



THE ISRAELI AND SYRIAN CONVENTIONAL MILITARY BALANCE

An Overview

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Please note that this document is a working draft and will be revised regularly. To comment, or to provide suggestions and corrections, please email the author at acordesman@gmail.com.

A Snapshot of Total Forces

There are significant uncertainties in the force counts of Israeli and Syrian forces available from unclassified sources. Any assessment of the Israel-Syrian military balance must also address the fact that strength measured in force numbers can be very different from strength measured in terms of force quality. Force size has only limited meaning as a measure of military capability or merit, unless it can be related to force quality. Leadership, the ability to conduct joint and combined operations, morale, and the ability to sustain complex cycles of rapid maneuver warfare are just a few of the aspects of force quality that can overcome superiority in force quantity.

It is possible, however, to quantify some key measures of the balance.

- **Figure 1** compares *operational* Israeli and Syrian forces, and Israel's quantitative lead, which is matched by an even greater qualitative lead. This comparison does much to explain why Syria is deterred from military adventures, rather than portraying what might happen in a war between Israel and Syria.
- The rate and size of arms transfers illustrated in **Figure 2** provide a key measure of each country's ability to modernize its forces. While Syria has made major orders in the 2000-2007 period, Israel can take advantage of the massive lead in arms imports and military technology that it has now sustained for nearly two decades, and these figures understate Israel's advantage as Israel has a vastly superior defense industry.

Moreover, Israel not only leads in actual deliveries, but in new orders -- which normally take between three years to a decade to deliver. This more than 10:1 lead in new agreements is particularly important because so many advances have taken place in precision guided munitions, munitions lethality, sensor systems, and the "netcentric" integration of battle management, intelligence, targeting, tracking, and communications systems during the years involved. Syria has fallen far behind in force quality.

Comparative Manpower Quantity and Quality

Total manpower is an uncertain measure of force strength, and it is a particularly poor measure when countries have such different force structures and set such different standards for manpower quality and training. Once again, however, some broad trends are clear.

- The data in **Figures 3** and **4** provide a rough measure of total force strength, and show the trends in the forces concerned. Israel's active manpower has not changed radically over time, but has fluctuated according to fiscal and security pressures. The data also show just how dependent Israel is on reserve versus active manpower. Israel has a small active force, but it has now halted a recent trend toward force cuts and is rebuilding the training and readiness of both its active manpower and reserves. If its high-quality reserves are added to its total actives, its force strength is far more competitive with its Arab neighbors.
- Syria maintained extremely high manpower levels after its 1982 war with Israel, but cut back in the late 1990s, partly because of their cost and partly because it could not properly equip, train, and support such forces.

Once again, however, numbers tell only part of the story. Human factors are at least as important as manpower numbers. Training, experience, and personnel management and development are critical "intangibles" that are hard to compare, virtually impossible to quantify, and which again can differ radically between countries and units. Israel has set much higher training standards than Syria, although it did reduce many aspects of its training activity between 2003 and 2005. The Israeli-Hezbollah War of 2006 made the Israeli Defense Force (IDF) aware of the need to rebuild its manpower quality as soon as possible, to carry out large-scale exercises of its conscripts and reserves, and to expand and improve the training of its experienced, combat-ready cadres.

There is a serious gap in manpower quality between Israel and Syria that is compounded by similar differences in the quality of realistic training for war. Israel has resumed demanding unit and exercise training at the field (FTX) and command post (CPX) level. Syrian FTX and CPX exercises are limited and unrealistic. Lebanon and the Palestinians have little experience, although Lebanon has made a few attempts at such efforts.

Similar disparities exist in the key elements of military organization, systems, and training that underpin what some experts have called the "revolution in military affairs." Israel is the only country that has made major progress in developing a modern mix of "jointness" among its military services; integration or netting of its command, sensor, communications, information and intelligence systems; and integrated or "combined operations" within its individual services.

These differences in the quality of each country's full-time active manpower are compounded by even more serious quality gaps in the case of most reserve forces. Israel does have modern and relatively well-trained reserves, many of which have had extensive practical experience in asymmetric warfare since 2000. In general, Syria's reserve military forces are little more than "paper" forces with no real refresher or modern training, poor equipment and readiness support, and little or no experience in mobility and sustainability. These forces are often given low-grade or failed officers and NCOs. They do little more than pointlessly consume military resources that would be better spent on active forces.

Syria's potential allies or proxies also lack the kind of effective conventional war-fighting capability necessary to defeat the IDF, although they can conduct effective asymmetric warfare. Hezbollah demonstrated the limits of its war-fighting capabilities in 2006, as well as some of its strengths. It can play a limited, largely defensive role in conventional warfare and wage spoiler attacks and wars of defensive attrition, but is not a serious threat to Israel's ability to maneuver, defend its territory, or exercise air and missile supremacy.

Jordan is the only Arab state that has created a modern corps of NCOs and that gives its junior officers significant initiative, promotes largely on the basis of merit, and limits the impact of nepotism and favoritism. Jordan faces serious financial constraints on both its force size and rates of modernization, however, and has concentrated on building up elite Special Forces, modernizing its air forces, and maintaining a deliberately defensive land posture for armored warfare.

Egypt, Saudi Arabia, and a number of other Arab states are making progress in improving manpower quality, but most Arab forces lack recent combat experience and face political

and cultural problems that are compounded by swollen and inflexible military bureaucracies and a garrison mentality. Syria compounded these problems with corruption, nepotism, and an occupation of Lebanon that further politicized and corrupted its forces. Syrian forces still have very real pockets of excellence, but they exist in spite of – not because of – Syria's overall approach to manpower quality.

Armor and Antitank Weapons

The importance of qualitative differences is striking in every aspect of the Israeli-Syrian balance, but it is particularly important in heavy armor, combat aircraft, surface-to-air missiles, and suppression of enemy air defense (SEAD) capabilities. **Figures 5 to 8** show the trend in Israeli and Syrian armor. They show both forces are "tank heavy" and place a major emphasis on heavy armor – partly because the outcome of past wars has been so heavily shaped by armored maneuver warfare. These figures also show, however, that the mix of combined arms within each army is strikingly different.

- **Figure 5** compares the armored forces of each nation. It shows that Israel has emphasized main battle tanks and armored personnel carriers (APCs) – many of which it has armed with light weapons. Syria has supported its tanks with large numbers of other armored fighting vehicles (OAFVs) from the Soviet Bloc, but has much less overall armored mobility and far fewer armored personnel carriers. Syria's forces seem to be deliberately tank heavy in an effort to provide enough tank numbers to try to compensate for the IDF's superior tactics, training, leadership, and equipment.
- **Figure 6** shows that Israel has a distinct lead in tank quality. The export versions of the T-72s in Syria have competent armor and drive trains, but poor ergonomics and inferior fire-control, targeting, and night-vision systems. The armor, night-fighting and long-range engagement capabilities of export versions of the T-72 proved to be significantly more limited than many unclassified estimates had predicted.
- **Figures 7 and 8** show the relative strength and quality of Israeli and Syrian other armored vehicles, including armored infantry fighting vehicles (AIFVs) and APCs. **Figure 7** shows that Israel has a major lead in sheer numbers of all types of other armored vehicles, but the totals shown include 180 obsolete M-2 half-tracks and some 3,386 M-3 half-tracks, and a large portion of these vehicles are inoperable and in storage. These are open, World War II vintage armored vehicles that are extremely vulnerable and make up more than a third of the more than 10,000 Israeli OAFVs shown for 2008
- **Figure 8** shows the relative strength of each country in combat-capable armored fighting vehicles, and it is clear that Syria has a major quantitative lead. However, many of these Syrian systems are worn and obsolete or obsolescent. While Syria's Ramtas, BMPs, and YPR-765s are exceptions, they are lightly armored by modern standards. They are also less able to engage in armored maneuver warfare except in the support role or in defensive positions where those equipped with modern anti-tank-guided weapons can be far more effective. Almost all, however, can play an important role in bringing infantry and weapons squads into the

forward area and provide fire support. This “battlefield taxi” role can be critical in ensuring that tanks have suitable combined arms support in combat.

One key point about these figures is that they show total numbers before combat. Armor, artillery, and aircraft numbers in combat depend heavily on support, maintenance, and repair capabilities. Israel retains a major lead in battlefield recovery and repair, overall maintenance, readiness, and armored support vehicle capability. It takes only days of maneuver, or minutes of intensive combat for the ability to recover major weapons and make rapid repairs to be at least as critical as the initial force ratios of weapons committed to combat.

Both sides have built up major stocks of antiarmor weapons, although anything like an accurate inventory of current holdings, of historical trend line analysis is impossible without access to classified information. Israel has significant numbers of antitank guided missiles (ATGMs) and other antitank weapons, and it is steadily improving its ATGM and antiarmor submunition technology. Syria has exceptionally large numbers of ATGMs and has focused on importing the latest weapons from Russia in recent years. Syria has done so because Israel has forced it to react defensively against Israeli tank attacks. Many of the ATGMs held by all of the countries that make up the frontline states in the Arab-Israeli balance are now mounted on APCs and AIFVs, but each country has a different force mix.

Israel has, however, developed significant uparmoring programs for their OAFVs. It is important to note that Israel, like the United States in Iraq, has learned the hard way that irregular forces such as Hezbollah and the Palestinians have learned how to carry out sophisticated ambushes with such light antiarmored weapons as rocket-propelled grenades (RPGs) and improvised explosive devices (IEDs) and that such attacks can be effective in urban warfare against exposed patrols.

Artillery Weapons

As might be expected from armies that have fought several major wars of maneuver, Israel and Syria have large numbers of self-propelled artillery weapons – although the ratios differ and there are major differences in equipment quality. All of the Arab-Israeli armies also retain large numbers of towed weapons, although Syria has a very large pool of such weapons compared to its neighbors. This reflects a long-standing Syrian emphasis on artillery, growing out of its past dependence on French doctrine from the 1950s and 1960s, and Soviet doctrine thereafter. However, it also reflects Syria's heavy dependence on mass fires and the use of towed artillery in defensive positions.

- **Figure 9** shows the overall mix of artillery weapons in each country.
- **Figure 10** highlights relative strength in self-propelled weapons and reflects the Israeli emphasis on self-propelled weapons over towed weapons.
- Israeli and Syrian artillery systems are broken down by caliber in **Figure 11**. In theory, the weapons in Syrian hands should have a range advantage over those in Israeli forces. In practice, Syria has badly lagged behind Israel in long range targeting capability, the ability to shift and rapidly retarget fires, other artillery battlement systems, the use of counterbattery and other radars, the use of

unmanned aerial vehicles (UAVs) as targeting and reconnaissance systems, and mobile ammunition support.

- **Figure 12** shows that Israel and Syria also have significant numbers of multiple rocket launchers (MRLs) and surface-to-surface missiles (SSMs). The numbers of MRLs is misleading, however, since Israel has developed a family of highly sophisticated rockets for its MRLs, and Syria and Egypt are more dependent on conventional Soviet-Bloc rounds with limited accuracy and lethality. Syria is, however, acquiring steadily larger numbers of long-range artillery rockets with improved accuracy and some with what seem to be guided warheads. Both Israel and Syria have rockets with advanced submunitions, including antiarmor systems. These systems could significantly change and increase the role of artillery in a future war, but no empirical combat data yet exist on each side's maneuver, targeting, and supply/sustainability capability to use such weapons effectively or what their future tactical impact would be.

These figures do not, however, include the growing holdings of non-state actors. Irregular forces such as Hezbollah have large numbers of rockets that can be fired from single round launchers or improvised vehicle launchers, and various Palestinian groups have started manufacturing crude single round rockets. All of the countries involved have significant numbers of mortars, many mounted in armored vehicles, for close combat.

The figures for surface-to-surface missile launchers almost certainly sharply understate Israeli and Syrian holdings. These weapons generally have operational conventional warheads, but lack the accuracy and lethality to be useful as much more than terror weapons. Israel has had conventional cluster warheads, but it is unclear that these are still in service. It is widely assumed to have tactical nuclear warheads with variable yields. Syria is believed to have mustard and nerve gas warheads, probably including persistent nerve agents, and chemical cluster munitions. It may have experimental biological devices.

Two additional points need to be made about interpreting the data in **Figures 8 to 12**. Israel is the only country to have developed, deployed, and realistically exercised "precision artillery" capabilities in terms of training and doctrine for rapid maneuver, the ability to target and register the effect of individual fires in near real or real time, and the ability to shift fires to strike at a mix of individual targets.

Syria lacks the equipment needed to support its massive artillery holdings effectively, and does a poor job of conducting meaningful training for an artillery doctrine that is weak on precision fire, rapid maneuver, and rapid changes in well-targeted fire. Syria also lags in computerized fire management, communications practices, and artillery radars.

Israel's advantages in precision artillery include the ability to acquire targets and observe fire in real time using unmanned aerial vehicles and long-range ground based and other aerial sensors. Israel also has a major advantage in processing such data, joint air-land targeting and operations, and battle damage analysis. Syria has a number of long-range weapons, but poor long-range targeting and battle damage assessment capability – unless it can take advantage of covert observers using cell phones or similar communications devices.

As is the case with tanks, Israel retains a critical lead in battlefield recovery and repair capability, and overall maintenance, readiness, and armored support vehicle capability. This is a critical capability in combat.

Air Force Aircraft, Weapons, and Technology

Syria maintains much larger numbers of combat aircraft than it can properly support – in effect, disarming by over-arming. This problem also affects Egypt. As is the case with the Egyptian Army, Egypt maintains a substantial pool of low-grade and obsolete weapons platforms that do not serve any apparent military purpose. If one looks only at the total aircraft numbers, Syrian forces would have a lead in aircraft. This is driven in part by the large number of obsolete and obsolescent aircraft in the Syrian forces. Syria is also trying to train for, maintain, arm, and sustain far too many different types of aircraft. This puts a major – and costly – burden on the air force and dilutes manpower quality, and does so with little, if any, actual benefit.

- **Figure 13** shows the trend in total numbers of combat aircraft or combat air strength. Oddly enough, it is the downward trend in Israeli numbers that is the best indication of effectiveness. The downward trend is driven by the fact that Israel has done the best job of emphasizing overall force quality over numbers and of funding full mission capability with all of the necessary munitions, force enablers, and sustainability.
- **Figure 14** shows the number of high-quality aircraft on each side. While the number of total combat aircraft is not irrelevant, in war-fighting terms, high quality air assets are the ones that really count. **Figure 14** shows that Israel maintains major air superiority over Syria, whose MiG-29s and Su-24s now have obsolescent avionics and cannot compete with Israeli types on a one-on-one basis. Given past rates of delivery and modernization, this Israeli lead will also grow in the near term. Israel has much better real-world access to aircraft improvement programs, and next-generation aircraft such as the F-22, than Syria has to either aircraft upgrades or any next-generation system with “stealth,” supercruise, or advanced avionics.
- **Figure 15** provides a rough picture of the airborne command and control, reconnaissance, electronic warfare, and intelligence “enabling” aircraft in each force. It shows that Israel has a major lead in both the quantity and quality of the air battle management, intelligence, warning, and targeting systems critical to making use of modern airpower and precision weapons.

Israel’s advantage is greatly enhanced by superior tactics, overall training, and use of other technologies such as unmanned aerial vehicles (UAVs). Israel has its own intelligence satellites for surveillance and targeting purposes, and much more advanced “netting” of its communications, battle management, and intelligence systems, plus world-class electronic intelligence and electronic warfare capabilities. Despite operating four reconnaissance squadrons with 40 MiG-21 H/J *Fishbed*, Syria has little overall meaningful capability in this area.

- **Figure 16** shows the total strength each air force and army has in rotary-wing combat aircraft, less naval assets. Israel has truly advanced attack helicopters such

as the AH-64 Apache, and it is also now in the process of taking delivery on 18 AH-64Ds, with extremely advanced avionics and “fire and forget” capabilities that do not require the aircraft to wait and track the missile to its target. Syrian attack helicopter units are elite units, but Syria has not been able to modernize its rotary-wing combat forces, and its training and tactics have not been fully updated over the last decade.

It is more difficult to make comparisons of air-to-air and air-to-ground munitions, particularly since Israel can modify imports and has a wide range of its own systems, some of which are classified. It is clear, however, that Israel has extensive stocks of state of the art systems and ready access to U.S. weapons and technology.

Syria’s stocks are often badly dated, and Syria faces particularly serious limits in terms of comparative precision strike, and long-range air-to-air missiles that have high terminal energy of maneuver and effective counter-countermeasures. The IAF also has a significant advantage in the ability to add specialized external fuel tanks, add on pads with special electronic warfare and precision strike capability, modify and develop external jammers, and adapt wing loading to new munitions needs.

Comparative Land-Based Air Defense Forces

Israel and Syria both have large numbers of surface-to-air missiles (SAMs), but only the Israeli Air Force has truly modern medium and long-range systems, radars, and command and control facilities.

- **Figure 17** shows the strength of each country’s land-based air defenses. Some countries integrate their major air defenses into their air forces, and some have a dedicated air defense force. Most countries also deploy a separate mix of short-range air defenses (SHORADs) in their land forces.

Israel has access to the latest U.S. weapons and technologies and can develop advanced weapons systems of its own. Moreover, Israel is able to combine surface-to-air missile defenses with antimissile defenses in a layered defense system and is examining options to add defenses against short-range rockets and UCAVs.

Syria’s system has many obsolescent and obsolete weapons and sensors and is vulnerable to Israeli real-time targeting, precision air and missile attack, and electronic countermeasures. It has a weak command and control system, as well as serious training and readiness problems.

The effectiveness of many of the Syrian surface-to-air missile systems listed in **Figure 17** is increasingly uncertain. Advances in air targeting and long-range, air-to-ground precision combat capability – coupled with steady advances in the long-range strike capabilities of rockets and missiles – have reduced the effectiveness of many short-range air defense systems. Some have limited or no effectiveness against low-flying helicopters unless the pilots cannot avoid overflying the defenses and many others lack the range, lethality, and ease of maneuver to attack fighters that can use long-range air-to-surface missiles.

Many of the longer-range systems – particularly the SA-2, the SA-3, the SA-5, and the SA-6 – are now so old that electronic and other countermeasures, including anti-radiation

missiles, can deprive them of much of their effectiveness. If they use their radars persistently they can be located, characterized, and jammed or killed. If they make sudden use of their radars, or remote radars further to the rear, reaction times are slow and lethality is low. If they attempt to use optical means, they generally fail to hit a target.

Israel's Improved Hawk or IHawk missiles are considerably better and more modern systems than Syria's aging SA-2, SA-3, SA-5, and SA-6s and have been heavily updated, but do have some of the same vulnerabilities. The Patriots in Israeli forces are the only fully modern long-range air defense missiles in Arab or Israeli hands, although Syria has long sought Soviet-designed S-300 and S-400 surface-to-air missiles – which have many of the advantages of the Patriot.

Israel's Arrow missiles are the only antiballistic missile defenses in the region with significant area coverage, although the Patriot has meaningful point defense capability and the IHawk has limited value as a point defense system.

At present, neither Israel nor Syria has a fully modern, integrated mix of sensors and battle-management systems to tie together its surface-to-air defenses, but Israel does have a significant capability to perform such operations. The Syrian system was never of more than limited capability and has lost capability relative to Israel's ability to suppress Syrian air defenses over time in spite of some modernization. Though it is increasingly vulnerable, it still has some capability, and Syria is improving its shorter-range air defense systems. The survivability of both Syrian radars and hardened and dispersed Syrian command facilities is increasingly questionable.

Comparative Naval Strength

Syria and Israel still maintain significant naval forces, but only Israel retains significant operational capability, and the naval forces on each side are now more likely to be used for asymmetric warfare missions or amphibious raids than in conventional combat. The Israel-Hezbollah War in 2006, for example, showed that a non-state actor such as Hezbollah could use anti-ship missiles to attack one of the Israeli Navy's most modern ships. At the same time, the Israeli Navy maintained extraordinarily high activity levels seeking to prevent infiltration or asymmetric attacks on Israel's coast, secure the waters off of the Gaza, and prevent seaborne resupply of Hezbollah.

- **Figure 18** compares the major combat ship strength in Israeli and Syrian forces. Israel has relatively modern and effective submarines and surface forces, backed by effective airpower. Israel has effective anti-ship missiles, as well as superior systems and targeting/electronic warfare capabilities. Its three Sa'ar 5 corvettes are very modern ships with considerable long-range capability by local mission capability standards. Construction of the first of the eight Sa'ar 4.5-class missile patrol boats began in 1981, but most were commissioned during 1994-2002, and they have been regularly modernized. All of these Sa'ar class vessels are armed with updated versions of the Harpoon anti-ship missile and have modern radars and electronic warfare suites. Israel's three *Dolphin*-class (Type 800) submarines are also modern vessels commissioned during 1999-2000. Israel updated some of its support vessels in the late 1980s.

- Syria's navy is largely obsolete, ineffective, and dependent on aging anti-ship missiles. It has two *Petya*-class frigates armed with guns and torpedoes, but they spend little meaningful time at sea. Its three *Romeo*-class submarines never performed meaningful combat roles and have been withdrawn from service.

Comparative Trends in Military Expenditures

The resources Israel and Syria spend to develop force quality and depth vary greatly. Syria's military expenditures continued to decline over most of the last decade and have been less than one-third of the level needed to pay for the mix of manpower quality, readiness, and modernization it would need to compete with Israel in overall conventional force quality.

- **Figure 19** shows more recent trends in military expenditures in current U.S. dollars based on IISS figures. These data are considerably more uncertain than the previous data because they include estimates for some countries for 2004 and 2005 rather than actual data and do not seem to fully account for the impact of U.S. aid to Egypt, Israel, and Jordan. Israel's edge in military resources remains clear, although its spending efforts dropped significantly after 2001 in spite of the Israeli-Palestinian War, while other Israeli security-related spending increased to pay for such civilian programs as roads and settlements.
- **Figure 20** shows the long-term trend in military effort as a percent of GNP. The burden placed on the Israeli, Jordanian, and Syrian economy has been cut sharply since the mid-1980s. It is striking, however, that Syria's military burden is so close to that of Israel. This indicates that Syria's slow economic development has been a major factor limiting what it can spend. Egypt cut its spending as a percentage of GNP and that spending has been low ever since. Lebanon has never attempted to spend the money to become a serious military power by regional standards.

Comparative Trends in Arms Imports

The trends in arms imports provide another important measure of military effort and one that shows how well given countries are modernizing and recapitalizing their forces. The data are more uncertain than those for military spending, and almost all come from declassified U.S. intelligence estimates provided by the Department of State and the IISS. Once again, however, they are useful in providing a picture of broad trends.

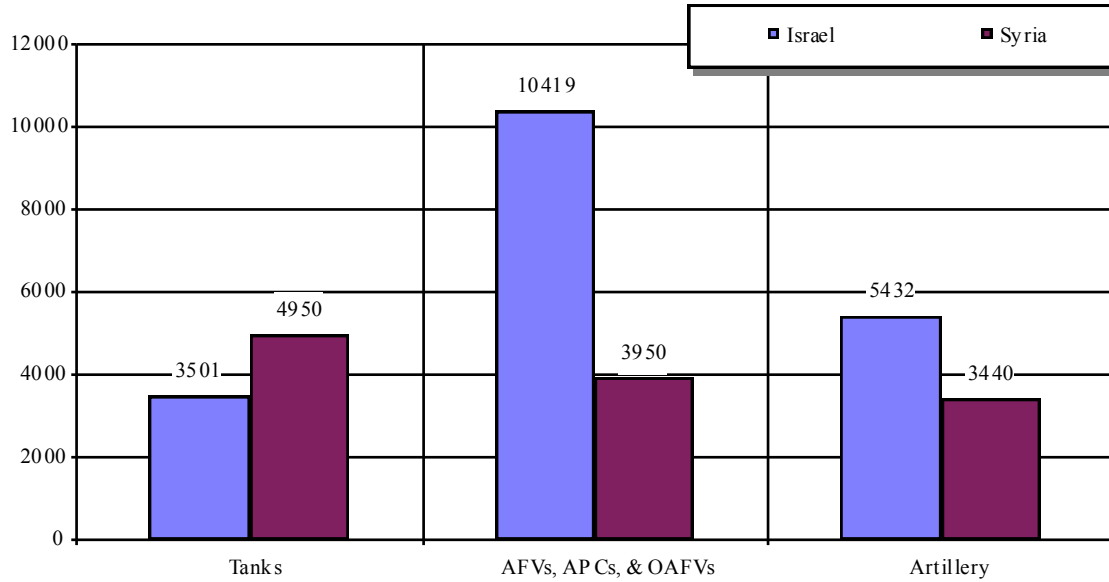
- **Figure 21** provides more current data on new arms orders and arms deliveries, using a different source. It shows that Israel has continued to receive far more arms imports than Syria, and with the exception of the 2004-2007 period, Israel has placed far more new orders. Syria made a substantial increase in its new orders during 2004-2007 versus 1996-2003, but the total remained less than half that of Israel, and again, Israel has the additional advantage of more major deliveries from 1996 to 2007 in addition to a major military-industrial base, which Syria does not have.
- **Figure 22** shows the source of Arab-Israel arms imports by supplier country. It shows that Israel has had large-scale access to U.S. arms imports, including the

most modern equipment – and the data in **Figure 1.22** do not include significant imports of technology, components, and subassemblies for Israeli military production that are not counted as arms imports. In contrast, Syria lost Russia as a major supplier during the 1990s and the early 2000s without finding any replacement – particularly one capable of selling advanced arms and technology. This negative trend may be reversing, however, in light of major – mainly Russian – arms orders for the 2000-2007 period. Syria made a total of \$5.6 billion in arms agreements with Russia during 1996-2007, while Israel made a total of \$12.6 billion in agreements with the United States. It is worthy of note, however that for the 2004-2007 period, Syria ranks third in the Middle East in terms of overall new arms agreements, behind Saudi Arabia and Egypt.

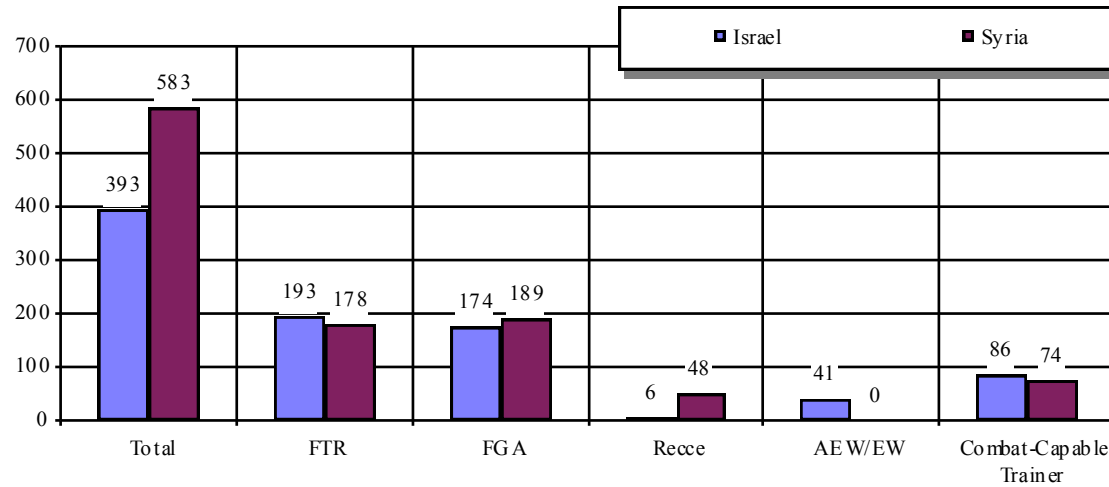
Both Israel and Syria continue to make efforts to secure outside military assistance, although Israel has been far more successful than Syria until recently. Given that the bulk of agreements with Russia were made in 2007, it remains to be seen whether Syria has found a reliable arms supplier in the longer term. As was described earlier, Israel relies mainly on its alliance with the United States for external military assistance, and defense cooperation between the IDF and the Pentagon appears to be on sure footing for the foreseeable future. In addition to courting Russia to obtain similar levels of advanced arms that it obtained from the Soviet Bloc during the Cold War, Syria has also attempted to cement its relationship with Iran on a bilateral basis.

Figure 1: Israeli versus Syrian Operational Force Strength as of 2008

Land Weapons



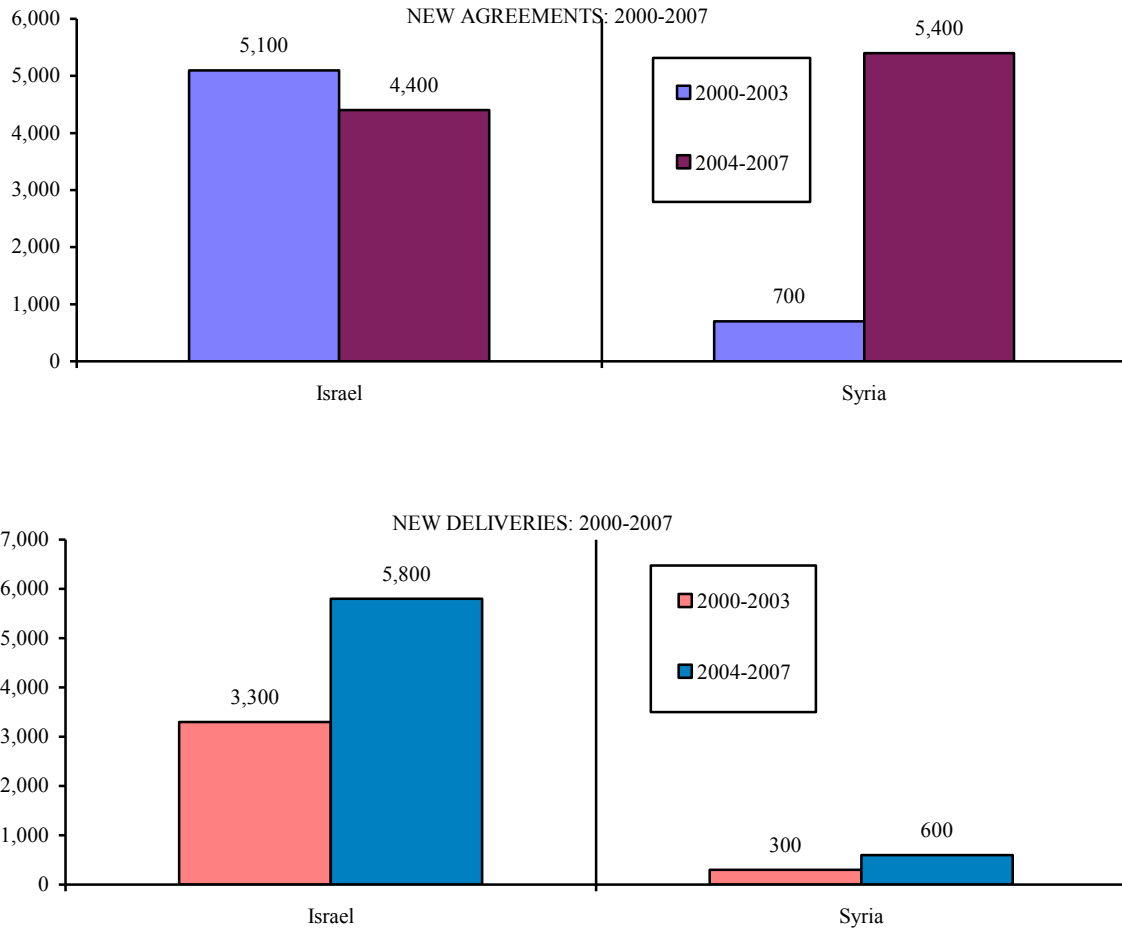
Air Forces



Note: Israeli AEW/EW include 6 RC-12D Guardrail, 4 Beech 200CT Super King Air, 2 EC-130H Hercules, 15 Do-28, 6 B-707 and 8 IAI-202 Arava. Israel had 3 Gulfstream V ELINT aircraft on order. Syrian combat-capable trainers include 40 L-39 Albatros, 6 MFI-17, 20 MIG-21U, 6MIG-23UM and 2 MIG-25U. Egypt had 755 M-1A1 tanks, 365 M-109A2/3 artillery and 2 E-2C AEW aircraft. Jordan had 390 CR1 Challenger 1 tanks. Total Artillery includes towed and self-propelled tube artillery and multiple rocket launchers. Total air forces include operational fixed-wing combat and combat-capable aircraft, including fighters, attack, fighter-attack, and combat-capable reconnaissance and training aircraft.

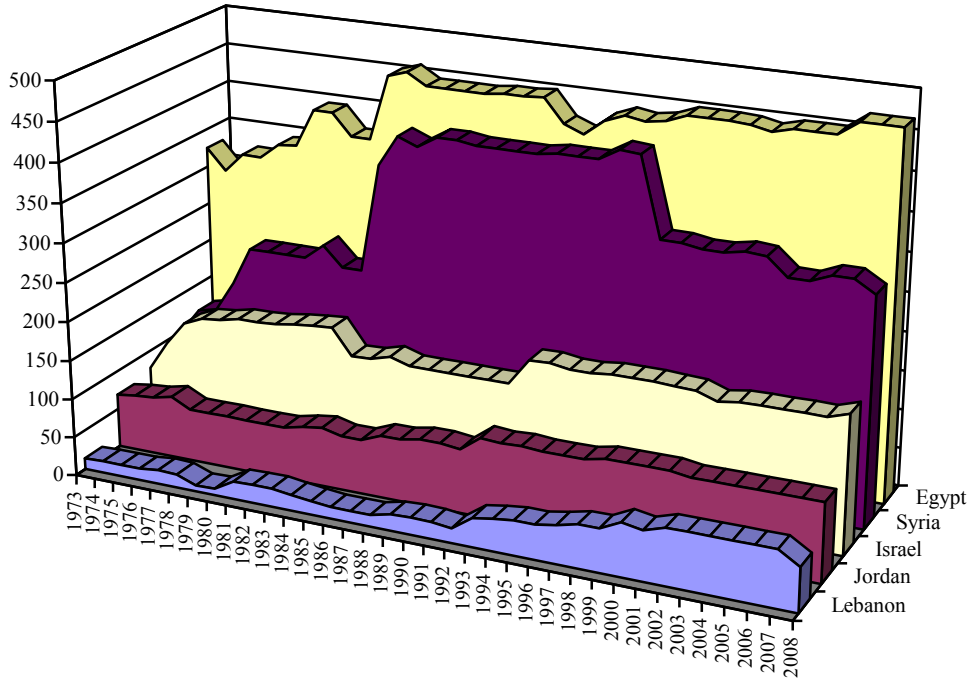
Source: Adapted by Anthony H. Cordesman from data provided by U.S. experts, and the IISS, *The Military Balance*, various editions.

Figure 2: Syrian-Israeli Arms Agreements and Deliveries: 2000-2007
(U.S. Current Millions)



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

Figure 3: Total Arab-Israeli Active Military Manpower: 1973-2008
(Troops in thousands)

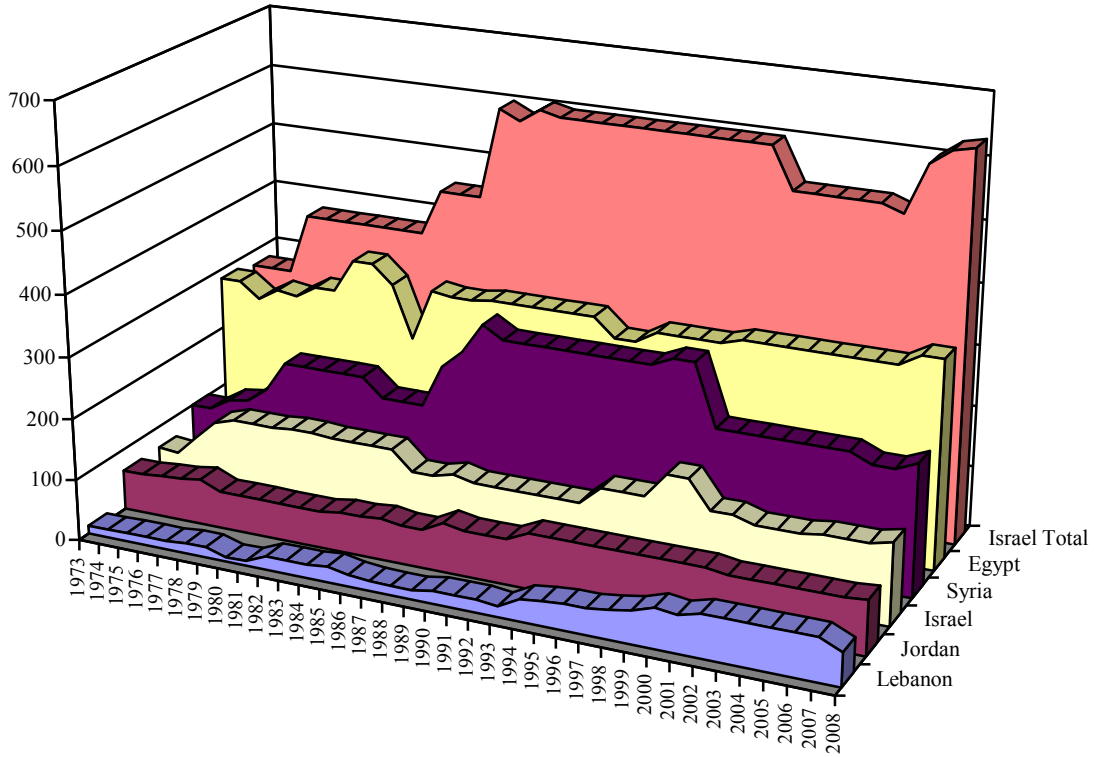


| | '73 | '76 | '82 | '85 | '88 | '91 | '94 | '97 | '00 | '04 | '05 | '06 | '07 | '08 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lebanon | 14.25 | 15.3 | 23.75 | 17.4 | 15 | 21.8 | 41.3 | 48.9 | 67.9 | 72.1 | 72.1 | 72.1 | 72.1 | 56 |
| Jordan | 69.25 | 80.25 | 67.5 | 70.3 | 80.3 | 82.25 | 100.6 | 98.65 | 104 | 100.5 | 100.5 | 100.5 | 100.5 | 100.5 |
| Israel | 77 | 156 | 172 | 142 | 141 | 141 | 176 | 175 | 173.5 | 168 | 168 | 168.3 | 168 | 176.5 |
| Syria | 100 | 177.5 | 222.5 | 402.5 | 407.5 | 404 | 408 | 421 | 316 | 296.8 | 296.8 | 307.6 | 307.6 | 292.6 |
| Egypt | 325 | 322.5 | 367 | 445 | 445 | 450 | 430 | 440 | 450 | 450 | 450 | 468.5 | 468.5 | 468.5 |

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Some data adjusted or estimated by the author.

Figure 4: Arab Active versus Israeli Mobilized Army Manpower: 1973-2008

(Troops in thousands)

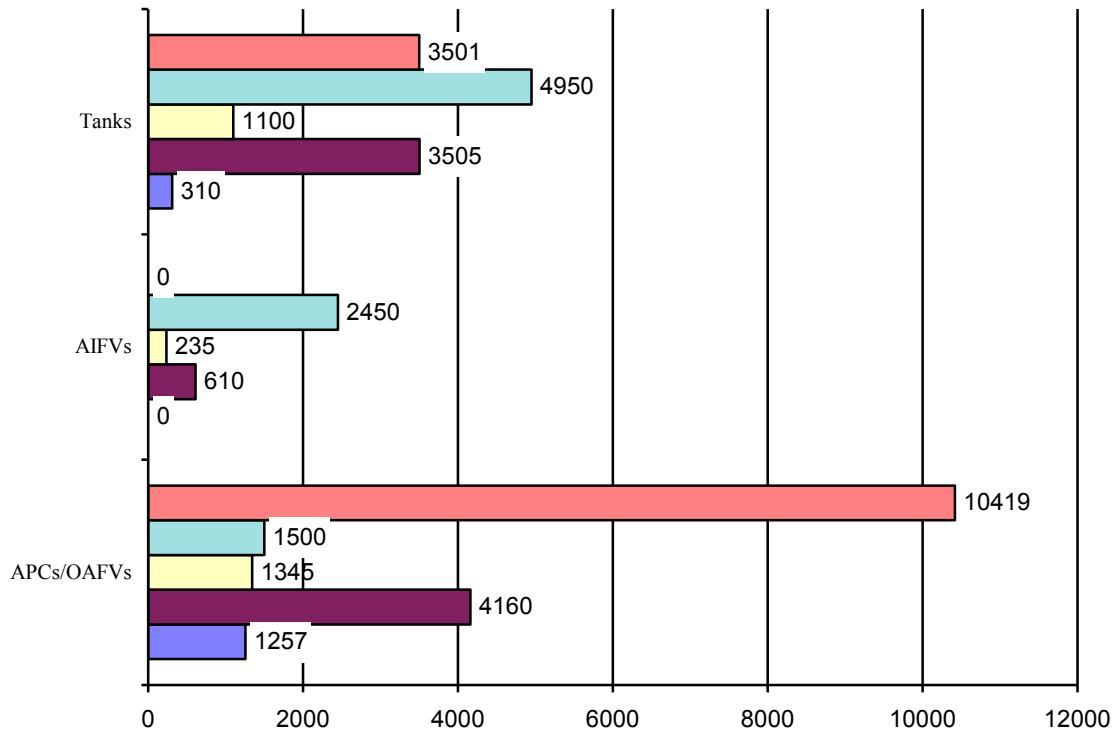


| | '73 | '76 | '79 | '82 | '85 | '88 | '91 | '94 | '97 | '00 | '04 | '05 | '07 | '08 |
|-----------------------|-----|-----|-----|-------|------|-------|-----|------|-----|-----|------|-----|-----|------|
| Lebanon Active | 13 | 14 | 17 | 22.25 | 25.5 | 15 | 21 | 35.7 | 43 | 65 | 70 | 70 | 70 | 53.9 |
| Jordan Active | 65 | 70 | 61 | 60 | 65 | 62.75 | 74 | 90 | 90 | 90 | 84.7 | 85 | 85 | 88 |
| Israel Active | 65 | 125 | 135 | 135 | 135 | 112 | 104 | 104 | 134 | 130 | 120 | 125 | 125 | 133 |
| Syria Active | 100 | 125 | 200 | 200 | 170 | 320 | 300 | 300 | 315 | 215 | 215 | 215 | 200 | 215 |
| Egypt Active | 285 | 280 | 295 | 320 | 315 | 320 | 320 | 290 | 310 | 320 | 320 | 320 | 340 | 340 |
| Israel Total | 275 | 375 | 375 | 375 | 450 | 606 | 598 | 598 | 598 | 530 | 530 | 518 | 625 | 633 |

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Some data adjusted or estimated by the author.

Figure 5: Arab-Israeli Armored Forces in 2008

(Numbers of major combat weapons)

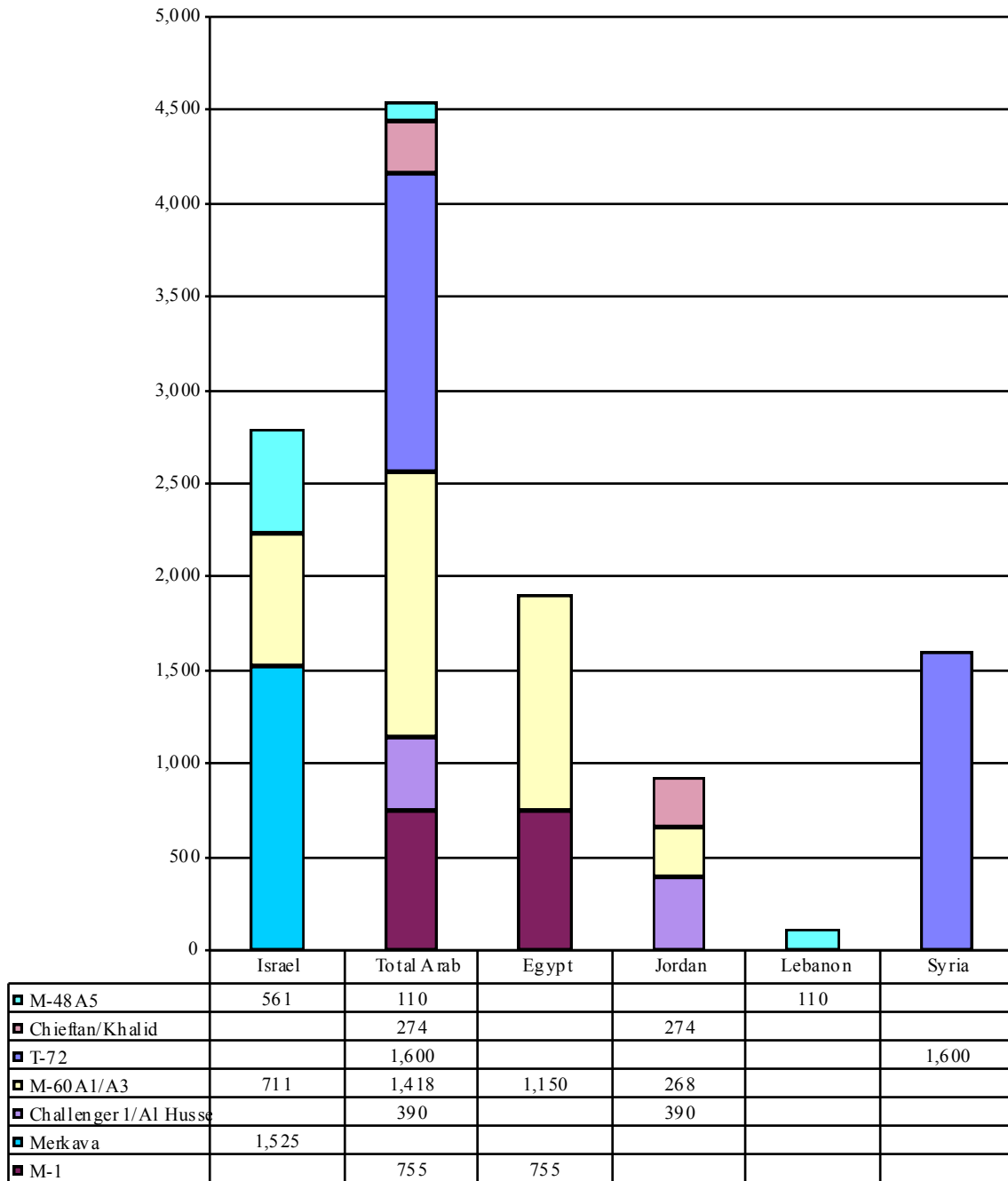


| | APCs/OAFVs | AIFVs | Tanks |
|---------|------------|-------|-------|
| Israel | 10419 | 0 | 3501 |
| Syria | 1500 | 2450 | 4950 |
| Jordan | 1345 | 235 | 1100 |
| Egypt | 4160 | 610 | 3505 |
| Lebanon | 1257 | 0 | 310 |

Note: Does not include old half-tracks and some combat engineering and support equipment.

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Other data based upon discussions with US experts.

Figure 6: Israel versus Egypt, Syria, Jordan, and Lebanon: High Quality Tanks by Type 2008

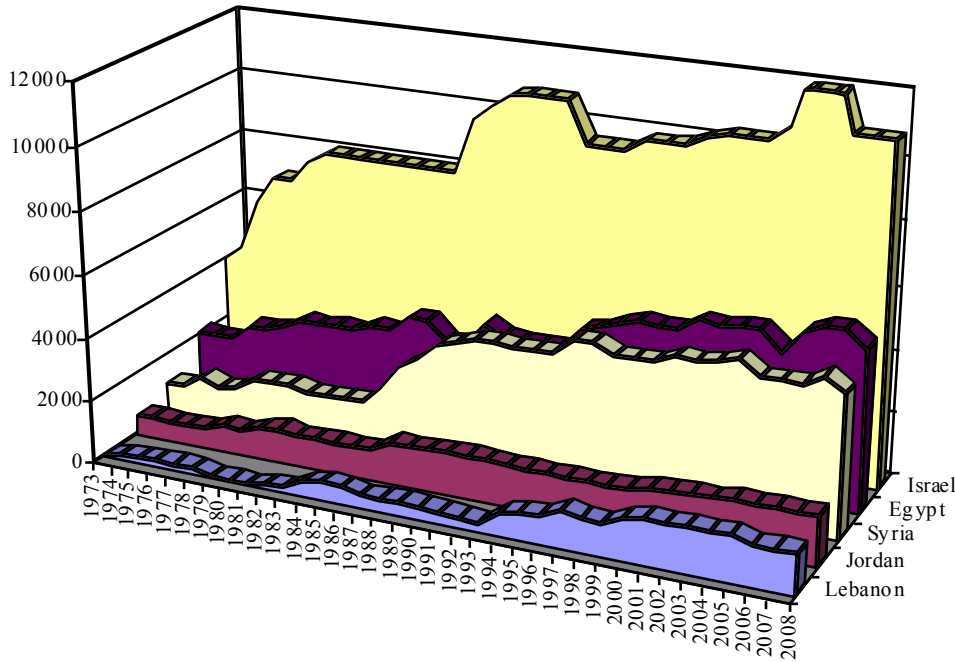


Note: The totals include large numbers of vehicles that are in storage or are fixed in place. In 2000, these included 300 M-47/M-48A5s for Jordan, 1,200 tanks for Syria and an unknown number for Egypt, Israel, and Lebanon.

Source: Adapted from the IISS, *The Military Balance*, various editions. Some data adjusted or estimated by the author. Data differ significantly from estimated by US experts.

Figure 7: Arab-Israeli Other Armored Fighting Vehicles (Light Tanks, OAFVs, APCs, Scouts, and Reconnaissance Vehicles): 1973-2008

(Numbers of major combat weapons)



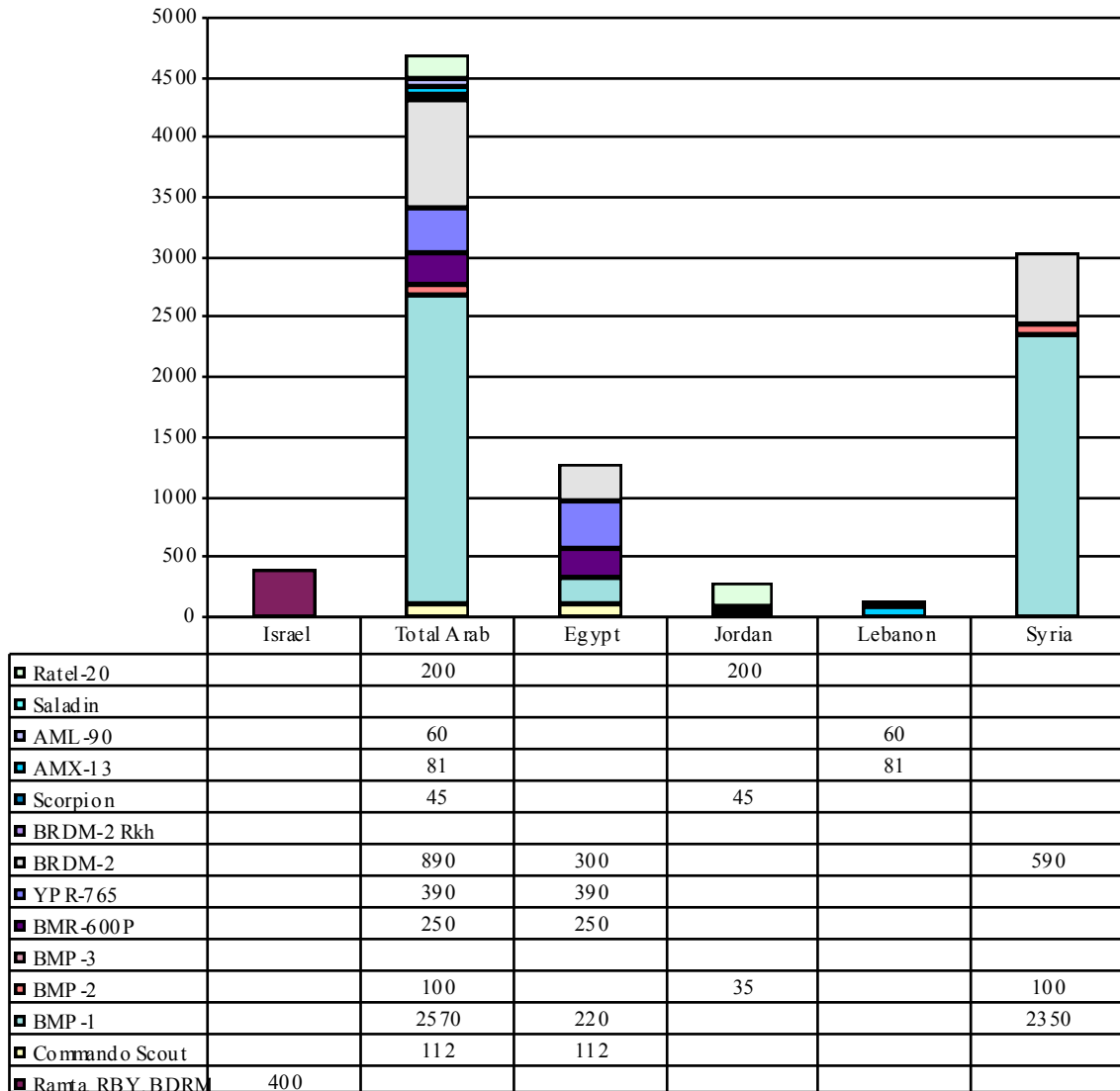
| | '73 | '75 | '77 | '79 | '81 | '83 | '85 | '91 | '93 | '95 | '99 | '01 | '04 | '07 | '08 |
|---------|------|------|------|------|------|------|------|-------|------|------|-------|-------|-------|------|-------|
| Lebanon | 80 | 204 | 239 | 80 | 80 | 245 | 658 | 402 | 312 | 915 | 1085 | 1463 | 1463 | 1317 | 1317 |
| Jordan | 670 | 670 | 680 | 860 | 1102 | 1022 | 1022 | 1403 | 1324 | 1304 | 1324 | 1501 | 1595 | 1595 | 1625 |
| Syria | 1100 | 1470 | 1300 | 1700 | 1600 | 1600 | 2200 | 4275 | 4250 | 4800 | 4510 | 4785 | 4600 | 4950 | 4540 |
| Egypt | 2100 | 2100 | 2630 | 3080 | 3130 | 3330 | 3830 | 3660 | 3660 | 4501 | 4886 | 5172 | 4682 | 5682 | 5182 |
| Israel | 4015 | 6100 | 6965 | 8080 | 8065 | 8000 | 8000 | 10780 | 8488 | 9488 | 10188 | 10308 | 13078 | 7261 | 10827 |

Note: Figures for Israel include M2/M3 180 obsolete M-2 half-tracks and some 3,386 M-3 half-tracks. These are open, World War II vintage armored vehicles that are extremely vulnerable, and many of which are in storage. They make up more than a third of the more than 10,000 Israeli OAVs shown for Israel in 2008.

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Some data adjusted or estimated by the author.

Figure 8: Israel versus Egypt, Syria, Jordan, and Lebanon: “True AFVs” 2008

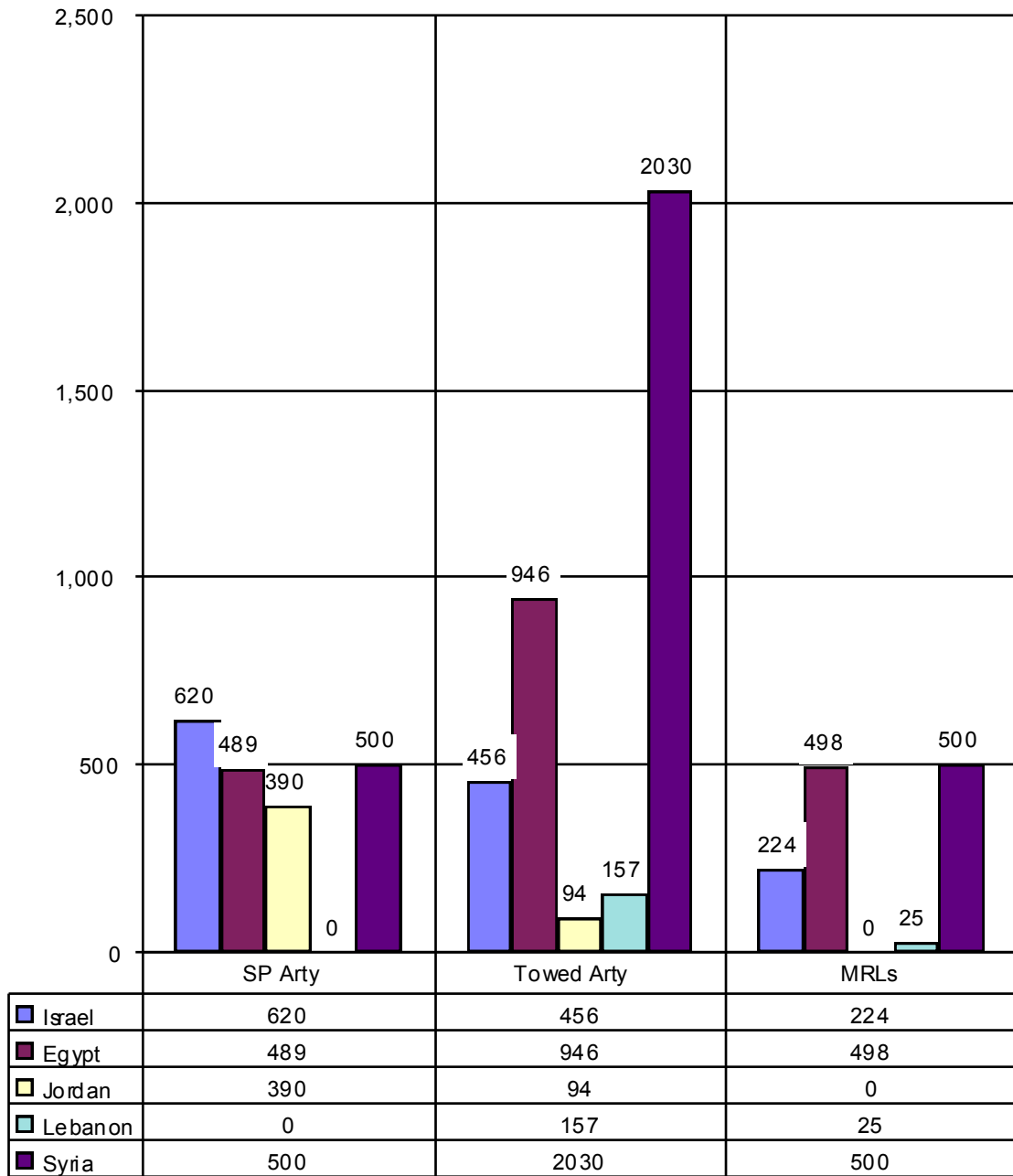
(AFVs include Light Tanks, MICVs, AIFVs, and Reconnaissance)



Note: MICV are mounted infantry combat vehicles.

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*. Some data adjusted or estimated by the author on the basis of comments by U.S. experts.

Figure 9: Arab-Israeli Artillery Forces by Category of Weapon in 2008
 (Numbers of major combat weapons)

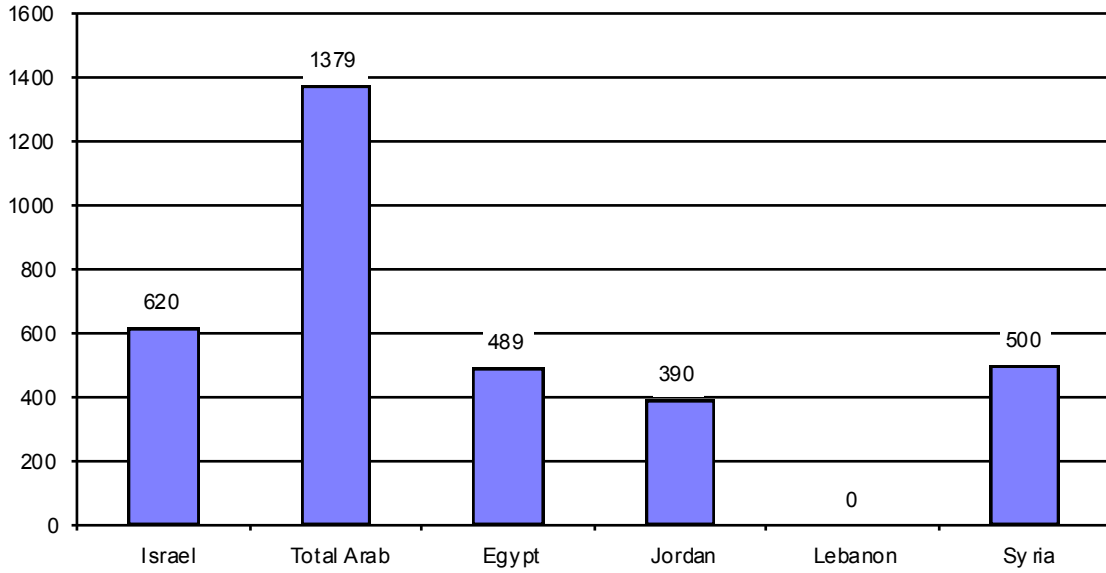


Source: Adapted by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. experts.

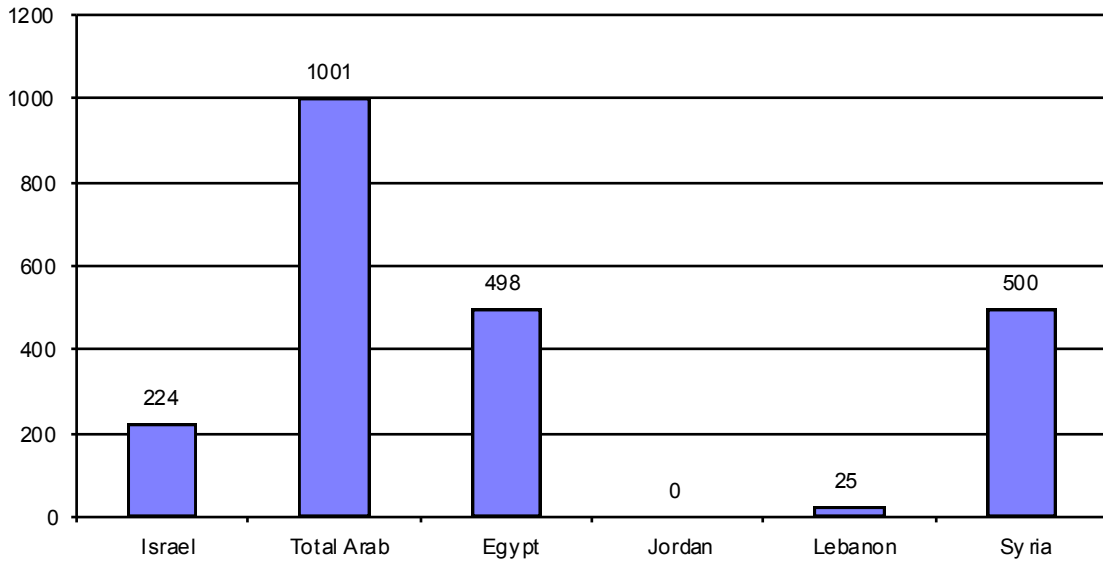
Figure 10: Israel versus Egypt, Syria, Jordan, and Lebanon: High Performance Artillery in 2008

(Numbers of major combat weapons)

Modern Self-Propelled Artillery

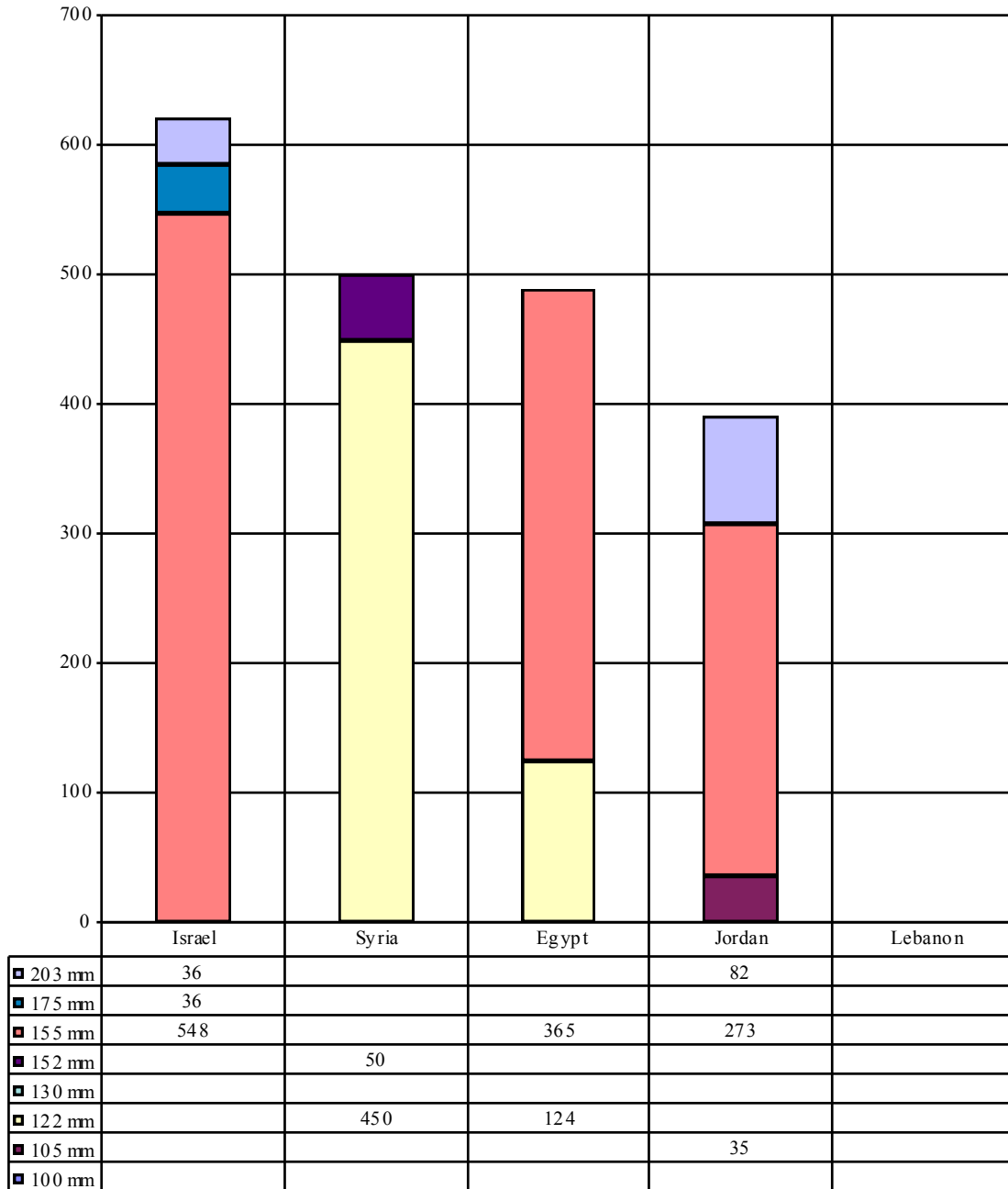


Multiple Rocket Launchers



Source: Prepared by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

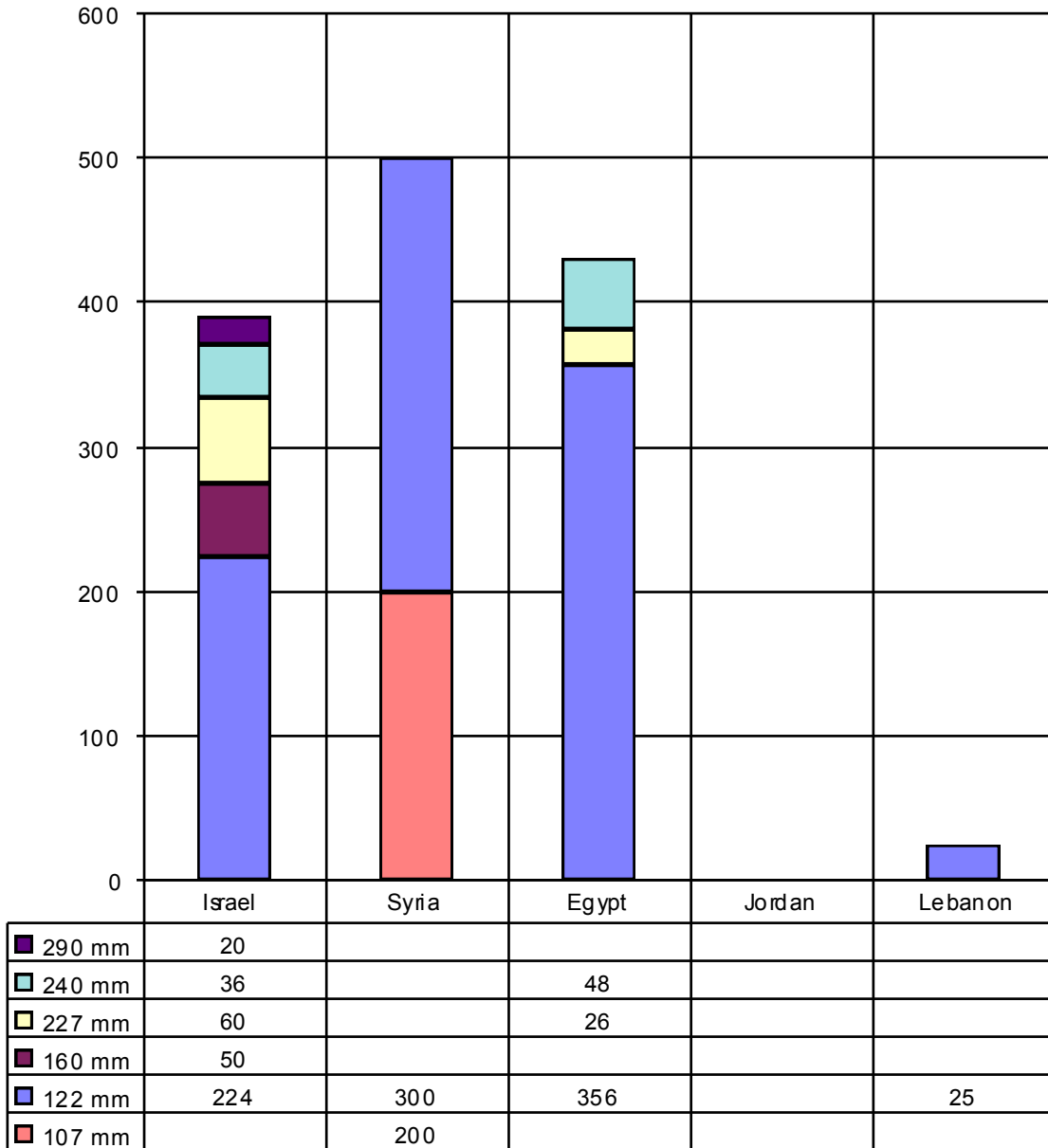
Figure 11: Arab-Israeli Self-Propelled Artillery by Caliber in 2008
 (Numbers of major combat weapons)



Note: Israel is phasing out its 175-mm weapons.

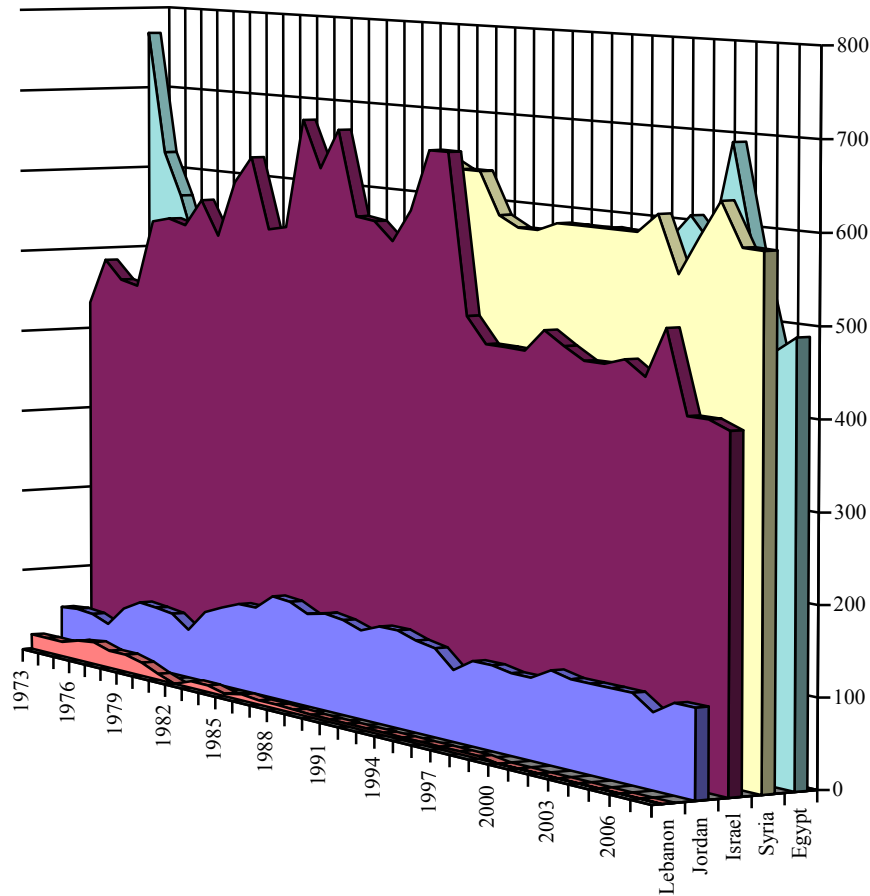
Source: Prepared by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

Figure 12: Arab-Israeli Multiple Rocket Launchers by Caliber in 2008
 (Numbers of major combat weapons)



Source: Prepared by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

Figure 13: Trends in Total Arab-Israeli Combat Aircraft: 1973-2008



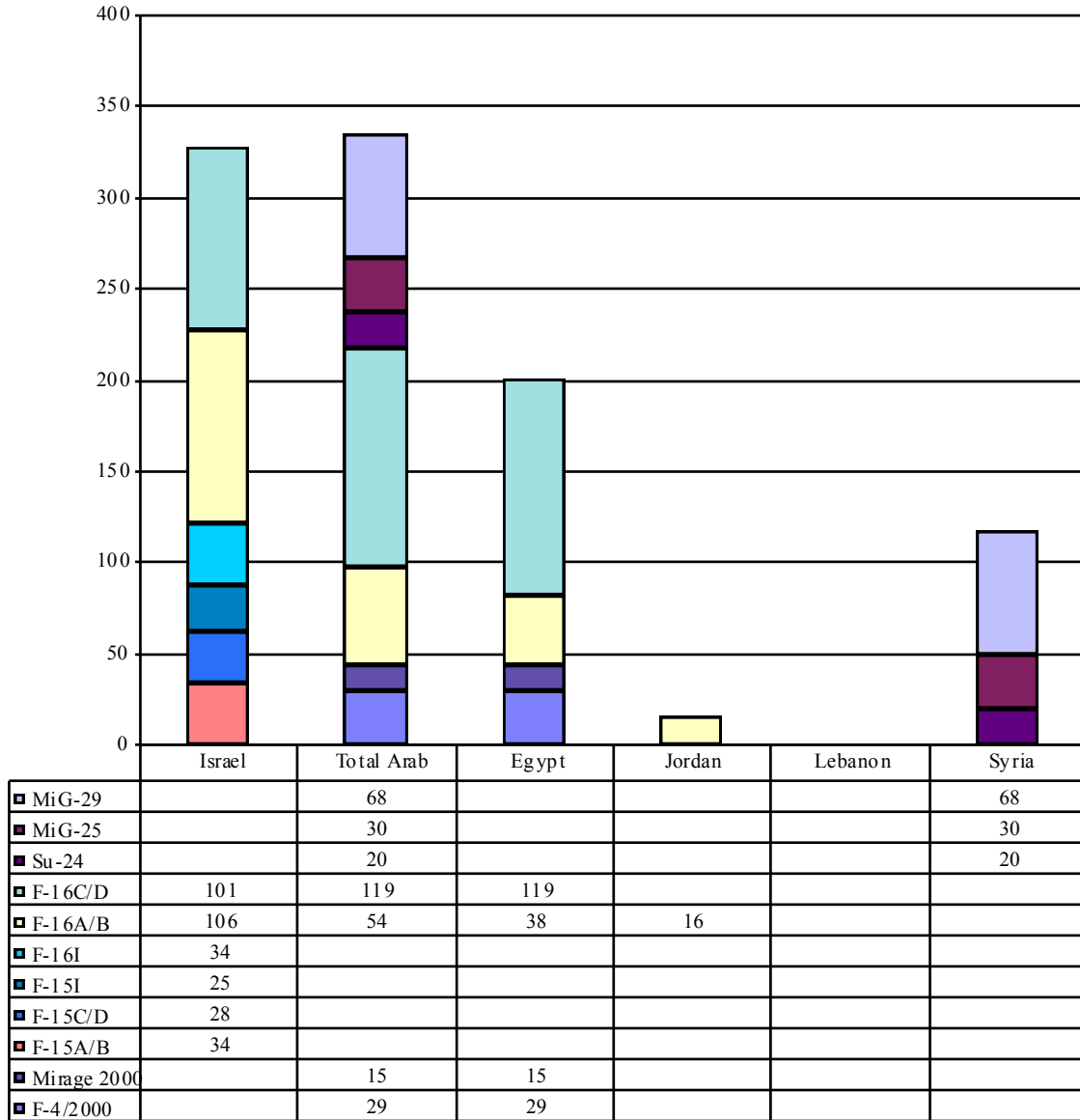
| | '73 | '75 | '77 | '79 | '81 | '83 | '85 | '87 | '89 | '91 | '93 | '95 | '97 | '99 | '01 | '04 | '07 | '08 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lebanon | 18 | 18 | 27 | 21 | 7 | 8 | 3 | 5 | 4 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Jordan | 50 | 50 | 66 | 76 | 58 | 94 | 103 | 119 | 114 | 104 | 113 | 102 | 97 | 93 | 106 | 101 | 100 | 100 |
| Israel | 432 | 466 | 543 | 543 | 535 | 634 | 555 | 629 | 577 | 553 | 662 | 478 | 449 | 474 | 446 | 438 | 402 | 393 |
| Syria | 210 | 300 | 440 | 392 | 395 | 450 | 503 | 483 | 448 | 558 | 639 | 591 | 579 | 589 | 589 | 548 | 584 | 583 |
| Egypt | 768 | 568 | 488 | 612 | 363 | 429 | 504 | 443 | 441 | 517 | 492 | 551 | 567 | 585 | 580 | 579 | 471 | 489 |

Note: Latest figures for Lebanon exclude 6 Hawker *Hunter* MK9, MK6, t66 (all grounded) and 8 CM-170 *Mafister* (all grounded with 3 that could be refurbished).

Source: Prepared by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

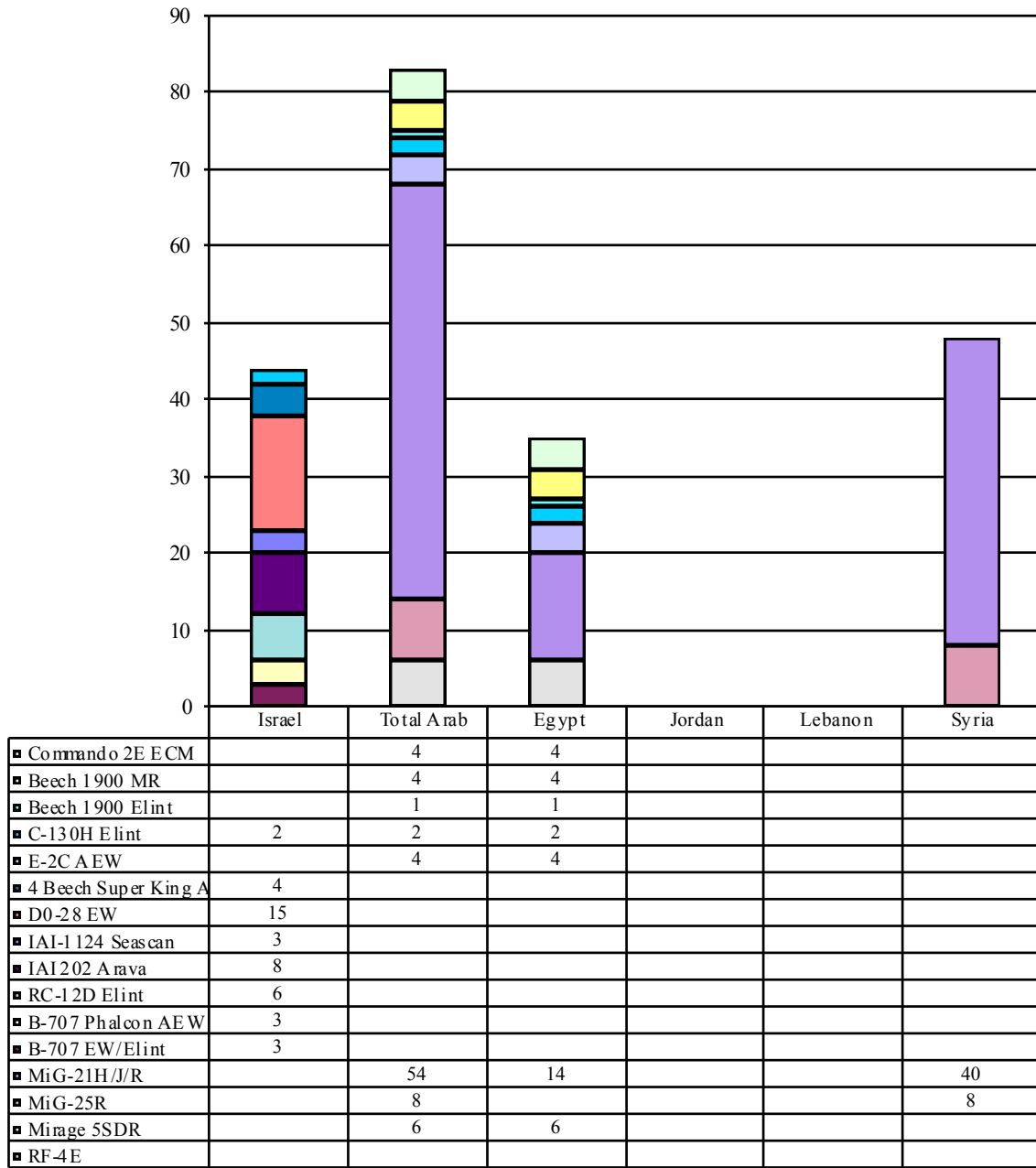
Figure 14: High-Quality Operational Arab-Israeli Combat Aircraft in 2008

(Does not include stored, unarmed electronic warfare or combat-capable RECCE and trainer aircraft)



Source: Adapted by Anthony H. Cordesman, from the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

Figure 15: Unarmed Fixed and Rotary-Wing RECCE, Electronic Warfare, and Intelligence Aircraft in 2008

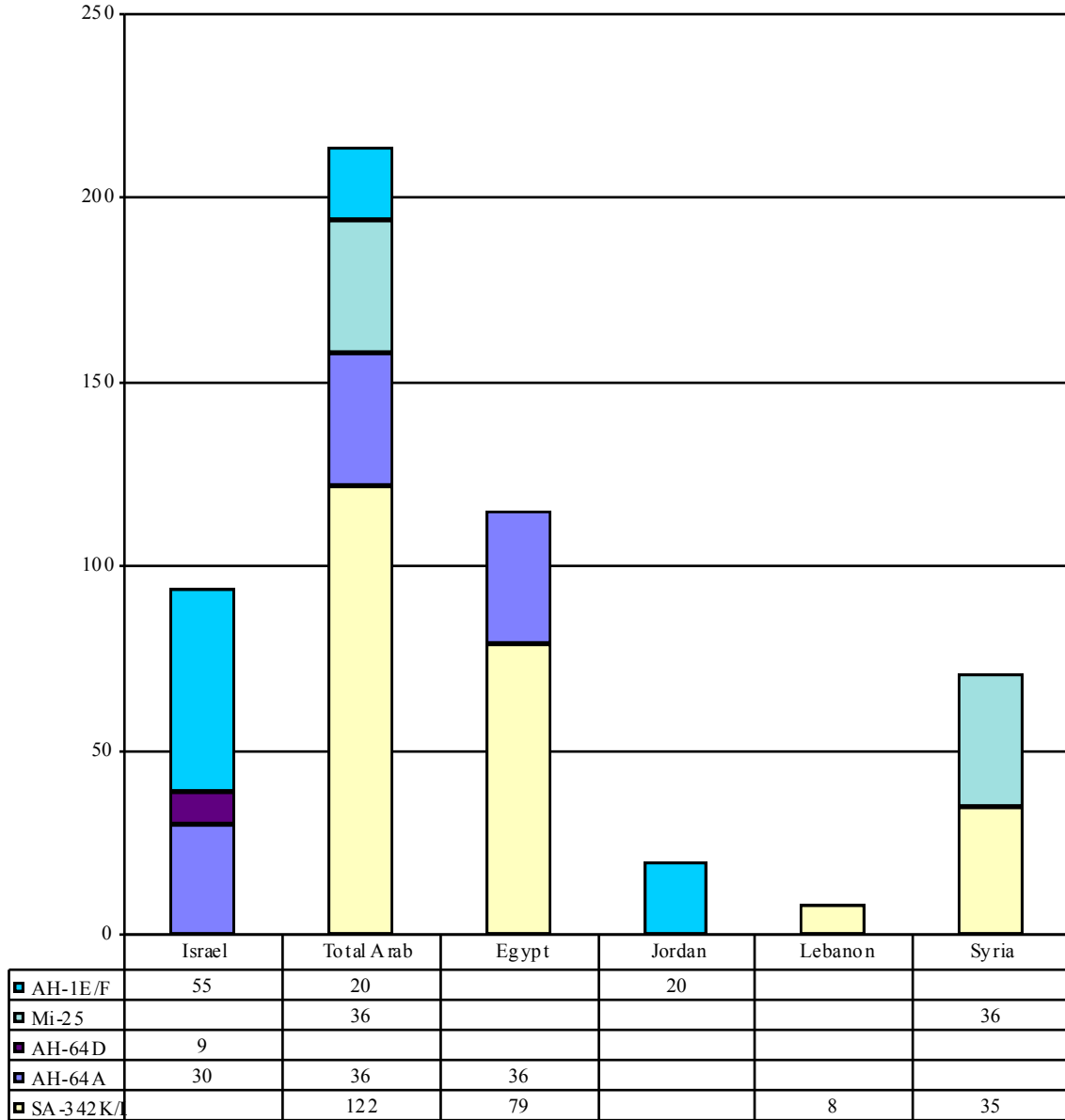


Note: Jordan had 15 Mirage F-1EJ and 54 F-5E/F Tiger II wit FGA and Recce capabilities.

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

Figure 16: Operational Arab-Israeli Attack and Armed Helicopters in 2008

(Does not include antisubmarine warfare or antiship helicopters)



Source: Prepared by Anthony H. Cordesman, based upon the IISS, *The Military Balance*, and discussions with U.S. and regional experts.

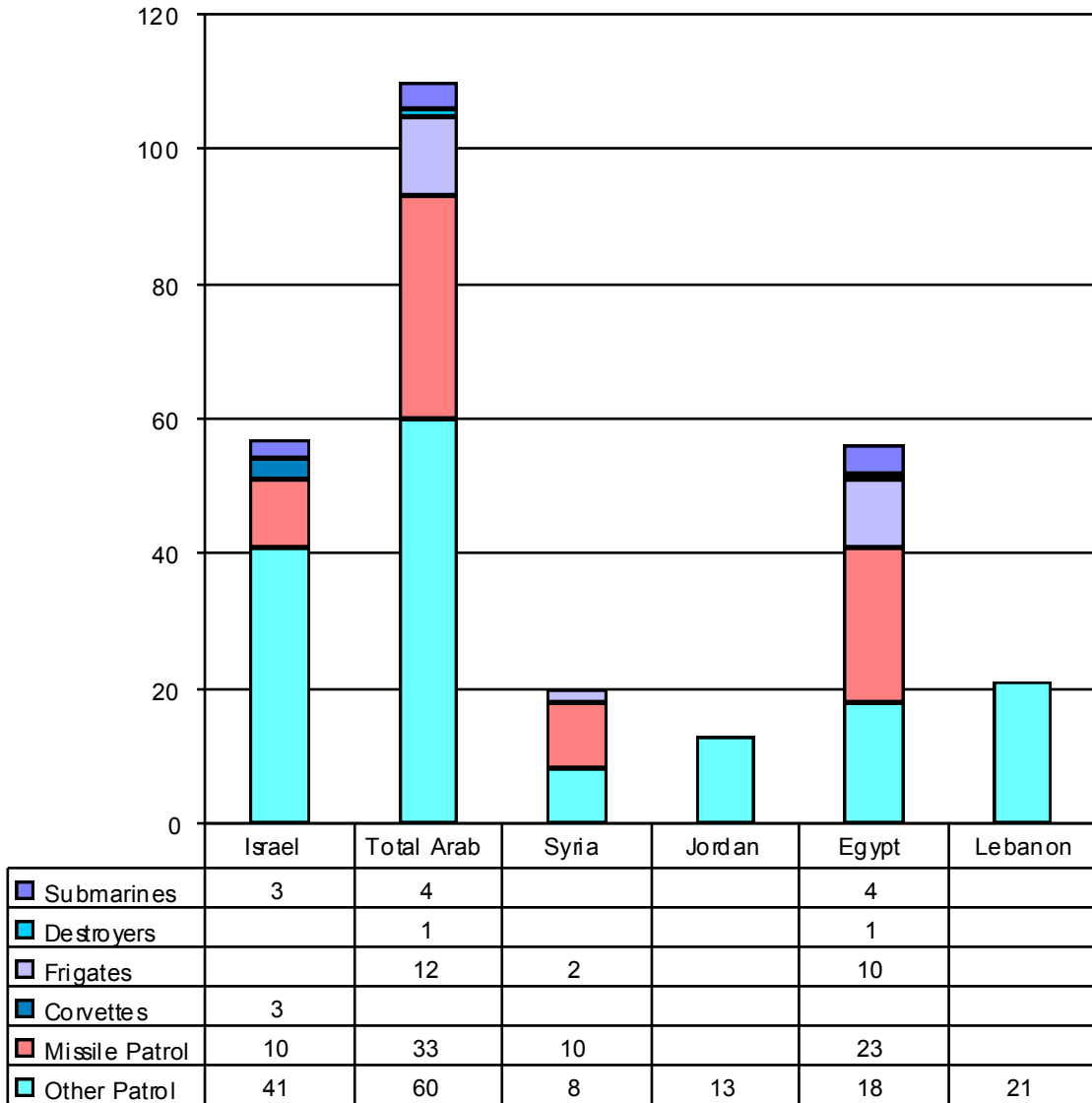
Figure 17: Arab-Israeli Land-Based Air Defense Systems in 2008

| <u>Country</u> | <u>Major SAMs</u> | <u>Light SAMs</u> | <u>AA Guns</u> |
|----------------|--|--|--|
| <u>Egypt</u> | 702+ launchers 282 SA-2 212 SA-3A 56 SA-6 78+ MIM-23B I Hawk | 2000 SA-7 <i>Ayn as Saqr</i> 20 SA-9 50 MIM-92A <i>Avenger</i> some FIM-92A <i>Stinger</i> <u>26 M-54 Chaparral SP</u> 50+ M-48 <i>Chaparral SP</i> 24 <i>Crotale</i> 72 <i>Amoun Skyguard</i> / RIM-7F 36 quad SAM <i>Ayn as Saqr</i> | 2200+ guns 300 ZPU-4 14.5mm 280 ZU-23-2 23mm 45+ <i>Sinai SP</i> 23mm 36+ <i>Sinai SP</i> 23mm 230 ZSU-23-4 23mm 400 M-1939 37mm 600 S-60 57mm <u>40 ZSU-57-2 SP 57mm</u> 400 M-1939 KS-12 85mm 300 KS-19 100mm, |
| <u>Israel</u> | 5 Bty/MIM-104 <i>Patriot</i> 17 Bty/MIM-23 I Hawk 2 Bty/9 <i>Arrow II</i> / 18 launchers 3 Bty/16 PAC-2/ 48 launchers | 20 Machbet 250 FIM-92A <i>Stinger</i> 1,000 FIM-43 <i>Redeye</i> | 920 guns, 105 M-163 <i>Machbet/ Vulcan</i> , 20mm 455 M-167 <i>Vulcan</i> 20mm/ /TCM-20 20mm/M-1939 150 ZU-23 23mm 60 ZSU-23-4 SP 23mm 150 L-70 40mm |
| <u>Jordan</u> | 2 bde/14 Bty/80 I Hawk 3 PAC-2 bty | 20 SA-7A 50 SA-7B2 60 SA-8 92 SA-13 300 SA-14 240 SA-16 SA-18 250 FIM-43 <i>Redeye</i> | 395 guns 139 M-163 SP 20mm 40 ZSU-23-4 SP 216 M-42 SP 40mm |
| <u>Lebanon</u> | None | 20 SA-7/B | 10+ guns ZU-23 23mm 10 M-42A1 40mm |
| <u>Syria</u> | 25 <i>Ad Brigades</i> 150 SAM Bty. 320 SA-2 195 SA-6 44 SA-5 148 SA-3 | 30 SA-13 20 SA-9 <u>4,000 SA-7</u> 14 SA-8 20 SA-11 100 SA-14 | 1,225 Guns 600 ZU-23 ZSU-23-4 SP M-1938 37mm 600 S-60 57mm 25 KS-19 100mm <u>10 ZSU-5-2 SP</u> <i>Some 4,000 air defense artillery</i> |

Note: Figures in italics are systems operated by the Air Force or Air Defense commands. "Bty" are batteries. "Bde" are brigades.

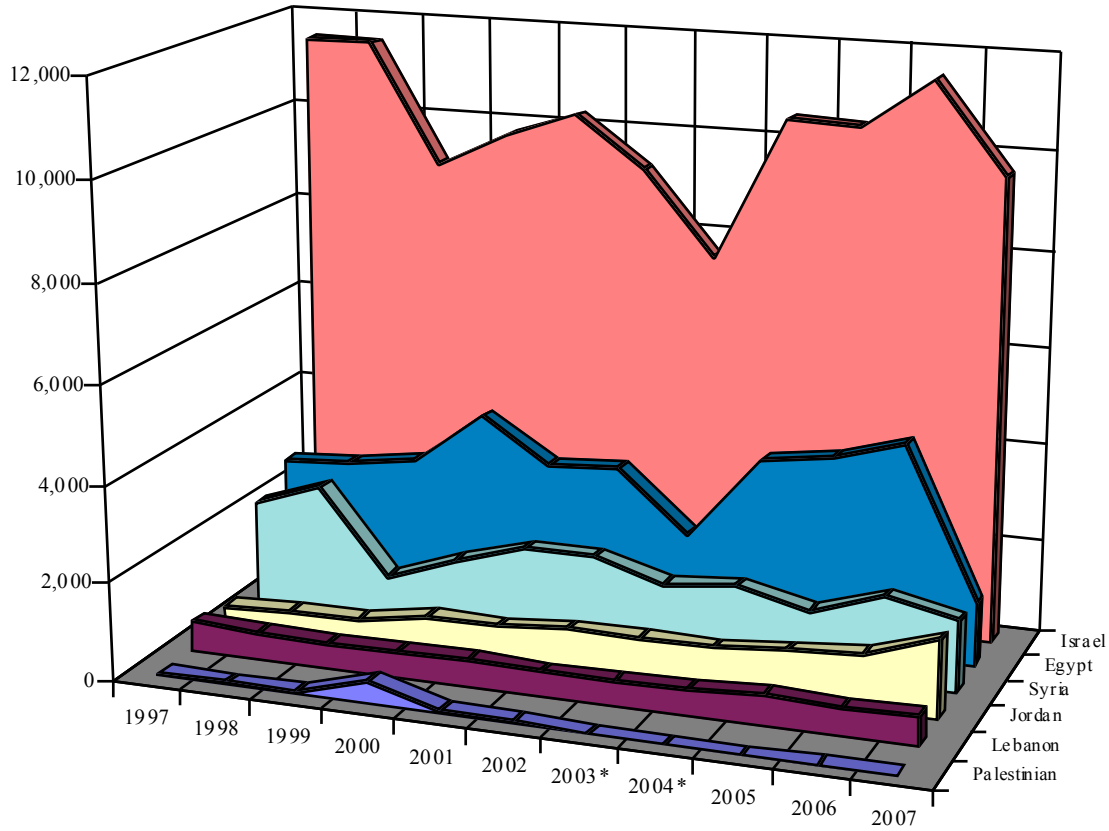
Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Some data adjusted or estimated by the author.

Figure 18: Arab-Israeli Major Combat Ships by Category in 2008



Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, and *Jane's Fighting Ships*, various editions.

Figure 19: Arab-Israeli Military Expenditures by Country: 1997-2007
(in 2008 \$U.S. Millions)

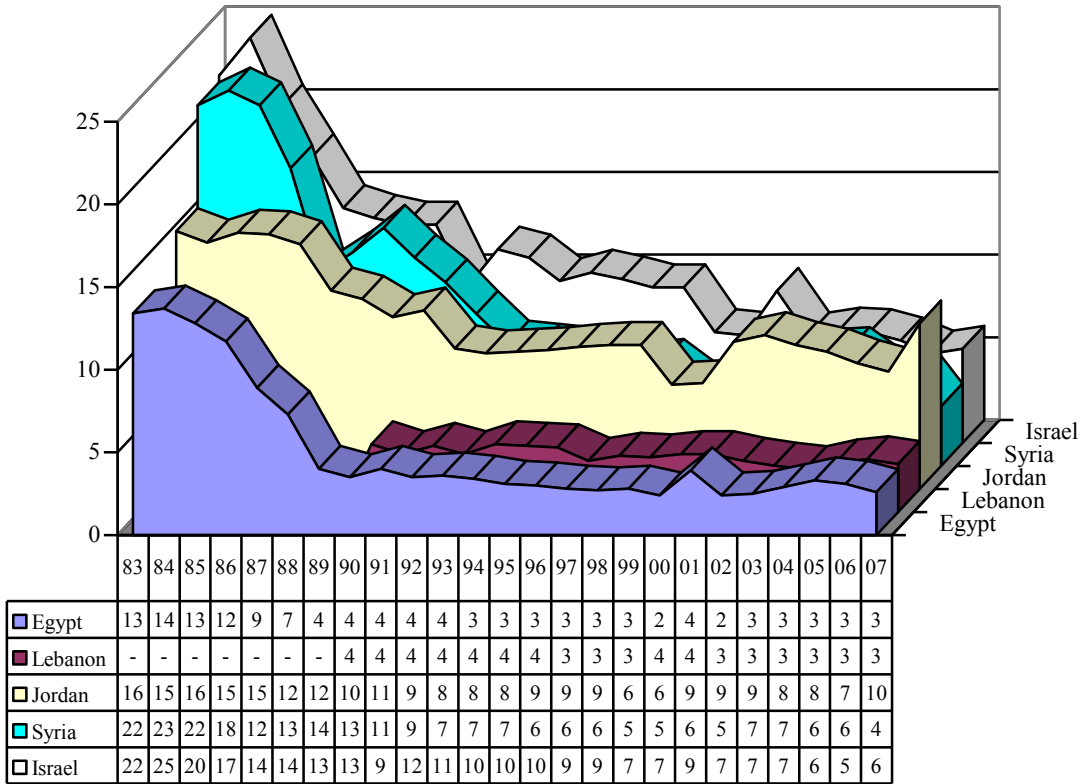


| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 * | 2004 * | 2005 | 2006 | 2007 |
|---------------|--------|--------|-------|-------|--------|-------|--------|--------|--------|--------|------|
| ■ Palestinian | 76 | 87 | 102 | 495 | 87 | 77 | - | | | | |
| ■ Lebanon | 690 | 606 | 575 | 590 | 600 | 547 | 522 | 573 | 678 | 612 | 644 |
| ■ Jordan | 506 | 560 | 581 | 808 | 805 | 911 | 904 | 895 | 1033 | 1146 | 1623 |
| ■ Syria | 2,246 | 2,757 | 1,010 | 1,531 | 1,940 | 1,940 | 1,531 | 1674 | 1,328 | 1803 | 1490 |
| ■ Egypt | 2,757 | 2,859 | 3,063 | 4,186 | 3,267 | 3,370 | 2,093 | 3,838 | 4,070 | 4512 | 1327 |
| ■ Israel | 11,537 | 11,537 | 9,087 | 9,801 | 10,312 | 9,291 | 7,555 | 10,495 | 10,436 | 11,496 | 9648 |

Source: Adapted by Anthony H. Cordesman from the IISS, *The Military Balance*, various editions. Palestinian total is rough estimate based on FMA.

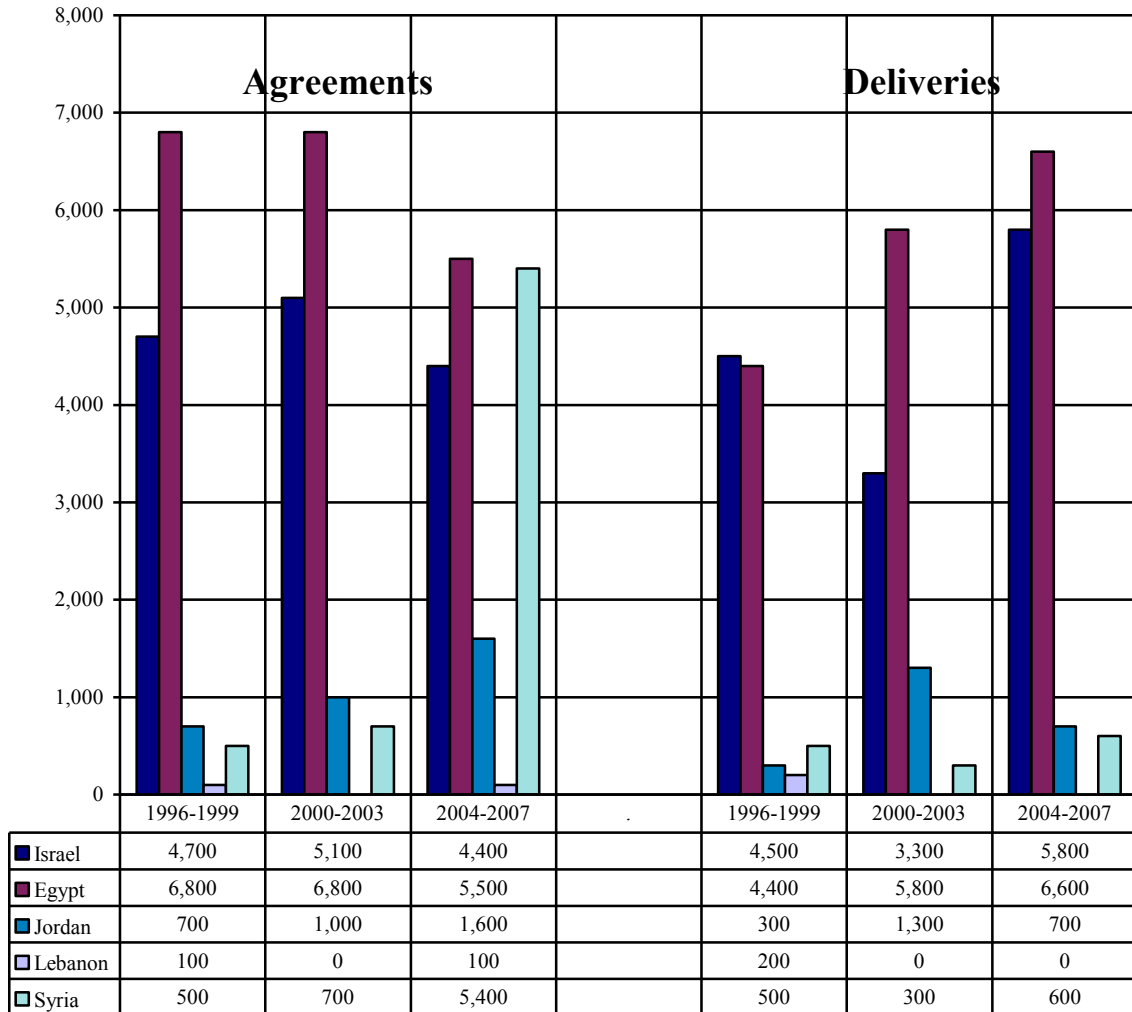
* Number reflects amounts budgeted as opposed to expenditures as the IISS no longer reports expenditures.

Figure 20: Trend in Percent of GNP Spent on Military Forces: 1983-2007: Half the Burden of the Early 1980s



Source: IISS. *Military Balance*, various editions.

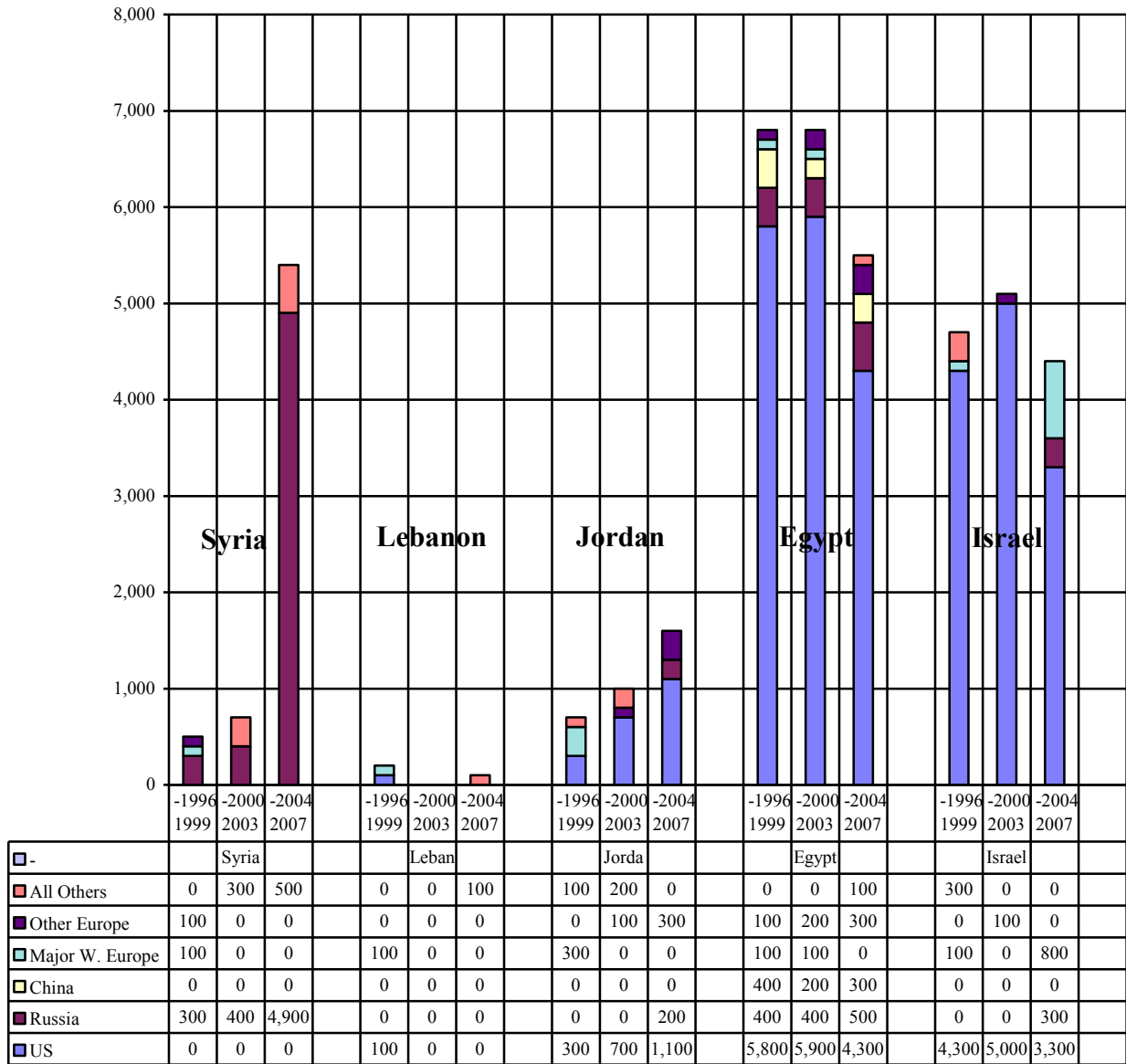
Figure 21: Arab-Israeli New Arms Agreements and Deliveries by Country: 1996-2007
(in \$U.S. Current Millions)



Note: 0 = Data less than \$50 million or nil. All data rounded to the nearest \$100 million.

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

Figure 22: Arab-Israeli Arms Orders by Supplier Country: 1996-2007
 (Arms Agreements in \$U.S. Current Millions)



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

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