TECHNICAL MEMORANDUM NO. 74-09

CRAMPON FOR USE IN WORLDWIDE MOUNTAIN OPERATIONS

TASK 01-S-74

by

Norman P. Leibel
Environment and Survival Branch

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Final Memorandum

U. S. ARMY LAND WARFARE LABORATORY
Aberdeen Proving Ground, Maryland 21005

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The crampon, developed by the US Army Land Warfare Laboratory, was designed to fit a range of ski and vapor barrier boots used by the US Army. This was accomplished by designing an adjustment plate which allows variation for size 5 to size 15 extra wide. The crampon is lightweight, durable and provides the user with the required foot stability to safely cross ice fields. This task was not completed due to the disestablishment of the Laboratory. Prototype hardware and a data package have been transferred to the US Army Natick Laboratories, Natick, Massachusetts.

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DISCUSSION

Introduction

The US Army Land Warfare Laboratory (USALWL) initiated a task to design and develop a new crampon based on a Proposed Required Operational Capability (PROC) for a crampon for Army use in mountain operations. Presently, troops in Alaska are using a commercial crampon which meets most of the requirements of the PROC. This particular crampon is of foreign manufacture and must be purchased in various sizes to accommodate the size range of boots used by troops in the US Army. The US Army Land Warfare Laboratory has designed a crampon which can be adjusted to fit all boot sizes.

Description

The USALWL crampon is very similar in design to the French crampon, Figure 1, presently used by troops in Alaska. The USALWL crampon has ten points, which provide maximum non-slip in all directions and can be adjusted to fit both the ski boot and vapor barrier boots in sizes 5 to 15 extra wide. The heel section is basically the same as the French crampon although the strap supports, Figure 2, have been widened to accept the large heel normally found in the large size vapor barrier boots.

Significant differences in the USALWL crampon, Figure 2, are in the sole section of the crampon which allows maximum adjustment at the toe and arch areas. The toe area has been designed with a reversible section referred to as a flip/flop, which can be changed by simply removing two screws and turning the section around 180°. The arch area is also adjusted by removing two screws and aligning holes in the crampon with holes in the adjusting plate. The cable, which connects the heel pad to the sole pad, is adjustable to accommodate various boot lengths.

Six pairs of prototype crampons, Figure 3, have been fabricated for laboratory evaluation and will be turned over to the US Army Natick Laboratories for evaluation.

CONCLUSION

The feasibility of designing and fabricating an adjustable crampon has been demonstrated. It is recommended that this development be continued by the Parent Agency.

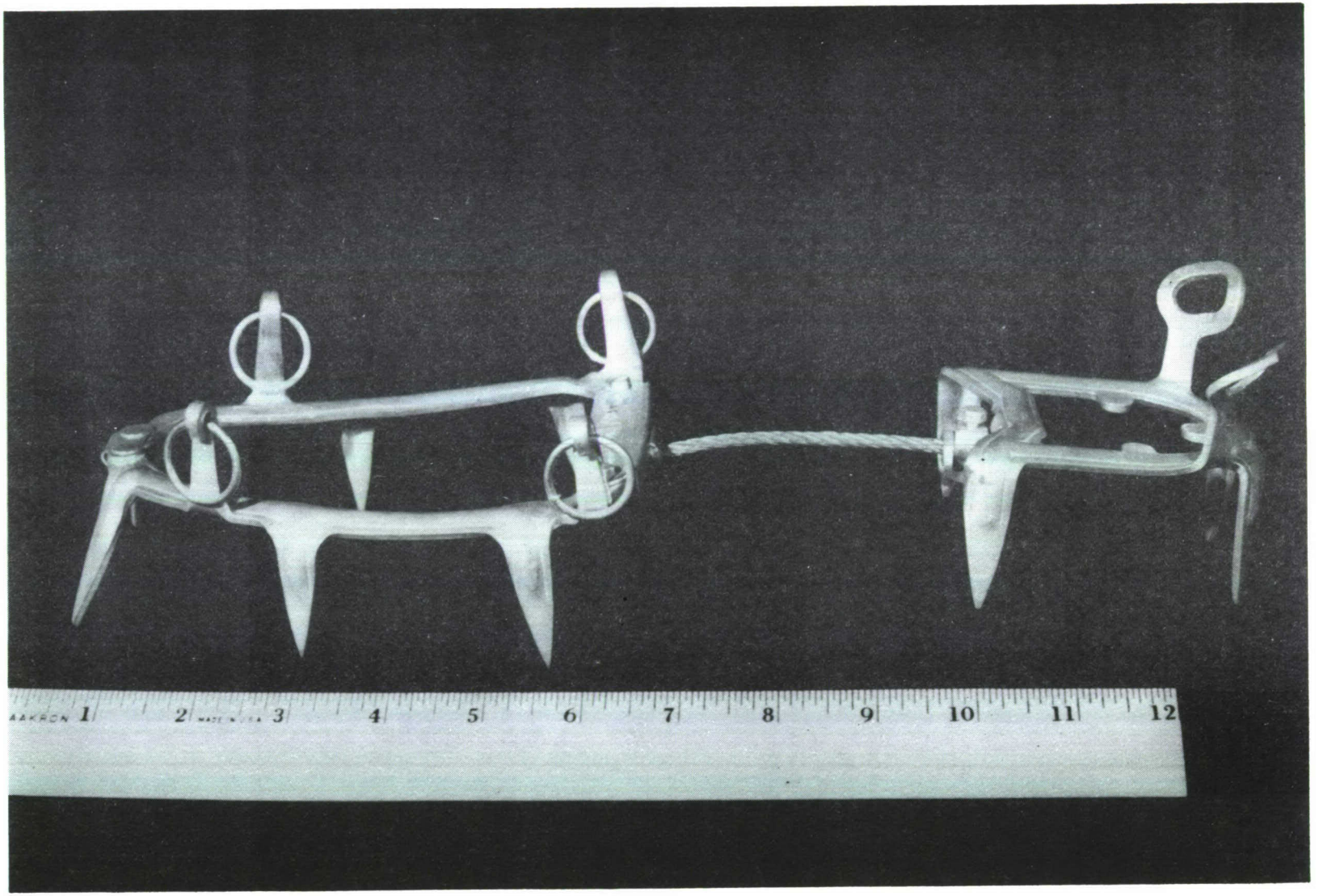

Figure 1. Commercial Design Crampon

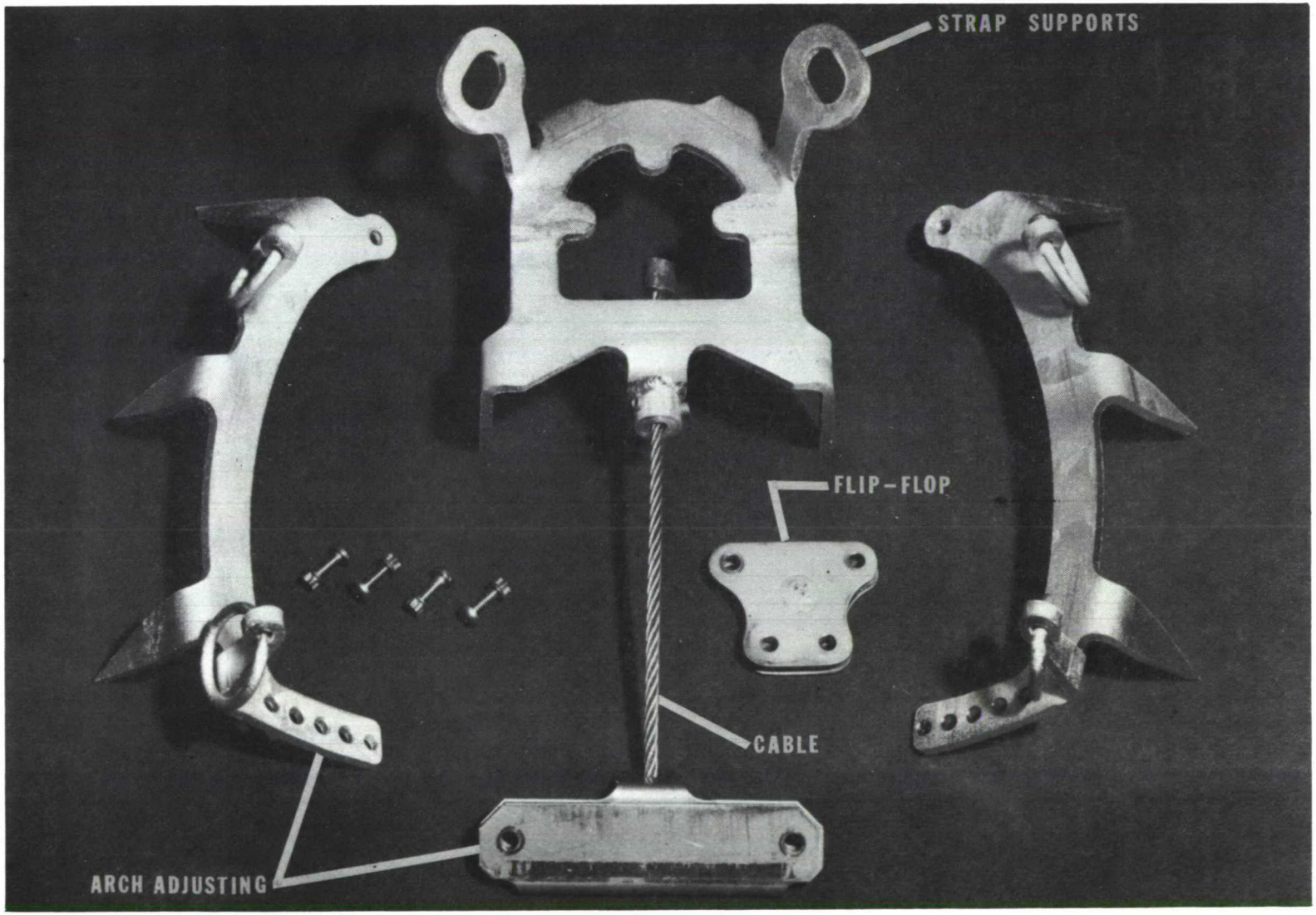

Figure 2. Components for Adjusting Crampon

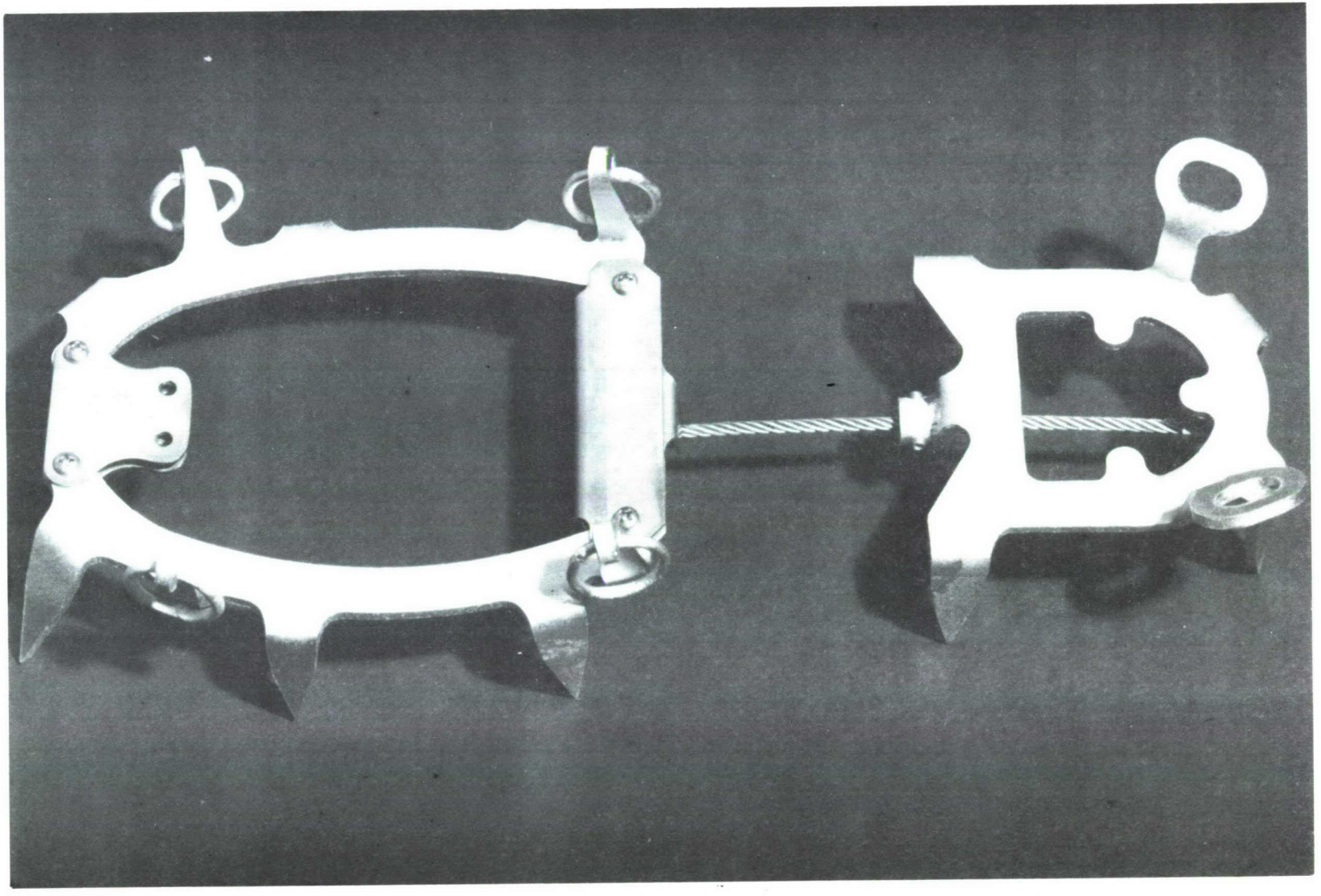

Figure 3. USALWL Prototype Crampons

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