

LEAP Informs USMC Equipment Decisions



In 2018, the USMC sought a lightweight hard armor plate to improve individual Marine mobility. Prototype designs achieved notable weight reductions but at a cost to protection performance, leaving the question:

Is the improvement in Marine mobility sufficient to justify the trade-off in protection?

Testing with the Load Effects Assessment Program (LEAP) determined an 8% increase in mobility with the lightweight plates and enabled an evidence informed trade-off decision.¹

“Without revealing too much information, I can state unequivocally that the new plates will significantly lighten the load from the Marine, and increase their mobility.”

Nick Pierce, Individual Armor team lead, Program Manager Infantry Combat Equipment¹

- Armor and combat load weight is steadily increasing with the addition of protection and warfighting capabilities, despite the obvious costs to mobility.
- Without a measure of mobility, the balance of armor protection vs individual mobility emphasizes protection due to the lack of scientific data on individual mobility.
- The LEAP provides rigorous and objective measurement of Marine mobility, enabling a trade-off decision fully informed by both sides of the protection-mobility equation.
- Using data from the LEAP, the operational impact of the mobility advantage with these new hard armor plates has been determined in follow-on testing.
- The LEAP provides the necessary data to empower the USMC to lighten the load for individual Marines.

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¹ <https://www.marcomsyscom.marines.mil/News/News-Article-Display/Article/1603311/marine-corps-searches-for-new-hard-armor-plate-to-lighten-the-load/>
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