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[Redacted]

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- The shifting market will reduce Moscow's sales competitiveness in some areas. The focus on modernization and artillery production technology will create new opportunities for Western suppliers in India, Iraq, and Algeria by helping them establish domestic arms industries and selling them modern artillery support equipment.

[Redacted]

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- Regional force balances could be affected as Soviet clients, such as [Redacted] try to gain or increase large numerical advantages in artillery over US allies seeking to offset these imbalances by improving the accuracy and mobility of their artillery forces. Other US allies may buy equipment from non-Western sources, raising problems in terms of their interoperability with US forces.

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Production-Related Demand

While modernization will be the main area of growth in the Third World artillery market, the spread of production will also increase opportunities for artillery-related sales. Several nations will seek licenses, design assistance, and machinery to begin domestic artillery production in the 1990s.

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the next decade, although its exports may fall somewhat. To cut costs, Moscow will probably continue to send large numbers of artillery to cash-poor clients, such as Syria and Cuba, on an aid basis even if it reduces deliveries of other major weapons. The Soviet Union has always placed heavier emphasis on artillery than have other nations, and providing artillery—particularly old, used pieces—is a less expensive way for the Soviets to show support to clients, than sending weapons such as fighter aircraft, helicopters, and tanks. Over at least the next year or two, Soviet exports will be propped up as Moscow implements existing contracts to supply the war-related needs of clients

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[Redacted]

Established LDC artillery producers will also need large amounts of technical assistance and equipment to support their industries. Most Third World arms producers will remain dependent on more technologically advanced nations in several areas:^a

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- *Almost all LDCs will import production machinery.*

[Redacted]

We believe Moscow will do well in the limited market for sales of artillery pieces. Soviet artillery is among the best in terms of range, accuracy, and mobility and has a reputation for being rugged and reliable. Moscow sells at competitive prices and offers many customers low-cost financing—loans payable over 10 to 12 years at 4-percent interest are common. In our view, drawbacks to Soviet equipment—its poor human engineering and weak follow-on support—are unlikely to hurt Soviet sales efforts, but Moscow will have trouble expanding its market because many nations will distrust its motives

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- *Many LDCs will need technical assistance in design and manufacture.*

[Redacted]

The Soviets will probably be far less competitive in selling modern weapons, support equipment, and munitions and in supporting Third World artillery production. Traditionally, they have only reluctantly exported their best equipment and allowed only limited licensed production of their arms. Iraq, for example, is the only nation in the Third World to receive the long-range M1976 gun,

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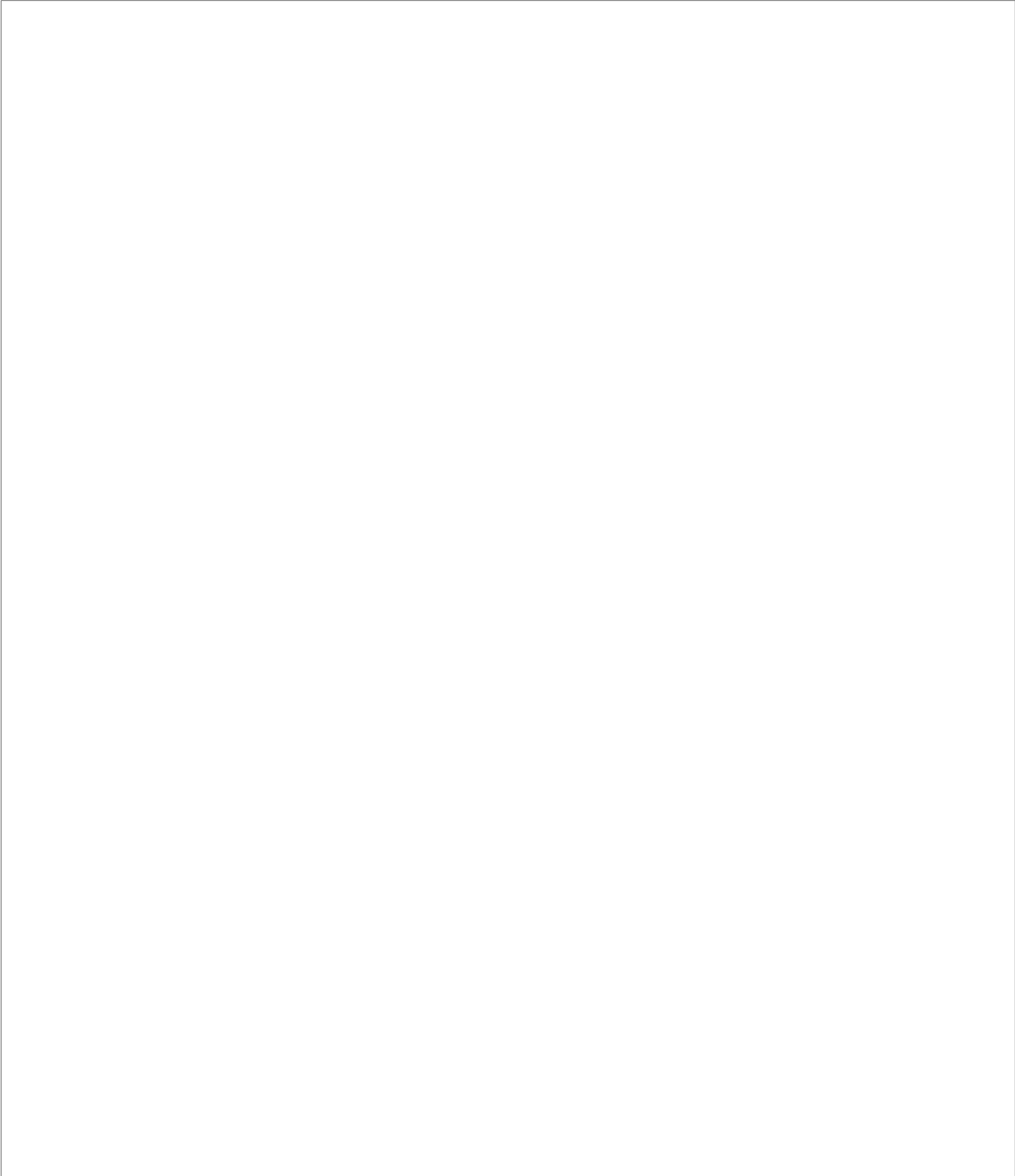
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- *Third World nations will continue to import components for many weapons.*

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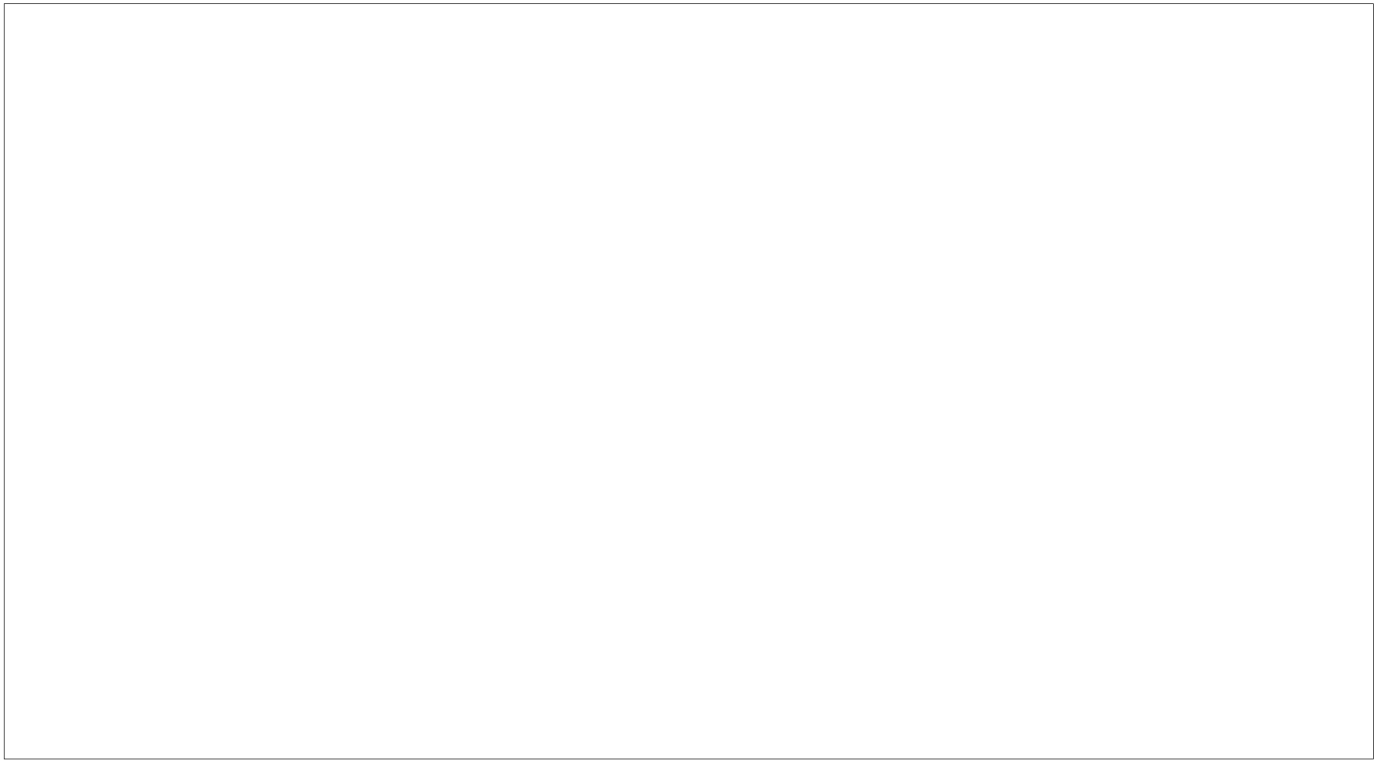
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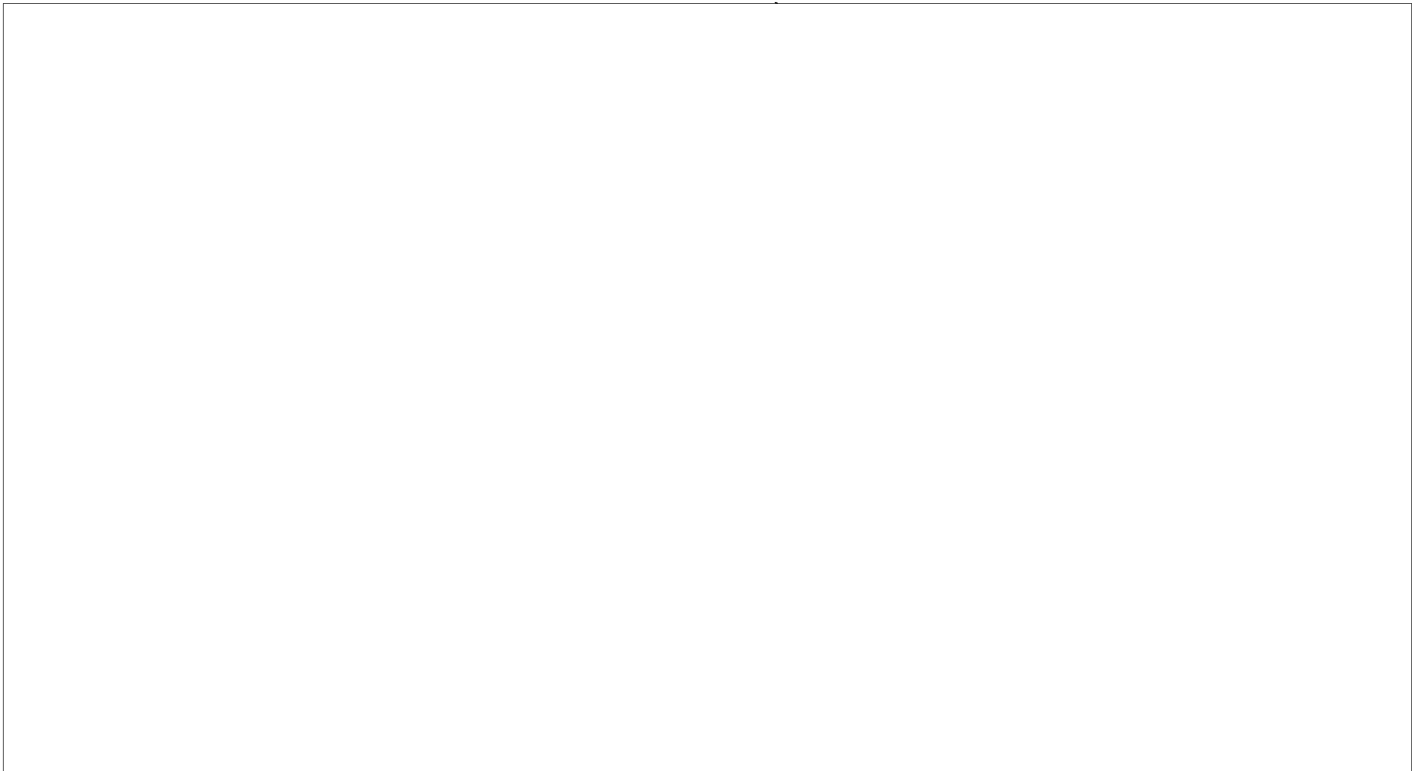
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as much as half. More than 70 percent of the 50,000 artillery pieces in the Third World are less than 20 years old. Because artillery can remain in service for 40 to 50 years, we believe that demand for replacements of wornout equipment will be modest over the next decade and that an increasing share of supply will be provided by domestic production. Even those nations planning to expand their inventories will need few pieces.

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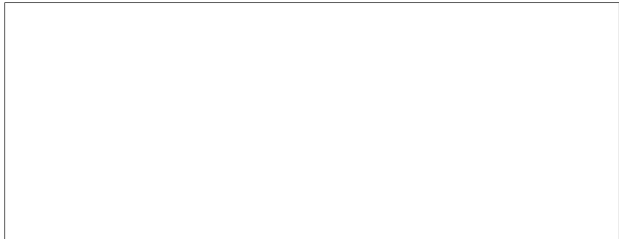
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Many other countries will modernize to gain advantages over potential foes:

A desire to acquire "prestige" equipment will drive many LDCs to acquire self-propelled artillery, guided munitions, fire-control computers, weapon-locating radars, and other equipment. We believe that wealthy nations in the Middle East will be first to acquire these items. Even though they often are unable to use or maintain them, these nations have consistently sought large numbers of the most modern arms



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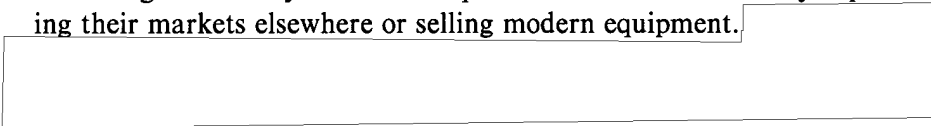
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On the supply side, field artillery producers will face mixed prospects as Third World purchasers shift from rapid expansion of their inventories to more systematic modernization efforts:

- The USSR will dominate the dwindling market for towed artillery pieces. Even if it seeks to cut the costs of its arms transfers, Moscow is likely to send large numbers of older, inexpensive, cannon and rocket launchers to clients on an aid basis and to continue to be competitive in the limited market for sales of new artillery pieces. On the other hand, Moscow will probably remain reluctant to export its newest weapons and equipment—offering them mainly in response to sales competition—and LDCs will often prefer to buy these items from Western suppliers. India and Iraq, for example, have recently purchased Western field artillery.
- North Korean, Chinese, and East European artillery exports will probably fall sharply. These nations were heavily dependent on the high demand generated by the Iran-Iraq war and will have difficulty expanding their markets elsewhere or selling modern equipment.



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- Western, including US, suppliers will dominate sales of modern weapons and support equipment—self-propelled and long-range artillery, battle-field computers, weapon-locating radars, and guided munitions, for example—as well as markets related to artillery production technology. Nonetheless, Western exporters of tube artillery pieces will face difficulties in the tight market because of the large number of suppliers, with prospects worst for suppliers offering less capable towed artillery.



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Trends in the Third World field artillery market will have several other market and military implications for the United States:

- The tight market will complicate any US efforts to limit exports of field artillery pieces. Faced with a drop in sales, North Korea and China will be eager to court any potential clients, while struggling Western and Third World producers, such as South Africa and Brazil, will likely resist restrictions on exports. Sales of some modern support equipment and munitions may be easier to limit because US and West European firms will produce most of these items.

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- Third World and small European producers that need large exports to achieve economic production rates will continue to resist embargoes. They may argue that artillery exports are not as important as exports of other major weapons such as tanks and fighter aircraft.
- Some potential targets of an embargo, such as South Africa, already make their own artillery, and others, such as Iran, will probably acquire a production capability within in the next decade.

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Nonetheless, limiting exports of modern support systems and guided munitions may be possible in some cases. Most sophisticated fire-control systems, smart and brilliant munitions, and weapon-locating radars will be produced by the Soviet Union and a handful of US and West European firms. West European governments and firms will be more willing than other nations to embargo—however reluctantly—some nations, as they have Libya and Iran, while the USSR has traditionally been reluctant to export advanced armaments. US-European cooperation in production of modern equipment, such as the MLRS and its munitions, will also give the United States control over exports of weapons that contain US components.

The changing market and Soviet reluctance to export its more modern artillery systems will create some opportunities to reduce Moscow's arms relationships with key customers. Some Soviet clients, such as Iraq, India, and possibly Algeria, may turn to the West for assistance in producing artillery:

Trends in Third World field artillery acquisitions will also have implications for US military and security assistance planning that, while varying from country to country, could prove significant:

- Regional force balances could be affected as Soviet clients, such as Nicaragua, hope to gain large numerical advantages in artillery over US allies seeking to reduce imbalances through improvement of the accuracy and mobility of their artillery forces as well as their target acquisition capabilities.
- Training may become a more important part of security assistance programs as nations seek to integrate large amounts of modern equipment.

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Third World Field Artillery Acquisitions in the 1990s: Modernization in a Mature Market

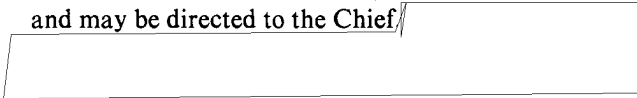


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A Research Paper

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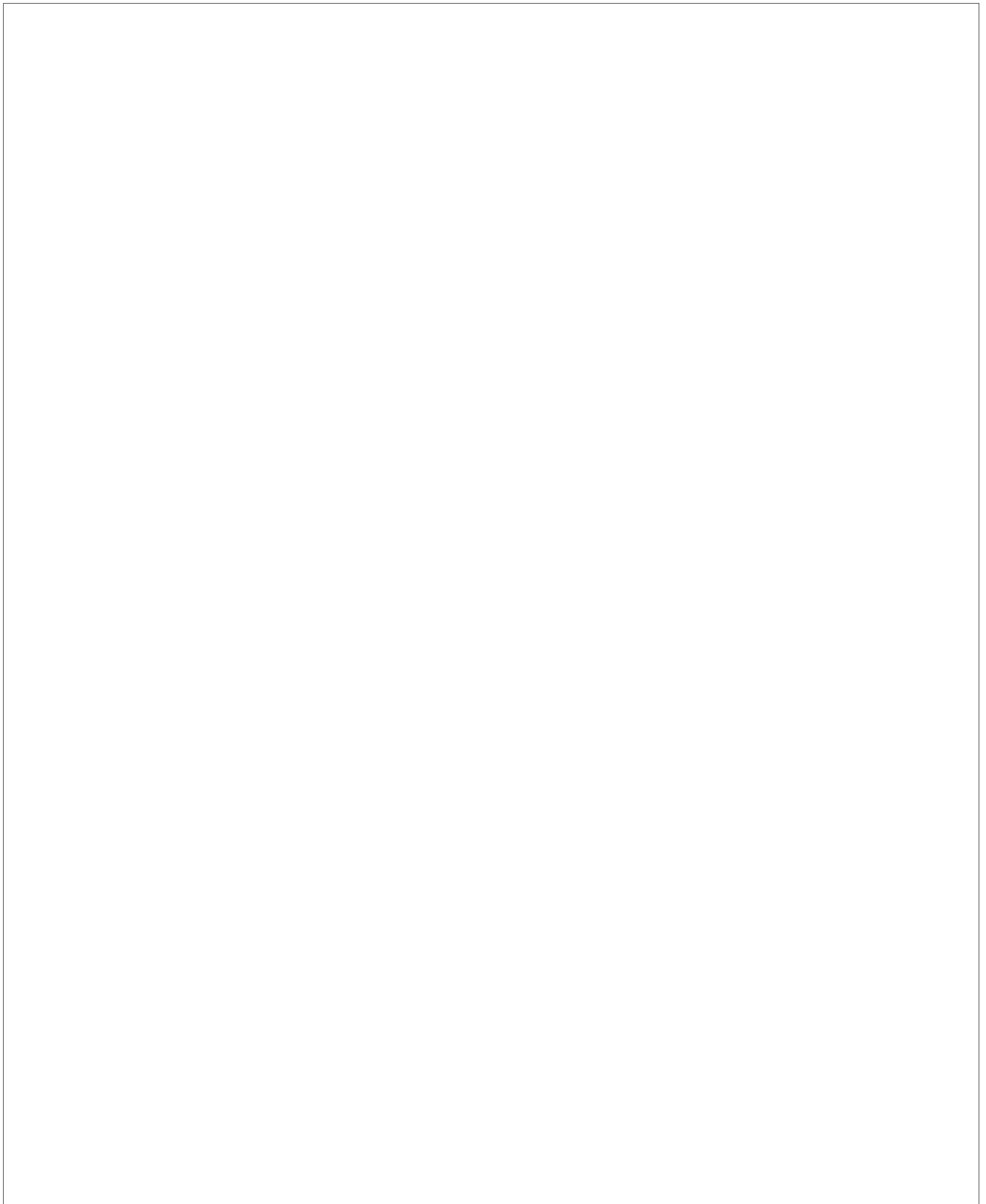
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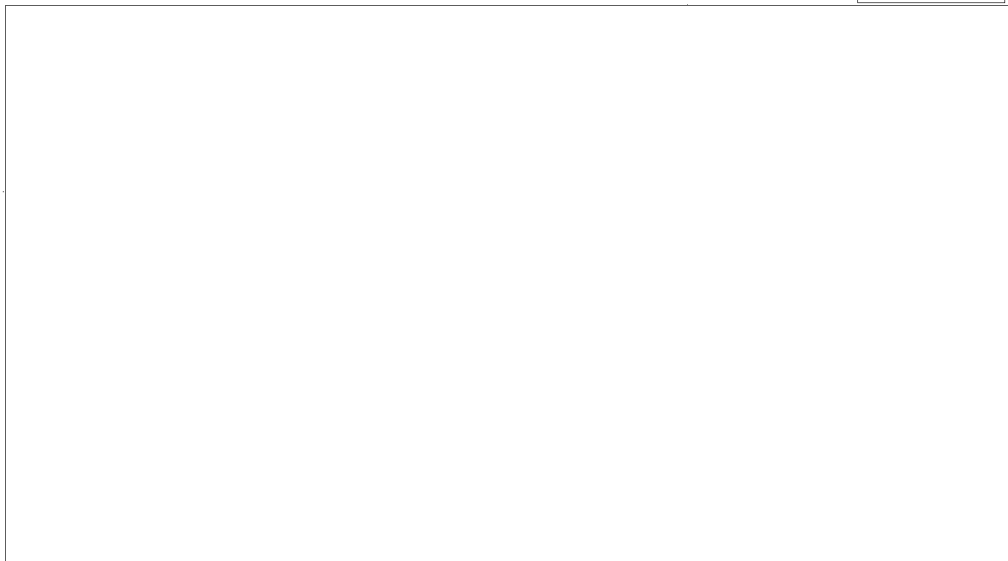
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Scope Note

This paper is one in a series of Office of Global Issues publications that addresses proliferation of major weapons systems to the Third World. 



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In this paper, the term “field artillery” is broadly defined to include all field guns, howitzers, multiple rocket launchers, and mortars over 100 mm. Mortars are included because many Third World forces, particularly those modeled along Soviet lines, attach them to artillery rather than to infantry units and because several newer mortars are similar in capabilities to some older howitzers. This paper does not discuss exports of antitank or air defense artillery, nor does it address tactical missiles and rockets, such as the Soviet Frog and the US Lance. 

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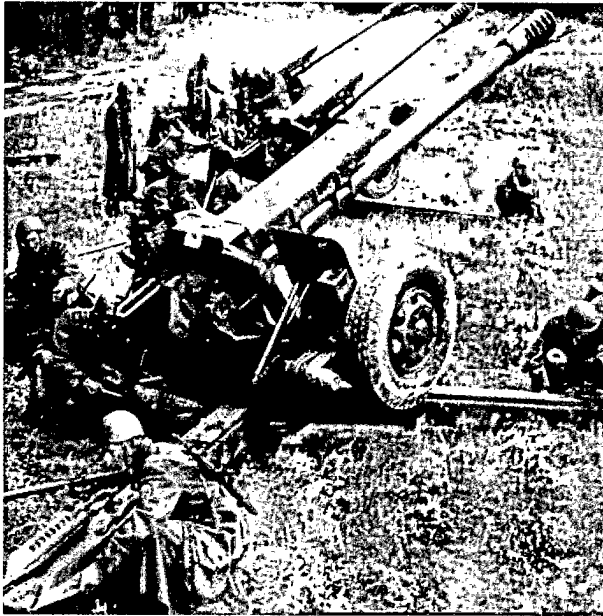
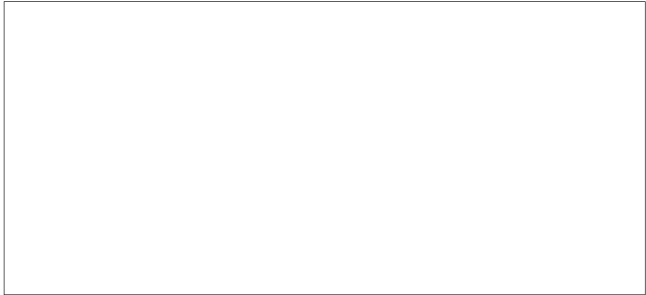


Figure 15. Moscow has exported large numbers of 122-mm D-30 howitzers to both paying customers and aid recipients. [redacted]

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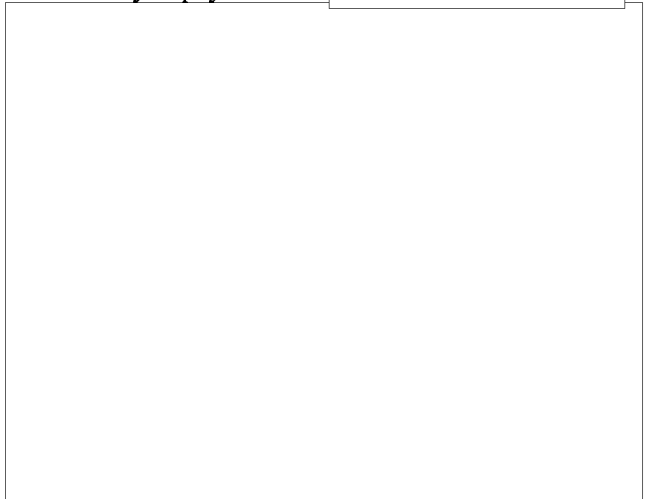
Prospects for Other Communist Suppliers

Chinese, North Korean, and East European exports of artillery pieces will probably fall sharply in the 1990s. These nations were all heavily dependent for sales (b)(1) high Iranian and Iraqi demand generated by the (b)(3) and their marketing efforts were aided by the reluctance of other nations to supply Baghdad and Tehran.



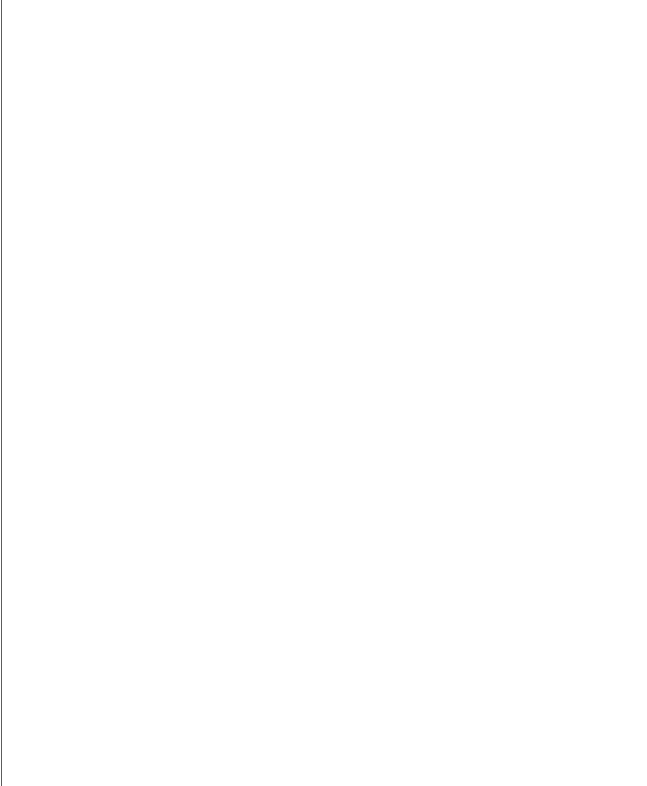
[redacted] we anticipate that these nations will probably continue to sell artillery to Iran and Iraq, although the size of this market will fall sharply as the need for replacements drops and both nations begin to produce their own artillery. [redacted] (b)(3)

China, North Korea, and the East European nations are not likely to make up for the decline in sales in the Iran-Iraq artillery market by increasing sales to other traditional Soviet arms customers. Most of these nations have severe financial problems that will limit their ability to pay for arms. [redacted]



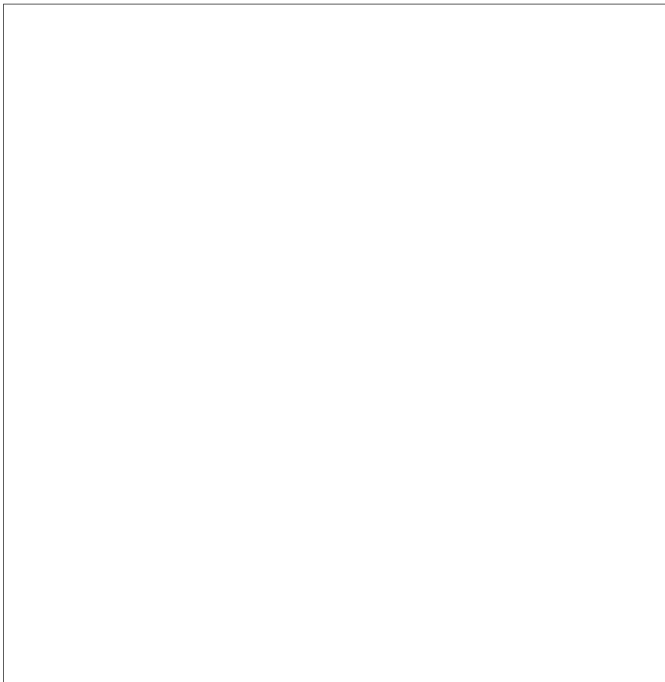
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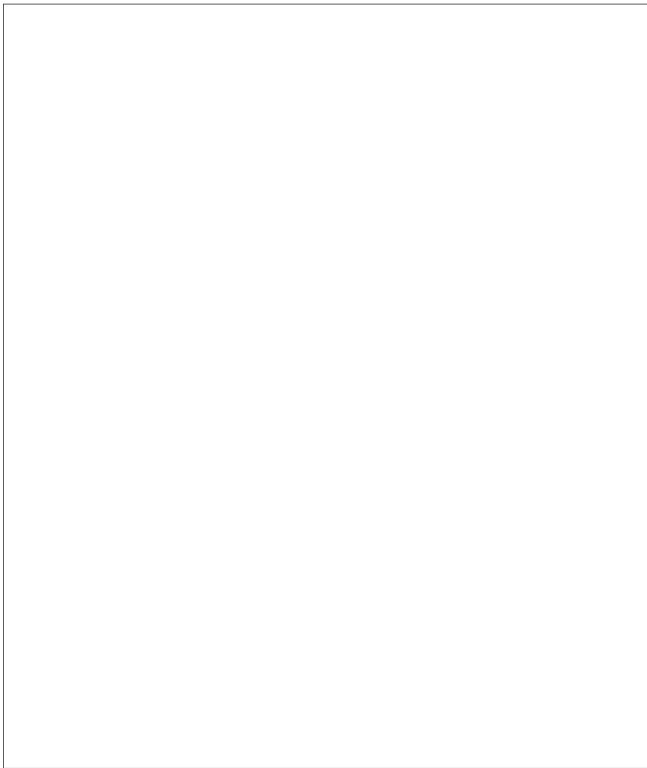
Prospects for Western Suppliers

Western, including US, suppliers will dominate markets related to modernization and artillery production.

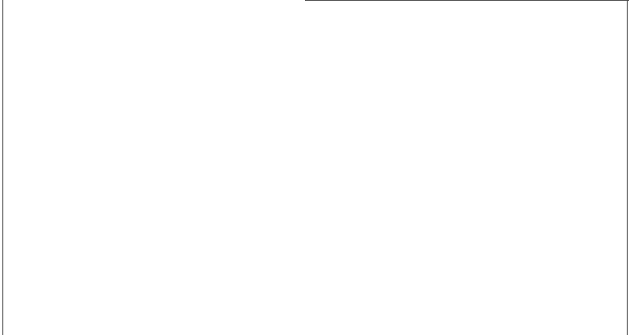


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Because the non-Soviet Communist nations do not produce a full line of equipment, most of their limited offerings of more modern weapons, support equipment, and munitions will go to nations that lack access to Western arms. (b)(3)



Although Western suppliers will dominate sales of modern artillery pieces, they will face problems that result from increased competition and from lower levels of overall demand. In our view, differences in the prices and capabilities of Western artillery are not great enough to give any supplier a significant edge, particularly given the political nature of many sales and the willingness of suppliers to cut prices and arrange creative financing.



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The Indirect Fire Process

Field artillery normally fires indirectly—that is, with no line of sight to its target. Ensuring that targets can be attacked quickly and accurately involves several steps:

- **Survey.** The artillery unit and any supporting systems or personnel must know their locations relative to each other. Survey can be done roughly, using maps; accurately, using standard survey equipment; and more quickly, using modern navigation systems.
- **Target acquisition.** The locations of targets must be identified. Often a ground-based forward observer identifies a target and its location. A target also can be acquired by other means—such as counterbattery radars, airborne observation, or even maps. Once a target is acquired, its location is reported to the artillery unit.
- **Fire calculation.** The artillery unit must determine the elevation, direction, and velocity at which it must fire to hit the target. This can be done by hand, using charts and manuals, or by computers. The effects of weather on artillery shells and the characteristics of individual artillery pieces and munition lots can be taken into account to improve accuracy.

- **Fire adjustment.** This generally involves a forward observer who watches the actual—as opposed to the planned—fall of the shells and gives the artillery unit data to adjust its fire to make it more accurate. Fire adjustment involves shooting a series of “spotting rounds” to avoid wasting ammunition or hitting friendly forces. Since this can give the target a chance to hide or escape, reducing or—when possible—eliminating the fire adjustment period by increasing accuracy is desirable.

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Not all artillery fire needs the same accuracy. Much unobserved fire consists of harassment of enemy forces in fairly well-known locations. Firing more shells—often by massing the fire of several batteries of artillery—can compensate for inaccurate fire, particularly when a target is unobserved. Fairly stationary targets can be presurveyed or registered. This involves determining how the artillery must shoot to hit the target well before it actually fires. On defense, for example, artillery might register several points through fire adjustment. When enemy units enter these points, fire can immediately be brought down on them

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- We believe that Iraq will place a high priority on maintaining a technological edge in weaponry over Iran, which has a 3-to-1 manpower advantage.
 - Other nations in areas of potential conflict, such as the two Koreas, Jordan, India, and Pakistan, also will seek modern equipment to avoid falling behind their adversaries.

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Areas of Modernization

The most recent trends in acquisitions suggest that increasing the range of artillery will be a top priority for most nations. Open sources indicate that artillery producers are increasing the ranges of new guns and

howitzers to 40 kilometers or more, compared with the 20- to 30-kilometer range of older weapons. New multiple rocket launchers and mortars also can shoot farther than older systems. In addition, several firms are marketing upgrades to increase the ranges of existing guns and howitzers, such as the US M-109 series howitzers. Many nations, in our view, will want to increase range to improve their ability to attack enemy artillery batteries while reducing their own vulnerability to counterbattery fire.³ Both Iran and

³ Increasing range also allows each piece of artillery to hit more targets. This can allow increased concentration of fire on a single target.

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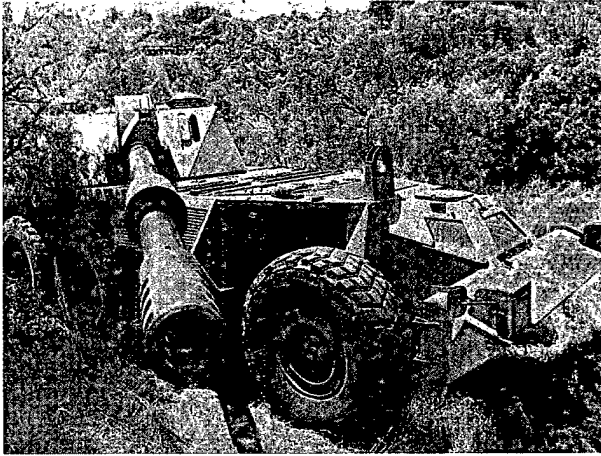


Figure 8. The South African G-6 gun-howitzer can fire almost 40 kilometers.

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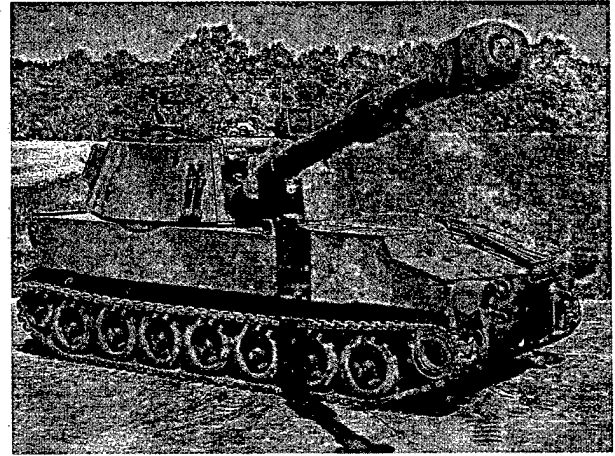


Figure 10. The US M109 is the most common self-propelled howitzer in the Third World

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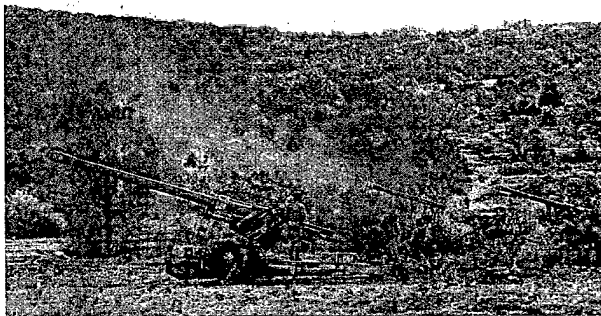


Figure 9. The French 155-mm gun TR can fire 32 kilometers.

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Increasing the mobility of artillery forces by acquiring self-propelled artillery pieces will likely be another high priority for many Third World nations. Improving mobility increases the speed with which effective firepower can be brought to bear both operationally (by allowing the artillery to keep pace with mechanized assault forces) and tactically (by allowing the artillery to move into and out of action quickly). Improved mobility also increases the survivability of artillery by reducing the time it remains in one place.

Iraq, for example, bought long-range howitzers during their war as they sought to improve their counter-battery fire and strike targets in rear areas

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[Redacted] Some poorer nations will achieve moderate increases in range by acquiring "base-bleed" and "rocket-assisted" munitions.⁵ [Redacted]

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[Redacted] a wide range of nations plan to increase the share of their artillery that is self-propelled even though it costs twice as much as towed artillery.

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[Redacted]

⁵ Base-bleed and rocket-assisted projectiles increase the range of artillery by up to 30 percent, but they are expensive and carry smaller payloads than standard shells, and rocket-assisted projectiles are less accurate. [Redacted]

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**Third World Field Artillery
Acquisitions in the 1990s:
Modernization in a
Mature Market** [Redacted]

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Summary

*Information available
as of 2 November 1988
was used in this report.*

Third World nations will focus on modernizing their field artillery forces in the 1990s. Most of these countries have already expanded their forces and will have modest needs for replacements—an increasing share of which they will meet through domestic production. Thus, we believe that less developed countries (LDCs) will give priority to upgrading their current inventories with modern support equipment, munitions, and some weapons new to the export market. [Redacted]

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We expect that LDCs will place a high priority on increasing the range and mobility of their artillery forces. Artillery exporters are marketing a variety of longer range guns, howitzers, multiple rocket launchers, and mortars that Third World nations will acquire. According to [Redacted] press reports, many countries also plan to increase mobility by expanding the share of their artillery that is self-propelled. Modernization in these areas will involve purchases of some new weapons and upgrades of existing forces. [Redacted]

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In the modernization process, Third World artillery forces will be improved in a number of other ways:

- *Responsiveness of fire.* Almost all LDCs will acquire at least simple fire-control computers; we expect a few—[Redacted]—will automate their entire fire-control systems.
- *Target acquisition.* Many nations will seek weapon-locating radars, such as the US “Firefinders,” and a few will probably buy other acquisition gear, such as remotely piloted vehicles and battlefield surveillance radars.
- *Accuracy.* The latest generation of fire control and target acquisition gear will help improve the accuracy of artillery fire, and many nations will probably acquire other equipment specifically to improve accuracy, notably improved conventional munitions and laser rangefinders. [Redacted]

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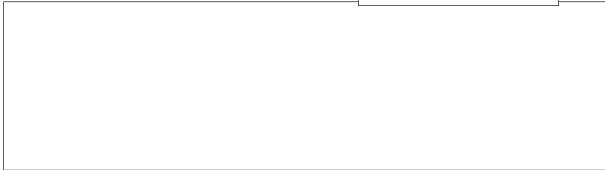
Third World Field Artillery Acquisitions in the 1990s: Modernization in a Mature Market (C NF)

Field Artillery in Recent Wars in the Third World

Field artillery is seldom emphasized in assessments of military capabilities, but recent wars in the Third World demonstrate its continuing importance as the dominant provider of fire support to ground forces and the main cause of battlefield casualties:

- Iran and Iraq both used artillery heavily in their war. Baghdad massed increasing numbers of artillery pieces throughout the war.

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- Afghan Government and Soviet forces increasingly turned to artillery for fire support in 1987 and 1988 after aircraft became vulnerable to insurgents armed with man-portable surface-to-air missiles.

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- Artillery is used heavily by both sides in Angola to attack fixed positions and harass enemy forces.

We believe that Third World militaries have been attentive to the lessons of these conflicts for their own acquisition and use of artillery.

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Types of Field Artillery

Tubed artillery falls into two categories: guns and howitzers. Guns fire at a low-to-medium trajectory and high velocity. This gives them a long range. Howitzers fire at a moderate-to-high trajectory and moderate velocity. They have a shorter range than guns, but the shell falls at a steeper, more lethal angle. The capabilities of modern guns and howitzers overlap so heavily that there is little practical difference between the two types. Some cannons are called gun-howitzers (such as the Noricum GHN-45). Guns and howitzers can fire accurately at moderate rates for long periods or more intensely for a short period.

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Mortars are light, tubed weapons that fire at high trajectories and low velocities. This gives them a shorter range than cannons. Mortars also are less accurate because their shells ("bombs") do not fit snugly in the tube, although their accuracy is sufficient for the short ranges at which they fire. On the other hand, mortars are inexpensive to make and have a very high rate of fire. Some new mortars have a heavier construction and may be rifled—in terms of capabilities and costs, these are similar to older howitzers.

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Multiple rocket launchers can quickly deliver a heavy barrage of fire over a large area. They are less accurate than tubed artillery; their reloading can take several minutes, making sustained harassing fire difficult; and the rockets are two to three times as expensive as artillery shells.

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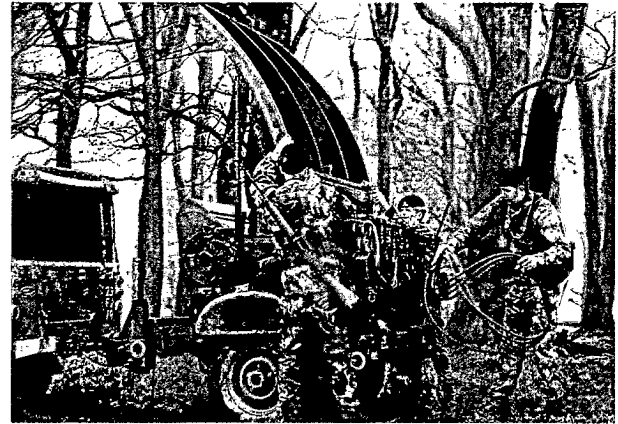
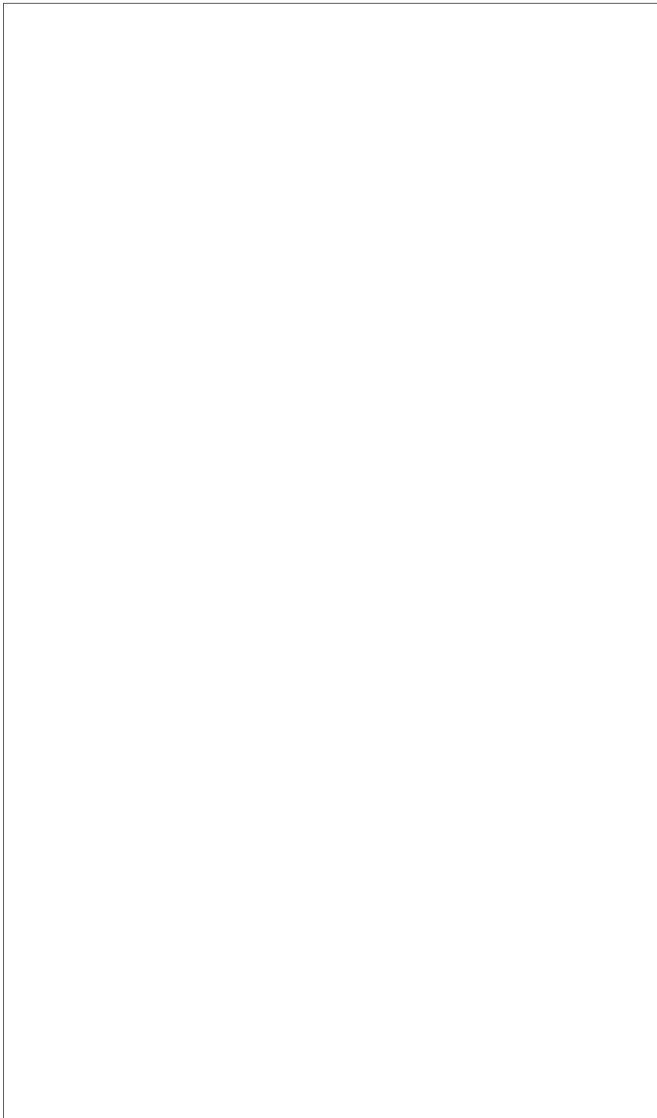


Figure 12. A British "Cymbeline" mortar-locating radar.

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Third World nations are showing fairly strong interest in improving their *target acquisition capabilities* by acquiring modern weapon-locating radars that can determine the position of hostile artillery much more quickly, accurately, and at longer ranges than older systems.

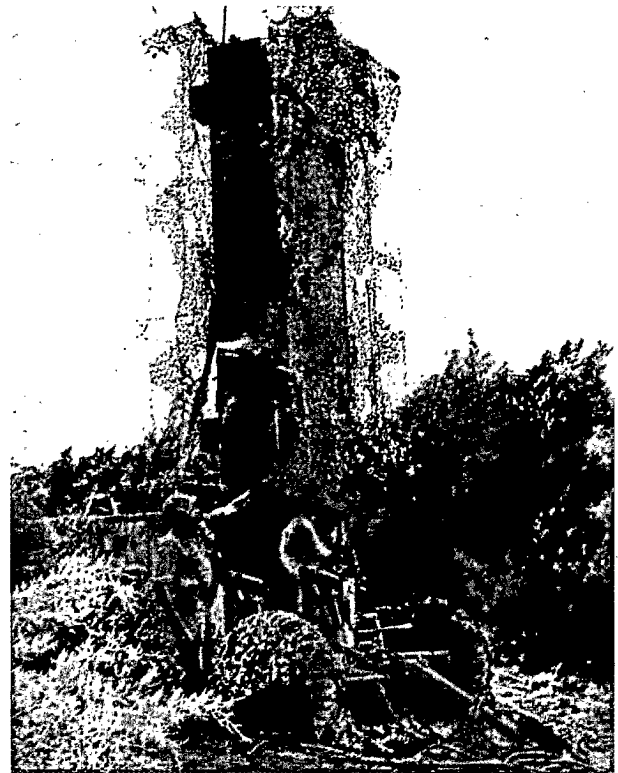
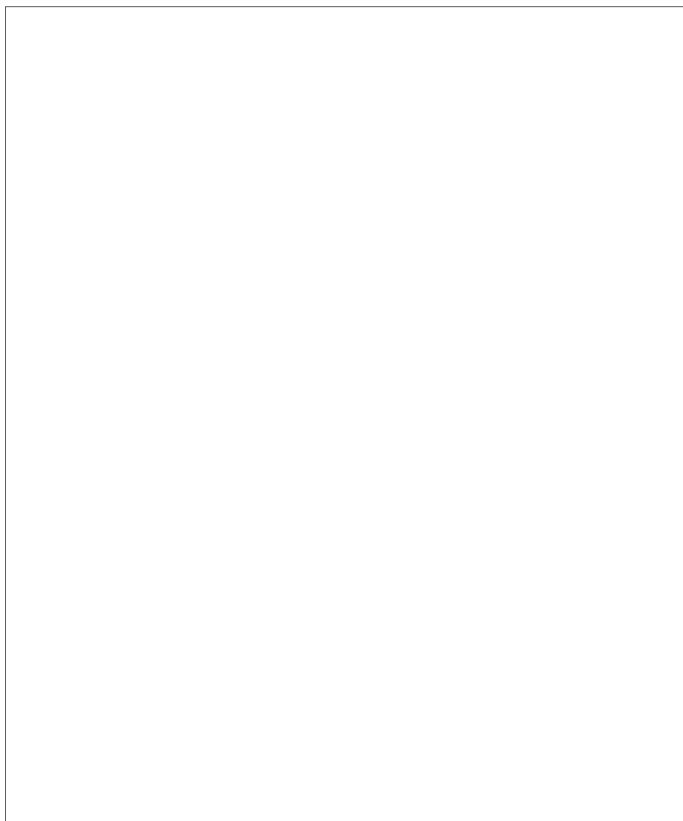


Figure 13. The US AN/TPQ-37 radar can locate hostile artillery firing at long range and low trajectory.

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- A few nations may acquire modern soundranging systems to locate hostile artillery as new systems enter production. Sweden and West Germany have recently developed inexpensive soundrangers, according to press reports, while the USSR has used them since World War II. In our view, demand for soundrangers will be low, however, because they are not effective in dry weather or mountainous terrain and are less mobile than weapon-locating radars.

[Redacted] (b)(3)

Almost all LDCs will acquire at least some equipment or munitions to *improve the accuracy* of their firepower. While modern fire-control systems, weapon-locating radars, and survey equipment will help improve accuracy, Third World militaries also will acquire equipment designed specifically to improve accuracy:

In our view, some LDCs will seek other target acquisition systems, but most will place a lower priority on acquiring these items than weapon-locating radars because they are not as capable or are too complicated for many armed forces:

- Battlefield surveillance radars may be used by some nations to gather target data for artillery forces. These radars can detect the general locations of personnel and weapons, such as tanks, that cannot be seen by forward observers but are not good at locating enemy artillery pieces. [Redacted]

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- At least several nations will buy remotely piloted vehicles (RPVs) to locate artillery targets in rear areas, to adjust fire, and to provide battlefield surveillance. [Redacted]



- Currently available improved conventional munitions that indirectly improve accuracy by increasing the lethal radius of each shell through the use of submunitions that separate and scatter will, in our view, remain popular with LDCs because the increased capabilities of the projectiles balance their increased costs. The US multiple launch rocket system (MRLS), for example, currently fires an improved munition that costs \$9,000—several times more than an unimproved rocket would cost—but it contains 640 antipersonnel bomblets that blanket an area the size of a football field, which means fewer rockets need to be expended.
- Laser rangefinders can also improve accuracy by allowing forward observers to make a more precise determination of a target's location. We believe the



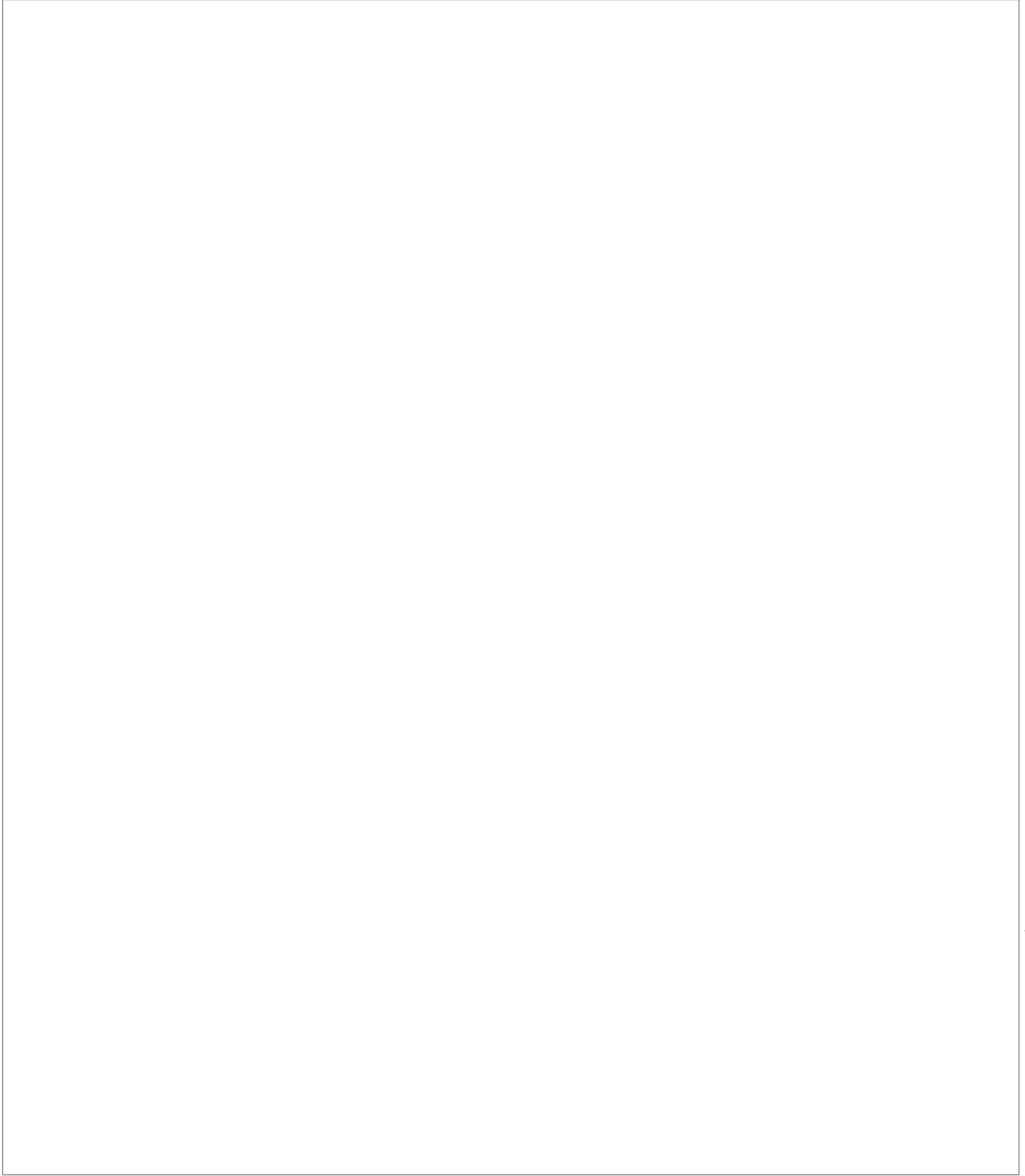
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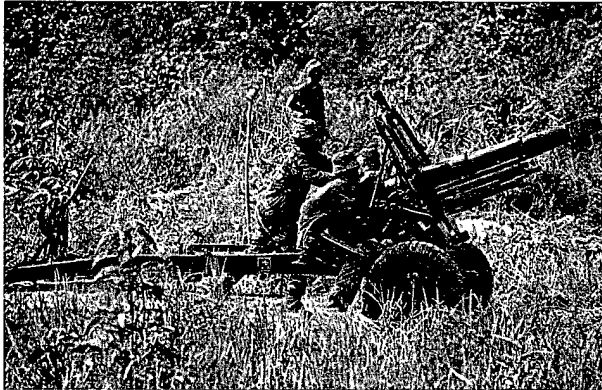


Figure 11. The Italian 105-mm pack howitzer can be broken down into 11 pieces for transport in rough terrain. [redacted]

some of this equipment, and demand will increase as improving technology lowers costs. Some acquisitions, however, will be driven less by specific purchaser interest than by the gradual incorporation of this equipment into new weapons by artillery producers:

- Fire-control computers that quickly determine the proper direction, elevation, and charge for artillery fires will become common on the battlefield as they become less complicated and less expensive. Even poor nations will be able to afford simple, hand-held fire-control computers. Some wealthier and more advanced LDCs will be well positioned to build large fire-control systems by using several computers to link forward observers, other target acquisition assets, meteorological stations, and command and control units to direct the fire of several batteries of artillery. [redacted]

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[redacted] Vietnamese press reports indicate Hanoi is interested in acquiring its first modern self-propelled howitzers from the USSR.

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In our view, demand for other systems that improve mobility will be limited:

- Probably only a few nations will buy auxiliary power units (APUs) to mount on towed guns and howitzers to give them the ability to move short distances at low speeds. Although artillery producers are incorporating APUs on new guns and howitzers, we do not believe that many LDCs will consider APUs to be an adequate substitute for self-propelled artillery because they do not increase cross-country mobility.
- Demand for maneuverable low-weight artillery also will probably be modest, mainly because most countries have already acquired a variety of light guns, mortars, and rocket launchers suitable for use in rugged terrain. [redacted] (b)(3)

In addition to improving mobility, a variety of support equipment will be available to help LDCs increase the speed with which they can bring artillery fire to bear. Third World nations have already acquired

- Automated survey equipment that gives artillery pieces sufficiently accurate data on their location to allow them to fire at almost any time is already entering LDC inventories. [redacted]

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- Automatic and semiautomatic loaders that speed up the rate of fire, thereby reducing the time needed to complete a fire mission, will also become more common. Self-propelled artillery can power auto-loaders with its engine and batteries, and towed artillery can use APUs. [redacted]

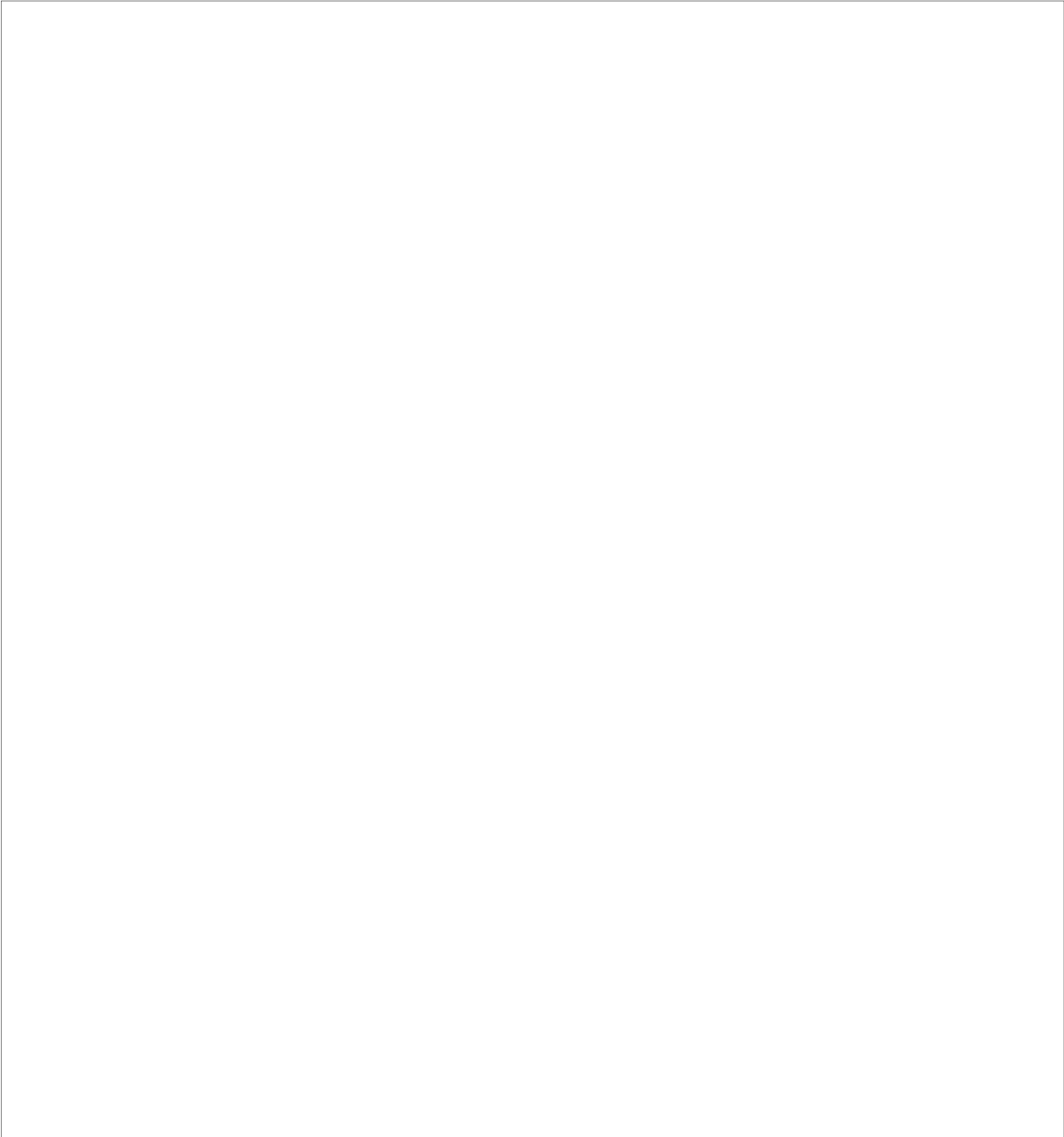
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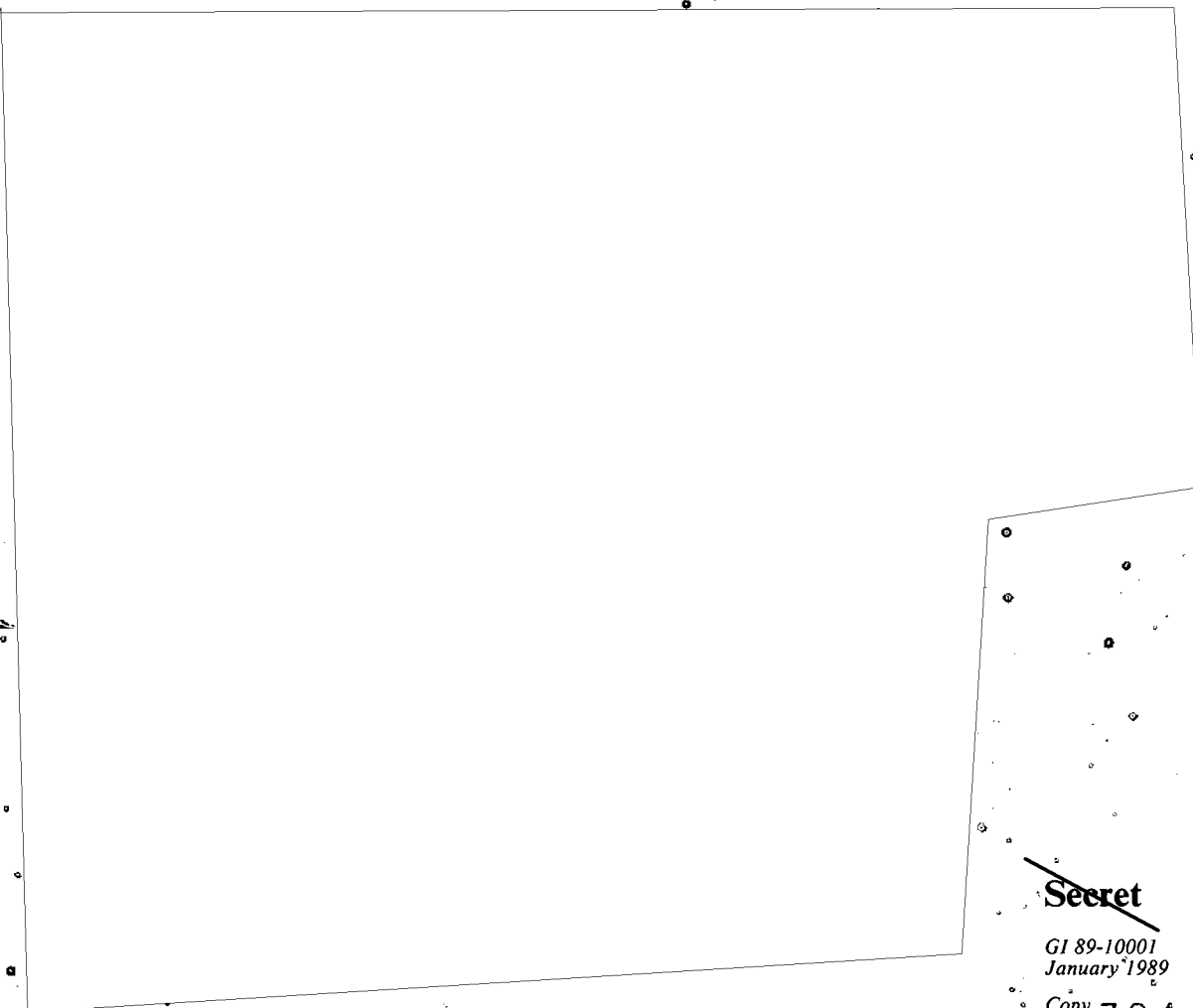
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Third World Field Artillery Acquisitions in the 1990s: Modernization in a Mature Market



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A Research Paper



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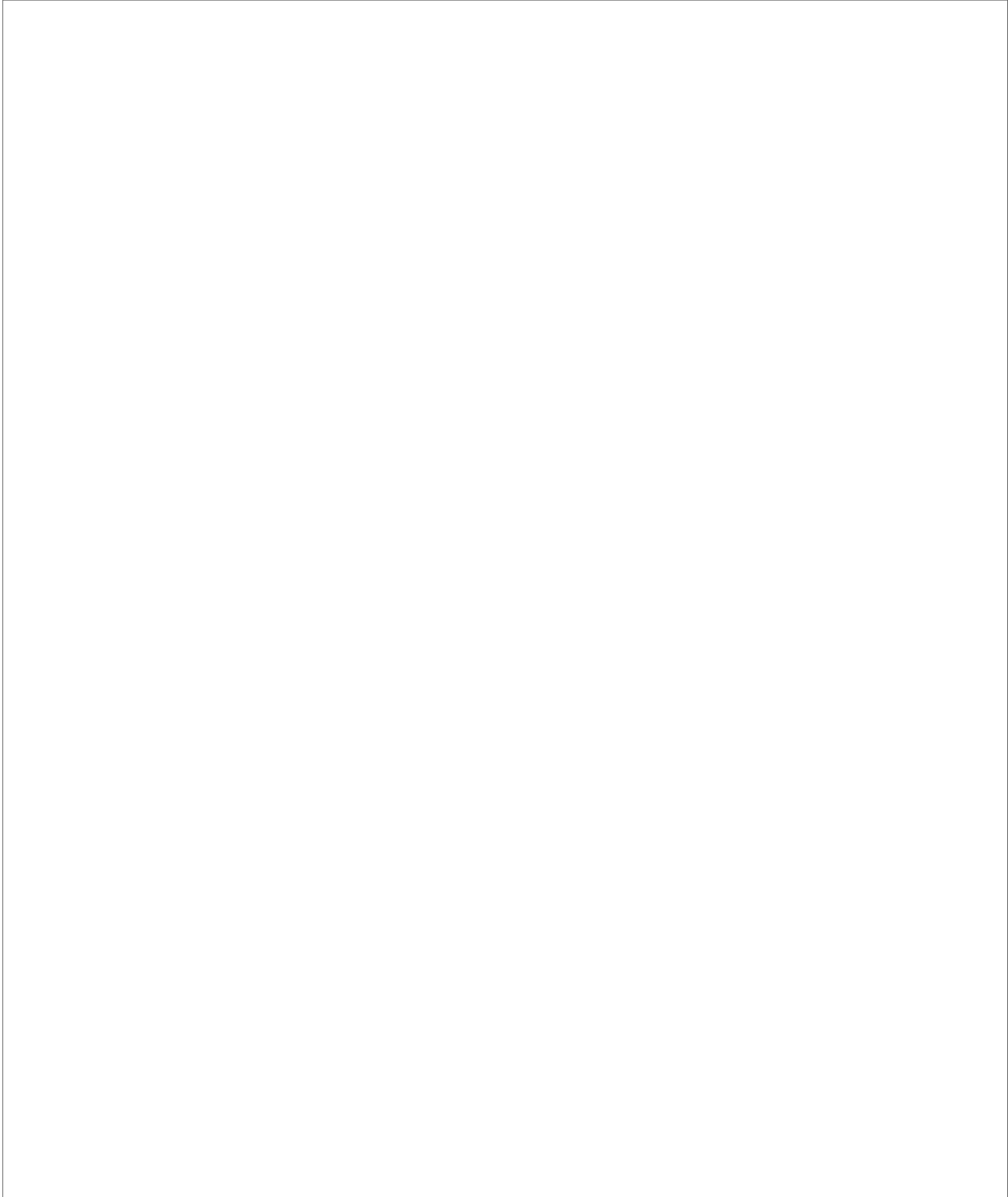
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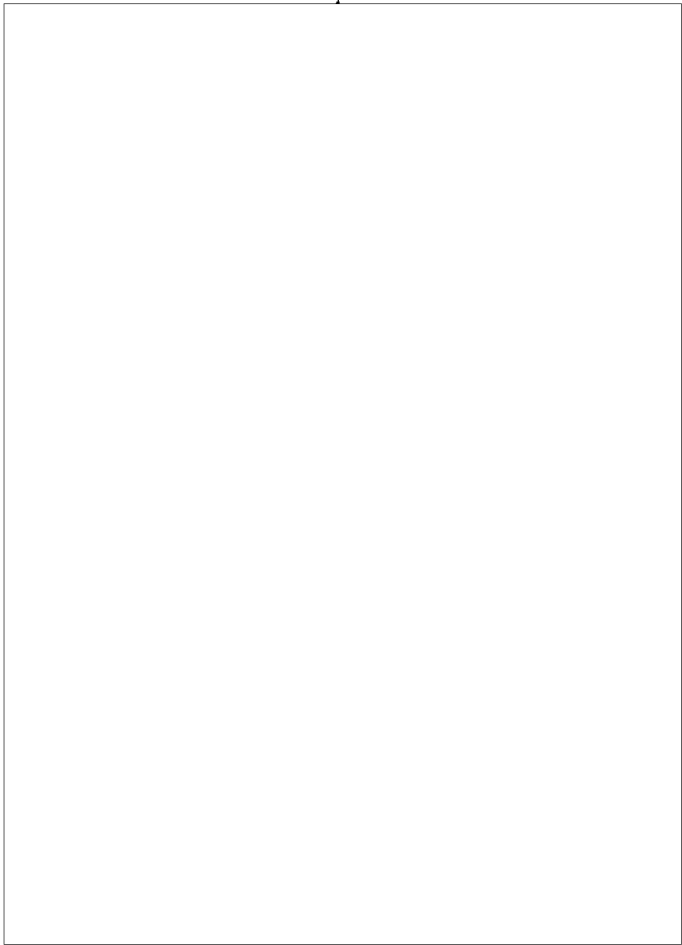
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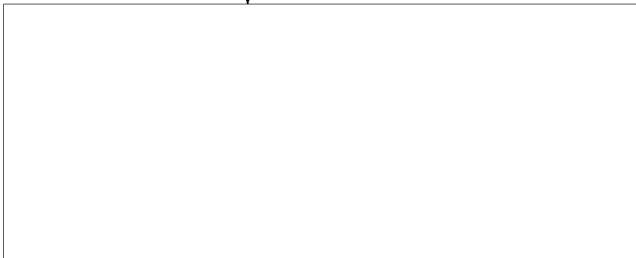


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The tight market and the large number of artillery producers will make the implementation of future US initiatives to limit exports of arms, including artillery pieces, extremely difficult:

- North Korea has demonstrated a willingness to sell its full line of towed and self-propelled guns, howitzers, multiple rocket launchers, and mortars to almost any nation.
- China also appears willing to sell artillery to embargoed nations. Even when Beijing showed restraint in exporting some weapons to Iran, it was filling Tehran's orders for artillery.

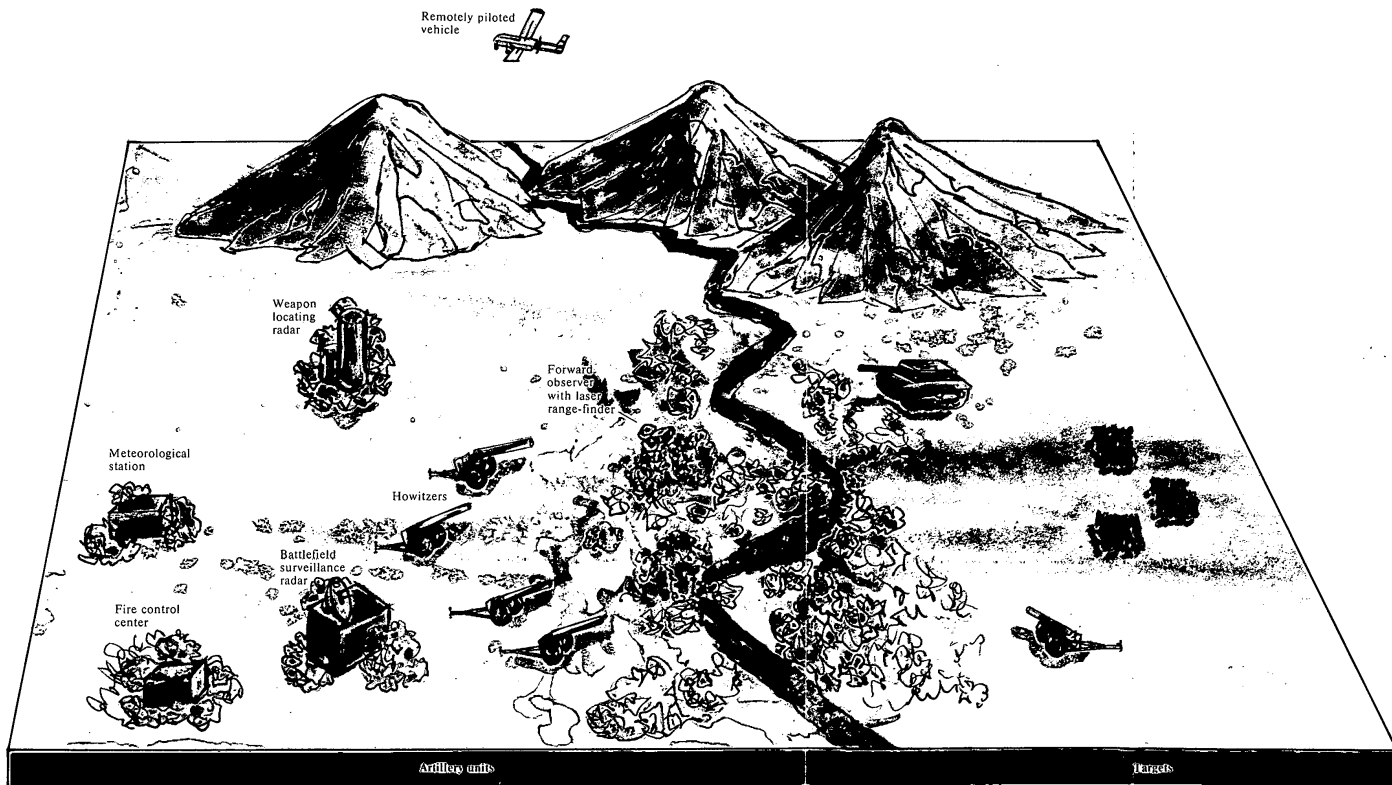
Implications for the United States



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Figure 7
A Field Artillery System



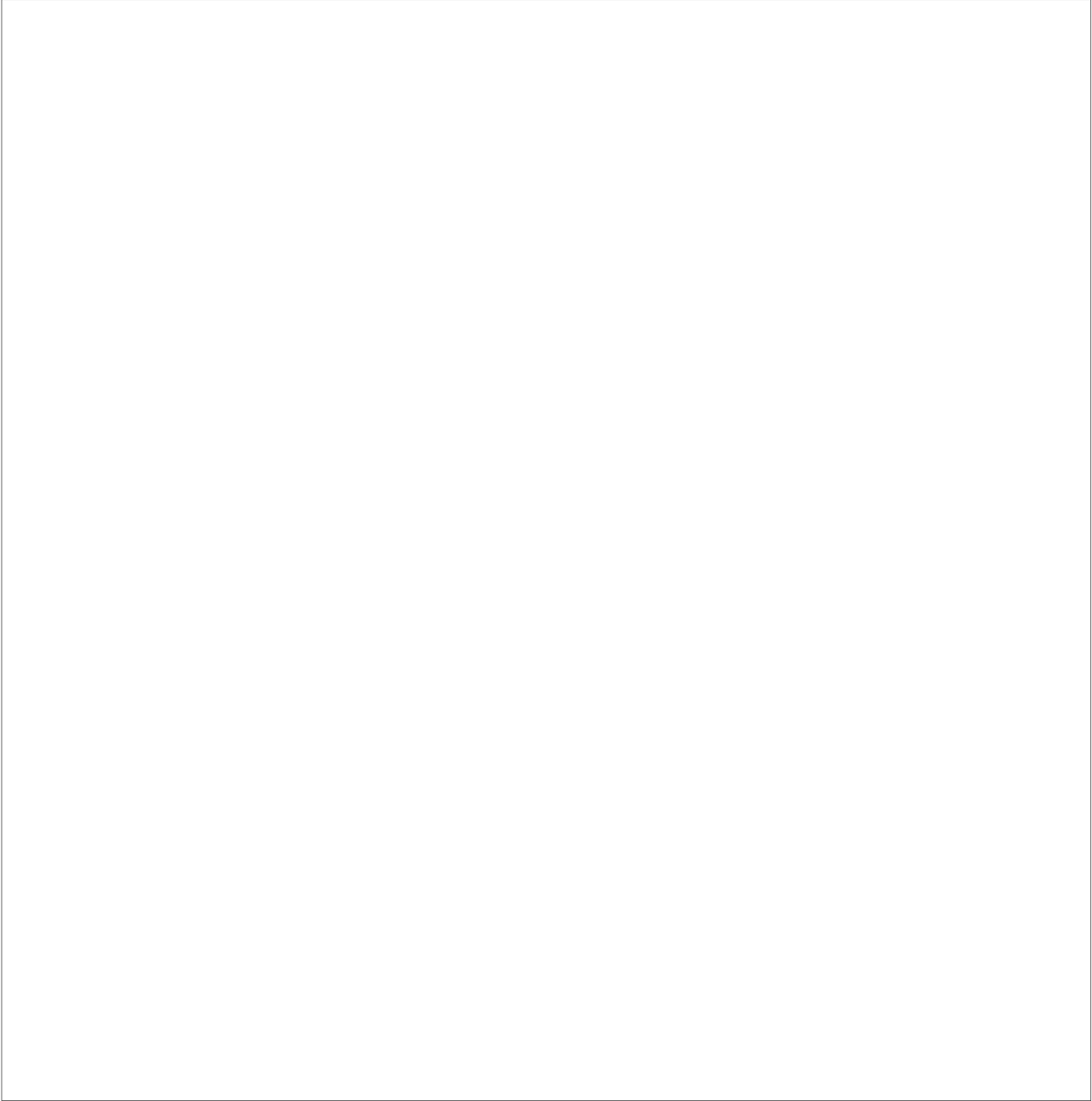
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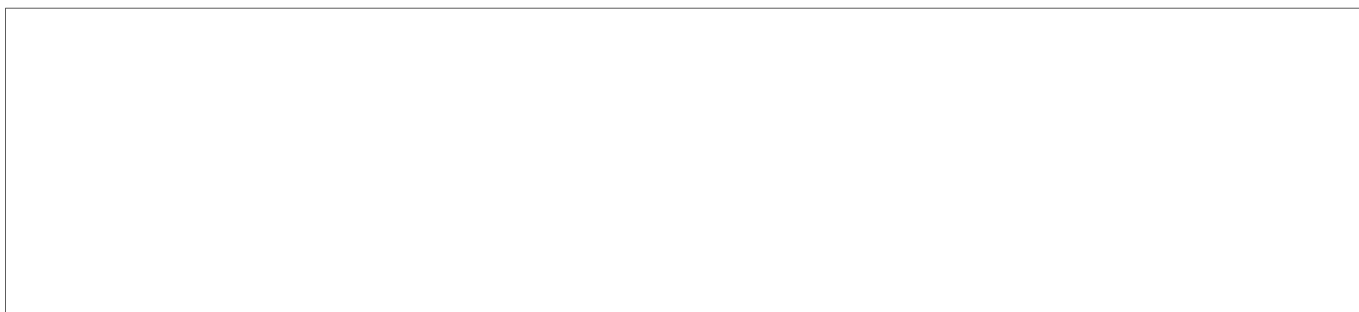


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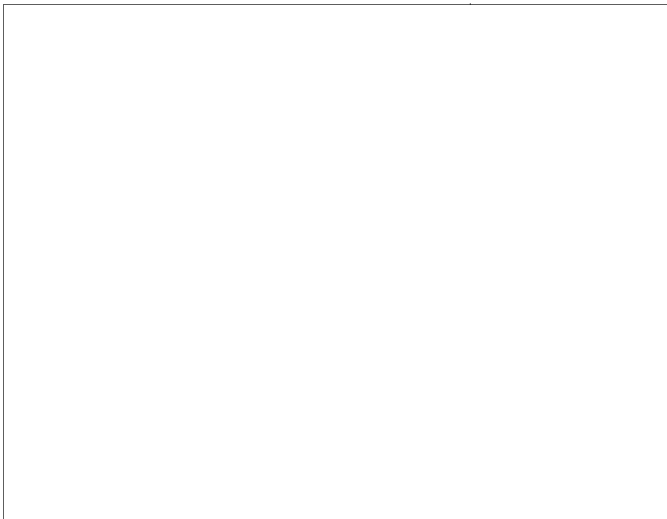
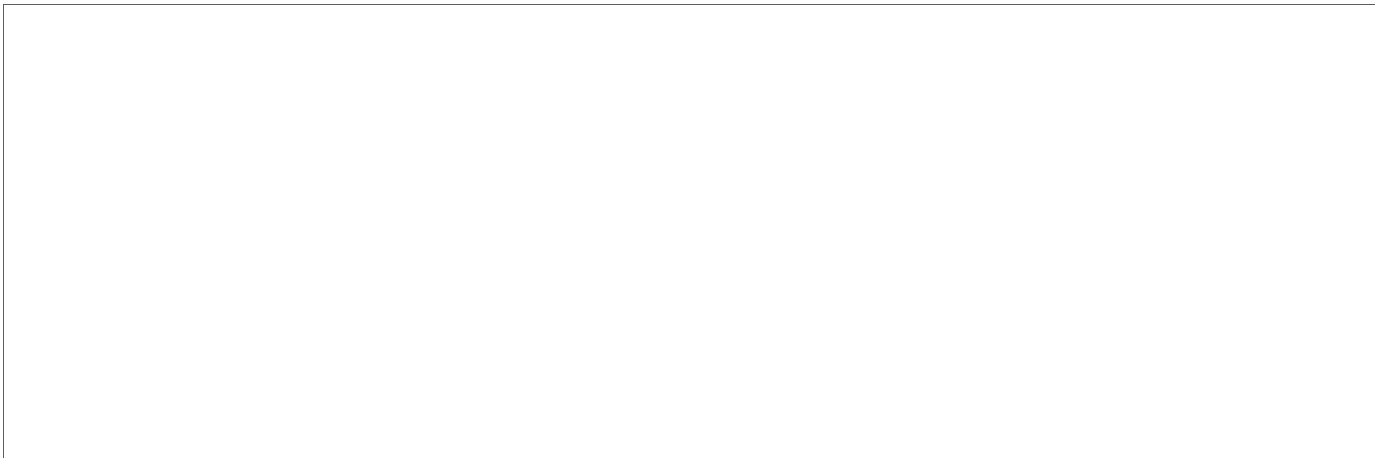
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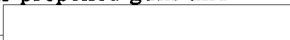
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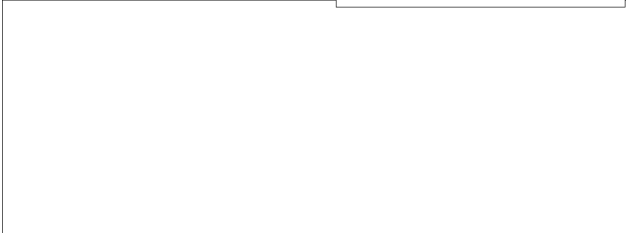
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Third World nations also began to import more modern weapons and equipment. In the last 15 years the number of LDCs with self-propelled guns and howitzers rose from 10 to 27. 


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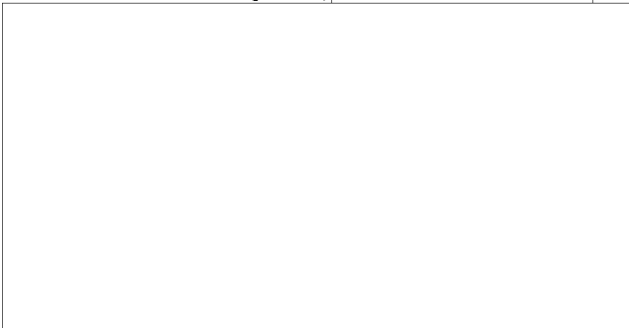



Outlook on Demand: Modernization in a Mature Market

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A Changing Market

During the 1970s and 1980s, increasing Third World production altered the structure of the market by cutting demand for finished artillery pieces. Several LDCs initiated production of multiple rocket launchers or mortars, and six nations began to make guns and howitzers in this period, 



We believe that the Third World field artillery market has matured and that LDCs will focus their acquisition efforts in the 1990s on further modernizing their forces. Demand for towed artillery pieces has largely been satisfied, and the likely ending of several wars will reduce the need for replacement equipment as LDCs make an increasing share of their own artillery. Only a few nations, however, have outfitted their forces with large numbers of self-propelled and long-range artillery, modern support equipment, and advanced munitions. 

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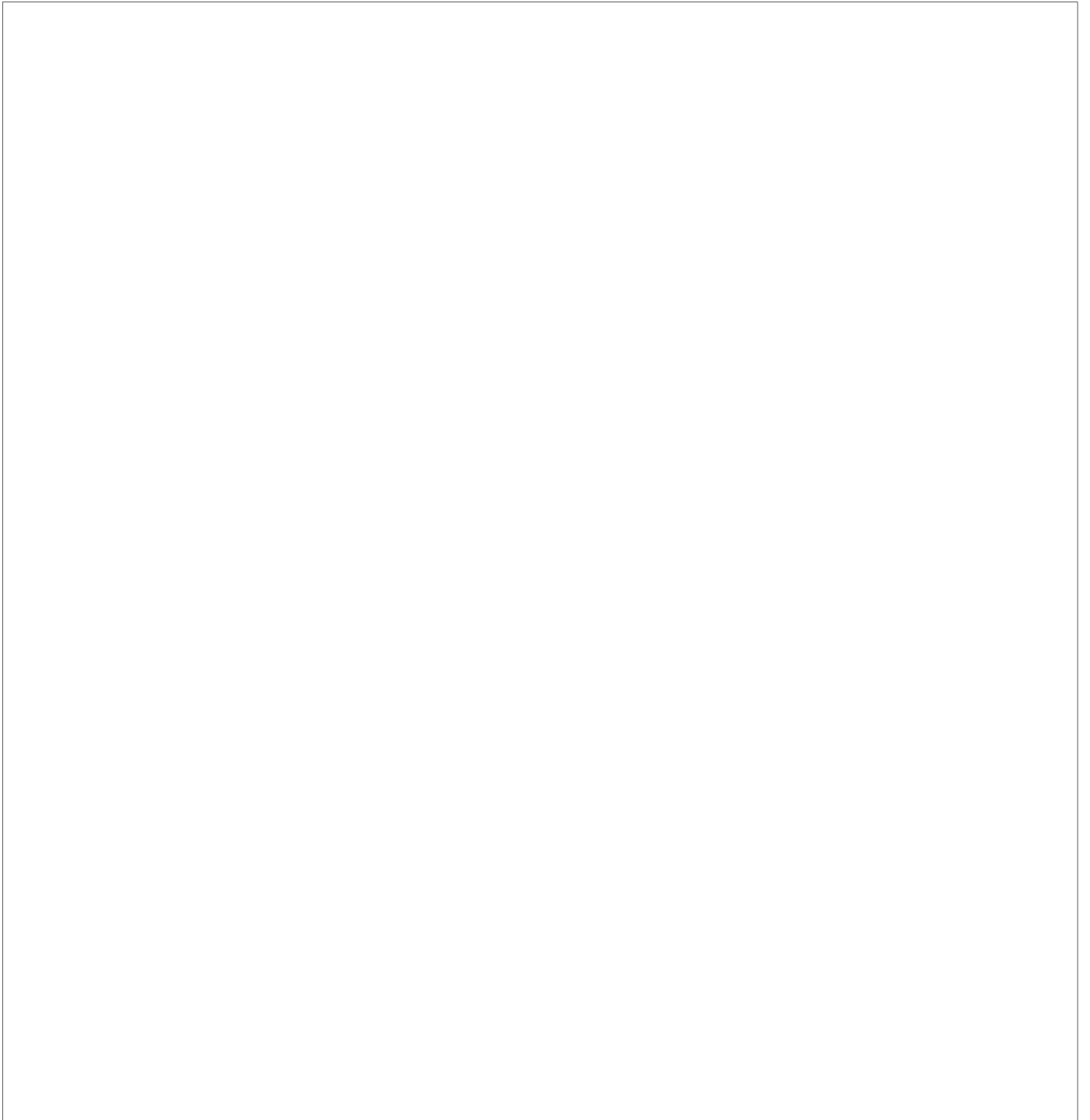
Overall, we estimate that Third World demand for field artillery pieces in the next decade will fall by at least a third compared with 1978-87, and possibly by

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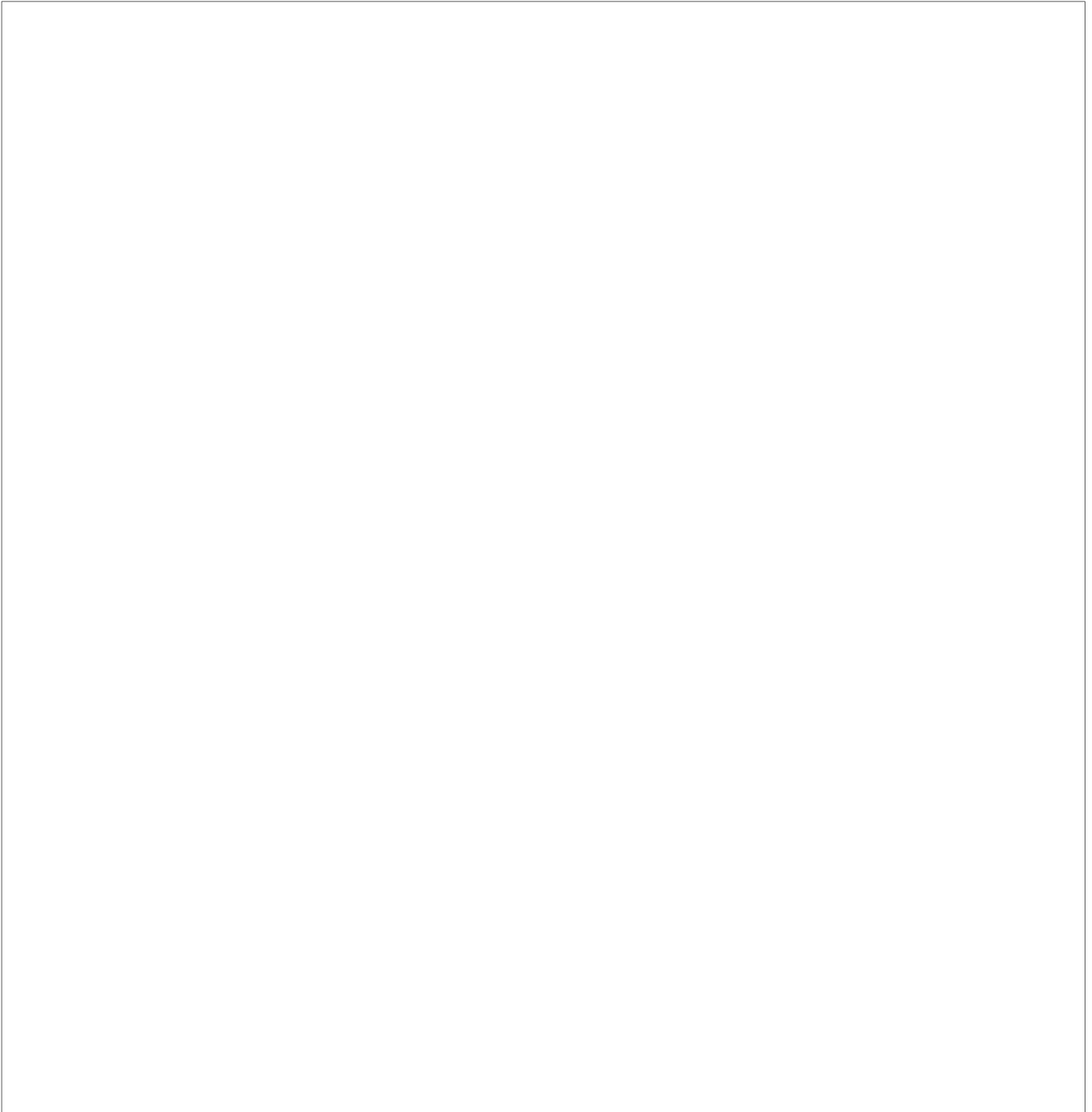
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- Third World acquisitions will affect the interoperability of US and allied LDC forces. Acquisition of equipment from non-Western artillery suppliers could degrade a nation's ability to operate jointly with US forces.
- Successful modernization of Third World artillery forces will, in some cases, pose new threats to US forces likely to operate in the Third World, such as Marine amphibious forces and light divisions. Some LDC artillery forces, such as Iran's, may possess advantages over US forces, not only in terms of the number of artillery pieces but also with regard to range.

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Figure 14. Forward observer with a hand-held laser rangefinder. [redacted]

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- Demand is likely to be modest for muzzle velocity radars that detect minor variations in the performances of individual guns and howitzers to more accurately determine how an artillery piece should fire to hit its target. [redacted]

[redacted]

- Meteorological equipment that determines weather conditions affecting the flight of artillery projectiles, thereby allowing adjustments when calculating fire directions, is already fairly widespread in the Third World. [redacted]

[redacted]

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low cost of laser rangefinders will make them particularly attractive. [redacted]

[redacted]

Third World nations, in our view, will most likely place less emphasis on acquiring other equipment to improve accuracy:

- Probably only a few LDCs will acquire "smart" or "brilliant"⁷ munitions because of their high costs. The US "Copperhead" antitank projectile, for example, costs \$35,000 a round, and costly laser designators also must be purchased to operate the system. [redacted]

[redacted]

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⁷ "Smart" and "brilliant" projectiles have seekers that allow them to home in on selected targets. The US Copperhead, for example, is a smart munition that homes in on a target designated by a laser. The laser is aimed by a ground- or air-based forward observer. Brilliant munitions are better able to discriminate among targets than smart munitions. [redacted]

Artillery Suppliers in the 1990s

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Artillery suppliers will face mixed prospects in the changed Third World field artillery market of the 1990s. The USSR will probably dominate deliveries to nations that acquire arms mainly on an aid basis, sending large numbers of older artillery pieces but little modern equipment. As a result, Moscow will probably remain the largest supplier of artillery pieces to LDCs, but its exports will not lead to much modernization. Western suppliers, on the other hand, are likely to lead in exports to wealthier nations that will be most able to buy new weapons, support equipment, and munitions to modernize their forces. Nonetheless, the large number of suppliers will make it difficult for Western exporters of artillery pieces to make profitable sales, with prospects best for those offering self-propelled and long-range weapons. [redacted]

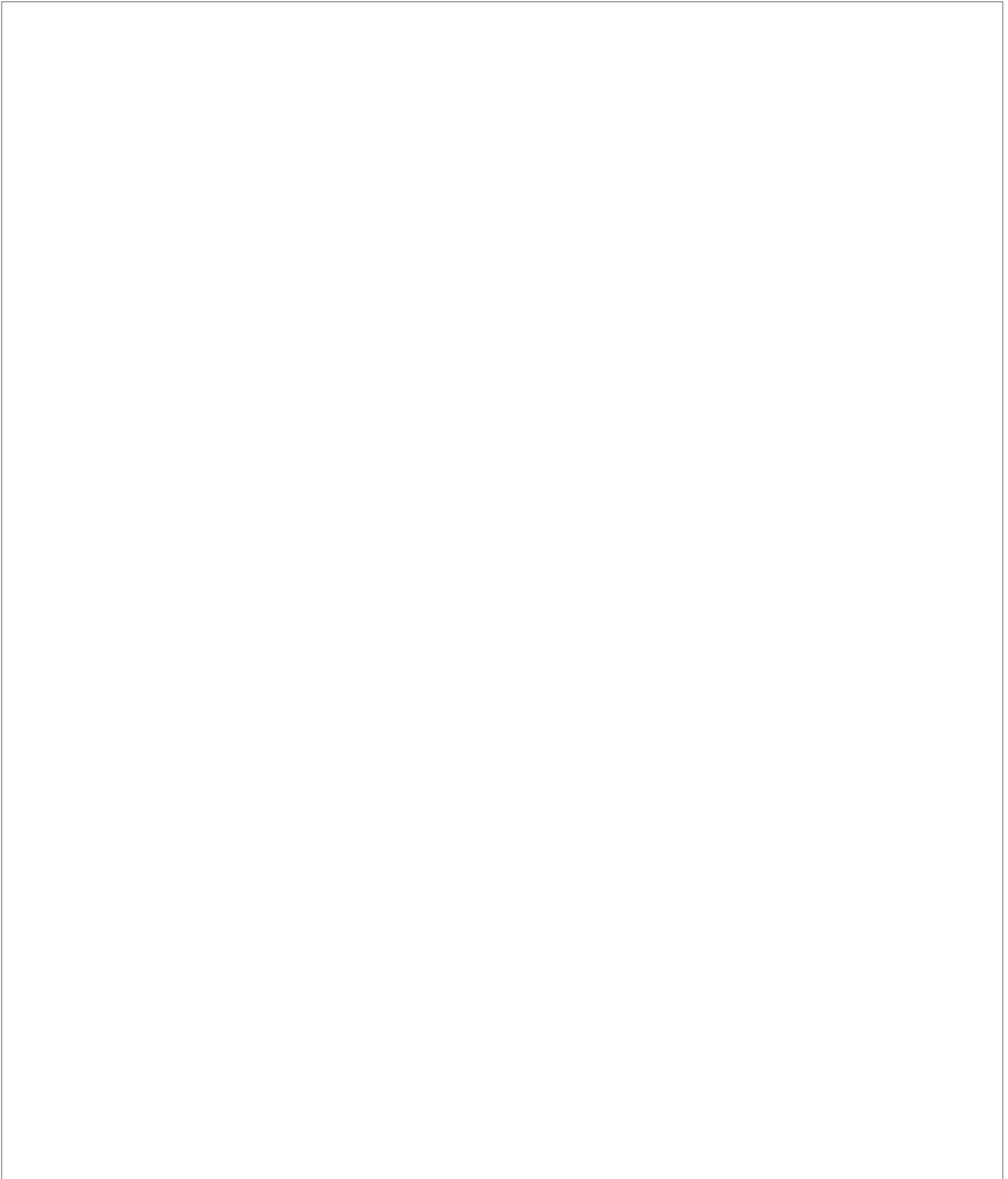
Prospects for the USSR

The USSR will continue to be, in our view, the largest exporter of artillery pieces to the Third World over

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