



NEWS OF THE P.A.T.C. MOUNTAINEERING COMMITTEE

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COMING EVENTS

10 June - Thurmont, Md.

17 June - Old Rag Mt., Va. Plan to leave from Hot Shoppe not later than 8:30 AM.

24 June - Boucher and Prospect Rocks, Va.

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KNOTS IN NYLON SLINGS, PART II

By R. J. Stirton and A.C. Lembeck

In the last two or three years there has been considerable interest among mountaineers on the question of suitable knots for use with nylon line. A note by Hart in APPALACHIA 1/ (summarized in MOUNTAINEERING 2/) called attention to a rappelling accident which was apparently caused by failure of a nylon braided sling tied with a square knot. This article indicated some tests of square knots which failed at 500 lbs. The author recommended, on the basis of the above tests and consultation with Boston Navy Yard rope experts, that knotted slings be made of manila or flax and that if nylon was desired it should be $\frac{1}{4}$ " diameter or larger line joined with special splices. The article discouraged use of nylon braid.

Nylon offers a number of advantages over natural fibers including high strength with low weight, abrasion resistance, long storage life, and desirable shock loading properties. It seemed pertinent to investigate suitable knots for nylon line in order that this material could be used with confidence for rappel slings and other anchors. Some preliminary testing of knots was reported in UP ROPE 3/; the results of subsequent tests are given here.

Two types of line were used in the current series. Mountain Nylon rope $\frac{1}{4}$ " diameter and braided nylon web $\frac{1}{2}$ " wide, both purchased from Gerry Mountaineering, Ward, Colorado. A single length of $\frac{1}{4}$ " rope was used as a source to make all slings of this material. Several lengths of webbing were used and it is not certain that they were all of the same lot.

A 60,000 lb. tensile testing machine was used in all tests and the loading was similar to that used in the previous tests, namely, the load was increased at such a rate that failure occurred in approximately 2 minutes. The sling or loop of the