FORCE SUSTAINMENT: THE GUIDED PRECISION AIR DROP SYSTEM

‘Sustaining the generated force is essential to ongoing operational effectiveness. It affects the depth and duration of campaigns and operations, and is essential to retaining and exploiting the initiative.’


Force sustainment has always been a critical element in the overall success of the employment of military forces. It focuses on ensuring that the force that is employed has the necessary personnel and materiel to conduct and sustain operations both domestically and in expeditionary operations. In the past three decades or so, the trend in warfare has been such that Western military forces have been engaged in irregular wars (IW) fought in faraway places that could at times be inaccessible because of geography or for political reasons.

The focus on expeditionary IW operations indicate two requirements. First is that the military forces need to be able to extend their reach and be able to access terrain that could be rugged and arduous. The second requirement is more important since it indicates the kind of forces that would be needed to function in these changed circumstances. Unconventional forces, normally Special Forces trained to operate in a particular physical domain, tend to adapt much better to the merging risks and challenges, and the fast-changing circumstances that often prevail in IW. By virtue of their training, Special Forces are also more conducive to the insertion, sustainment and extraction requirements of functioning in an IW environment. The deployment and sustainment of such groups is normally beyond the reach of traditional supply chains, which are developed more for the employment of conventional forces engaged in regular combat operations.

In IW, such Special Force deployments optimise mission effectiveness and have a high level of success in achieving the desired operational objectives. There is no doubt that these missions are hazardous and are undertaken only because they fulfil crucial requirements that contribute directly to the success of a campaign. However, sustainment of these deployments for the preferred period of time is altogether another story. Sustainment creates challenges that take concerted and joint efforts to ameliorate. Assured ability to deliver ammunition, water, rations and war-fighting materiel is a critical element in the planning and execution of these dangerous and vital missions. In order to reduce the risks associated with expeditionary remote area operations by small contingents of Special Forces, it is necessary to decrease the reliance on forward operating bases to mount and sustain these forces. While insertion of Special Forces have evolved over the years, sustainment has not received the same amount of analysis and development.

Since Special Forces normally operate in the IW environment behind enemy lines in hostile territory and without a direct line of support from their home base, the most often used method to sustain them in operations is to air deliver the materiel required. Parachute insertion of the forces themselves and their resupply thereafter is not a new concept and has been practised since World War II. Operation Market-Garden is a famous example of
parachute insertion of forces, even though the particular operation was not an overwhelming success. The current focus on IW and the associated mission requirements has focused the development of parachute insertion towards precision aerial delivery. A number of next generation capabilities are being investigated, which if successful, will provide unprecedented air delivery capabilities that will effectively support forward deployment of military forces both on land and at sea.

The Special Operations fraternity is at the forefront of developing the tactics, techniques and procedures to facilitate the extended reach of assault Special Forces that usually operate independently and in small, self-contained groups. A major innovation has been the development of the Guided Precision Airdrop System (GPADS). The ADF Glossary mentions this system as the Joint Precision Air Drop System (JPADS), as explained in Pathfinder No 75, September 2007. This system is capable of deploying supplies from high altitudes to inserted Special Forces elements deep into enemy territory and then sustaining them. GPADS can deploy from as much as 25 kilometres away from the designated impact point or drop zone and from up to an altitude of 25,000 feet. The accuracy of insertion is reported to be within 250 meters from the designated delivery point. This stand-off capability diminishes the threat to the supporting air asset from adversary air defences. Therefore, it is ideal for sustaining Special Forces elements that have been clandestinely inserted by employing the free-fall technique. If the sustainment of these forces are done through the GPADS method, the stand-off distances of delivery will minimise the chances of their detection and interception.

The GPADS technology is of strategic importance since it is a force multiplier when employed appropriately within the circumstances of an IW scenario. The system permits the deploying aircraft to remain outside the normal air defence envelope, can be deployed in a clandestine manner, and has the capacity to deliver materiel and supplies to difficult terrain such as mountains and even to populated urban areas— with extreme precision. Another noteworthy technology-enabled evolution has been the development of the light tactical all-terrain vehicle that is ‘air droppable’. When used in combination with the demonstrated GPADS capability, it provides unprecedented mobility and greatly increased radius of action to the Special Forces elements operating behind enemy lines on covert, independent missions.

Since GPADS are relatively more expensive, development efforts have started to concentrate on creating single-use solutions, especially since retrieval of precision parachute insertion equipment in war zones is not a practical solution. These single-use systems would be relatively low-cost options. Another development is focused on increasing the GPADS weight carrying capability. Currently, GPADS is restricted to carrying only 295 kilograms of weight, although systems that have the ability to carry 4500 kilograms have already been demonstrated.

While the focus of developments—in concepts and technology—has been the IW scenario, there is an increasing demand for similar mission capability in the maritime domain as well. There is a concerted push towards adapting the same concepts and technology to increase the reach and reduce reaction times of maritime counter-terrorism and anti-piracy military units. As the capability of the system is being demonstrated and becoming known, the demand for GPADS and a number of similar commercial variants, is gradually increasing. It is expected that as the GPADS capability reaches complete maturity, it will also become easily reconfigurable for use on either land or maritime domains, which in turn will provide immense flexibility to the combat sustaining force. A Modular Autonomous Guidance Unit is also being trialled in an effort to vastly increase the 25 kilometre range of the current system.

The success of Special Force operations is underwritten by the ability of the military forces to sustain them by air. GPADS provides an assured way of delivering the essential equipment to the deployed elements even in remote and difficult terrain. Further, the system assists in increasing the mission endurance of deployed Special Force elements, while ensuring that the covert nature of most of their operations is not compromised.

**Key Points**

- **Force sustainment has always been a critical element in the overall success of the employment of military forces.**

- **Irregular Wars require that military forces adapt rapidly to the merging risks and challenges, and the fast-changing circumstances that commonly prevail.**

- **As the GPADS capability reaches complete maturity, it will provide immense flexibility to the combat sustaining force.**