TABLE 2

BARE MULTI-TUBE HAIRPIN MECHANICAL DESIGN DATA

SHELLSIDE SCH. 40				TUBE SIDE									
								Surface					
Type	25 NFA	De In.	Ao/Ai	O.D. In.	No. Tube	25 NFA	I.D. In.	10	20	30	Ft2/Ft	Ends	Wall Thk
2A	53.45	0.60	1.26	5/8	4	19.24	0.495	13.08	26.17	39.25	1.308	0.60	0.065
2B	62.04	0.89	1.21	3/4	2	15.10	0.620	7.85	15.70	23.55	0.785	0.30	0.065
2.5A	66.10	0.49	1.26	5/8	7	33.68	0.495	22.90	45.79	68.69	2.290	1.06	0.065
2.5B	75.61	0.70	1.21	3/4	4	30.19	0.620	15.70	31.40	47.10	1.570	0.74	0.065
3A	131.37	0.90	1.26	5/8	7	33.68	0.495	22.90	45.79	68.69	2.290	1.20	0.065
3B	107.75	0.66	1.21	3/4	7	52.83	0.620	27.48	54.95	82.43	2.748	1.44	0.065
3D	126.15	1.06	1.15	1	3	44.59	0.870	15.70	31.40	47.10	1.570	0.86	0.065
3.5A	158.21	0.73	1.26	5/8	12	57.73	0.495	39.25	78.50	117.75	3.925	2.24	0.065
3.5B	172.93	1.00	1.21	3/4	7	52.83	0.620	27.48	54.95	82.43	2.748	1.60	0.065
3.5C	145.01	0.76	1.17	7/8	7	76.29	0.745	32.05	64.11	96.16	3.205	1.86	0.065
3.5D	171.71	1.16	1.15	1	4	59.45	0.870	20.93	41.87	62.80	2.093	1.26	0.065
4A	173.16	0.55	1.26	5/8	19	91.41	0.495	62.15	124.29	186.44	6.215	3.70	0.065
4B	186.35	0.73	1.21	3/4	12	90.57	0.620	47.10	94.20	141.30	4.710	2.73	0.065
4B	241.58	1.33	1.21	3/4	7	52.83	0.620	27.48	54.95	82.43	2.748	1.59	0.065
4C	213.66	1.07	1.17	7/8	7	76.29	0.745	32.05	64.11	96.16	3.205	1.86	0.065
4D	181.45	0.84	1.15	1	7	104.03	0.870	36.63	73.27	109.90	3.663	2.13	0.065
5A	262.97	0.55	1.26	5/8	31	149.14	0.495	101.40	202.79	304.19	10.140	7.21	0.065
5B	290.89	0.77	1.21	3/4	19	143.41	0.620	74.58	149.15	223.73	7.458	5.53	0.065
5B	368.21	1.34	1.21	3/4	12	90.57	0.620	47.10	94.20	141.30	4.710	3.49	0.065
5D	324.03	1.18	1.15	1	9	133.76	0.870	47.10	94.20	141.30	4.710	3.57	0.065
6A	401.31	0.63	1.26	5/8	42	202.06	0.495	137.38	274.75	412.13	13.738	10.66	0.065
6B	458.38	0.97	1.21	3/4	24	181.14	0.620	94.20	188.40	282.60	9.420	7.48	0.065
6B	381.06	0.66	1.21	3/4	31	233.98	0.620	121.68	243.35	365.03	12.168	8.91	0.065
6D	448.56	1.14	1.15	1	14	208.06	0.870	73.27	146.53	219.80	7.327	5.40	0.065
8A	598.42	0.50	1.26	5/8	85	408.94	0.495	278.02	556.04	834.06	27.802	27.06	0.065
8B	642.91	0.67	1.21	3/4	55	415.12	0.620	215.88	431.75	647.63	21.588	21.23	0.065
8B	764.40	0.95	1.21	3/4	44	332.10	0.620	172.70	345.40	518.10	17.270	16.98	0.065
8C	694.14	0.88	1.17	7/8	37	403.22	0.745	169.43	338.86	508.29	16.943	15.47	0.065
8D	641.99	0.84	1.15	1	31	460.71	0.870	162.23	324.47	486.70	16.223	15.63	0.065
8D	779.44	1.24	1.15	1	24	356.68	0.870	125.60	251.20	376.80	12.560	13.14	0.065
10A	1043.30	0.62	1.26	5/8	121	582.14	0.495	395.77	791.54	1187.31	39.577	40.50	0.065
10B	1032.56	0.71	1.21	3/4	85	641.55	0.620	333.63	667.25	1000.88	33.363	33.00	0.065
10D	1146.69	1.12	1.15	1	42	624.19	0.870	219.80	439.60	659.40	21.980	23.00	0.065
*12A	1492.87	0.63	1.26	5/8	174	837.13	0.495	569.13	1138.25	1707.38	56.913	54.00	0.065

*12B	1491.03	0.74	1.21	3/4	121	913.27	0.620	474.93	949.85	1424.78	47.493	44.00	0.065	12.00
*12D	1570.80	1.05	1.15	1	64	951.15	0.870	334.93	669.87	1004.80	33.493	34.00	0.065	12.00
*16A	2257.72	0.57	1.26	5/8	301	1448.13	0.495	984.52	1969.04	2953.56	98.452	90.00	0.065	15.25
*16B	2368.47	0.73	1.21	3/4	199	1501.99	0.620	781.08	1562.15	2343.23	78.108	70.00	0.065	15.25
*16D	2426.15	0.99	1.15	1	109	1619.93	0.870	570.43	1140.87	1711.30	57.043	48.00	0.065	15.25
*18A	3112.15	0.66	1.26	5/8	356	1712.74	0.495	1164.42	2328.83	3493.25	116.442	127.97	0.065	17.25
*18B	3070.42	0.76	1.21	3/4	251	1894.47	0.620	985.18	1970.35	2955.53	98.518	108.27	0.065	17.25
*18D	3172.28	1.05	1.15	1	136	2021.20	0.870	711.73	1423.47	2135.20	71.173	78.22	0.065	17.25
*20A	3778.51	0.63	1.26	5/8	456	2193.85	0.495	1491.50	2983.00	4474.50	149.150	175.62	0.065	19.25
*20B	3675.43	0.71	1.21	3/4	326	2460.55	0.620	1279.55	2559.10	3838.65	127.955	150.67	0.065	19.25
*20D	4075.49	1.14	1.15	1	163	2422.46	0.870	853.03	1706.07	2559.10	85.303	100.44	0.065	19.25
*24A	5321.70	0.60	1.26	5/8	690	3319.64	0.495	2256.88	4513.75	6770.63	225.688	301.18	0.065	23.25
*24B	5246.23	0.69	1.21	3/4	486	3668.18	0.620	1907.55	3815.10	5722.65	190.755	254.56	0.065	23.25
*24D	5607.02	1.03	1.15	1	255	3789.74	0.870	1334.50	2669.00	4003.50	133.450	178.09	0.065	23.25

* The shell thickness is standard wall(.375")