**55[8].**—DOROTHY KERR, *Run Test for Randomness*, Applications Analysis Division, Department of Computer Services, Army Map Service, Washington, D. C. 20315, ms. in two volumes, 155 and 169 computer sheets, respectively (photographically reduced and unnumbered), deposited in the UMT file.

If $u$ represents the number of runs in a random linear arrangement of two different kinds of objects ($m$ of one kind, $n$ of the other), then the probability that $u$ does not exceed a given number $u'$ can be found from the formula

$$P\{u \leqq u'\} = \sum_{u=2}^{u'} f_u \div \binom{m+n}{m}$$

where

$$f_u = 2\binom{m-1}{k-1}\binom{n-1}{k-1}, \qquad k = \frac{u}{2}, \text{ when } u \text{ is even ;}$$

and

$$f_u = \binom{m-1}{k-1}\binom{n-1}{k-2} + \binom{m-1}{k-2}\binom{n-1}{k-1},$$

$$k = \frac{u+1}{2}, \text{ when } u \text{ is odd [1] .}$$

The tables under review consist of 7D approximations to the value of $P$ for $15 \leqq m \leqq n$, $m + n \leqq 100$. When $m = n$, the maximum theoretical value of $u'$ is $2m$; when $m < n$, this maximum is $2m + 1$. However, the printed tabular values do not generally extend to these limits in $u$ because of suppression as soon as they first equal unity when rounded to 7D. Likewise, all the entries equal to zero to 7D are omitted.

These tables constitute a direct continuation of a similar table by Swed & Eisenhart [2], to which reference is made in the brief introduction.

The underlying calculations were performed on a Honeywell 800 system, and several entries were checked against related data in a report of Argentiero & Tolson [3].

These new tables in conjunction with those in [2] should be particularly useful in connection with testing a large range of samples of data for randomness of grouping when the asymptotic formulas of Wald & Wolfowitz [4] do not yield the desired precision.

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1. WILLIAM FELLER, *An Introduction to Probability Theory and its Applications*, Vol. I, John Wiley & Sons, New York, 1950, pp. 56–58.
2. FRIEDA S. SWED & C. EISENHART, "Tables for testing randomness of grouping in a sequence of alternatives," *Ann. Math. Statist.*, v. 14, 1943, pp. 66–87.
3. P. D. ARGENTIERO & R. H. TOLSON, *Some Nonparametric Tests for Randomness in Sequences*, NASA Technical Note D-3766, December 1966.
4. A. WALD & J. WOLFOWITZ, "On a test whether two samples are from the same population." *Ann. Math. Statist.*, v. 11, 1940, pp. 147–162.

**56[8].**—FRANCIS J. WALL, *Tables of the Generalized Variance Ratio or U-Statistic*, ms. of 32 computer sheets deposited in the UMT file.

Univariate analysis of variance possesses a direct generalization for vector