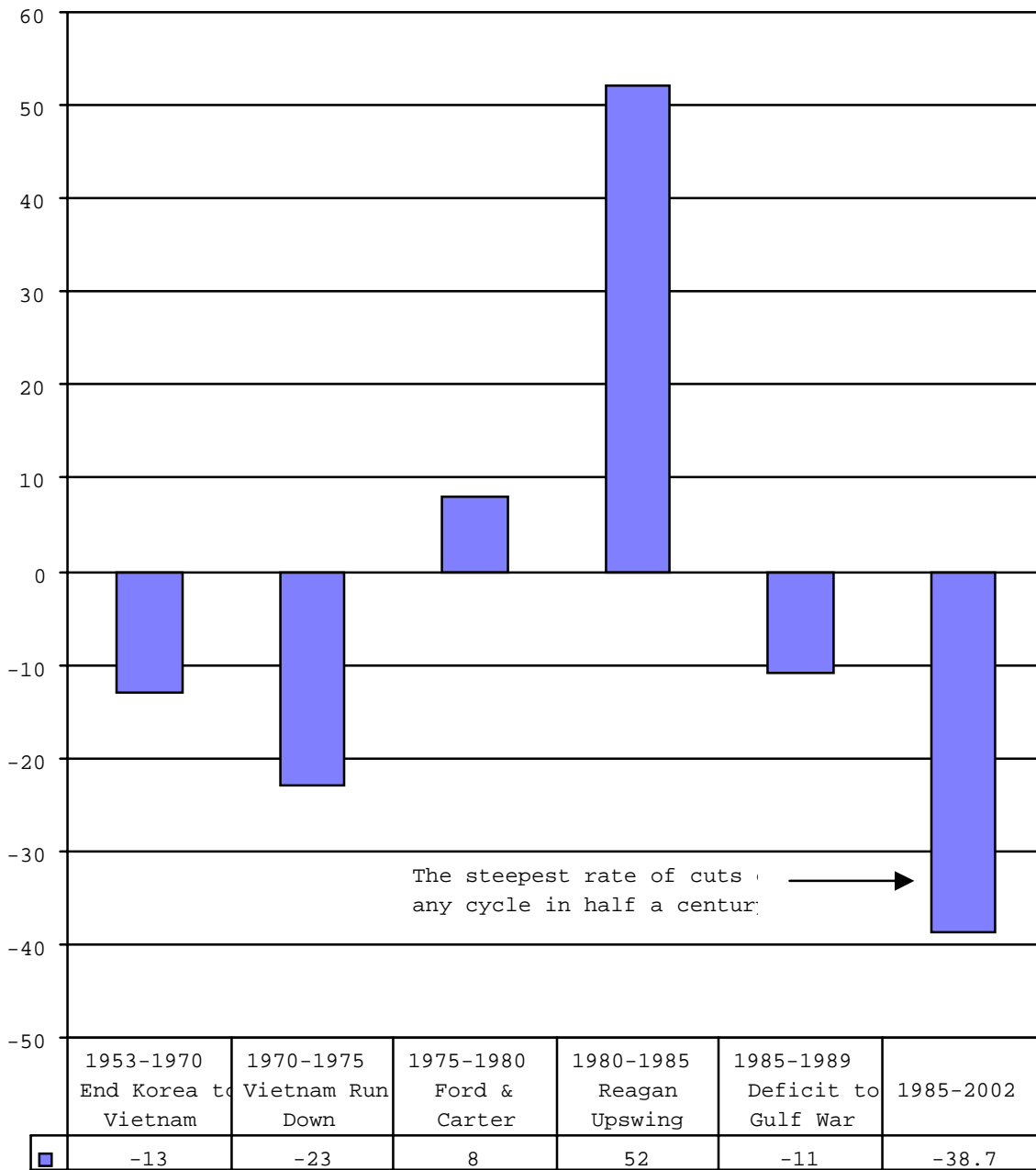


Source: Adapted by Anthony H. Cordesman from data provided by Dr. Gordon Adams, OMB, February 24-25 1997; Stephen Dagget, "Defense Budget for FY1998, Data Summary," CRS 92-294F, February 26, 1997; Stephen Dagget, "Appropriations for FY1988 Defense," CRS 97-205F, October 24, 1997.



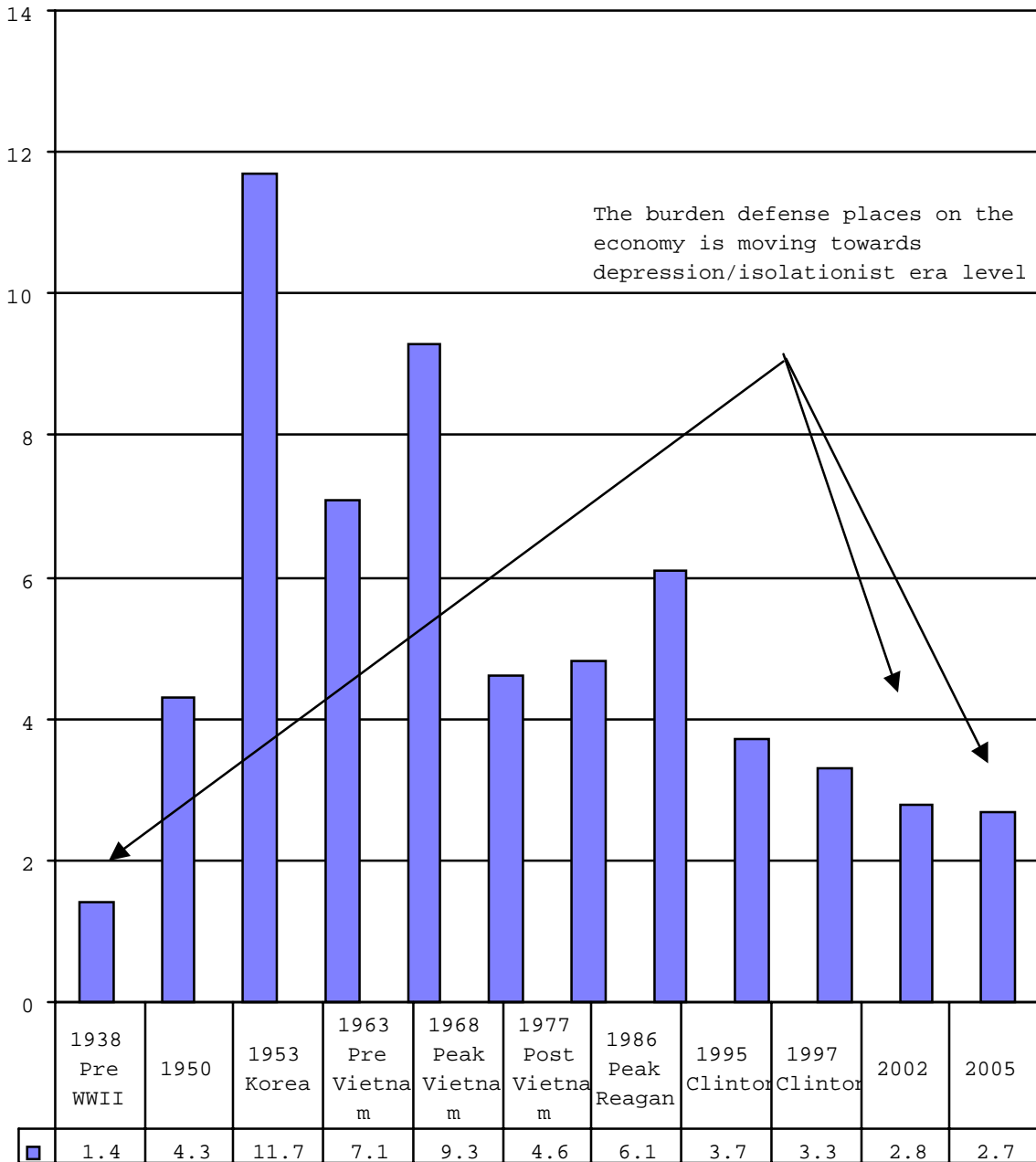
### Spending Cycles as Percent of Change in the US Department of Defense Military Budget During Given Periods

(Change in DoD Military BA for Fiscal Years Shown in Constant 1998 \$US Billions)



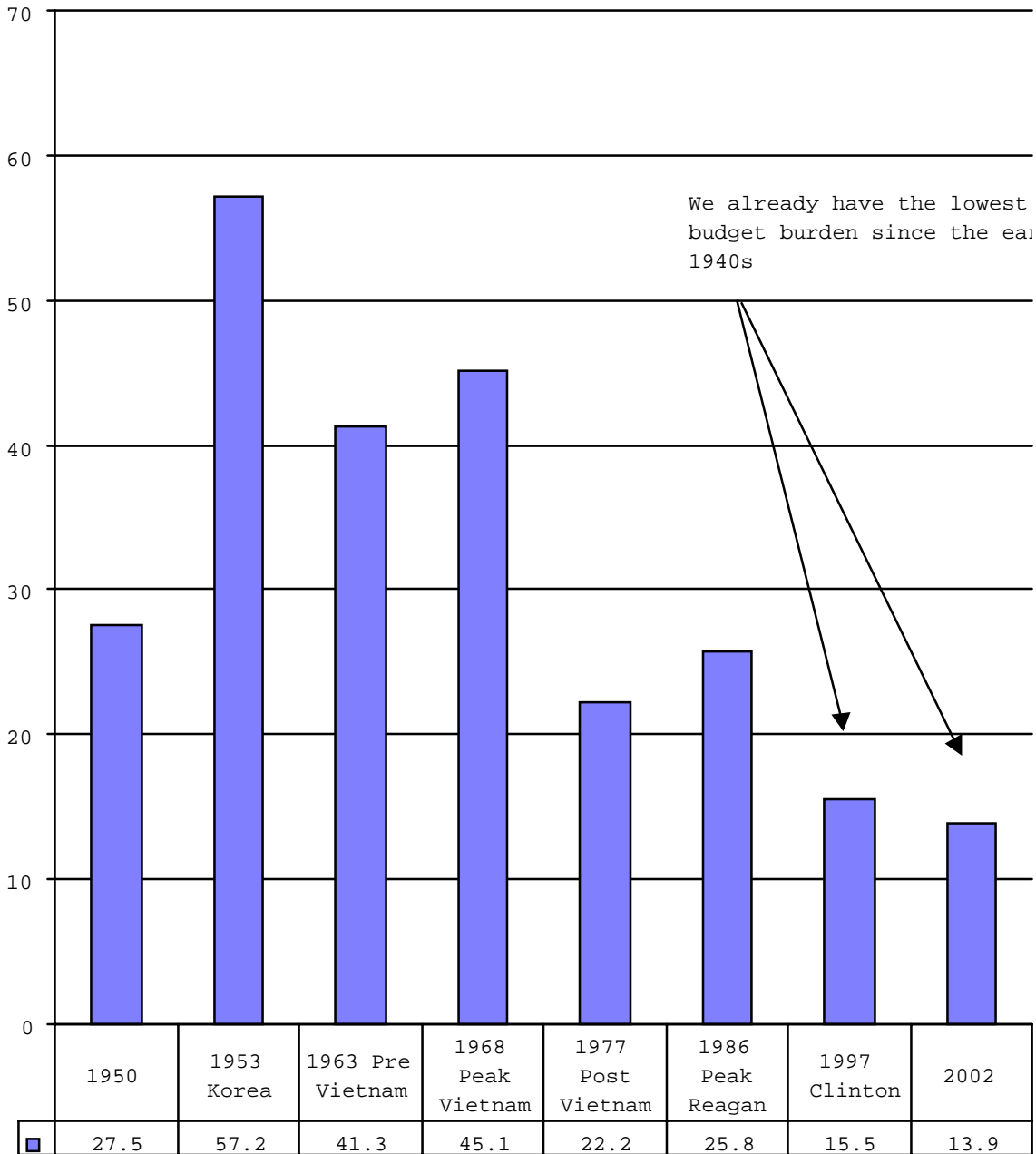
Source: Adapted by Anthony H. Cordesman from data provided by Dr. Gordon Adams, OMB, February 24-25 1997; Stephen Dagget, "Defense Budget for FY1998, Data Summary," CRS 92-294F, February 26, 1997; Stephen Dagget, "Appropriations for FY1988 Defense," CRS 97-205F, October 24, 1997.

### Cycles in the Defense Burden on the US GDP (DoD Military BA as % of GDP for Fiscal Year Shown)



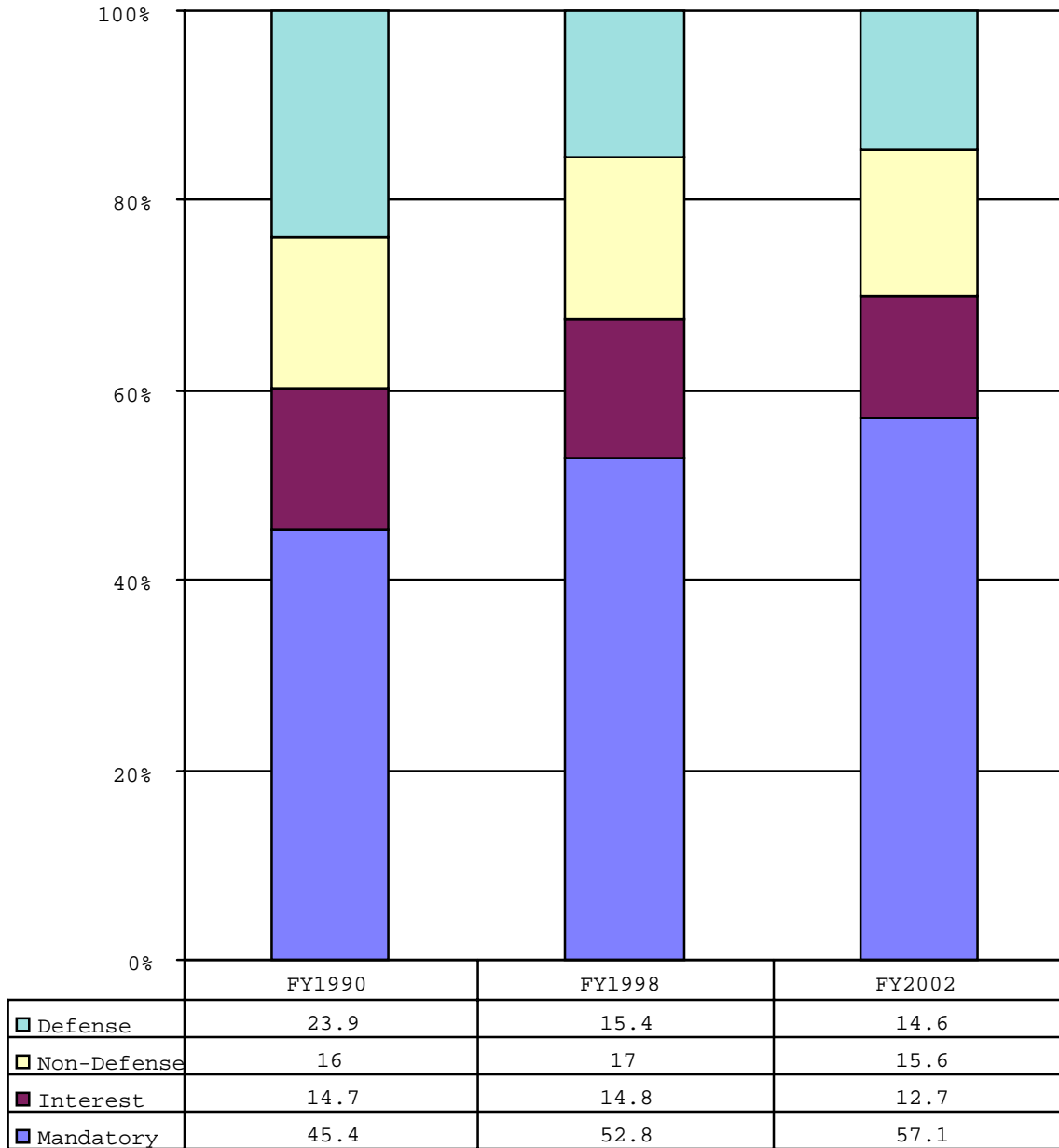
Source: Adapted from data provided by Dr. Gordon Adams, OMB, February 24-25 1997

**Cycles in the Defense Burden on the US Federal Budget**  
 (DoD Military BA as % of Total Federal BA for Fiscal Year Shown)



Source: Adapted from data provided by Dr. Gordon Adams, OMB, February 24-25 1997

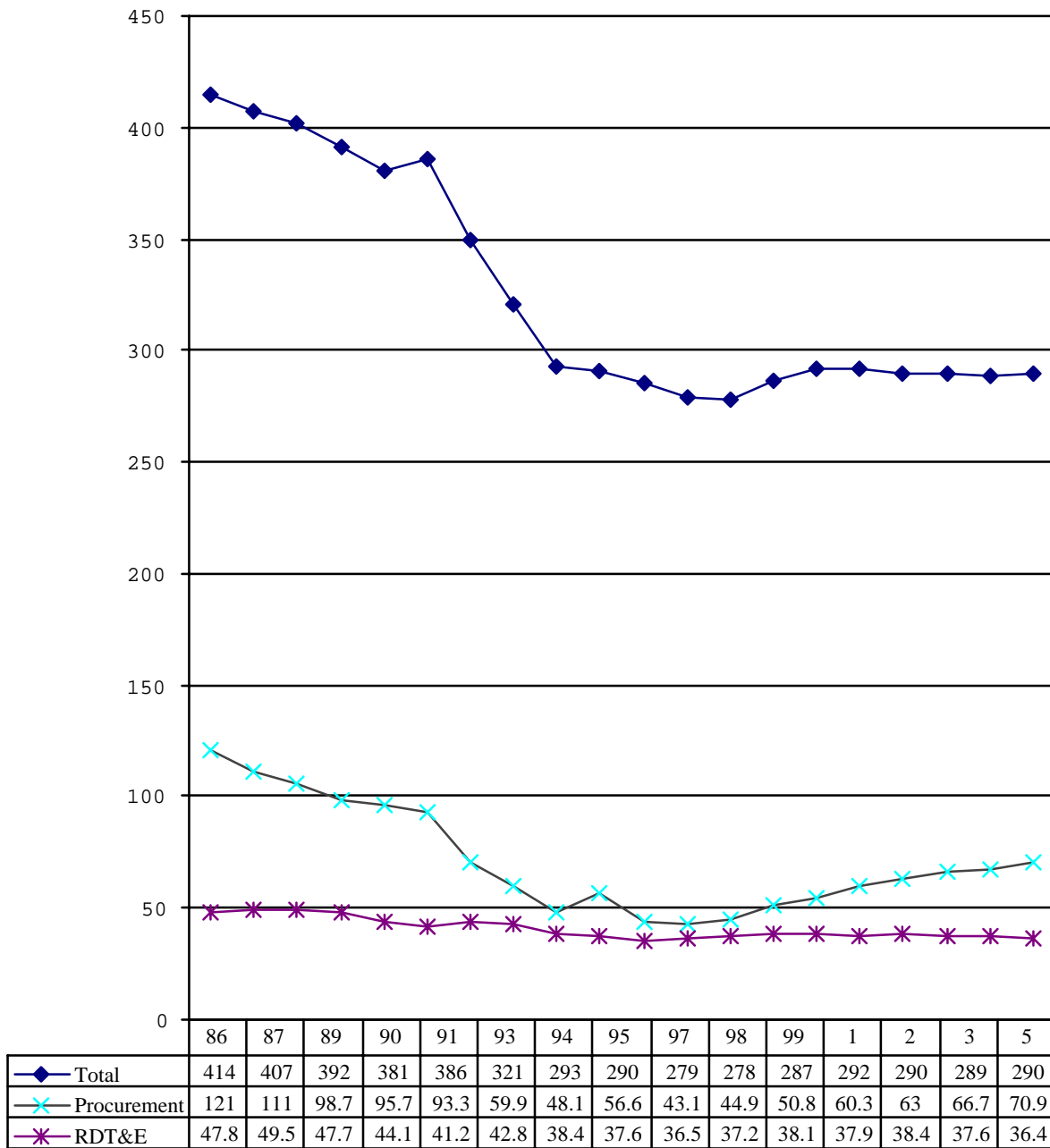
**Defense vs. Entitlements in the US Federal Budget**  
 (BA as % of Total Federal BA for Fiscal Year Shown)



<b>Total Budget</b>	<b>\$1.25 Trillion</b>	<b>\$1.69 Trillion</b>	<b>\$1.88 Trillion</b>
<b>Entitlements as a Percent of Defense Spending</b>	<b>190%</b>	<b>342%</b>	<b>391%</b>
<b>Non-Defense Spending as a Percent of Total Budget</b>	<b>76.1%</b>	<b>84.6%</b>	<b>85.5%</b>

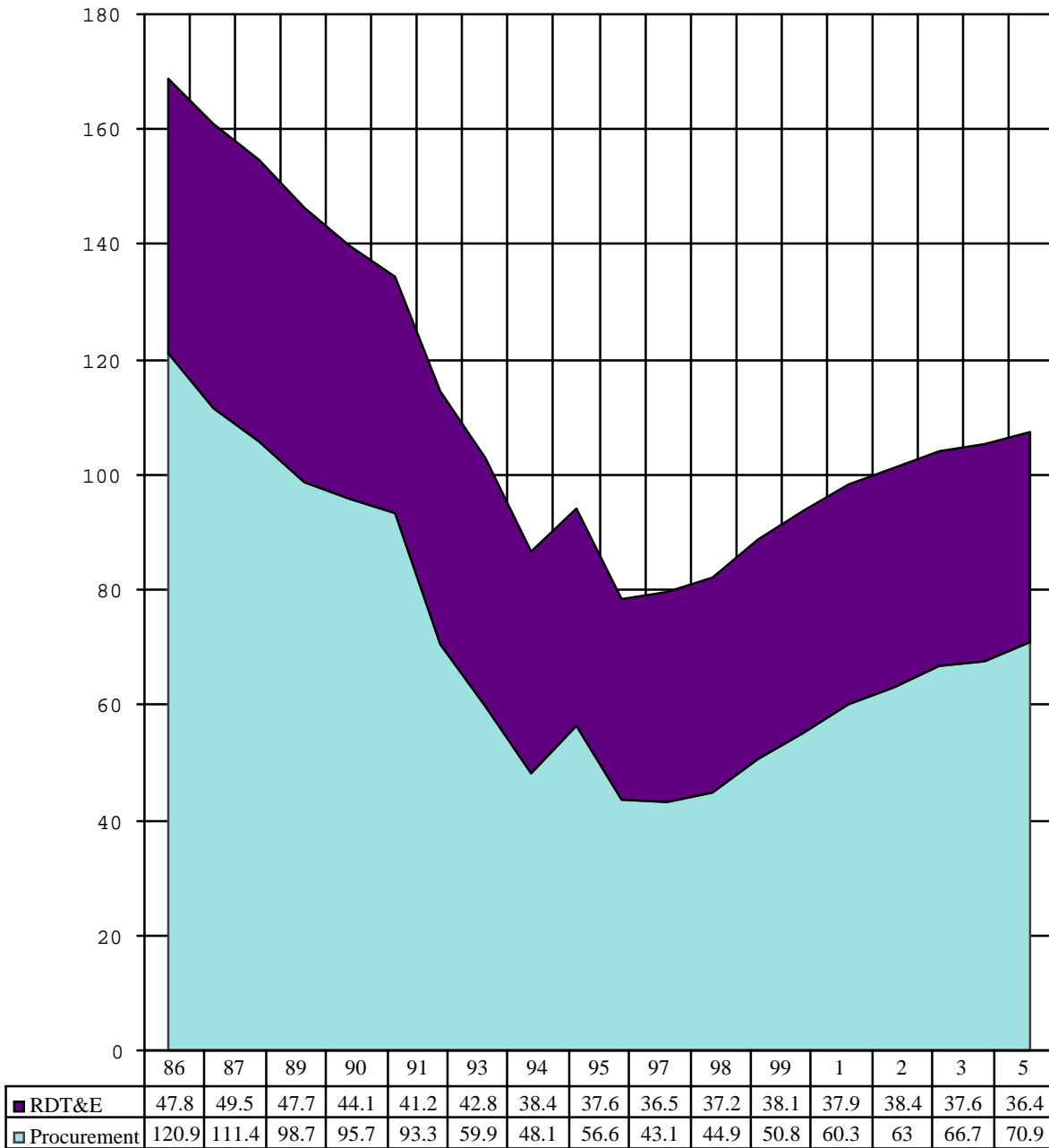
Source: Adapted from data provided by Dr. Gordon Adams, OMB, February 24-25 1997 and OMB, 2/2000

### Trends in US Defense Spending: 1984-2000 (DOD TOA in Constant FY20001 US \$Billions)



Source: OSD Comptroller, 12/2000

**Trends in US Defense Investment in Modernization: 1984-2000**  
 (DOD TOA in Constant FY20001 US \$Billions)



Source: OSD Comptroller, 12/2000

**U.S. National Defense Budget Summary: FY1998-FY2001**

(\$ Millions)

	Change		Change		Change		FY 2001
	FY 1998	FY 98-99	FY 1999	FY 99-00	FY 2000	FY 00-01	
<b>Current Prices</b>							
Total Obligational Authority (TOA)							
DoD - 051	259,123	13,606	272,729	11,481	284,210	8,122	292,332
Budget Authority							
DoD - 051	258,537	19,866	278,402	1,515	279,918	11,169	291,087
OMB Rounding	-1	-3	-4	10	6	-6	-
DoE and Other	12,718	1,031	13,749	-390	13,359	975	14,334
Total National Defense 050	271,254	20,893	292,147	1,136	293,283	12,138	305,421
Outlays							
DoD - 051	256,136	5,243	261,379	16,097	277,476	7	277,484
OMB Rounding Difference	-14	14	-	-	-	-	-
DoE and Other	12,334	1,159	13,493	-333	13,160	558	13,718
Total National Defense 050	268,456	6,416	274,873	15,764	290,636	565	291,202
<b>Constant FY 2001 Prices</b>							
Total Obligational Authority (TOA)							
DoD - 051	277,790	8,954	286,744	5,459	292,206	126	292,332
Budget Authority							
DoD - 051	277,184	15,377	292,562	-4,712	287,848	3,238	291,087
OMB Rounding	-1	-4	-6	11	7	-6	-
DoE and Other	13,635	813	14,448	-711	13,738	596	14,334
Total National Defense 050	290,818	16,186	307,004	-5,411	301,593	3,828	305,421
Outlays DoD - 051	273,794	736	274,531	10,761	285,289	-7,805	277,484
OMB Rounding Difference	-15	15	-	-	-	-	-
DoE and Other	13,184	988	14,172	-641	13,531	187	13,718
Total National Defense 050	286,963	1,739	288,703	10,120	298,822	-7,620	291,202

Source: OSD Comptroller, 12/2000

**US National Defense Budget- Future Year Plan FY1999-FY2005**  
(\$ Billions)

	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05
<b>Current Prices</b>							
<b>Budget Authority</b>							
DoD - 051	278.4	279.9	291.1	294.8	300.9	308.3	316.4
DoE and Other	13.7	13.4	14.3	14.4	14.7	15.1	15.3
Total National Defense	292.1	293.3	305.4	309.2	315.6	323.4	331.7
<b>Outlays</b>							
DoD - 051	261.4	277.5	277.5	284.3	293.0	301.9	315.8
DoE and Other	13.5	13.2	13.7	14.1	14.3	14.7	14.9
Total National Defense	274.9	290.6	291.2	298.4	307.4	316.5	330.7
<b>Constant FY 2001 Prices</b>							
<b>Budget Authority</b>							
DoD - 051	292.6	287.8	291.1	288.6	288.2	288.3	288.8
DoE and Other	14.4	13.7	14.3	14.1	14.1	14.1	13.9
Total National Defense	307.0	301.6	305.4	302.7	302.3	302.4	302.7
<b>Outlays</b>							
DoD - 051	274.5	285.3	277.5	278.4	281.2	282.8	289.0
DoE and Other	14.2	13.5	13.7	13.8	13.8	13.7	13.7
Total National Defense	288.7	298.8	291.2	292.2	295.0	296.6	302.7

Source: OSD Comptroller, 12/2000



**National Defense Topline (Function 050) - FY 2001 President's Budget (\$ Billions)**

**FY 99 FY 00 FY 01 FY 02 FY 03 FY 04 FY 05**

**Budget Authority**

DoD Military (051)	278.4	279.9	291.1	294.8	300.9	308.3	316.4
DoE and Other	13.7	13.4	14.3	14.4	14.7	15.1	15.3
National Defense (050)	292.1	293.3	305.4	309.2	315.6	323.4	331.7

**Outlays**

DoD Military (051)	261.4	277.5	277.5	284.3	293.0	301.9	315.8
DoE and Other	13.5	13.1	13.7	14.1	14.4	14.6	14.9
National Defense (050)	274.9	290.6	291.2	298.4	307.4	316.5	330.7

**DoD Budget Authority by Title - FY 2001 President's Budget (\$ Billions)**

Military Personnel	70.7	73.7	75.8	78.4	80.4	83.1	85.6
Operation & Maintenance	105.0	104.9	109.3	107.5	109.1	112.2	114.8
Procurement	50.9	54.2	60.3	63.0	66.7	67.7	70.9
RDT&E	38.3	38.4	37.9	38.4	37.6	37.5	36.4
Military Construction	5.4	4.8	4.5	4.3	3.8	4.6	5.4
Family Housing	3.6	3.6	3.5	3.7	3.9	4.0	4.1
Funds, Receipts, & Other	4.6	.4	-.2	-.5	-.5	-.7	-.7
Total DoD (051)	278.4	279.9	291.1	294.8	300.9	308.3	316.4

**DoD Budget Authority by Component - FY 2001 President's Budget (\$ Billions)**

Army			68.4	69.5	70.6	74.4	76.1	78.0	79.9
Navy/Marine Corps	83.8	87.2	91.7	90.8	94.1	96.4	98.7		
Air Force	81.9	81.2	85.3	88.3	89.3	90.9	93.3		
Defensewide		44.3	41.9	43.5	41.4	41.5	43.1	44.5	
Total DoD (051)	278.4	279.9	291.1	294.8	300.9	308.3	316.4		

**Department of Defense Budget Authority Requests for FY1999-FY2007**  
(Discretionary \$ in Billions)

	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	
<i>TOTAL</i>										
FY1999 President's Request	258	264	272	276	285	292	299	307	314^	2,568
Supplemental Requests	+9	+2	-	-	-	-	-	-	-	+11
Administration Topline Increases	-	+4	+20	+35	+25	+25	+25	+27	+28	+188
Congress Adds to Requests	+7	+17	+4	-	-	-	-	-	-	+28
Total FY 1999-2007 Topline Changes	+16	+23	+24	+35	+25	+25	+25	+27	+28	+227
FY2002 President's Request	275	287	296	310	310	317	324	333	342	2,795

NOTE: INCLUDES DIRECT TOPLINE CHANGES TO DOD BUDGET AUTHORITY. DOES NOT INCLUDE ADJUSTMENTS TO DOD FUNDING AS A RESULT OF ECONOMIC CHANGES IN INFLATION RATES, FUEL PRICES, ETC.

Source: William S. Cohen, Annual Report to the President and the Congress, 2001, Department of Defense, Washington, January, 2001

### Evolving US Force Plans - Part One

<u>Force Element</u>	Gulf War	Bush Base	<u>FY1995</u>	<u>FY1997</u>	<u>FY2001</u>	Clinton
Goal	<u>FY1990</u>				<u>Force</u>	<u>Plan</u>
for FY 2002						
<b>Strategic Forces</b>						
Minuteman missiles	-	-	535	530	500	(500)
Peacekeeper missiles	-	-50	50	50	(50)	
B-52 bombers	(	(74	56	56	(56)	
B-1 bombers	268	176	60	60	82	(82)
B-2 bombers	)	)6	10	16	(16)	
Poseidon/Trident missiles	-	-360	408	432	(432)	
<b>Army</b>						
Active divisions	18	12	12	10	10	10
Active Separate Brigades	8	-3	3	3	3	
Reserve Divisions	-	88	8	8	8	
Total Divisional and Separate Reserve brigades *	57	34	46	46	-	42
Active personnel (1,000s)	751	-59	492	480	475-495	
Reserve personnel (1,000s)	736	-629	603	555	-	
<b>Marines</b>						
Expeditionary Forces **	3	33	3		3	
Active personnel (1,000s)	197	-175	174	172	174	
Reserve personnel (1,000s)	45	-41	42	39.5	-	
Active Divisions	3	33	3		3	
Reserve Divisions	1	11	1		1	
Active Combat Aircraft	368/24	-	320/23	308/21	280/21	280/21
Reserve Combat Aircraft	84/8	-60/5	48/4	48/4	48/4	
<b>Navy</b>						
Active personnel (1,000s)	583	-435	396	371.3	394	
Reserve personnel (1,000s)	149	-101	95	90.0	-	
Navy Aircraft Carriers	15/1	12/1	11/1	11/1	11/1	11/1
Carrier Air Wings	13/2	11/2	10/1	10/1		10/1
Active Combat Aircraft	662/57	-528/44	456/36	432/36	432/36	
Reserve Combat Aircraft	97/9	-38/3	38/3	36/3	36/3	
Battle Force Ships	546	430	372	354	316	(315)346
Support Force Ships	66	-37	26	25	25	
Reserve Force Ships	31	-19	18	15	15	
Ballistic Missile Submarines	34	16	16	17	18	(18)
Mine Warfare & Coastal	-	-13	19	24	(22)	
Other	-	-13	19	24	(22)	

### Evolving US Force Plans

<u>Force Element</u>	Gulf War	Bush Base	<u>FY1995</u>	<u>FY1997</u>	<u>FY2001</u>	Clinton
Goal						
<u>for FY 2002</u>	<u>FY1990</u>					
Air Force					<u>Force</u>	<u>Plan</u>
Active personnel (1,000s)	539	-	400	377	354	(375)
Reserve personnel (1,000s)	201	-	198	182	235	-
Fighter Forces						
Active Wing Equivalents	24	15	13	13		
Active Combat Aircraft	1722/76	-	936/53	936/52	906/45	(906/45)
Reserve Wing Equivalents	12	11	8	7		
Reserve Combat Aircraft	873/43	-	576/38	504/40	549/38	(549/38)
Conventional Bombers	33	-	0	0	36/16	(36/16)
Total Civilians (1,000s)	1,102	-	865	786	685	-
Strategic Lift						
Intertheater aircraft	400	-	364	345	304	(299)
C-5	-	-	199	163	88	(69)
C-141	-	-	199	163	88	(69)
KC-10	-	-	54	54	54	(54)
C-17	-	-	17	24	58	(72)
Intratheater aircraft	460	-	416	428	418	(418)
Active Sealift Ships						
Tankers	28	-	18	13	10	(10)
Cargo	40	-	51	48	57	(60)
Reserve Ships	96	-	77	87	86	(73)

\* An approximate equivalent and numbers are not comparable in the outyears. The BUR plan calls for 15 enhanced readiness brigades, a goal that DoD will begin to reach in FY1996. Backing up this force will be an Army National Guard strategic reserve of eight divisions (24 brigades), two separate brigade equivalents, and a scout group.\*\* A MEF includes a Marine division, air wing, and force service support group. Figures in parenthesis show the FY2001 force plan and not the QDR goal.

Source: William J. Perry, Annual Report to the President and the Congress, 1995, Department of Defense, Washington, February, 1995, pp. 274; William S. Cohen, Annual Report to the President and the Congress, 2000, Department of Defense, Washington, February, 2000, and material provided by the military services.

**US Force Plans : FY1995-FY2001: Part I**

<u>Force Element</u>	<u>FY1995</u>	<u>FY1996</u>	<u>FY1997</u>	<u>FY1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>
<b>Strategic Forces *</b>							
Minuteman II & III missiles	535	530	530	500	500	500	50
Peacekeeper missiles	50	50	50	50	50	50	50
B-52 bombers	74	56	56	56	56	56	56
B-1 bombers	60	60	60	70	74	80	82
B-2 bombers	6	9	10	12	13	16	16
Poseidon/Trident missiles	360	384	408	432	432	432	432
<b>Army</b>							
Active personnel (1,000s)	508.6	491.1	491.7	483.9	479.4	482.3	-
Army National Guard Personnel (1000s)	374.9	370.0	370.0	362.4	357.5	353.0	-
Army Reserve personnel (1,000s)	241.3	226.2	212.9	205.0	205.2	206.9	-
Active Divisions	12	10	10	10	10	10	10
Active Separate Brigades **	3	3	3	3	3	3	3
Reserve Divisions	8	8	8	8	8	8	8
Separate Reserve Brigades **	24	22	18	18	18	18	18
<b>Navy</b>							
Active personnel (1,000s)	434.6	416.7	395.6	382.3	373.0	373.3	-
Reserve personnel (1,000s)	100.6	98.0	95.3	93.2	89.0	86.3	-
<b>Navy Aircraft Carriers</b>							
<b>Carrier Air Wings</b>							
Active Combat Aircraft	528/44	504/37	456/36	456/36	432/36	432/36	432/36
Reserve Combat Aircraft	38/3	38/3	38/3	38/3	36/3	36/3	36/3
Strategic Forces Ships	16	17	18	18	18	18	18
Battle Force Ships	300	294	292	271	256	259	259
Support Force Ships	37	26	26	26	25	25	25
Reserve Force Ships	19	18	18	18	18	16	15
Total Ship Battle Forces	372	355	354	333	317	318	317
Mine Warfare Mobilization Category B	1	2	6	8	10	9	9
Local Coastal Mine and Defense Craft	12	13	13	12	12	13	13
<b>Marines</b>							
Active personnel (1,000s)	174.6	174.9	173.9	173.1	172.6	173.3	-
Reserve personnel (1,000s)	40.9	42.1	42.0	40.8	40.0	39.7	-
Active Divisions	3	3	3	3	3	3	3
Reserve Divisions	1	1	1	1	1	1	1
Active Combat Aircraft	320/23	308/21	308/21	308/21	280/21	280/21	280/21
Reserve Combat Aircraft	48/4	48/4	48/4	48/4	48/4	48/4	48/4

\* Includes only operational ICBMs and not missiles in maintenance or overhaul. Excludes backup and attrition reserve aircraft and aircraft in depot maintenance. B-1 bombers are accountable under START I but not START II

\*\* Includes Eskimo Scout Group and armored cavalry regiments

**Evolving US Force Plans: FY1995-FY2001 – Part II**

<u>Force Element</u>	<u>FY1995</u>	<u>FY1996</u>	<u>FY1997</u>	<u>FY1998</u>	<u>FY1999</u>	<u>FY2000</u>	<u>FY2001</u>
<b>Air Force</b>							
Active personnel (1,000s)	400.4	389.0	377.4	367.5	360.6	355.7	-
Air Force Reserve personnel (1,000s)	78.3	73.7	72.0	72.0	71.7	72.3	-
Air National Guard Personnel	109.8	110.5	110.0	108.1	105.7	106.4	-
B-1 Active/reserve	0	0	036/18	36/18	36/18	36/18	36/18
<b>Fighter Forces</b>							
Active Combat Aircraft	936/53	936/52	936/52	936/52	936/49	936/47	906/45
Reserve Combat Aircraft	576/38	504/40	504/40	504/40	519/38	549/38	549/38
<b>Strategic Lift</b>							
<b>Intertheater aircraft*</b>							
C-5	104	104	104	104	104	104	104
C-141	199	187	163	143	136	104	88
KC-10**	54	54	54	54	54	54	54
C-17	17	22	24	30	37	46	58
Intratheater aircraft (C-130)*	428	432	430	425	425	425	418
<b>Active Sealift Ships ***</b>							
Tankers	18	12	13	10	10	10	10
Cargo	51	49	48	43	49	52	57
Reserve Ships (RRF)	77	82	87	88	87	87	72
<b>Special Forces</b>							
Army Special Forces Groups	5/2	5/2	5/2	5/2	5/2	5/2	5/2
Army Psychological Operations Groups	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Army Aviation Spec Ops Regiments	1	1	1	1	1	1	1
Army Ranger Spec Ops Regiments	1	1	1	1	1	1	1
Air Force Active Spec Ops Wings/Groups	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Air Force Active Spec Ops Wings/Groups	0/1	0/1	0/1	0/1	0/1	0/1	0/1
Air Force Active Spec Ops Wings/Groups	1/0	1/0	1/0	1/0	1/0	1/0	1/0
Air Force Special Tactics Groups	1	1	1	1	1	1	1
Naval Special Warfare Groups	3	3	3	3	3	3	3
Naval Special Boat Squadrons	2	2	2	2	2	2	2
<b>Total Civilians (1,000s)</b>							
Army	272.7	258.6	246.7	232.5	225.9	221.9	-
Navy/Marine Corps	259.3	239.9	222.6	207.6	206.9	196.6	-
Air Force	188.9	182.6	180.0	174.4	165.7	162.7	-
DoD Agencies	137.6	136.5	125.6	125.6	112.5	117.2	-
Total	920.4	902.2	902.2	881.5	869.1	864.6	-

\* Includes active and reserve component aircraft. Development/test, training, and US Navy aircraft are excluded.

\*\* Includes 37 KC-10s allocated for airlift missions.

\*\*\* Includes fast sealift (FSS), alfoat prepositioning, and common-user charter ships, and aviation support ships through FY1998. From FY1999 on, includes large, medium-speed roll-on/roll-off (LMSR) vessels and Ready Reserve Force (RRF) ships tendered for the Military Sealift Command (MSC). The FSS and surge LMSRs are available on four days notice.

\*\*\*\* The RRF includes vessels assigned to 4, 5, 10, or 20 day reactivation readiness status.

Source: William S. Cohen, Annual Report to the President and the Congress, 2001, Department of Defense, Washington, January, 2001, and material provided by the military services.

### U.S Military Forces in Selected Fiscal Years, 1989-1999

	<u>1989</u>	<u>1993</u>	<u>1997</u>	<u>1999</u>	Percentage Change, <u>1989-1999</u>
Strategic Forces <sup>a</sup>					
Land-Based ICBMs	1,000	787	580	550	-45
Heavy Bombers <sup>b</sup>	310	194	126	143	-54
Submarine-Launched Ballistic Missiles	576	408	408	432	-25
Conventional Forces <sup>c</sup>					
Land Forces					
Army divisions <sup>d</sup>					
Active	18	14	10	10	-44
Reserve	10	8	8	8	-20
Marine Corps expeditionary forces <sup>e</sup>					
Active	3	3	3	3	0
Reserve	1	1	1	1	0
Naval Forces					
Battle force ships <sup>f</sup>	566	435	354	317	-44
Aircraft carriers					
Active	15	13	11	11	-27
Reserve	1	0	1	1	0
Navy carrier air wings					
Active	13	11	10	10	-23
Reserve	2	2	1	1	-50
Air Forces					
Tactical fighter wings					
Active	25	16	13	13	-48
Reserve	12	11	8	8	-33
Airlift aircraft					
Intertheater	401	382	345	331	-17
Intratheater	468	380	430	425	-9

SOURCE: Congressional Budget Office using data from the Department of Defense and the Office of Management and Budget, as shown in "Budgeting for Defense: Maintain Today's Forces," Washington, CBO, September 2000, [cbo.gov](http://cbo.gov).

Note: ICBMs = intercontinental ballistic missiles.

- a. Forces with basically nuclear missions.
- b. Includes some long-range bombers that do not have strategic missions.
- c. Forces with largely nonnuclear missions.
- d. Excludes separate brigades that are not part of a division.
- e. A Marine expeditionary force includes a division, an air wing, and supporting forces for those combat elements.
- f. Includes all Navy ships involved in combat—for example, ballistic missile submarines, surface combat ships, aircraft carriers, and amphibious craft—as well as some other vessels.

**Funding for National Defense and Personnel for the US Department of Defense in Selected Fiscal Years, 1989-1999**

	<u>1989</u>	<u>1993</u>	<u>1997</u>	<u>1999</u>	Percentage Change, 1989-1999	
<i>Budget Authority (In billions of 2000 dollars)</i>						
Department of Defense						
Military personnel		109	93	78	73	-33
Operation and maintenance		116	99	99	109	-6
Procurement		97	58	44	52	-47
Research, development, test, and evaluation		47	42	38	39	-17
Military construction		7	5	6	6	-20
Family housing		4	4	4	4	-11
Subtotal		380	302	269	282	-26
Other Agencies <sup>a</sup>		11	16	13	14	23
Total, National Defense <sup>b</sup>		391	318	282	296	-24
<i>DoD Personnel (In thousands)<sup>c</sup></i>						
Active Duty		2,130	1,705	1,439	1,386	-35
National Guard and Reserve		1,171	1,058	902	869	-26
Civilian 1,107		984	786	704	-36	

SOURCE: Congressional Budget Office using data from the Department of Defense and the Office of Management and Budget, as shown in "Budgeting for Defense: Maintain Today's Forces," Washington, CBO, September 2000, [cbo.gov](http://cbo.gov).

NOTE: Apparent discrepancies in the calculations arise from rounding.

- a. Covers defense activities related to atomic energy in the Department of Energy and national defense functions in other agencies.
- b. Includes revolving and management funds, trust funds, and offsetting receipts. Excludes contract authority for the working capital funds because appropriations are used to liquidate that authority.
- c. Strength measured at the end of the year.



**Fiscal Year 2000 Appropriations for National Defense and CBO's Estimate of a Sustaining Defense Budget, by Budget Category (In billions of 2000 dollars of budget authority)**

	<u>Appropriation for Fiscal Year 2000<sup>a</sup></u>	<u>Sustaining- Budget Estimate<sup>b</sup></u>
Department of Defense (Budget subfunction 051)		
Military personnel	74	82
Operation and maintenance	102	107
Procurement	53	90
Research, development, test, and evaluation	38	40
Military construction	5	5
Family housing	<u>4</u>	<u>4</u>
Subtotal	276	327
Other Agencies (Budget subfunctions 053 and 054) <sup>c</sup>	<u>13</u>	<u>13</u>
Total, National Defense (Budget function 050) <sup>d</sup>	289	340

SOURCE: Congressional Budget Office.

NOTE: The figures in the table include both discretionary and mandatory funding. Apparent discrepancies in the calculations arise from rounding.

a. Based on CBO's estimates as of July 2000 but excluding supplemental appropriations of about \$9 billion.

b. The sustaining-budget estimate is CBO's calculation of the annual funding required to maintain U.S. military forces at their current size; to modernize their weapons and equipment at a rate that is consistent with expected service lives and with maintaining a technological advantage over potential adversaries; and to maintain current funding for readiness. It is a steady-state concept and not an estimate of the defense budget for any specific year.

c. Covers defense activities related to atomic energy in the Department of Energy and national defense functions in other agencies.

d. Includes revolving and management funds, trust funds, and offsetting receipts, which total less than \$0.5 billion. Excludes contract authority for the working capital funds because appropriations are used to liquidate that authority.

**US Forces in NATO Europe - Part One**

	<u>1990</u>	<u>1996</u>	<u>1997</u>	<u>2000</u>	<u>2001</u>
<b>USEUCOM &amp; 6<sup>th</sup> FLEET</b>					
Total Personnel	321,300	127,200	127,200	114,000	112,000
USEUCOM only	-	-	-	100,000	98,000
Army (USAREUR)	-	-	-	54,700	53,000
Air Force (USAFE)	-	-	-	35,500	35,500
<b>CENTRAL REGION</b>					
Germany (Equipment Totals Include all POMCUS, 57% of which is in Germany)					
Army					
Personnel	203,100	60,400	60,400	42,400	42,300
Tanks	5,900	1,120	1,120	785	541
AIFVs	2,120	893	893	715	760
APCs	-	-	1,359	852	852
Artillery	2,660	725	725	512	508
Attack Helicopters	-	113	113	136	134
SSM	126	0	0	0	0
Air Force					
Personnel	41,100	15,050	15,050	14,880	15,100
Combat Aircra	300	72	72	72	60
Airlift/SOF Aircraft	30	31	31	37	41
Navy Personnel	-	-	-	300	300
USMC Personnel	-	-	-	200	380
Belgium (22% of POMCUS)					
Army Personnel	1,500	730	730	170	795
Navy Personnel	-	100	100	100	100
Air Force Personnel	600	515	515	520	530
Netherlands (7% of POMCUS)					
Army Personnel	900	490	490	60	335
Air Force Personnel	2,100	-	-	290	290
Combat Aircraft	24	-	-	-	-
Navy Personnel	-	295	295	10	10
Luxembourg (21% of POMCUS)					
	-	-	-	-	-
United Kingdom					
Army Personnel	-	-	-	450	390
Navy Personnel	2,400	1,950	1,950	1,220	1220
SSBN	-	-	-	-	-
Air Force Personnel	25,000	9,800	9,800	9,500	9,550
Combat Aircraft	246	66	66	53	72
SOF Aircraft	9	13	13	15	15
Tanker/Transport Aircraft	4	9	9	9	-
SAR Aircraft	9	-	-	-	-
USMC	-	-	-	120	120

**US Forces in NATO Europe - Part Two**

	<u>1990</u>	<u>1996</u>	<u>1997</u>	<u>2000</u>	<u>2001</u>
NORTHERN FLANK					
Norway					
1 MEB Prepositioned	17 tanks, 24 Arty	24 Arty,	24 Arty	30 Arty No Aviation	23 Arty No Aviation
Air Force Personnel	-	-	-	50	50
Navy Personnel	-	-	-	10	10

**US Forces in NATO Europe - Part Two**

	<u>1990</u>	<u>1996</u>	<u>1997</u>	<u>2000</u>	<u>2001</u>
<b>MEDITERRANEAN AND SOUTHERN FLANK</b>					
<b>Mediterranean Fleet</b>					
Navy Personnel	17,700	14,200	16,500	14,000	14,000
Marine Corps	2,300	2,300	2,300	(2,100)	(2,100)
SSN	4	4	4	4	3
Carrier	1	1	1	1	1
Other Surface Combatants	7-11	8	8	5	6
Support Ships	6-8	6	6	6	7
MPS Ships	4	4	4	4	4
Amphibious ships	3-5	-	-	-	-
<b>Italy (Theater Reserve/Army Readiness Package South)</b>					
Army Personnel	4,100	2,550	2,550	1,700	2,200
MBTs	-	122	122	116	116
AIFVs	-	133	133	125	127
APCs	-	118	118	59	4
Artillery	-	35	35	15	1
Navy Personnel	5,700	7,140	7,140	4,400	4,400
Combat Aircraft	9	9	9	9	9
Marines	300	-	-	-	-
Air Force Personnel	5,600	4,020	4,020	4,200*	4,140
Combat Aircraft	?	36	36	36*	42
(Deliberate Force)	-	-	-	(163)	(237)
SFOR Element Aircraft	-	-	-	28	-
GLCMs	-	-	-	-	-
USMC Personnel	-	-	-	200	110
<b>Portugal (Less Azores)</b>					
Army Personnel	-	-	-	20	-
Navy Personnel	-	-	-	50	50
Air Force Personnel	-	-	-	930	940
<b>Spain</b>					
Navy Personnel	3,700	3,000	3,000	1,760	1,760
Combat Aircraft	9	9	9	-	-
Air Force Personnel	5,000	220	220	250	360
Combat aircraft	72	-	-	-	-
USMC Personnel	-	-	-	120	70
<b>Greece</b>					
Army Personnel	400	9	9	10	-
Navy Personnel	600	275	275	250	240
Air Force Personnel	2,200	162	162	160	240
Combat forces	2 groups	0		0	-

**US Forces in NATO Europe - Part Three**

	<u>1990</u>	<u>1996</u>	<u>1997</u>	<u>2000</u>	<u>2001</u>
Turkey					
Army Personnel	1,200	310	310	?	-
Navy Personnel	-	30	30	20	20
Air Force Personnel	3,600	2,640	2,640	1,800	1,800
Combat Aircraft	-	1 wing, 2 groups on rotation	1 wing, 2 groups on rotation		-
USMC Personnel	-	-	-	220	220
NORTHERN FLANK					
Norway					
1 MEB Prepositioned	17 tanks, 24 Arty	24 Arty,	24 Arty	30 Arty No Aviation	23 Arty No Aviation
Air Force Personnel	-	-	-	50	50
Navy Personnel	-	-	-	10	10

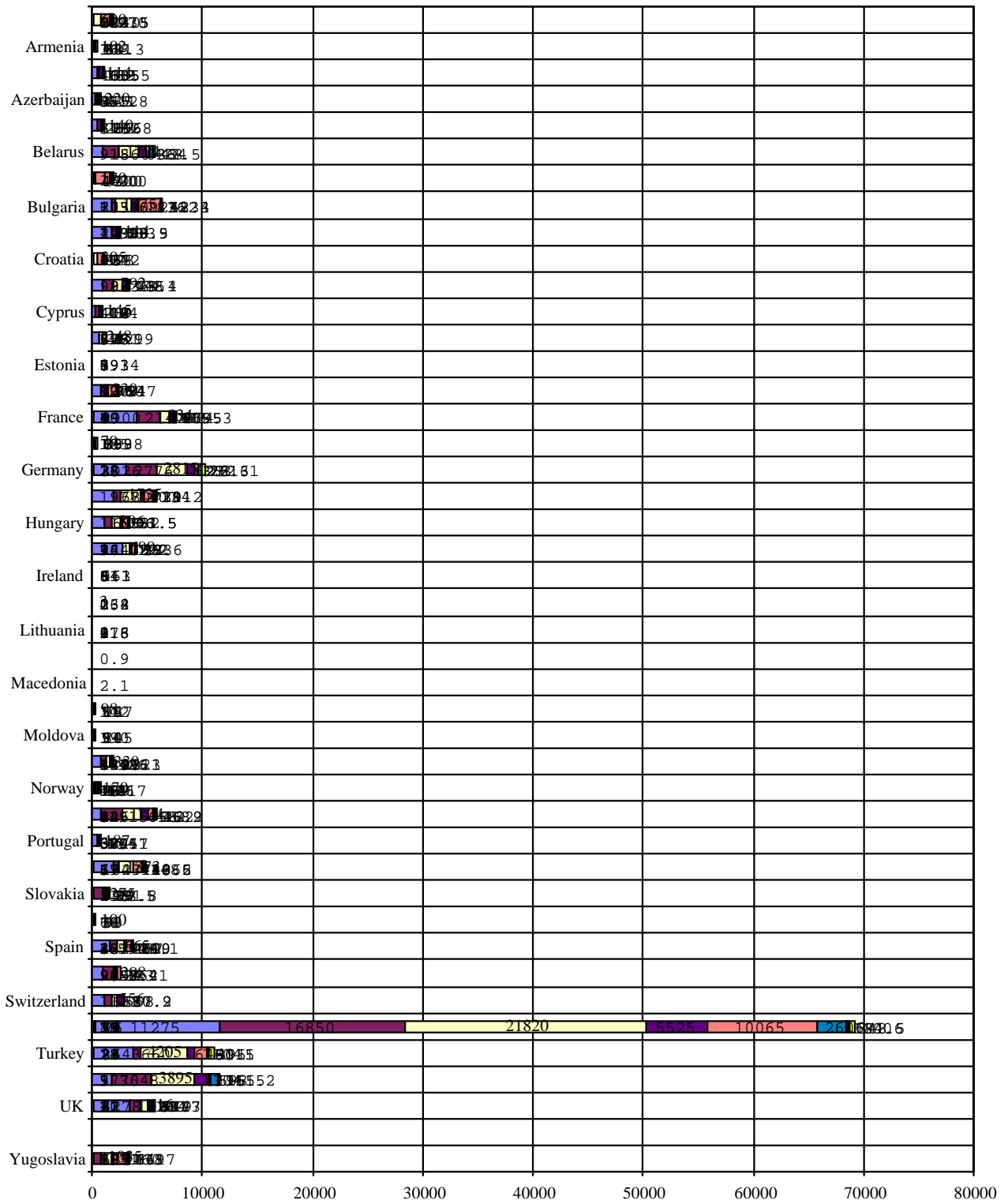
Note: Navy manpower total includes US Marines. \* = Does not include units for Deliberate Force.

Source: Adapted by Anthony H. Cordesman from DoD database and IISS, Military Balance, various years.





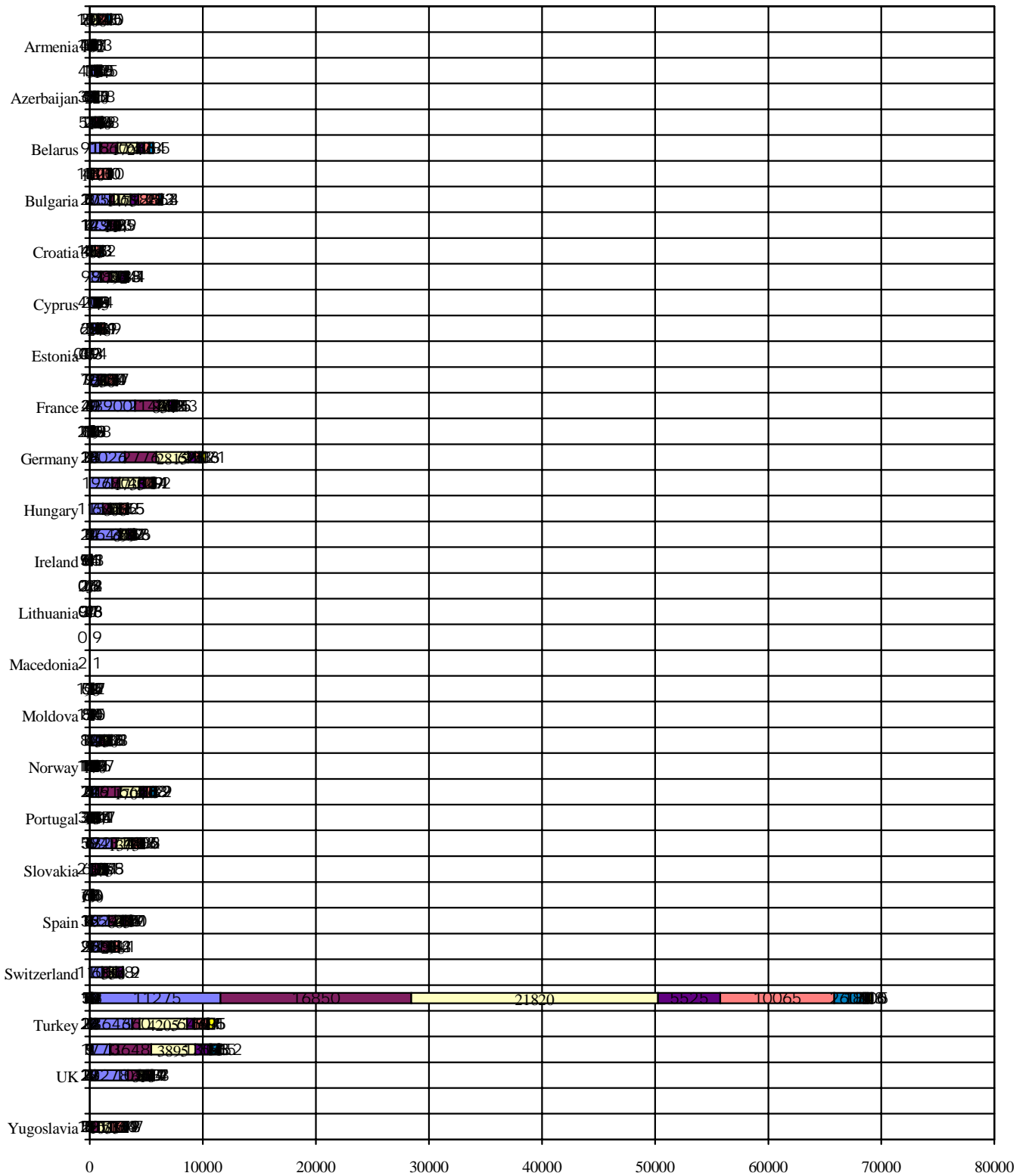
### Western Data Dump for 2000



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

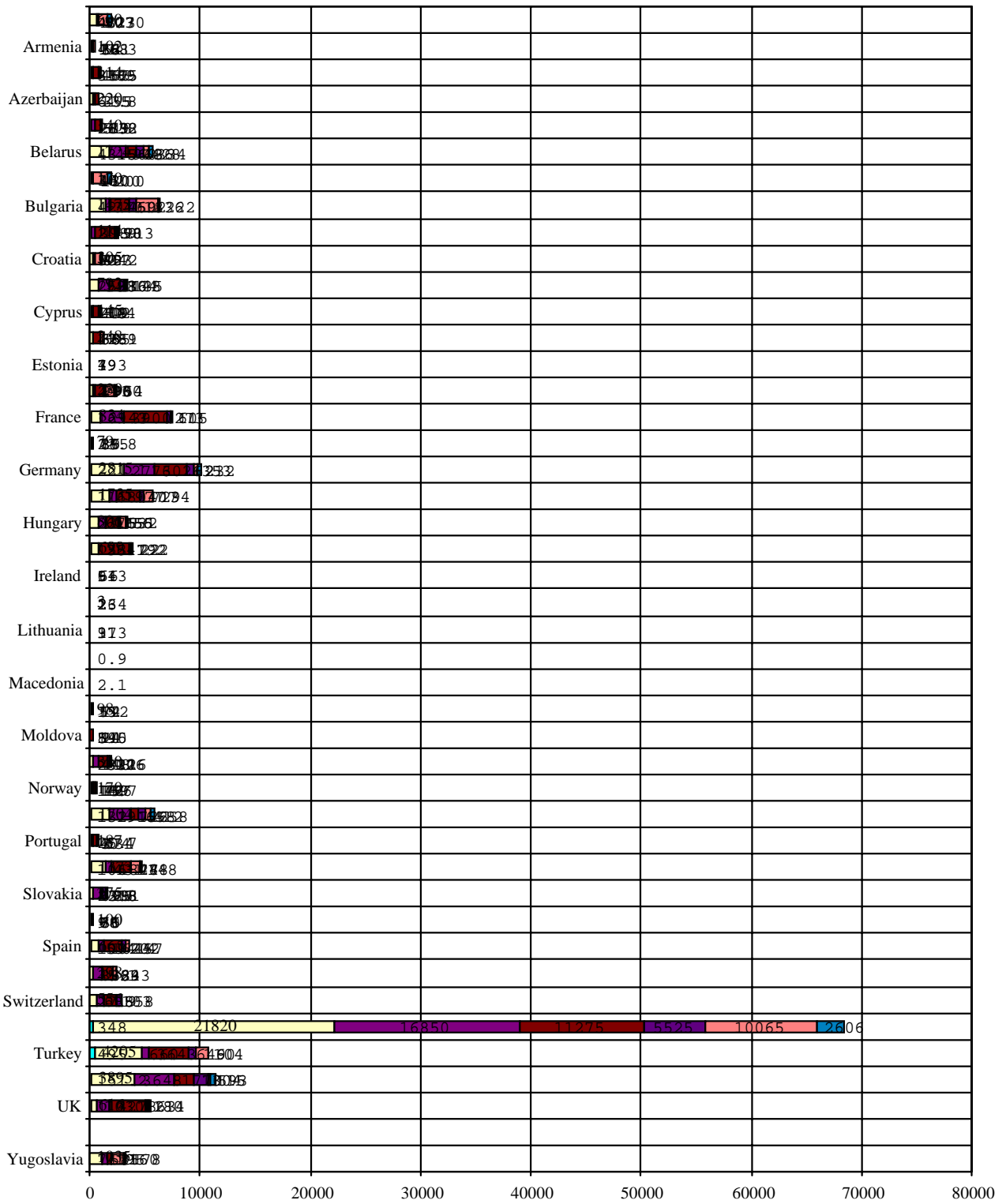


### Western Data Dump for 2000



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

### Army Table 2000



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

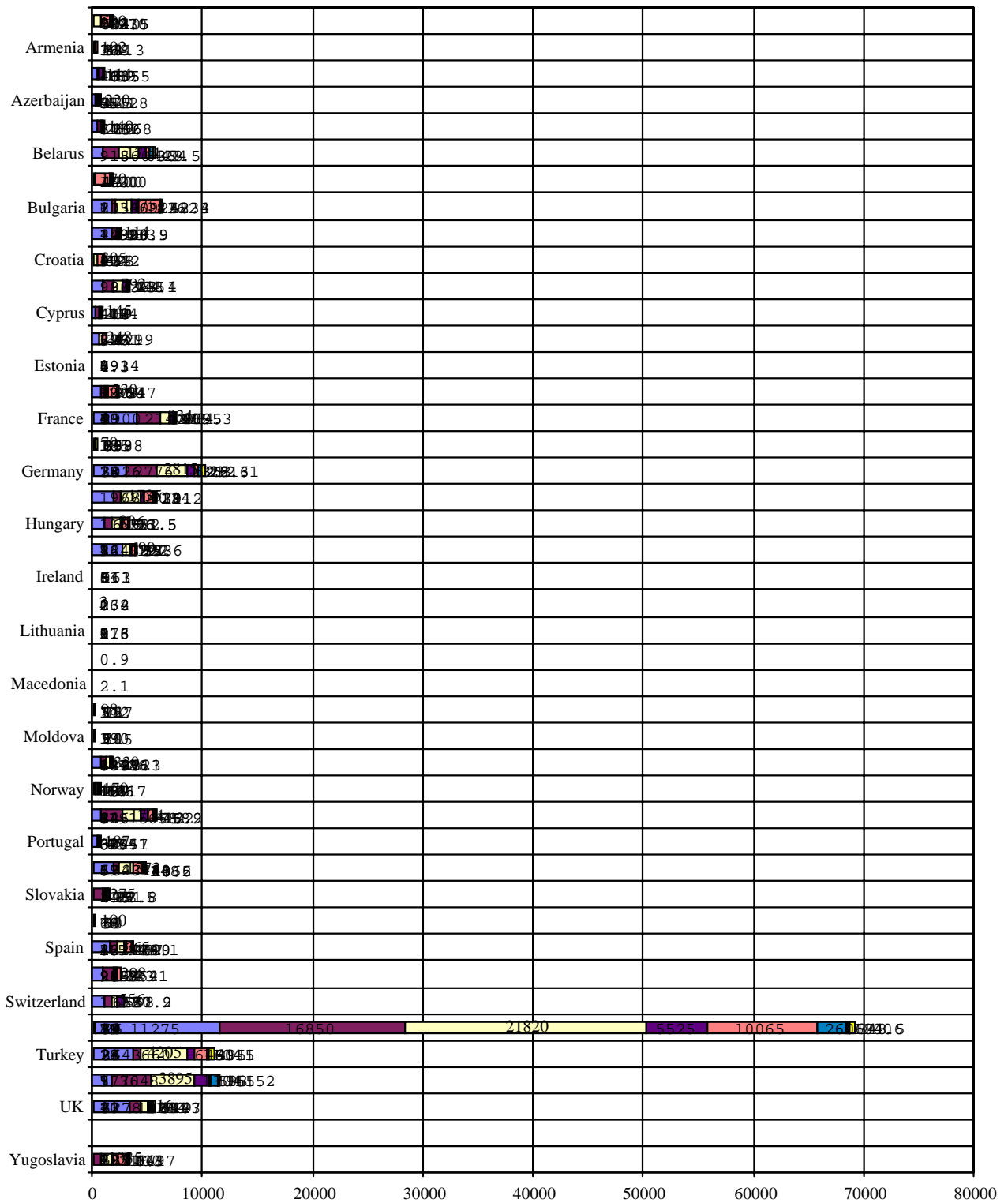
### Western Active Army Strength in 2001

	Manpower (1,000s)	Armor			Artillery		
		Tanks	AIFVs	APCs	SP	Towed	MRL
Yugoslavia	791016	557	204	82	976	123	
US	477.8	7620	6820	15400	2476	1547	881
UK	113.9	636	1054	2398	179	233	63
Ukraine	151.2	3937	3678	1782	1301	1130	603
Turkey	402	4205	650	3643	868	679	84
Russia	321	21820	16850	11275	4705	10065	2606
Switzerland	3.6*	556	754	827	558	-	-
Sweden	19.1368	1291	540	23	585	-	
Spain	92688	376	2023	194	310	18	
Slovenia	7.676	59	38	8	36	52	
Slovakia	19.8272	605	175	211	75	90	
Romania	52.91373	298	1316	48	708	177	
Portugal	25.4187	15	370	6	134	-	
Poland	120.31677	1869	726	652	440	258	
Norway	14.7170	157	189	126	46	12	
Netherlands	23.1	320	361	345	123	112	22
Moldova	7.1-	53	156	9	71	11	
Malta	2.1 -	-	112	-	74	12	
Macedonia	1598	51	112	-	271	37	
Luxembourg	0.9	-	-	-	-	-	-
Lithuania	7.5-	10	81	-	-	-	
Latvia	3.13	2	13	-	26	-	
Ireland	8.5-	47	54	-	66	-	
Italy	1371349	26	2777	269	325	22	
Hungary	13.2753	680	1109	151	532	56	
Greece	1101733	630	1977	413	729	134	
Germany	211.8	2521	2776	2666	605	350	229
Georgia	8.690	185	-	3	79	16	
France	150809	2147	3900	273	97	61	
Finland	24.5230	266	840	90	918	94	
Estonia	4.0-	7	32	-	19	-	
Denmark	12.9238	36	609	76	231	8	
Cyprus	10145	209	402	12	144	18	
Czech	23.8652	983	975	322	124	109	
Croatia	50.7301	123	37	8	412	232	
Canada	18.6114	403	1357	58	213	-	
Bulgaria	42.4	1475	272	1750	692	473	222
Bosnia	24205	74	160	7	379	106	
Belarus	43.61683	1577	919	570	428	344	
Belgium	26.4132	337	491	108	14	-	
Azerbaijan	62262	253	381	14	153	56	
Austria	34.6114	180	488	209	104	-	
Armenia	38.9110	110	36	38	121	51	
Albania	20400	50	103	-	823	50	

\* Please note that total includes active and key mobilized manpower. Only 3,600 officers and NCOs are in full-time active armed forces.

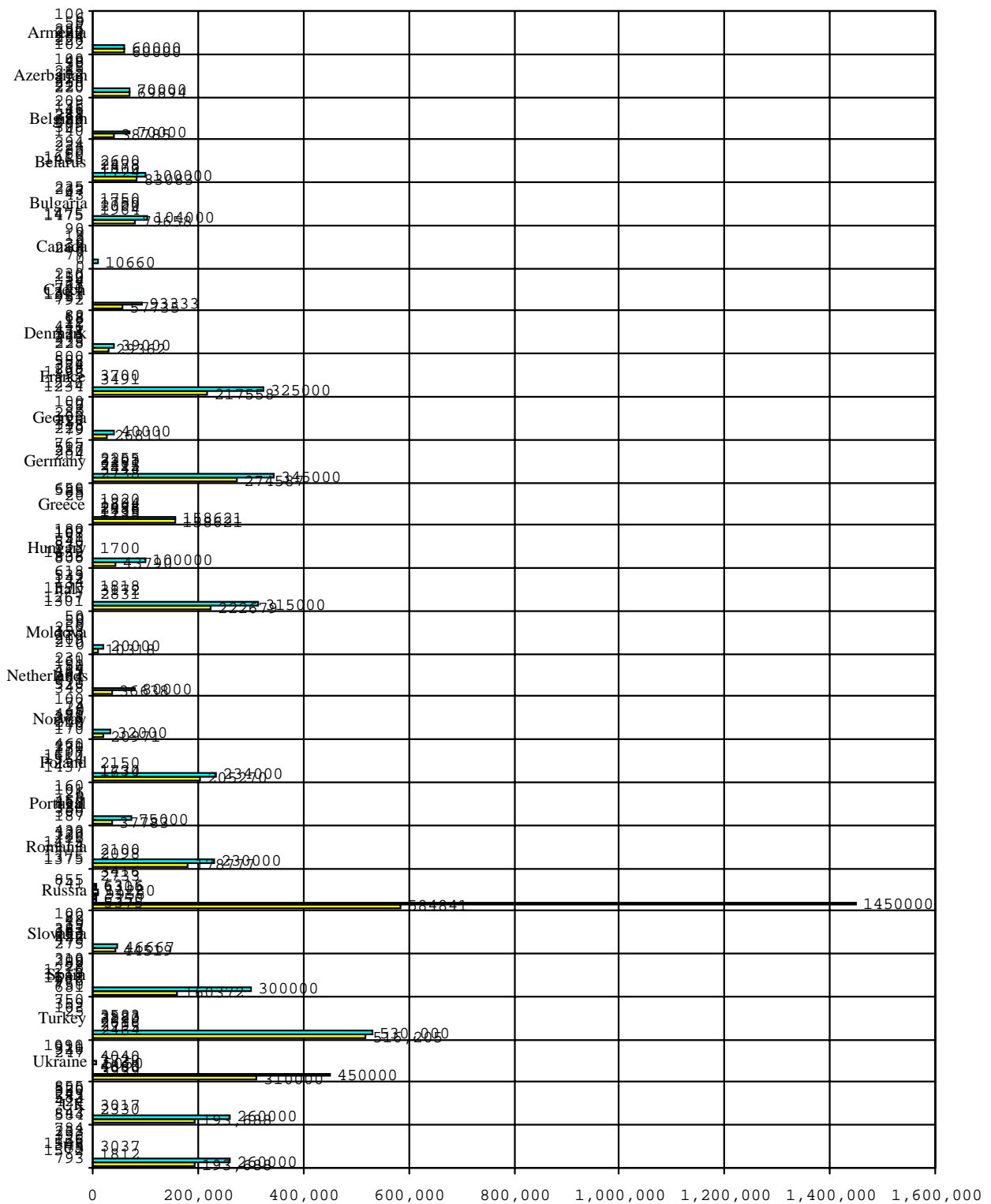
Source: IISS, Military Balance, 2001-2002.

### Western Data Dump for 2000



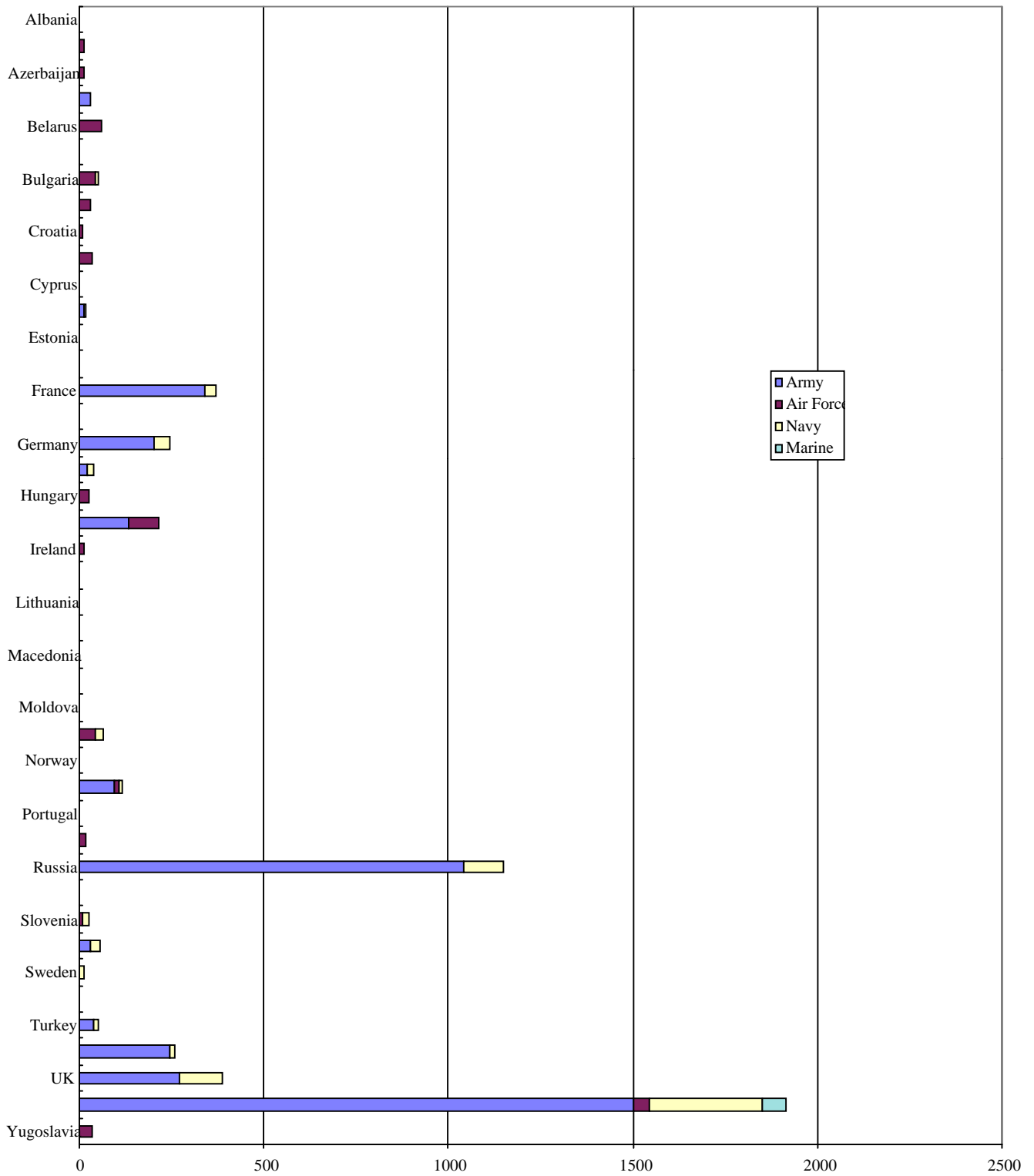
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

### Army Table 2000 (As of January 1, 2000)



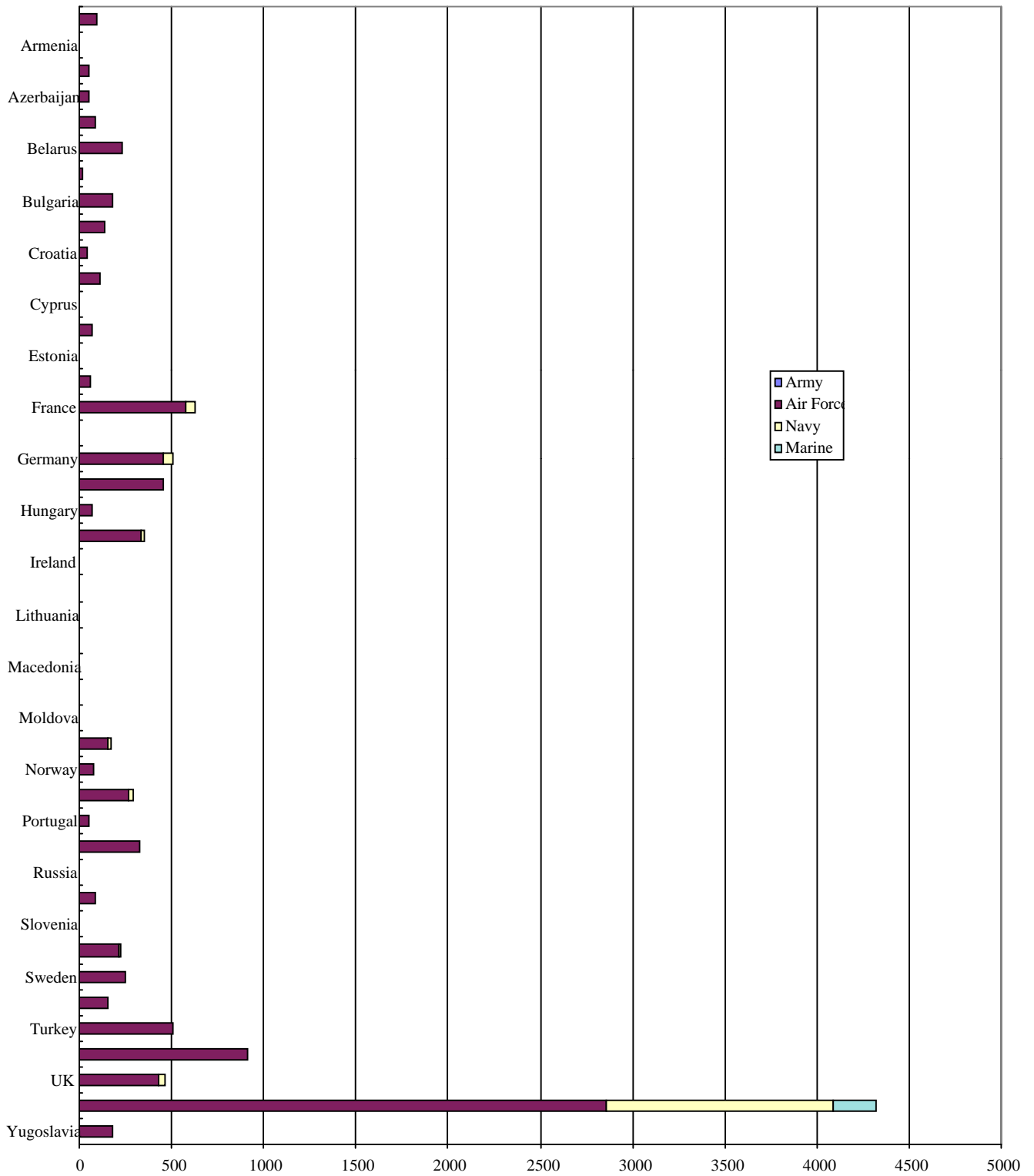
Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001

### Armed Helicopter Data Dump in Western Forces in 2000



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

### Fixed Wing Combat Aircraft Data Dump in Western Forces in 2000



Source: Adapted by Anthony H. Cordesman from the IISS, Military Balance, 1999-2000 and 2000-2001.

