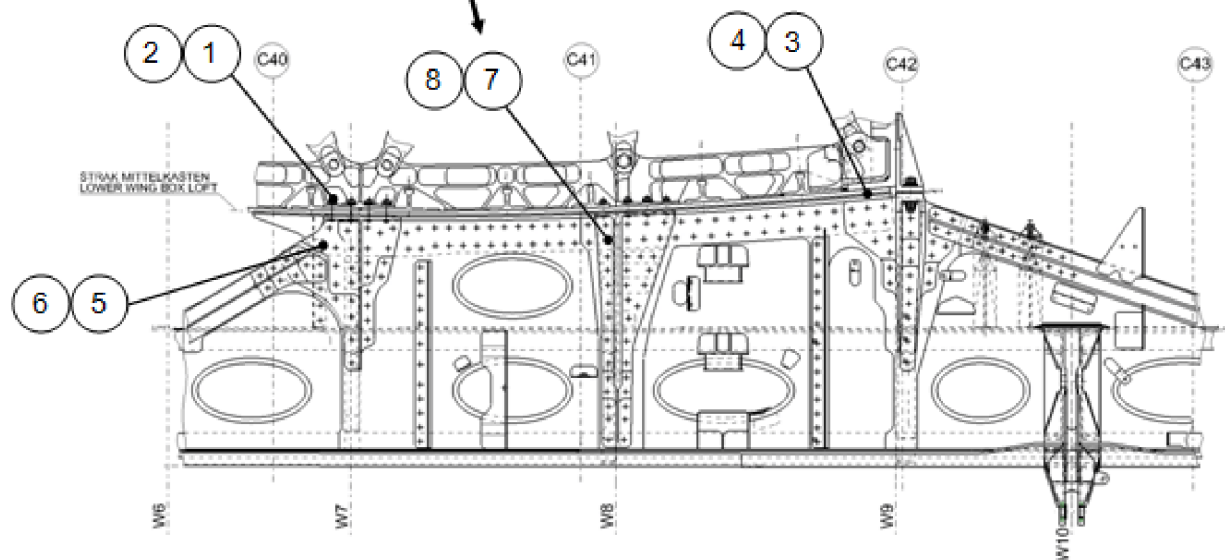
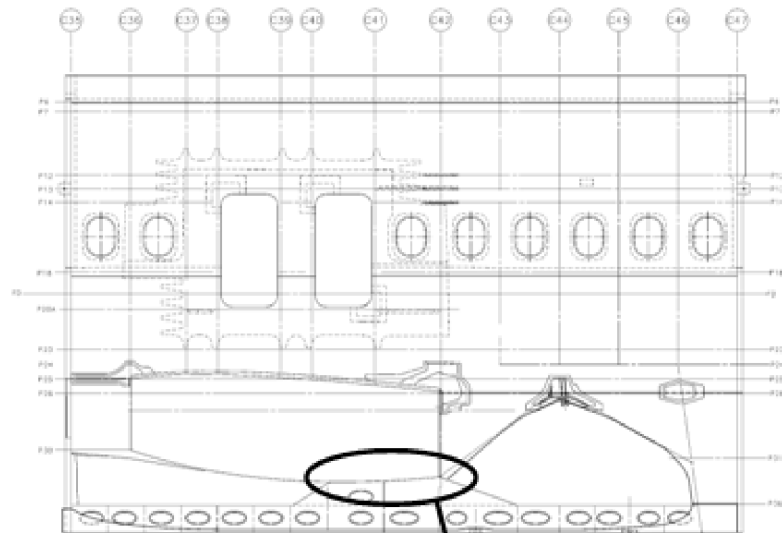


ОТЧЕТ ПО ПРОИЗВОДСТВЕННОЙ ПРАКТИКЕ

Выполнил студент группы 4-33

Воробьев С.Е.



Кеел беат и место его крепления к центроплану

1. Расчет в среде ASSACOS

```
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000
22XLF313 11 1.50 MAX WING TORSION AT WING ROOT
0.000 0.000 -0.212 0.000 0.000 -1.485 0.000 0.000
0.000 0.000
0.000 0.000 0.000 -0.057 0.000 0.000 0.000 0.000
0.000 0.000
0.000 -0.420 0.000 0.000 0.000 0.318 -5.600 0.000
-8.564 5.438
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.318 -5.600
0.000 -8.564 5.438 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 1.584 1.584 0.000 0.000 0.000 0.000 0.000
1.578 5.282
4.716 0.941 1.077 0.000 1.500 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
0.000 0.000
0.000 0.000 0.000 0.000 0.000 0.000
22XLF3#7 12 1.50 MAX MY FRONT FUSELAGE C36
0.000 0.000 -0.836 0.000 0.000 -1.656 0.000 0.000
0.000 0.000
```

Входные файлы для модуля LAS
Loud factors matrix

2. Подготовка к последующему расчету

A1		LC 1 ZCT																					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
1	LC 1 ZCT								1	2	3	4	5	6	7	8	9	10	11	12	13	14	
2	NODE 2110034 Force PX(Local CS) [daN] Moment [daNcm]						Load Case																
3	1337.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
4	-327.6 -49.1 961.3 0.0 0.0	12	12	12	8	8																	
5	NODE 2110034 Force PY(Local CS)						Node																
6	-852.8 0.0 0.0 0.0 0.0 90.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
7	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
8	NODE 2110034 Force PZ(Local CS)						GRID 2110035																
9	10.4 0.0 0.0 0.0 90.0 0.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
10	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
11	NODE 2110033 Force PX(Local CS)						GRID 2110037																
12	1374.6 23.40 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
13	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
14	NODE 2110033 Force PY(Local CS)						GRID 2110036																
15	210.5 23.40 0.9 0.0 0.0 90.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
16	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
17	NODE 2110032 Force PX(Local CS)						GRID 2110034																
18	1471.1 38.85 2.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
19	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
20	NODE 2110032 Force PY(Local CS)						GRID 2110033																
21	190.7 38.85 2.2 0.0 0.0 90.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
22	0.0 0.0 0.0 0.0 0.0	12	12	12	8	8																	
23	NODE 2110029 Force PX(Local CS) [daN] Moment [daNcm]						GRID 2110033																
24	-1108.9 57.55 3.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	8	8	8	8																	
25	-392.9 18.4 461.5 0.0 0.0	12	12	12	8	8																	

Template в среде Microsoft excel

Shearing force in the riveting				-8052.84	8052.84		
Perpendicular force in the riveting				663.10	-663.10		
Tot. shear force in the shearing plane				8418.62	8418.62		
Forces in the riveting							
Coord.	ref. c.g.	F shear	DELTA	RF-hole	Tension	RFrivet	M
-33.625	-1.500	732.987	12.326	2.801	-505.822	2.819	1
-33.625	1.500	748.925	12.059	2.741	-58.362	2.759	2
-29.125	-1.500	1143.064	10.445	2.355	-740.059	2.838	3
-29.125	1.500	1168.247	10.218	2.304	2.624	2.777	4
-25.525	-1.500	1137.897	8.924	2.366	-660.466	2.851	5
-25.525	1.500	1163.191	8.728	2.314	82.217	2.784	6
-21.925	-1.500	722.089	7.390	2.843	-349.971	2.862	7
-21.925	1.500	738.263	7.227	2.781	97.489	2.778	8
22.975	-1.500	3339.672	348.079	2.814	1532.697	2.693	9
22.975	1.500	3412.511	348.337	2.754	4296.753	2.091	10
-18.525	-1.500	719.945	5.931	2.262	-304.681	2.870	11
-15.025	-1.500	718.229	4.422	2.267	-258.059	2.877	12
-10.425	-1.500	716.735	2.428	2.272	-196.785	2.883	13
-7.025	-1.500	716.190	0.951	2.273	-151.495	2.885	14
-2.525	-1.500	1124.296	358.994	1.923	-151.957	2.885	15
0.975	-1.500	716.788	357.474	2.272	-44.931	2.883	16
5.875	-2.500	1119.329	355.316	1.932	-213.801	2.898	17
8.975	-2.500	1121.799	353.969	1.927	-145.263	2.892	18
13.075	-3.800	1603.791	352.121	1.603	-576.033	2.909	19
16.675	-3.800	1610.442	350.564	1.597	-454.241	2.897	20
-18.525	1.500	736.166	5.800	2.212	142.779	2.763	21
-15.025	1.500	734.488	4.323	2.217	189.401	2.736	22
-10.425	1.500	733.027	2.374	2.221	250.675	2.687	23
-7.025	1.500	732.494	0.930	2.223	295.965	2.641	24
-2.525	1.500	1149.890	359.017	1.880	590.726	2.571	25
0.975	1.500	733.079	357.530	2.221	402.529	2.511	26
5.875	2.500	1161.854	355.488	1.861	1024.004	2.208	27
8.975	2.500	1164.234	354.190	1.857	1092.542	2.150	28
13.075	3.800	1696.232	352.553	1.516	2302.968	1.831	29
16.675	3.800	1702.522	351.079	1.510	2424.760	1.775	30
Force on the compr. area:					-0.000		

Remarks for the LOAD CASES

Выходные данные модуля RIVETAGE

3. Обработка результатов и подготовка отчетов для заказчика

L333																					
E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
34	345,077	5	755,951	5	30	30_5	30_5			1,51	1,585	1,739	2,294			1,51		1,775	1,953	2,118	
35																					
36							LC2 21MV311	LC2	21MV311												
37	DELTA	RF-hole	Tension	RFrivet	M	M_RF-hole	M_RFrivet				minRF										
38	15,624	3,529	-303,067	3,553	1	1_3_529	1_3_553			1	> 2	RF-hole	LC11	21MV311		1,51		30			
39	15,152	3,425	-31,295	3,448	2	2_3_425	2_3_448			2	> 2	RF-hole	LC11	21MV311				1,516		29	
40	12,987	2,983	-441,421	3,594	3	3_2_983	3_3_594			3	> 2	RF-hole	LC11	21MV311				1,597		20	
41	12,59	2,893	9,66	3,486	4	4_2_893	4_3_486			4	> 2	RF-hole	LC11	21MV311				1,603		19	
42	10,837	3,007	-392,139	3,623	5	5_3_007	5_3_623			5	> 2	RF-hole	LC11	21MV311				1,857		28	
43	10,502	2,915	58,941	3,507	6	6_2_915	6_3_507			6	> 2	RF-hole	LC11	21MV311				1,861		27	
44	8,655	3,623	-206,569	3,647	7	7_3_623	7_3_647			7	> 2	RF-hole	LC11	21MV311				1,88		25	
45	8,385	3,511	65,203	3,515	8	8_3_511	8_3_515			8	> 2	RFrivet	LC11	21MV311				1,923		15	
46	341,385	3,484	1011,53	3,386	9	9_3_484	9_3_386			9	> 2	RFrivet	LC11	21MV311				1,927		18	
47	341,935	3,385	2690,33	2,828	10	10_3_385	10_2_828			10	> 2	RFrivet	LC11	21MV311				1,932		17	
48	6,571	2,887	-178,527	3,665	11	11_2_887	11_3_665			11	> 2	RF-hole	LC11	21MV311				2,091		10	
49	4,407	2,898	-149,66	3,678	12	12_2_898	12_3_678			12	> 2	RF-hole	LC11	21MV311				2,212		21	
50	1,544	2,905	-111,72	3,687	13	13_2_905	13_3_687			13	> 2	RF-hole	LC11	21MV311				2,217		22	
51	359,423	2,906	-83,678	3,689	14	14_2_906	14_3_689			14	> 2	RF-hole	LC11	21MV311				2,221		23	
52	356,619	2,454	-77,285	3,682	15	15_2_454	15_3_682			15	1,923	RF-hole	LC11	21MV311				2,221		23	
53	354,448	2,893	-17,697	3,672	16	16_2_893	16_3_672			16	> 2	RF-hole	LC11	21MV311				2,223		24	
54	351,344	2,457	-112,655	3,687	17	17_2_457	17_3_687			17	1,932	RF-hole	LC11	21MV311				2,262		11	
55	349,443	2,444	-70,218	3,666	18	18_2_444	18_3_666			18	1,927	RF-hole	LC11	21MV311				2,267		12	
56	346,782	2,03	-320,668	3,683	19	19_2_03	19_3_683			19	1,603	RF-hole	LC11	21MV311				2,272		13	
57	344,618	2,01	-245,257	3,648	20	20_2_01	20_3_648			20	1,597	RF-hole	LC11	21MV311				2,272		13	
58	6,364	2,797	93,245	3,511	21	21_2_797	21_3_511			21	> 2	RF-hole	LC11	21MV311				2,273		14	
59	4,268	2,807	122,112	3,496	22	22_2_807	22_3_496			22	> 2	RF-hole	LC11	21MV311				2,304		4	
60	1,495	2,814	160,052	3,459	23	23_2_814	23_3_459			23	> 2	RF-hole	LC11	21MV311				2,314		6	
61	359,441	2,814	188,094	3,419	24	24_2_814	24_3_419			24	> 2	RF-hole	LC11	21MV311				2,355		3	
62	356,725	2,377	373,795	3,354	25	25_2_377	25_3_354			25	1,880	RF-hole	LC11	21MV311				2,366		5	
63	354,622	2,802	254,075	3,295	26	26_2_802	26_3_295			26	> 2	RF-hole	LC11	21MV311				2,693		9	
64	351,789	2,332	639,146	2,993	27	27_2_332	27_2_993			27	1,861	RF-hole	LC11	21MV311				2,741		2	
65	349,982	2,32	681,582	2,929	28	28_2_32	28_2_929			28	1,857	RF-hole	LC11	21MV311				2,778		8	
66	347,784	1,878	1427,94	2,583	29	29_1_878	29_2_583			29	1,516	RF-hole	LC11	21MV311				2,801		1	
67	345,771	1,863	1503,35	2,514	30	30_1_863	30_2_514			30	1,510	RF-hole	LC11	21MV311				2,843		7	
68																					
69							LC3 21MV311Z	LC3	21MV311Z												

Template для сортировки запасов прочности