UNIFIED THREADS—*continued.*

American Threads

United States Standard (U.S.S.). A comparatively coarse thread corresponding very closely to the British Whitworth standard in number of threads per inch (20 in $\frac{1}{4}$" diameter size), but not in thread form.

Society of Automotive Engineers (S.A.E.). The normal thread used in American automobile design. Somewhat similar in number of threads per inch to B.S.F. but rather finer (28 threads per inch in $\frac{1}{4}$" size) and of similar thread form to U.S.S.

Unified Threads

Unified Coarse (U.N.C.). Exactly the same as American U.S.S. except that the tops and bottoms of the threads are rounded instead of truncated.

Unified Fine (U.N.F.). Exactly the same as American S.A.E. except that the tops and bottoms of the threads are rounded instead of truncated.

Unified Special (U.N.S.). Used in cases where the normal U.N.C. or U.N.F. ranges are inappropriate to the special needs of a particular application. U.N.S. threads provide for such cases, while still remaining within a recognised standard.

Spanners

It is to be noted that all A.N.F. and "Unified" threaded nuts and hexagon headed bolts are made to the standard American hexagon sizes and that spanners of the appropriate size must be used when tightening or loosening them. Spanners for Whitworth bolts and nuts are marked according to the size of the bolts that they fit, for example, "$\frac{3}{8}$w" ($\frac{3}{8}$" Whitworth) fits the hexagon of a $\frac{3}{8}$" Whitworth bolt or nut. Spanners for unified bolts are marked by the actual measurement across the flats of the hexagon. Thus a spanner for a $\frac{3}{8}$" U.N.F. bolt is marked $\frac{9}{16}$" A/F ($\frac{9}{16}$" across flats) which is the size of the hexagonal head on a $\frac{3}{8}$" U.N.F. bolt.

KEY TO SPANNER SIZES (Nominal widths between jaws)

Diameter of Screw Thread (inches)	$\frac{1}{4}$"	$\frac{5}{16}$"	$\frac{3}{8}$"	$\frac{7}{16}$"	$\frac{1}{2}$"	$\frac{9}{16}$"	$\frac{5}{8}$"	$\frac{3}{4}$"	$\frac{7}{8}$"	1"
For B.S.F. screws and nuts . .	.448	.529	.604	.705	.825	.925	1.016	1.207	1.309	1.489
For A.N.F. screws and nuts .	.440	.504	.566	.629	.755	.880	.944	1.132	1.320	1.508
For "Unified" screws . . .	.440	.504	.566	**.630**	.755	**.817**	.943	1.132	1.321	1.509
For "Unified" nuts (normal) .	.440	.504	.566	**.692**	.755	**.880**	.943	1.132	1.321	1.509
For "Unified" nuts (heavy) .	—	—	—	—	—	—	**1.069**	**1.258**	**1.446**	—

NOTE.—In the case of some "Unified" threaded components the size of the hexagon for the nut is different from that of the bolt. Where this occurs the spanner size is shown in heavy type in the above table.

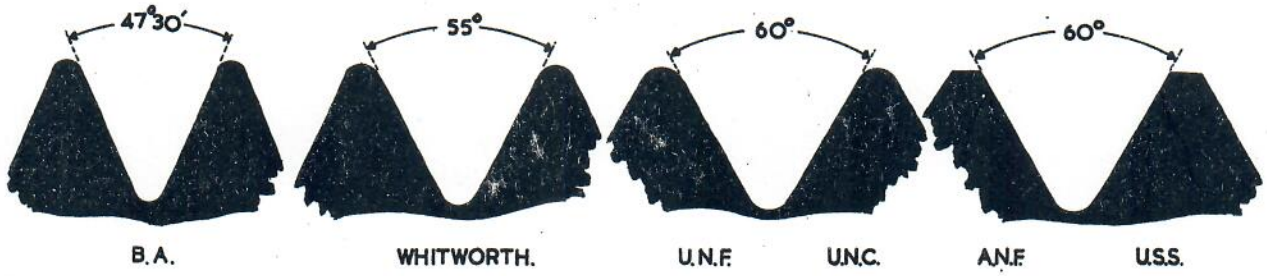

Fig. 2 *STR 1782*

This illustration of B.A., Whitworth, U.N.F. and A.N.F threads, to the same scale, shows the close relationship of American and Unified threads, but the dissimilarity with British threads.