

INTERCHANGEABILITY OF U.S. STANDARD  
 AND BRITISH STANDARD WHITWORTH THREADS  
 BY DIAMETER MODIFICATION.

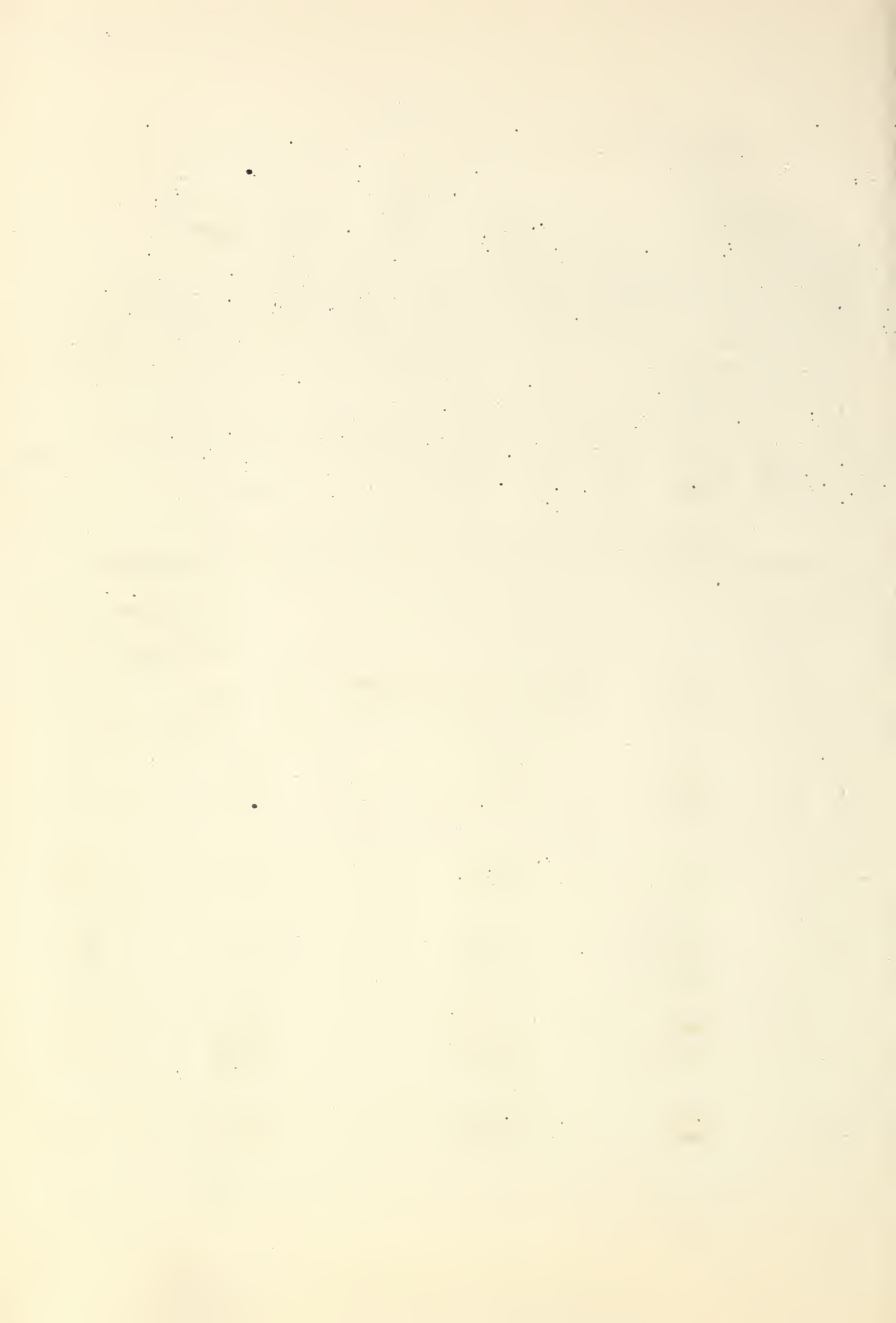
The question of interchangeability between the U.S. Standard and the British Standard Whitworth Thread Systems has caused considerable discussion both in this country and in England. The following method of securing interchangeability is based on a slight modification of the diameter of either the U.S. or the Whitworth, or both, without changing the thread form of either. The following table shows the modification of diameters of either of the systems to produce assembly. Contact occurs near the crest of the Whitworth thread form and near the root of the U.S. form. The conditions as to stress developed in the thread would be the same as in either system with a slight difference in angle between bolt and nut.

The table is based on diameter changes corresponding to standard pitches common to the two systems.

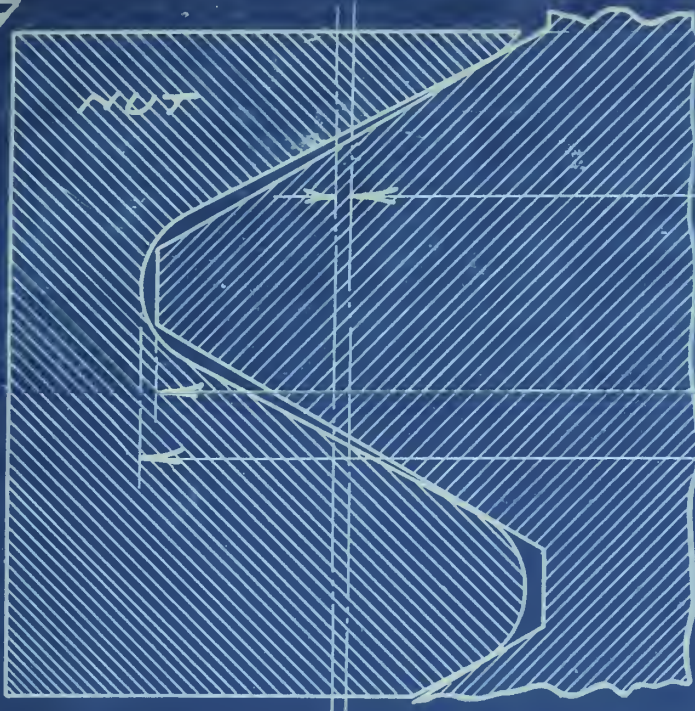
Drawing B-1083 shows the two possible combinations.

DIAMETER MODIFICATION OF UNITED STATES OR  
 BRITISH STANDARD WHITWORTH THREADS FOR INTERCHANGEABILITY.

Pitch		Change in	Difference in Full	
		Effective Diameter	Diameter required	
		for	for Assembly.	
		<u>Interchangeability</u>		
Thds. per	Inches	Minus on Bolts or	U.S. Nut	B.S.W. Nut
		Plus on Nuts	B.S.W. Bolt	U.S. Bolt
20	.0500	.0024	.0029	.0019
18	.0556	.0027	.0032	.0022
16	.0625	.0031	.0037	.0025
14	.0714	.0035	.0042	.0028
12	.0833	.0041	.0048	.0034
11	.0909	.0045	.0053	.0035
10	.1000	.0049	.0059	.0039
9	.1111	.0054	.0065	.0043
8	.1250	.0061	.0073	.0049
7	.1429	.0070	.0083	.0057
6	.1667	.0082	.0098	.0066
5	.2000	.0098	.0116	.0080
4.5	.2222	.0109	.0129	.0089
4	.2500	.0122	.0145	.0099



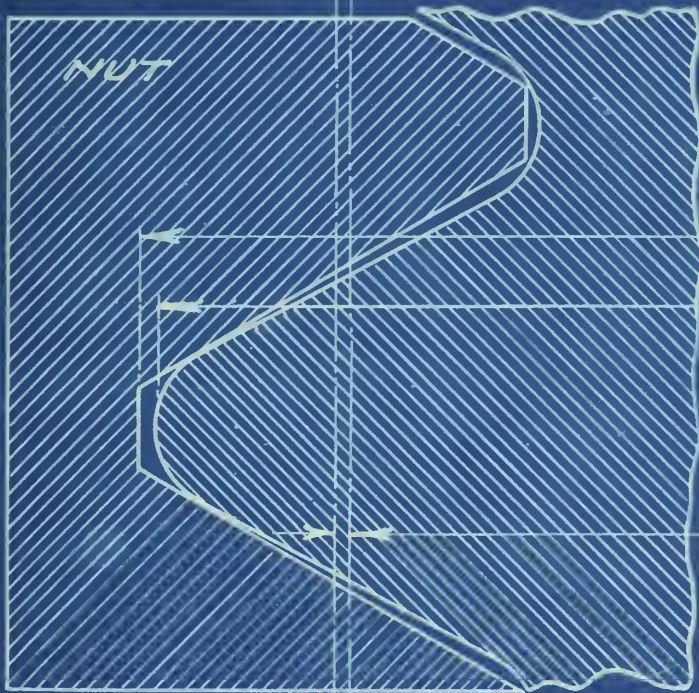
B 1083



DIFFERENCE IN  
EFFECTIVE DIAM.

FULL DIAM. OF  
U.S. STD. BOLT.

FULL DIAM. OF  
B.S.W. NUT.



FULL DIAM. OF  
U.S. STD. NUT

FULL DIAM. OF  
B.S.W. BOLT.

DIFFERENCE IN  
EFFECTIVE DIAM.

#	NAME	REQD. MATL.	REMARKS
	DIFFERENCE IN DIAMETERS OF ENGAGED U.S. STD. AND B.S.W. THREADS.		
DEPARTMENT OF COMMERCE BUREAU OF STANDARDS WASHINGTON, D.C.		DRAWN S.E.S. 9/19/18	CHECKED P.T.M.
		TRACED S.E.S. 9/19/18	APPROV. APRYD.
		B1083	





