Improved Method of Human Excreta Disposal in Field Area

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Abstract

Sanitary disposal of human excreta in field area in semi permanent camps established by the Armed Forces personnel is extremely important to ensure hygiene and sanitation of these camps. The existing method of constructing deep trench latrines (DTLs) has several practical problems. An improved method of constructing DTLs has been evolved, tested and tried by an Infantry Division. This method of human excreta disposal has a greater acceptability among the troops.

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Key Words : Deep trench latrines; Improved deep trench latrines; Semi permanent camps; Spot disposal; Superstructures

Introduction

Sanitary disposal of human excreta in semi-permanent camps established by the Armed Forces personnel is a major issue concerning the maintenance of hygiene and sanitation of these camps. The recommended method for disposal of human excreta in these camps is spot disposal by constructing DTLs [1]. DTLs have been in vogue in the Armed Forces since the past so many years, but of late they have fallen into disrepute due to some of the shortcomings / pitfalls associated with them. First and foremost, units are confronted with a continued shortage of DTL superstructures. The Corps of Engineers is supposed to provide these superstructures, at the authorized scale of 10% of the unit strength, but the same is not made available to them as per this scale. The problem is further compounded when units do not construct DTLs as per the correct specifications given in the Manual of Health for the Armed Forces 2002 [1]. Perpetual shortage of DTL superstructures and inappropriately constructed DTLs, some of which may have missing / broken lids, make them very unhygienic and thus less acceptable to the troops. These are the two most important reasons to account for the practice of open air defecation resorted to by the troops in field areas resulting in fly breeding / fly nuisance and the resultant unhygienic / unsanitary conditions in and around the campsites. To overcome the problems associated with the DTLs in vogue, an Infantry Division has developed an improved method of spot disposal of human excreta as a pilot project.

Improved Deep Trench Latrines

This improved method of spot disposal of human

excreta tried out under the aegis of Medical Branch, of the Infantry Division as a pilot project, entails construction of improved deep trench latrines (IDTLs). The details of construction, functioning and maintenance of these IDTLs is as under:-

- (a) Trench:- It is 1 meter wide, at least 2.5 meters deep and 3 meters long. The dimensions may vary depending on the type of soil / terrain and the level of subsoil water. The trench has to be covered with a superstructure that should overlap the trench all around up to 10 cm.
- (b) Superstructure:- Instead of the recommended wooden superstructure, the superstructure is made of a metallic sheet (iron / tin) of appropriate thickness which will be more hardy and long lasting. It has no apertures / lids so that there is no scope of lids getting broken / missing to cause fly breeding. A pipe of sufficient height for vent of gases is fitted at one corner of the trench.
- (c) Water closets:- Along the length of the IDTL on both sides, 3 to 5 Indian type water closet seats of plastic / fibreglass / chinaware are fitted. The seats should be put about 1.5 meters away from the edge on both the sides of the trench. This will lead to doubling of the number of seats available for each IDTL.
- (d) Water seal:- The WCs are fitted with a water seal (bend pipe) which is connected to a pipe leading into the trench.
- (e) Water for flushing:- Small quantity of water (2.5 to 3 litres) is sufficient to flush the WCs after each use. Water can be stored near the IDTL in a plastic

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Fig. 1 : Front view of improved DTL

tank.

- (f) Shelter:- A shelter with interposed partitions between the WCs using canvas / tarpaulin to provide privacy and protection from rain and sun.
- (g) Storm water drain:- A storm water drain dug all around the IDTL with a soakage pit at one end prevents rainwater from entering the IDTL.

Cost Factor

The additional cost in terms of requirement of WCs and accessories like water seal (bend pipe), connecting pipes etc is offset due to the doubling of the number of seats achieved per IDTL. The approximate cost of each Indian type WC seat, water seal (bend pipe) and connecting pipe is Rs.200/-.

Advantages of Improved Deep Trench Latrine

- (a) Better hygiene:- The IDTL is more hygienic as the water seal helps to prevent escape of foul gases and also denies access to flies into the IDTL.
- (b) Increased capacity:- The capacity of each IDTL gets doubled as compared to conventional DTLs as WCs have been fitted on both sides of the trench.
- (c) Easy maintenance:- Maintenance of IDTLs is much more easy as compared to the conventional DTL and mainly entails insecticide spray around the trench on a weekly basis.

Pilot Project Undertaken by an Infantry Division

Construction of IDTLs has been taken up as a pilot project by some of the units of an Infantry Division under the aegis of Medical Branch of the formation, and the same has been found to be very successful in field conditions and more acceptable to the troops. Figures 1, 2 and 3 give a view of one such IDTL. Following the success of this pilot project, all the units of the Infantry Division implemented it under the direction of Formation Commander.

Fig. 2 : Side view of improved DTL

Fig. 3 : Side view of improved DTL

Need for Propagation of Improved Deep Trench Latrines

Improved methods of spot disposal of human excreta have also been developed by the Planning, Research and Action Institute (PRAI), Lucknow (UP) and Research-Cum Action Projects in Environment Sanitation of the Ministry of Health, Government of India, called as the PRAI and RCA type models respectively. Both these models were found to be highly suitable for rural masses [2,3]. The improved type of DTL discussed above is based on the RCA type of model which is better of the two models under reference. Though IDTL of similar pattern has also been mentioned in the Manual of Health for the Armed Forces 2002, [1] the same is not being propagated on ground. Based on the experience of the pilot project undertaken by the Infantry Division, there is a strong case for recommending propagation of IDTLs for troops in semi-permanent camps in field areas.

Field flush latrines (FFLs)/ Aqua privy have been recommended for semi permanent camps. It consists of an underground concrete septic tank and cannot be shifted. It may be useful for a small garrison of a semi permanent location like Army Posts on line of control (LOC). It can not be used when formations (Brigades

and Divisions) move for deployment / collective training. For such moves, IDTLs as recommended and tried by us have been found to be very useful. IDTLs can be constructed in 4 to 6 hours and dismantled in 2 hours, shifted to new location and reconstructed with the same material.

Conclusion

Keeping in view the advantages of IDTLs over the conventional DTLs, it is recommended that medical administrative authorities at all levels should propagate the use of IDTLs. This will go a long way in improving

hygiene and sanitation of camps in the Armed Forces and contribute to maintain the morale of troops.

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