

**WHOSE LIFE IS IT
ANYWAY?**

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By

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New Delhi

ISBN : 978-93-84492-22-9

Price in India : ₹ 150 /-

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Printed in India

Printed by

Xtreme Office Aids Pvt. Ltd.

Basement Bhanot Building (Below Syndicate Bank)

Nangal Raya Commercial Complex, N.D-110046

Ph.: 9311156527

E-mail: xtremeofficeaids@gmail.com

Website: www.xtremeonline.in

WHOSE LIFE IS IT ANYWAY?

A Review of an Avoidable Ammunition Accident

Accountability breeds Response-Ability-Stephen Covey

Dedicated to the memory of the 19 intrepid bravehearts of the Central Ammunition Depot, Pulgaon, who died doing their duty in exceptionally dangerous circumstances.

31 May 2016

0050 hours

CAD, Pulgaon

The Accident

Late at night, when most of India was asleep, Sepoy Amar Singh of the Defence Security Corps was alert on the watchtower of guard post no. 24, his eyes peeled for any sign of unusual activity. He knew the safety of 75,000 tonnes of ammunition rested on his

and his colleagues' broad shoulders. The waning moon was in its last quarter with a deep darkness having descended on the depot much earlier. The morning had been hot, an understatement perhaps, at 46.5°C. Nightfall had brought hardly any respite from the oppressive heat. Sepoy Amar Singh knew that it would be at least another hour of active duty before he would hand over charge to his reliever and he lay his weary body down on a charpoy for a short nap before he was to be awakened by another buddy for his next round of duty.

While gazing into the distance, Sepoy Amar Singh suddenly froze. There was smoke rising from somewhere within the depot. His training and instincts kicked in. He hurriedly dialed the duty officer at the depot main gate. Almost immediately screechingsirens of fire alarmsrent the air and pierced the stillness of the night. The depot quick reaction team swung into action.

The Administrative Officer of the depot, Lt Col RS Pawarand the security officer Maj K Manoj Kumar, rushed to the spot,the explosive store house (ESH) No. 192, along with four fire tenders and a water bowser.They began drenching the smoking ESH with water. Col Ghaninder Singh, the Officiating Commandant also arrived to personally supervise the operation. Unmindful of their personal safety, the firefighters not only inundated the shed with water, but also flooded the ground surrounding the shed as per the standard operating procedure.

Alas, despite their brave efforts, the ESH blew up without any warning. Nineteen bravehearts were dismembered, perishing instantaneously, and scores others were injured, 17 seriously. The explosion caused a fire in an area of more than 800 acres, which threatened then neighbouring ESHs with unimaginable devastation. The firefighters continued, despite the loss of their comrades, with officers leading the firefighting operation from the very front. With a herculean effort and indomitable courage, the kind rarely witnessed, they managed to stop the spread of the fire and finally doused the flames by 6 a.m.

CAD Pulgaon, located about 120 km from Nagpur, occupies an area of over 7,000 acres and stores a variety of ammunition and explosives in a large number of sheds. The CAD is a central depot and functions under the Army Headquarters. It is the mother depot supplying the Indian Army with ammunition and explosives through many ammunition depots spread across the length and breadth of the country. Ammunition and explosive stores are received from the manufacturers, primarily the Ordnance Factories and through import. The depot is one of the biggest ammunition storage echelons in the world. Over the years, infrastructure has been added to ensure that ammunition is stored in appropriate conditions. All the infrastructure at the depot is as per the specifications defined by the Storage and Transportation of Explosives Committee (STEC) published by the Centre for Fire, Explosive and Environment Safety (CFEES).

The Cause of the Accident

ESH No. 192 contained what is called segregated ammunition. In it were about 20,000 anti-tank mines with a Net Explosive Content [NEC] of 134 tonnes awaiting a decision for repair or demolition. Ammunition is segregated when something amiss is noticed during storage or usage. The main component of anti-tank mines is TNT, which, as everyone knows, is a highly explosive substance. High-grade TNT which is normally used to fill military ammunition, has a set point (melting point) of 80.4°C to 80.6°C. However, the TNT in these mines had a much lower set point, lower than the standard 80°C which is normally used in non-military or commercial applications, and was, thus, prone to exudation. The plastic mine bodies were also defective with cracks appearing on them. In addition, the joints in the mine bodies were not sealed properly and, as a result, there was excessive exudation of TNT. This exudation of TNT is extremely sensitive to percussion and high temperatures and is highly flammable.

The contamination of TNT with impurities, especially with metals and oxides, can increase the danger since TNT is an acid. The mines were packed in metal boxes that were lined with plywood. The combination of exuding TNT, wood and metal, stored over prolonged periods, in high temperatures of 25°C to 47°C made for a very lethal combination. This first led to a slow burning, then deflagration and, ultimately, detonation. This disastrous interplay of factors led to the unfortunate accident.

What perhaps is absolutely astonishing is that when the mines were first received in the depot in 2010 (the year they were manufactured) they were already exuding TNT. This was highlighted by the depot authorities and, after an in-depth investigation by all agencies concerned, this problem was classified as a ***‘Serious Manufacturing Defect’*** and so, ab-initio, the mines were sentenced as irreparable. **The hazards to life and property were highlighted to all stakeholders, yet nothing was done about it by the Ordnance Factory Board probably because of the huge financial loss in writing off the entire quantities produced.** The ammunition holding depots were only asked to segregate the mines and store them till a methodology was evolved for their repair.

Manufacture and Inspection

The ammunition that the Indian Army procures is manufactured by the Ordnance Factories with some quantities coming in through import. There are supposed to be very stringent checks on the manufacture of ammunition, which broadly consists of the inspection of raw-materials, in-process inspection, and the inspection of the finished products. The Directorate General Quality Assurance (DGQA) has traditionally been responsible for carry out the complete Quality Assurance and Quality Control. However, from 1984 till 2006, in a phased manner, the responsibilities of the DGQA with regards to quality have reduced successively, while the Ordnance

Factory Board (OFB) has been empowered to carry out these functions. It is, therefore, not surprising that incidents of poor quality and defective ammunition have sharply increased over the past decade or so. **There have been instances of the Ordnance Factories manufacturing artillery fuses without safety components. This is a sure recipe for disaster as a fuse without a safety component will definitely detonate in the barrel of the gun, or even before, leading to death or injury to the gun crew.**

Defective Ammunition

An article published by IDSA in 2012 had this to say.

“In a reply to the lower house of the Parliament in 2007, the Minister of State for Defence Production reported a number of deficiencies in OFB products, including some batches of 5.56 mm INSAS rifle, 5.56 mm light machine gun, small arms and ammunitions, tank ammunitions and delay igniters..... In 2005, the CAG observed that of the 47 items of weapons, ammunition and heavy vehicles produced in the OFs, 18 items had quality problems...Between 1999 and 2004, the army reported a total of 3,210 defects in OFB supplied products, of which more than 1,500 were related to weapons, ammunitions and armoured vehicles.”¹

There are several cases of defective ammunition pending investigation or replacement by the Ordnance

Factories leading to holding of almost 15,000 to 25,000 tonnes of segregated ammunition by the Indian Army at given any time which besides negatively impacting operational preparedness, is a sure recipe for ammunition accidents, and loss of life of our brave soldiers and fire fighters. It is important to note that defective ammunition has been the cause of many a death and injury especially in the last decade as borne out by investigations into a number of ammunition accidents.

A litany of manufacturing defects covers almost the entire range of ammunition being manufactured by Ordnance Factories as brought out by The Comptroller and Auditor General in 2015.

“Moreover, we observed that the SQAE [Senior Quality Control Establishment] continued to sentence components under RFR [Return for Rectification.] In 71 out of 123 instances during 2008–13, the percentage of RFR was as high as 20 to 100 per cent in several types of ammunition. Table-18 given below[not reproduced] illustrates the instances where the RFR was 20 to 100 per cent of the quantity of ammunition inspected during the year. Some of the reasons for sentencing the components under RFR were (i) leakage of propellant, (ii) driving band (where the shell is fired after filling) not rotating, (iii) improper coating (phosphating), (iv) imperfections in the body of the shell like cavities or excess varnish or dents or forging defects with the shell pitted at places, (v) dimensional deviations such as those in length

and height of the shell, tail fin thickness higher than specified, etc. Evidently, these defects particularly imperfections in the shell body or dimensional deviations, etc., should ideally have been detected in the inspections by QC. The fact that these components were sentenced as RFR in QA stage, points to gaps in Factory QC and the SQAE making compromises in its mandate.”

It further goes on to say, “During the period 2008–13, we observed rejection of filled ammunition/ components by the SQAE in 43 out of 205 instances aggregating to Rs234 crore, representing around 2 per cent of the ammunition issued during the period . . . We found that as of 31 March 2013, 13 types of ammunition valuing Rs1,617.94 crore were lying rejected in 856 lots due to manufacturing defects, of which 632 lots were for more than five years . . . The rejections were due to a host of reasons including ammunition not covering the required range, non-functioning/malfunctioning of components, misfiring, failure of the ammunition to penetrate the target, high standard deviation than specified on certain quality parameters, muzzle break, defects in fuze including partial/low order detonation of the fuze, non-opening of parachutes of Illuminating ammunition.”

What is even more damning and germane to this tragic and totally avoidable accident is the observation by the CAG in the same report:

“We noticed in September 2013, that DGOS was pursuing for free replacement of ammunition, worth Rs 814 crore, downgraded within the shelf life, with OFB. DGOS also emphasized that unserviceable ammunition was deteriorating, and was a potential fire risk at various depots . . . The fact thus remains that the down gradation of ammunition within the shelf life entails loss to the state and the inordinate delay in its free replacement was adversely affecting the operational preparedness of the Army.” (Emphasis added)

Apart from the fact that such ammunition is inherently dangerous and poses an unacceptable risk in handling and usage, considerable resources are wasted in re-inspection, repair and destruction of such ammunition. Since defective ammunition has to be held till an investigation takes place and follow-up measures are instituted, such ammunition also puts a premium on storage space. In the present case as well, the Army was compelled to hold on to unusable and defective anti-tank mines for several years perhaps in the fond hope that the shelf life of these mines would expire in storage without incident and the mines could then legitimately be ordered to be demolished.

ALegalView-CantheStateDuckItsResponsibility?

Article 21 of the Constitution of India guarantees the fundamental right to life. It guarantees citizens the right to any occupation in a ‘safe working environment’. This

safe working environment also includes working with safe material and equipment. The members of the Armed Forces willingly and unquestioningly accept the risks inherent in their profession. This, however, does not mean that persons serving in the Armed Forces of India automatically subject themselves to risks that come with the handling and usage of poor quality defective arms and ammunition.

Hence, a willingness to live with a risk that comes naturally with the job does not negate the responsibility and the care owed by the State towards the members of the Armed Forces. **It is, therefore, incumbent upon the State to take all reasonable steps to ensure that the equipment manufactured by one department of the State is in conformity with the quality standards laid down by another department of the State.** From this also springs a larger issue of holding of defective ammunition which significantly jeopardises national security and defence preparedness. It also shakes the confidence of the soldier in the war-fighting material the Government provides him.

Over the years, the right to life also includes the right to work in an environment that does not expose a person to unnecessary danger. That a member of the Armed Forces is incurring the risk that is a part and parcel of his life does not automatically absolve the State of his protection or the Government of any liability due to any fault on the part of the State. If there has been any negligence on the part of the

Government, it does not imply that a soldier on duty should subject himself to such negligence.

The Latin maxim *Volentia non fit injuria*, which means that to a willing person injury is not done, is normally quoted in cases where the litigant is involved in a dangerous profession. In other words, if someone has set himself up in a profession that could cause injury and is aware of the risks that profession entails, then, in case he is injured, he cannot enter a plea that his rights were violated and, hence, seek compensation. **However, what is germane to this particular case is that when a soldier consents to join the Armed Forces, he certainly consents to the risk of being killed or wounded by the enemy. But that does not imply that he has consented to have subjected himself to the risk of being killed or injured by defective equipment or ammunition manufactured by his own Government.**

Therefore, in this context, the protection of a soldier's life places an obligation upon the State to take all reasonable steps and prevent serious lapses in manufacturing and inspection of ammunition.

In a landmark judgment in the United Kingdom, *Haseldine vs Daw* (1941) 3 All E.R. 156), it was held that *"the manufacturer, or indeed, the repairer, of any article, apart entirely from contract, owes a duty to any person by whom the article is lawfully used to see that it is carefully constructed.....If the repairers do their work carelessly, or fail to report a danger of*

which, they as experts ought to be aware , I do not see why the principle of Donoghue should not apply to them.”*

*(Donoghue v Stevenson [1932] UKHL 100 was a foundational decision in Scots delict law and English tort law by the House of Lords. It created the modern concept of negligence, by setting out general principles whereby one person would owe a duty of care to another person.)

Thus, it is the duty of the manufacturer or the supplier to ensure that the ammunition that is entrusted to the troops is manufactured exactly as per the norms, without any defect whatsoever. **Any carelessness or failure in this regard pins the responsibility entirely on the manufacturer, especially when it was repeatedly brought to the notice of the manufacturer that the mines were defective.** The shelf life of ammunition is laid down and deterioration of any type during the shelf life is unacceptable.

Article 32 of the Constitution guarantees remedies for redressal in case of a violation of fundamental rights. The Latin maxim *Ubi jus ibi remedium*, which means that where there is a right, there is a remedy, applies to this case. The basic principle contemplated in the maxim is that when a person's rights are violated the victim will have an equitable remedy. This is certainly applicable in such cases where shoddy manufacturing processes,

coupled with poor inspection standards, have led to a loss of life and limb. Such incidents cannot and should not be accepted.

In a landmark judgment the Hon'ble High Court of Delhi in W.P. (C) 3414/2013 dt. 02.05.2017, SS Kaliavs Union of India, quoting extensively from a judgment in the UK, stated that the concept of *“sovereignty from civil actions and the liability arising from violation of a fundamental right are independent of each other under civil law”*.

Further, to quote from the judgment, *“A soldier or an air warrior like the petitioner can be expected to be aware of the ‘normal’ risks that he undertakes to accept in the course of a career that is removed from the ordinary. That assumption of risk at the same time raises the threshold bar on his employer to maintain the standards in respect of the workplace and the technical equipment, which such officers and warriors have to handle and live with. The HAL’s insistence of blamelessness and the stony silence maintained by the UOI in keeping the petitioner in the dark, and for its share of lapse in providing a safe workplace—with standard equipment, maintained to highest standard, are indefensible. A soldier or officer’s honour and dignity is as much a part of his right to life; it is to be respected just as much, if not more, for the reason that it is offered unhesitatingly and fully in defending the borders of the nation. Unlike ‘hired guns’ they stand guard so that the rest exercise our liberties. Denying them the right to a safe workplace with*

standard equipment constitutes violation of their right to life and dignity.”

Hence, this too is a fit case for the State, in this case the MoD, to review the cases of the soldiers and civilians killed and injured in this accident and grant them liberalized family pension² as well as ex-gratia payment.³

The Way Ahead

This tragic and completely avoidable accident is a prime example of how various organs of the state pass on the buck till the user is left holding the can. Unless decision makers are held accountable for such losses, such occurrences are bound to recur.

Be that as it may, the MoD must recognize such accidents as not only being attributable to military service, meriting Special Family Pension to the Next of Kin but more importantly, meriting Liberalised Family Pension with immediate ex-gratia payment.

The safety of the user being paramount, manufacturing and inspection standards have evolved over the years leading to higher and more stringent controls. These should be meticulously followed and adhered to lest, God forbid, such an accident repeats itself. There is a crying need to reintroduce the DGQA quality control regime into the manufacturing processes, be they by Ordnance

Factories or by the private industry, which the MoD is already leveraging to meet the shortfall in capacity.

Sadly, even now, despite being faced with overwhelming evidence, the MoD continues to chase red herrings. **Recently, too, post this horrendous accident, which, apart from the court of inquiry, merited a thorough study on manufacturing defects and quality controls, it is indeed farcical that the MoD instead ordered a study to look into storage accommodation for ammunition in spite of the fact that ESHs are being designed and built as per STEC specifications. This state of denial by the MoD and turning a blind eye to the twin problems of manufacturing and inadequate quality controls beggars comprehension.** The Army would be better served with a study incorporating the users as members looking into these two aspects that have been neatly sidestepped for far too long.

Above all, in keeping with the tenor of the quote at the commencement of this paper, it is imperative that the manufacturers be held accountable for only then can a positive response from them be expected in the raising of safety standards to acceptable levels.

End Notes

1. Behara, Laxman Kumar, 'India's Ordnance Factories: A Performance Analysis', Journal of Defence Studies, Volume 6, Issue 2, 2012, Pp. 63–77.
2. The Comptroller and Auditor General's Report No. 19 Of 2015, 'Union Government (Defence Services) Army And Ordnance Factories (Performance Audit Of Ammunition Management In Army)' dated 08 May 2015, Chapter V: Quality Control and Quality Assurance.
3. Govt of India (Ministry of Defence) letter No. 1(2)/97/I/D(Pen-C) dt 31 Jan 2001 of Para 4.1, read with Para 6.1 and 6.4.
4. Govt of India, (Ministry of Defence), letter No. 20(5)/2009/D (Pay/Services) dt. 04.06.2010.