

Chapter 1

IDENTIFICATION OF AIRCRAFT CABLES

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Introduction

1. The original system of classification and identification of aircraft cables was by current rating. Cables now coming into service, however, such as Nyvin, Tersil, and Efglas, are identified by a new system based on the American classification, and this system will be used for all future cables.

American system of classification

2. The American type classification does not give a direct indication of a nominal current rating, since cable current-carrying capacity varies widely under different installation conditions, but is based on the cross-sectional area of the conductor. Table 1 gives details of this classification, and indicates the equivalent cable in the classification based on current rating, Nyvin and Pren cables respectively being taken as typical examples.

Relative dimensions of cables

3. Further details of relative dimensions between the two systems are shown in Table 2; it will be seen that, with few exceptions, equivalent cables are identical in dimensions.

Table 1
List of equivalent cables

New system	Old system
Uninyvin	Unipren
22	4
20	6
18	9
16	12
14	18
12	24
10	35
8	50
6	70
4	100
2	135
1	150
0	170
00	200
000	230
0000	280
Uninyvinal	Uniprenal
8	35
6	50
4	70
2	100
0	135
00	150
000	170
0000	200

Table 2
Relative dimensions of cables

Cable	Max. dia. (in.)		Cable	Max. dia. (in.)	
	Conductor	Cable		Conductor	Cable
Uninyvin			Unipren		
26	0.022	0.075	—	—	—
24	0.027	0.080	—	—	—
22	0.033	0.090*	4	0.033	0.105
20	0.041	0.100*	6	0.041	0.110
18	0.052	0.115	9	0.052	0.115
16	0.061	0.130	12	0.061	0.130
14	0.076*	0.150	18	0.078	0.150
12	0.096	0.170	24	0.096	0.170
10	0.122	0.200	35	0.122	0.200
8	0.167	0.255	50	0.167	0.255
6	0.218	0.310	70	0.218	0.310
4	0.272	0.370	100	0.272	0.370
2	0.345	0.445	135	0.345	0.445
1	0.384	0.495	150	0.384	0.495
0	0.432	0.550	170	0.432	0.550
00	0.490	0.610	200	0.490	0.610
000	0.548	0.680	230	0.548	0.680
0000	0.615	0.750	280	0.615	0.750
Uninyvinal			Uniprenal		
8	0.160	0.260	35	0.160	0.260
6	0.211	0.325	50	0.211	0.325
4	0.262	0.385	70	0.262	0.385
2	0.330	0.465	100	0.330	0.465
1	0.368	0.515	—	—	—
0	0.418	0.570	135	0.418	0.570
00	0.478	0.630	150	0.478	0.630
000	0.535	0.705	170	0.535	0.705
0000	0.587	0.775	200	0.587	0.775

*Denotes a difference in dimension from the equivalent Pren cable.

Interchangeability of cable lugs

4. Tables 3 and 4 list the standard U.S. and U.K. copper and aluminium cable lugs. These are generally interchangeable as indicated, though it should be noted that the

tables are based on stud and conductor diameters, not on tongue width, and therefore equivalent lugs may not be suitable for a particular installation. U.S. cable lugs should be crimped with the appropriate U.S. tools, and U.K. lugs with U.K. tools.

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Table 3

Interchangeability of copper cable lugs

Stud size		6B.A. (No. 4)	4B.A. (No. 6)	2B.A. (No. 10)	$\frac{1}{4}$ in.	$\frac{3}{16}$ in.	$\frac{1}{2}$ in.	$\frac{3}{4}$ in.									
Cable		U.S. AN.659—				U.K. Ref. No. 5X/											
AN.	Pren	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.
22	4	—38	6667	—1	6668	—2	6669					—25	—				
20	6	—38	6667	—1	6668	—2	6669					—25	—				
18	9	—38		—1	6670	—2	6671					—25	—				
16	12	—39		—3	6670	—4	6671					—27	—				
				—26													
14	18	—39		—3	6672	—4	6673					—27	—				
				—26													
12	24				6674	—5	6675	6676	—6	6677	—28	—					
10	35				6512	—5	6513	6514	—6	6515	—28	6516					
8	50					—7		6517	—8	6518	—29	6519					
6	70					—30		—9	6520	—31	6521	—10	6522				
4	100							—11	6523	—32	6524	—12	6525		6526		
2	135							—13			6527	—14	6528	—33	6529		
1	150							—15			6530	—16	6531	—34	6532		
0	170							—17			6533	—18	6534	—35	6535		
00	200								—19	6536	—20	6537	—36	6538			
000	230									6539	—21	6540	—22	6541			
0000	280									6542	—23	6543	—24	6544	—37		

Table 4

Interchangeability of aluminium cable lugs

Stud size		4B.A. (No. 6)		2B.A. (No. 10)		$\frac{1}{4}$ in.		$\frac{3}{16}$ in.		$\frac{1}{2}$ in.		$\frac{3}{4}$ in.		$\frac{7}{8}$ in.	
Cable		U.S. Part No. MS25021—								U.K. Ref. No. 5X/					
AL.	Prenal	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.	U.S.	U.K.
8	35		6545	—1	6546	—2	6547	—3	6548	—4	6549				
6	50			—5		—6	6550	—7	6551	—8	6552				
4	70			—9		—10	6553	—11	6554	—12	6555				
2	100					—13	6556	—14	6557	—15	6558	—16	6559		
1	—					—17		—18		—19		—20			
0	135					—21		—22	6560	—23	6561	—24	6562		
00	150							—25	6563	—26	6564	—27	6565		6566
000	170								6567	—28	6568	—29	6569		6570
0000	200								6571	—30	6572	—31	6573		6574

