

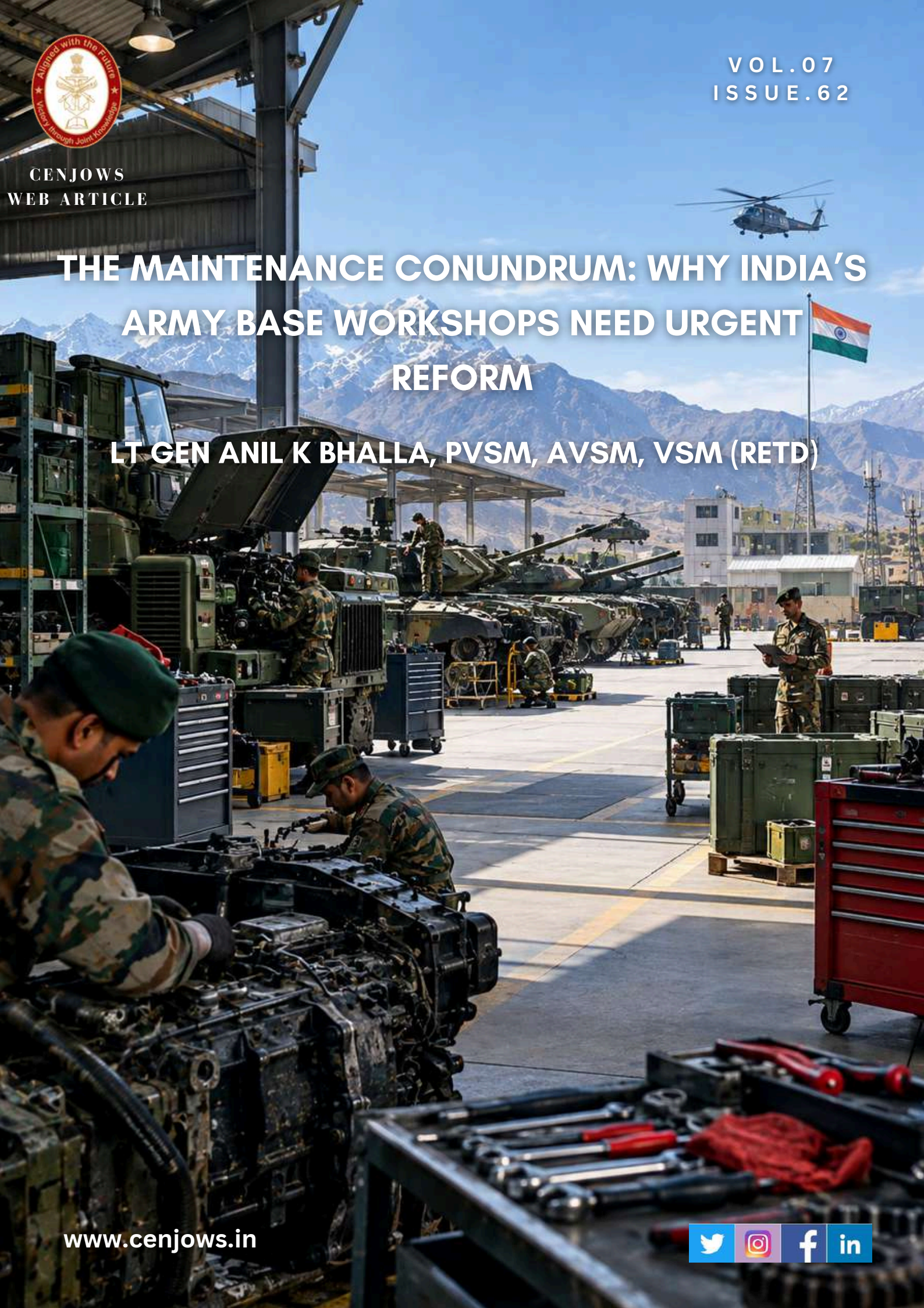


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THE MAINTENANCE CONUNDRUM: WHY INDIA'S ARMY BASE WORKSHOPS NEED URGENT REFORM

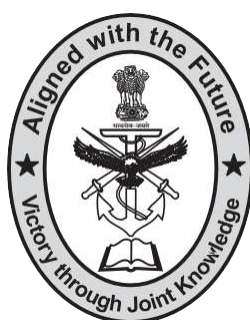
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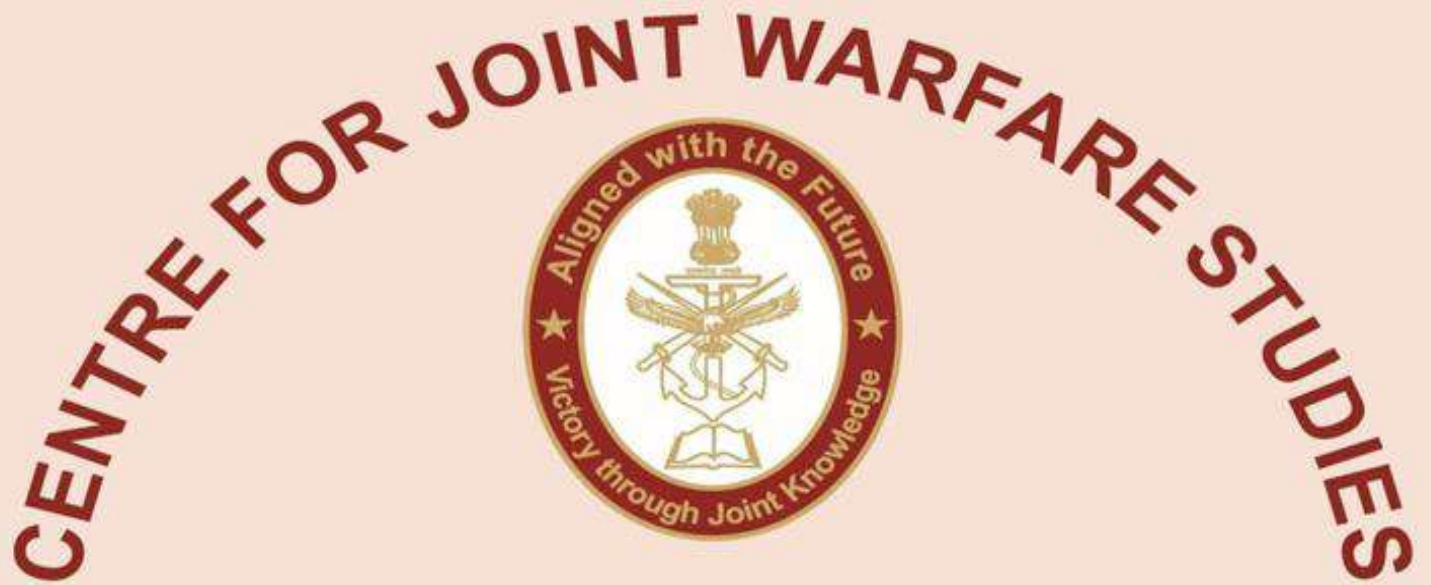
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**THE MAINTENANCE CONUNDRUM: WHY INDIA'S
ARMY BASE WORKSHOPS NEED URGENT
REFORM**



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**The Maintenance Conundrum:
Why India's Army Base
Workshops Need Urgent Reform**

**Author: Lt Gen Anil K
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(Retd)**

International models offer lessons but no ready-made answers. The cost of indecision is measured in combat readiness.

There is a quiet crisis behind the operational frontage of the Indian Army. It concerns the eight Army Base Workshops (ABWs), which are the backbone of the Army's Maintenance, Repair, and Overhaul (MRO) ecosystem, and how to fix an ageing system that can no longer keep pace with a modern fighting force. These workshops handle depot-level overhaul of the Army's most critical assets: T-72 and T-90 tanks, BMP infantry combat vehicles, artillery, radars, and communication equipment. Of the eight, seven handle repair and overhaul; 515 ABW Bengaluru serves a distinct role of indigenous manufacture of spares, production of simulators, and overhaul of aviation rotables.

Efficiency of these base workshops is most critical at this juncture when resilience and equipment availability will decide the outcome of any future conflict. By every objective measure, the entire system has been found wanting, including Time, Quality, Cost, and Operational Readiness albeit due to fragmented

ecosystem where **responsibility, accountability and empowerment is not with a singular entity. This is the singular and most important aspect which needs to be fixed.**

A Documented Record of Shortfalls

The CAG has audited ABW performance three times: 1992, 2005, and 2015–16. Report No. 36 of 2016 found workshops consistently failing in achieving overhaul targets. Radar overhaul delays stretched beyond 900 days. The T-72 backlog stood at over 700 tanks at the end of 2010–11 and over 400 at the end of 2015–16, roughly 20 per cent of holdings. For the ARV WZT-2, the overhaul facility was not set up until 2009 — a 28-year gap; only 22 of 222 vehicles were overhauled. The same deficiencies recurring across three decades point to structural malaise. **But it is more important to analyse as to why did this happen despite outstanding capabilities possessed by base workshops especially the combatants.**

The Spares Crisis

The single thread running through every audit is the chronic non-availability of spare parts. Sourced from the erstwhile Ordnance Factory Board, Defence PSUs, and Russian OEMs, each channel has been prone to delays. The MoD responded with a list of 107 sub-systems to be indigenised by 2028. AVNL in early 2026 supposedly achieved 100 per cent indigenisation of T-72, T-90, and BMP-2 engines, a milestone, but one category among hundreds required for full overhaul. And even this needs to be professionally judged.

International Models, Contextualised

Every major military has grappled with this challenge. The US Army operates government-owned depots like Anniston (the M1 Abrams overhaul centre, worth \$530 million annually) and Red River, which combines overhaul with fabrication and manufacture of specialty parts. These depots routinely partner with private industry. The Lima Army Tank Plant is a true GOCO under General Dynamics. The UK sold its Army Base Repair Organisation to Babcock International in 2015. But these models suited their specific contexts. The Indian Army, the third-largest tank operator globally, facing a potential two-front contingency with diverse Russian, Israeli, Indian, and French equipment, operates in a fundamentally different environment. **Any model**

must account for wartime surge requirements, classified repair capability, and the nascent state of India's private defence-industrial base.

GOCO: From Ambition to Stalemate

The Lt Gen DB Shekatkar Committee (December 2016) recommended corporatising all eight ABWs on a GOCO model. The MoD set timelines and engaged a consultant in January 2020. The first step was limited: an RFI was issued specifically for 505 ABW Delhi, which overhauls approximately 70 T-72 tanks annually, acknowledging that complexities exceeded initial expectations. The initiative then stalled. The CAG's 2021 compliance audit found modernisation "plagued by administrative inefficiency." ₹9.46 crore on DPRs was rendered unfruitful. GOCO was assessed as "fraught with risks and operational challenges." ABWs employ 90 per cent civilians, making combatant manpower savings notional. Cost estimates of ₹5,000–6,000 crore could escalate to ₹10,000 crore. **GOCO was a copied model and unsuitable for Indian conditions.**

A Recent Signal: The DPR for 505 ABW Infrastructure Upgradation

Amidst this prolonged impasse, a recent RFI has been issued for the preparation of a Detailed Project Report and its subsequent implementation for the infrastructure upgradation of 505 ABW, Delhi. This represents a notable recalibration: rather than pursuing wholesale handover to a private contractor, the focus shifts to what the CAG consistently recommended, modernising the workshop's physical infrastructure, plant, and machinery. Whether this signals pragmatic course correction or another stop-start iteration remains to be seen but limiting the initiative to a single workshop while seven others age is insufficient. This anomaly not only needs correction but a new focus on responsibility, accountability and empowerment must be ushered in a mission mode. The delays will be catastrophic.

Beyond Repair: The Manufacturing Imperative

One dimension absent from the GOCO debate is whether restructuring should encompass a manufacturing role — not of platforms, but of systems and critical spares. 515 ABW Bengaluru already offers a precedent: it has produced over 143 ATGM simulators since 2008, manufactures spares for tanks, ICVs, and artillery, and in March 2026 signed MoUs for indigenous drone manufacturing and AI-based UAV

systems. In January 2026, the Army signed an MoU with the MSME Ministry to link ABWs with 33 Technology Centres. **If 515 ABW can manufacture, indigenise, and incubate, the remaining workshops can be retooled for critical systems manufacturing, directly addressing the spares crisis. It will, however, need to be empowered to manufacture as per its own requirement rather than waiting orders from ordinance directorate or MGS branch. The current distribution of responsibility between EME (to undertake MRO) and Ordinance (to provide spare parts for MRO) is a failed system. It needs to be changed immediately. EME must be given single responsibility of providing entire MRO support and manufacture/ source spare parts for MRO by itself. Ordinance can continue other provisioning tasks less the equipment spares if the sustainability of equipment has to be maintained which is most critical from the national security resilience perspective.**

3D printing and other upgrades allow base workshops to manufacture a large number of spare parts needed by them in the workshop itself. Balance ones can be taken from the industry directly wherein such industries can be nurtured by themselves. This may also allow to split the spare holding between the workshops as well as the industry manufacturing these.

The Way Ahead

The either-or framing of GOCO versus status quo is a false binary. A properly structured PPP model, contextualised to the Indian Army's scale and threat environment, could bridge both positions. Infrastructure modernisation cannot wait for the ownership question. The spares supply chain must be a strategic capability. And the 515 ABW model of manufacturing, indigenisation, and incubation should become the template for transforming all workshops into dual-role facilities.

There is, moreover, an instructive precedent closer to home. The Indian Air Force, which oversees 13 Base Repair Depots and the Central Indigenisation and Manufacturing Depot at Nashik, has undertaken a substantive restructuring of its MRO ecosystem without pursuing an ownership-transfer model. This approach of reforming processes, retooling capabilities, and building supply chain resilience from within offers a practical template that the Army's Base Workshop system would do well to study.

The Army Base Workshop system has sustained the fleet for seven decades. It deserves not abandonment but transformation, and that transformation can wait no longer. With the appointment of CDS and Secy DMA institutionalised, there is a better visibility of MRO practices in the three services. **As per the current model, AF model appears to be the best and needs to be emulated in Indian Army as well without any delay. In addition to the synergy in MRO and spare management, a single leadership is needed with full empowerment as is the case in IAF. The maintenance engineer is the best fit for such an appointment. This maintenance engineer must sit at apex with full responsibility, accountability, and empowerment if we must win the wars of tomorrow. Sooner it is done, better it will be.**

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