

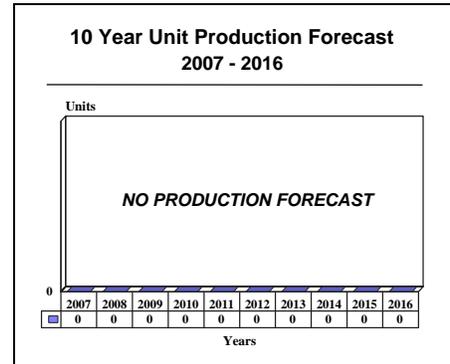
ARCHIVED REPORT

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T-80 - Archived 5/2008

Outlook

- Russian production reportedly ended in 2005; Ukrainian licensed production remains dormant
- Rosoboronexport continues to seek export and license customers; export sales have accounted for less than 5 percent of production
- T-80 offers minimal modernization and retrofit potential
- Production forecast reflects the lack of significant sales opportunities for new-production T-80 series tanks



Orientation

Description. A main battle tank (MBT).

Sponsor. The Ministry of Defense of the Russian Federation, Main Automotive and Armored Materiel Directorate, continues to sponsor this legacy program of the former Soviet Union.

After gaining independence and assuming the design and production facilities at Kharkov, the Ukraine Ministry of Defense assumed support of the T-80UD in that nation.

Status. Development through serial production.

Total Produced. Through 2006, we estimate 13,782 T-80 tanks of all models had been produced.

Application. Armored mobile weapons systems, optimized for high-speed offensive and breakthrough operations, as well as defensive fire support.

Price Range. In 2007 U.S. dollars, the latest production T-80UM1 BARS reportedly maintains a unit price of \$4.219 million. Ukraine currently offers the T-80UD for \$3.717 million.

Contractors

Prime

| | |
|---|---|
| Omskiy Mashinostroitelnny Zavod | 2 Krasny Per., Omsk-20, Omsk, 644020 Russia, Tel: + 7 3812 418 513, Fax: + 7 3812 415 293, Email: frug_kbtm@omsknet.ru, Prime |
| V.A. Malyshev State Enterprise, V.A. Malyshev Research and Production Assn | Plehanovskaya St, 126, Kharkov, 61002 Ukraine, Tel: + 380 0572 28 3101, Fax: + 380 0572 28 3002, Email: marketing@malyshev.kharkov.ua, Licensee |

Subcontractor

| | |
|--|--|
| KBP Instrument Design Bureau | http://www.shipunov.com/eng/kbp/ , Shcheglovskaya Zaseka St, Tula, 300001 Russia, Tel: + 7 4872 41 00 68, Fax: + 7 4872 42 61 39, Email: kbp@shipunov.com and kbkedr@tula.net (Arena Self-Defense System) |
| Kaluga Motor-Building Plant JSC | http://www.kadvi.ru , Ulitsa Moskovskaya 247, Kaluga, 248021 Russia, |

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| | |
|--|--|
| (PO Kaluzhskiy Motorostroitelnyy Zavod) | Tel: + 7 4842 55 80 79, Fax: + 7 4842 59 68 60, Email: kadvi@kaluga.ru (GTD-1250 Vehicular Gas Turbine) |
| TDA Armements | http://www.tda-arm.com, Route d'Ardon, La Ferté Saint-Aubin, 45240 France, Tel: + 33 2 38 51 63 63, Fax: + 33 2 38 51 63 97, Email: dpt.communication@tda.thalesgroup.com (Arena Self-Protection System) |

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Technical Data

T-80U

Crew. Three: commander, gunner, and driver.

Armor. The low-silhouette hull features conventional rolled homogeneous steel armor, supplemented by additional Kontakt-5 Explosive Reactive Armor (ERA), appliqué armor, and a neutron-absorbing liner. The 20

centimeters (7.87 in) of glacis armor yields protection equivalent to over 2 meters (6.56 ft) of conventional rolled homogeneous armor. The turret is a single-piece casting with a maximum thickness of approximately 45 centimeters (17.72 in).

Dimensions. The following data reflect the T-80U with the ERA package. The fuel capacity data are for internal tanks followed by the external tanks.

| | <u>SI Units</u> | <u>U.S. Units</u> |
|---------------|--------------------|---------------------|
| Length | 9.66 m | 31.69 ft |
| Width | 3.59 m | 11.78 ft |
| Height | 2.20 m | 7.22 ft |
| Combat weight | 46.02 tonnes | 50.72 tons |
| Fuel capacity | 1,090 + 680 liters | 289.89 + 180.85 gal |

Performance. The performance data reflect use on a paved road; the range data are without/with the extra fuel tanks. With preparation, the T-80U can ford 6 meters (19.7 ft) of water.

| | <u>SI Units</u> | <u>U.S. Units</u> |
|---------------|-----------------|---------------------|
| Maximum speed | 65 kmph | 40.4 mph |
| Maximum range | 335/440 km | 208.0/273.2 stat mi |
| Step | 98 cm | 3.21 ft |
| Trench | 2.85 m | 9.35 ft |
| Slope | 46% | 46% |
| Gradient | 63% | 63% |
| Fording | 1.2 m | 3.94 ft |

Engine

Early Production. GTD-1000TF vehicular gas turbine engine. This powerplant generates 820.6 kilowatts (1,100 hp), with a power-to-weight ratio of 17.83 kilowatts per tonne (21.68 hp/ton).

Current Production. GTD-1250 vehicular gas turbine engine. This powerplant generates 932.5 kilowatts (1,250 hp), with a power-to-weight ratio of 20.26 kilowatts per tonne (24.65 hp/ton).

Both powerplants are products of PO Kaluzhskiy Motorostroitelnyy Zavod. The GTA-18A gas turbine, mounted in the rear of the hull, powers the 19-kilowatt

(25.46-hp) auxiliary power unit. The T-80 features a 27-volt electrical system.

Gearbox. An unspecified hydraulically assisted manual unit, with one reverse and four forward gear ratios.

Suspension and Running Gear. Torsion bar suspension, with six forged-steel dual-tired roadwheels and five return rollers on each side. The drive sprocket mounts to the rear. The first, second and sixth roadwheel stations feature linear-type hydraulic shock dampers. The RMSH track is the live type.

Armament

Main Armament. The 125mm 2A46M1 D-81TM 125 smoothbore tank gun. This fully stabilized ordnance features a muzzle reference system, thermal shield, and fume extractor. Elevation (+15°), depression (-5°), and turret traverse (360°) are electrically operated, with manual backup available. After firing, the gun automatically returns to the index position for reloading.

The main armament feeds from a carousel-type electro-hydraulic automatic loading system, known as the Korzina. Projectiles and propellant charges are stored in a horizontal position in two layers in the bottom of the fighting compartment. The T-80U carries a total of 45 rounds of 125mm ammunition, with 28 rounds in the carousel magazine.

The 2A46M1 ordnance can achieve a muzzle velocity of 1,830 meters per second (6,003.9 ft per second) with the 3VP6 Hyper Velocity Armor Piercing Fin Stabilized Discarding Sabot (HV-APFSDS) penetrator round. The barrel life of the 2A46 ordnance is around 750 rounds of 3VP6 HV-APFSDS ammunition and 1,000 rounds of High Explosive Anti-Tank (HEAT) ammunition. Available Russian-design 125mm ammunition includes:

- 3VBM3, 3VBM6, 3VBM7, 3VBM8, 3VBM13, and 3VBM17 APFSDS
- 3VP6 APFSDS-T
- 3VBK7, 3VBK10, 3VBK16, and 3VBK17 HEAT
- 3VOF22 and 3VOF36 High Explosive-Fragmentation (HE-Frag)

The 2A46M1 D-81TM 125mm smoothbore gun (the Rapira-3) can also fire the 9M119M Svir (AT-11 Sniper) laser-guided anti-tank missile. The Svir, also known as the Reflecks, can deliver its HEAT warhead

out to a range of 5 kilometers (5,468 yd). The T-80U carries six 9M119M munitions.

Secondary Armament. One coaxially mounted 7.62x54mm PKT (SGMT) machine gun; one remotely operated 12.7x107mm NSV machine gun on the turret roof. Each side of the turret mounts four electrically operated 81mm 902B Tutscha smoke grenade launchers. The T-80U carries 1,250 rounds of 7.62x54mm ammunition and 500 rounds of 12.7x107mm ammunition.

Fire Control. The T-80U features the Type 1A45 fire control suite. This system differs from the original T-80 and T-80B only in the control system for the 9M119 Reflecks missile. The fire control suite features a laser rangefinder, a 1V517 or 1V528 ballistic computer, and several sensors. The gunner's 1G46 Irtysh sight is a variable-power (2.7x to 12x), stabilized periscopic day/night sight with integral rangefinder. Since 1992, the gunner's station has also been equipped with the Buran-PA stabilized thermal night sight.

The commander's station features five TNP-165 vision blocks and the PNK-4S day/night binocular-type periscopic sight, with an integral TKN-4S infrared night vision device. For day use, the PNK-4S device provides 7.5x magnification at 10° field of view; at night it provides 5.1x magnification at 8° field of view. The commander's station also features an electro-optic monitor. An L-2 Luna infrared/white light searchlight mounts to the left of the main armament; the commander's cupola mounts a secondary infrared/white light searchlight.

T-80B

Crew. Three: commander, gunner, and driver.

Armor. Same as the T-80U, albeit with an earlier-generation ERA suite.

Dimensions. The following data reflect the earlier-model T-80B with the earlier-generation ERA package. Fuel capacity data are for the internal tanks followed by the external tanks.

| | <u>SI Units</u> | <u>U.S. Units</u> |
|---------------|--------------------|---------------------|
| Length | 9.9 m | 32.48 ft |
| Width | 3.4 m | 11.15 ft |
| Height | 2.2 m | 7.22 ft |
| Combat weight | 42.5 tonnes | 46.85 tons |
| Fuel capacity | 1,100 + 740 liters | 292.55 + 196.81 gal |

Performance. The performance data reflect use on a paved road; the range data are without/with extra fuel tanks. With preparation, the T-80 can ford 5 meters (16.4 ft) of water.

| | <u>SI Units</u> | <u>U.S. Units</u> |
|---------------|-----------------|---------------------|
| Maximum speed | 65 kmph | 40.4 mph |
| Maximum range | 335/440 km | 208.0/273.2 stat mi |

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| | <u>SI Units</u> | <u>U.S. Units</u> |
|----------|-----------------|-------------------|
| Step | 98 cm | 3.21 ft |
| Trench | 2.85 m | 9.35 ft |
| Slope | 46% | 46% |
| Gradient | 63% | 63% |
| Fording | 1.8 m | 5.91 ft |

Engine. GTD-1000TF, as also used by the early-production T-80U. In the T-80B application, this 820.6 kilowatt (1,100 hp) powerplant yields a power-to-weight ratio of 19.31 kilowatts per tonne (23.48 hp/ton). The T-80B also features a 27-volt electrical system.

Gearbox. An unspecified hydraulically assisted manual unit, with one reverse and five forward gear ratios.

Suspension and Running Gear. Same as the T-80U.

Armament

Main Armament. Same as the T-80U. However, the T-80B features the Kasetka automatic loading system;

the tank carries 36 rounds of 125mm ammunition. The T-80B can also fire the 9M112M Kobra (AT-8 Songster) anti-tank guided missile. The 9M112M can deliver its HEAT warhead out to a range of 4 kilometers (4,374.4 yd). The T-80B carries four 9M112M Kobra munitions.

Secondary Armament. Same as the T-80U.

Fire Control. The T-80B features the Type 1A33 fire control suite. This suite differs from the later T-80U suite (see above) only in the control system for the anti-tank guided missile. The T-80B supports the 9M112M Kobra; the T-80U supports the 9M119 Reflecks.

Variants/Upgrades

Variants. Other than the BREM-80U armored recovery vehicle, the prime contractor has developed no specific variants of the T-80.

BREM-80U. The prime contractor completed this prototype armored recovery vehicle (ARV) in 1997. The BREM-80U features a hydraulically operated dozer blade, which can also function as a stabilizing blade when the crane is in use. This vehicle remains in the prototype stage.

Proposals have also surfaced for the development of a command post vehicle and ammunition supply vehicle, both based on the BREM-80U design. To date, these proposals reportedly exist only on paper.

Self-Propelled Artillery Application

The 2S19 Msta-S 152mm self-propelled artillery system features the T-80 tank chassis, mounting the V-84A diesel engine of the T-72 tank. For a complete discussion of the 2S19, see the “SP-152 (2S19) Msta-S 152mm Self-Propelled Howitzer” report in Tab A of the *Ordnance & Munitions Forecast*.

T-84: The Ukrainian Offspring

Following the breakup of the Soviet Union, the newly independent state of Ukraine inherited the Morozov Design Bureau (the original designer of the T-80) and the large Malyshev plant in Kharkov. Ukraine has further developed the T-80UD into the T-84. For a more

detailed discussion on the T-84 program, see the “T-84” report in this tab.

Modernization and Retrofit Overview. The primary T-80 retrofit work has involved integrating a conventional diesel engine in place of the troublesome gas turbine powerpack.

Giving Up on the Gas Turbine

This retrofit program (under the auspices of Obiekt 478) generally involves converting gas turbine-powered T-80U tanks to the diesel-powered T-80UD configuration. The prime contractor also produces new T-80UD tanks on an as-needed basis.

The Morozov Design Bureau developed the original Obiekt 478 diesel program; the Malyshev plant in Kharkov performed the initial retrofit work. Following the breakup of the Soviet Union, the Russian Federation assigned all T-80 modernization and retrofit work to the VNI Transmash design bureau – an amalgamation of the Kotin, Shashmurin, and Popov design bureaus. The Omskiy Mashinostroitelnyy Zavod tank plant in Omsk (Zavod 13) currently performs all Russian T-80 production and retrofit work.

Active Defensive Systems. More recently, the prime contractor has integrated several different defensive systems with the T-80 as production cut-ins and retrofits. The TShU1-7 Shtora system was the first of this type to enter this market segment. This equipment

uses infrared guidance technology to provide protection against anti-tank missiles. The Shtora-1 system includes the infrared sources, power supply, and related control equipment.

TDA Armements has teamed with the Russian KBP organization to market the Arena tank self-protection system. Thus far, Omskiy Mashinostroitelnyy Zavod has tested the Arena on the T-72, T-80, and T-90 tanks; the T-80UM1 BARS features the Arena as standard equipment. The Arena (also known as the Kazt) is automatic in operation and has a reaction time of half a

second. It is available for purchase on new-production T-80UM1 BARS and T-90 tanks, or as a retrofit to existing T-72 and T-80 tanks.

When the Arena radar detects an incoming missile or anti-tank munition, the Arena computer fires the appropriate defensive munition from the launchers mounted around the turret. The defensive munition detonates downward at a pre-determined height, producing a hail of ballistic fragments that intercept the threat munition.

Program Review

Background. The T-80 is the third member of the second generation of Soviet (Russian) main battle tank development since World War II, joining the earlier T-64 and T-72 designs. This tank clearly exhibits a continuation of the T-64's higher-cost, more technologically sophisticated, higher-risk design; the T-72 continues to exhibit the lower-cost, less technologically sophisticated, lower-risk design of the second generation. However, the later-model T-72 tanks share a much closer technological bond with the T-80U.

Russia's Gas Turbine Experiment

The Morozov Design Bureau originally developed the T-80 design (called the Obiekt 288) in 1966. In 1969, the Bureau rolled-out Obiekt 219, a T-64 tank modified with a new suspension and a vehicular gas turbine powerplant. Following an extensive period of developmental and operational testing, the Soviet Army accepted a modified Obiekt 219 as the T-80 in 1976. The use of a vehicular gas turbine, based on a helicopter turboshaft design, marked only the second time that gas turbine technology had provided the sole source of power in a tank; the General Dynamics M1 Abrams was the first production-standard main battle tank to successfully employ a vehicular gas turbine powerplant.

A Legacy of the Soviet Union

The Morozov Design Bureau originally developed the T-80 in conjunction with VNII Transmash. T-80 production initially occurred at the Malyshev Tank Plant at Kharkov (Zavod 75) in Ukraine. Following the collapse of the Soviet Union, the Russian Federation placed the T-80 program under the VNII Transmash bureau in Saint Petersburg; PO Kirovskiy Zavod in Saint Petersburg handled T-80 production until 1990. Subsequently, the Omskiy Mashinostroitelnyy Zavod tank plant, located at Omsk (Zavod 13), took over T-80U production and retrofit work in the Russian Federation.

Since 1994, Ukrainian production of the T-80 design (first as the T-80UD, now as the T-84) has occurred at the Malyshev Tank Plant, under the auspices of the Morozov Design Bureau.

Description. The interior design of the T-80 is similar to that of the T-64, following the conventional layout.

The driver's compartment is in the center of the forward hull; the turret/fighting compartment occupies the center of the vehicle; the powerpack and gearbox mount in the rear of the hull. In the T-80U, the driver's seat attaches to the roof of the vehicle; in earlier models it mounted on the floor. The driver's station features a single-piece hatch cover, a TVNE-4E observation periscope, and two FG-125 driving lights.

In the cast turret, the commander sits to the right of the main armament; the gunner sits to the left. Both the commander's and gunner's stations feature single-piece hatch covers and TNPA vision blocks. The operating handles of the commander's TKN-3 sight also rotate the cupola, and operate the searchlight.

Optimized for NBC Environment

The standard PAZ overpressure-type nuclear, biological, and chemical (NBC) protective suite consists of a radiation detector, a dust separator/blower, and a filtering system. The tank also features a lead-based foam cloth lining for neutron absorption. This lining helps to eliminate electromagnetic pulse; it also reduces interior noise and spalling. Other features include the R-163 radio suite and the R-174 intercommunication system, extended-range external fuel tanks, the INEY centralized fire extinguishing system, and an OPVT snorkel. All T-80 tanks can mount a dozer blade or the KMT mineclearing roller system. An air conditioning system is an option for the T-80.

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Production Models. The following table lists the known development and production models of the T-80.

| | |
|--------------|--|
| T-80 | Obiekt 219, original production model (1976) |
| T-80B | Obiekt 219R, mounting more powerful SD-1000 vehicular gas turbine (1978) |
| T-80BK | Command version of T-80B (1978) |
| T-80BV | Obiekt 219RV, mounting ERA (1985), also known by NATO designation T-80 M1984 |
| T-80BVK | Command version of T-80BV (1985) |
| T-80U | Greatly enhanced model of T-80 (1985) – the definitive T-80 configuration |
| T-80UD | Obiekt 478, mounting a diesel powerplant |
| T-80UK | Command version of T-80U (1992) |
| T-80UM | Improved T-80U (1993) |
| T-80UM1 BARS | Current production standard; features Arena active defense system (1997) |
| T-80UM2 | T-80UM1 BARS (“snow leopard”) with a redesigned turret, featuring fire control components closer to NATO standard. Commander and gunner positions reversed; enhanced loading system; retains vehicular gas turbine powerplant (1998) |

The Mysterious Black Eagle

Research suggests the much ballyhooed Black Eagle developmental tank is, in fact, simply a further evolution of the T-80UM2. The Black Eagle reportedly retains the standard 125mm 2A46M1 main armament and the GTD-1250 vehicular gas turbine powerplant of the T-80 series. Distinguishing features of the Black Eagle include a longer hull, featuring seven roadwheels on each side; the redesigned turret of the T-80UM2; the Kaktus ERA suite; and the Arena active defense system.

Like the T-80UM2, the Black Eagle features a redesigned turret in which the commander sits to the

left of the ordnance and the gunner to the right. The enhanced, bustle-mounted automatic loading system features blast doors and blow-out panels in the turret roof. The Black Eagle computerized fire control suite reportedly mirrors the current NATO standard, with a day/night fire-on-the-move capability.

Although the Black Eagle represents a significant enhancement over the T-80, its role in the Russian Army remains unclear. Given the structural changes to the hull and turret configurations, it appears unlikely the Black Eagle can become a retrofit program for existing T-80 tanks. In short, where the Black Eagle fits into the Russian Federation’s main battle tank production scheme remains to be seen.

Significant News

Russia to Engage in Broad Military Reform – In a push to form a more professional military, Russian Defense Minister Sergei Ivanov announced broad plans to reform the armed forces. The first priority will be to reduce the number of conscripts and cut generals’ and admirals’ posts over the next five years. Ivanov also announced that roughly 30,000 military support jobs will be cut. In turn, 70 percent of servicemen and all non-commissioned officers will be contractually employed within three years.

These moves are an attempt to push Russia’s declining military force into a more professional status instead of relying on conscription to bulk up its numbers. The issue of conscription has become an increasingly heated topic in Russia, as numerous conscripts suffer severe beatings at the hands of more senior conscripts while officers look away. The public outcry rose to fever pitch after Private Andrei Sychoy was beaten so severely by senior conscripts on a 2005 New Year’s Eve drinking binge that his right knee and genitals had to be amputated.

However, because of Russia’s vast territorial stretch and limited manpower, President Vladimir Putin still sees conscription as a necessary tool to maintain the country’s defense personnel totals. Therefore, in an attempt to mollify a skeptical public, Putin signed a Military Reform Bill in December 2005 which will reduce the term of compulsory military service from two years to one by 2008. This reform bill, however, has not been able to dampen the public outcry against a policy many view as corrupt and counterproductive. Critics of the Russian military argue that abolishing conscription altogether and evolving into a fully professionalized force would benefit the military to a greater degree, but Putin has consistently rejected that notion.

The new military reform signals that the Kremlin is finally making an honest effort for a more professional force, as defense expenditures will continue to rise in 2007 – to RUB800 billion (\$29.64 billion), or 2.7 percent of GDP. For the first time, Russia will adopt a federal defense funding program. It will attempt to spend 50 percent of the budget

on equipment development and 50 percent on personnel by 2010, thus increasing the professional profile of the military. Currently the ration is 60-40, but in the past five years it was 70-30.

Part of Russia's problem has been its focus on revisiting strategic thought patterns of the Cold War. Instead of focusing mainly on counterterrorism and the rise of China in its southeast, Russia has concentrated on investing in its strategic nuclear forces and Topol-M missile system (also known as the SS-27). While the Kremlin concerns itself with NATO expansion on its Western front, the growing might of China on its southern border becomes a more pressing matter. With a rapidly declining population, a broad frontier and sparsely populated swathes across its vast eastern regions, Russia is highly susceptible to encroachments, or possible land grabs, by China. But Russia's military leaders continue to focus on preparing for a Cold War that the rest of the world has relegated to the past. (BBC News, 5/06)

Russia is Weak and Getting Weaker – The Russian Federation is weak and getting weaker. President Vladimir Putin has brought order to a chaotic situation but at the expense of the nation's democratic institutions. Putin's authoritarianism has neutered Russia's Parliament. He has silenced independent civic organizations, political parties, and the media. In contrast, he has strengthened the secret police, military, and other security organizations. Official corruption flourishes. Moscow's control of the large segments of the press assures that good stories about a resurgent and strong Russia appear frequently in print and on television and radio. But the opposite is actually happening.

The Russian government has made much of its development of advanced weapons systems, including a new ballistic missile capable of defeating U.S. defensive systems. Yet much of the new weaponry developed by Russia is being exported and little is in the hands of its own troops. India has bought more Russian-made tanks since 2001 than the Russian Army. The Russian Army remains poorly trained, malnourished, and demoralized. Alcoholism, suicide, and corruption are rife.

High economic growth figures, in the area of 7 percent, have been attributed to Russia by the International Monetary Fund (IMF). But this growth is fueled mainly by rising energy prices, something for which Moscow had little responsibility. A downturn in the energy markets could be disastrous for Russia. Too little has been invested in expanding production capacity, which is insufficient to sustain current levels of exports. Economic reforms are stalled. State control over strategic economic industries has increased, discouraging foreign investment. Russia rates poorly in globalization rankings.

International observers are concerned about Putin's nationalistic, nostalgic rhetoric. His appeal to a Greater Russia resonates with certain political classes. This rhetoric is seen as fueling race-related hate crimes, xenophobia, and the rise of ultranationalist groups in Russia. Russian chauvinism could mean the end of a multi-ethnic, multi-confessional Russia. (NBC News, 9/06)

2007 Russian Defense Budget Prioritizes Arms Development, Procurement – For the first time in post-Soviet Russia, a significant proportion of the annual defense budget will be allocated toward the development, purchase and repair of armaments. The Russian defense budget is set to rise to \$27.55 billion in 2007, a 15 percent increase over its total in 2006 of \$23.4 billion. Within the new budget, investments toward upgrading weaponry through modernization, development or new purchase will total \$15.01 billion, or close to 55 percent of the total budget.

The infusion of capital is desperately needed for the Russian state armaments industry as it staves off a near total collapse. Although Russia's armed forces rely entirely on domestically produced armaments, the lack of orders from the Kremlin over the past decade has caused the industry to turn to the export market in order to retain any profitability.

Since the fall of the former Soviet Union, the defense industry – once the highest quality component of the Soviet economy – has gradually been depleted of its best scientific and innovative minds. Their departure has been accompanied by the loss of large shares of modern defense technology. Today, much of the Russian defense material exported abroad is based on products developed in the 1970s and 1980s that are becoming more and more obsolete. In addition, production capacity has declined as many young Russians opt out of employment in the defense industry complex, leaving the average median age of workers at 55 and a future dearth of labor.

With this in mind, Russian President Vladimir Putin and Defense Minister Sergei Ivanov put forward a new state arms program for the period between 2007 and 2015. The program calls for the financing of RUB5 trillion (roughly

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\$185 billion) in material and equipment for the armed forces over the course of the next nine years. The Kremlin under Putin has prioritized bringing “strategic interests” such as Russia’s energy resources, precious metals, and the defense industrial complex under the control of the state. The new infusion of capital into Russia’s defense industry may be the last chance to prevent a total collapse of this vital sector and resuscitate it for the future. Otherwise, the last option left for Russia will be to go into partnerships with foreign partners such as India or China. (ITAR-TASS, 11/06)

Russian Arms Exports Expected to Hit \$6 Billion Mark for 2006 – In December 2006, President Vladimir Putin stated that Russia’s arms exports should reach \$6 billion by the end of FY06. If that figure should indeed be attained, it would surpass the preliminary forecast of \$5.5 billion in arms sales made by Russian authorities in December 2005. That estimate was made in 2005, at a time when Russia’s arms industry had hit a post-Soviet peak of \$6.1 billion. Further predictions estimated \$7 billion in arms sales for 2007.

These back-to-back years of strong foreign arms sales show that the Russian defense industry is achieving high export results only a few years after many observers had essentially cast it into oblivion. Reasons for its imminent decline ranged from narrowing markets and declining productivity to outdated equipment and evaporating technological leads. While these points are all pertinent in terms of 10-year forecasts, the reality is that in the immediate timeframe, Russian arms sales are matched only by the United States in the global market.

Due to a lack of state orders in the past, the Russian arms industry has increasingly looked to the export market to remain solvent. But with the Putin government making a healthy future investment of \$184 billion in rearming the Russian military over the course of the next nine years, reinvigorating the military-industrial complex is still a possibility.

Two other factors are also aiding the Russian defense industry: the consolidation of many companies under one state umbrella to bolster their strength, and the push for closer ties with the former Soviet republics now within the Commonwealth of Independent States. By re-examining the CIS market and strengthening bonds with these countries, Russia may indeed have rediscovered some of the fertile markets that were lost with the collapse of the Soviet Union. (FI, 12/06)

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Funding

The Ministry of Defense of the Russian Federation currently funds this legacy program of the former Soviet Union.

Contracts/Orders & Options

Not available, as the ministries of defense and contractors have not released contractual information regarding the T-80 program.

Timetable

| <u>Month</u> | <u>Year</u> | <u>Major Development</u> |
|--------------|-------------|---|
| | 1972 | Development begins |
| | 1976 | Low-rate serial production begins; T-80B development begins |
| | 1978 | Soviet Army fields T-80B |
| | 1983 | First sighting of T-80 by Western observers |
| | 1985 | Soviet Army fields T-80U |
| Early | 1987 | Soviet Union offers T-80 to India for evaluation |
| | 1988 | Soviet Army fields first diesel-powered variant (T-80UD) |
| | 1991 | Production ceases in Ukraine |
| | 1994 | Production restarts in Ukraine |
| Jul | 1996 | Ukraine secures 320-unit export sale of T-80UD to Pakistan |
| Sep | 1997 | Contractor displays T-80UM1 BARS at Omsk |

| <u>Month</u> | <u>Year</u> | <u>Major Development</u> |
|--------------|-------------|---|
| Late | 1998 | Russian Federation reveals Black Eagle improved tank as T-80UM2 |
| | 2005 | Final year of T-80U low-rate production in Russian Federation; production complete in Ukraine |
| | 2007 | T-80 program dormant; marketing of existing tanks and components continues |

Worldwide Distribution/Inventories

Export Potential. Initially, the Russians refrained from making the T-80 available on the international market, most likely over concerns regarding the sensitive technology involved. However, the Russian Federation's desperate need for hard currency eventually trumped any security concerns. The Rosoboronexport organization aggressively promotes the T-80 on the international market, sending the T-80 to India, Malaysia, Syria, and the United Arab Emirates for evaluations.

The People's Republic of China was the first export customer of the T-80. Subsequently, Cyprus acquired the T-80, and the Republic of Korea accepted 80 tanks as a partial repayment of debt. In mid-1996, Ukraine scored a major coup by selling 320 T-80UD tanks to Pakistan.

Nevertheless, the export prospects for the T-80 in the glutted international market are not particularly bright, despite its relatively inexpensive unit price. Like the T-72, the T-80 simply cannot compete with the high-end main battle tank market segment – dominated by the Challenger 2, Leopard 2, and M1A1/A2 Abrams – in terms of capabilities.

Countries. Cyprus (41 T-80U), Pakistan (320), People's Republic of China (200 T-80U), Republic of Korea (80 T-80U), Russian Federation (12,479 – some were lost in the Chechnya fighting or otherwise destroyed), and Ukraine (234 T-80U/T-80B/T-80BK/T-80BVK, 28 T-80U, and 11 T-80UD). In 1992, the Spetstekhnika organization sold five T-80U tanks to Morocco, which then resold the tanks to France, Germany, the United Kingdom, and the United States. In 1992, the Voyentekh export firm in the Russian Federation sold another T-80U to the United Kingdom. Finally, Sweden has acquired a T-80U for evaluations.

Forecast Rationale

The T-80 main battle tank production line appears to have fallen dormant in the Russian Federation. As Ukraine continues to produce its T-84, the Ukrainian T-80UD program also appears to have fallen permanently dormant.

Little to Show for Great Promise

While the T-80 remains the centerpiece of the Russian Army's armored force, the tank clearly has not lived up to its initial promise. Like the T-64 and T-72, the T-80 simply is not in the same class as the Challenger 2, Leopard 2, or M1A1/A2 Abrams main battle tanks.

On the international market, the export potential of the T-80 suffers from the tank's inability to compete with the high-end designs in a glutted market. To date, export sales have accounted for less than 5 percent of all T-80 production. The Forecast International Weapons Group does not expect any further significant export sales of the T-80.

Playing the Cards They've Been Dealt

Despite the end of new production, the T-80 will likely remain the primary main battle tank of the Russian

Army throughout the forecast period – a function of the sheer numbers of T-80 series tanks remaining in active Russian Army service. While the T-80 has proven something of a disappointment for the Russian Army, the Ministry of Defense of the Russian Federation simply cannot afford a procurement program that would allow pulling the T-80 from first-line service.

Consequently, we expect to see the center of gravity shift to modernization and retrofit programs, as the Russians attempt to find cost-effective means of maintaining the T-80 as a viable asset in a world increasingly dominated by NATO-standard weapons systems.

Still the Russian Army's Primary MBT

Our 10-year production outlook reflects our assessment that the T-80 programs in the Russian Federation and Ukraine will likely remain dormant in terms of new tank production. Nevertheless, we expect the T-80 to remain the primary Russian Army MBT for the foreseeable future, as budgetary constraints will prevent sufficient procurement of the T-90 or Black Eagle as Russia's next-generation tank. Thus, modernization and retrofit

T-80

work, as well as the production of spare and replacement components, will at least keep the T-80 program active to some extent throughout the forecast period.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR PRODUCTION

| Vehicle | (Engine) | thru 06 | High Confidence Level | | | | Good Confidence Level | | | Speculative | | | Total 07-16 |
|---|------------|---------|-----------------------|----|----|----|-----------------------|----|----|-------------|----|----|-------------|
| | | | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| OMSKIY MASHZAVOD | | | | | | | | | | | | | |
| T-80U | GTD-1250 | 7762 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal - OMSKIY MASHZAVOD | | 7762 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SOVIET STATE TANK PLANTS | | | | | | | | | | | | | |
| T-80 | SD-1000 | 954 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| T-80B | GTD-1000TF | 4325 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| T-80UD | 6TF | 389 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal - SOVIET STATE TANK PLANTS | | 5668 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| VA MALYSHEV STATE ENTERPRISE | | | | | | | | | | | | | |
| T-80U (a) | GTD-1250 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| T-80UD (b) | 6TF | 324 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal - VA MALYSHEV STATE ENTERPRISE | | 352 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Production | | 13782 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(a) No further production forecast; effort now directed to the T-84 program.
 (b) Through 2006 production includes four developmental prototype tanks. All other production is for Pakistan. Late-production tanks are essentially the same as the T-84.



T-80UD Main Battle Tank

Source: www.army-technology.com



T-80UM1 Main Battle Tank

Source: www.army-technology.com