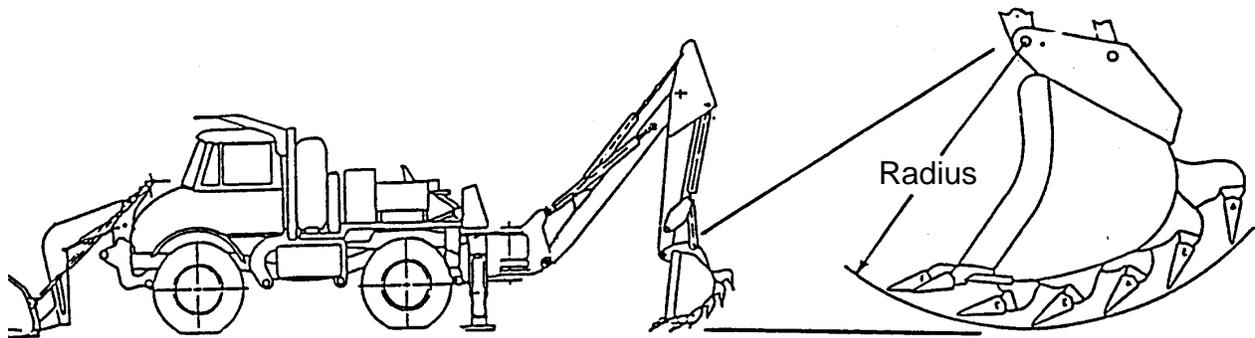


Fact Sheet

RIPPER BUCKET FOR DIGGING HARD AND FROZEN GROUND

PROBLEM

Engineer units need the capability to dig and excavate as part of general operational and tactical activities, including construction of fighting positions and obstacles. Therefore, digging seasonally frozen ground can be a significant problem even for some heavy units, since their most effective tool, the D-7 tractor with a ripper, is no longer available. Existing equipment for this task, the Small Emplacement Excavator (SEE) with a standard bucket, and the Armored Combat Earthmover (ACE), both have problems penetrating frozen ground.



SOLUTION

A ripper bucket of special design and size, based on U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) criteria developed and used for design and selection of tools for drilling and excavating frozen ground, is now available. During field demonstrations, the Army SEE fitted with the ripper bucket excavated frozen ground at sites where the frozen surface layer could not be penetrated using the standard bucket. Consideration of tooth configuration and excavation techniques also increased performance in frozen soils.

RESULTS

This effort has been coordinated with the U.S. Army Engineer School at Fort Leonard Wood, Missouri, and has been successfully demonstrated to troop units with excavation problems caused by hard or frozen ground. The 41st Engineer Battalion at Fort Drum has 10 ripper buckets and finds them to be a major enhancement to digging in frozen as well as hard soils. The ripper bucket is available by ordering NSN 3830-01-361-8209, from the Defense Construction Supply Center (DCSC), Columbus, Ohio 43216.

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