



Figure 1: Backpack, Standard and AirMesh LCS (left to right respectively, top and bottom). Top three images show LCS setup when 8 or 16 kg were carried, bottom three images when 24 or 32 kg were carried.

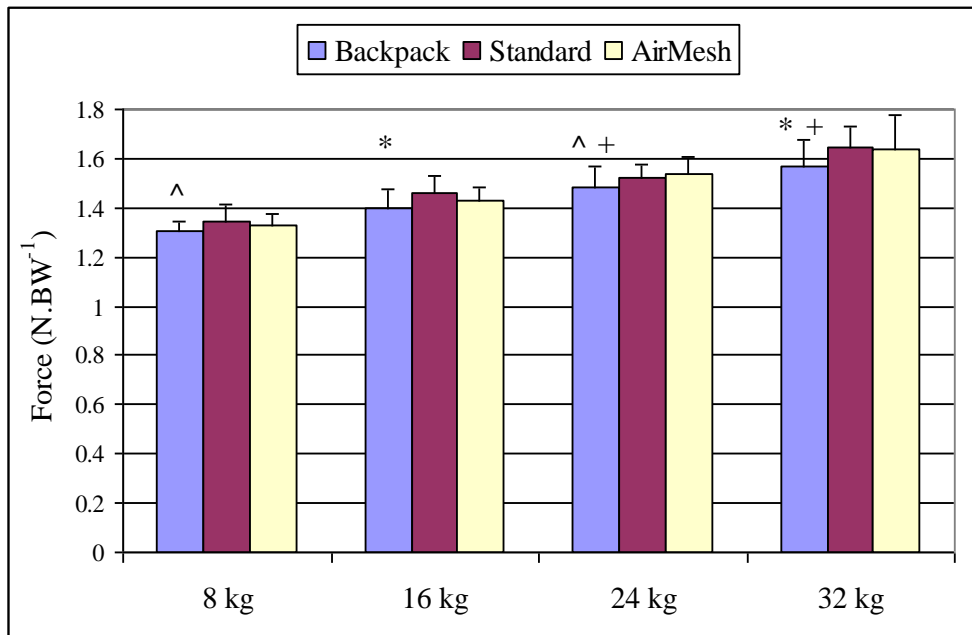


Figure 2: Mean thrust maximum value for LCS conditions against load, error bars represent standard deviation.

* indicates backpack significantly lower than standard LCS.

^ indicates trend for backpack to be lower than standard LCS.

+ indicates trend for backpack to be lower than AirMesh LCS.

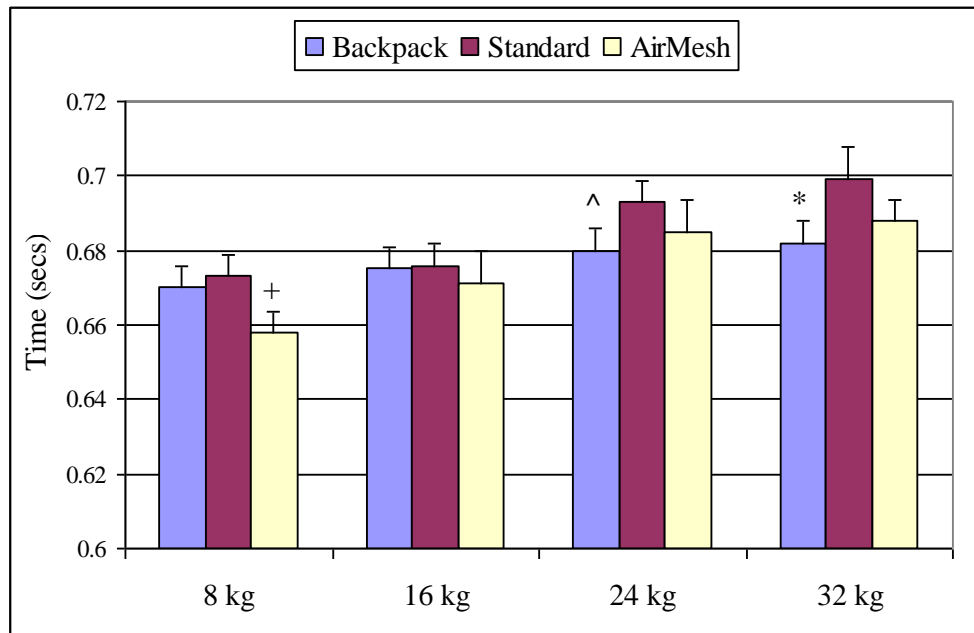


Figure 3: Mean stance time values for LCS conditions against load, error bars represent standard deviation.

* indicates backpack significantly lower than standard LCS.

^ indicates trend for backpack to be lower than standard LCS condition.

+ indicates trend for AirMesh to be lower than backpack and standard LCS.

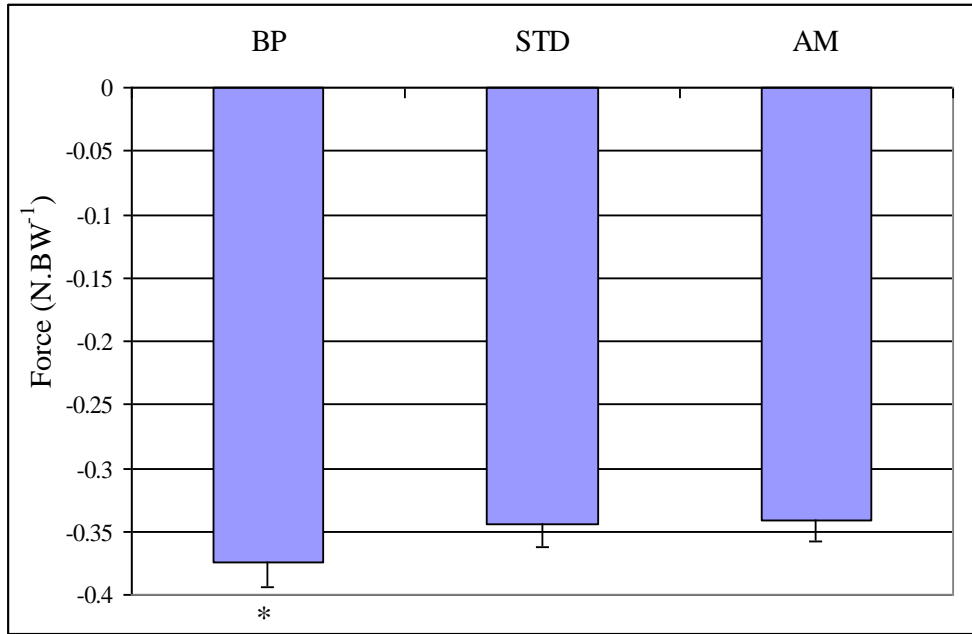


Figure 4: Mean maximum braking force for the LCS tested at 32 kg, error bars represent standard deviation. * indicates significant difference from the AirMesh and Standard LCS condition.

Table 1: Description of conditions during the study.

Condition	Description
Rifle	Carrying weighted replica SA80 rifle, used as a control
BP 8kg	Carrying 8 kg in '90 Pattern Bergen
BP 16kg	Carrying 16 kg in '90 Pattern Bergen
BP 24 kg	Carrying 24 kg in '90 Pattern Bergen
BP 32 kg	Carrying 32 kg in '90 Pattern Bergen
STD 8kg	Carrying 8 kg in waist webbing
STD 16kg	Carrying 16 kg in waist webbing
STD 24kg	Carrying 8kg in waist webbing and 16kg in '90 Pattern Bergen
STD 32kg	Carrying 16kg in waist webbing and 16kg in '90 Pattern Bergen
AM 8kg	Carrying 8 kg in vest webbing
AM 16kg	Carrying 16 kg in vest webbing
AM 24kg	Carrying 8kg in vest webbing and 16kg in AirMesh Bergen
AM 32kg	Carrying 16kg in vest webbing and 16kg in AirMesh Bergen

Table 2: Summary of load distribution results, * indicates significance.

GRF Parameter	MANOVA Significance	Post-Hoc Differences	At Which Load
Impact Peak	NS	-	-
Force Minimum	NS	-	-
Thrust Maximum	p < 0.05 *	BP ↓ STD	All
		BP ↓ AM	24 & 32 kg
Max Braking Force	NS	AM ↓ All	32 kg
Max Propulsive Force	NS	-	-
Vertical Impulse	NS	-	-
Mediolateral Impulse	NS	-	-
Stance Time	NS	BP ↓ STD	24 & 32 kg
		AM ↓ All	8 kg