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The Gulf Military Forces in an Era of Asymmetric War

Yemen

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Introduction

Yemen is not a Gulf country, but it is a major state on the Arabian Peninsula, and one that has long played a major strategic role in Gulf security. As is shown in **Map 1**, Yemen has coasts and islands on the Indian Ocean and Red Sea, and occupies a strategic position at the Bab al-Mandeb – the narrow strait that controls the entrance to the Red Sea and which every ship passing through the Suez Canal must also traverse.

Map 1: Yemen

Source: CIA, "Yemen," 2002, available at http://www.lib.utexas.edu/maps/middle_east_and_asia/yemen_pol_2002.jpg

Yemen shares borders with Oman and Saudi Arabia, and there has been a long history of clashes between Yemen (now a federation of the Yemeni Arab Republic (YAR) and People's Democratic Republic of Yemen (PDRY)), and Oman and Yemen. Saudi Arabia won a border war with what became the YAR in the 1930s, taking control over the disputed territory – control which is still disputed by some Yemeni nationalists. Saudi Arabia and Egypt nearly came to war when both sides took place in a Yemeni civil war from 1962 to 1967.[1]

South Yemen became a violent Marxist regime when it achieved independence in 1967, and clashed with Oman as well as North Yemen. South Yemen sponsored a violent Marxist insurgent movement in Oman and provided it with military support and sanctuary during the Dhofar rebellion, which lasted from 1964 to 1975.[2]

Hundreds of thousands of Yemenis fled from the south to the north over the two decades after South Yemen became independent, and both states had several border wars and became involved in assassinations and covert operations. The regime in the PDRY was so extreme, however, that it provoked a civil war in the late 1980s that led to the collapse of the state, and created a political climate that made unification with the YAR both popular and necessary. The two countries were unified as the Republic of Yemen in 1990. A civil war broke out between elements in the north and south in 1994, but the southern secessionist movement lacked broad support and was defeated within a year.[3]

Yemen has resolved its border disputes with Oman and Saudi Arabia, and Yemen and Saudi Arabia seem to have reached a stable border agreement in 2000. There still, however, are armed clashes at the tribal level between Yemenis and Saudi security forces. Smuggling from Yemen to Saudi Arabia – including the supply of arms, explosives, and drugs for terrorist organizations – is a continuing problem. So is the long legacy of radicalism in Yemen, tribal and political divisions that limit the central governments internal security capabilities, and the presence of significant Islamist extremist elements including some linked to al-Qaeda.

The central government has made serious efforts to deal with these problems. Yemen signed a security pact with the United Arab Emirates in 2005, and it began to conduct joint exercises with Saudi Arabia. The security pact with the UAE was designed to facilitate stronger anti-al-Qa'ida efforts between the two states, both of which have a long history of combating domestic militants.[4] The first military exercises with the Saudis occurred on March 28, 2005. Though the exercises did not include large numbers of units, they are a symbolic effort to continue to improve relations.[5]

Infiltration of terrorists, illegal immigration, and weapons smuggling from Yemen to Saudi Arabia does, however, a source of tension.[6] The same is true of the steady flow of illegal immigrants seeking jobs in Saudi Arabia. It explains why Saudi Arabia began constructing a security barrier along the Yemeni border in 2004, and why the Kingdom is examining proposals for a much more sophisticated border control system that could cost well in excess of $5 billion.[7]

Religious tensions are also an issue. The population is probably over 90% Muslim, with limited numbers of Jews, Christians, and Hindus. It is split, however, between Shaf'i (Sunni) and Zaydi (Shi'ite) Muslims, and there do seem to have been some tribal clashes almost sectarian lines.

Internal stability remains a serious problem. Although Yemen is making some progress towards stability, it has a long history of civil war and violence. The central government has tenuous control over many tribal elements, and crimes like kidnappings of foreigners are endemic. Real unemployment, including disguised unemployment, is sometimes put as high as 40 percent, and it is unlikely that it is lower than 35 percent. The population in mid-2005 was 20.7 million, with an extremely high birthrate of 3.45 percent, and 46 percent of the population under the age of 15 year.

The Yemeni economy cannot support this rapidly growing population. The IISS estimates the GDP at between $11 and $13 billion.[8] The CIA estimates the GDP at only $17.2 billion, even in

purchasing power parity terms, the per capita income at only $800, and estimates that well over 40 percent of the population is below the poverty line. Most workers are employed in agriculture and herding in one of the least productive agricultural sectors in the world because its output is dominated by a low-grade narcotic called Qat.

The CIA estimates that services, construction, industry, and commerce account for less than one-fourth of the labor force, and the real figure may be less than 15 percent. Only remittances from workers overseas and foreign aid allow the nation to function. This economic and demographic instability, coupled with a long history of tolerating the presence of extremist and terrorist movements when they do not directly threaten the regime, makes Yemen a potential threat to both Oman and Saudi Arabia.

Military Spending & Arms Imports

The CIA estimates that Yemeni national budget had $5.6 billion in revenues in 2005, and $5.7 billion in expenditures. This limits what Yemen can spend on security and military forces, and Yemen has not been able to benefit from the free or low-cost arms imports in received from the US and FSU during the Cold War for well over a decade. According to the IISS, Yemen's military budget has been steadily increasing over the past few years rising from $482 million in 2001, to $809 million in 2003, $869 million in 2004, and $942 million in 2005.[9] If correct, this represents a 96 percent increase of Yemen's military spending in five years, and is much higher than the $374 million to $539 million a year that Yemen spent in the 1990s.[10] It represents a major burden on Yemen's GDP and economy.[11]

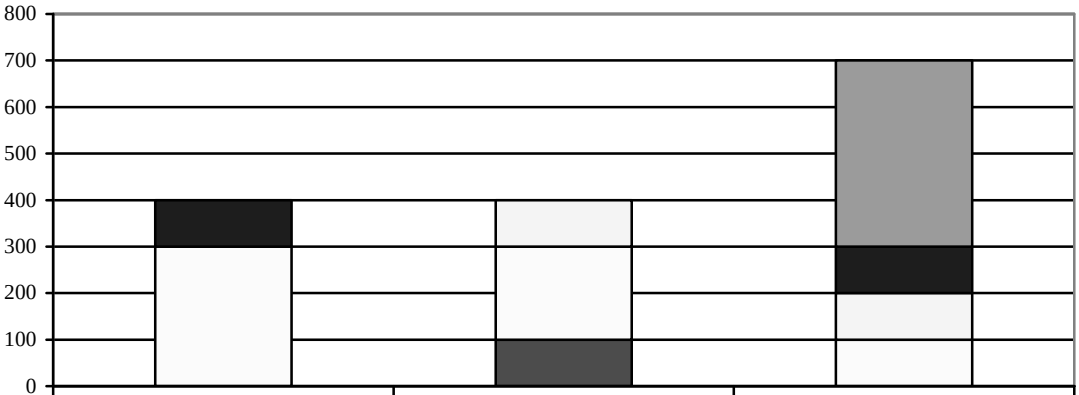
As is the case with other countries in the region, Yemen is an arms importer. **Figure 1** shows the trends in arms deliveries to Yemen by the supplier. It shows that, unlike other Gulf States, Yemen has not been a major recent importer of US arms. At the same time, **Figure 1** shows Yemen's arms deliveries have nearly doubled since from $400 million during 1993-1996 to $700 million during 2001-2004. It is equally important, however, to note that Yemen has relied on Europe, China, and recently Russia for its arms purchases. For example, China delivered $100 million worth of arms to Yemen between 1993 and 1996 and another $100 million between 2001 and 2004. Russia has also emerged as an arms exporter to Yemen. Between 2001 and 2004, Russia delivered $400 million worth of new arms to Yemen.

Figure 2, on the other hand, shows the value of recent new arms agreements between Yemen and outside suppliers. The trend of Yemen's new arms agreements is also on the rise. Between 2001 and 2004, Yemen signed several agreements, which the United States and the major western European countries were absent from. Russia signed $600 million worth of new agreements between 2001 and 2004. China signed $100 million as well as $200 million worth of agreements with other nations during the same period, putting Yemen's total new arms agreements at approximately $900 million.

In spite of the upward trend in both deliveries and new arms agreements, however, Yemen is still not able to fund anything approaching large amounts of advanced more weapons, or even recapitalize its existing force structure without significant force cuts or reliance on obsolete equipment. At this point in time, Yemen lacks any clear enemy. Nevertheless, it seems no more capable of making hard trade-offs between force quality and force quantity, and bring force modernization into balance with resources, than most other powers in the MENA region.

Figure 1: Yemen's Arms Deliveries by Supplier, 1993-2004

(In Current Million $US)

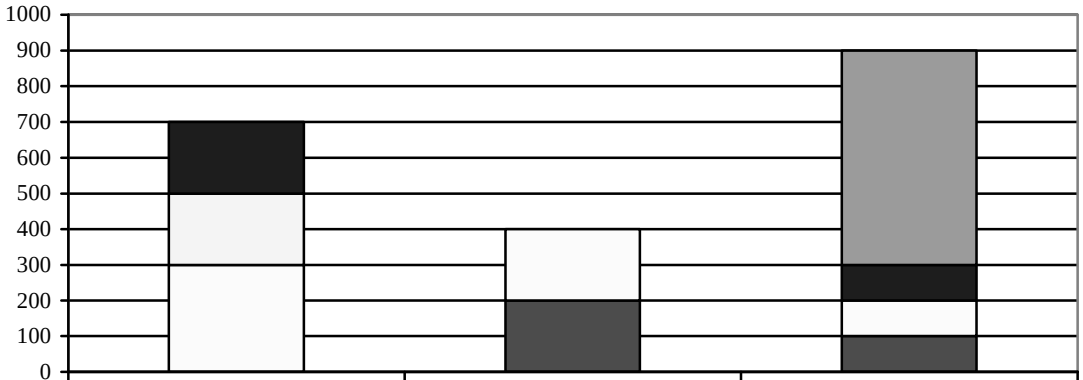


	1993-1996	1997-2000	2001-2004
US	0	0	0
Russia	0	0	400
China	100	0	100
Major W. European	0	100	100
Other European	300	200	100
All Others	0	100	0
Total	400	400	700

Source: Richard F. Grimmett, *Conventional Arms Transfers To Developing Nations, 1997-2004*, CRS, August 29, 2005; and Richard F. Grimmett, *Conventional Arms Transfers To Developing Nations, 1993-2000*, CRS, August 16, 2001.

Figure 2: Yemen's New Arms Agreements by Supplier, 1993-2004

(In Current Million $US)



	1993-1996	1997-2000	2001-2004
US	0	0	0
Russia	0	0	600
China	200	0	100
Major W. European	200	0	0
Other European	300	200	100
All Others	0	200	100
Total	700	400	900

Source: Richard F. Grimmett, *Conventional Arms Transfers To Developing Nations, 1997-2004*, CRS, August 29, 2005; and Richard F. Grimmett, *Conventional Arms Transfers To Developing Nations, 1993-2000*, CRS, August 16, 2001.

Military Manpower

Total Yemeni military manpower was around 66,700 in 2006, with slightly larger paramilitary forces totaling 70,000. These levels of total manning have been typical since the mid-1990s, although Yemen reached totals of 127,000 in the early 1990s. The Army had some 60,000 men, the Navy 1,700, the Air Force 5,000, and the air defense force 2,000. There were some 50,000 men in paramilitary roles in the Ministry of the Interior, another 20,000 in tribal levies, and a small Coast Guard was being created.

Two-year conscripts made up a significant part of the total, although they were a small part of Yemen's potential pool. The CIA estimates that some 237,000 young men became eligible for conscription in 2005. In broad terms, Yemen paid little attention to effective military manpower, lacked effective schools and career development programs, and did not have an effective NCO corps or mix of technical personnel. As in all countries, there were some outstanding officers and NCOs, but Yemen did a poor overall job in developing suitable manpower quality.

Yemen showed little interest in effective combined arms and joint warfare training and exercises.

The Yemeni Army

The Yemeni army has some effective battalion-sized elements, but is largely a hollow force better suited to internal security purposes than warfighting. It is a nominal strength of 60,000 men, many of which are two-year conscripts. It has some 40,000 reserves, with little or no meaningful reserve training.

Figure 3 confirms the decreasing trend in the overall manpower of Yemen's conventional army decreasing since the consolidation of the state in 1990, and after the brief civil war of 1994. This manning is very limited relative to the total potential manpower pool provided by Yemen's population. As has been noted earlier, Yemen's population is young, 46.5 percent of the population is between ages 0-14.[12] Yemen has approximately 2.8 million men between ages 18-49 who are capable of military service (roughly 13.5 percent of the population).[13] On average, 236,517 men become eligible for military service every year.[14]

At the same time, Yemen faces only limited external conventional military threats. Improved relations with the UAE, Saudi Arabia, and Oman have lessened Yemen's need for protection against external threats. Yemen's poor economy has also crippled its military growth. Unlike most other "Southern Gulf" countries, the fall e removal of Saddam Hussein did not remove a major conventional threat to Yemen. Iraq was too far away to be a threat, and Saddam and Yemeni President Ali Abdullah Salih had relatively good relations.[15]

The Yemeni army's force structure is large for its manpower pool. It includes 8 armored brigades, 16 infantry brigades, 6 mechanized brigades, 2 airborne and commando brigades, 1 Special Forces brigade, and a central guard force. Yemen has a number of major combat support units. They include 3 artillery brigades, and 6 air defense brigades with 4 AA gun and 1 surface-to-air missile battalions. It has one surface-to surface missile brigade with 12 FROG, 10 SS-21, and 6/33 SCUD missiles.

The operational status of most of these missiles is uncertain. This order of battle is roughly equivalent to a seven division force, and would normally require about 30 to 50 percent more total manpower than the army possesses.

Armor and Anti-Armor Weapons

The army has a mix of a wide variety of equipment types, many of which are obsolete or worn. **Figure 3** shows that Yemen has 790 main battle tanks (MBT) including 30 T-34, 450 T-54/55, 200 T-62, 50 M-60A1, and 60 T-72.[16] Jane's Sentinel Security Assessment, however, estimated that Yemen has 763 MBTs, which include 30 T-72, 75 T-62, and 106 upgraded T-54/55.[17] Regardless of the exact number, Yemen's MBTs were dominated by older and obsolescent types. There has also been a significant downward trend in numbers. The Yemeni army had 1,195 MBTs in 1990. This declined to 990 in 2000 and 790 in 2005-2006.

The downward trend also applied to Yemen's armored reconnaissance vehicles. According to the IISS, Yemen's army had more than 350 vehicles in 1990. In 2006, Yemen had 130 reconnaissance vehicles (80 AML-90 and 50 BDRM-2). Yemen had 300 armored infantry fighting vehicles (AIFV) in 1990, which declined to 200 AIFV (200 BMP-1/2) between 2000 and 2006.

Yemen is estimated to have had 710 armored personal carriers (APCs) in 2006, which is roughly the same number on-hand in 1990. However, only around 210 out of the pool of 710 are operational. According to the IISS, this pool included: 60 M-113s plus a mix of 150 BTR 40, 60, and 152.[18] According to Jane's, Yemen had 70 AML-90, 10 AML-60-7, 48 Panhard armored cars, 100 BMP1/2, 70 M113, and 180 BTR 40, 60, and 152.[19]

In 2006, Yemen has 12 TOW, 24 Dragon (Jane's reports 150 Dragon), and 35 AT-3 Sagger anti-tank guided weapons. It also had large numbers of rocket launchers, and 75mm, 82mm, and 107mm recoil rifles.[20] Jane's estimated that Yemen had 100 82mm M43 and 450 40mm M79 anti-tank weapons.[21] Armor and anti-armor training is limited, while armored maneuver warfare capability and sustainability are low.

Artillery

Yemen has a large pool of some 1,153 artillery weapons —a level that Yemen had maintained since 2000. However, this pool was dependent on towed weapons without modern fire control systems, artillery radars, and other support equipment.

Yemen had only 25 2S1 122mm self-propelled artillery weapons, plus 30 worn and obsolescent SU100 100mm assault guns and 20 100mm 1944M guns.[22] The IISS estimated that Yemen had 310 towed artillery weapons, including 25 M-101a1 105mm; 30 M-1931/1937, 40 M-1938, and 130 D-30 122mm weapons; 60 M-46 130mm, 10 D-20 152mm, and 15 M-114 155mm weapons.[23]

Jane's count was higher, estimating that Yemen had 535 towed weapons. Jane's estimated that Yemen has 10 155mm M114, 90 122mm M1938, 28 122mm M1931/7, 92 85mm D44, and 70 76mm 1942.[24] It also has 36 SM-4-1 coastal defense guns. It has roughly 160-170 operational multiple rocket launchers (MRL), including 150 operational BM-21122mm out of an inventory of 280, and 14 BM-14 140mm weapons.[25]

Yemen also had some 502 mortars (81mm, 82mm, 107mm, 120mm, and 160mm).[26]

While Yemen had a large inventory of artillery, its artillery forces were even less effective than most other regional forces. Yemen was capable of using artillery in static massed fires, but had very limited capability to maneuver its artillery, support it away from peace time casernes, rapidly shift fires or target effectively beyond visual range. It had little or no modern fire control, counter-battery radar, and fire management capability. Live fire training was very limited.

Anti-Aircraft Weapons

According to the IISS, it had 530 anti-aircraft (AA) guns. These guns included 50 M-167 and 20 M-163 20mm, 100 ZSU-23-2 and 50 ZSU-23-4 23mm, 150 M-1939 37mm, 120 S-60 57mm, and 40 KS-12 85mm.

Jane's estimates, however, differ. Yemen had some 242 AA guns in 2006. These included 100 57mm SZ-60, 10 35mm Oerlikon, 50 ZU-23-2, 7 ZSU-23-4SP, 35 14.5mm ZPU-2 35, 20 M167 Vulcan self-propelled systems, and 20 M163 Vulcan.[27] It had large numbers of SA-7, SA-9, SA-13, and SA-14 light surface-to–air missiles.

Air defense training and maneuver warfare capability is minimal to limited.[28] Realistic live fire training is virtually non-existent.

Ballistic Missiles and Rockets

Yemen has sought ballistic missiles since the 1970s. The Soviet Union was it traditional supplier, but North Korea has since become the primary source. It is believed that Yemen has bought missiles and related items from North Korea for the last ten years. Spain intercepted a North Korean ship on December 9, 2002 that was loaded with 15 complete Scud missiles (possibly SCUD-Cs) as well as fuel and additional warheads. The shipment did not break international law, and the vessel was released after officials stated that the missiles would not be transferred to a third party.

Though it is unclear exactly how many and what type of ballistic missiles Yemen possesses due to the secretive nature of their procurement and the use of many in the 1994 civil war, it is believed that it maintains a variety of weapons. Its tactical SSM strength may have more than doubled between 1990 and 2006, from a total of 12 to 28 missiles.

It is believed that Yemen has up to 12 9k21 FROG 7-TELs, approximately 10 9P129 SS-21 Scarabs-TELs, and up to 6 SCUD B/C launchers with approximately 33 missiles.[29] Some of these weapons were delivered in the 1970's, and their effectiveness, especially in light of their performance in the 1994 civil war, is uncertain. A Russian firm has inspected many of Yemen's SS-21s, but both the results and Yemen's upgrade plans remain unknown.[30]

While Yemen may have had some stocks of chemical weapons in the past, it is believe these are limited to token levels, if Yemen retains any at all. Poor training, a lack of live-fire training, lack of long-range targeting and damage assessment capability, and probably reliance on low grade conventional warheads all seem to sharply limited the effectiveness of this force.

Overall Assessment

The Yemeni army does not face serious external threats, and is probably capable of defeating any major insurrection. It is, however, a low-grade force in virtually every respect, with limited real-world combat capability. Its small number of elite combat units would, however, be somewhat

more effective, and it is large and capable enough to put up consider resistance in defensive warfare that exploits Yemen's terrain.

Figure 3: Yemeni Army's Force Structure Trends, 1990-2006

	1990	**2000**	**2005**	**2006**
Manpower	**134,500**	**101,000**	**100,000**	**100,000**
Active	64,500	61,000	60,000	60,000
Reserve	70,000	40,000	40,000	40,000
Combat Units				
Armored Brigade	4	9	8	8
Mechanized Brigade	4	7	6	6
Infantry Brigade	18	18	16	16
Special Forces Brigade	1	1	1	1
Commando/Airborne	2	2	2	2
Artillery Brigade	8	3	3	3
Surface to Surface Missiles Brigades	1	3	1	1
Air Defense	2	4	6	6
Guard/Central Guard Force	1	1	1	1
Tanks	**1,195**	**990**	**790**	**790**
T-72	0	30	60	60
M-60A1	140	60	50	50
T-62	100	250	200	200
T-54/T-55	475	500	450	450
T-34	150-480	150	30	30
Armored Infantry Fighting Vehicles (AIFV)	**300**	**200**	**200**	**200**
BMP-1/BMP-2	300	200	200	200
Reconnaissance (Recce)	**305+**	**200**	**130**	**130**
Saladin	50	0	0	0
Ferret	?	0	0	0
AML-90	125	100	80	80
BRDM-2	130	100	50	50
Armored Personal Carrier (APC)	**720**	**440**	**710**	**710**
M-113	70	60	60	60
BTR 40/60/152	650	380	650	650
Artillery	**913+**	**1,645+**	**1,153+**	**1,153+**
TOWED 76mm M-1942	200	0	0	0
TOWED 105mm M-101A1	90	35	25	25
TOWED 122mm D-30	120	130	130	130

TOWED 122mm M-1931/37	30	20	30	30
TOWED 122mm M-30 M-1938	40	100	40	40
TOWED 130mm M-46	65	75	60	60
TOWED 152mm D-20	0	10	10	10
TOWED 155mm M-114	12	12	15	15
SP 122mm 2S1 Carnation	0	0	25	25
Coastal 130mm SM-4-1	36	36	36	36
MRL 122mm BM-21	205	184	280	280
MRL 140mm BM-14	15	?	14	14
MOR M-43	100	0	0	0
MOR 81mm	?	600	200	200
MOR 82mm M-93	?	200	90	90
MOR 107mm	0	12	12	12
MOR 120mm	?	100	100	100
MOR 160mm	0	100	100	100
Anti-Tank Weapons	**?**	**?**	**?**	**?**
Vigiliant	20	0	0	0
MSL AT-3 Sagger	36	35	35	35
MSL M47 Dragon	24	24	24	24
MSL TOW	12	12	12	12
RCL 107mm B-11	0	?	?	?
RCL 75mm M-20	?	?	?	?
RCL 82mm B-10	?	?	?	?
RL 66mm M-72 LAW	?	?	?	?
RL 73mm RPG-7Knout	0	0	?	?
GUNS 100mm M-1944	40	20	20	20
GUNS 100mm SU-100	30	30	30	30
GUNS 85mm D-44	30	?	?	?
Air Defense Missiles	**?**	**?**	**1,358**	**1,358**
SAM	?	?	800	800
SA-2	?	0	0	0
SA-13 Gopher	0	?	?	?
SA-14 Gremlin	0	?	?	?
SA-7 Grail	?	?	?	?
SA-9 Gaskin	?	?	?	?

Air Defense Guns	**372**	**470**	**530**	**530**
SP 20mm M-163 Vulcan	20	20	20	20
TOWED 20mm M-167 Vulcan	52	40	50	50
23mm ZSU-23	30	0	0	0
SP 23mm ZSU-23-4	30	100	50	50
TOWED 23mm 100ZU-23-2	0	0	100	100
TOWED 37mm M-1939	150	150	150	150
TOWED 57mm S-60	120	120	120	120
TOWED 85mm KS-12	0	40	40	40
Tactical Surface-to-Surface Missile (SSM)	**12**	**28**	**28**	**28**
FROG-7	0	12	12	12
SS-21 Scarab	12	10	10	10
SCUD B Launchers(33 missiles)	0	6	6	6

Note: For all 1990 figures, statistics represent North and South Yemen Combined. All question marks refer to weapons that Yemen is believed to possess, though the exact numbers in their possession are unknown.
Source: IISS, *Military Balance*, various editions including 1989-1990, 1999-2000, 2004-2005, 2005-2006.

The Yemeni Air Force

The Yemeni air force has a nominal strength of 3,000-3,500. It suffers badly from a lack of modernization and foreign support in recent years, although **Figure 4** shows that Yemen has acquired a few more modern fighters over the past six years. In 2006, the Yemeni air force had 75 combat capable aircrafts (Jane's estimated that number to be 84), of which 40 were in storage. It had 31 fighter interceptor, 40 a fighter ground attack (FGA) aircraft, 18 transport airplanes, and 44 training craft.

Combat Air Strength

The Yemeni air force has lost roughly half of it fighter interceptor strength since the early 1990s. In 1990, it had a total of 66 aircraft. This total dropped to 16 in 2000 and 26 in 2005. In late 2005, Yemen acquired six new Mig-29SMT Fulcrums, which brought Yemen's fighter intercept total to 31 including: 14 MiG-29MT Fulcrum, 15 MiG-21 Fishbed, and 2 Mig-29UBT Fulcrum.

Yemen has also lost roughly half of its fighter ground attack (FGA) aircraft during the last decade. Yemen's FGA's total was: 81 in 1990, 27 in 2000, and 40 in 2005-2006. Much of the decline was due to the decommissioning of 35 MiG-17 in the early 1990s. In addition, 28 Su-20/Su17 Fitter (out of a total of 45 in 1990) no longer are listed as operational. The Yemeni air force has, however, acquired 13 Su-20/17s. This purchase brought Yemen's total FGA strength in 2006 to: 30 Su-20/Su-17, 10 F5E Tiger II, and 2 F5B Freedom Fighters. (The latter may have become a training aircraft, but the IISS still listed them as part of Yemen's combat capable aircraft in 2006

Since 1990, Yemen's total number of training aircraft has, however, increased from 15 to 44, the largest increase in Yemen's air force structure. The most notable addition has the purchase of Z-242 from Czech Republic.

Helicopters and Transport Aircraft

The total number of helicopters operated by the Yemeni air force has also been on the decline. In 1990, Yemen reportedly had 76 helicopters, but by 2000 this number declined to 25, and in 2006 it reached 20. Most of the old helicopters that it had in 1990 (including Ka-26, AB-204, Ab-206, Mi-3, and SA-316) were decommissioned or were in operable in the mid 1990s. According to the IISS, in 2006, Yemen has 8 Mi-35 and 9 Mi-8 attack helicopters of unknown readiness and sustainability, and its transport assets include 2 AN-123, 6 AN-26, 3 C-130H, 4 IL-14, and 3 IL-76 Candid. Its utility and transport helicopters include two AB-212s and one AB-47.[31]

Overall Assessment

Yemen has some effective squadron elements, but cannot operate as a modern aircraft and has little sustainability. Pilot training is limited, and Yemen lacks anything approaching a modern command and control, battle management, and air control and warning system for its air units and land-based air defenses. Joint warfare capability is token at best.

Figure 4: Yemeni Air Force's Force Structure, 1990-2006

	1990	**2000**	**2005**	**2006**
Manpower	**3,500**	**3,500**	**3,000**	**3,000**
Active	3,500	3,500	3,000	3,000
Reserve	0	0	0	0
Fighter Interceptor	**66**	**16**	**26**	**31**
J-7M	6	0	0	0
MiG-29SMT Fulcrum	0	5	8	14
MiG-21 Fishbed	60	11	16	15
MiG-29UBT Fulcrum	0	0	2	2
Fighter Ground Attack (FGA)	**81**	**27**	**40**	**40**
Mig 17	35	0	0	0
Su-20/Su-17 Fitter	45	17	30	30
F5E Tiger II	11	10	10	10
Transport	**14**	**18**	**18**	**18**
An-12 Cub	3	2	2	2
An-24	9	0	0	0
An-26 Curl	4	6	6	6
C-130H Hercules	2	3	3	3
F-27	2	0	0	0
Skyvan 3M	2	0	0	0
Il-14 Crate	4	4	4	4
Il-76 Candid	0	3	3	3
Training Craft	**15+**	**32**	**44**	**44**
MiG 15UTI	3	0	0	0
Su-22	4	0	0	0
F-5B Freedom Fighter	2	2	2	2
L-39C	0	12	12	12
MiG 21 Mongol A	6	4	4	4
Yak-11 Moose	?	14	14	14
Z-242	0	0	12	12
Helicopters	**76**	**25**	**20**	**20**
Ka-26	2	0	0	0
AB-204	2	0	0	0
AB-206	6	0	0	0

Mi-4	5	0	0	0
SA-316	2	0	0	0
Mi-35 Hind	0	8	8	8
ATK AB-47 Bell	0	1	1	1
SPT Mi-8 Hip	53	14	9	9
UTL Bell 212	6	2	2	2

Note: All question marks refer to weapons that Yemen is believed to possess, though the exact numbers in their possession are unknown.
Source: IISS, *Military Balance*, various editions including 1989-1990, 1999-2000, 2004-2005, 2005-2006.

Yemeni Air Defense Forces

Yemen's land based air defense units have a nominal strength of some 1,500-2,000 men. They are equipped with SA-2, SA-3, and Sa-6 heavy surface-to-air missiles, but it is unclear how many are operational or sustainable in combat and few – if any – have been modernized to improve their resistance to jamming and detection. Yemen has large numbers of AA guns and lighter SA-7, SA-9, SA-13, and SA-14 man portable and vehicle mounted light surface-to-air missiles, but their operational status is unknown.

Figure 5 reflects the fact that few unclassified data are available on the Yemeni Air Defense system. Aside from manpower, the ISSS provides little data on most of Yemen's SAM batteries and how many missiles Yemen actually has. Jane's Sentinel Security Assessment asserts that Yemen has 100 SAM SA-7, and 12 SAM SA-9 batteries, but it lists all other SAM designations as "not available."

The bulk of Yemen's systems are obsolete to obsolescent. Sensor and command control facilities are limited in modernization and technical effectiveness. Readiness and training are poor, as are most aspects of maintenance and sustainability. Electronic warfare capability is obsolete.

Figure 5: Yemeni Air Defense's Force Structure Trends, 1990-2006

	1990	**2000**	**2005**	**2006**
Manpower	**?**	**2,000**	**2,000**	**2,000**
Active	?	2,000	2,000	2,000
Reserve	?	0	0	0
Air Defense Missiles	**22**	**0**	**?**	**?**
SAM SA-2	10	0	0	0
SAM SA-3 Goa	6	?	?	?
SP SA-13 Gopher	0	0	?	?
SP SA-6 Gainful	5	?	?	?
SP SA-9 Gaskin	0	0	?	?
TOWED SA-2 Guideline	0	?	?	?
MANPAD SA-14 Gremlin	0	0	?	?
MANPAD SA-7 Grail	0	0	?	?

Tactical Missiles	**0**	**0**	**?**	**?**
AAM AA-2 Atoll	?	?	?	?
AIM-9 Sidewinder	0	?	?	?

Note: All, "?" refer to weapons that Yemen is believed to possess, though the exact numbers in their possession are unknown. In 1990, no figures are available regarding the manpower of the Yemeni Air Defense. At that time, Air Defense was maintained by the Yemeni Air Force, but one can extrapolate that it was near 2000.
Source: IISS, *Military Balance*, various editions including 1989-1990, 1999-2000, 2004-2005, 2005-2006.

The Yemeni Navy

The Yemeni Navy has an important potential role. In addition to its location near the Bab el Mandeb, Yemen has a 1,030 nautical mile coastline and major ports at Aden and Al Hudaydah. It has important islands near major shipping channels, including Socottra, Kamaran, and Perim.

In 2006, the Yemeni Navy had 1,700 men and was based on the Indian Ocean and Red Sea at Aden, Al-Katib, and Al-Hadaidah, with smaller bases at Al Mukalla and at the islands of Perim (Barim) and Socotra (Suqutra) Island. **Figure 6** shows that the Yemeni Navy has had little modernization over the last decade. Between 2000 and 2005/2006, the fleet shrank in size, and manpower dropped slightly from 1,800 to 1,700.

Surface Combat Forces

Two of the navy's missile patrol boats were Osa II class vessels in disrepair. One may be decommissioned and the other's SSM system may not function.[32] A 385-ton Tarantul 1 class missile patrol boat was operational, but seems to lack all of its four Styx SS-N-2C anti-ship missiles.

The navy has three 171-ton Huangfen class missile patrol boats that should be equipped with relatively effective C-801 ship-to-ship missiles. However, one (the Huangfen 126) was not equipped with missiles, and the Huangfen 128 ran ashore some years ago and was still damaged, though functional.

Smaller patrol boats include two to three 39-ton Zhuk class and 6 12-ton Baklan class. There are 2 Sana'a-class patrol boats, but only 1 is functioning.[33]

A 804-ton Natya minesweeper is believed to have limited operational status.[34] At least two of five 804-ton Yevgenya class mine-hunters are operational (though it is possible that all are functioning), but probably can only be used for mine laying purposes. Mine stocks seem to include relatively simple FSU and Chinese types.

The Navy is seeking to improve its capabilities through the purchase of 10 fast Austal patrol boats, which could help Yemen combat the smuggling of weapons in its harbors, as well as they entry of terrorist suspects into their country.[35] These ten Austral patrol boats are reported to have sailed for Yemen on February 9, 2005. They have a maximum speed of 29 knots, and carry two 12.7mm machine gun and a twin 25mm gun mounting.[36]

As part of a Yemeni security pact with the French regarding the Bab al-Mandeb strait, the French have agreed to provide supports systems for the 10 Austal built patrol boats, as well as Yemen's six Baklan patrol boats.[37]

Amphibious Forces

Yemen has a number of amphibious ships. These include one NS-722-class LSM, 3 Deba-class (NS-717) LCUs, and 2 Ondatra-class (Project 1176) LCUs. There is also a Ropucha-class LST is now a hulk and will be replaced by the NS-722 class.

The NS-722 is 1,383-ton vessel that can carry 5 T-72 tanks and 111 troops or marines. It is a modern Polish-built ship delivered in May 2002, and is capable of cadet training and disaster relief operations as well as amphibious missions.

The two Ondatras are 145 ton -ships capable of transport squad-level forces and a major armored vehicle. The three Deba-class ships are modern 221-ton ships capable of lifting 16 tons of cargo and 50 troops. Yemen has possessed two Toplivo tankers whose operational capacity is unknown.[38] *Jane's Fighting Ships* reports that they may be decommissioned, while the IISS *Military Balance* makes no mention of this.[39]

Overall Assessment

Yemen's naval readiness, training, and war-fighting capabilities are minimal. The navy is not capable of independent operations against a regional naval power like Iran, Oman, Saudi Arabia, or Egypt, but could carry out limited asymmetric attacks by mining the Strait of Bab al-Mandeb or shipping routes in the Red Sea. It could also harass shipping traffic.

The purchase of these fast patrol boats illustrates that Yemen is attempting to streamline its navy against threats such as piracy and smuggling, rather than against foreign conventional navies. Between 1990 and 2000, Yemen has added six Baklan fast patrol boats and has doubled the number of mine-warfare ships from three to six.

The changes are designed to help Yemen use what naval resources it has to defend its islands and the Bab al-Mandeb strait from unconventional threats. The Yemeni Navy will not be able to carry out the responsibilities inherent in Yemen's geo-strategic position along the Horn of Africa and near the Bab al-Mandeb. However, the Yemeni navy shares the burden of policing this area with the United States Navy, which is now in control of the 1,100 strong Combined Joint Task Force-Horn of Africa (CJTF-HOA) in Djibouti. Together, the two navies attempt to curtail the activities of smugglers and terrorists.[40] In addition to counterterrorism, CJTF-HOA also works closely with other Horn of Africa states on issues of economic development, attempting to stabilize the area.[41]

In addition to working with the United States navy, Yemen signed a security pact with France on February 27, 2005 to monitor the Bab al-Mandeb strait.[42] The agreement primarily includes the French training Yemeni units in coastal defense and mountain warfare, but it also provides for the sharing of intelligence and threat assessments to the strait.[43]

In any case, conventional naval warfare is scarcely Yemen's most urgent threat. Asymmetric attacks by groups such as al-Qaeda are immediate and have been at the center of Yemen's naval strategic planning. Following the attack on the USS Cole and the French oil tanker, Yemen's naval forces have worked closely with outside power projectors to improve its naval force structure to deal with this change in the nature of threat.

Yemen is establishing a small coastguard, but it will only be capable of light patrol duties.

Figure 5: Yemeni Navy's Force Structure Trends, 1990-2006

	1990	**2000**	**2005**	**2006**
Manpower	**1,500**	**1,800**	**1,700**	**1,700**
Active	1,500	1,800	1,700	1,700
Patrol and Coastal Combatants	**14**	**20**	**18**	**18**
Misc Boats and Crafts	**0**	**6**	**6**	**6**
PFI:	**8**	**8**	**5**	**5**
Sana'a	3	3	2	2*
Zhuk	5	5	3	3
PFM:	**6**	**6**	**7**	**8**
Huangfen	0	3	3	3
Huangfen with Sardine Tactical SSM	0	0	0	1
Osa II	6	0	2	2
Tarantu l	0	2*	2*	2*
Mine Warfare	**3**	**6**	**6**	**6**
MHC Yevgenya	3	5	5	5
MSO Natya	0	1	1	1
Amphibious LCT/LCU	**6**	**3**	**7**	**7**
LSM Polnochy	4	0	0	0
LST Ropucha	1	1	1	1
LCU PI NS-717	0	0	4	4
LCU Ondatra	2	2	2	2
Logistics and Support	**0**	**2**	**2**	**2**
Toplivo	0	2	2	2

Note: All question marks refer to weapons that Yemen is believed to possess, though the exact numbers in their possession are unknown; "*" means that one of these boats is inoperative.
Source: IISS, *Military Balance*, various editions including 1989-1990, 1999-2000, 2004-2005, 2005-2006.

Paramilitary, Security, and Intelligence Forces

Yemen has large internal security forces, an almost inevitable development in country with many internal divisions and tensions. The Ministry of the Interior has some 50,000 men and there are at least 20,000 tribal levies. These troops have seen a great deal of combat during the last several years, as they have clashed with militant insurgents repeatedly as well as dealt with political unrest and violence.

Main Security and Paramilitary Forces

These threats explain Yemen's need to maintain a security force that is almost two-thirds the size of its army. **Figure 7** shows a steady maintenance of 50,000 Ministry of Interior forces for the past six years, with 20,000 tribal levies (reserves) available if needed. There has, however, been a change in these forces over time. Since the mid 1990's, Yemen has come to rely on trained paramilitary forces instead of levies to maintain order, a sign that their internal security has become more regulated.

Yemen's internal security apparatus has several services. Reporting by *Jane's* indicates that they include the following elements:[44]

- **Central Security Force (CSF):** This the main paramilitary internal security force in Yemen. It is under the Ministry of Interior, and has an estimated strength of approximately 50,000. The CSF is equipped with medium and heavy machine guns as well as armored personal carriers.
- **Terrorism Combating Department (TCD):** This was established in March 2002. It has been reported that the TCD is under the auspices of the Yemeni Ministry of Interior, and has technical and financial help from the United States. The force, reportedly, is equipped with surveillance cameras, electronic intercept capabilities, and a central command center in Sanaa that links terrorist information records to Yemen's air and sea ports. Its total strength remains unknown.
- **Armed tribal levies:** As noted earlier, these levies total 20,000 from tribes that are loyal to the government. They are not as well trained, and are not equipped with any meaningful weapons. They act as reserves that can be called upon incase of political or civil insurrection. It is, however, unclear how useful such force can be in counterterrorism.
- **Coast Guard:** Yemen did not have a coast guard force. As part of their counterterrorism efforts, Yemen has announced that it was building a small coast guards force that will be under the command of the Ministry of Interior to guard its 1,491 miles of coastline. The fact that it is being built under the MoI highlights the focus of Yemen's counterterrorism planning, and the importance of its internal security apparatus.
- **Political Security Organization (PSO):** The main purpose of the PSO is to protect Yemen's political elites. It is used for counterintelligence, counter espionage, and also for gathering intelligence on threats against Yemen's government. Its total strength is unknown.

Yemen's internal security largely depends on domestic intelligence and counterintelligence services to deal with political strife and conduct counterterrorism operations. Most of the trained elements of these counterterrorism forces have been created since 2002. Both the counterterrorism forces and the new coast guards have been supported by outside powers such as the United States, France, and neighboring Saudi Arabia. Their force effectiveness is unknown, however, and it's unclear how well they would operate without foreign assistance.

The absence of a dedicated and well-equipped border guards is a key problem in in Yemen's internal security apparatus. Yemen's army has the responsibility of controlling Yemen's border, but Yemen's army is trained to deal with protecting Yemen against conventional armies crossing its borders from Saudi Arabia or Oman. This helps explain Saudi Arabia's concern about Yemen's border control, particularly against weapons smuggling and terrorist infiltration.

Figure 7: Yemeni Paramilitary's Force Structure Trends, 1990-2006

	1990	**2000**	**2005**	**2006**
Manpower	**75,000**	**70,000**	**70,000**	**70,000**
Active/Ministry of Interior Forces	25,000	50,000	50,000	50,000
Reserves/Tribal levies	50,000	20,000	20,000	20,000
Coast Guard (still being established)	0	0	0	?
PCI	**0**	**5**	**5**	**5**
French Interceptor (less100 tonnes)	0	5	5	5

Note: The number of forces listed for 1990 is the combined figure of Paramilitary troops for North and South Yemen. All question marks refer to weapons that Yemen is believed to possess, though the exact numbers in their possession are unknown.
Source: IISS, *Military Balance*, various editions including 1989-1990, 1999-2000, 2004-2005, 2005-2006.

Yemen's Struggle Against Terrorism

Yemen's most pressing threat is from terrorism organizations operating on its soil, and some estimates indicate Yemen has 5,000 non-state armed combatants in 2005.[45] This includes tribes that are not under the control of the Yemeni government, but it also includes terrorist organizations with large membership inside Yemen. Some of the more notable militant organizations that maintained a presence in Yemen include:[46]

- **Gama'a al-Islamiyya (IG)**: Its strength has been in decline since the late 1990's due to arrests by the Egyptian government (where they are primarily based) and a ceasefire that was signed with the Egyptian government in 1997. Most of its members, however, are believed to be Egyptian.

- **Yemen Islamic Jihad:** This group has close association with Egyptian Islamic Jihad. Its membership is believed to be Yemenis, Egyptians, Algerians, and Saudis. Its leadership is largely compromised with fighters from the Afghan war. Its leader, Tariq al-Fasdli, helped the current Yemeni government during the civil war. After the war, the failure of the Yemeni government to incorporate these fighters in the regular Yemeni army is seen as one of the reason that these fighters turned against the Yemeni government. Its total strength is unknown, but it is believed that the group enjoys support amongst the tribes in the south and even some political elite in the Yemeni government.

- **Aden-Abyan Islamic Army (AAIA):** Its strength is unknown, and its membership is largely Yemeni. This group is believed to have been established in 1996 as a splinter group from Al-Jihad, but it first came to prominence in December 1998 by kidnapping 16 Western tourists and killing four of them. It is also believed to be behind the attack against the French oil tanker, *Limburg* in October 2002. The Yemeni government has attempted to combat this group by closing some of its bases and pressuring its leadership. Its total strength in Yemen is unknown, but it is also believe to have international connection with extremist organizations such as al-Qaeda and British extremist cleric Abu Hamza al-Masri.

- **Al-Qaeda:** Yemen's most troublesome terrorist group, however, has remained al-Qaeda, even though their presence in Yemen has been reduced by post 9/11 countermeasures. As of February 2005, they were still believed to possess several thousand members worldwide, with potentially thousands of followers in Yemen of multiple nationalities. It has connections with local organizations, as noted earlier, including the

AAIA. It is believed to be behind the USS Cole bombing, and was involved in helping the AAIA in the bombing against the French oil tanker.

- **Liwa al-Tawhid (Banner of Unity):** This group is believed to be a splinter group, or a sub union between al-Qaeda and Al-Jihad. It first came to prominence after the assassination of security officials in December 2003. As is the case with most of these splinter groups, determining their actual size given their association is highly uncertain.

As this list reveals, Yemen's internal security is threatened by both the "usual suspects" and by Yemeni splinter groups that have association to transnational groups such as al-Qaeda. In addition, Yemen's counterterrorism efforts have escalated the tension caused by internal power struggles within Yemen's government and by the brief Yemeni civil war that began in May 1994 and ended the following July. The Yemeni government has been fighting militants since the bombing of the USS Cole in October of 2000, but these fighters have been a part of Yemen's history since the early 1980's.

Most of these groups have their origins—at least at the leadership level—to fighters in the Afghan war in the 1980s. In response to the Soviet invasion of Afghanistan, Yemen began sending fighters to Afghanistan. When the Soviets withdrew from Afghanistan in 1988, North Yemen welcomed many of them back. These fighters brought their militancy as well as their ties to groups such as al-Qaeda and Osama Bin Laden back to Yemen.[47]

In addition, Bin Laden has strong ties to some of tribes of Hadhramaut, a mountainous region of Yemen, where his father's family is believed to have come from. Using these ties, Bin Laden recruited Yemenis for his training camps, and is believed to have used the nation as an additional training site starting in 1993.[48] The operations in Yemen included using the Yemeni ports as sources of arms smuggling, an exercise that persists to this day.

The suicide bombing on the USS Cole on October 22, 2000 put pressure on the Yemeni government to crack down on the militants. The United States government began actively working with Yemen on counterterrorism in an official capacity. Efforts to combat these militants, however, dated back to 1997, when the government acknowledged that the groups posed a serious threat to the state's legitimacy.[49]

One of the most public results of the cooperation between the United States and Yemen was the elimination of six al-Qaeda members, who were killed by a predator drone while driving in Yemen on November 6, 2002. It has been reported that US forces were tipped off by Yemeni intelligence.[50] Military assistance between the United States and Yemen has also occurred in the exchange of military equipment and spare parts. Yemen received $1.9 million in Foreign Military Financing in 2003. This number increased by 685 percent in 2004 to an estimated $14.9 million.[51]

Internal counterterrorism efforts were further enhanced in early 2005, as the government began enforcing its policy on cracking down on potential terrorist organizations and hotbeds. This included the use of mass arrests, prosecutions that resulted in jail time, and additional heavy guards on various government buildings and embassies.[52]

There were some gaps in the efforts of the Yemeni paramilitary, as two of USS Cole suspects, Fahd al-Qasaa and Jamal al-Badawi escaped custody and had to be recaptured in April 2004.[53] Once recaptured, however, each was tried and convicted, Qasaa received 10 years, and Badawi's sentenced was reduced from death to 15 years. In addition to prosecuting terror suspects, in April

of 2005, the Yemeni government began threatening the underground radical schools with shutting them down. It is estimated that these radical schools have as many as 330,000 students.[54]

Pattern of Attacks

The threat from al–Qaeda to Yemen's internal stability is not over. While there have not been "spectacular" attacks on the scale of the one against the USS Cole, attacks against soft-targets by extremists groups (al-Qaeda included), however, continued to occur. The following timeline, based on information adapted from the United States National Memorial Institute for the Prevention of Terrorism (MIPT) Knowledge Base, shows major attacks in Yemen between 2001 and 2006:[55]

- **January 23, 2001:** In Aden, a Yemeni, Mohammed Yehia Ali Sattar, hijacked a Yemeni plane carrying US ambassador Barbara Bodine and ninety other people. Sattar wished to show support for Saddam Hussein by flying to Baghdad airport to protest Iraq's international isolation. He was armed with a gun and possibly a grenade. Sattar was subdued by the members of crew and hospitalized with self-inflicted injuries. There were no deaths and no injuries in the attack besides Sattar.

- **January 24, 2001:** In Sanaa, a bomb exploded in front of the house of Brig-Gen Staff Ahmad Shamlan, commander of the First Defense Brigade of the Presidential Guard. The bomb exploded when a guard opened the gate for the General's car. The attempt is the first to be reported against such a high-ranking security official in the defense brigades of the president.

- **February 12, 2001:** In Hijrat al-Dawagher, a convoy transporting trade minister Abdul al-Kumayem and Mahwit's provincial governor Abdul Hamid Numan came under attack by gun fire in an ambush by unknown tribesmen.

- **May 19, 2001:** In Radaa, a remote bomb exploded in a gun market killing 32 and wounding 50. No group claimed responsibility for the explosion, and while terrorism was never ruled out as the cause of the attack, it is also possible the explosion was caused by carelessly stored weapons.

- **September 20, 2001:** In Sanaa, an explosive device detonated near the Sheraton Hotel, where a group of FBI agents was staying. Four people were killed and an unknown number were injured.

- **October 14, 2001:** In Sanaa, a bomb detonated in a garbage bin near the residence of Yemeni President Salih. No one was killed or wounded. Police later arrested at least six people in connection with the attack.

- **March 3, 2002:** In Sanaa, a university student tossed two concussion grenades at a wall of the U.S. Embassy the day after Vice President Dick Cheney visited Yemen. There were no injuries.

- **October 6, 2002:** In Mina al Dubah, a Bulgarian was killed and twelve Bulgarians and Frenchmen were wounded in an attack on a French oil tanker, the "Limburg." The attack was a carried by a suicide bomber/bombers on a small boat, done in the same style as the USS Cole. The Aden Abyan Islamic Army (AAIA) claimed responsibility, though they admitted that their initial target was a US Navy vessel, and not the tanker.

- **December 28, 2002:** In Sanaa, Jarullah Omar, the second ranking official of the Yemeni Socialist Party, was killed as a result of gun shot wounds that he received while attending a conference for the opposition Yemeni reforms party.

- **May 14, 2003:** In Sanaa, a bomb exploded in a Yemeni court, injuring a judge and three others. The attack came four days after a different judge at the court sentenced suspected al-Qaeda militant Abed Abdul Razzah Kamel, 30, to death for killing three Americans who worked at a Christian-run hospital in Jibla.

- **December 4, 2003:** In Shabwa, the governor of the region, Ali Ahmad al Rasas, was wounded in an ambush and his brother, Rasas Ahmad, a top intelligence official, was killed by gunmen. The militant group Takfir wal Hijra, was blamed with the attack.
- **June 18, 2004:** In Sanna, Hussein Badreddin al-Houthi begins a rebellion bearing his name, and desiring greater autonomy for his tribe and region. His forces inflicted a total of 400 casualties, and almost captured the city before they were repelled by government forces.[56]
- **January 31, 2005:** In the Ma'rib region, armed tribesmen opened fire on Yemeni security forces, resulting in a one-day gun battle. Two soldiers and four attackers were killed, and 16 people were injured. No group claimed responsibility.
- **February 2, 2005:** In Amran two gunmen attacked Japanese funded cement factory, wounding two guards. No group claimed responsibility.
- **March 27-28, 2005:** In Nushur, assailants attacked a police patrol, killing between four and seven police officers. The attack was believed to be in retaliation for the killing of Sheikh al-Houthi by the army in late August of 2004 and the over 400 civilians who were killed during the fighting. No group claimed responsibility, although it was widely understood that the Faithful Youth Organization, part of the rebellion led by al-Houthi senior, was responsible.
- **April 3, 2005:** In Sa'dah Governorate, unknown assailants attacked the Sa'dah Security Commander, killing one bodyguard. No group claimed responsibility.
- **April 3, 2005:** In the Talh area, Sa'dah, gunmen fired on the secretary-general of the Sa'dah local council as he was driving, but failed to kill him. No group claimed responsibility.
- **April 3, 2005:** In Sanaa, an unidentified assailant lobbed a hand grenade out of the window of a passing car at the Central Customs Authority building, killing one civilian and wounding one other. No group claimed responsibility.
- **June 21, 2005:** In Sanaa, one assailant detonated a bomb outside the Sana'a University, wounding three civilians, destroying a car, and causing minor damage to the campus. No group claimed responsibility, although authorities have arrested one man, whom they believe was responsible.
- **June 22, 2005:** In Sanaa, assailants armed with automatic weapons fired on the car of a Yemeni Parliament official, killing the official, and wounding two other passengers. No group claimed responsibility, although the Deputy Governor of Al-Baydha Governorate, Abdullah Al-Qawsi, claimed responsibility for the murder.
- **January 17, 2006:** In Zumar, Yehya Mousa, the Yemeni Minister of Justice, was beaten by two masked men and shot in an assassination attempt. Mousa survived the attack, and the assailants are believed to be members of the al-Houthi rebellion.

What this time line shows is that before the attacks of "911," attacks on foreign diplomatic targets and the Yemeni government assets took place almost on a monthly basis. After 2002, Yemen began seeing major attacks on the government every six months, a noticeable decrease. Political unrests in 2004 and the downward turn of Yemen's economy in 2005 have also brought a higher spurt of violent attacks in Yemen than had been seen since 2001.

Political Unrest

Al-Qaeda and other extremists have not been Yemen's only internal security problem. President Ali Abdullah Salih began facing an internal rebellion led by Hussein Badreddin al-Houthi, a political insider who wanted increased autonomy for his tribe and for his region of Yemen. Al-Houthi disliked President Salih's connection to Washington, and opposed US involvement in

Iraq. On June 18, 2004, the rebellion assaulted government forces near Sanaa, and inflicted hundreds of casualties. They nearly took control of the city.[57]

The rebellion saw a change in leadership when Hussein Badreddin al-Houthi was killed in September 2004. Badreddin al-Houthi, father of the slain Hussein, took over the rebellion in the name of his son. Since that time, al-Houthi senior has attempted to broaden his coalition base, and has continued fighting.[58] Between March 27 and March 28, 2005, al-Houthi rebels engaged Yemeni troops in a gun battle that killed 400 civilians. In April 2005, the rebels and paramilitary fought again, as they fought paramilitary troops in an attempt to arrest al-Houthi senior. There were 250 casualties total.[59]

Groups which take hostages, kidnap, and hold people for ransom are another problem. The primary weapon of these groups, such as the Aben-Abyan Islamic Army (AAIA), is the kidnapping and ransoming of westerners. In 1998, the AAIA kidnapped 16 westerners, and in 2005, another group kidnapped 65-year-old German diplomat Juergen Chrobog and his wife, as well as 6 Italian tourists in January of 2006.[60] These groups also attempted bombings of Anglican Churches and western hotels.[61]

Such groups do not, however, confine themselves to such low-level operations. In October 2002, the AAIA attempted a suicide boat attack on the French oil tanker Limburg and killed a Bulgarian crewmember and wounding 12 others.[62] The government has repeatedly vowed to crack down on these abductions by arresting and prosecuting the individuals performing the abductions, but the kidnappings have continued despite repeated convictions of offenders.[63] Since this last incident, the AAIA has been relatively quiet, and since the execution of their leader, Zain al-Abidin al-Midhar in October of 1999, they have not been as distinguishable from other Islamic militants.[64]

Yemen's weak economy adds more pressure on internal security.[65] On July 22, 2005, Yemeni troops and tanks dispersed protesters who were angry over the doubling of fuel prices. The protests had lasted two days, and claimed 36 lives by the time they were dispersed.[66]

Yemen's Continuing Strategic Challenges

Yemen's primary security needs are internal, and are driven by its need for economic reform and social stability. As has been touched upon earlier, 45 percent of the population lives below the poverty line, and unemployment is at least 35 percent.[67] This high unemployment poses a serious risk in light of Yemen's demographic situation. Yemen's population is young—46.5 percent of the population is between ages 0-14, and as the population grows into adulthood, the lack of work and economic opportunities will make the population fertile ground to al-Qaeda recruitment campaigns and exploitation.

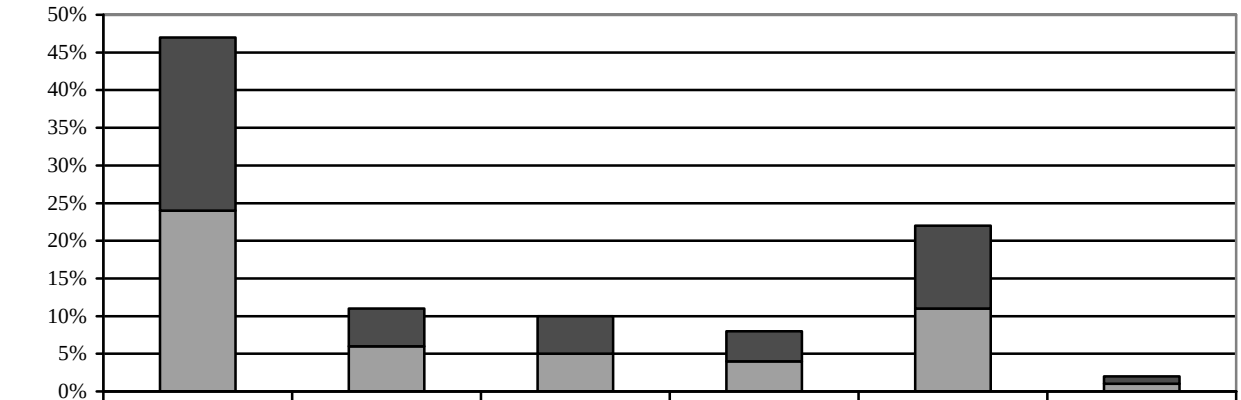
Socioeconomic Challenges

Yemen is an impoverished population nation with a young society. The Yemeni economy can scarcely meet its current employment requirement, and if it its economy has not grown sufficiently to employ its youth as they come of age, there will be a demographic/socio-economic "time-bomb."[68]

Figure 8 shows the extreme disproportionate nature of Yemen's demographic distribution. Nearly half the population, 47 percent, is between the ages of 0-14. No other groups come close

to this percentage. Even the widest category of 30-64 years of age totals only 22 percent. When these young people enter into the workforce in the next decade, the current Yemeni economy will not be able to provide them with work, and may become fertile recruiting ground for al-Qaeda and other militant groups.

Figure 8: Yemen's Demographic Distribution, 2006



	0-14	15-19	20-24	25-29	30-64	65+
Female	23%	5%	5%	4%	11%	1%
Male	24%	6%	5%	4%	11%	1%
Total	47%	11%	10%	8%	22%	2%

Source: IISS, *Military Balance, 2005-2006.*

Yemen's economy also may face decreases in oil revenues due to the depletion of its oil reserves and production capacity. While Yemen is not a major producer compared to its neighbors, oil revenues play an important part in its economy. The depletion of Yemen's oil reserves poses a serious threat to Yemen's financial security, as oil income represent 60-70 percent of the Yemeni government's total revenue.[69]

Rises in oil prices have helped offset Yemen's oil production plans. Oil revenues were $1.95 billion in 1997, $1.37 billion in 1998, $2.17 billion in 1999, $3.6 billion in 2000, $2.93 billion in 2001, $3.21 billion in 2002, $3.51 billion in 2003, $4.35 billion in 2004, and $5.92 billion in 2005, Yemen's oil production has been falling since 2002.[70] In 2005, Yemen averaged 0.387 MMBD, approximately 85 percent of what their production level was in 2002.[71] In addition, a 2002 World Bank Survey estimated that by 2008 Yemen's production would fall to less than half of 2001 level.[72] Yemen's oil revenues have risen this past year because of rising global oil demand and oil prices, but as Yemen's current oil reserves and production decline, prices will not be able to outpace the loss of production, and Yemen's economics woes could become a crisis.[73]

Structural economic reform is difficult and governmental corruption plagues Yemen's efforts to receive aid and attract foreign direct investment. Foreign investors have been reluctant to give the large amounts of aid or invest in Yemen's economy due to the lack of transparency and the weakness of its judicial system.[74] These risks, however, are further compounded by Yemen's internal insecurity. Foreign companies, including oil and gas multinational, fear for their workers and investments from attack by militant groups, and the overall political uncertainty in Yemen.

Yemen's judicial system is in need of steady strengthening as well. Yemen is a decentralized state with lawless areas that exist beyond the control of the paramilitary. These regions often use local tribal laws and customs to punish offenders, rather than turn them over to national courts for prosecution.[75] In addition, most of Yemen's rural areas are impoverished. Yemen must continue to aid these rural areas by targeting foreign aid towards their economic development, which will in time strengthen the Republic's influence over them.[76]

Yemen's economy is inefficient, plagued by corruption, experiences slow growth, and has high double-digit inflation and unemployment. The World Bank proposed structural economic reforms on four levels for Yemen. It proposes better economic management, improved structural policies, greater social inclusion, and better public sector management. The economic management refers to monetary policies that can combat inflation and reduce budget deficits.[77]

It also recommends deregulating parts of Yemen's economy to spark growth. The most important recommendation is the proposed reforms on public sector management, specifically corruption and budgetary transparency.[78] It is estimated that Yemen averages $9 million a year in corruption, and this remains one of the largest issues that aid organizations have in funding Yemen's programs.[79] In addition, despite the fact that Yemen desperately needs to combat corruption, some scholars have noted very little desire within the Yemeni government to begin the reforms.[80] Yemen's economy is likely to continue to slide unless it gets serious about structural economic change, and thus far, the government has not taken steps to address all the World Bank's recommendations.

As noted earlier, the Yemeni economy is currently heavily dependent on oil. According to the World Bank, Yemen has the potential to mildly diversify its economy. Yemen has shown economic growth in sectors such as fisheries, tourism, and gasoline exports, and the World Bank believes that these areas can be developed further to diversify Yemen's economy. The World Bank does report, however, that continued long-term growth will continue to be a challenge for Yemen, as it has no industry that can match its oil revenues.[81]

The Bab el-Mandeb Strait

The Bab el-Mandeb is a strategic issue because of its importance as a chokepoint affecting Gulf oil shipments through the Red Sea and shipping through the Suez Canal and Red Sea. It is situated between Eritrea, Djibouti and Yemen at the southern end of the Red Sea at the entrance to the Gulf of Aden and the Arabian Sea. It is the preferred route for tankers and shipping moving from the Gulf to Europe and the United States. The EIA estimates that some 3.2-3.3 million barrels per day (bbl/d) of oil flowed moved through the Bab el-Mandeb in 2003, and recent peaks have brought this total to substantially higher levels.[82]

Any major disruption or closure of the Bab el-Mandeb could prevent tankers carrying Gulf oil from using the Red Sea and Suez Canal/Sumed Pipeline complex, and to go around the southern tip of Africa (the Cape of Good Hope), greatly increasing transit time and cost, limiting the tanker capacity now available on world markets. The one alternative is the East-West oil pipeline, which traverses Saudi Arabia and has a capacity of about 4.8 million barrels a day.

There have not been recent threats to the Bab el-Mandeb or tanker traffic in the Red Sea. Libya did, however, scatter mines in the shipping lanes in the Red Sea in the past, during a period of

peak tension with Egypt. While there were reports that South Yemen might try to close the Bab el-Mendab in the 1970s and early 1980s, these reports were largely speculation.

The one tangible set of clashes that affected the security of shipping in the region occurred in December 1995 and August 1996. Yemen and Eritrea disputed control over the Hanish Islands, which are located just north of the Bab el-Mandeb. The issue was, however, resolved by diplomatic means. The two countries agreed to put their case before an international court of arbitration (Permanent Court of Arbitration-PCA) in October 1996. In October 1998, the PCA ruled that the Hanish Islands are subject to the territorial sovereignty of Yemen. In December of 1999, the PCA issued its ruling on the maritime boundary. Both countries have since accepted these decisions.

Relations with Neighboring States

Relations with Yemen's neighbors, including Oman, the UAE, and Saudi Arabia have improved over the past several years, and will likely continue to do so. As is mentioned earlier, Yemen has been displeased with the Saudi Arabia's attempts to build a wall along parts of the Yemeni border where smuggling is prominent, but this dispute has been handled diplomatically and has not strained relations.

Yemen's borders and harbors are porous and scarcely guarded. This has allowed militants fleeing from the United States invasion of Afghanistan, as well as weapons, drug, and explosives smugglers to move from Yemen into neighboring countries.[83] Militants are also able to move into Oman and Saudi Arabia from Yemen, which makes an unguarded Yemen a potential threat to their internal security. The border treaty signed with Saudi Arabia in 2002 resolved the exact location of the border in contested areas, but the follow through by Yemen to police its agreed borders has not been forth coming. Yemen will face increased pressure from its neighbors to control its borders, and if it cannot, then the Saudis will likely continue building walls around the Yemeni border to restrict traffic between the two countries.[84]

The dominating issue for Yemen's neighbors is Yemen's internal security problems. Militants easily can slip into Saudi Arabia and Oman from Yemen, and aside from creating a stronger border guard; the best solution for curbing Yemen's domestic troubles is to aid the Yemeni government's security efforts. This will entail continued peaceful negotiations over issues the preservation of overall goodwill. By keeping hostilities to a minimum, Saudi Arabia and Oman will allow Yemen to focus its military budget on internal security rather than conventional forces designed to face external threats.

Ongoing Internal Instability

While Yemen's external threats are minimal, its internal problems are serious and may increase over the coming years. Despite the countermeasures taken by Yemen since the year 2000, the violence caused by Yemen's various factions has not stopped. President Salih is often described is a moderator whose power depends on his ability not to alienate too many groups at once.[85]

As noted earlier, Yemen had a previous history of allowing militants to return from foreign conflicts. Since the USS Cole bombing and 9/11, times have changed, and it is likely that President Salih's security forces will attempt to apprehend many of the militants when they return from fighting. With Yemen's unguarded borders, however, there will be large portions of militants that slip through undetected. These militants, having gained experience fighting

American forces, can and will destabilize Yemen even further. Unless they are occupied in Iraq for a long period of time, it will be difficult for Yemen's security forces to face even more opponents than already exist.

Al-Qaeda remains strong in Yemen, with a membership that could be in the thousands. In addition, smaller groups also continue to play a key role in Yemen's internal instability. The kidnapping of westerners remains a problem, and al-Houthi senior has not been captured, making his rebellion a continued threat.

The invasion of Iraq has stirred more of Yemen's militants into action, making the job of Yemen's security forces more difficult. In addition, some militants have gone to Iraq to fight American forces. In whatever way the war in Iraq ends, these militants will return to Yemen after its conclusion, and they could destabilize the state even further.

In order to deal with these challenges, Yemen's internal security forces need to adapt their strategy to deal with these threats. In addition, Yemen's internal economic, social, and political dynamics are likely to adapt overtime to lessen the level of poverty in its rural areas and limit al-Qaeda's ability at recruiting, particularly amongst its young male population.

Internal stability will likely to continue to be Yemen's greatest challenge. Yemen will likely continue to increase its military budget to improve its naval patrolling abilities and to maintain its paramilitary. It is likely that Yemen will continue to need US and French aid in guarding the Horn of Africa. It is even possible that if Yemen's does not make a strong effort to eliminate corruption and diversify its economy, then foreign powers may have to take a larger role in ridding Yemen of hostile forces. The following is a summary or checklist of things Yemen will face in the upcoming years:

- **Demographic Time Bomb:** Yemen's population is improvised with a young society. Out of its population, 45% live below the poverty line, and 46.5% of its people are age 14 and below.[86] Yemen's economy has not grown sufficiently to employ its youth as they come of age, there will be a demographic/socioeconomic crisis. With 35% unemployment, Yemen's young and growing population have little hope of finding steady work. While unemployed, they become prey to militant groups looking for new members.[87] The high unemployment rate will also likely lead to more protests like the ones that occurred over the loss of subsidies in July of 2005.[88]

- **Terrorism and counterterrorism:** As noted earlier, Yemen faces a threat from terrorists groups of varying size, strength, and organization. Most of them have proven capable of violence on some scale, and they remain a burden for the security forces.[89] Al-Qaeda remains the largest terrorist group in Yemen, as its membership is estimated in the thousands. It has the greatest organizational capability of any militant group, and despite Yemeni anti-terrorism efforts, al-Qaeda is still capable of large-scale attacks.[90] Among key concerns will remain protecting foreign ships from maritime attacks like those that occurred against the Cole or Limburg.[91] Yemeni forces will also continue to be concerned with militant groups kidnapping and ransoming westerners.

- **Militants in Iraq:** Many of the militant groups that reside within Yemen, including al-Qaeda and the al-Houthi followers, oppose Yemeni cooperation with the United States and the occupation of Iraq.[92] These militants will return to Yemen, and with Yemen's unguarded borders, many can slip through undetected. These militants, having gained experience fighting American and Iraqi forces, can destabilize Yemen.

- **The al-Houthi Rebellion:** The rebellion led by Baddredin al-Houthi has not been put down. The rebels have carried out attacks as recently as January 17, 2006, and al-Houthi will likely remain a strategic challenge for the Yemeni government until he is either appeased or arrested. The rebellion has proven itself capable of launching large-scale assaults when it engaged security forces in June 2004 and in March 2005. It has also shown that it can carry out small-scale attacks like the beating of Justice Minister Yehya Mousa

in January 2006.[93] Yemen will be pressed to resolve the al-Houthi Rebellion, as both the rebels and militant groups stretch the security forces.

- **Economic Reforms:** Yemen's economy is inefficient, plagued by corruption, experiences slow growth, and has high double-digit inflation and unemployment. The World Bank recommends that Yemen creates new monetary policies that can combat inflation and shrink deficits. They also suggest that Yemen should deregulate parts of its economy to spark growth. The World Bank also acknowledges that Yemen will need to add greater transparency to its budgetary process in order to curb inflation.[94] Yemen averages $9 million a year in corruption, and this gives pause to foreign investors who don't to see their investments squandered.[95] The Yemeni government has not taken serious steps to follow the World Banks proposed reforms. Without economic reform, it will be difficult for Yemen's economy to grow or attract foreign investors.

- **Border Security:** Yemen has extremely limited border checks and patrols. Smugglers and militants exploit this deficiency, and some of Yemen's neighbors like Saudi Arabia fear that militants may migrate from Yemen and take refuge in their country.[96] The problem of Yemen's inability to control its land borders is compounded by the challenge of controlling its harbors. Several al-Qaeda suspects have fled Pakistan and Afghanistan and entered into the Arabia Peninsula through Yemeni ports.[97] Yemen will continue to face pressure to establish firmer control over who enters their country. In the end, however, Yemen's resources are so limited that neighboring countries and the US may have to guard the harbors and borders themselves.

Balancing Internal Security and Conventional Military Needs

Military spending is a serious internal security issue. As noted earlier, Yemen's military budget has doubled over the past five years, rising from $482 million dollars in 2001 to $809 million US dollars in 2003 to 942 million US dollars in 2005.[98] Most of this increase is believed to have gone toward Yemen's Air-Force (i.e. the purchase of the MiGs), to its Navy and the upgrading/purchasing of new patrol boats, and to Yemen's security forces, who deal with Yemen's numerous internal militant groups.

The main purpose of Yemen's conventional military forces now centers around protecting its harbors from elicit activities and attacks, as well as using a modern Air Force to put down rebellions like those led by Baddredin al-Houthi. However, Yemen desperately needs money for economic and social reform and funding effective security forces limits Yemen's ability to expand its conventional forces, which are out of date and far weaker than its neighbors.

In addition to maintaining a streamlined and relevant conventional military, Yemen must also maintain and possibly expand its 70,000-man internal security force. Yemen has chosen to meet these demands by doubling its military spending between the years 2001 and 2005 (from $482 million to $942 million).[99] This money has been used to purchase MiG-29 fighters, as well as 10 new Austal class fast patrol boats.

Yemen has not expanded its security forces personnel in recent years, but as terrorist attacks have increased in 2005, and with the threat of insurgents returning from Iraq, Yemen may have to decide to halt further purchases of aircraft or boats for increased paramilitary equipment.[100] It is equally important to note that while counterterrorism forces such as the Terrorism Combating Department (TCD) have been created, their effectiveness remain uncertain. Yemen's internal security forces have been trained to put down political uprising that often relies on the use of too much forces and informal intelligence sources.

Yemen must find a way to maintain (or possibly increase) its internal security force without abandoning needed upgrades to its Air Force and Navy. Not neglecting Yemen's need for patrol

craft is especially critical because it is one of Yemen's only ways to counter the smuggling and maritime terrorist attacks that take place around the harbors.

Given Yemen's strategic location, maritime security is of paramount importance to both Yemen's security but to international maritime trade. Control of the seas is something Yemen is attempting to achieve. The purchase of the 10 fast Austal patrol boats will help Yemen arrest terror suspects who travel by boat to Saudi Arabia or up the Gulf Coast to Iraq.[101]

It is important to note, however, that the task of policing the geostrategic Horn of Africa and the Bab al-Mandeb strait is beyond the capabilities of the Yemeni Navy. It would require Yemen's cooperation with neighboring states such as Saudi Arabia as well as outside power projectors in the region such as the United States, France, and Britain. This is has started by signing a security pact between France and Yemen. The United States Navy also maintains a permanent presence in Djibouti.

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