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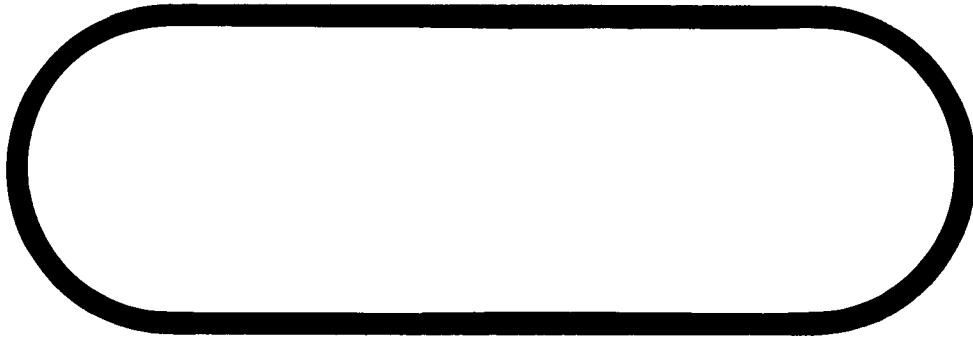
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TITLE FLIGHT ARTICLE MASS PROPERTIES REPORT FOR MINUTEMAN
WING II COMPONENTS FOR MISSILES 653-687 (U)

MODEL NO. WS-133A CONTRACT NO. AFO4(694)-46

ISSUE NO. 20 Asita 25-287052
ISSUED TO _____

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SUMMARY

This report contains mass property summaries of the Boeing components for a series of Operational Wing II Minuteman missiles. The serialized components included in the data for each missile are those committed to that particular missile during the course of production in Seattle and may not be the ones finally installed during missile assembly at Air Force Plant 77.

1.0 INTRODUCTION

1.1 REFERENCES

- 1.1.1 BSD Exhibit 62-45, "Mass Properties Control Data for WS-133A", Dated 3 August 1962.
- 1.1.2 CCN 258 (BSD-63MSN-2597) to AFO4(647)-580 dated 5 October 1962.
- 1.1.3 Boeing Document D2-13943-2, "Flight Article Mass Properties Report for CTLI Installations."
- 1.1.4 Boeing Document D2-13944-501, "Flight Article Mass Properties Report for Missile 501 Components."
- 1.1.5 Boeing Document D2-13956-1 "Statistical Means and Dispersions for the Mass Properties of Boeing Components for the Wing II Operational Minuteman Missile - March 1, 1963."
- 1.1.6 Boeing Document D2-13947-xxx "Air Force Plant 77 Flight Article Mass Properties Report for Missile xxx."

1.2 COMPONENT SERIAL NUMBERS

Component serial numbers appear on the data summary sheet for each missile. See pages 9 through 21.

1.3 DISCUSSION

This weight report for the Boeing components of a series of Operational Wing II Minuteman missiles is presented in accordance with section 3.1.1 of BSD Exhibit 62-45 (reference 1.1.1) as authorized by CCN 258 to AFO4(647)-580 (reference 1.1.2). Since the data are to be reported monthly, this report contains data for a series of Wing II missiles whose components were manufactured recently. The report includes actual mass properties for the major components assigned to each missile in the manufacturing records at Seattle. (These may not be the same components finally assembled together at Air Force Plant 77. See reference 1.1.6 for the final configuration). Mean mass properties are used for components other than the interstages, aft skirt, and base heat deflectors since the weights for these remaining items are small. Mean and dispersion back-up data for these items can be found in the latest quarterly means and dispersions report (reference 1.1.5).

The data presented in this report consist of (1) sectional summaries of the total Boeing weight responsibility for each missile covered by this report, (2) a sectional summary of the components whose mean weights are used in lieu of actual weights, (3) summary check lists by missile section, (4) a list of Engineering Change Proposals incorporated on the hardware included in this report, and (5) actual weighing records for the interstages, the aft skirt, and the base heat deflectors.

The actual weighing records for the major components covered by this report can be found in section 6 (pages 25 through 72). In order to limit the size of this report, weighing diagrams and inventory lists have been omitted for all but the first unit of each interstage and skirt since the components have all been weighed in the "complete" condition. However, these records are on file and can be supplied if necessary. The change records found in section 6 are listed in order by serial number for each major component in order to assist in cross referencing the components in case of substitution at a later date.

This report contains no weight and balance summary data for missile 658 even though the latest schedule lists this as a Wing II missile. However, when the components were manufactured, this position was scheduled for a Wing I missile so no Wing II components were made. Components for this missile will be reallocated at Air Force Plant 77 from those on hand there.

1.4 CTLI PROVISIONS

The only CTLI provisions incorporated into this report are those components which are installed on every operational missile. The mass properties data for CTLI components which will be added at Vandenberg Air Force Base are reported in reference 1.1.3.

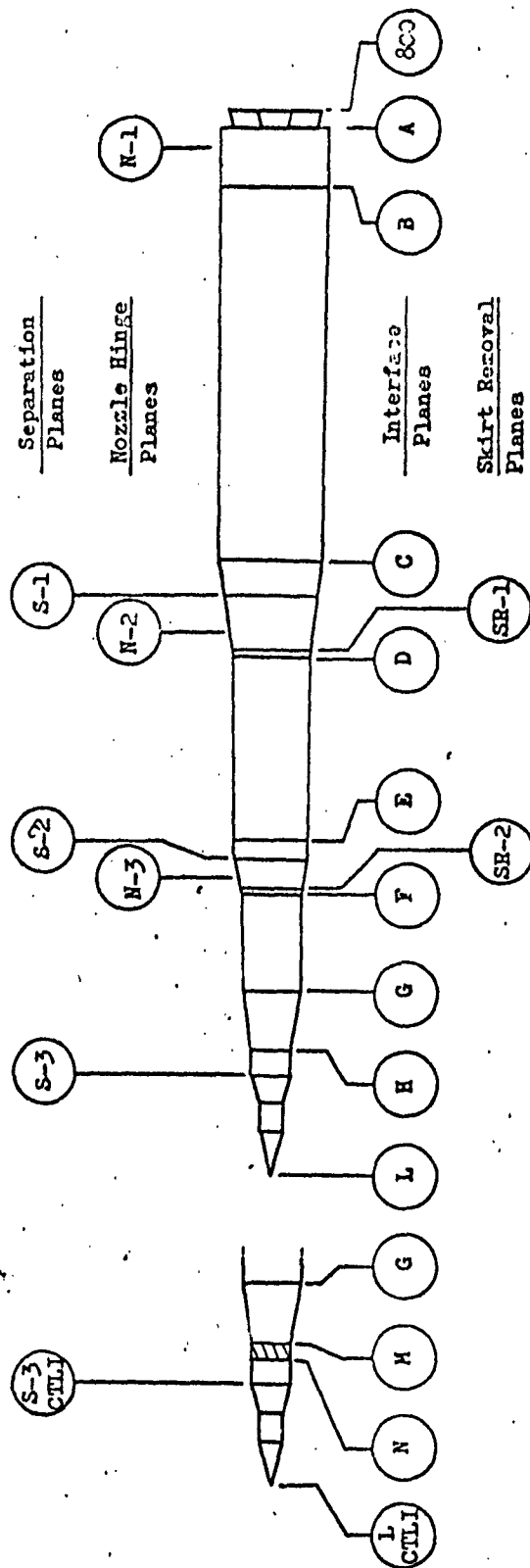
1.5 WEIGHING PROCEDURES

A description of the weighing procedures and an accuracy statement will be found in reference 1.1.4.

1.6 ENGINEERING CHANGE PROPOSAL (ECP) SUMMARY

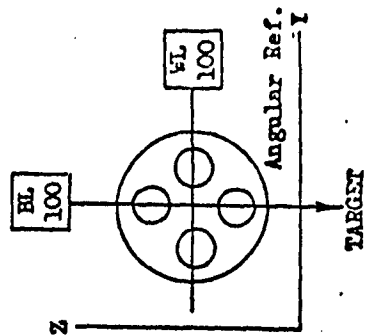
See page 24 for a list of the ECP's incorporated on the Boeing components covered by this report. The ECP's listed are those not covered by the latest revision to "Model Specification for Guided Missile Main Assemblage, S-133-1000-0-1", Dated 25 October 1962.

WING II OPERATIONAL AND CTLI MISSILE STATION DIAGRAM



▷ These Missile Stations become 50,000 when converted to Boeing Section Stations.

SEPARATION PLANES	MISSILE STA	INTERFACE PLANES	MISSILE STA
S-1	501.66	A	784.24
S-2	342.93	B	748.24
S-3	210.55	C	525.60
S-3 CTLI	200.53	D	466.52
SKIRT REMOVAL PLANES		E	357.58
SR-1	466.97	F	319.23
SR-2	319.74	G	257.45
		H	225.95
		L	129.46
NOZZLE HINGE PLANES			
N-1	770.03	M	225.95
N-2	477.32	N	215.95
N-3	327.33	L CTLI	119.46



Reference
STL Release 9862.6-513
(17 December 1962)

3.1 MISSILE NO. 653 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N **						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.60	97.33	106.53	111.49	0	.003
11		S/N 0000918	Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.45	59.99	100.18	101.48	.010	.006
15		(Fwd)	Silo							
16		S/N 0000915	Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.81		61.99	99.02	100.65	.008	.005
22	45	Interstage 2-3			63.58	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.53	145.65	105.89	110.24	.001	.018
26		S/N 0000918	Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			242.56	67.44	99.61	101.54	.032	.022
30		(Fwd)	Silo							
31		S/N 0000915	Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	197.79		68.97	98.71	100.97	.028	.018
37	47	Interstage 1-2			128.74	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.08	223.60	110.32	117.51	.004	.115
41		S/N 0000918	Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			290.27	68.46	100.74	101.07	.064	.039
45		S/N 0000198	Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			959.83					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	284.60						

* Boeing Section Stations (See Missile Station Diagram)
2-5550-0-58

** Serial numbers shown under section
in description column.

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3.2. MISSILE NO. 655 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000199						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10-3	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.52	97.17	106.56	111.54	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.84	59.83	100.30	101.46	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	87.20		61.75	99.18	100.62	.008	.005
22	45	Interstage 2-3			63.84	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.34	145.38	105.92	110.30	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			243.41	67.48	99.60	101.43	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	198.64		69.02	98.71	100.83	.028	.018
37	47	Interstage 1-2			129.24	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.18	223.75	110.30	117.48	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			289.97	68.48	100.80	101.01	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			961.36					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	285.84						

* Boeing Section Stations (See Missile Station Diagram)
2-5550-0-58

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3.3 MISSILE NO. 660 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000200						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10-3	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.65	97.43	106.52	111.46	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.72	59.93	100.23	101.52	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	87.08		61.90	99.08	100.71	.008	.005
22	45	Interstage 2-3			63.76	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.52	145.64	105.89	110.25	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			244.20	67.59	99.49	101.42	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	199.43		69.15	98.57	100.83	.028	.018
37	47	Interstage 1-2			129.70	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.13	223.68	110.31	117.50	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			291.12	68.49	100.96	100.98	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			963.82					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	286.51						

* Boicing Section Stations (See Missile Station Diagram)
2-5550-0-58

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3.4 MISSILE NO. 662 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N **						REPORT NO. _____ DATE _____				
LINE	S/N	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.60	97.33	106.53	111.49	0	.003
11		S/N 0000919	Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.27	59.93	100.21	101.48	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.63		61.90	99.05	100.65	.008	.005
22	45	Interstage 2-3			63.46	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.31	145.33	105.93	110.31	.001	.018
26		S/N 0000917	Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			242.84	67.44	99.56	101.65	.032	.022
30		(Fwd)	Silo							
31		S/N 0000917	Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	198.07		68.97	98.65	101.11	.628	.018
37	47	Interstage 1-2			128.91	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.16	223.72	110.31	117.49	.004	.115
41		S/N 0000917	Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			285.12	68.39	100.58	101.17	.064	.039
45		S/N 0000201	Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			954.69					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	284.70						

* Boeing Section Stations (See Missile Station Diagram)
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** Serial numbers of major components
.. shown under section of description column.

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3.5 MISSILE NO. 667 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000201**						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.53	97.19	106.56	111.54	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.81	59.98	100.37	101.45	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	87.17		61.97	99.28	100.61	.008	.005
22	45	Interstage 2-3			63.82	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.38	145.44	105.92	110.29	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			241.96	67.58	99.80	101.56	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	197.19		69.15	98.94	100.99	.028	.018
37	47	Interstage 1-2			128.39	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.20	223.78	110.30	117.48	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			290.57	68.22	100.80	101.06	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			959.68					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	284.36						

* Boeing Section Stations (See Missile Station Diagram)
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** Art Skirt S/N 0000202

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3.6 MISSILE NO. 669 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000202**						REPORT NO. _____ DATE _____				
LINE	SSC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10-3	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.69	97.50	106.50	111.44	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.57	59.80	100.25	101.42	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.93		61.72	99.10	100.56	.008	.005
22	45	Interstage 2-3			63.66	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.27	145.28	105.94	110.33	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			244.01	67.74	99.56	101.38	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	199.24		69.33	98.67	100.77	.028	.018
37	47	Interstage 1-2			129.59	95.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.74	224.59	110.21	117.33	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			288.72	68.47	100.70	101.16	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			961.27					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	286.17						

* Boeing Section Stations (See Missile Station Diagram)
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** Aft Skirt S/N 0000203

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3-7 MISSILE NO. 674 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000203**						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.64	97.41	106.52	111.47	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.24	59.97	100.22	101.50	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.60		61.97	99.07	100.67	.008	.005
22	45	Interstage 2-3			63.44	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.52	145.64	105.89	110.25	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			243.47	67.35	99.57	101.50	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	198.70		68.85	98.67	100.92	.028	.018
37	47	Interstage 1-2			129.28	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.25	223.86	110.29	117.46	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			287.37	68.47	100.80	101.12	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			958.23					
49			Silo	32.20						
50			Aero.	21.25						
51			Base	58.71						
52			Jett	285.30						

* Boeing Section Stations (See Missile Station Diagram)
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** Art Skirt S/N 0000919

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3.8 MISSILE NO. 676 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000204						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.64	97.41	106.52	111.47	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3 (Fwd)			119.30	59.97	100.27	101.44	.010	.006
15			Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.66		61.97	99.14	100.59	.008	.005
22	45	Interstage 2-3 (Aft)			63.48	80.64	99.30	101.39	.006	.003
23			Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.28	145.29	105.93	110.32	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2 (Fwd)			243.98	67.38	99.43	101.53	.032	.022
30			Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	199.21		68.89	98.50	100.97	.028	.018
37	47	Interstage 1-2 (Aft)			129.57	96.61	100.76	99.76	.024	.014
38			Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			62.93	223.37	110.34	117.55	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			291.32	68.57	100.74	101.16	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			962.52					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	285.87						

* Boeing Section Stations (See Missile Station Diagram)
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3.9 MISSILE NO. 679 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000211					REPORT NO. _____ DATE _____					
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.64	97.41	106.52	111.47	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.03	59.95	100.18	101.60	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.39		61.94	99.02	100.80	.008	.005
22	45	Interstage 2-3			63.30	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.16	145.11	105.96	110.36	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			243.19	67.48	99.59	101.40	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	198.42		62.02	98.70	100.80	.028	.018
37	47	Interstage 1-2			129.11	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.15	223.71	110.31	117.49	.004	.115
41			Silo	2.89		130.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			292.22	68.43	100.84	101.05	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			961.82					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	284.81						

* Boeing Section Stations (See Missile Station Diagram)
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3.10 MISSILE NO. 681 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000205						REPORT NO. _____ DATE _____				
LINE	SS	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.69	97.50	106.50	111.44	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.06	59.84	100.27	101.50	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.42		61.79	99.13	100.67	.008	.005
22	45	Interstage 2-3			63.32	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.57	145.71	105.88	110.23	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			244.67	67.59	99.55	101.47	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	199.90		69.14	98.66	100.89	.028	.018
37	47	Interstage 1-2			129.98	95.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.23	223.83	110.20	117.47	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			290.12	63.48	100.70	101.11	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			962.66					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	286.32						

* Boeing Section Stations (See Missile Station Diagram)
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11 MISSILE NO. 683 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000212						REPORT NO. _____ DATE _____				
LINE	SQ.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.69	97.50	106.50	111.44	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			118.82	59.68	100.27	101.22	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.18		61.58	99.14	100.27	.008	.005
22	45	Interstage 2-3			63.16	8.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.64	145.81	105.87	110.21	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			244.61	67.42	99.69	101.47	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	189.84		68.93	98.82	100.89	.028	.018
37	47	Interstage 1-2			129.94	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.94	224.88	110.18	117.28	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			290.67	68.46	100.69	101.15	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			963.49					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	286.02						

* Boeing Section Stations (See Missile Station Diagram)
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1.2 MISSILE NO. 686 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000206						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.57	97.27	106.54	111.51	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.54	59.90	100.34	101.49	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.90		61.87	99.23	100.65	.008	.005
22	45	Interstage 2-3			63.64	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.60	145.76	105.88	110.22	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			241.92	67.57	99.47	101.77	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	197.15		69.13	98.54	101.25	.028	.018
37	47	Interstage 1-2			128.38	96.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.35	224.01	110.28	117.44	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			287.97	68.45	100.66	101.10	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			956.99					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	284.05						

* Boicing Section Stations (See Missile Station Diagram)
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3.13 MISSILE NO. 687 WEIGHT AND BALANCE SUMMARY MAJOR COMPONENTS S/N 0000231						REPORT NO. _____ DATE _____				
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² x10-3	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00	0	0
8			Silo							
9			Aero							
10	44	3rd Stage Engine			18.65	97.43	106.52	111.46	0	.003
11			Silo	.43		94.95	110.30	117.70	0	0
12			Aero	.80		94.95	110.30	117.70	0	0
13			Base	.20		131.00	100.00	100.00	0	0
14	45	Interstage 2-3			119.48	59.85	100.24	101.46	.010	.006
15		(Fwd)	Silo							
16			Aero							
17			Base	2.81		57.33	107.51	108.65	0	0
18			Silo	1.92		61.11	101.01	101.74	0	0
19		Jettisoned	Aero	3.40		61.59	100.27	100.47	0	0
20		Portion	Base							
21			Jett	86.84		61.80	99.10	100.61	.008	.005
22	45	Interstage 2-3			63.60	80.64	99.30	101.39	.006	.003
23		(Aft)	Silo	1.18		80.97	100.50	100.84	0	0
24			Aero	1.18		82.00	103.07	105.23	0	0
25	46	2nd Stage Engine			32.47	145.57	105.90	110.26	.001	.018
26			Silo	.63		99.62	112.30	121.20	0	0
27			Aero	.53		99.62	112.30	121.20	0	0
28			Base	1.80		189.25	100.00	100.00	0	0
29	47	Interstage 1-2			245.59	67.50	99.63	101.54	.032	.022
30		(Fwd)	Silo							
31			Aero							
32			Base	3.10		64.06	112.35	115.53	0	0
33			Silo	4.21		66.61	100.32	100.55	.001	0
34		Jettisoned	Aero	7.56		66.87	100.10	100.17	.001	.001
35		Portion	Base	5.40		67.09	100.27	100.76	.001	0
36			Jett	200.82		69.03	98.75	100.98	.028	.018
37	47	Interstage 1-2			130.51	95.61	100.76	99.76	.024	.014
38		(Aft)	Silo	3.37		96.69	100.34	100.59	.001	0
39			Aero	3.41		97.71	101.98	103.41	.001	0
40	48	1st Stage Engine			63.54	224.29	110.24	117.38	.004	.115
41			Silo	2.89		190.41	111.84	120.45	0	.004
42			Aero	1.04		136.60	117.20	129.70	0	.001
43			Base	4.80		309.40	100.00	100.00	0	0
44	49	Skirt			287.62	68.36	100.87	101.02	.064	.039
45			Silo	17.57		68.02	100.35	100.60	.004	.002
46			Aero	3.33		67.80	100.64	101.12	.001	0
47			Base	40.60		69.10	101.70	102.76	.009	.006
48		MISSILE			962.48					
49			Silo	32.20						
50			Aero	21.25						
51			Base	58.71						
52			Jett	287.66						

* Boeing Section Stations (See Missile Station Diagram)
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3.1.4 WEIGHT AND BALANCE SUMMARY MEAN WEIGHT COMPONENTS** (APPLICABLE TO ALL MISSILES)						REPORT NO. _____		DATE _____		
LINE	SEC.	DESCRIPTION	DATA	EXPENDED WEIGHT (LB)	TOTAL WEIGHT (LB)	CENTER OF GRAVITY			INERTIA SLUG FT ² X10 ⁻³	
						LONG.*	LAT.	VERT.	ROLL	PITCH
1	41	RV Spacer								
2			Silo							
3			Aero							
4	39	CTLI Section								
5			Silo							
6			Aero							
7	42	G&C Section			1.02	80.94	100.00	100.00		
8			Silo							
9			Aero							
10	44	3rd Stage Engine			12.71	80.65	109.56	116.82		
11			Silo							
12			Aero							
13			Base							
14	45	Interstage 2-3			18.57	59.49	105.24	107.52		
15		(Fwd)	Silo							
16			Aero							
17			Base							
18			Silo							
19		Jettisoned	Aero							
20		Portion	Base							
21			Jett	7.68		61.44	100.06	103.80		
22	45	Interstage 2-3			7.61	80.79	98.29	96.54		
23		(Aft)	Silo							
24			Aero							
25	46	2nd Stage Engine			16.89	102.11	111.34	119.73		
26			Silo							
27			Aero							
28			Base							
29	47	Interstage 1-2			22.14	66.13	105.62	111.67		
30		(Fwd)	Silo							
31			Aero							
32			Base							
33			Silo							
34		Jettisoned	Aero							
35		Portion	Base							
36			Jett	9.35		68.33	96.79	109.60		
37	47	Interstage 1-2			8.56	91.01	100.68	97.51		
38		(Aft)	Silo							
39			Aero							
40	48	1st Stage Engine			38.09	161.19	117.09	129.00		
41			Silo							
42			Aero							
43			Base							
44	49	Skirt			14.47	62.87	106.84	110.70		
45			Silo							
46			Aero							
47			Base							
48		MISSILE			140.06					
49			Silo							
50			Aero							
51			Base							
52			Jett							

* Boeing Section Stations (See Missile Diagram)

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** See page 23 for details of
these items,

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ENGINEERING CHANGE PROPOSAL (ECP) INCORPORATION
APPLICABLE TO WING II MISSILES 653-687

The following ECP's have not been incorporated into "Model Specification, Guided Missile Main Assemblage (S-133-1000-0-1)" dated 25 October 1962. However, the mass properties of these ECP's have been incorporated into this report unless otherwise noted. ECP's applicable to the CTLI components will be found in D2-13943-2, "Flight Article Mass Properties for CTLI Installations".

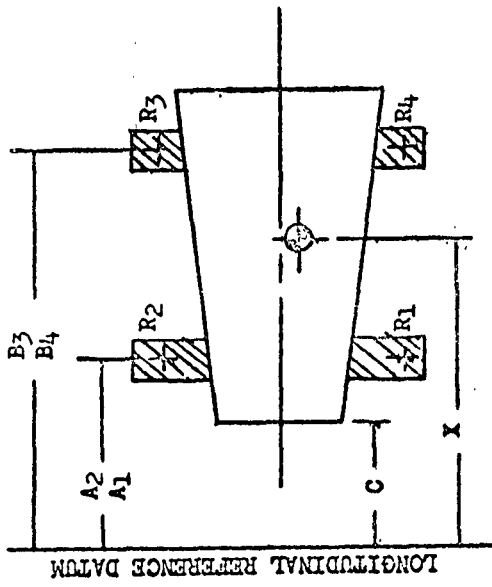
ECP NO. (WS-133A-BO-)	ECP TITLE	STAGE	WEIGHT CHANGE	WEIGHT CHANGE INCORPORATED IN THIS REPORT
369	Revision to Incorporate Blast Tubes in Second Stage Wing II Engines	2	-	Yes
540	Potting and Bonding Deletion for Vandenberg Air Force Base Missiles, Phase II	1,2,3	-	No*

* ECP 540 postpones the potting of certain components on scheduled CTLI missiles until final installation at Vandenberg Air Force Base. Since the potting is considered part of the operational weight, its mass properties are still included in this report even though it will be applied at VAFB.

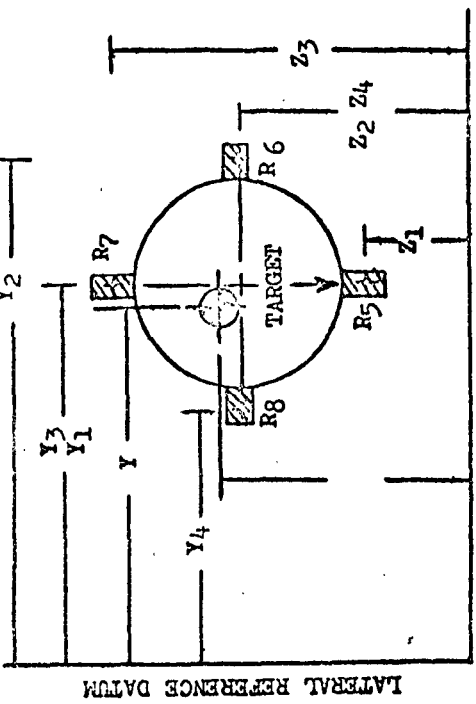
SERIAL NUMBER: 0000199 6.1.1 ACTUAL WEIGHT RECORD - INTERSTAGE 2-3

U/O MISSILE 655	CHECK LIST NO. 5	REPORT NO. OPR-2065
MISSILE MODEL WS-133	REPORTED BY HC-JH	PAGE NO.
CONFIGURATION TAH	CHECKED BY GVR	DATE 3/11/63
DON	NEW	
ADCN	6	

(FIGURE I)



(FIGURE II)



VERTICAL REFERENCE DATUM

WEIGHING DATA

REACTION	GR. WT.	TARE	CORR.	NET WT.	REACTION	GR. WT.	TARE	CORR.	NET WT.
R1	84.55	41.00		43.55	R5	95.40	40.80		54.60
R2	132.20	94.85		37.35	R6	47.00	23.90		23.10
R3	78.10	40.50		37.60	R7	100.75	40.65		60.10
R4	134.00	95.00		39.00	R8	40.80	21.10		19.70
TOTAL	428.85	271.35		157.50	TOTAL	283.95	126.45		157.50

DIMENSIONAL DATA

DIM. INCHES	DIM. INCHES	DIM. INCHES
A1 47.343	Z1 100.000	Y1 72.500
A2 47.354	Z2 72.501	Y2 100.000
B3 88.351	Z3 100.000	Y3 127.493
B4 88.351	Z4 127.499	Y4 100.000
C 50.000		

LONGITUDINAL C.G.

REACTION	NET WT.	ARM	MOMENT
R1	43.55	47.343	
R2	37.35	47.354	
R3	37.60	88.351	
R4	39.00	88.351	
AS WGD	157.50	67.29	10,598.1

LATERAL C.G.

REACTION	NET WT.	ARM	MOMENT
R5	54.60	100.000	
R6	23.10	72.501	
R7	60.10	100.000	
R8	19.70	127.499	
AS WGD	157.50	99.41	15,656.5

VERTICAL C.G.

REACTION	NET WT.	ARM	MOMENT
R5	54.60	72.500	
R6	23.10	100.000	
R7	60.10	127.493	
R8	19.70	100.000	
AS WGD	157.50	100.96	15,901.1

Fig "A" Number: 6501

Serial Number: 0000199

CHECK LIST NO. 5		6.1.1 MISSILE WEIGHING CHECK LIST		RECORD OF CHECKING (DATE)																	
DATE 3/11/63		MODEL WS-133		FTRAL ASSEMBLY DRAWING NO. 21-52150		<table border="1"> <tr> <th colspan="2">REV.</th> <th colspan="2">DCN</th> </tr> <tr> <th>ADCN</th> <th>USED ON</th> <th>REV.</th> <th>DCN</th> </tr> </table>				REV.		DCN		ADCN	USED ON	REV.	DCN				
REV.		DCN																			
ADCN	USED ON	REV.	DCN																		
SECTION 45		MISSILE NO. 655		COMPONENT																	
DESCRIPTION		PART NO.		WEIGHT		X ARM		Y ARM		Z ARM		BASIC WEIGHT		AS WEIGHED		REMOTE SITE SHIPMENT		AS RECEIVED		REMOTE SITE	
BODY SECTION ASSY		25-36103-1																			
Interstage Assy- Structural		25-36102-1																			
Cork Insulation Installation		25-37084-1																			
Instr Rack & Accelerometer		25-31659-4																			
Marking Instl- Section 45		25-30134-28																			
Cover- Insulating		29-24652-2																			
Cover- Insulating		29-25503-1																			
Cover- Insulating (8)		29-23365-1																			
Cover- Insulating (8)		29-23365-2																			
Cover- Insulating (7)		29-23365-3																			
Cover- Insulating (4)		29-23365-4																			
Cover- Insulating		29-23365-5																			
Cover- Insulating		29-23365-6																			
Seal- Forward		29-23674-1																			
Door- Access, Ordnance		29-22673-3																			
Closure Panel- Access, Ordnance		29-22672-2																			
Door- Access, Ignitor Stage II		29-22361-4																			
Closure Panel- Access, Booster Skirt		29-22081-5																			
Door- Access, Detonator		26-11678-1																			
Door- Access, Ignitor Stage III		26-11835-4																			
Door- Access, CUII		26-12909-1																			
Plug- Screw, Insulated		26-15247-2																			
Sleeve		26-14713-1																			
Bolt - 100° Head		EACB30E1-3-3																			
Bolt - 100° Head		-3-4																			
Bolt - 100° Head		(14)																			
Bolt - 100° Head		(8)																			
Bolt - 100° Head		(41)																			
Bolt - 100° Head		-5-3																			
Bolt - 100° Head		-4-4																			

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SERIAL NUMBER: 0000199				6.1.1 ACTUAL WEIGHT RECORD - INTERSTAGE 2-3				CHECK LIST NO. 5		REPORT NO. OPR-2065	
U/O MISSILE 655				DRAWING NO. 25-36103-1				REPORTED BY HC-JH		PAGE NO.	
MISSILE MODEL WS-133				DCN New				CHECKED BY CWR		DATE 3/11/63	
CONFIGURATION TAH				ADCN							
(FIGURE I)											
						(FIGURE II)					
LONGITUDINAL REFERENCE DATUM						LATERAL REFERENCE DATUM					
VERTICAL REFERENCE DATUM											
WEIGHING DATA											
REACTION	GR. WT.	TARE	CORR.	NET WT.	REACTION	GR. WT.	TARE	CORR.	NET WT.	DIMENSIONAL DATA	
										DIM. INCHES	DIM. INCHES
R1	84.55	41.00		43.55	R5	95.40	40.80		54.60	A1	47.343
R2	132.20	94.85		37.35	R6	47.00	23.90		23.10	A2	47.354
R3	78.10	40.50		37.60	R7	100.75	40.65		60.10	B3	88.351
R4	134.00	95.00		39.00	R8	40.80	21.10		19.70	B4	88.351
TOTAL	428.85	271.35		157.50	TOTAL	283.95	126.45		157.50	C	50.000
										DIM. INCHES	
										Y1 72.500	
										Y2 100.000	
										Y3 127.493	
										Y4 100.000	
										Z1 100.000	
										Z2 127.499	
										Z3 100.000	
										Z4 100.000	
										Y1 72.500	
										Y2 100.000	
										Y3 127.493	
										Y4 100.000	
										Z1 100.000	
										Z2 127.499	
										Z3 100.000	
										Z4 100.000	
LONGITUDINAL C.G.											
REACTION	NET WT.	ARM	MOMENT	LATERAL C.G.							
				REACTION	NET WT.	ARM	MOMENT	VERTICAL C.G.			
								REACTION	NET WT.	ARM	MOMENT
R1	43.55	47.343		R5	54.60	100.000		R5	54.60	72.500	
R2	37.35	47.354		R6	23.10	72.501		R6	23.10	100.000	
R3	37.60	88.351		R7	60.10	100.000		R7	60.10	127.493	
R4	39.00	83.351		R8	19.70	127.499		R8	19.70	100.000	
AS WGD	157.50	67.29	10,598.1	AS WGD	157.50	99.41	15,656.5	AS WGD	157.50	100.96	15,901.1

WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2066	
COMPONENT		INTERSTAGE 2-3		LOT NO.				DATE		3/12/63	
MODEL NO.		WS-133		DRAWING NO.		25-36103-1		PREPARED		H. CHRISTIANSEN	
SERIAL NO.		0000199		U.O. MISSILE		655		APPROVED		G. ROEBERS	

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1	25-36103-1	157.50	67.29	10,598.1	99.41	15,656.5	100.96	15,901.1
2	Body Section (As Weighed)							
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	25-36103-1	157.50	67.29	10,598.1	99.41	15,656.5	100.96	15,901.1
12	Body Section (Complete)							
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
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31								
32								

WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR FORTING
 COMPONENT INTERSTAGE 2-3
 MODEL NO. WS-133
 SERIAL NO. 0000000
 CONTRACT NO. AF04(694)-046
 LOT NO. 25-36103-1
 DRAWING NO. U.O. MISSILE 660
 REPORT NO. OPR-2067
 DATE 3/12/63
 PREPARED H. CHRISTIANSEN
 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	25-36103-1	Body Section (As Weighed)	157.30	67.37	10,596.9	99.56	15,629.6	101.00	15,888.0
3									
4									
5		ADD:	0						
6									
7									
8		DEDUCT:	0						
9									
10									
11	25-36103-1	Body Section (Complete)	157.30	67.37	10,596.9	99.36	15,629.6	101.00	15,888.0
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AF04(604)-046	REPORT NO.	OPR-2269
COMPONENT	INTERSTAGE 2-3	LOT NO.		DATE	3/12/63
MODEL NO.	VS-133	DRAWING NO.	25-36103-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000201	U.O. MISSILE	667	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	25-36103-1 Body Section (As Weighed)	157.45	67.41	10,614.3	99.46	15,659.9	100.95	15,894.8	
3									
4									
5	ADD:	0							
6									
7									
8	DEDUCT:	0							
9									
10									
11	25-36103-1 Body Section (Complete)	157.45	67.41	10,614.3	99.46	15,659.9	100.95	15,894.8	
12									
13									
14									
15									
16									
17									
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BOEING

NO. D2-13946-4

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING CONTRACT NO. AEC4(694)-046 REPORT NO. OPR-2070
 COMPONENT INTERSTAGE 2-3 LOT NO. DATE 3/18/63
 MODEL NO. 15-133 DRAWING NO. 25-36103-1 PREPARED H. CHRISTENSEN
 SERIAL NO. 0000202 U.O. MISSILE 669 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	Body Section (As Weighed)	157.05	67.27	10,564.6	99.37	15,606.0	100.92	15,849.3	
3									
4		0							
5	ADD:								
6									
7									
8	DEDUCT:	0							
9									
10									
11	Body Section (Complete)	157.05	67.27	10,564.6	99.37	15,606.0	100.92	15,849.3	
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	REPORT NO.	OPR-2071
COMPONENT	DATE	3/18/63
MODEL NO.	PREPARED	H. CHRISTIANSEN
SERIAL NO.	APPROVED	G. ROBERTS

CONTRACT NO.	AF04(694)-046
LOT NO.	
DRAWING NO.	25-36103-1
U.O. MISSILE	674

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
LINE	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1			156.50	67.40	10,548.8	99.35	15,548.3	100.98	15,803.9
2	25-36103-1	Body Section (As Weighed)							
3									
4			0						
5		ADD:							
6									
7									
8		DEDUCT:	0						
9									
10									
11	25-36103-1	Body Section (Complete)	156.50	67.40	10,548.8	99.35	15,548.3	100.98	15,803.9
12									
13									
14									
15									
16									
17									
18									
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2072	
COMPONENT		INTERSTAGE 2-3		LOT NO.				DATE		3/15/63	
MODEL NO.		WS-133		DRAWING NO.		25-36103-1		PREPARED		R. ST. ROMAIN	
SERIAL NO.		0000204		U.O. MISSILE		676		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS				
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT			
1											
2	Body Section (As Weighed)	156.60	67.40	10,555.5	99.38	15,562.4	100.94	15,807.0			
3											
4		0									
5	ADD:										
6											
7											
8	DEDUCT:	0									
9											
10											
11	Body Section (Complete)	156.60	67.40	10,555.5	99.38	15,562.4	100.94	15,807.0			
12											
13											
14											
15											
16											
17											
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2074	
COMPONENT		INTERSTAGE 2-3		LOT NO.				DATE		3/26/63	
MODEL NO.		WS-133		DRAWING NO.		25-36103-1		PREPARED		H. CHRISTIANSEN	
SERIAL NO.		0000205		U.O. MISSILE		681		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS				
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT			
1	25-36103-1	156.20	67.29	10,509.9	99.38	15,522.4	100.98	15,772.6			
2	Body Section (As Weighed)										
3											
4											
5	ADD:	0									
6											
7											
8	DEDUCT:	0									
9											
10											
11	25-36103-1	156.20	67.29	10,509.9	99.38	15,522.4	100.98	15,772.6			
12	Body Section (Complete)										
13											
14											
15											
16											
17											
18											
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING CONTRACT NO. AF04(694)-046 REPORT NO. OPR-2076
 COMPONENT INTERSTAGE 2-3 LOT NO. DATE 3/22/63
 MODEL NO. WS-133 DRAWING NO. 25-36103-1 PREPARED R. ST. FOYATH
 SERIAL NO. 0000206 U.O. MISSILE 686 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE						
		WEIGHT	X AXIS		Y AXIS		Z AXIS	
PART NO.	DESCRIPTION OF EQUIPMENT		ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1								
2	25-36103-1 Body Section (As Weighed)	157.00	67.35	10,574.4	99.44	15,622.0	100.98	15,863.9
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	25-36103-1 Body Section (Complete)	157.00	67.35	10,574.4	99.44	15,622.0	100.98	15,863.9
12								
13								
14								
15								
16								
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2-5550-0-11 R1

WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AF04(694)-046	REPORT NO.	OPR-2073
COMPONENT	INTERSTAGE 2-3	LOT NO.		DATE	3/20/63
MODEL NO.	WS-133	DRAWING NO.	25-36103-1	PREPARED	R. ST. ROMAIN
SERIAL NO.	0000211	U.O. MISSILE	679	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE						
LINE	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1									
2	25-36103-1	Body Section (As Weighed)	156.15	67.37	10,519.9	99.32	15,509.1	101.06	15,779.9
3									
4									
5		ADD:	0						
6									
7									
8		DEDUCT:	0						
9									
10									
11	25-36103-1	Body Section (Complete)	156.15	67.37	10,519.9	99.32	15,509.1	101.06	15,779.9
12									
13									
14									
15									
16									
17									
18									
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BOEING

NO. D2-13946-4

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AFO4(694)-046	REPORT NO.	OPR-2075
COMPONENT	INTERSTAGE 2-3	LOT NO.		DATE	3/21/63
MODEL NO.	WS-133	DRAWING NO.	25-36103-1	PREPARED	R. ST. ROMAINE
SERIAL NO.	0000212	U.O. MISSILE	683	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	25-36103-1 Body Section (As Weighed)	155.80	67.17	10,464.3	99.38	15,483.8	100.76	15,698.2	
3									
4		0							
5	ADD:								
6									
7									
8	DEDUCT:	0							
9									
10									
11	25-36103-1 Body Section (Complete)	155.80	67.17	10,464.3	99.38	15,483.8	100.76	15,698.2	
12									
13									
14									
15									
16									
17									
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BOEING

NO. D2-13946-4

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING
 COMPONENT INTERSTAGE 2-3
 MODEL NO. WS-133
 SERIAL NO. 0000231

CONTRACT NO. AFO4(694)-046
 LOT NO. _____
 DRAWING NO. 25-36103-1
 U.O. MISSILE 687

REPORT NO. OPR-2077
 DATE 3/27/63
 PREPARED R. ST. ROMAIN
 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	Body Section (As Weighed)	156.90	67.31	10,561.6	99.36	15,589.6	100.95	15,839.8	
3									
4									
5	ADD:	0							
6									
7									
8	DEDUCT:	0							
9									
10									
11	Body Section (Complete)	156.90	67.31	10,561.6	99.36	15,589.6	100.95	15,839.8	
12									
13									
14									
15									
16									
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BOEING

NO. D2-13946-4

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AR04(694)-015		REPORT NO.		OPR-2065	
COMPONENT		INTERSTAGE 2-3		LOT NO.				DATE		2/28/63	
MODEL NO.		WS-133		DRAWING NO.		25-36103-1		PREPARED		M. BAIRD	
SERIAL NO.		000915		U.O. MISSILE		653		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS ARM	X AXIS MOMENT	Y AXIS ARM	Y AXIS MOMENT	Z AXIS ARM	Z AXIS MOMENT			
1											
2	25-36103-1 Body Section (As Weighed)	156.85	67.41	10,573.6	99.32	15,577.8	100.97	15,837.5			
3											
4											
5	ADD:	0									
6											
7											
8	DEDUCT:	0									
9											
10											
11	25-36103-1 Body Section (Complete)	156.85	67.41	10,573.6	99.32	15,577.8	100.97	15,837.5			
12											
13											
14											
15											
16											
17											
18											
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2068	
COMPONENT		INTERSTAGE 2-3		LOT NO.				DATE		3/26/63	
MODEL NO.		WS-133		DRAWING NO.		25-36103-1		PREPARED		H. CHRISTIANSEN	
SERIAL NO.		0000917		U.O. MISSILE		SP. 020 (662)		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS				
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT			
1											
2	Body Section (As Weighed)	156.55	67.36	10,545.0	99.34	15,551.9	100.97	15,806.1			
3											
4		0									
5	ADD:										
6											
7											
8	DEDUCT:	0									
9											
10											
11	Body Section (Complete)	156.55	67.36	10,545.0	99.34	15,551.9	100.97	15,806.1			
12											
13											
14											
15											
16											
17											
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SERIAL NUMBER: 0000199

6.2.1 ACTUAL WEIGHT RECORD - INTERSTAGE 1-2

U/O MISSILE 655

DRAWING NO. 25-36101-1

CHECK LIST NO. 7

REPORT NO. OPR-

MISSILE MODEL WS-133

DCN C

REPORTED BY RS

PAGE NO.

CONFIGURATION TAH

ADCN 14

CHECKED BY GVR

DATE 3-15-63

(FIGURE I)

(FIGURE II)

WEIGHING DATA				DIMENSIONAL DATA			
REACTION	GR. WT.	TARE	CORR.	NET WT.	REACTION	DIM.	DIM.
R1	223.85	127.80		96.05	A1	49.072	Z1
R2	179.00	97.90		81.10	A2	49.070	Z2
R3	198.45	110.90		87.55	B3	109.070	Z3
R4	159.35	82.10		77.25	B4	109.070	Z4
TOTAL	760.65	418.70		341.95	C	50.000	

LONGITUDINAL C.G.				LATERAL C.G.				VERTICAL C.G.			
REACTION	NET WT.	ARM	MOMENT	REACTION	NET WT.	ARM	MOMENT	REACTION	NET WT.	ARM	MOMENT
R1	96.05	49.072		R5	60.90	100.000		R5	60.90	72.500	
R2	81.10	49.070		R6	111.00	72.501		R6	111.00	100.000	
R3	87.55	109.070		R7	63.80	100.000		R7	63.80	127.493	
R4	77.25	109.070		R8	106.25	127.499		R8	106.25	100.000	
AS WGD	341.95	77.99	26,667.7	AS WGD	341.95	99.62	34,064.4	AS WGD	341.95	100.23	34,274.6

Fig. "A" Number: 6701

Serial Number: 0000199

CHECK LIST NO. 7		6.2.1 MISSILE WEIGHING CHECK LIST		RECORD OF CHECKING (DATE)			
DATE 3-15-63		MODEL WS-133 FINAL ASSEMBLY DRAWING NO. 21-50150		Mo	Day	Yr	
SECTION 47		MISSILE NO. 655		COMPONENT			
ITEM NUMBER		DESCRIPTION		PART NO.	WEIGHT	X ARM	Y ARM
		BODY SECTION ASSY		25-36101-1			
		Interstage Assy-Structural		25-36100-1			
		Shield-Assy of, Insulated		25-36101-2			
		Shield-Time Delay, Booster		25-29544-1			
		Cork Insulation Instl-Exterior		25-37131-1			
		Plug-Access Hole		29-23663-1			
		Seal-Fwd Adapter Ring (2)		29-24180-1			
		Door-Access Stage Separation		26-11886-1			
		Door-Access, Booster		26-11888-1			
		Door Assy - Safe & Arm		29-20567-4			
		Closure Panel Ord. Access (1170)		29-28371-1			
		Door-Ordnance Access (4)		29-28391-1			
		Cover Panel Tie (4)		29-23654-1			
		Cover Panel Tie (4)		29-23654-2			
		Panel-Insulation		29-25565-1			
		Panel-Insulation		25-36383-1			
		Marking Instl		25-30134-29			
		Cover Rectractable		29-22725-1			
		Bolt - 100° Head		BACB30EM-3-8			
		Bolt - 100° Head (33)		-4-11			
		Bolt - 100° Head		-4-9			
		Bolt - 100° Head (6)		-4-5			
		Bolt - 100° Head (3)		-3-4			
		Bolt - 100° Head (4)		-3-3			
		Bolt - 100° Head (4)		-4-10			
		Bolt - 100° Head		-4-19			
		Bolt - 100° Head		-4-20			
		Bolt - 100° Head		-4L-9			
		Bolt - 100° Head		-4L-16			
		Bolt - 100° Head		-4-4			

2-5550-0-21

BOEING

No. D2-13946-4

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Serial Number: 0000199

Serial Number: 0000199

Fig. "A" Number: 6701		6.2.1		MISSILE WEIGHING CHECK LIST		Serial Number: 0000199	
CHECK LIST NO. 7		MODEL WS-133		FINAL ASSEMBLY DRAWING NO. 21-50150		RECORD OF CHECKING (DATE)	
DATE 3-15-63		SECTION 47		MISSILE NO. 655		Mo 3 Day 15 Yr 63	
ITEM NUMBER		DESCRIPTION		PART NO.		WEIGHT	
		BODY SECTION ASSY (CONTINUED)					
		Bolt - 100° Head (14)		BAC30EM-4-6		AS	
		Bolt - 100° Head (16)		BAC30EM-Pl-4		WEIGHED	
		Washer (22)		AN960-416L		AS	
		Nut (6)		NAS679-A4W		WEIGHED	
		Insulation		EWS 5-62		AS	

WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2066	
COMPONENT		INTERSTAGE 1-2		LOT NO.				DATE		3/15/63	
MODEL NO.		WS-133		DRAWING NO.		25-36101-1		PREPARED		R. ST. ROMAIN	
SERIAL NO.		0000192		U.O. MISSILE		655		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT		X AXIS		Y AXIS		Z AXIS	
						ARM		MOMENT		ARM	
1	25-36101-1	Body Section (As Weighed)		341.95		77.99	26,667.7	99.62	34,064.4	100.23	34,274.6
2											
3											
4											
5		ADD:		0							
6											
7											
8		REDUCT:		0							
9											
10											
11	25-36101-1	Body Section (Complete)		341.95		77.99	26,667.7	99.62	34,064.4	100.23	34,274.6
12											
13											
14											
15											
16											
17											
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2067	
COMPONENT		INTERSTAGE 1-2		LOT NO.				DATE		3/15/63	
MODEL NO.		WS-133		DRAWING NO.		25-36101-1		PREPARED		T. VOGEL	
SERIAL NO.		0000200		U.O. MISSILE		660		APPROVED		G. ROBERTUS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT		X AXIS		Y AXIS		Z AXIS	
						ARM		MOMENT		ARM	
1	25-36101-1	Body Section (As Weighed)	343.20	78.07	26,795.0	99.55	34,164.6	100.23	34,398.3		
2											
3											
4											
5		ADD:	0								
6											
7											
8		DEDUCT:	0								
9											
10	25-36101-1	Body Section (Complete)	343.20	78.07	26,795.0	99.55	34,164.6	100.23	34,398.3		
11											
12											
13											
14											
15											
16											
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AFO4(694)-046	REPORT NO.	OPR-2069
COMPONENT	INTERSTAGE 1-2	LOT NO.		DATE	3/18/63
MODEL NO.	WS-133	DRAWING NO.	25-36101-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000201	U.O. MISSILE	667	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	Body Section (As Weighed)	339.65	78.06	26,512.8	99.77	33,888.0	100.32	34,073.3	
3									
4		0							
5	ADD:								
6									
7									
8	DEDUCT:	0							
9									
10									
11	Body Section (Complete)	339.65	78.06	26,512.8	99.77	33,888.0	100.32	34,073.3	
12									
13									
14									
15									
16									
17									
18									
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR		CONTRACT NO.		REPORT NO.		DATE	
COMPONENT		LOT NO.		ARM		MOMENT	
MODEL NO.		DRAWING NO.		ARM		MOMENT	
SERIAL NO.		U.O. MISSILE		ARM		MOMENT	
INTERSTAGE 1-2		AF04(694)-046		OPR-2070		3/21/63	
MS-133		25-36101-1		R. ST. ROMAIN			
0000202		669		G. ROBERTS			

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1	Body Section (As Weighed)	342.90	78.18	26,807.2	99.60	34,153.9	100.20	34,360.0
2								
3								
4		0						
5	ADD:							
6								
7								
8	DEDUCT:	0						
9								
10								
11	Body Section (Complete)	342.90	78.18	26,807.2	99.60	34,153.9	100.20	34,360.0
12								
13								
14								
15								
16								
17								
18								
19								
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	DOELING	CONTRACT NO.	AF04(694)-046	REPORT NO.	OPR-2071
COMPONENT	INTERSTAGE 1-2	LOT NO.		DATE	3/21/63
MODEL NO.	MS-133	DRAWING NO.	25-36101-1	PREPARED	T. VOGEL
SERIAL NO.	0000203	U.O. MISSILE	674	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT	X AXIS		Y AXIS		Z AXIS	
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
PART NO.	DESCRIPTION OF EQUIPMENT							
1								
2	25-36101-1 Body Section (As Weighed)	342.05	77.90	26,645.5	99.60	34,067.5	100.28	34,299.7
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	25-36101-1 Body Section (Complete)	342.05	77.90	26,645.5	99.60	34,067.5	100.28	34,299.7
12								
13								
14								
15								
16								
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18								
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DOELING

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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AFOL(694)-046		REPORT NO.		OPR-2072	
COMPONENT		INTERSTAGE 1-2		LOT NO.				DATE		3/21/63	
MODEL NO.		MS-133		DRAWING NO.		25-36101-1		PREPARED		H. CHRISTIANSEN	
SERIAL NO.		0000204		U.O. MISSILE		676		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT	X AXIS		Y AXIS		Z AXIS		
					ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1	25-36101-1	Body Section (As Weighed)		342.85	77.92	26,714.9	99.50	34,113.1	100.31	34,392.1	
2											
3											
4				0							
5		ADD:									
6											
7											
8		DEDUCT:		0							
9											
10											
11	25-36101-1	Body Section (Complete)		342.85	77.92	26,714.9	99.50	34,113.1	100.31	34,392.1	
12											
13											
14											
15											
16											
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	JOELIG	CONTRACT NO.	AF04(694)-046	REPORT NO.	OPR-2074
COMPONENT	INTERSTAGE 1-2	LOT NO.		DATE	3/26/63
MODEL NO.	WS-133	DRAWING NO.	25-36101-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000205	U.O. MISSILE	681	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE					
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1								
2	Body Section (As Weighed)	343.95	78.07	26,852.8	99.59	34,254.8	100.26	34,484.2
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	Body Section (Complete)	343.95	78.07	26,852.8	99.59	34,254.8	100.26	34,484.2
12								
13								
14								
15								
16								
17								
18								
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	FOETIG	CONTRACT NO.	AF04(694)-046	REPORT NO.	OPR-2076
COMPONENT	INTERSTAGE 1-2	LOT NO.		DATE	3/26/63
MODEL NO.	WS-133	DRAWING NO.	25-36101-1	PREPARED	R. ST. ROMAINE
SERIAL NO.	0000206	U.O. MISSILE	686	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	25-36101-1 Body Section (As Weighed)	339.60	78.05	26,504.3	99.53	33,799.1	100.47	34,120.7	
3									
4									
5	ADD:	0							
6									
7									
8	DEDUCT:	0							
9									
10									
11	25-36101-1 Body Section (Complete)	339.60	78.05	26,504.3	99.53	33,799.1	100.47	34,120.7	
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR BOEING				CONTRACT NO.		REPORT NO.		DATE			
INTERSTAGE 1-2				AF04(694)-046		OPR-2073		3/26/63			
MODEL NO.				DRAWING NO.		PREPARED		H. CHRISTIANSEN			
SERIAL NO.				U.O. MISSILE		APPROVED		G. ROBERTS			
0000211				25-36101-1		679					
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT	X AXIS		Y AXIS		Z AXIS		
					ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1	25-36101-1	Body Section (As Weighed)		341.60	77.99	26,641.5	99.62	34,030.8	100.21	34,231.3	
2											
3											
4											
5		ADD:		0							
6											
7											
8		DEDUCT:		0							
9											
10											
11	25-36101-1	Body Section (Complete)		341.60	77.99	26,641.5	99.62	34,030.8	100.21	34,231.3	
12											
13											
14											
15											
16											
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BOEING

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING		CONTRACT NO.	REPORT NO.	WEIGHT AND BALANCE		
COMPONENT	INTERSTAGE 1-2	LOT NO.	DATE	X AXIS		
MODEL NO.	MS-133	DRAWING NO.	PREPARED	ARM	MOMENT	Z AXIS
SERIAL NO.	0000212	U.O. MISSILE	APPROVED	Y AXIS		
		683		ARM	MOMENT	MOMENT
1	25-36101-1	Body Section (As Weighed)		343.85	26,802.9	34,497.8
2						
3						
4						
5		ADD:		0		
6						
7						
8		DEDUCT:		0		
9						
10						
11	25-36101-1	Body Section (Complete)		343.85	26,802.9	34,497.8
12						
13						
14						
15						
16						
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18						
19						
20						
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING
 COMPONENT INTERSTAGE 1-2
 MODEL NO. WS-133
 SERIAL NO. 000231

CONTRACT NO. AF04(604)-046
 LOT NO. 25-36101-1
 DRAWING NO. U.O. MISSILE
 V.O. MISSILE 687

REPORT NO. OPR-2077
 DATE 3/27/63
 PREPARED R. ST. ROMAIN
 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	25-36101-1 Body Section (As Weighed)	345.40	78.01	26,945.0	99.65	34,417.6	100.32	34,651.2	
3									
4		0							
5	ADD:								
6									
7									
8	DEDUCT:	0							
9									
10									
11	25-36101-1 Body Section (Complete)	345.40	78.01	26,945.0	99.65	34,417.6	100.32	34,651.2	
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AF 04(624)-046	REPORT NO.	OPR-2065
COMPONENT	INTERSTAGE 1-2	LOT NO.	WING II	DATE	4-8-63
MODEL NO.	WS-133	DRAWING NO.	25-36101-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000915	U.O. MISSILE	653	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	Body Section (As Weighed)	340.60	77.96	26,553.4	99.63	33,933.5	100.31	34,167.1	
3									
4									
5	ADD:	0							
6									
7									
8	DEDUCT:	0							
9									
10									
11	Body Section (Complete)	340.60	77.96	26,553.4	99.63	33,933.5	100.31	34,167.1	
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	FOEING	CONTRACT NO.	- AF04(694)-046	REPORT NO.	OPR-2068
COMPONENT	INTERSTAGE 1-2	LOT NO.		DATE	4/3/63
MODEL NO.	MS-133	DRAWING NO.	25-36101-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000917	U.O. MISSILE	662	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE							
EQUIP. NO.	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1										
2	25-36101-1	Body Section (As Weighed)	341.05	77.96	26,587.5	99.59	33,966.1	100.39	34,236.9	
3										
4										
5		ADD:	0							
6										
7										
8		DEDUCT:	0							
9										
10										
11	25-36101-1	Body Section (Complete)	341.05	77.96	26,587.5	99.59	33,966.1	100.39	34,236.9	
12										
13										
14										
15										
16										
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S/N 0000198				6.3.1 ACTUAL WEIGHT RECORD - SKIRT			
U/O MISSILE 653		DRAWING NO. 25-36000-1		CHECK LIST NO. 9		REPORT NO. OPR-	
MISSILE MODEL WS-133		DCN C		REPORTED BY RS-TV		PAGE NO. 3-8-63	
CONFIGURATION TAH		ADCN 9		CHECKED BY GVR		DATE 3-8-63	

LONGITUDINAL REFERENCE DATUM

NOTE: Views taken from top.

VERTICAL REFERENCE DATUM

WEIGHING DATA				LATERAL REFERENCE DATUM				DIMENSIONAL DATA					
REACTION	GR. WT.	TARE	CORRECTION	NET WT.	X ARM	Y ARM	Z ARM	DIM	DIM	DIM	DIM	DIM	DIM
R1	140.10	64.10		76.00	52.353			X1	52.353	Y5	63.752	Z5	63.661
R2	87.65	8.45		79.20	52.354			X2	52.354	Y7	63.727	Z6	63.698
R3	160.45	96.55		63.90	89.854			X3	89.854	Y6	136.253	Z7	136.160
R4	207.80	151.10		56.70	89.854			X4	89.854	Y8	136.229	Z8	136.198
TOTAL	596.00	320.20		275.80									
R5	102.60	39.40		63.20		63.753							
R6	218.85	146.60		72.25		136.253							
R7	193.55	120.50		73.05		63.727							
R8	81.00	13.70		67.30		136.229							
MOMENT					18,961.7	27,696.9							
TOTAL	596.00	320.20		275.80	68.75	100.42							

REMARKS	

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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF 04(604)-046		REPORT NO.		OPR-2065	
COMPONENT		SKIST		LOT NO.				DATE		3-8-63	
MODEL NO.		W3-134		DRAWING NO.		25-36080-1		PREPARED		P. ST. ROYALH	
SERIAL NO.		0000198		U.O. MISSILE		653		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
ITEM	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS			
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT		
1											
2	25-36080-1	Body Section (As Weighed)	275.80	68.75	18,961.7	100.42	27,696.9	100.57	27,738.2		
3											
4											
5		ADD:	0								
6											
7											
8		DEDUCT:	0								
9											
10											
11	25-36080-1	Body Section (Complete)	275.80	68.75	18,961.7	100.42	27,696.9	100.57	27,738.2		
12											
13											
14											
15											
16											
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BOEING

NO. D2-13946-4

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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	FOELING	CONTRACT NO.	AFO4(694)-046	REPORT NO.	OPR-2065
COMPONENT	SKIRT	LOT NO.		DATE	3/11/63
MODEL NO.	WS-133	DRAWING NO.	25-36080-1	PREPARED	R. ST. ROMAIN
SERIAL NO.	0000199	U.O. MISSILE	655	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE						
		WEIGHT	X AXIS		Y AXIS		Z AXIS	
PART NO.	DESCRIPTION OF EQUIPMENT		ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1								
2	Body Section (As Weighed)	275.50	68.77	18,946.0	100.48	27,681.4	100.50	27,686.5
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	Body Section (Complete)	275.50	68.77	18,946.0	100.48	27,681.4	100.50	27,686.5
12								
13								
14								
15								
16								
17								
18								
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR BOEING CONTRACT NO. ARO4(694)-046 REPORT NO. OPR-2067
 COMPONENT SKINT LOT NO. 3/12/63 DATE 3/12/63
 MODEL NO. WS-133 DRAWING NO. 25-36080-1 PREPARED H. CHRISTIANSEN
 SERIAL NO. 0000200 U.O. MISSILE 660 APPROVED G. ROBERTS

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE							
LINE	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1									
2	25-36080-1	Body Section (As Weighed)	276.65	68.78	19,024.9	100.65	27,845.3	100.47	27,796.0
3									
4									
5		ADD:	0						
6									
7									
8		DEDUCT:	0						
9									
10									
11	25-36080-1	Body Section - (Complete)	276.65	68.78	19,024.9	100.65	27,845.3	100.47	27,796.0
12									
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15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR COMPONENT		BOEING SKIRT		CONTRACT NO. AFO4(694)-046		REPORT NO. OPR-2068		DATE 2/18/63		PREPARED H. CHRISTIANSEN	
MODEL NO.		WS-133		DRAWING NO. 25-36080-1		APPROVED		G. ROBERTS			
SERIAL NO.		0000201		U.O. MISSILE		662					
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS ARM	X AXIS MOMENT	Y AXIS ARM	Y AXIS MOMENT	Z AXIS ARM	Z AXIS MOMENT			
1											
2	25-36080-1 Body Section (As Weighed)	270.65	68.69	18,590.8	100.25	27,133.0	100.66	27,243.4			
3											
4											
5	ADD:	0									
6											
7											
8	DEDUCT:	0									
9											
10											
11	25-36080-1 Body Section (Complete)	270.65	68.69	18,590.8	100.25	27,133.0	100.66	27,243.4			
12											
13											
14											
15											
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		CONTRACT NO.		REPORT NO.		DATE		PREPARED		APPROVED	
COMPONENT		LOT NO.		AFOL(694)-046		3/18/63		H. CHRISTIANSEN		G. ROBERTS	
MODEL NO.		DRAWING NO.		25-36080-1							
SERIAL NO.		U.O. MISSILE		667							
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
LINE NO.	PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS			
				ARM	MOMENT	ARM	MOMENT	ARM	MOMENT		
1											
2	25-36080-1	Body Section (As Weighed)	276.10	68.50	18,911.5	100.48	27,741.4	100.55	27,760.9		
3											
4			0								
5		ADD:									
6											
7											
8		DEDUCT:	0								
9											
10											
11	25-36080-1	Body Section (Complete)	276.10	68.50	18,911.5	100.48	27,741.4	100.55	27,760.9		
12											
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15											
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BOEING

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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2070	
COMPONENT		SKIN		LOT NO.				DATE		3/13/63	
MODEL NO.		W3-133		DRAWING NO.		25-36080-1		PREPARED		T. VOGEL	
SERIAL NO.		0000203		U.O. MISSILE		669		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS				
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1											
2	25-36080-1 Body Section (As Weighed)	274.25	68.77	18,859.9	100.38	27,529.2	100.66	27,606.8			
3											
4											
5	ADD:	0									
6											
7											
8	DEDUCT:	0									
9											
10											
11	25-36080-1 Body Section (Complete)	274.25	68.77	18,859.9	100.38	27,529.2	100.66	27,606.8			
12											
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15											
16											
17											
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WEIGHT AND BALANCE CHANGE RECORD									
ASSOCIATE CONTRACTOR		CONTRACT NO.		REPORT NO.					
COMPONENT		LOT NO.		DATE					
MODEL NO.		DRAWING NO.		PREPARED					
SERIAL NO.		U.O. MISSILE		APPROVED					
BOEING		AF04(694)-046		OFR-2072					
SHEET				3/18/63					
MS-133		25-36080-1		H. CHRISTIANSEN					
0000204		676		C. ROBERTS					
EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS		
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1									
2	Body Section (As Weighed)	276.85	68.87	19,067.3	100.42	27,800.1	100.66	27,866.7	
3									
4									
5	ADD:	0							
6									
7									
8	DEDUCT:	0							
9									
10									
11	Body Section (Complete)	276.85	68.87	19,067.3	100.42	27,800.1	100.66	27,866.7	
12									
13									
14									
15									
16									
17									
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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-046		REPORT NO.		OPR-2074	
COMPONENT		SKIRT		LOT NO.				DATE		3/25/63	
MODEL NO.		15-133		DRAWING NO.		25-36080-1		PREPARED		T. VOGEL	
SERIAL NO.		0000205		U.O. MISSILE		681		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT		X AXIS		Y AXIS		Z AXIS	
						ARM		MOMENT		ARM	
1	25-36080-1	Body Section (As Weighed)		275.65		68.77	18,957.5	100.38	27,669.2	100.61	27,732.2
2											
3											
4											
5		ADD:		0							
6											
7											
8		DEDUCT:		0							
9											
10											
11	25-36080-1	Body Section (Complete)		275.65		68.77	18,957.5	100.38	27,669.2	100.61	27,732.2
12											
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15											
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR	BOEING	CONTRACT NO.	AFOL(694)-046	REPORT NO.	OPR-2073
COMPONENT	SKIRT	LOT NO.		DATE	3/18/63
MODEL NO.	WS-133	DRAWING NO.	25-36080-1	PREPARED	H. CHRISTIANSEN
SERIAL NO.	0000211	U.O. MISSILE	679	APPROVED	G. ROBERTS

EQUIPMENT CHANGE RECORD			WEIGHT AND BALANCE							
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS			
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT		
1										
2	25-36080-1	Body Section (As Weighed)	277.75	68.72	19,086.2	100.53	27,922.7	100.55	27,927.6	
3										
4										
5		ADD:	0							
6										
7										
8		DEDUCT:	0							
9										
10										
11	25-36080-1	Body Section (Complete)	277.75	68.72	19,086.2	100.53	27,922.7	100.55	27,927.6	
12										
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WEIGHT AND BALANCE CHANGE RECORD

ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-016		REPORT NO.		OPR-2075	
COMPONENT		SLT		LOT NO.				DATE		3/25/63	
MODEL NO.		WS-133		DRAWING NO.		25-36080-1		PREPARED		T. VOGEL	
SERIAL NO.		0000212		U.O. MISSILE		683		APPROVED		G. ROBERTS	

EQUIPMENT CHANGE RECORD		WEIGHT AND BALANCE						
PART NO.	DESCRIPTION OF EQUIPMENT	WEIGHT	X AXIS		Y AXIS		Z AXIS	
			ARM	MOMENT	ARM	MOMENT	ARM	MOMENT
1								
2	Body Section (As Weighed)	276.20	68.75	18,990.0	100.37	27,722.4	100.65	27,799.9
3								
4								
5	ADD:	0						
6								
7								
8	DEDUCT:	0						
9								
10								
11	Body Section (Complete)	276.20	68.75	18,990.0	100.37	27,722.4	100.65	27,799.9
12								
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15								
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VEHICLE AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-016		REPORT NO.		OPR-2077	
COMPONENT		SKIRT		LOT NO.				DATE		3/25/63	
MODEL NO.		MS-133		DRAWING NO.		25-36080-1		PREPARED		T. VOGEL	
SERIAL NO.		0000231		U.O. MISSILE		687		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT		X AXIS		Y AXIS		Z AXIS	
						ARM		MOMENT		ARM	
1	25-36080-1	Body Section (As Weighed)		273.15		68.65	18,751.7	100.55	27,466.4	100.51	27,453.5
2											
3											
4											
5		ADD:		0							
6											
7											
8		DEDUCT:		0							
9											
10											
11	25-36080-1	Body Section (Complete)		273.15		68.65	18,751.7	100.55	27,466.4	100.51	27,453.5
12											
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BOEING

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WEIGHT AND BALANCE CHANGE RECORD											
ASSOCIATE CONTRACTOR		BOEING		CONTRACT NO.		AF04(694)-0-6		REPORT NO.		OPR-2071	
COMPONENT		SKIRT		LOT NO.				DATE		4/2/63	
MODEL NO.		WS-133		DRAWING NO.		25-36080-1		PREPARED		H. CHRISTIANSEN	
SERIAL NO.		0000919		U.O. MISSILE		GEM-020		APPROVED		G. ROBERTS	
EQUIPMENT CHANGE RECORD				WEIGHT AND BALANCE							
PART NO.		DESCRIPTION OF EQUIPMENT		WEIGHT	X AXIS		Y AXIS		Z AXIS		
					ARM	MOMENT	ARM	MOMENT	ARM	MOMENT	
1	25-36080-1	Body Section (As Weighed)		272.90	68.77	18,766.7	100.48	27,421.4	100.61	27,455.6	
2		ADD:		0							
3		DEDUCT:		0							
4											
5											
6											
7											
8											
9											
10											
11	25-36080-1	Body Section (Complete)		272.90	68.77	18,766.7	100.48	27,421.4	100.61	27,455.6	
12											
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BOEING

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BASE HEAT DEFLECTORS

Serial No.	25-37379-1	25-36378-1	25-36377-1
0000199	5.81 lb.	15.45 lb.	25.09
0000200	5.94	15.63	25.04
0000201	5.82	15.49	25.11
0000202	5.98	15.38	25.65
0000203	5.93	15.63	25.16
0000204	5.93	15.39	24.84
0000205	5.98	15.68	25.14
0000206	5.86	15.71	25.26
0000211	5.93	15.27	25.06
0000212	5.98	15.75	25.85
0000231	5.94	15.58	25.45
0000917	--	15.42	25.07
0000918	5.89	15.54	24.99
0000919	5.89	--	--