함 충격 조건을 만족하는 통제 콘솔 개발에 관한 연구

A study of control console development for satisfying shock-condition in a ship

진용은† · 안선규* · 최지호* · 정우진**

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(   )
HMI(Human Machine Interface)
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BV043   Elastic Platform
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Figure1
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Figure1 Created crack on shock testing in console

2.

2 1

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SRS

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SRS

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† ; LIG NEX1
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* LIG NEX1
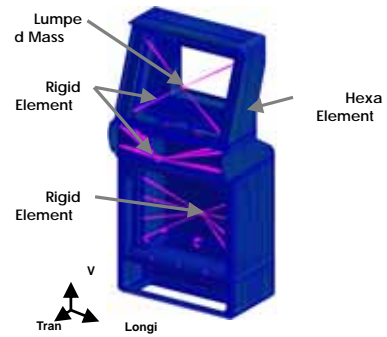**   1- 4- 2

(1) Quasi- static

Lumped Mass

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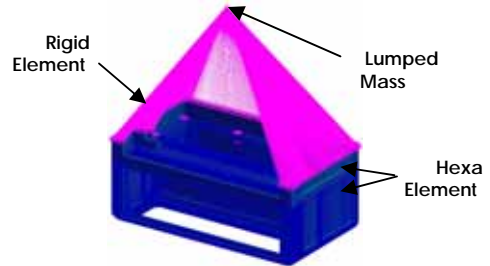**Figure2** Meshing of the console housings
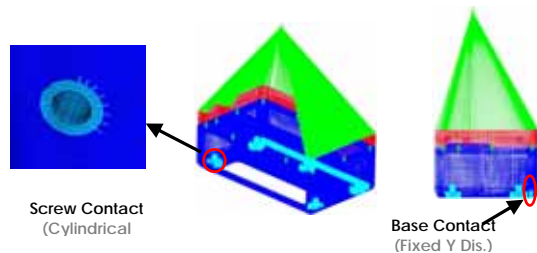

Figure3 Mesh generation

(2)

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Figure4 Transverse + B.C. set

2.2 [text] Figure5

KS D6008 AC4C-T5 [text] KS D6008 AC4C-T6 [text] ([text] : 200MPa [text] 130MPa) [text]. [text] Figure6 [text].

Figure5 The modified console housing
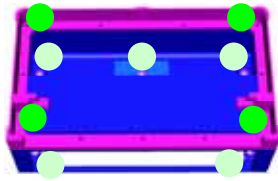
Figure6 Stress measuring points of the modified housing

(1)

Transverse ± [text] Vertical [text] Table1 [text] 1.0 [text] (0.3) [text].

Table1 Analysis results at every screw set in the initial console housing

	Transverse		Longitudinal		Vertical
	+	-	+	-	+
1	335	32	8	91	420
2	335	32	91	7	289
3	30	335	18	115	151
4	7	66	8	15	12
5	32	338	116	9	151
6	137	151	56	60	159
7	142	154	61	57	163
8	10	107	10	12	48
9	10	107	13	11	50
	0.4	0.4	1.2	1.2	0.3

(2)

[text] 2.3 [text].

Table2 Analysis results at every screw set in the modified console housing

	Transverse		Longitudinal		Vertical
	+	-	+	-	+
1	88	29	9	21	76
2	88	29	23	9	76
3	30	81	13	34	38
4	4	56	7	5	14
5	30	83	35	13	31
6	70	76	26	28	78
7	71	77	28	26	79
8	55	55	7	7	23
9	56	55	7	7	21
	2.3	2.4	5.7	5.9	2.5

2.3

(1)

[text] Vertical(Z) ±, Transverse(X) ±, Longitudinal(Y)) ± [text] 6 [text] 3 [text].

[text] Table3 [text].

Table3 List of shock spec. of console for each direction

	Acceleration [m/s2]	Time [msec]
Transverse (X)	XX	XX
Longitude (Y)	XX	XX
Vertical (Z)	XXX	XX

(2)

[text].

Figure7 Shock testing of console for vertical direction

3 [text]

[text], [text], [text]. [text],

Transverse [text] 0.4 [text] 2.3, Longitudinal 1.2 [text] 5.7, Vertical [text] 0.3 [text] 2.5 [text].

[text].

[text].

[text].