



DRDO

Press Release

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HEAVY DROP SYSTEM DEVELOPED TO PARA-DROP MILITARY LOADS UP TO 16 TONS

A 16 ton capacity heavy drop system (HDS) consisting of a platform and a highly advanced system of parachutes to drop loads consisting of military stores such as vehicles (including BMP class), supplies and ammunition from IL76 heavy lift aircraft has been designed and developed and demonstrated. Three prototypes of the system developed by the Aerial Delivery Research and Development Establishment (ADRDE), an Agra based laboratory of Defence Research and Development Organisation (DRDO) have been realized and two successful drops meeting the performance parameters have been demonstrated. The system is an extension of technology developed by DRDO for 'P-7 HDS', the 7 ton capacity Heavy Drop System developed earlier and already accepted by Indian Army for induction.

Appreciating the development, the Scientific Advisor to Defence Minister (SA to RM) and Secretary, Department of Defence R&D Shri Avinash Chander stated that the system offered 'drop and drive' capability and once inducted, the system, a force multiplier, will considerably enhance the capabilities of armed forces. He further stated "DRDO is the prime agency for development of parachutes systems and has developed wide range of parachute systems for applications covering 'delivery of military stores and human beings to battle field and remote locations', to 'recovery (from spin) parachute system for Light Combat Aircraft', to recovery system for **Space Recovery Experiment (SRE)**."

P-7 heavy drop system (P-7 HDS), paraded as a composite unit termed as "Load", has been developed for parading military stores/equipments such as military vehicles and ammunition trolleys from IL-76 aircraft and comprises of two main sub-systems namely Platform sub-system and Parachute Sub-system. The platform has a set of removable wheels which provides transportability for load to be taken to the airfield by means of towing it behind a suitable vehicle once the Load is prepared at the distantly located unit. Among various mechanism, Platform Fastening & Release Lock (PFRL) is an important device which ensures safe carriage and release of Load in/from the aircraft in all possible flight maneuver conditions and emergency landing. The store/equipment kept on the platform is lashed with lashing chains. The parachute system consists of three stages. The first stage is initiated on release command from aircrew and extracts the load from aircraft cargo bay into airstream. Two auxiliary parachutes deployed to assist the opening of five main parachutes, each around 700 sq. m. in size. These parachutes reduce the descent rate to desired speed at touchdown. On impact with ground, parachutes are released by automatic disengage unit (ADU) to avoid dragging and toppling of load due to high surface winds.

The design features built in the system ensure aircraft safety during the separation of such a large body in a foolproof manner as well as smooth deployment of parachutes and landing of Load at pre-designated target point. The P-7 HDS has been tested extensively during the Technical as well as Users Trials at different types of Drop Zones in Planes, Deserts and High Altitude Areas to prove the system and its operational effectiveness.

These systems are re-usable type to provide drop practice to the troops during their regular military training during peace time. This system has been very popular among the Users (Army) and operators (IAF) during project development stage itself in terms of performance reliability and

operational utility. During the development phase, the system has participated in Army's Joint Ex (Excope-2009) with US Air force and demonstration during Vayushakti-2010 at Pokhran witnessed by the President of India. After successful completion, the system has been inducted in the Army. The bulk production of Qty 146 nos is being initiated at L&T for mechanical platform and accessories and OPF Kanpur for the parachute systems respectively at an approximate total cost of Rs.180 crore.

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