Soldiers’ Load

The need to balance and reduce a soldier's load is as old as warfare with technology creating additional burden with new ability as well as reducing them through eliminating weight in existing kit. In addition innovative approaches to discipline, education and supply can aid the process to increase soldier effectiveness in the field.

Balancing and mitigating soldier load isn’t new. “When you talk about soldier load, I don’t know if there is an army in the history of the world that hasn’t had the dilemma of trying to manage or work or deal with soldier load,” commented David Libersat, Director, Soldier Requirements Division, Capabilities Development And Integration Directorate at the US Army’s Maneuver Center Of Excellence, speaking at WBR’s Soldier Technology US in January.

Libersat sees the goals in trying to solving the challenges as balancing the equipment needs of that capability, the integration and cost as well as human and other factors addressed by leadership, education, discipline and supply.

The base research on the impact of load on the soldier is well established in the body of work undertaken well before Operation Enduring Freedom began. In 1988 a Technology Study on Lightening The Soldier Load was undertaken by Natick which looked at the impact of load on the distance a soldier could travel. Libersat said, “Given the surface of the road and weight, giving them 30lbs, then they can probably go 20 miles in eight hours. So if you are carrying the load they are carrying today, don’t expect them to go very far, especially in the terrain you are asking them to operate in today.” The study assumed a 50th percentile soldier weighing 177lbs on a dirt track with just a one percent gradient.

The recommended combat load in FM 21-18 was last updated on June 1st 1999 and hasn’t changed since then. Soldiers are only supposed to be carrying about 30 percent of their body weight for their fighting load while a combat load should not exceed 45 percent. For the 50th percentile US Army soldier at 171 lbs, the fighting load is just 51lbs. Today however, that is massively exceeded with the biggest weight penalty now lying in protection whereas before OEF, this was likely to be in the area of lethality.

Part of the challenges for the soldier is from the need for asymmetric operations in extremely difficult terrain. Libersat said, “It is not the traditional fight we have known in the past. The enemy is everywhere and the young soldier has to be able to execute any type of contingency. That in itself causes huge planning considerations for our young leaders out there today.”

The extra weight that entails has had consequences. This

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**PLATOON LEADER LOAD**

**MOBILITY:**
- SMALL VS-17 PANEL = .01 LBS
- RUCK SACK = 10 LBS
**TOTAL WEIGHT MOBILITY = 10.1 LBS (4.6Kg)**

**LETHALITY:**
- M4W/ BASIC LOAD = 14.2 LBS
- AN/PAS-13 W/ SPARE BATTERIES = 5 LBS
- AN/PVS 7D = 1 LBS
- AN/PEQ = .106 LBS
- M24 BINOS = 1.26 LBS
- ACOG = .94 LBS
**TOTAL WEIGHT LETHALITY = 22.51 LB (10.23Kg)**

**SURVIVABILITY:**
- IOTV (MEDIUM) = 31.87 LBS
- ACH (MEDIUM) = 4.93 LBS
- 6 LITERS OF WATER = 16 LBS
- 6 MRE’S = 10 LBS
- 500 ML IV BAG W/ STARTER KIT = 1.5 LBS
- IFAK = 1.08 LBS
**TOTAL WEIGHT SURVIVABILITY = 65.38 LBS (29.71Kg)**

**SUSTAINMENT:**
- SLEEPING PAD AND SUMMER SLEEP SYSTEM = 6.5 LBS
- 3 PAIR OF SOCKS = .75 LBS
- 3 T-SHIRTS = 1 LBS
- PONCHO W/ PONCHO LINER = 1.5 LBS
- WET WEATHER TOP & BOTTOM = 3 LBS
- WET WEATHER BAG = 1 LBS
- HYGIENE KIT = 2.5 LBS
- WPN’S CLEANING KIT = .313 LBS
- HARD SHELL KNEE & ELBOW PAD = 2 LBS
**TOTAL WEIGHT SUSTAINMENT = 18.56 LBS (8.44Kg)**

**C2:**
- ASIP = 7.5 LBS
**TOTAL WEIGHT C2 = 7.5 LBS (3.41Kg)**

Total = **124.05 LBS (62.03Kg)**
explained Libersat has been borne out by close combat surveys with just about every unit that returns from the theatre of operation. He sums up an important perspective found in answers from troops, giving an example, “Sir, we are weighted down with all this equipment and we are fighting a 60 year old Hajji in flip flops and an AK-47 who can run faster than me?”. That is part of their frustration. At the same time, they don’t want to give up any of the capability that they have because they understand the value of that capability. Therein lies the challenges; a balance between the wants and the constraints with respect to the power, volume and weight.”

**Education, Discipline and Supply**

Libersat believes that leaders must be trained to understand the effect of load in accomplishing the mission. “From an educational perspective, understanding what weight really does to soldier and its effect on his ability to accomplish the mission over time. How many missions has he been on? Does he need to go on this one because if he does he may not make the right decision because he is burned out? Those are some of the leadership decision our young leaders are challenged with today.”

Education must be coupled with discipline in regards to load. Libersat said, “Individual and unit discipline are key to managing the soldier load. Discipline is very important at the leadership level and at the individual level to manage that. When that young leader says, ‘This is what I am taking on this mission’, then it is incumbent upon the leadership of that organisation to make sure that is what they take - nothing more nothing less.”

Supply plays its key role in soldier load too. Libersat gave two examples of its impact, “We have learned a lot of lessons from our Army over time, I can think of Mogadishu – we are only going to bring one sleeping bag for two men out for a couple of hours so we don’t need to bring my NV devices. Or you say we are only going to bring one sleeping bag for two men because the rest are going to come out on the supply trucks and then the supply trucks don’t show up. Then you wonder what happens next time. I guarantee you that the soldier is going to carry it.”

“I believe that supply is the lynchpin of helping to manage the soldier load. Our supply folks do a great job but the enemy has a vote too. Look at what they have caused us to do just in Afghanistan alone. They make it very hard on us to resupply by road. We have to deal with IEDs. That puts a burden on our air supply systems; it puts a burden on all the processes to make sure that the line of supply is clear and safe for our soldiers. Soldier and leader are the biggest piece of this. They have to have trust and confidence in the supply systems.”

**The Way Ahead**

The way ahead is being determined through technology and sound conceptual foundations, the latter through the ‘Squad: Foundation of the Decisive Force’ approach. This is then further enhanced through developments from the Research and Development and Science and Technology efforts as well as industry research and development funds.

Libersat has two examples of technology solutions to the load challenge. A 100lbs of light weight equipment is still 100lbs. We have done great job in getting our soldiers the equipment we need but it hasn’t solved the problem of the soldier load. We have a robotic capability. One of our deputy branch chiefs just got back from Afghanistan. He was making sure that these Squad Mission equipment transports were delivered to the unit. We want to use it for power generation but if you put a piece of equipment in soldier had and they will figure out the best use for it. Think of it from a tactical perspective, not just about throwing something out there that we think might help manage the soldier load. This in and of itself may cause a leadership challenge. Is a new piece of equipment going to cause one of my squad members remotely controlling it, to take away from his other special assigned duties and mission within his team or am I going to have someone else to manage it for me?”

David Libersat was speaking at WBR’s Soldier Technology US 2012.

## POWER AND LOAD GOALS

### Now (2012-13)
- Address requirements for current deployments through REF, SEP, and CDRT
- Provide unit power generation capability
- Provide universal battery chargers forward in the battlespace
- Reduce Soldier load for extended duration missions
- Establish organisations to support long-term success
- Formalise strategy and plan in writing
- Technical and operational analysis of gaps
- Evaluate powered systems for modification candidates

### Mid (2019-23)
- By 2020, reduce batteries within the Infantry Company to 12 types
- Reduce battery weight by 50 percent
- Field Soldier power generation capability (kinetic, mechanical, heat, etc…)

### Far (2024-28)
- Soldiers can produce power ≥ power demand
- By 2025, reduce batteries within the Infantry Company to four types
- Reduce frequency of routine resupply to 72 hours
- Reduce battery weight by 75 percent
- By 2028, reduce batteries within the Infantry Company to one integrated power source which powers/charges all soldier-borne powered peripherals.