



## T-90S “Bhishma”

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One of the tanks showcased by the Army in the recent Republic Day parade was Bhishma. The first T-90S tank, Bhishma, was assembled with Russian technical help, and handed over to the Army in the first week of January 2004. Eighty more tanks, obtained in semi-knocked down condition are on the assembly line. Another hundred would be assembled from completely knocked down kits in a year from now. According to official sources, the indigenous production of Bhishma is set to commence by 2006/2007. India had finalized this deal in 1999 to procure 310 T-90S tanks from Russia. 124 were to be delivered in assembled form, and the rest in semi knocked down and completely knocked down condition. This deal also included the requisite license and provided for the transfer of technology for indigenous production of T-90S tanks in India at the Heavy Vehicles Factory in Avadi.

### The Purchase

The Army's decision to purchase the T-90S was informed by two factors: one, Pakistan finalizing the purchase of 320 T-80UD tanks from Ukraine; and, two, delay in the production of MBT Arjun. In summer 1998, the army narrowed down its choice to two Russian tanks - T-72S and T-90S - and tested them in desert terrain. The T-72S was not favored by some quarters in the Army as they were dubious about its abilities and suspected that the trial tanks were overhauled and repainted old 72S tanks, and not exactly new ones. Besides, the missile system of the T-90S performed poorly and the thermal sensors turned blind due in the 40 degrees plus desert heat. The Army perceived these issues as teething problems and went ahead with inking the deal. Thereafter the battle of wits commenced over the purchase.

The T-72S is considered equivalent to the T-90S, as most of the add-ons differentiating the T-90S from the earlier model could easily be incorporated into the T-72S. Furthermore, it was available for roughly half the price of the T-90S - 5-6 crores (approx US\$ 1.1 m) compared to the price of the T-90S viz. 12-13 crores (approx US\$ 2.6 m). This issue was raised in Parliament by the former Prime Minister, HD Deve Gowda, during whose tenure the negotiations for the T-72S and T-90S were proceeded with. It has been argued that the T-90S tank was only an upgraded version of the T-72S and the difference in price between the two did not match the upgrading costs. Prom-Export, the company involved in the sale of T-72S tanks, went on a public relations offensive, distributing confidential documents promoting the T-72S tanks, questioning the adaptability of the T-90S tanks to extreme desert heat conditions in India where they would be deployed.

There was general apprehension also that the purchase of T-90S tanks would effectively kill the indigenous Arjun tank program. Some in the Army felt that the T-90S was less capable than the T-72M1 Ajeya, and that its procurement could stall up gradation of the T-72M1. Proponents of this view felt that, instead of finding outside sources for a new tank, the funds could be allotted for the indigenous Arjun tank production and T-72M1 up gradation. True to their fears, 'Operation Bison' 'the program to upgrade the T-72M1' has run behind schedule due to the purchase of T-90S tanks.

At the other end of the spectrum there were debates on the utility of the Armored Corps in a nuclearized scenario, and the rationale behind further upgrading them. Several pertinent questions continue to linger.

### Is the T-90S better than T-72S?

The T-90 went into production in 1993. Though seen as a new design at first, the T-90 is based on the T-72BM design, which is a T-72B upgrade with third generation Explosive Reactive Armor (ERA) already in use on the T-80U tanks. More features from the T-80 series were added to this basic design, including a new engine, thermal sights, laser warning receivers and a jamming system. The T-90S is the export variant of the T-90. The T-90S is, therefore, much more advanced than the T-72. Since the tanks would be in service for at least three more decades with a mid-life upgrade, the T-90S was a natural choice for the Army.

### Would the purchase and production of T-90S affect the production of Arjun?

The Arjun MBT was planned to be equivalent to the M1A2 Abrams (American), Leopard 2 (German), and Leclerc (French) tanks. However, changes in the basic design of the tank resulted in freezing its design only in 1996 for the second time. While, on the one hand, the Army is very disappointed with the proto-types and pre-series

production vehicles manufactured by the DRDO, to the point of questioning its ability to design and manufacture the tank, the DRDO is critical of the Army having a closed mind regarding the indigenous production and unqualified

support for operating Arjun, since it is got accustomed to inducting imported T-72 tanks. After three decades and 3.5 billion rupees expenditure, the Arjun is too expensive a project to be written off.

Nevertheless, to assuage fears that the T-90S induction would cripple the indigenous Arjun programme, the Army has placed an order for 124 Arjun tanks. This was done due to political pressure rather than its convictions based on the trial

versions of this tank. Nevertheless, in the event of the Bhisma rolling out, the Army has reiterated that it would not jeopardize the production of Arjun. According to the Chief of Army Staff, Gen NC Vij, the Army wants 30 percent of its equipments to be state of the art. Bhisma and Arjun are to form a bulk of this 30 percent. This finds resonance in the Defence Minister's claims that the Bhisma would complement the Arjun and not cripple its production programme.

### What would happen to Ajeya?

About 2000 Ajeya tanks form the backbone of the Army, which was intended to replace the ageing T-55 Vijayanta tanks. Indigenous production of T-90S, Bhisma, is meant to replace the Ajeya, but this process has been delayed for three reasons. The Heavy Vehicle Factory at Avadi, set to produce 400 tanks each year, has never produced more than 200. During the last 15 year years, about 1100 Ajeya tanks have been produced. That apart, indigenous production has been beset with problems. Roughly 770 gun barrels manufactured for the tanks did not adhere to the original critical heat treatment standards for tempering the barrels. This led to a large number of accidents in which the barrels cracked or burst. Russian scientists who investigated the accidents linked them to the barrels - manufacture having deviated from the original heat temperature for tempering without consulting the original designer. In 1998, about 450 such barrels, valued at Rs 44 crores, were removed from stock, and 300 barrels fitted on the tanks were placed under investigation. Moreover, overhauling of the tanks has also taken place at a much slower pace, leading to piling up of tanks that need to be overhauled. However, the Chief of Army Staff has assured that production of Ajeya would continue for another three years before phasing them out. This corresponds to the time frame for commencing indigenous production of the Bhisma.

### Is the T-90 better than Pakistan's T-80UD that it is designed to counter?

When Pakistan decided to procure the 320 T-80UD Ukrainian tanks, the Indian Army was in a fix. The latest generation of tanks available to it was the T-72M1 Ajeya, a substantial number of which required overhauling. Production of the indigenous Arjun tank was nowhere in sight.

Therefore, the Army, looking for quick acquisition, inked the deal for the T-90S. Since it was procured to counter Pakistan's T-80UD, it would be interesting to note their similarities and differences.

#### TABLE MISSING

A cursory glance at the specifications of both tanks shows that there are only marginal differences between them. However, it is these marginal differences that make the T-90S a superior tank. First the armaments. The T-90S can fire different armaments, including two kinds of missiles. The T-80UD carries only one type of missile. While the loading is automatic in the T-90S, it is hydro-mechanical in the T-80UD. The T-90S also has an AK74 assault rifle, but that is of minor significance. The tank is provided with an integrated fire control system which makes it a far superior MBT to contend with. But the best feature of the T-90S tank relates to its battle survivability. The Kontakt 5 ERA, the latest generation in armor protection, protects the tank from frontal, flank and aerial attacks. This ensures their protection from manually operated fire systems. The SHTORA-1 defensive aid makes it very difficult for the enemy to attack, especially if the fire system uses guided missiles and laser targeting. And, most importantly, the T-90 includes protection against chemical, biological and nuclear weapons.

Having declared a no-first use nuclear doctrine, to maintain credible deterrence, the minimum nuclear capability required is the ability to absorb a first attack before embarking on a retaliatory strike. The T-90S is definitely an integral part of this defense preparedness, considering the tank's battle survivability features. However, the caveat is: much depends on the ordnance factories adhering to the original schedule and rolling out the indigenous production on time.?

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