



Directorate of  
Intelligence

~~Secret~~

25X1

*CIA GI*

*85-L0052*

*SUB*

# Tracking the Third World Armored Vehicle Market

25X1

A Research Paper

**NOT MICROFILMED**  
*color chart*  
**For Data Entry**

~~Secret~~

GI 85-10052  
March 1985

Copy **283**

**Page Denied**



Directorate of  
Intelligence

~~Secret~~

25X1

# Tracking the Third World Armored Vehicle Market

25X1

A Research Paper

This paper was prepared by [redacted]  
a contribution from [redacted] Office of  
Global Issues. It was coordinated with the  
Directorate of Operations. Comments and queries are  
welcome and may be directed to the Chief,  
International Security Issues Division, OGI, [redacted]

25X1

25X1

25X1

25X1

~~Secret~~

GI 85-10052  
March 1985

Secret

25X1

## Tracking the Third World Armored Vehicle Market

25X1

### Key Judgments

*Information available  
as of 15 January 1985  
was used in this report.*

Third World armies are nearing the end of a rapid expansion of their armored vehicle inventories. In the last decade their armored forces have grown by almost 60 percent to more than 80,000 vehicles, with corresponding improvements in quality. Inventory growth will slow in the next 10 years as Third World states absorb recent purchases. Less than 35,000 armored vehicles will be added to their inventories over the next decade, more than a 60-percent drop in the size of the Third World armored vehicle market. Quality improvements should continue.

The softer market will affect producers of armored vehicles and equipment:

- The Soviet Union will remain the leading supplier by holding about one-third of the market through new orders from traditional clients, such as Syria and Iraq, and by offerings of more advanced equipment and favorable financing terms.
- Third World producers will expand their current 10-percent share by providing low-priced vehicles with reliable, basic designs that can be easily assimilated by less sophisticated armies.
- The East European market share will decline from the current 10 percent as the older T-54/55 tank—the principal export model—is phased out of production.
- West European producers will continue sales to regular customers, but the drop in their current 15-percent market share will force a reorganization of industries and revisions in export policies. The upgrading of existing vehicles in Third World inventories, however, will benefit manufacturers of armored vehicle equipment, such as main guns, engines, and fire-control systems.

The future armored vehicle market has mixed implications for the United States. The demand for US equipment will remain strong over the next decade, but the US role as a supplier to the Third World of 30 percent of all armored vehicles will decline. The drop in the West European share will also affect NATO armor procurement plans. Smaller foreign sales will increase the unit cost of West European models for domestic armies.

Secret



25X1

In addition, the continued buildup of high-performance Soviet vehicles in Third World inventories could threaten US and allied interests by destabilizing regional military balances. Soviet provision of large numbers of new-generation armored vehicles to several clients in North Africa and the Levant and India, for example, gives their armies a greater ability to challenge regional forces during crises. Western sales of comparable vehicles to clients who have expressed an interest—such as Egypt and Saudi Arabia—are not imminent. Most Third World armies, however, will retain only a limited ability to conduct offensive armored operations.



25X1

Secret

Secret

25X1

**Contents**

	<i>Page</i>
Key Judgments	iii
Scope Note	vii
Introduction	1
A Growing Market, 1974-83	1
Armored Personnel Carriers (APCs) and Reconnaissance Vehicles (RVs)	1
Tanks	1
The Declining Third World Market, 1985-94	3
The Pattern of Future Armored Vehicle Purchases	4
Infantry Fighting Vehicles (IFVs), APCs, and RVs	4
Tanks	5
Outlook for Suppliers	6
Third World	6
China	9
Eastern Europe	9
Soviet Union	9
Western Europe	10
Implications for the United States	13
Regional Instability	13
NATO Armor Procurement	14
US Sales	14
<b>Appendixes</b>	
A. The Structure of the Armored Vehicle Market	15
B. Market Variables	23
C. Changing Needs	27
D. Third World: Projected Armored Vehicle Purchases, 1985-94	29

Secret




25X1

**Scope Note**

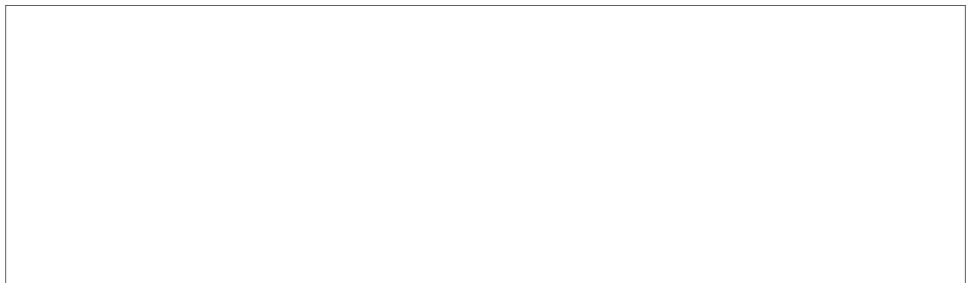
This paper reviews the Third World demand for armored vehicles in the last decade, projects sales in the next 10 years, and assesses the significance of the future market for Western, Third World, and Communist producers of armored vehicles and equipment. Implications for the United States also are provided. This study covers the following types of armored vehicles:

- *Main battle tanks.* Vehicles over 30 tons, armed with at least a 76-mm gun and used for direct fire support.
- *Light tanks.* Vehicles between 20 and 30 tons, armed with at least a 76-mm gun and used for direct fire support.
- *Armored personnel carriers (APCs).* Vehicles under 20 tons, used to transport troops.
- *Reconnaissance vehicles (RVs).* Vehicles under 25 tons, armed with at least a 20-mm gun and used for battlefield reconnaissance.
- *Infantry fighting vehicles (IFVs).* Vehicles under 20 tons, armed with a chain gun or cannon 30 mm or smaller and used for infantry fire support.

We have omitted self-propelled artillery and antiaircraft guns that use armored vehicle chassis and fill battlefield support roles. These weapon systems account for less than 7 percent of total chassis production for armored vehicles. 

25X1

25X1



Secret

25X1

## Tracking the Third World Armored Vehicle Market

25X1

### Introduction

Third World<sup>1</sup> armies are nearing the end of a rapid expansion of their armored vehicle inventories. In the last decade their armored forces have grown by almost 60 percent to more than 80,000 vehicles (figure 1). This expansion has been accompanied by gains in the quality of vehicles acquired by Third World armies. Financial problems and the completion of modernization programs will result in a period of slower growth over the next decade while these armies integrate their new armor. This slowdown has important consequences for the producers of armored vehicles and equipment in developed and less developed countries.

### A Growing Market, 1974-83

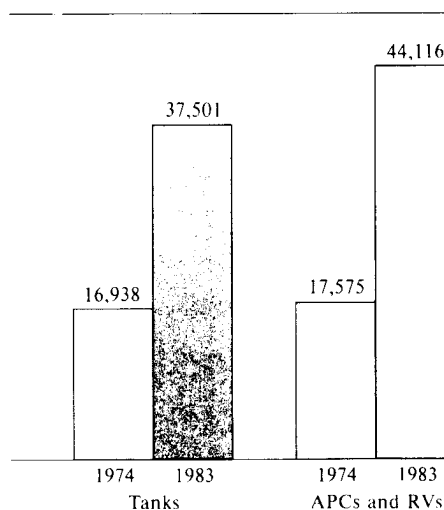
Third World states purchased more than 56,000 armored vehicles—compared to about 13,000 jet combat aircraft and 400 warships—in 1974-83 (figure 2). Armored vehicles were more popular items because of their relatively low price<sup>2</sup> and modest training requirements. Sales of armored vehicles also were higher because almost all Third World states possess armies or land forces, but few have navies or air forces. More than half of these vehicles were from new production; the remainder was used vehicles transferred from the armies of developed and other Third World states.

**Armored Personnel Carriers (APCs) and Reconnaissance Vehicles (RVs).** Sales of APCs and RVs dominated the Third World market in 1974-83.

multirole capability and small crew and training requirements were the major selling points of APCs and RVs. Wheeled APCs and RVs—which comprise about 40 percent of sales—are becoming more popular because they perform better in

<sup>1</sup> Third World includes all countries except members of NATO and the Warsaw Pact, neutral and nonaligned European countries—Albania, Austria, Finland, Ireland, Switzerland, Sweden, and Yugoslavia—and Australia, China, Japan, and New Zealand.  
<sup>2</sup> The average price of a new tank was about \$1.5 million and \$500,000 for an APC or RV. In comparison, a new jet fighter costs about \$20 million and a major warship more than \$100 million.

**Figure 1**  
**Third World: Growth of Armored Forces, 1974 and 1983**



25X1

304877 2-85

25X1

rugged terrain and consume less fuel than tracked vehicles. The leading recipients were armies in North Africa and the Levant, the Persian Gulf, and Sub-Saharan Africa (figure 3). For example:

- Since 1974 the Syrian Army has acquired more than 1,100 BMP-1 APCs from the Soviet Union.
- Zimbabwe recently purchased 90 Brazilian Cascavel RVs armed with 90-mm guns.
- Saudi Arabia has bought more than 800 US M113 and French AMX-10P APCs since 1978.
- Egyptian purchases of US M113 APCs since 1977 total more than 1,000 units.

25X1

25X1

25X1

25X1

**Tanks.** Although fewer tanks than APCs and RVs were sold in the last decade, Third World tank

25X1

25X1

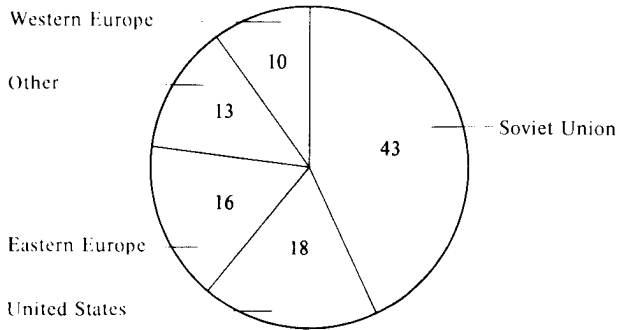
Secret



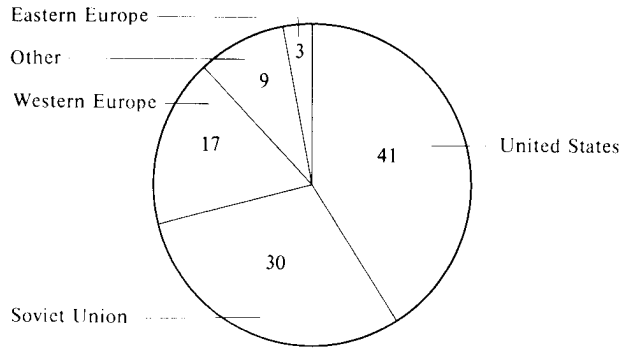
**Figure 2**  
**Third World: Suppliers of Armored Vehicles, 1974-83**

Percent

**Tanks**  
 Total: 25,756



**APCs and RVs**  
 Total: 30,773



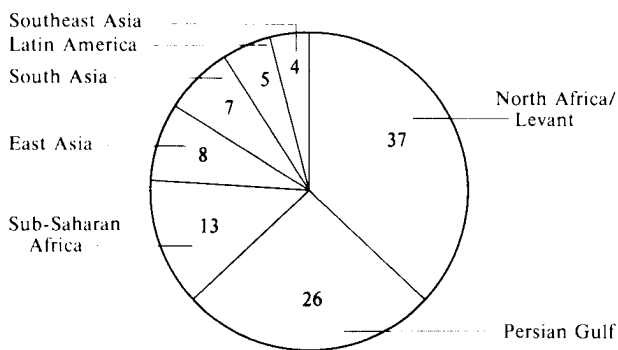
304878 2 85

25X1

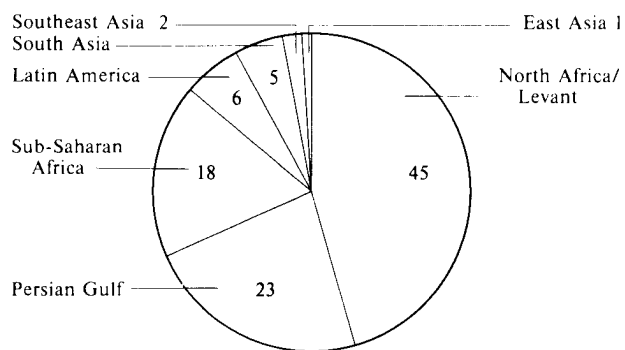
**Figure 3**  
**Third World: Armored Vehicle Purchases**  
**By Region, 1974-83**

Percent

**Tanks**  
 Total: 25,756



**APCs and RVs**  
 Total: 30,773



304879 2 85

25X1



Jane's Main Battle Tanks ©



Jane's Armour and Artillery, 1984-85 ©

**Figure 4. US and Soviet tanks.**  
*The Soviet T-72 tank. The new-generation T-72 has been exported to several clients, including Algeria, India, Iraq, and Peru. [redacted]*  
*The US M60 tank. The M60 is in service with 15 Third World armies, including those in Egypt, Israel, Singapore, and South Korea. Model shown is the M60A3 with infrared searchlight and improved fire-control system and engine. [redacted]*

inventories more than doubled. US and Soviet tanks were the most popular, with the main buyers again states in North Africa and the Levant and, Persian Gulf. [redacted] these states' armies were particularly impressed with the proven combat performance of US and Soviet-style tanks (figure 4). For example, according to Defense Department reporting:

- Since 1974 the Syrian Army has acquired almost 3,000 T-54/55 and T-72 tanks from Moscow.

- Egypt plans to replace at least half of its aging Soviet-made inventory with about 1,500 US M60A3 and—possibly—M1 tanks by 1993.
- The Iraqi Army has received almost 4,000 T-54/55, -62, and -72 tanks from the Soviet Union and Eastern Europe and T-59/69 tanks from China since 1974.
- Iran acquired almost 800 US M60A3 tanks before 1979. Since 1981 Tehran has received about 200 T-54/55 and T-62 tanks from North Korea and Libya.<sup>3</sup> [redacted]

25X1

**The Declining Third World Market, 1985-94**

Armored vehicle purchases are now leveling off, and several factors point to a much smaller Third World market in the next decade:

- *Decreased funding.* The large increase in OPEC revenues generated by the hike in oil prices in October 1973 and easy financing packages offered by suppliers pushed armored vehicle purchases in 1974-83 to more than \$20 billion.<sup>4</sup> Third World armored purchases are now being constrained by debt problems and the soft oil market. [redacted] that Nigeria canceled an option to purchase 160 US APCs because of funding shortages. The Indonesian Army also shelved plans to purchase additional US APCs because of falling oil revenues. Third World armies usually account for the largest portion of military budgets, but the recent economic pinch has constrained purchases. [redacted] slashed funding for armor procurement as part of its recent defense budget cutback.

25X1  
25X1

25X1

25X1

25X1

- *Completion of modernization programs.* Increased revenues and regional threats drove many armor modernization cycles. Purchases are now leveling off after the rapid expansion of inventories in the last 10 years. Armored vehicle producers will not benefit from equipment replacement cycles until after the turn of the century.

25X1

<sup>3</sup> See appendix A for details on the structure of the armored vehicle market. [redacted]

<sup>4</sup> In comparison, we estimate that Third World states spent about \$50 billion on jet combat aircraft and \$10 billion on warships in the same period. [redacted]

25X1

25X1

Secret

25X1

- *Completion of armored infantry programs.* Many Third World armies mechanized infantry and marine units with armored vehicles as part of their modernization efforts, according to [redacted] Defense Department reporting. The pace of mechanization is now slowing because most Third World armies do not possess the large infantry forces necessary to sustain these programs. Only a few Arab armies—such as the Egyptian, Saudi, and Syrian—plan to continue mechanizing infantry units above battalion size.<sup>5</sup>

British 105-mm guns produced in Israel [redacted]

[redacted]

25X1

25X1

25X1

- *A smaller number of used vehicles.* More than 26,000 low-cost used vehicles—mostly those retired from the Czechoslovak, Polish, and Soviet armies—entered the market in the last decade. [redacted]

- *Third World production.* An increasing number of states are producing their own armored vehicles rather than seeking foreign models (figure 5). Since 1975, five countries—Brazil, Israel, North and South Korea, and South Africa—have made the jump from licensed assembly to production of armored vehicles of domestic design. India will begin producing its indigenously designed APC and Model 80 tank in the late 1980s, and Egypt has also constructed a prototype of a new APC. We estimate that Third World states will produce almost 6,000 vehicles in the next decade to fill their armor needs (table 1).

25X1

25X1

25X1

[redacted]. We estimate that the number of available used vehicles will decline by almost 50 percent to about 14,000 in the next decade. The majority of used US vehicles are slated to NATO aid programs for Greece, Spain, and Turkey. The primary West European suppliers—hard hit by the slump in arms sales—are delaying the retirement of many vehicles. The United Kingdom, for example, is extending the operational life of its Chieftain fleet because of slowed deliveries of new Challenger tanks. We estimate that the US and West European armies will retire about 3,400 tanks and 8,400 APCs and RVs. About 50 percent of these vehicles will be sold to countries seeking surplus Western models including North Yemen, Pakistan, and Somalia. [redacted]

- *Alternative systems.* Some Third World armies are considering attack and transport helicopters and portable antiarmor weapons to fill roles now slated to armored forces. [redacted]

25X1

#### The Pattern of Future Armored Vehicle Purchases

[redacted] we estimate that Third World states will order fewer than 35,000 vehicles over the next decade, down more than 60 percent from the level reached in the last 10 years (table 2 and figure 6). The softer market will result in more gradual growth of Third World armored inventories (figure 7). In cases where information on the intentions of Third World armies was not available, we assumed vehicles older than 25 years would be retired and replaced on a one-for-one basis.<sup>7</sup>

25X1

25X1

25X1

25X1

Several other factors could further reduce Third World purchases of armored vehicles in the next decade:<sup>6</sup>

- *Upgrade programs.* Funding shortages are forcing Third World states to upgrade existing armored inventories rather than purchase new vehicles. [redacted] Israel up-gunned its Soviet-made T-54/55 inventory with

#### Infantry Fighting Vehicles (IFVs), APCs, and RVs.

We expect purchases of APCs and RVs to decline by about 40 percent to about 19,000 in 1985-94. Several countries—India, Iraq, and Saudi Arabia—plan to purchase 1,000 or more APCs, IFVs, and RVs. We

25X1

25X1

<sup>5</sup> The manpower strength of mechanized battalions in Third World armies varies greatly. For example, battalions in the Indian Army comprise 900 soldiers, compared to 300 to 400 men in an Iraqi battalion. Mechanization programs involve putting all personnel in APCs with tanks and RVs often complementing the unit. [redacted]

<sup>6</sup> See appendix B for details on these market variables. [redacted]

<sup>7</sup> See appendix C on changing armored vehicle needs and appendix D for detailed projections of country purchases. [redacted]

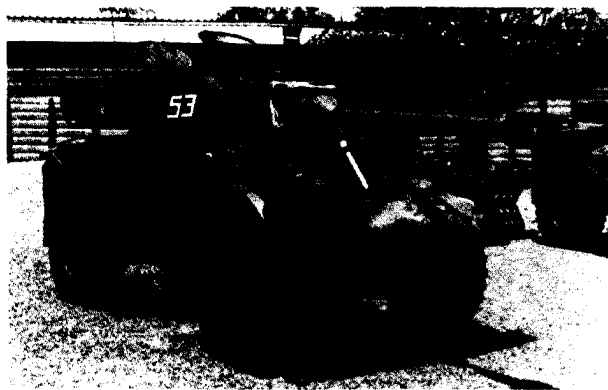
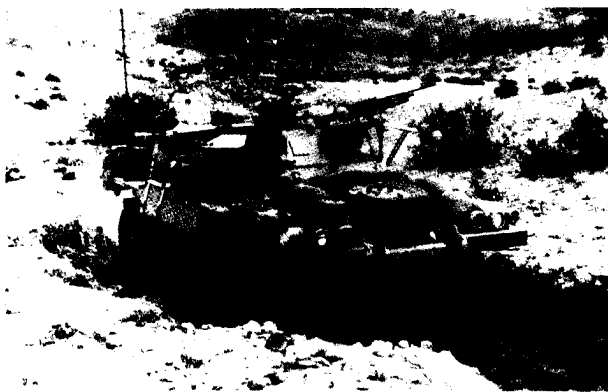
25X1

25X1

25X1

Secret

Secret



All photos:  
Jane's Light Tanks and Armoured Cars. ©

Figure 5. Vehicles produced by Third World states (top to bottom), the Brazilian Jararaca RV, Israeli RBY Mk I RV, and South African Eland RV.

Table 1  
Third World: Projected Armored Vehicle Production, 1985-94<sup>a</sup>

	Tanks	APCs/IFVs/RVs	Total
<b>Total</b>	<b>2,085</b>	<b>3,700</b>	<b>5,785</b>
Brazil	330	1,770	2,100
India	100	0	100
Israel	355	560	915
North Korea	1,300	800	2,100
South Africa	0	570	570
South Korea	0	1,492	1,492

<sup>a</sup> Excludes vehicles produced under license.

[Redacted]

25X1

expect regional threats and insurgencies to prompt Angola, Ethiopia, and Thailand each to order about an equal number. A large number of other states—including Egypt, Iraq, and Mexico—plan to update aging APC and RV fleets with newer models to mechanize infantry units and perform internal security missions. All of these purchases will be subject to budgetary constraints. [Redacted]

25X1

**Tanks.** Third World armies will acquire fewer than 14,000 tanks in the next decade, down almost 50 percent from the previous 10 years. The market for main battle tanks is depressed because Third World armies usually have only a small need for them and financial problems have reduced their ability to buy them. [Redacted]

25X1

only Iraq and Libya will order 1,000 or more tanks to replace older Soviet-style models or expand their inventories. Iran will probably buy about 500 tanks from China and—if no other sources are available—North Korea to replace its US-made inventory when the war with Iraq is over. [Redacted]

25X1

25X1

25X1

[Redacted] Among other purchasers, Syria plans to acquire almost 800 tanks to replace older T-62s in its armored divisions, and the Saudi Army wants to buy 300 tanks to replace its two brigades of aging AMX-30s. Egypt would like to purchase about 650 US M1 tanks by 1993 to augment the 750 M60A3s it will buy, but funding constraints will be a problem.

25X1

[Redacted]

Secret

Secret

**Table 2**  
**Third World: Projected Armored Vehicle**  
**Purchases by Region, 1985-94**

	North Africa/ Levant	Sub-Saharan Africa	Persian Gulf	Latin America	South Asia	Southeast Asia	East Asia	Total
<b>Total</b>	<b>6,724</b>	<b>6,729</b>	<b>8,416</b>	<b>2,782</b>	<b>2,898</b>	<b>3,900</b>	<b>1,385</b>	<b>32,834</b>
Tanks	2,930	2,119	4,414	1,367	1,007	1,154	715	13,706
APCs/IFVs/RVs	3,794	4,610	4,002	1,415	1,891	2,746	670	19,128

25X1

### Outlook for Suppliers

Despite the softer market for armored vehicles over the next decade, Third World and Communist suppliers marketing inexpensive but durable armored vehicles stand to benefit. Although their level of sales will probably drop slightly, their share of the overall market will grow as they become more competitive in the smaller armored vehicle market. An exception will be East European suppliers who will play a smaller role as their older main export models end production. West European producers will be favored in selected sales to former colonies, but the continued drop in orders will force them to make changes in industries and export guidelines as they try to check the slide in their market share. [redacted]

**Third World.** We expect the main Third World suppliers—Brazil, North Korea, and South Africa—to slightly expand their 10-percent share in the smaller armored vehicle market in the next 10 years. Third World producers will see their sales drop from the 1974-83 level of over 6,000 vehicles as the overall market shrinks. Brazil, North Korea, and South Africa, however, will enjoy competitive advantages stemming from:

- *Low labor costs.* [redacted] an armored industry worker in Brazil earns about \$1.40 an hour compared to \$15.00 for his US counterpart. The predominately black work force also assures low labor costs for South African armor producers. This allows Brazilian and South African producers to typically price their vehicles up to 40 percent less than comparable Western models. [redacted]

[redacted] the new Brazilian Tamayo main battle tank is priced at less than \$1 million compared to \$1.5 million for the US M60.

- *Barter arrangements.* Severe debt problems are forcing Third World states to increasingly engage in barter trade. This will benefit Brazil and North Korea because they are willing to trade armored vehicles for commodities. [redacted]

25X1

25X1

- *Iranian postwar armor procurement plans.* [redacted]

25X1

25X1

North Korea has been the main supplier recently of tanks to Iran, and Tehran may acquire some North Korean models as part of its effort to rebuild its postwar inventory.

25X1

- *Aggressive marketing efforts.* Brazil has keyed on Third World states in its burgeoning arms export drive and often uses sales of APCs and RVs as wedges to open up new markets. North Korea is also building on its position as a supplier of vehicles to the combatants in the Iran-Iraq war to find new markets. [redacted]

25X1

25X1

The reliable armored vehicle designs Third World producers are offering will interest other Third World armies. Almost all indigenously designed APCs and RVs currently produced in the Third World are wheeled versions which are more marketable than tracked vehicles. For example, the proposed Brazilian

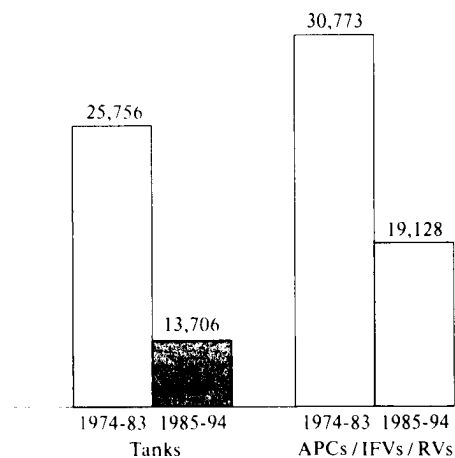
25X1

25X1

25X1

Secret

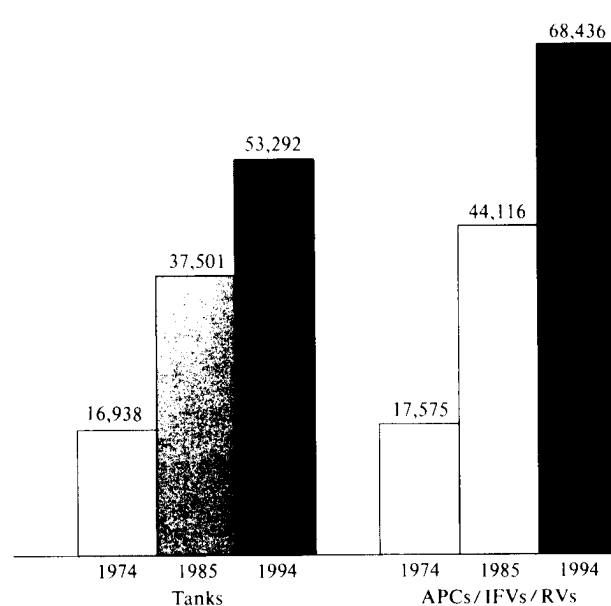
**Figure 6**  
**Third World: Armored Vehicle**  
**Purchases, 1974-94\***



\* Estimated.

304880 2 85

**Figure 7**  
**Third World: Growth of Armored**  
**Forces, 1974, 1985, and 1994\***



\* Estimated.

304881 2 85

Tamayo will interest armies seeking a tank with good mobility and improved ballistic protection through the use of sloped armor and a low-profile design. Press sources, for example, report that Saudi Arabia is interested in the Tamayo.

Profits from new armored vehicle production, however, will be small for Third World manufacturers. Most producers—unable to offer main or light battle tanks—will concentrate on sales of less expensive APCs and RVs. In any case, the engines, main guns, and fire-control systems in Third World-produced vehicles will continue to be imported. The hull, drive train, and light armament—30 percent of the value of an armored vehicle—will be the primary Third World input. The new Brazilian EE-T1 tank design shows the high foreign content that will continue to characterize Third World vehicles (figure 8).

The role of Third World suppliers will further increase as financial and operational requirements force some states to dispose of current inventories. Several Third World armies are making changeovers to newer

vehicles and are considering selling existing inventories to avoid standardization problems and to cut operating and maintenance costs. Egypt would like to phase out about 3,600 of its Soviet-made vehicles to accommodate its switch to US models, [redacted] may dispose of some of its 1,200 Vijiyanta tanks as it standardizes with Soviet armor. Iraq may also sell some of its T-54/55 tank fleet as it recycles newer tanks into its inventory, if Moscow gives approval. Simmering regional tensions, however, will probably curtail the plans of some Third World armies to reduce inventories. Israel and India, for example, may reconsider selling their older US-, Soviet-, and British-made vehicles because of the unstable security situation in the Middle East and South Asia.

25X1

25X1

25X1

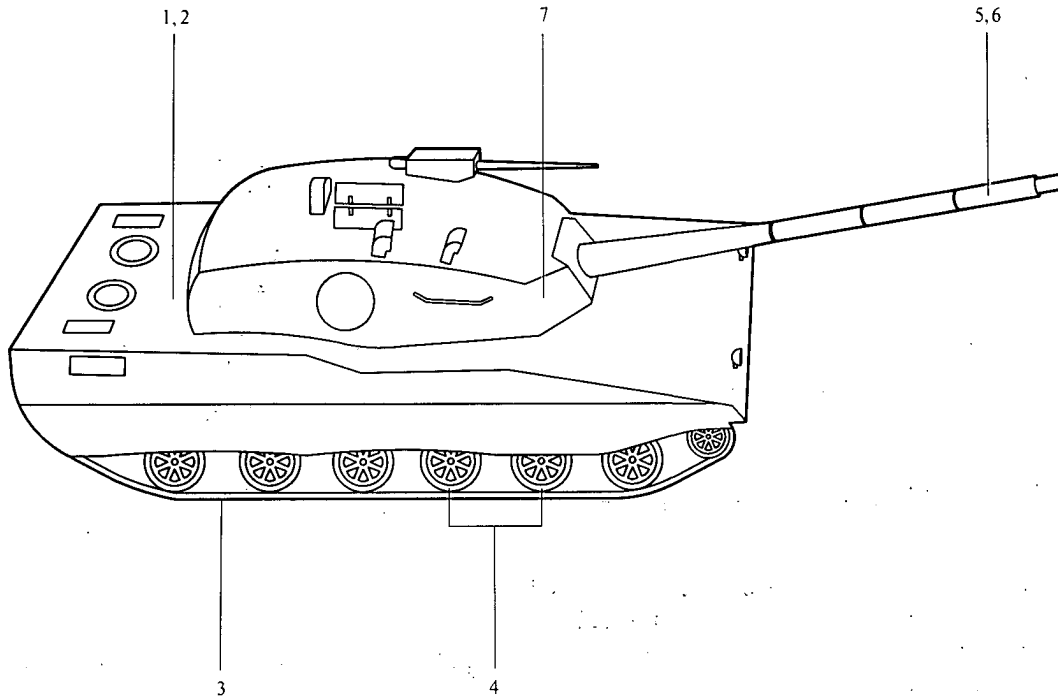
25X1  
25X1

25X1

25X1

Secret

**Figure 8**  
**The Brazilian EE-T1 Light Tank: Foreign Equipment Inputs**



Equipment	Manufacturer	Country
1. Diesel engine	MTU	West Germany
2. Transmission	Unknown	West Germany
3. Tracks	Diehl	West Germany
4. Suspension system	Dunlop	United Kingdom
5. 105-mm gun	Royal Ordnance Factory	United Kingdom
6. 120-mm gun <sup>a</sup>	GIAT	France
7. Fire-control system	NA	United Kingdom or France

<sup>a</sup> Gun may be produced under license in Brazil.

[Redacted Box]

304883 3-85

25X1

Secret

**China.** In our judgment, China will maintain a competitive edge in the Third World armored vehicle market. [redacted] Chinese vehicles—although based on 1950s-vintage Soviet technology—tolerate harsh climates and heavy use better than many Western models. Iran may try to supplement its postwar tank inventory with Chinese models, and Iraq will continue acquiring Chinese tanks to maintain a wartime reserve in the event of another Soviet embargo. We believe several African states with security ties to Beijing—Congo, Tanzania, Zaire, and Zambia—will continue to rely mainly on China for their limited armor needs. [redacted]

**Eastern Europe.** The East European market share of about 10 percent will decrease as the T-54/55 tank—the principal export vehicle—is phased out of production. The T-54/55 spearheaded East European sales of more than 5,000 vehicles in 1974-83 (figure 9). Only Romania will continue producing the T-54/55. The US attache in Warsaw reports that the last batch of 200 T-54/55 tanks produced in Poland were sold recently to India and Iraq. [redacted]

[redacted] T-72 is now entering production for national militaries in Czechoslovakia and Poland. The Czechoslovak and Polish T-72 tanks are identical to the Soviet version, which is too complex and heavy for most Third World armies. [redacted]

Some Third World operators of Soviet-style armor, however, will continue to look to East European suppliers to augment their needs. Some Third World users of Soviet-style vehicles prefer not to deal with Moscow for political reasons or wish to avoid dependence on the Soviet Union. Iraq, for example, purchased large numbers of tanks from Poland and Czechoslovakia largely out of deep distrust of Moscow after its embargo in 1980-81. Iran and Iraq will probably augment their postwar APC fleets with East European models similar to the BTR and BMP series. The Czechoslovaks, for example, produce the OT-62/64—a version of the BTR-50/60—as well as the BMP-1 APC. Sales of these vehicles, however, will continue to be subject to Soviet approval. [redacted]

[redacted]

**Soviet Union.** The Soviet share of the armored vehicle market will slightly decline from the 1974-83 level of 35 percent, but Moscow will remain the leading supplier as key customers place new orders. Moscow sold almost 20,000 vehicles in the last 10 years (figure 10). We estimate that several traditional Soviet clients—Ethiopia, India, Iraq, Libya, and Syria—will together acquire almost 10,000 vehicles by 1994. [redacted]

[redacted] In some cases, concessionary prices and the need for follow-on support ensure that Soviet clients purchase most of their vehicles from Moscow. Low prices occasionally may also open up new markets. [redacted]

[redacted]

We expect the Soviet role in the market to remain concentrated among longtime clients. Since 1974 Moscow has exported more vehicles than any other supplier, but the number of major recipients has been selective. Purchases of more than 300 Soviet vehicles were made by a few Marxist Third World states—Angola, Cuba, Ethiopia, South Yemen, and Vietnam—and regular customers—Algeria, India, Iraq, Libya, Peru, and Syria. Several of the latter also purchased more than 200 vehicles from Western suppliers. [redacted] the sales pattern for Soviet vehicles reflects their lower prices and quality compared to Western models. At \$250,000 each, for example, a BMP-1 APC is priced about \$50 to \$120,000 less than comparable Western vehicles such as the French AMX-10P and US M113 APCs. [redacted]

Nevertheless, prospects for Western and Third World inroads into most Soviet-dominated armored vehicle markets are poor. Soviet clients generally purchase only token numbers of Western vehicles to upgrade their inventories or squeeze Moscow for better sales

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

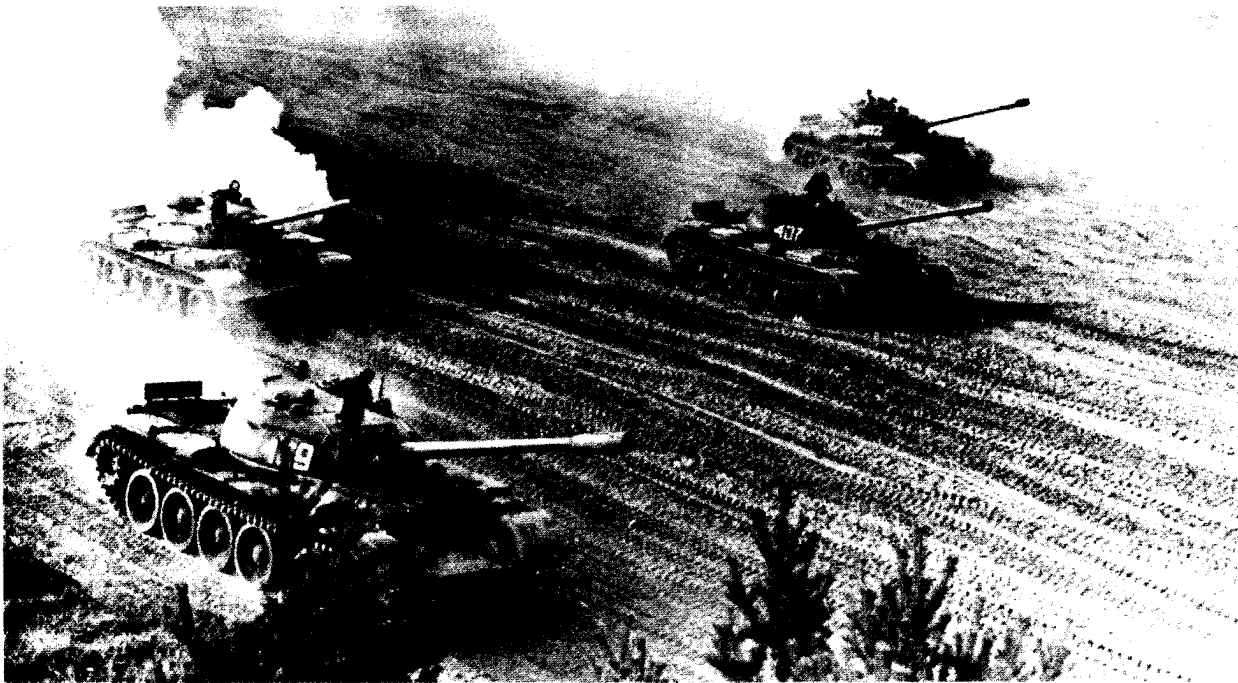
25X1

25X1

25X1



Secret



Jane's Main Battle Tanks ©

Figure 9. T-54/55 tanks during maneuvers. The T-54/55 is the main Soviet and East European export vehicle. [redacted]

25X1

terms. The Soviets—unwilling to risk losing traditional clients—have recently taken steps to close their markets to Western suppliers. Moscow provided India with a license to produce improved T-72 tanks and new-generation BMP-2 APCs to prevent it from seeking comparable Western models. [redacted]

[redacted] In contrast to the stiffer financing terms Western suppliers are demanding, Moscow in a few cases has offered more flexible payment schedules. Some Iraqi payments, for example, have been deferred to accommodate Baghdad's precarious financial position during its war with Iran. [redacted]

**Western Europe.** West European armored vehicle producers will play a smaller role in the Third World market, but equipment manufacturers will continue to do well. West European producers held about 15 percent of the market in 1974-83 with sales of about 8,000 vehicles. Recent sales trends indicate this share will shrink over the next decade. [redacted]

Defense attaches and US Embassy officials report that the West European share is already shrinking

because of the high prices and lower quality of some of their vehicles:

- Third World operators of the 1950s-vintage French AMX-30 tank regard it as unreliable and overpriced at \$1 million each. No AMX-30 tanks have been sold since 1980. Two follow-on models—the AMX-32 and AMX-40—have received no orders despite a major sales campaign since 1981.
- The Italian OF-40 tank has been sold in small numbers only to the United Arab Emirates. [redacted] the OF-40 is perceived as inferior to most US, Soviet, and British models.
- French AMX-10RC RVs in the Moroccan Army inventory have experienced breakdowns in the suspension system caused by the excessive weight of the 105-mm gun. Modifications to solve the problem will further increase the price of the vehicle—already more expensive than the AMX-30 tank.

25X1  
25X1

25X1

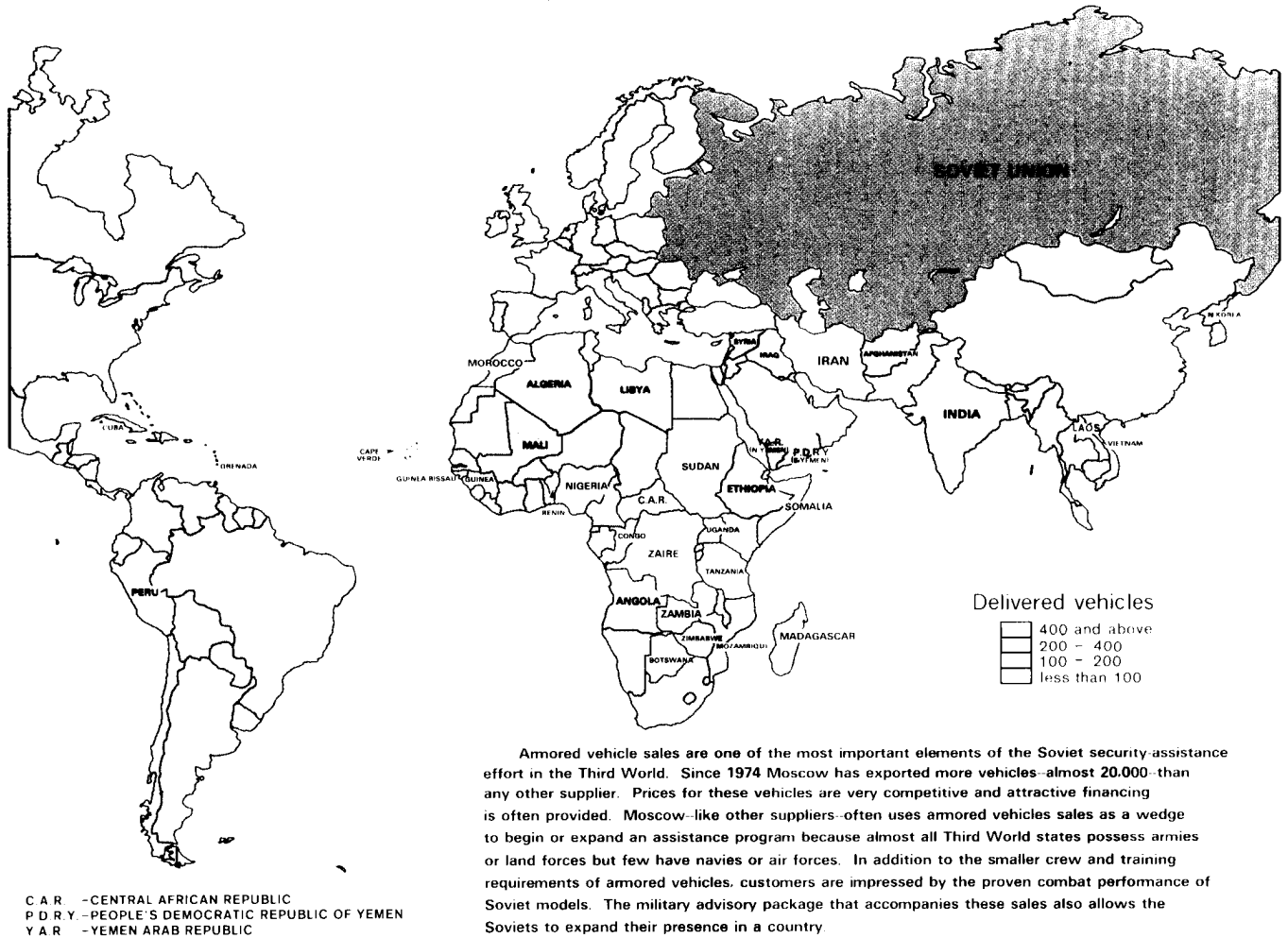
25X1

25X1

25X1

Secret

**Figure 10**  
**Third World Soviet Armored Vehicle Deliveries, 1974-83**



Armored vehicle sales are one of the most important elements of the Soviet security assistance effort in the Third World. Since 1974 Moscow has exported more vehicles—almost 20,000—than any other supplier. Prices for these vehicles are very competitive and attractive financing is often provided. Moscow—like other suppliers—often uses armored vehicles sales as a wedge to begin or expand an assistance program because almost all Third World states possess armies or land forces but few have navies or air forces. In addition to the smaller crew and training requirements of armored vehicles, customers are impressed by the proven combat performance of Soviet models. The military advisory package that accompanies these sales also allows the Soviets to expand their presence in a country.

704520 3 85

- The 66-ton British Challenger tank performed poorly in desert mobility trials last year in the Middle East. No orders have been received for the Challenger—priced at more than \$2 million each—despite high-level marketing efforts since 1982.

The only significant sale of West European vehicles that we foresaw—the Saudi purchase of 300 tanks—has been delayed indefinitely. Riyadh has expressed its preference for the West German Leopard II, but

Bonn has refused to approve a sale. Although the Saudis have also offered to buy a comparable number of APCs, they refuse to purchase any vehicles if the Leopard II is not included in the package. Riyadh has also reviewed the AMX-32 and Challenger tanks but appears to be leaning toward the US M1 equipped with a 120-mm gun. Long production leadtimes and sales restrictions, however, would preclude an M1 sale before 1990.

West European armored vehicle exporters will try to slow the erosion of their market position by using traditional sales advantages. Some new orders may be secured by exploiting security ties with former colonies in Sub-Saharan Africa and the Persian Gulf. Easy sales terms and favorable foreign policy stances will also continue to benefit West European suppliers in selected sales. For example, according to US Embassy and defense attache reporting:

- French technicians and advisers to the Cameroonian Army have pointed to the delay in shipment of 24 V-150 APCs because of payment arrearages as an example of US unreliability. Cameroonian officers have now requested a demonstration of French vehicles.
- Oman previously purchased British Chieftain rather than US M60 tanks under pressure from British military advisers to the Omani Army.
- Saudi leaders have told US officials that they sometimes prefer to purchase French rather than US vehicles because of the lack of sales restrictions and Paris's pro-Arab Middle Eastern policy.

[redacted]

On the other hand, West European manufacturers of equipment for armored vehicles face brighter prospects. The demand for main guns, engines, and fire-control systems for vehicles being built or upgraded in Third World countries will be strong throughout the decade. We also expect reasonably priced new equipment—automatic loaders, composite armor, high-velocity light guns, and laser rangefinders—to be increasingly introduced into Third World inventories. The large number of West European firms will lead to increased competition, but their involvement in providing similar equipment to the aerospace and naval sectors should cut costs and alleviate the pressure on profits. [redacted]

The depressed Third World market is already decreasing the competitiveness of the underused West European armored vehicle industry. Producers are being squeezed by falling domestic and intra-European orders and slackened international demand. Press sources, for example, report that Renault of France suffered a drop in profits of \$2 billion in 1983

because of declining foreign sales. The situation is especially troublesome for West German producers constrained from selling to the Third World. According to press [redacted] defense attaches, West European governments and producers are taking initial steps to ease the problem by:

- *Cutting employment.* Armored industry employment in France, the United Kingdom, and West Germany has been allowed to drop by 17 percent since 1978. Vickers, Ltd. of the United Kingdom plans no further hiring in order to streamline the current work force. The Royal Ordnance Factory also will probably reduce employment once production of main guns for Egypt's T-55 tanks—the main activity at the Nottingham plant—ends in 1985. In West Germany, Thyssen-Henschel plans to reduce its workweek in 1985 if a major foreign contract is not secured.
- *Reorganizing.* London is selling the Leeds and Nottingham plants of the Royal Ordnance Factory into private ownership. The British Government also recently contributed grants of more than \$3 million for consolidation of the vehicle divisions of Vickers, Ltd. into a new plant. Creusot-Loire and Renault of France may merge their armored vehicle divisions into a firm specializing in wheeled APCs and RVs to meet the increasing Third World demand for these vehicles. Panhard—another wheeled-vehicle producer—may also be folded in. In Italy, Oto Melara has improved production efficiency by establishing common assembly lines for its armor and naval products.
- *Placing domestic orders.* Governments are placing selected orders to help maintain employment in companies competing for the dwindling number of foreign contracts. Italy recently authorized OTO-Melara and Fiat to design a new tank based on the OF-40 for the Army rather than purchase the West German Leopard II. Spain also has opted to develop a new tank instead of acquiring a US or West German model. Madrid has received no foreign orders for the French-licensed AMX-30.

25X1

25X1

25X1

- *Loosening export restrictions.* West German armored vehicle exporters have been hindered by government definitions of "offensive" vehicles. Although tanks still fall under this category, APCs and RVs with light armament are increasingly sold as "utility" or "internal security" vehicles. The TM-170, Condor, and UR-416 APCs are now exported under these designations.
- *Improving aftersales support.* Producers are upgrading support services to retain current markets and to keep the door open for future sales. Panhard is offering contracts to provide a permanent in-country team of technicians to maintain vehicles it sells. Vickers, Ltd. has also initiated an across-the-board improvement in sales support including in-country training and tank maintenance at its own facilities. [redacted]

**Implications for the United States**

The future Third World armored vehicle market carries several economic and security implications for the United States. The improved capabilities of Third World armored forces could contribute to regional instability—particularly in North Africa and the Levant and the Persian Gulf—to threaten US interests. In addition, the softer market will affect NATO armored vehicle procurement plans by increasing the cost of these vehicles for West European armies. Finally, we expect the US position as the second-leading supplier of armored vehicles to shrink. US armored vehicle equipment producers, however, will benefit from continued strong demand. [redacted]

**Regional Instability.** The increased acquisition of modern Soviet vehicles by a number of states—some in areas beset by instabilities—will allow a greater number of Third World armies to threaten neighboring forces and destabilize regional military balances. Soviet provision of large numbers of improved T-72 tanks and BMP-2 IFVs to several clients in North Africa and the Levant and India, for example, will give their armored forces a qualitative advantage over other regional forces. We believe procurement of this weaponry—particularly by Iraq, Libya, and Syria—gives their armies a greater ability to challenge regional forces during crises. Introduction of the T-72 tank into their inventories—given crews with good

training—could pose the greatest risk because of its reportedly good performance against US- and British-made armor in the Iran-Iraq war.<sup>8</sup> [redacted]

Despite these improvements, in our judgment, most Third World armies will retain only a limited ability to conduct offensive armored operations. We believe only the Indian, Iraqi, Israeli, and North and South Korean armies have the standardized inventories, trained personnel, and air support necessary to conduct a successful armored offensive against their neighbors. Limited armored operations against smaller regional armies can also be mounted by the Libyan Army against Chad and Tunisia and by Algerian forces against Morocco. Standardization problems encountered in switching to US and Soviet-style armor, however, will limit the capabilities of the Egyptian and Iranian armies, respectively. Acquisition of new armor will also do little to enhance the offensive capabilities of other major Third World armored forces because of persistent problems in:

- *Training.* [redacted] Saudi armored units are inexperienced and suffer from severe deficiencies in training and exercises. The Algerian Army is also at a qualitative disadvantage to the Libyan and Moroccan armies because of its lack of combat experience, according to Defense Department reporting.

[redacted]

- *Logistic support.* Libyan armored operations are greatly hindered by inefficient resupply efforts and lack of spare parts. [redacted] faces similar problems because of a poorly developed road network.

[redacted]

The successful Iraqi use of the T-72 tank is due largely to the superior training of Iraqi crewmen over their Iranian counterparts. Against tank crews of equal or better skill, the T-72's effectiveness would probably drop. [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

In the next decade these armies will make advances in some of these areas, but we expect the improved offensive capabilities generated by such gains to be matched by continued improvement in the performance of other regional forces. [redacted]

**NATO Armor Procurement.** The failure of West European governments to streamline their armored vehicle industries will increase the cost of their products for domestic armies. West European governments will maintain the capacity to build armored vehicles for their own militaries, but this political decision will preserve many relatively inefficient producers. The problem will be particularly acute among APC and RV manufacturers because of their large number—more than 20 in 12 countries—and the continuous entry of new firms into the industry such as Lohr of France and Porsche of West Germany. Smaller foreign sales will increase the cost of West European vehicles as factories slow production to maintain employment. The more expensive vehicles acquired by domestic armies will then absorb a larger portion of already strained defense budgets. NATO armor procurement plans will be affected because armies will acquire fewer vehicles for their money or be forced to increase funding to obtain the same number. [redacted]

**US Sales.** We expect the US role in the market for new vehicles to decrease significantly because of the lack of marketable models and increasing foreign competition. The M60 tank is scheduled to end production in early 1985. [redacted] no prospects for additional orders. The only US production tank will be the M1 whose high price—more than \$2 million—operational complexity, and various technology-transfer restrictions have severely limited Third World sales prospects. Production of the Rapid Deployment Force Light Tank—favorably reviewed by Venezuela—is several years off, with initial deliveries to the US Army. US producers can offer only four APC models—the M113, Piranha, V150/300, and Dragoon—in a market saturated with comparable West European models. [redacted] the M113 APC—the principal US export vehicle—is becoming less competitive because of its old design and light armor protection. [redacted] Third World purchases of the M113 APC dropping steeply after 1987. [redacted]

US APC producers hope to offset declining sales by securing a major Saudi contract for 1,600 Piranha APCs and by offering vehicles with new designs. [redacted]

[redacted] General Motors is favored to win the \$940 million Piranha contract. A decision by Riyadh is expected soon. New designs are being evaluated by FMC Corporation, which is developing an M113 APC with a lower silhouette and thicker armor. FMC is also trying to break into the Third World market for wheeled vehicles with a new RV being designed with Brazil. These models, however, will not be available before 1988. US APC and RV manufacturers also expect strong competition because they are 10 to 15 years behind their West European and Third World counterparts in the use of low-profile designs, wheeled suspension systems, and heavier armor. [redacted]

The United States will retain a market presence by supplying used vehicles to US clients, but this role will also gradually diminish. The M113 APC and the M48A5 tank will be offered in this market. We believe US clients will acquire fewer surplus US vehicles because of their higher prices. [redacted]

[redacted]

US equipment manufacturers, on the other hand, will continue to be competitive in the Third World market. [redacted] the demand for new engines and fire-control systems to upgrade existing inventories is increasing. US companies will face stiff competition from West European firms, but the continued expansion of the Third World upgrade market should maintain sales throughout the next decade. [redacted]

25X1  
25X1  
25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

25X1

## Appendix A

### The Structure of the Armored Vehicle Market

The Third World armored vehicle market is serviced by a three-tiered structure of producers, equipment manufacturers, and armies disposing of used vehicles. Armored vehicle production—unlike naval and combat aircraft manufacture—requires relatively unsophisticated technologies and is less costly. It is an attractive option for states with even a modest defense production capability because labor is the primary input. [redacted] for example, reports that South African production of the Ratel RV requires no computerized machinery and four hulls can be turned out daily. More than 20 countries produce armored vehicles for export (table 3). [redacted]

Armored vehicles produced for export run a wide gamut of capabilities. The US M1 Abrams, Soviet T-72, and West German Leopard II—regarded by industry sources as the world's most capable tanks—have the highest mobility and firepower (figure 11). The British Challenger and Soviet-style T-54/55 tanks have less mobility but good armored protection. Several other tanks—including the British Vickers Mk 3, French AMX-30, and Italian OF-40—are lighter models, which meet the limited requirements of Third World armies. APCs and RVs range from high-speed, tracked vehicles with rapid fire guns—such as the French AMX-10P and British Simba APCs—to lightly armed vehicles for internal security—including the Brazilian Jararaca RV and West German UR-416 APC. [redacted]

Large domestic markets have reduced the reliance of US, Soviet, and East European armored vehicle manufacturers on foreign sales. More than 70 percent of the production of these manufacturers is fielded with national militaries. West European manufacturers have depended on large domestic and intra-European orders. Press sources report that, among other suppliers, Brazil exports 95 percent of its armored vehicle production because of small domestic needs. North Korea and China provide inexpensive, Soviet-style armor to Iran and Iraq and clients in Sub-Saharan Africa. [redacted]

The engines, fire-control systems, and armament that comprise 70 percent of the value of an armored vehicle are produced by almost 30 US and West European manufacturers (table 4). These firms are seldom operated by vehicle producers, and most are involved in the manufacture of similar systems for aircraft and naval vessels. Thomsom-CSF of France and SABCA of Belgium, for example, produce radars for aircraft as well as tank fire-control systems. In addition to providing components for new vehicles being manufactured in the United States, Western Europe, and the Third World, equipment producers maintain sales by refitting existing inventories. A tank is usually upgraded three times in its average 25-year lifespan, and an APC or RV twice. Third World armies also purchase older used vehicles and extend their life by several upgrades, providing additional business for equipment manufacturers. [redacted]

Eastern Europe and the Soviet Union have been the major suppliers of used armored vehicles to the Third World (table 5). Frequent replacement cycles have ensured a continuous flow of used vehicles, mainly Soviet-style tanks supplied by Czechoslovakia, Poland, and the Soviet Union. These vehicles are offered at bargain-basement prices—a used Soviet T-55 tank is priced two-thirds less than a US Korean war tank—inflating the size of the market because consumers acquire them in large numbers. West European states supplied surplus vehicles to traditional customers in the Persian Gulf and North Africa and the Levant, including Lebanon, Morocco, Oman, and Somalia. The United States has provided some used vehicles to Israel, Pakistan, and Thailand. [redacted]

25X1

25X1

25X1

25X1

25X1

25X1

**Table 3**  
**Third World: Armored Vehicles Exported, 1974-83**

Country	Type <sup>a</sup>	Entered Production	Weight (tons)	Troop Capacity <sup>b</sup>	Armament <sup>c</sup>
Austria	SK-105 LT	1971	20	3	1- by 105-mm gun
	4K7FA APC	1977	16	10	1- by 7.62-mm MG 1- by 12.7-mm MG
Belgium	SIBMAS APC	1980	18	14	Various
Brazil	Cascavel RV	1974	13	3	1- by 90-mm gun 1- by 7.62-mm MG
	Jararaca RV	1974	6	3	1- by 12.7-mm MG
	Urutu APC	1974	14	14	Various
China	Type-69 MBT	1969	40	4	1- by 105-mm gun 1- by 7.62-mm MG
	Type-59 MBT	1950s	40	4	1- by 100-mm gun 1- by 7.62-mm MG
	Type-62 LT	1950s	20	4	1- by 85-mm gun 1- by 7.62-mm MG
	Type-63 LT	1950s	23	4	1- by 85-mm gun 1- by 7.62-mm MG
Czechoslovakia	T-531 APC	1960s	14	14	1- by 12.7-mm MG
	T-54/55 MBT	1958	40	4	1- by 100-mm gun 1- by 7.62-mm MG
	T-62 MBT	1960s	44	4	1- by 115-mm gun 1- by 7.62-mm MG
	OT-62 APC	1962	18	20	1- by 14.5-mm MG
Egypt	OT-64 APC	1964	16	20	1- by 14.5-mm MG
	Walid APC	1967	9	Unknown	1- by 7.62-mm MG
France	AMX-30 MBT	1966	40	4	1- by 105-mm gun 1- by 20-mm cannon
	AMX-13 LT	1952	17	3	1- by 90-mm gun 1- by 7.5-mm MG
	AML-60/90/245 RV	1961	6	3	1- by 90-mm gun 1- by 7.62-mm MG
	AMX-10RC RV	1978	17	4	1- by 105-mm gun 1- by 7.62-mm MG
	VBC-90 RV	1970	14	3	1- by 90-mm gun 1- by 7.62-mm MG
	ERC-90 RV	1978	9	3	1- by 90-mm gun 1- by 7.62-mm MG
	M-3 APC	1971	7	12	Various
	VAB APC	1976	16	12	Various
Hungary	VLRA APC	1960s	8	12	Various
	OT-65 RV	1964	8	6	1- by 7.62-mm MG
Israel	RBY Mk I RV	1975	4	8	2- by 7.62-mm MG

Table 3 (continued)

Country	Type <sup>a</sup>	Entered Production	Weight (tons)	Troop Capacity <sup>b</sup>	Armament <sup>c</sup>
Italy	OF-40 MBT	1978	40	4	1- by 105-mm gun 1- by 7.62-mm MG
	6616 RV	1972	9	3	1- by 20-mm cannon 1- by 7.62-mm MG
	VCC-1 APC <sup>d</sup>	1963	13	9	1- by 12.7-mm MG 1- by 7.62-mm MG
	6614 APC	1970s	9	11	1- by 12.7-mm MG
Netherlands	YP-408 APC	1964	13	12	1- by 12.7-mm MG
North Korea	T-55 MBT	1973	40	4	1- by 100-mm gun 1- by 7.62-mm MG
	T-62 MBT	1978	44	4	1- by 115-mm gun 1- by 7.62-mm MG
Poland	T-54/55 MBT	1956	40	4	1- by 100-mm gun 1- by 7.62-mm MG
Portugal	Chaimite APC	1960s	8	11	Various
Romania	T-54/55 MBT	Unknown	40	4	1- by 100-mm gun 1- by 7.62-mm MG
South Africa	Eland RV <sup>e</sup>	1960s	6	3	1- by 90-mm gun 1- by 7.62-mm MG
	Ratel APC	1976	20	10	1- by 2-mm cannon 1- by 7.62-mm MG
Switzerland	Roland APC	1964	5	6	1- by 7.62-mm MG
	Piranha APC	1976	14	15	Various
	Grenadier APC	1967	7	9	1- by 20-mm cannon
United Kingdom	Challenger MBT <sup>f</sup>	1982	66	4	1- by 120-mm gun 1- by 7.62-mm MG
	Chieftain MBT	1963	60	4	1- by 120-mm gun 1- by 7.62-mm MG
	Centurion MBT <sup>g</sup>	1946	57	4	1- by 105-mm gun 1- by 7.62-mm MG
	Vickers Mk 3 MBT	1965	43	4	1- by 105-mm gun 1- by 7.62-mm MG
	Scorpion RV	1972	9	3	1- by 90-mm gun 1- by 7.62-mm MG
	Saladin RV	1958	13	3	1- by 76-mm gun 1- by 7.62-mm MG
	Scimitar RV	1974	9	3	1- by 30-mm cannon 1- by 7.62-mm MG
	Ferret RV	1952	6	3	1- by 7.62-mm MG
	Fox RV	1972	7	3	1- by 30-mm cannon 1- by 7.62-mm MG
	Sultan RV	1977	10	6	1- by 7.62-mm MG
Saracen APC	1953	11	12	2- by 7.62-mm MG	



**Table 3 (continued)**  
**Third World: Armored Vehicles Exported, 1974-83**

Country	Type <sup>a</sup>	Entered Production	Weight (tons)	Troop Capacity <sup>b</sup>	Armament <sup>c</sup>
United States	M1 MBT <sup>f</sup>	1980	60	4	1- by 105-mm gun 1- by 7.62-mm MG
	M60 MBT <sup>g</sup>	1960	54	4	1- by 105-mm gun 1- by 7.62-mm MG
	M48 MBT <sup>g</sup>	1952	48	4	1- by 105-mm gun 1- by 7.62-mm MG
	M47 MBT <sup>g</sup>	1953	51	5	1- by 90-mm gun 1- by 7.62-mm MG
	M113 APC <sup>g</sup>	1960	12	13	1- by 12.7-mm MG
	V-150/300 APC	1964	11	12	1- by 20-mm cannon 1- by 7.62-mm MG
	Dragoon APC	1979	14	9	1- by 20-mm cannon 1- by 7.62-mm MG
	Bradley IFV <sup>h</sup>	1981	24	9	1- by 25-mm cannon 1- by 7.62-mm MG
	Soviet Union	T-72 MBT	1972	45	3
T-62 MBT		1961	44	4	1- by 115-mm gun 1- by 7.62-mm MG
T-54/55 MBT		1949	40	4	1- by 100-mm gun 1- by 7.62-mm MG
IS-2/3 MBT		1943	51	4	1- by 122-mm gun 3- by 7.62-mm MG
T-10 MBT		1957	57	4	1- by 122-mm gun 1- by 12.7-mm MG
T-34 MBT		1940	35	5	1- by 85-mm gun 1- by 7.62-mm MG
PT-76 LT		1952	15	3	1- by 76-mm gun 1- by 7.62-mm MG
BRDM-1/2 RV		1959	8	5	1- by 7.62-mm MG 1- by 14.5-mm MG
BMP-1 APC		1967	15	11	1- by 73-mm gun 1- by 7.62-mm MG
BTR-152 APC		1951	11	19	2- by 14.5-mm MG
West Germany	BTR-40/50/60 APC	1951	11	18	1- by 14.5-mm MG
	Leopard II MBT <sup>f</sup>	1978	61	4	1- by 120-mm gun 1- by 7.62-mm MG
	UR-416 APC	1969	8	10	1- by 7.62-mm MG
	Condor APC	1978	13	12	1- by 20-mm cannon 1- by 7.62-mm MG
	TM-170 APC	1979	10	14	Optional
Yugoslavia	T-54/55 MBT	1950s	40	4	1- by 100-mm gun 1- by 7.62-mm MG
	M60 APC	1965	12	13	1- by 7.92-mm MG

<sup>a</sup> LT—light tank.

MBT—main battle tank.

APC—armored personnel carrier.

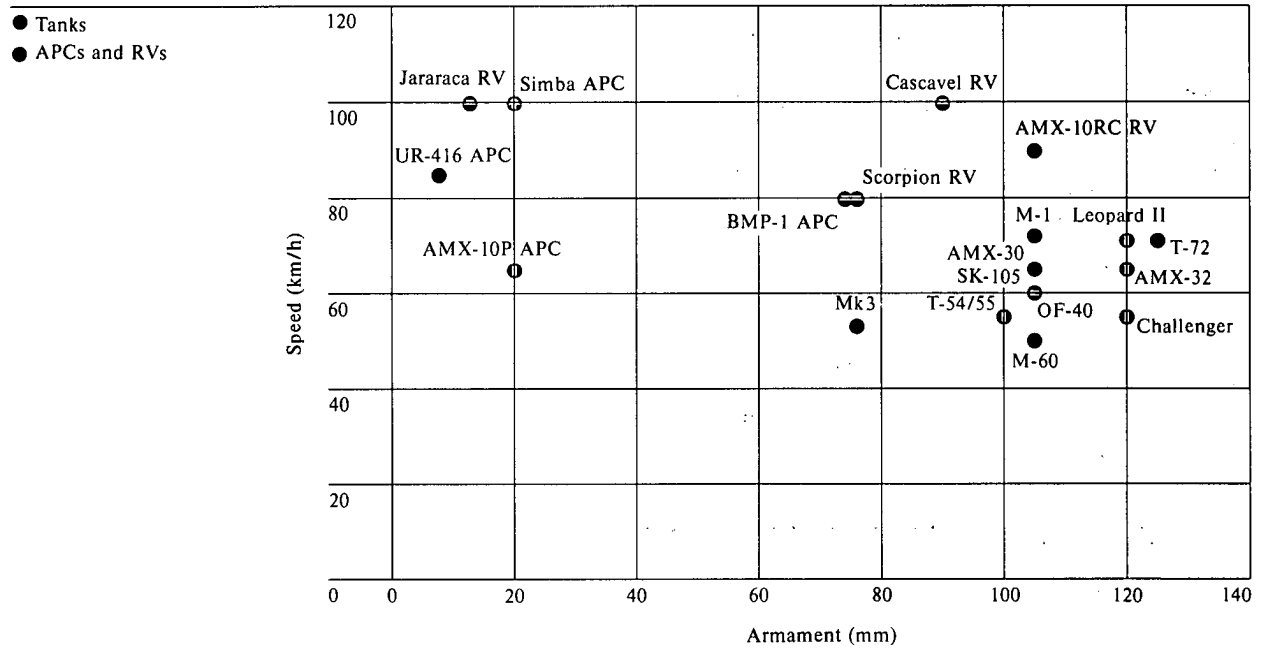
RV—reconnaissance vehicle.

IFV—infantry fighting vehicle.

<sup>b</sup> Including crew.<sup>c</sup> Designates heaviest armament that can be mounted; excludes anti-aircraft and anti-tank weapons.<sup>d</sup> Produced under US license.<sup>e</sup> Produced under French license.<sup>f</sup> Evaluated by Saudi Arabia.<sup>g</sup> All models.<sup>h</sup> Under consideration by Bahrain.

Secret

**Figure 11**  
**Firepower<sup>a</sup> and Mobility of Selected Armored Vehicles**



<sup>a</sup> Designates basic armament and excludes machinegun if larger caliber gun also mounted.

[Redacted]

304882 2-85

25X1

**Table 4**  
**Leading Western Producers of**  
**Armored Vehicle Equipment**

	Engines	Fire Control	Armament <sup>a</sup>
Belgium		SABCA OIP Optics	Cockerill Mecar
France	Poyaud Renault Badouin Grossal	Thomson-CSF SFIM CILAS	GIAT Hispano-Suiza SAMM
Italy	Fiat OTO-Melara		
Switzerland			Oerlikon
United Kingdom	Perkins Rolls-Royce	Marconi, Ltd. Barr and Stroud	Alvis, Ltd.
United States	Garrett Cummins Detroit-Diesel Teledyne Continental Avco-Lycoming	Hughes	Cadillac-Gage Hughes

<sup>a</sup> Excluding machineguns.



25X1

**Table 5**  
**Third World: Purchases of Used**  
**Armored Vehicles by Region, 1974-83**

	North Africa/ Levant	Sub-Saharan Africa	Persian Gulf	Latin America	South Asia	Southeast Asia	East Asia	Total
<b>Total</b>	<b>8,618</b>	<b>4,835</b>	<b>6,395</b>	<b>1,602</b>	<b>2,840</b>	<b>862</b>	<b>1,161</b>	<b>26,313</b>
<b>Soviet Union</b>	<b>4,924</b>	<b>3,381</b>	<b>4,130</b>	<b>732</b>	<b>1,438</b>	<b>624</b>	<b>260</b>	<b>15,489</b>
Tanks	3,030	2,229	2,552	624	859	564	260	10,118
APCs and RVs	1,894	1,152	1,578	108	579	60	0	5,371
<b>Eastern Europe</b>	<b>1,946</b>	<b>22</b>	<b>910</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>2,996</b>
Tanks	1,946	22	852	22	0	0	50	2,892
APCs and RVs	0	0	58	46	0	0	0	104
<b>United States</b>	<b>1,286</b>	<b>0</b>	<b>24</b>	<b>765</b>	<b>160</b>	<b>133</b>	<b>23</b>	<b>2,391</b>
Tanks	1,256	0	0	765	130	133	23	2,307
APCs and RVs	30	0	24	0	30	0	0	84
<b>Western Europe</b>	<b>299</b>	<b>128</b>	<b>655</b>	<b>37</b>	<b>30</b>	<b>35</b>	<b>43</b>	<b>1,227</b>
Tanks	199	100	655	37	30	15	43	1,079
APCs and RVs	100	28	0	0	0	20	0	148
<b>Other</b>	<b>163</b>	<b>1,047</b>	<b>616</b>	<b>0</b>	<b>636</b>	<b>55</b>	<b>398</b>	<b>2,915</b>
<b>Non-Communist <sup>a</sup></b>	<b>163</b>	<b>790</b>	<b>556</b>	<b>0</b>	<b>60</b>	<b>40</b>	<b>11</b>	<b>1,620</b>
Tanks	59	517	415	0	30	40	8	1,069
APCs and RVs	104	273	141	0	30	0	3	551
<b>Communist <sup>b</sup></b>	<b>0</b>	<b>257</b>	<b>60</b>	<b>0</b>	<b>576</b>	<b>15</b>	<b>387</b>	<b>1,295</b>
Tanks	0	239	60	0	576	15	355	1,245
APCs and RVs	0	18	0	0	0	0	32	50

<sup>a</sup> Includes Argentina, Brazil, Egypt, India, Iraq, Jordan, Kuwait, Morocco, Saudi Arabia, South Africa, South Yemen, and United Arab Emirates.

<sup>b</sup> Includes China, Cuba, Libya, North Korea, and Vietnam.

[Redacted]

25X1

## Appendix B

### Market Variables

Although financial problems and the end of modernization cycles will be the principal causes of the softer Third World armored vehicle market, several other factors could further reduce sales. The upgrading of current inventories, acquisition of portable weapons and helicopters to fill armored roles, and the increasing number of countries producing their own vehicles may limit planned purchases. [redacted]

#### Upgrading

The refurbishment and upgrading of vehicles already in the field is the most likely cause of a further drop in unit purchases. [redacted]

Funding shortages are forcing Third World armies to upgrade current inventories rather than purchase new vehicles. A typical tank upgrade with a new engine and fire-control system costs about \$500,000. [redacted]

[redacted] Several companies also offer upgrade packages including installation and spares support. [redacted] most Third World armies are upgrading their vehicles with US and West European equipment:

- Israel has upgunned its Soviet-made T-54/55 tank fleet with British 105-mm guns manufactured in Israel (figure 12).
- Colombia recently updated its World War II-vintage M-8 RV fleet with US armor plating and machineguns.
- Pakistan is installing Belgian fire-control systems in its Chinese-made T-59 tank inventory.
- The Pakistani Army plans to repower its US-made M113 APC fleet with US diesel engines.
- India plans to upgrade its Vijiyanta tank fleet with a Western-made fire-control system and engine.
- The Egyptian Army is reengining its Soviet-made BMP-1 APC inventory with a French powerpack.

[redacted]

Security and performance factors may sometimes impact on upgrading programs. In a few cases, Third World armies seem skeptical of the degree to which upgrading improves their armored capabilities. The bombing of the US Embassy in Beirut, for example, prompted the Kuwaiti National Guard to purchase new US V-150/300 APCs rather than upgrade its current inventory. [redacted]

#### Upgrading Companies

A variety of Western and Third World firms are offering complete armored vehicle upgrade programs. Packages usually include a new engine, fire-control system, and larger caliber main gun. The company purchases the equipment from the manufacturer and stores it in its own depot. The firm then offers to install the components at a per vehicle cost. By centralizing the upgrade process, these firms reduce package costs and create a single source for spares support. The major companies in the field are:

- NAPCO Industries Incorporated (United States). 25X1
- Teledyne Continental Motors Corporation (United States). 25X1
- Bernardini (Brazil). 25X1
- NIMDA (Israel). 25X1
- Flensburger Fahrzeugbau-Gesellschaft (FFG—West Germany). [redacted] 25X1

These firms usually focus on countries seeking to modernize aging US-, British-, and Soviet-made inventories because compatible components are readily available. [redacted]

- Teledyne Continental Motors recently won a contract worth almost \$1 billion to completely refit T-54/55 tanks in the Egyptian inventory. Cost per vehicle is \$800,000. 25X1
- FFG and Bernardini are competing for the contract to refit M41 tanks in the Taiwanese Army inventory with new engines and fire-control systems. 25X1
- NIMDA is seeking foreign orders from operators of M113 APC fleets to upgrade them to M113A1 standards with a new engine. 25X1
- Teledyne Continental is modernizing Jordan's Centurion tank fleet with a new engine, larger caliber gun, and fire-control system. 25X1
- FFG and NAPCO Industries are competing for a reengining contract for M41 tanks in the Thai Army inventory. 25X1
- NAPCO is negotiating with Pakistan to refit its M48 tank inventory with a new engine and fire-control system. [redacted] 25X1



Figure 12. This Soviet-made T-55 tank has been upgunned with a British 105-mm gun replacing the standard 100-mm gun. [redacted] Defence Materiel ©

upgrade programs sometimes are also delayed because Third World armies prefer to wait until the equipment has demonstrated good performance in another army's inventory. [redacted]

### Third World Production

The increasing number of Third World countries producing their own vehicles could also shrink the export market. [redacted] in 1975 only Brazil produced armored vehicles of domestic design. Several other countries—Israel, North Korea, South Africa, and South Korea—have since made the jump from licensed assembly to production of indigenously designed APCs, RVs, and tanks. [redacted]

[redacted] India also plans to use its tank manufacturing plants to produce its own main battle tank. Other nations are taking initial steps to develop armored vehicle industries:

- [redacted] South Korean technicians are participating in the development of the SK-1 tank with their US counterparts.
- [redacted] Taiwan will soon begin modifying 450 of its US-made M48 tanks with M60 hulls as a first step toward producing its own tanks.
- Indonesia has moved forward its production plans by introducing an APC using the chassis and engine of a West German UNIMOG truck, according to the [redacted] [redacted] recently developed an APC based on the chassis of a dump truck that it will place in production next year. [redacted]

We doubt that these countries, however, will move on to totally indigenous production of armored vehicles in the next decade. Many Third World states can

fabricate hull and turret sections, but very few possess the skilled labor pool and technologies to design bodies or manufacture operational components, armament, and fire-control gear. These components instead must be acquired from Western suppliers. Financial problems will also preclude capital investment to reduce this dependence on foreign sources. In any case, [redacted]

Third World states would forgo production of sophisticated equipment because they see no gain in entering such a competitive market once domestic needs are met. These factors have prompted India, for example, to adopt a [redacted]

### Alternative Systems

The use of helicopters in combat by the Iranian, Iraqi, Israeli, and Soviet Armies points to their utility over armored vehicles in troop-transport and antiarmor roles. [redacted] helicopters can be superior to armored vehicles because they can:

- *Deploy faster.* Helicopters are not hindered by rough terrain or vulnerable to passive ground-based defenses, such as mines and barricades.
- *Carry a larger payload.* Transport helicopters can ferry up to 35 soldiers with equipment to the battlefield. APCs and RVs usually carry 10 to 15 men.
- *Attack from long range.* Attack helicopters armed with guided antiarmor rockets can fire from stand-off positions and escape quickly. This standoff capability allowed the Israeli Army to successfully use its US-made Cobra helicopters armed with TOW missiles against Syrian armor in the Lebanon war. [redacted]

We doubt, however, that a large shift from armored vehicles to helicopters will occur. [redacted] armored vehicles play the central role in the full range of ground missions tasked to Third World

armies. Their superior survivability even under intense firing and their firepower capacity also give them better endurance in battle than other weapon systems.

[redacted] it withstands ground fire and makes few trips to rear areas for ammunition replenishment. In addition, attache and Defense Department reporting indicates that armored vehicles are highly prized items to:

- *Display military prestige.* Libya acquires excessive amounts of Soviet vehicles for parade purposes. The Paraguayan Army recently featured its 50 new Brazilian Cascavel RVs in a parade to demonstrate the modernization of the Army.
- *Maintain a presence in disputed areas.* Peru plans to deploy its new Soviet T-72 tanks along its southern border to counter Chile's armor buildup.

[redacted]

Purchases of portable weapons to fill antiarmored roles now slated to armored forces may slightly reduce sales. Military officers report that French-made HOT and Milan missiles were used effectively by Syrian soldiers against Israeli armor in the Lebanon war because they could be moved quickly and left no launch signature. Iranian infantry armed with hand-held antiarmored weapons have had similar success against Iraqi tanks. Large numbers of these inexpensive weapons can be purchased for diffusion among small infantry squads to avoid large-scale attrition of antiarmored defenses. We believe that sales, however, will be limited to the few Third World armies with large infantry forces because portable weapons must be fired from exposed positions.

[redacted]

25X1  
25X1

25X1

25X1  
25X1

## Appendix C

### Changing Needs

#### Lighter Vehicles

Third World armies are beginning to consider up-gunned APCs and RVs and light tanks to replace or supplement main battle tank inventories. [redacted] defense attaches note that Third World armies view the latest generation of main battle tanks as ill suited for their terrain and road conditions. The [redacted] for example, reports that Chinese-made T-62 tanks in the Zairian inventory destroy roads and delay military convoys. Less expensive APCs and RVs, however, can perform a tank's antiarmored role by mounting a main gun. Modern, easily maintained light tanks well suited for harsh terrain and climate conditions are also being evaluated by some Third World armies. [redacted]

[redacted] Brazil and Italy are also developing tanks under 30 tons for the export market. [redacted]

Several Third World armies have also shown an interest in IFVs designed to provide increased fire support for advancing infantry and armor. [redacted] IFVs are more mobile than most tanks and are equipped with a rapid fire, chain gun or cannon and side ports for infantrymen to fire their weapons from inside the vehicle (figure 13). Bahrain, Kuwait, and Saudi Arabia plan to evaluate the US Bradley and West German Marder IFVs. Kuwait also plans to review the British MCV-80 IFV. West European IFV manufacturers have attempted to make their products more marketable by standardizing them with the operational components of earlier, widely exported APCs and RVs. [redacted]

#### Few Sales

We do not, however, expect a large shift toward upgunned APCs and RVs, IFVs, and light tanks. The market for these vehicles has been slow to develop with Third World armies showing little interest in similar models available since 1976. For example, while several countries—Iran, Panama, Saudi Arabia, Thailand, and Venezuela—have reviewed the Argentine TAM light tank, none has placed orders for the

#### Ungunned APCs and RVs

Many producers of APCs and RVs envision that their versatile products can supplement and, in some cases, replace tank inventories. APCs and RVs equipped with main guns—ranging from 30 mm to 105 mm—are being offered to fill a perceived demand for vehicles with high firepower but which are less expensive and easier to maintain than tanks. For example, according to open sources:

- French firms offer several RV series—AML, AMX, EBR, and VBC—with 90-mm guns; the AMX-10RC mounts a 105-mm gun.
- The Soviet BMP-1 APC is equipped with a 73-mm gun.
- The Brazilian Cascavel RV mounts a Belgian-made 90-mm gun, and the Urutu APC is equipped with an indigenously designed 90-mm cannon.
- The British Scorpion RV is offered with a 30-mm, 76-mm, or 90-mm gun.
- Switzerland recently introduced a Piranha APC that mounts a 105-mm gun.

Manufacturers have had some initial success marketing APCs and RVs equipped with main guns. Honduras, for example, recently purchased 72 British Saladin RVs with 76-mm guns to counter the larger Nicaraguan tank inventory. [redacted]

Several Western APC and RV manufacturers are involved in programs to increase the firepower and performance of older vehicles. France's Hispano-Suiza—one of the most active refitters with seven turrets for application on vehicles in the 5- to 15-ton range—recently upgraded French RVs purchased by Mexico with its Lynx 90-mm gun. Integrated gun turrets are also being developed for refitting onto lighter platforms unable to withstand high gun recoil forces. Rheinmetall of West Germany has developed a low recoil 105-mm gun for refitting onto APCs and RVs in the 14-ton range. The Royal Ordnance Factory of the United Kingdom and the US Cadillac-Gage Corporation also recently introduced a jointly designed 105-mm gun turret for vehicles over 20 tons. [redacted]

25X1  
25X1

25X1

25X1  
25X1

25X1

25X1  
25X1

25X1

25X1

25X1





vehicle. Only a handful of countries—Honduras, Mexico, Morocco, and Zimbabwe—has purchased APCs and RVs equipped with main guns. Only India plans to place a major order of IFVs, about 1,000 Soviet BMP-2s in the next several years. [redacted]

[redacted] several factors explain the lukewarm response:

- Most Third World armies are reluctant to purchase upgunned APCs and RVs or light tanks until they have been proved in combat.
- Western and Soviet IFVs are mechanically complex and require maintenance equal to most tanks. US Embassy officials report that this will probably convince Bahraini officers to cancel a demonstration of the US Bradley IFV.
- Third World armies view these vehicles as less capable in armored protection and firepower than their present tank forces.
- Few Third World armies face the modern battlefield conditions or have power-projection requirements for which upgunned APCs and RVs and IFVs were originally designed. [redacted]

25X1  
25X1

25X1

25X1



*Jane's Pocket Book Modern Tanks and Armoured Fighting Vehicles ©*



*Jane's Armour and Artillery, 1984-85 ©*

*Figure 13. A series of new-generation IFVs (top to bottom), the US Bradley, British MCV-80, and Soviet BMP-2. [redacted]*

## Appendix D

**Third World: Projected Armored  
Vehicle Purchases, 1985-94**

	Tanks	APCs/IFVs/RVs	Total	Comments
<b>Latin America</b>	<b>1,367</b>	<b>1,415</b>	<b>2,782</b>	Cuba will be the largest customer as it updates its aging Soviet-made inventory. Chile recently completed deliveries of Swiss APCs but—along with Mexico—will be replacing its World War II-era US-made Sherman tank fleet. We expect El Salvador to receive mainly used US vehicles as it modernizes the Army to combat the insurgency. Peru is also beginning a buildup of its armored forces to counter the Chilean military.
Argentina	50 <sup>a</sup>	350 <sup>a</sup>	400	
Chile	225	0	225	
Colombia	12	86	98	
Cuba	480	320	800	
Dominican Republic	0	40	40	
Ecuador	86	17	103	
El Salvador	51	18	69	
Guatemala	13	33	46	
Haiti	5	6	11	
Mexico	130	133	263	
Nicaragua	90	206	296	
Paraguay	21	0	21	
Peru	125	95	220	
Uruguay	39	39	78	
Venezuela	40	72	112	
<b>Sub-Saharan Africa</b>	<b>2,119</b>	<b>4,610</b>	<b>6,729</b>	
Angola	450	1,028	1,478	
Benin	0	7	7	
Cameroon	0	28	28	
Central African Republic	0	4	4	
Chad	35	191	226	
Congo	50	64	114	
Equatorial Guinea	0	10	10	
Ethiopia	630	1,439	2,069	
Gambia, The	0	4	4	
Ghana	0	20	20	
Guinea	30	40	70	
Guinea-Bissau	10	4	14	
Ivory Coast	6	0	6	
Liberia	0	12	12	
Madagascar	0	28	28	
Mali	37	40	77	
Mozambique	270	617	887	
Niger	0	10	10	
Nigeria	0	104 <sup>a</sup>	104	
Senegal	0	30	30	

Secret

**Third World: Projected Armored (continued)  
Vehicle Purchases, 1985-94**

	Tanks	APCs/IFVs/RVs	Total	Comments
Somalia	71	582	653	
South Africa	250	0	250	
Tanzania	60	50	110	
Togo	7	13	20	
Uganda	13	144	157	
Upper Volta	0	10	10	
Zaire	200	131	331	
<b>North Africa and the Levant</b>	<b>2,930</b>	<b>3,794</b>	<b>6,724</b>	
Algeria	100	76	176	
Egypt	753	1,266	2,019	
Israel	0	124	124	
Jordan	141	763	904	
Lebanon	35	191	226	
Libya	1,000	510	1,510	
Morocco	92	202	294	
Syria	770	600	1,370	
Tunisia	39	62	101	
<b>Persian Gulf</b>	<b>4,414</b>	<b>4,002</b>	<b>8,416</b>	
Bahrain	12	16	28	
Iran	500	490	990	
Iraq	2,500	1,170	3,670	
Kuwait	200	122	322	
North Yemen	102	37	139	
Qatar	0	27	27	
Saudi Arabia	300	1,600	1,900	
South Yemen	800	410	1,210	
United Arab Emirates	0	130	130	
<b>South Asia</b>	<b>1,007</b>	<b>1,891</b>	<b>2,898</b>	
Afghanistan	200	0	200	
Bangladesh	5	0	5	
India	300 <sup>a</sup>	1,000 <sup>a</sup>	1,300	
Pakistan	502	891	1,393	
<b>Southeast Asia</b>	<b>1,154</b>	<b>2,746</b>	<b>3,900</b>	
Burma	25	85	110	
Cambodia	0	10	10	
Indonesia	105	297	402	
Laos	25	10	35	
Malaysia	0	150	150	
Philippines	155	54	209	
Singapore	0	75	75	

as it phases out a similar number of Soviet-made tanks by the late 1980s. Libya will continue to buy large numbers of Soviet vehicles—now at 230 units annually—partly to enhance its prestige in the region. We expect Syria to acquire almost 1,400 Soviet vehicles under its continuing modernization and expansion program. Jordan is receiving US M60s to modernize its tank forces but will probably outfit its APC and RV fleet mainly with West European models.

Iran and Iraq are laying the groundwork for a reorganization of their postwar armored inventories. Baghdad will update its tank force with newer Soviet models like the T-72, and Iran will structure its fleet around Soviet-style models—tanks supplied by Libya and, possibly, North Korea, and APCs bought from East European suppliers. Tehran will not expand its tank forces above the prewar level because of fear of an Army coup attempt. Saudi Arabia will modernize two tank brigades with a new-generation, US or West European model and will soon sign a major contract to expand its APC fleet with 1,600 US vehicles.

India will be the major customer, ordering about 300 Soviet tanks and 1,000 BMP-2 IFVs to continue the expansion and modernization of its army. tanks from the United States will probably take precedence over APC purchases because of limited funding. We expect the Army to try working around the problem by acquiring mainly used US APCs.

This will remain a fairly concentrated market with only Thailand engaged in a major armored buildup to counter Vietnamese forces in neighboring Cambodia. Bangkok is leaning toward buying US or West European tanks to update its aging M41 and M48 fleet but will probably look to West European suppliers to expand its APC and RV inventory. We expect smaller armies—in Indonesia, Malaysia, and Singapore—to receive mainly US-made M113 APCs being retired from the Australian and New Zealand Armies.

Secret

30

Secret

---

**Third World: Projected Armored  
Vehicle Purchases, 1985-94**

	Tanks	APCs/IFVs/RVs	Total	Comments
Thailand	664	1,655	2,319	
Vietnam	180	410	590	
<b>East Asia</b>	<b>715</b>	<b>670</b>	<b>1,385</b>	This region will largely remain a captive US market. Taiwan plans to extend the operational life of its US-made M48 tank fleet through an upgrade program but will probably purchase about 200 US APCs to modernize its fleet. Although South Korea will fill its APC and RV needs from domestic production, it will purchase kits from US manufacturers to build its SK-1 tank based on the M1.
South Korea	715 <sup>a</sup>	470	1,185	
Taiwan	0	200	200	

<sup>a</sup> Includes vehicles produced under license.

25X1

Secret

**Secret**

**Secret**