REPORT NO. AP60-1046 VOLUME I



GROUND OPERATIONAL EQUIPMENT LIST SERIES E AND F

WE ARE NOW

GENERAL DYNAMICS ASTRONAUTICS



CONVAIR (ASTRONAUTICS) DIVISION GENERAL DYNAMICS CORPORATION



VOLUME I

REPORT NO. AP60-1046

GROUND OPERATIONAL EQUIPMENT LIST SERIES E AND F

THIS REPORT SUPERSEDES REPORTS:

AP60-0551 AZM-27-229 AZM-27-246 AP60-0553 AP60-0554

5 JANUARY 1961

CONTRACT NOS. AF04(647)-370 AF04(647)-453 AF04(647)-346 AF04(647)-605







AP60-1046

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Issued 5 January 1961 Revised 22 February 1961 Revised 22 March 1961 Revised 22 April 1961 No Revision 22 May 1961 No Revision 22 July 1961 No Revision 22 July 1961 No Revision 22 August 1961 No Revision 22 October 1961 No Revision 22 November 1961 Revised 22 December 1961

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

CONVAIR-ASTRONAUTICS

AP60-1046 22 March 1961

INTRODUCTION

INTRODUCTION TO USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

This Ground Operational Equipment List is prepared in accordance with WDT Exhibit 57-1 dated 16 September 1957, as revised 1 December 1959, as modified by CCN 52 to Contract No. AF 04(647)-346 and CCN 13 to Contract No. AF 04(647)-605, and as implemented by CCN 51 to Contract No. AF 04(647)-370 and CCN 26 to Contract No. AF 04(647)-453.

This list includes Figure-1's for ground operational equipment (GOE) recommended for Convair-Astronautics development, commercial, and government furnished equipment.

In accordance with AMC BMC letter LBTCP dated 17 December 1959, Weapon System Equipment Component List No. 252 (SM-65) should be referred to for information concerning common hand tools.

By Air Force direction in the applicable CCN's:

- Part or specification number listed in column 3 of the Figure-1 is the number proposed for original provisioning and does not necessarily reflect the part number of the article actually delivered or the required configuration of that article.
- Recommended quantities only are listed in column 7 of the Figure-1. Provisioned quantities are not published in this list.
- Figure-1's will not be updated for any reason except change of function (new usage), deletion, or supersession.
- Reference should be made to the current issue of AFBMD Exhibit 60-36 for configuration or part number changes, and for provisioning information.

Reference should be made to the latest revision of Convair-Astronautics Report No. AP60-0742 for current Federal nomenclatures and type numbers. Entries under column 9 on the Figure-1 are only area-estimated prices which cannot be considered as firm.

By CCN direction, item numbers are assigned according to the following system:

- One Figure-1 item identification number is assigned for all provisioning of a given item.
- For items having the same basic part number, the item identification number is the same for both Figure-1 (GOE) and Figure-A (GSE) items.
- 3) Item identification numbers of all WS107A-1 Series E and Series F Figure-1's, when these items are common to Series D, are the same as the corresponding Series D item identification number.
- Item identification numbers, of all items required for WS107A-1 Series E and/or Series F only, begin with the number 5000.

By Air Force Direction, the word "Commercial" is inserted in column 13 to designate "common and standard" items previously designated as CFE.

Maintenance and support equipment is listed on Figure-A in USAF Weapon System 107A-1 Ground Support Equipment List, Series E and F Report No. AP60-1045. Items having both a support and a launch function are listed in both Report No. AP60-1045 and AP60-1046.

Contract AF 04(647)-680 has superseded Contract No. AF 04(647)-370 for the OSTF No. 1 Program. Since revision of Figure-1 entries in this GOE List is restricted specifically to additions, deletions, and changes in function; page frames in the body of this report will continue to reflect OSTF No. 1 listings under Contract No. AF 04(647)-370.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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 Items 1 thru 999

Part II

Series E and F Items

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Items 5000 and on

I-1 and I-2 .

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FIGURE-1 CROSS REFERENCE LIST, ITEM IDENTIFICATION NUMBER

		SEI	UES D, E, AND F		
Old Item No.	New Item No.	Old Item No.	New Item No.	Old Item No.	New Item No.
1101	5000	1122	5013	1212	5029
1102	30. 2	1123	5014	1214	5030
1103	5001	1124	5015	1215	5031
1105	6.1	1125	5016	1219	5032
1106	5002	1126	5017	1221	5033
1107	26	1127	5018	1222	5098
1109	5003	1128	5019	1227	5034
1110	5004	1129	5020	1228	5035
1111	5005	1130	5021	1231	5100
1112	5006	1131	5022	. 1232	5036
1113	5007	1132	5023	1433	5001
1114	5008	1134	5025	1435	5099
1115	5009	1200	5026	1534	30.2
1116	5079	1201	5027	1535	5028
1117	5010	1207	5095	2000	5037
1120	5011	1210	5028	2379	5037
1121	5012				

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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LIST OF DELETED AND SUPERSEDED ITEMS

ITEM	PUBLISHED	SPECIFICATION	NOMENCLATURE		REASON FOR (D) DELETION OR (S) SUPERSESSION
SEQUENCE	REVISION	NUMBER		-	
1100	B-Jan '60	27-49501-3	Service Line and Equipment Instl, Launcher	(D)	This item is incorporated with item 5000.
1104	C-Mar '60	27-24507-1	Secondary Shutdown Kit Instl, Booster Engine, MA-3	(S)	This item is superseded by item 5011.
1108	A-Sep '59	27-49550-1	Shock Mounts, Missile	(D)	This item is incorporated with items 5000 and 5002.
1118	A-May '60	27-99067-3	System Assy, Drive, Launcher Platform	(S)	This item is broken out into and superseded by items 5020, 5021, 5022 and 5023 per Provisioning Con- ference action 19 February 1960.
1119	A-May '60	27-99071-3	System Assy, Suspension, Crib	(8)	This item is broken out into and superseded by items 5018 and 5019 per Provisioning Conference action 19 February 1960.
1133	New-Jul '60	27-96150-1	Deflector, Turbine Exhaust	(D)	This item is deleted as an end item of GOE since the item was fabricated in place as a part of the "Installation and Checkout" task.
1202	A-Feb '60	27-06183-1	Relay Logic Unit No. 2	(S)	This item is incorporated with item 5027.
1203	A-Feb '60	27-06185-1	Signal Responder	(S)	This item is incorporated with item 5027.
1204	New-Sep '60	27-68645-3	Cable Kit, Umbilical	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of the "Installation and Checkout" task.
1205	New-Sep '60	27-06192-1	Cable Kit, Umbilical Telemetering, IRSS, and Impact Prediction	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of the "In- stallation and Checkout" task.
1206	A-Feb '60	27-06214-3	Junction Box, Umbilical, Left	(S)	This item is incorporated with item 5033.
1208	New-Sep '60	27-68644-1	Cable Kit, Interconnecting, IRSS	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

PART OR

LAST

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		9 A	LIST OF DELETED AND SUPER	RSEDED ITE	CMS (cont)
ITEM SEQUENCE	LAST PUBLISHED REVISION	PART OR SPECIFICATION NUMBER	NOMENCLATURE		REASON FOR (D) DELETION OR (S) SUPERSESSION
1209	New-Sep '60	27-68688-5	Cable Kit, Interconnecting, Launch and Service Building	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.
1211	A-Feb '60	27-06189-1	Distribution Set, AC Power	(S)	This item is superseded by items 5032 and 5037.
1213	C-Aug '60	27-68913-803	Cable Kit, Interconnecting Launch and Service Building	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.
1216	New-Sep '60	ARMA 2-00026-800	Countdown Group	(D)	Incorporation of Associate Contractor end items as a part of CV-A GOE list has been discontinued per AF letter LBWAPG/Mr. Simon/306 dated 29 November, 1960.
1217	New-Sep '60	ARMA 2-00026-802	Alignment Group, Sensing Platform	(D)	Incorporation of Associate Contractor end items as a part of CV-A GOE list has been discontinued per AF letter LBWAPG/Mr. Simon/306 dated 29 November 1960.
1218	A-Apr '60	ARMA 2-00034-258	Amplifier Assy	(D)	The requirement for missile checkout at the MAB no longer exists.
1220	New-Sep '60	27-68711-801	Cable Kit Miscellaneous	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.
1223	New-Sep '60	General Electric 00835	Monitoring Set, Prelaunch, Re-entry Vehicle	(D)	Incorporation of Associate Contractor end items as a part of CV-A GOE list has been discontinued per AF letter LBWAPG/Mr. Simon/306 dated 29 November 1960.
1224	C-Sep '60	North American Aviation Inc. G1001	Control-Monitor Set	(D)	Incorporation of Associate Contractor end items as a part of CV-A GOE list has been discontinued per AF letter LBWAPG/Mr. Simon/306 dated 29 November 1960.
1225	A-Jun '60	27-53800-1	Cable Kit, TLM Trailer, Launch and Service Building, OSTF-X	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.
1226	New-Sep '60	27-99066-3	System Assy, Launcher Platform to Crib Cable Loop	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of "Installation and Checkout" task.

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USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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	100 and the fi		LIST OF DELETED AND SUPERS	EDED ITE	MS (cont)
ITEM SEQUENCE	LAST PUBLISHED REVISION	PART OR SPECIFICATION NUMBER	NOMENCLATURE		REASON FOR (D) DELETION OR (S) SUPERSESSION
1229	New-Sep '60	ARMA 2-00042-751	Count-lown Group	(D)	Incorporation of Associate Contractor end items as a part of CV-A GOE list has been discontinued per AF letter LBWAPG/Mr. Simon/306 dated 29 November 1960.
1230	New-Sep '60	27-68713-1	Cable Kit. Missile Umbilical and Launcher." Launch Control Series E Silo	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of the "Installation and Checkout" task.
1233	New -Sep '60	27-65779-1	Cable Kit, Launch Control Center Crib. Inter- connecting Launch Control Series E Silo	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of the "Installation and Checkout" task.
1234	New-Sep '60	27-68714-1	Cable Kit. Crib Launch Control. Series E Silo	(D)	This item is deleted as an end item of GOE per AF direction at Provisioning Conference 24 October thru 4 November 1960. This item now is part of the "Installation and Checkout" task.
1235	None	27-68871-1	Auxiliary Logic and Control Group	(D)	No static firing requirement at OSTF No. 2. Deleted prior to publication.
5015	A-Feb ³ 61	27-27729-1	Charge Unit, Liquid Oxygen	(D)	The requirement for this item no longer exists, due to revisions in launch sequence programming,
5025	A-Feb '51	Hahn & Clay Machine and Botter Works 1065	Task, High Pressure Gas, Slug Fill	(D)	The requirement for this item no longer exists, due to revisions in launch sequence programming.
.5134	None	27-27009-1	Drain Control Unit Liquid Oxygen Fransfer Line	(S)	This item is superseded by item 5133.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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CONVAIR-ASTRONAUTICS

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								AP60-1 22 February	
				LIST OF EF	FECTIVE ITE	MS			
Item Sequence	Old Item Sequence	Date and/or Revision	Nomenclature	Fig. 1 Page Nos.	Item Sequence	Old Item Sequence	Date and/or Revision	Nomenclature	Fig. 1 Page Nos.
		PAR	RT I				P	ART II (cont)	
6.1	1105	New-Jan '61	Erection Mechanism, Boom	1	5017	1126	New-Jan '61	System Assembly, Gaseous Oxygen	
26	1107	New-Jan '61	Control Unit, Pressurization	1				Vent Mechamism	1
30.2	1102	New-Jan '61	Pumping Unit, Hydraulic	1	5018	1127	New-Jan '61	System Assembly, Suspension, Crib	1 /
		PAR	тп		5019	1128	New-Jan '61	System Assembly, Lock and Damper	1
5000	1101	New-Jan '61	Service Lines and Equipment		5020	1129	New-Jan '61	System Assembly, Counterweight	1
3000			Instl, Launcher	1	5021	1130	New-Jan '61	System Assembly, Guide Rails, Counterweight	1
5001	1103	New-Jan '61	Control Unit, Nitrogen	1	5022	1131	New-Jan '61	System Assembly, Drive, Launcher	
5002	1106	New-Jan '61	Boom, Erector, Missile	1			1997 - 1997 -	Platform	1
5003	1109	New-Jan '61	Sight Tube Instl, Horizontal	1	5023	1132	New-Jan '61	System Assembly, Cable and Guide,	
5004	1110	New-Jan '61	Anti-Fire Installation	1				Launcher Platform	1
5005	1111	New-Jan '61	Pod Air Conditioning Unit, Silo	1 1	5025	1134	A-Feb '61 (De	el) Tank, High Pressure Gas, Slug Fill	1
5006	1112	New-Jan '61	Charge Unit, Helium, Silo Lift	1	5026	1200	New-Jan '61	Console, Launch Control, Unitary Concept	1
5007	1113	New-Jan '61	Distribution Unit, Pneumatic	1	5027	1201	New-Jan '61	Assembly, Sequencer and Responder Group, EOC	1
5008	1114	New-Jan '61	Pumping Unit, Hydraulic	1	5028	1210	New-Jan '61	Power Supply and Distribution Unit,	
5009	1115	New-Jan '61	System Assembly, Hydraulic,- Missile Lifting	1	0020	1010	iten oun ou	Stationary, GSE	1
5010	1117	New-Jan '61	System Assembly, Launcher Platform	1	5029	1212	New-Jan '61	Battery, Emergency, Missile Ground Power, Stationary	1
5011	1120	New-Jan '61	Captive Firing Kit, Propulsion, Series E	1	5030	1214	New-Jan '61	Console, Assembly, Operational and Checkout, Missile Destruct System	1
5012	1121	New-Jan '61	Launcher and Utilities Assembly, Silo	1	5031	1215	New-Jan '61	Cabinet, Combustion Stability Monitor	1
5013	1122	New-Jan '61	System Assembly, Door Closure	1	5032	1219	New-Jan '61	Relay Box, AC Power Distribution, GSE	1
5014	1123	New-Jan '61	System Assembly Locking, Launcher		5033	1221	New-Jan '61	Junction Box Group, Launch and Test	1
3014			Platform	1	5034	1227	New-Jan '61	Console, Launcher Control, Silo Concept	1
5015	1124	A-Feb '61 (Del)	Charge Unit. Liquid Oxygen	1	5035	1228	New-Jan '61	Control Monitor Group, Missile Launch	1
5016	1125	New-Jan '61	System Assembly, Collimator	1	£5			5 C S S S S S S S S S S S S S S S S S S	

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USAF WEAPON SYSTEM 107A-1 OPERATIONAL GROUND EQUIPMENT LIST, SERIES E AND F

22 December 1961 LIST OF EFFECTIVE ITEMS (cont) Old Date Fig. 1 Old Date Fig. 1 and/or Page Page Item and/or Item Item Item Nos. Sequence Sequence Revision Nomenclature Nos. Sequence Revision Nomenclature Sequence PART II (cont) System Assembly, Electrical Missile 1232 New-Jan '61 5036 Lifting 1 5037 2000 New-Jan '61 Motor-Generator Skid Mounted, Type MD-2 1, -2 Control Unit Pressurization, Silo 5079 1116 New-Jan '61 1, -2 1 New-Jan '61 Junction Box, Umbilical, Right 5095 1207 Auxiliary Logic and Control Group/ New-Jan '61 5098 1222 Launch Control Equipment 1, -2 Strut Assembly, Re-Entry Vehicle 1 5099 1435 New-Jan '61 5100 1231 Junction Box, Umbilical, Launcher New-Jan '61 1 Platform

1, -2

5171 None New-Dec'61 Cable, Autopilot and Actuator Checkout 1

Silo

New-Apr '61

5133

None

Topping Control Unit, Liquid Oxygen,

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USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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AP60-1046

PART I

SERIES E AND F ITEMS COMMON TO SERIES D

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			JSAF WEAP	ON SYSTE	A 107A-1 GROU	IND OP	ERATION	AL EQ	UIPMEN	NT LIST,	SERIES E	ND F					DATE	5 Januar	v 1961		LIS	TNU	MBER:	AP60-1	046		
	5M-65		CONVA	IR-ASTRONAU	nics (CONVAI	R IS A DI	ISION	OF GE	NERAL D	YNAMICS	CORPOR	ATION	_	SA	N DIEGO, C	AL C	ONTRACT NO		See Co	lumn 7	7)	REV.				
(1)	(2)		(3)		(4)	_	(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)					(7				(8)
ITEM SEQUENCE	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL NUMBER	AFG. PART OR DWG. NUMBER	NOMENCLAT	URE	DESCRIPTION OF PROBLEM AREA	111444111	UNIT PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS. & REMARKS	EST PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA GENERAL	DEPOT		SUB TOTAL	TOTAL ON ORDER
6.1			97	05002 1	ERECTION				Cat				CFE					2		•	co	NTRAC	T NO. A	F 04(64	7}-370	-	1
0.1					MECHANISI				25,00	0			CFE						OSTF	1						1	1
		Spec Con	•					-	20,00	•				4		11 mo	L		No. 1								
		1999 - 1960	EID-27-											ŀ								NTRAC	T NO. A	F 04(64	7}-346		1
																	2/19/60	5/24/60	576-C	1						1	
(4)	NOMENCLATU	RE: (PNS)	Erection	Mechan	sm, fo	rward	d of the	drive	sproc	kets.	A roller	r drive	chair						567	9		-	_	-		9	1 /
Boo	m.				er	ncircle	es each	drive	-and-	idler-	sprocket	(one o	n ezc	h						-		-+		+		-	1 /
						ide of	the encl	osure) com	binati	on. The	ends	of the						548	9		-				9	1/
	ically, the recti-										ks near t			- 1						-		-		-		+-	1/
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	ected to the ere					ng, w	hich spa	in the	enclo	sure.				- [9						9	11
	t of the boom-la									~									549							1	Ĩ
	e electrically-p ides the forces,				0						t of a ler d roller-										co	NTRAC	T NO. A	F 04(64	7)-453		<u> </u>
	ed to pivot the b										s roll or								OSTF			_	_				
	ithout a missile			and the second second second second							osure.			-	101-1103				No. 2	L				1		1	L
	between horizon										orizonta										co	NTRAC	T NO. A	F 04(64	7)-605		
	ted position, an				di	rectio	on. Two	conn	ecting	g-rod-	type ere es of the	ction s	truts						576-D								1
	mechanism is d oximately 75 hp	and the second			r of ju	st inb	oard of	the di	rive-c	hain li	inks. Th approxim	ne othe	r end						576-E							+	
	A "fail-safe" h			0.0							rd of the	0.000							550					-			
	n the motor and				gear bo						her link.			H					-	-			-	-		+	
box,	and brake are a	mounted no	ear the ce	enterline	of er	ection	n struts	are d	esign	ed to c	arry eith	her co	m-			3			551			-+		-		+	
	nissile enclosur 1700. A drive s	041 042 144									drive cha against s			Ì					577			1	+				
	box toward both e-chain sprocke				1 37 July 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						mbinatio ts from			t					578			\pm				\pm	
of th	e drive shaft ap tile centerline.	proximate	ly 11.5 fe	eet from	the co	mpre	ssion, o	r the	rever	80, as	the cen	ter of	grav-						579			_					
	L L. L. L			and and	1.9		e boom-		110-18	ancuel	comon	aston 1	A0008						000000					1			

By Air Force direction:

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Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.

over center.

attached to each sidewall, are located at approxi-

mately the same elevation, at missile station 1165,

This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.



Asterisk indicates common usage with diadesent complex and/or area.

Use Current List of Effective Pages as guide for inserting Revision Pages.

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ATC

ITEM NUMBER 6. 1

Page 1 of 2

 USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F
 DATE: 5 January 1961
 LIST NUMBER: AP60-1046

 SM-65
 CONVAIR ASTRONAUTICS
 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION
 SAN DIEGO, CAL.
 CONTRACT NO.
 LIST NUMBER: AP60-1046

 The crection mechanism may be controlled or actuated from either the launch control center or the launcher area.
 3) Which will control positively the erection or lowering of a missile.
 SAN DIEGO, CAL.
 CONTRACT NO.
 (See Column 7)
 REV.:

The mechanism is de-energized during standby operating conditions except when necessary to energize the mechanism for occasional missile erection for crew training or checkout purposes. During countdown, the missileboom-launcher combination is erected, the launcher is latched down, the boom-launcher-locks are released, the boom is disconnected from the missile and rotated approximately an additional 10 degrees to launch position. After launch the boom is again locked to the launcher and the boom-launcher combination is lowered to the horizontal.

(5) PROBLEM AREA: During standby, a missile is supported in horizontal readiness condition by an erection boom-launcher combination. The missile and erection boom have a combined weight of approximately 14 tons. During countdown, a missile must be erected within a period of 90 seconds maximum. It is required that the equipment used to erect the missile be capable of lowering an erected missile to the horizontal position. The equipment used in erecting or lowering a missile must also be capable of stopping at any point in the erection or lowering sequence, holding the missile at that point, and then resuming operation smoothly in either sequence as desired.

Equipment is required:

- Which is capable of erecting or lowering the missile-boom-launcher combination in 90 seconds or less when controlled remotely.
- 2) Which will ensure smooth, rapid, shock-free erection or lowering of a missile.

 Which will move the erection boom clear of the missile during launching.

(18) REMARKS: This item is similar to Series D configuration. item 6.1 in Report No. ZM-7-357.

> Use Current List of Effective Pages as guide for inserting Revision Pages.

ITEM NUMBER: 6.1

					107A-1 GROUND	_					a special states	500030					DATE	5 Januar	y 196	1	LI	ST NU	JMBE	R: A	P60-1	046			
(1)	SM-05			LIE-ASTRONAUT				-	OF GEN	ERAL D	YNAMICS	CORPORA	TION		SAP	DIEGO, C		ONTRACT NO		See Co	lumn	7)		EV.:					
	(2)		(3)		(4)		(5) (6	4	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)						(7)					(8)
ITEM QUENCE	GSE SPEC. PARA. NO.	CLASS	SERIAL NUMBER	MFO. PART OR DWG. NUMBER	NOMENCLATUR	DECCENTION	OF PROBLEM AREA		UNIT		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS. & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT ICC'S	AT GUID. STAS	AT SMA	GENERAL	DEPOT		-	SUB TOTAL	TOTAL ON ORDER
26		Minne	apolis-Ho	nevwell	CONTROL UN	IT			Est			•	CF									ONTRA	CT NO	D. AF	04(64	7)-370		-	
		GM 43			PRESSURIZA				120,00	0			Cr.	1					OSTF	1							Т	1	
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 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

Use Current List of Effective Pages as guide for inserting Revision Pages.

Page 1 of 2

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F DATE: 5 January 1961 LIST NUMBER: AP60-1046 SM-65 CONVAIR-ASTRONAUTICS CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, CAL. CONTRACT NO. (See Column 7) REV.:

A pressure differential must be maintained across the missile intermediate bulkhead to prevent collapse of this bulkhead. This pressure differential must be maintained with a minimum value of 2.5 psi and increased during high-rate propellant transfer. During this highrate propellant transfer, helium must flow at rates of from zero to 6.0 pounds per minute through four pressurization phases as follows:

Phase	Condition	Fuel Minimum	Liquid Oxygen Minimum
1	"Stand-By" Pressure	9.5 psig	5.2 psig
2F	"Fuel Loading" Pressure	24.5 psig	1.8 psig
2L	"Liquid Oxygen Loading"		
	Pressure	57.0 psig	1.8 psig
3	"Flight" Pressure	57.5 psig	24.7 psig

It is desirable that pressurization and propellant loading operations be remotely controlled for safety reasons. However, there are certain checks and tests (functional and leak tests are examples) which can be best done with local control of helium flow and pressures.

The helium required for tank pressurization during missile flight is stored in bottles at 3000 psig. Since these bottles which are attached to the missile are not of sufficient size to contain the required helium at ambient temperatures, the helium is chilled and contracted to increase the amount which can be stored in the bottles without increasing their weight. This is done by introducing liquid nitrogen into the shrouds surrounding the helium bottles.

Since the problem of maintaining missile pressurization is critical, particularly during high-rate propellant transfer, it is desirable that equipment be provided with emergency pressurization. Equipment is required which can be used to:

- Control, regulate and route, semiautomatically and/or manually the flight pressurization gases from the ground facilities into the fuel and liquid oxygen tanks of a missile.
- Regulate pressures within individual tanks and differential pressure between these tanks from missile post-erection standby condition through high-rate propellant transfer to pressurizationcomplete condition.
- Provide automatic pressure relief for the missile propellant tanks and provide monitor signals for remote indication and control of tank pressurization.
- Control the transfer of helium from storage to missile storage bottles.
- Backup systems to supplement the primary system in case of possible breakdown of the primary system.

(18) REMARKS: This item is functionally similar to item 26 in Report No. ZM-7-357.

This item is similar in function to GOE item 5079 used at Series F sites.

> Use Current List of Effective Pages as guide for inserting Revision Pages.

ITEM NUMBER: 26

		U	SAF WEAP	ON SYSTEM	107A-1 GR			-		1000	21312211	92039741		1			DATE	5 Januar	y 1961		LIS		MBEI	R: AP	60-10	946		
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By Air Force direction:

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Asterisk indicates common usage with adjacent complex and/or area.

Approved Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.

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Page 1 of 2

	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1	961		MBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	(See Colu	umn 7)	REV.:

The unit is designed to maintain the desired discharge pressures (2000 psig, and 3000 psig), temperatures, and flow rates automatically. Each unit fluid tank has a capacity of approximately 30 gallons. Each system has a cooler and heater which maintain the temperature of the hydraulic fluid between 35 degrees F and 100 degrees F throughout the complete range of environmental operating conditions.

A common hydraulic-fluid control panel is mounted on the front of the hydraulic pumping unit. This panel contains all of the valves, gages, sight glasses, indicators, and switches required for local manual operation of the system. Provisions for remote control of each system from the launch operations building are included where required.

A nitrogen gas control system is provided for unitcomponent pressurization (fluid reservoirs and oil evacuation chambers).

The following utilities are required for operation of this equipment:

- 150 kva of 440-volt, 60-cycle, 3-phase ac power
- 2) 0.7 kw of 28-volt dc power
- 50 gpm of fresh cooling water at 60 psig and temperatures between 40 degrees F and 70 degrees F

(5) PROBLEM AREA: When the missile arrives at the SMA from the factory, its hydraulic systems must be leak checked, filled, and bled to ensure that they are ready for checkout. Checkouts to assure the readiness of the hydraulic systems for use are required at the SMA and periodically, at the launcher. These checkouts require a supply of automatically regulated hydraulic power to the two systems at temperatures ranging from 35 degrees F to 100 degrees F and at the following flow rates:

Booster Hydraulic System - 2 gpm to 23 gpm at 3000 psi

Sustainer/Vernier Hydraulic System - 2 gpm to 12 gpm at 3000 psi

A separate supply of hydraulic power is required for each missile hydraulic system. This is required because, if the supply was manifolded, the actuation of one missile hydraulic system would result in depletion of hydraulic power in the supply lines of the inactive system. Such depletion could cause interaction between the thrust chambers and result in possible damage to these chambers.

The missile internal hydraulic power sources are inoperative until just before engine firing during countdown. However, the countdown procedure calls for activation of both hydraulic systems from an external source prior to this time. Normally, supply pressure during countdown is 2000 psig. Approximately one minute prior to launch, 65 cubic inches of fluid volume are removed from each missile hydraulic system. Safety demands that hydraulic power to the missile be controlled remotely during static firing or missile launching. Hydraulic power during most other checkouts requires local control.

Equipment is required which can be used for:

 Filling and bleeding booster and sustainer/ vernier hydraulic systems.

- Supplying automatically regulated hydraulic power individually to each separate missile hydraulic system during checkout or countdown. Pressures required are 200 psig and 3000 psig with remote control of 2000 psig supply pressures.
- Remote and local control of the hydraulic power supply and remote control as specified in (2) above.
- Adequate fluid and contamination control including filtration per Convair Spec No. 0-75014.

(18) REMARKS: This item is similar to item 30.2 in Report No. ZM-7-357.

This item is the same as GSE item 30.2 in Report No. AP60-1045.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F

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PART II

SERIES E AND F ITEMS

AP60-1046

CONVAIR-ASTRONAUTICS

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By Air Force direction:

SEQUENCE

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1) Part or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7.

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Approved Quantity Asterisk indicates common usage with adjacent complex and/or area.

Recommended Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.

ITEM NUMBER 5000

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Page 1 of 2

This page will not be updated to show provisioning oction, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F LIST NUMBER: AP60-1046 DATE 5 January 1961 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION (See Column 7) CONTRACT NO. REV. SAN DIEGO, CAL SM-65 CONVAIR-ASTRONAUTICS Provide a stable platform which will support the ends of the pivot assembly of the launcher 3) at missile station 1288. The lower shock mount and hold a missile erect during the missile assemblies are mounted on the floor of the loading operation. This must be accomplished without overloading the missile structure. facility. The two upper shock-mount assemblies are identical and are mounted on the walls of the facility. The upper shock-mounts are Release a missile and permit unobstructed, 4) detached from the launcher when a missile is unrestricted vertical takeoff of the missile. rotated to vertical position. This assembly, in conjunction with the shock mounts for the 5) Support an erection-boom assembly in conerection boom, reduce the probability of damjunction with the erection mechanism. age to the missile, launcher, boom, and erection mechanism as a result of shock effects 6) Re-engage the missile in the event a launch from nuclear blast. is not completed, restrain the missile during propellant unloading, and return the missile The launcher is rotated to permit mating with a horito horizontal storage position. zontal missile. At the time of mating, the Quadrant I and Quadrant II hooks are attached to the missile and 7) Provide control of the utilities for transremain attached until completion of the erection and mitting electrical power and various fluids loading cycles. Quadrant III and Quadrant IV hooks from the facility connections in the launch pad area to the missile system. are attached when the missile reaches the vertical, and remain attached until completion of the loading Connect utilities to a missile during the cycle. 8) mating operation and rotate with these (5) PROBLEM AREA: A missile must be maintained utilities and the launcher subassembly in a condition of horizontal readiness at the launcher during the erection operation. installation until missile erection by an overhead erection boom. Following erection, a missile must be Disconnect utilities and fluid lines from the 9) supported in a vertical position during propellant missile, prior to or during launch, without loading operations and until the missile is ready for hindering the launch. flight. 10) Provide shock protection for a missile and launch site equipment during standby con-Equipment is required at the launcher installation which will: dition. 1) Mate manually with and provide horizontal (18) REMARKS: This item is similar in function to support for missile. GOE item 5012 used at Series F sites. 2) Rotate with a missile to the vertical position.

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		USAF WEAPON STSTE	M 107A-1 GROUND OF	PERATI	ONAL	EQUIPME	NT LIST,	SERIES E	AND F					DATE	5 Januar	y 1961		LIS	TNUN	BER:	AP60-	1046		
	SM-65	CONVAIR-ASTRONAU	TICS CONVA	IR IS A	DIVISI	ON OF GE	NERAL C	YNAMICS	CORPOR	ATION		SA	N DIEGO, C	AL. C	CONTRACT NO). (See Co	lumn)	7)	REV.				
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		when supplied with high pres									- [706								1
		m the facility storage cylind	성장 것으로 영양한 것을 알았다.								-					708]
		ites the gas to the missile and systems. All regulated ga														549	9		_	-	-		9	-
		the launch site, with the exc									H					198658					1		1	-
	날카는 것 같은 아파가 잘 잘 하는 것 같이	sed for the transfer of fuel,	Name and American								H					~ * * *	1		NTRACT	NO. A	F 04(64	7)-453	11	-
	d through this		unit. The										7 mo			OSTF No. 2		-			-		+	1
			joint which								T				L			co	NTRACI	NO. A	F 04(64	7)-605	_	
		ximately 1500 pounds. It is	en- connectin								T					576-D	1	T		T	T	ΓT	1	T T
		ing which measures approxi-									L		7 mo	4/14/60		378-0								1 \
		feet wide, and 5 feet high. A nel, inclined at a sufficient			lets s	upply ni	trogen	gas for	the fol	low-						576-E	1	-	_	_	1		1	11
	승규는 전문을 알려서 지금을 생긴 다른 것이	venient observation and oper	ing functi	ons:							H				l				-	-	-		-	111
		ontains all of the gages, mar		1) 2	ero t	o 40 nei	g for n	ropulsio	n com	-00			8	1/22/60		550	12				-		12	11
	and regulator o	영상은 동안은 것 같은 것 같은 것 같은 것이 가지 않는 것 않는 것 같이 않는 것이 없다.	1997 B			akage to	-	ropuloio	i com	0	- 1			1/22/00			12			+-			12	+ V
	E.		Line			-		or hydrau	lic re	ser-						551	12	-	-	-	-	-	14	1.
Primar	ly, the unit is	manually operated. Gaseou	18	v	oir p	ressuriz	ation.				Г		19-11-11 (r.				12			+	-		12	1+
		lived at the unit; at inlet pre-		3) 2	50 ps	ig to 150	00 psig	for NAA	and v	er-						577					1			1 V
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	4000 psig; is filtered, regul	ated					arging an								578	12					1	12	
and the	distributed to	the following outlets:					on of t	he vernie	er sole	>	L			81 P		370								
1)	1000 peig to	engine service unit	Line		notor.											579	12	_	_		-		12	11
2)		hydraulic supply unit	Lane					g for boo or chargi			H						10	-	-+-	+-	-			4
-/		, dialane sappi, and						sphere							1	556	12	-	-+-	-	-		12	1
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Use Current List of Effective Pages as guide for inserting Revision Pages.

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	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIS	T, SERIES E AND F		DATE: 5 January	1961 LIST N	UMBER: AP60-1046	
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL D	NAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	(See Celumn 7)	REV.:	
ontrol, charging, testing,	secus nitrogen for use in the , and purging of various com- ed in the launcher area, is sylinders.		1				6 (27	
A pneumatic unit is requir nonitor, and distribute thi and ground components and	ed which can receive, regulat is gas to the various missile d systems as required.	e, tangan se						
18) REMARKS: This unit he nitrogen control unit an litems 25.1 and 26.0.2 in	t performs the functions of bo nd the nitrogen charge panel Report No. ZM-7-357).	<b>b</b>		N				
This item is the same as (	GSE item 5001 in Report							
No. AP60-1045.	-							
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Use Current List of Effective Pages as guide for inserting Revision Pages. ITEM NUMBER: 5001

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			USAF WEAF	UN STSIEA	A 107A-1 GROUND C									DATE	5 January	1961		LIS	1 NU/	ABER:	AP60	-1046		
	SM-65			IR-ASTRONAU		IR IS A DIVI	SION OF G	ENERAL D		ORPOR/			AN DIEGO, C		ONTRACT NO	. (	ee Co	lumn	7)	CEV	.:			
(1)	(2)		(3)		(4)	(5) (6)	(9)	(10)	(11)	(12)	(13) (	4) (18)	(16)	(17)	(15)	_	-				(7)			
ITEM QUENCE	GSE SPEC. PARA. NO.	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM AREA	UNIT		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	CODE SECURITY CLASS & REMARKS	EST PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S		AT SMA	GENERAL		SUB TOTAL	TOTALOW
5002		27-95008	8-1		BOOM,		Est	122		I	CFE	-	1		l			co	- G -	T NO.	AF 04(	647)-370		+
5002		Spec 27-			ERECTOR,		80,000				OFE		1	1	1	OSTF	1		1	T	T	TT	11	1
			nt Dwg 27-	09007-1	MISSILE					21 #			10 mo			No. 1								
		EID-27-	9108		FSC NOMENCLA													co	NTRAC	T NO.	AF 04(	647)-346		
					BOOM, MISSILE	ERECTION	N							- / /		576 C	1		1				1	1
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	OMENCLATU	E: (PNS)	Boom, E	rector,	is horiz	ontal is p	rovided b	y stop	pads which	ch res	t on					548	-					++		-
Missi	e.					ng pad sho																		
<b>m</b>						These st				each s	ide of					706							_	
cipal j	rector boom is	comprise	a of the fo	priowing p	frin- the bott	om of the	beam str	ucture.	8							549	9		_	-			9	)
cipar j					The nos	e clamp is	an elec	trically	and hude	multo				1000	L						1			-
1)	Boom struc	ture				i tong-type							1	T		~			NTRAC	T NO.	AF 04(	647)-453		-
2)	Nose clamp				forward	end of the	boom s	tructure	e. This	clamp	en-					OSTF No. 2		-	-	-	-	+		-
3)			ruts		circles	the missil	e re-ent	ry vehic	cle adapte	er sec	tion.							co	NTRAC	T NO.	AF 04(	647)-605		+
4)					The cla	mp provid	es the los	ad point	t which su	upport	s the		1			576-D				T	T	TT	1	1
5)	Shock Moun	t Assembl	les			end of a r										3/0.0								
The by	om is a tapere	d trainent	mo etmot	una of		ing missil										576-E		_	_	-	-		_	
	steel, and me					hich has a entered on														-	_	+	_	_
	The structure			• • • • • • • • • • • • • • • • • • •		lle station	465.50.	The cl	amp has	a 4 in	ch					550				-+-		+		-
12-1/2	feet wide at the	he launche	er attach p	oints to	vertical	and later	al self-al	igning	feature a	nd ma	v be							-	+	+		+++		-
	timately 4 feet			1 <b>.</b>	h swung f	orward the	ough an	arc of a	approxim	ately	70					551			-	+			-	-
	t. The depth				degrees	to preven	t interfer	rence d	uring mis	ssile t	rans-										-			
	imately 6-1/2					e clamp is				ateria	l to					577								
	et at the nose of nected to the la					the missil	e surface	e from	damage.							578								
	red to these p					char to h	oom etm	10 000	hudaaulta										_		_			_
	erection struts			-		ncher-to-b ng a lockin										579		_	-+	-		+		-
	boom by lifting	The second second				e launcher													-	-+		++		-
	boom structure				p- station	106. The										556						11		
port fo	or the forward	end of the	boom whe	en the boo		oom above							1				_		-	-	-		-	+-
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The page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Asterisk indicates common usage with adjacent complex and/or area.

 USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F
 DATE: 5 January 1961
 LIST NUMBER: AP60-1046

 SM-65
 CONVAIR-ASTRONAUTICS
 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION
 SAN DIEGO, CAL.
 CONTRACT NO.
 (See Column 7)
 REV.:

During erection, the struts are locked in retracted position from zero to 90 degrees of the erection cycle. When the boom and launcher reach 90 degrees, the launcher is locked in position; the struts are unlocked and extended approximately 24 inches which moves the boom an additional 10 degrees. The cycle is reversed when lowering the boom.

The hydraulic power unit operates the nose clamp, the launcher-to-boom struts, the boom pedestal shock mount assemblies, and the launcher support set. The unit includes an electric motor driven hydraulic pump and all the accessories required to supply a variable flow of hydraulic fluid up to 2 gpm at 3000 psig.

A missile stretch system consisting of two struts is stored on the boom. These struts are installed between the boom and the nose clamps in fittings which are provided. This stretch system is designed to provide 9000 pounds (plus or minus 1000 pounds) of stretch to a missile while it is on the launcher. These struts are equipped with a manually operated (hand pump) hydraulic system which is cross-connected to ensure that equal loads are applied to both struts.

Operation of the erector boom, except for the stretch system, is by remote control. All hydraulic components are equipped with solenoid operated valves and limit switches. The electric motor is powered by 440-volt, 60-cycle, 3-phase ac. All limit switches are powered by 110-volt, 60-cycle, 3-phase ac; all solenoids by 28volt dc.

A platform of expanded metal grating is positioned on the boom on either side of the top vernier engine of a horizontal missile. Two lightweight portable ladders provide access to these platforms.

The boom pedestal shock mounts are right and left hand mirror image assemblies. Each of the two mounts consists of a triangularly framed strut, a shock absorber, and a hydraulic actuator. The struts are bolted to the missile enclosure wall in the launch and service building. These struts extend inboard from the wall approximately 6 feet toward each side of the missile erection boom. The sides of the struts converge to an apex which is fastened to the boom.

The shock absorber is bolted to the top of the boom end of the strut. This shock absorber consists of honeycomb rubber sandwiched between metal plates. The top plate is bent upward 90 degrees at the outboard edge to form a bracket. This bracket supports a hydraulic actuator. The actuator has an internal locking mechanism that locks the actuator piston, and contains limit switches to indicate remotely the piston position.

Hydraulic fluid under 3000 psi is provided from the erection boom hydraulic power unit. The hydraulic actuator is controlled remotely by solenoid operated valves.

With the erection boom in the horizontal position the forward boom support pads rest on the shock absorbers. The actuator pistons are extended and enter holes in the support pads. This action locks the boom to the shock absorbers.

The nose clamp shock mount is a pivoted boom attached on the missile enclosure wall at approximately missile station 465.50. The boom is electro-mechanically operated to engage the boom bracket on the nose clamp. The sandwich configuration of honeycomb rubber bonded between metal plates is again used to perform the actual shock absorption function by restraining the nose clamp from lateral motion.

With all shock mounts installed, the launcher erector boom and missile are protected from shock laterally by the nose clamp shock mounts and launcher sway mounts, and vertically by the launcher pedestal shock mounts, and fore and aft by the launcher pedestal shock mounts.

(5) PROBLEM AREA: The thin-skinned, pressurized missile tank section of pure monocoque construction can only be handled at structural attach points. These structural attach points, aft on the missile thrust section and forward on the re-entry vehicle adapter, are so located that handling stresses are uniformly transmitted to the tank skin. Aft support of the missile is provided by mating the missile with the launcher.

Equipment must be provided which will provide forward support for the missile. This equipment must act simultaneously with the launcher to provide two-point suspension of the missile during the erection period in countdown. In addition, the equipment must be capable of lowering the missile from the erected position and of supporting the missile during prolonged periods of storage. The equipment must be simple in construction and operation to minimize the time required for mating with the missile; remotely controlled to reduce manpower requirements and increase safety of operations; and be capable of being disengaged, clear of an erected missile, so that the missile may be launched.

Specifically, equipment is required which:

- 1) Will accommodate a Series E missile.
- Will provide adequate safe support for a missile while the missile is horizontal and during the rapid missile erection sequence.
- Can be remotely disengaged from a vertical missile and rotated clear of the missile so that the missile may be launched.
- When controlled remotely, will re-engage a vertical missile and safely lower that missile to a horizontal position.
- Without repositioning, will permit the missile to be backed into position for mating with the launcher and boom.

		USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST N	UMBER: AP60-1046
	5M-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN I	DIEGO, CAL.	CONTRACT NO. (See	Column 7)	REV.:
6)	Will support the mile erection or lowering a horizontal position	ssile adequately during g, and during storage in n.					
ŋ		pound stretch load to a issile is in a horizontal					
8)	with the launcher pr	k effects and in conjunction rovide shock protection for the standby horizontal	i. K				
	MARKS: This item .3 in Report No. ZM	is similar in function to -7-357.					×
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		2	USAF WEAP	ON SYSTEM	107A-1 GROU	IND OPERA	TIONAL	EQUIPME	NT LIST,	SERIES E A	AND F					DATE	5 Januar	y 1961		LIS	TNU	MBER:	AP60	1046		
	SM-65		CONVA	IR-ASTRONAUT	ncs	CONVAIR IS	A DIVIS	ON OF GE	ENERAL C	NAMICS C	CORPOR	TION		SAI	N DIEGO, CA	м. с	ONTRACT NO	). (5	ee Co	lumn 7	7	REV.	ŧ	_	_	
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ITEM QUENCE	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL NUMBER	ER MFG. PART OR DWG. NUMBER	NOMENCLAT	DESCRIPTION	AREA	UNIT		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS. & REMARKS	EST. PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	IOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	DEPOT		SUB TOTAL	
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					FSC NOMEN	CLATUR	E:								7 mo			No. 1	-				-			Ч
					TUBE ASSY	, SIGHT,		3					0	0						co	NTRAC	T NO.	AF 04(0	47)-346	-	+
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	m (IGS) and a c				•	reater the	ın 5 de	gree F v	within t	the length	h of the	tube.	۰ſ		-			549	9						9	•
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					a	llows the	rear p	ortion of	f the tu	be to be	in con	tact			1			576-D				-	+-			
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5	supports the One lever a	ssembly.	This lev		bly t	While still ube is cor	nected	to the s	econd	of the two	o parte	s in th	e					551	_		_				_	
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PBG)	ck-paper-base with a wall thic	kness of	0.188 incl	hes. Whe	en o	ire length rientation					n for í	ine						579					+			-
	ded the over-al mately 40 feet.												ſ					556								1
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1) Part or specification number listed in column 3 is the number proposed for original provisioning.



Part of specification includer instant in column 7 is the nonperpendence for original processing.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Approved Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.

	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 19	61 LIST NU	MBER: AP60-1046
M-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	(See Column 7)	REV.:

coupled to a 6-inch diameter aluminum tube which has a sponge rubber seal. A coil spring inserted between the two tubes permits fore and aft adjustment of 4 inches. A bracket on the aluminum tube engages a hook on the missile pod. This holds the tube in place. At missile rise-off the hook disengages permitting the tube to swing clear.

The base assembly is essentially a support stand consisting of welded steel channels in the form of a right triangle with the hypotenuse of the triangle' forming the support for the base of the sight tube assembly. The base is positioned over the collimator opening in the floor of the enclosure and is held in position with three dowel pins. Three casters on the base provide mobility for the stand which has to be moved whenever the missile handling trailer is in the enclosure. The base assembly and the sight tube assembly are located 77.6 inches from and parallel with the missile center line. Brackets on the base assembly permit adjustment of the sight tube in elevation and azimuth.

The lever assembly consists of two 600-pound counterweights pivoted one on each side of the base assembly and attached to the tube assembly. These counterweights nunction to maintain contact between the missile pod and sight tube and on rise-off to swing the sight tube up and away from the missile. Ball-lock pins permit locking the counterweight to the base assembly when disassembling all or any part of the entire sight tube installation.

To maintain a low temperature differential between the inside and outside of the tube, and to eliminate temperature gradients within the tube, ambient air is forced through the tube at approximately 300 cfm. A facility blower takes air from inside the enclosure and forces it into the collimator room. From the collimator room the air exhausts through the tube.

(5) PROBLEM AREA: A structure is required to provide an unobstructed refraction-free line of sight between the Arma collimator and the missile IGS sensing platform porro prisin. This equipment must:

- 1) Be adjacent to the IGS window during platform fine alignment
- Be capable of clearing the missile at riseoff
- Provide baffles or other devices to prevent light dispersion and provide an aperture of 9 inches inner diameter
- Provide 4.5 inches clearance between the center line of sight and the inner circumference of any part of the baffle or structure
- 5) Maintain light beam alignment within a tolerance of plus-or-minus 2 seconds of arc
- 6) Maintain a temperature differential, in conjunction with a circulating air system, of plus-or-minus 5-degree F between any two points of the tube.

(18) REMARKS: † Technical Figure-A approval granted per Air Force TWX LBTCS-12-2-E dated 2 December 1959.

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			USAF WEAP	ON SYSTEM	107A-1 GROUND OF	ERATIONAL	EQUIPMEN	NT LIST,	SERIES E A	ND F					DATE	5 Janua	ry 196	1	Lis	NUN	NBER:	AP60-	1046		
	SM-65		CONVA	R-ASTRONAUT	ICS CONVA	R IS A DIVISI	ON OF GE	NERAL D	YNAMICS Ç	ORPORA	TION		SAI	DIEGO, CA	u.   c	ONTRACT NO	). (S	iee Co	lumn 7	7)	REV	E			
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QUENCE	GSE SPEC. PARA. NO.	CLASS	SERIAL	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBU	UNIT PRICE		COGNIZANT LABORATORY CENTER, L SERVICE	CLASSIFI	PROPOSEI SUPPLY SOURCE	SOURC	SECURITY CLASS. & REMARKS	EST. PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID.	AT SMA	DEPOT		SUB TOTAL	TOTAL ON
5004		27-96126	-1		ANTI-FIRE		Est				CFE								co	NTRAC	T NO.	AF 04(6-	17)-370		
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															1/22/60	6/5/60	576-C	H-	-		-			+	-
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			1000	2010-001-004		f water a n											567					-			1
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with th	ree risers and	i a three-i	nch spray	manifold	is autom	atically act	tivated a	t engin	e cutoff t	to pre-	vent	- 1			L		548								
with tw	enty-two spra	y nozzles.	The spr	ay manifo		k of heated	•				-	- 1					706								
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	re opening.				ay auxiliary	firex and	cooling a	system									549					_			
	er around the r				(1) 550							-		- annad								_			+
	pproximately			above the		BLEM ARI		100000000000000000000000000000000000000				ł					-	-		NTRAC	T NO.	AF 04(6	47)-453		-1
exnaus	t end of the th	rust chami	bers.			n be used to m the rock								1. 5		b = b	OSTF No. 2	-					+		-11
The su	pply main, a f	our-inch d	liameter s	teel pipe		e missile.	-					ł								NTRAC	TNO	AF 04(6	471-605	_	+
	ts the facility					of automati		· · · · · · · · · · · · · · · · · · ·				ł					1	<u> </u>		T	1	1	1	-	-11
the spr	ay manifold.	The spray	manifold	is three-		firing, or								8			576-D				+	+			
liamet	er steel pipe v	with twenty	-two spra	y nozzles								1													
	ray nozzles an					IARKS: Th	nis item	is sim	ilar in fu	nction	1						576-E								
	he thrust cham					.1.4 in Re	port No.	ZM-7	-357.			1					550								
	ight type-A no		-			17						1					550					_		_	4
	allons of wate	가슴 친구에 가지 않는 것이 같아.		23 C. T. C. C. C. M. C. C.	e-B				9								551	_		-	_			_	4
	s each provide											-						-		-+	_				4
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to seve	n inches above	e the exhau	ist end of	the thrus	t							1					1							Y	1
chambe	ers. The spra	y pattern	encircles	the thrus													556							$\setminus$	
chambe	ers and cools	and extingu	ishes any	flame wh	nich							ľ							100				-	/	
might 1	rise into the th	rust section	on at engin	ne cutoff.						12				0	10 H		ATC								1
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1) Part or specification number listed in column 3 is the number proposed for original provisioning.

Part of the second quantities only are listed in column 7.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

Approved

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Page 1 of 1

					M 107A-1 GROUND O	_	_			12.0000000	1012111					DAT	5 Januar	y 1961		Lus I	T NU	MBER	R: AP	60-104	16		
0)	SM-65 (2)	1		ASTEONAU		-	1 1			YNAMICS C	ORPOR	ATION		SA	N DIEGO, CA	L	CONTRACT N	0. (	See Ca	lumn	7)	RE	v.:				
	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)	1			1		(7)				1.
IEM UENCE	GSE SPEC. PARA. NO.	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM		UNIT PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS. & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	GENERAL	DEPOT		SUB TOTAL	TOTAL ON
005		C.G.Ho	kanson Co	. Inc.	POD AIR			Est	ana deba ente		and success	CPE								co	NTRA	CT NO	AF O	4(647)-	370	-	+
		514100			CONDITIONING			50,000	)			CFE	- [					OSTF									1
		Spec 27-0			UNIT, SILO			170100					- 1				L	No. 1									
					FSC NOMENCLAT								- H				1	<b></b>	-	- CO	NTRA	CT NO	AF O	4(647)-	346	-	-
		EID-27-8	8087	3	AIR CONDITIONE	R								-				576-C	-		-	-				-	-
													1						-				-+		-	-	+
	NOMENCLATU	RE: (PNS)	) Pod Air (	Conditio		and a d	lirect	expansi	on coi	l. The e	xpans	ion co	n L					567									1
Unit	, Silo				operat	es fro	mah	ermetic	ally se	ealed refr	rigera	tion						548			1						
This	unit measures	annroxima	tely 8 feet	equara	unit w	th an	air co	oled con	idense	r. Chille by a wat	ed wa	ter flo	w						_				-	_			]
	high, and weigh				s. valve	which	is con	s is con	by the	refrigera	ter re	gulati	ng	3			÷	706	-			-		-	-		1
				1.55	presso				oy are	remiger	ation	com-	- t	1					-		-	-+			+-		-
The	following major	componen	nts make u	p the un			•	1										549				-	-	-		+	-
					The ai	r flow	contr	ol syste	m is c	perated h	by pos	ition-			-					co	NTRA	CT NO	AFO	4(647)-	453	-	+
	<ol> <li>Dehumidifi</li> <li>Refrigerat:</li> </ol>	Constant and the second second								of the blo			e					OSTF	1							1	1
	3) Blower	ion unit								820 cfm	at alt	ltudes	H		8 mo	1000	1	No. 2									
	4) Electric m	otors			varyin	g iron	1 sea	level to	5,000	teet.			H				1			- CO	NTRA	CT NO	AFO	4(647)-	605		4
1	5) Chilled wat	er coils			Dehum	idifica	ation i	s contro	lled b	y regulat	ing th	e rate		_		4/14/60	2/21/61	576-D	1		-	-+	-		-	1	-
	6) Direct exp				of des	ccant	react	ivation i	n the d	iehumidif	iying o	cham-	. 1				0/21/01		1			-	-	-		1	1
	7) Pump and p	oiping								rating wit						1.1		576-E								Ê	1
	<ol> <li>Air filters</li> <li>Ducts</li> </ol>				lowing	range	of co	nditions	on a p	osychrom	etric	chart:	× 1					550	12							12	1
	0) Instrument	ation and c	ontrols				E .d			14		• ••	H			1/22/60					_	_	_	_	_		
	И Аккевири		inter of b		1)	inn	1 Hilli	H HAN H	ilili ili	line at z	ero re	elative						551	12				-			12	4
					2)					H JB LU B	t degt	eus F							12							12	
The	unit delivers al	r at 1820 c	ofm at 35 d	legrees	F 3)	The	cons	tant mol	sture	line at 70	grain	ns per	L					577				-	-			-	1
	zero degrees					100000				grees F								578	12						10	12	1
dry	mum moisture air. Conditione	content of	18 grains	per pou	ind of					degrees		-													1		
	sure of 32 colu			amst a	static	at a ity.		imately	50 per	rcent rela	ative l	humid-						579	12	-	-	-	-			12	4
5.C					- 4)			om the 7	7 degr	ee dry bu	ulb at	the 70							12			-+	-		+	12	-
The a	air is dehumidi	fied by an a	adsorption	type ch						point to								556			-	-	+		-	10	1
ber.	Air cooling is	by three w	vater chille	ed cooli	ing	1.11	100 C 100 C			ve humid	2011 - COLOR	•						ATC	т	-349	(1)						t

This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

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USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F DATE: 5 January 1961 LIST NUMBER: AP60-1046 SM-65 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION CONVAIR-ASTRONAUTICS SAN DIEGO, CAL. CONTRACT NO. (See Column 7) REV.: Dust filtering in the unit is 5 micron filtration rating, equivalent to an efficiency rating of not less than 85 percent by the National Bureau of Standards discoloration test standard. (5) PROBLEM AREA: With the missile in readiness for flight, the electronic equipment and circuitry must be maintained at a constant ambient temperature and humidity to prevent overheating and malfunction. Equipment is required capable of furnishing a variable air flow of from 1120 cfm to 1820 cfm at 35 degrees F (plus zero degrees or minus 5 degrees F) from sea level to 5,000 feet. The equipment must also hold moisture to 18 grains per pound of air maximum; deliver a uniform flow of air against a static pressure of 32 inches water column gage; and filter the air to 5 micron size with 85 percent efficiency.



By Air Force direction

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.

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 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Quantity

Use Current List of Effective Pages os guide for inserting Revision Pages.

	USAF WEAPON SYSTEM 107A-1 G	OUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 19	61 LIST NU	MBER: AP60-1046	
\$M-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL		(See Column 7)	REV.:	
	- excites contains internal						
	on section contains integral ments for sensing variables						
	ed fluid. These instruments						
	tegral pneumatic feedback cir-	4					
여기 다양이 나라가 잘 못 못했다. 것 같아?	t relay valves having pressure						
Contraction of the second s	ratios of 3.5 to 1.	2					
his charge unit is pne	umatically self-regulating						
	iules which are electrically se-						
uenced by remote sign	als. Sensing lines transmit						
한 같은 사람이 가지 않는 것이 것 같은 것을 가지 않는 것 같은 것 같은 것 같은 것이다.	ntrollers. Regulators and						
	able in the system under both	34 ⁷⁴ 1					
ynamic and static pre-	ssure conditions.	出 済 ・					
he unit performs satis	sfactorily at any air temper-						
ture between plus 30 d	egrees F and plus 80 degrees						
(50 percent relative l	numidity). The unit is						
	hin a pressure range from					5 C	
	ercury, and is capable of						
	from 3.44 to 30 inches of						
nercury non-operating	•						
	ted that all components in the						
	e an operating gas tempera-						
	egrees F to plus 80 degrees signed to a proof pressure of						
	m operating pressure and a						
	re of 250 percent of operating						
거에는 김 권한 것에서 옷에서 가지 않는 것에서 집에서 있다. 것이 많은 것이 없다.	ested to a proof pressure of						
00 percent of maximu	m operating pressure, and a						
urst pressure of 400	percent of maximum operating						
pressure.			52				
5) PROBLEM AREA:	Equipment is required which						
그는 그는 것이 같은 것이 같은 것이 같은 것이 같은 것이 같은 것이 같이	ressure to the missile from						
	ion unit when the silo lift is in						
	nd to continue this pressuriza-						
	r the silo lift has separated						
rom the ground connec	ction throughout the transition						

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				(	107A-1 GROUND O		_				0.000	TION					5 Januar	-					1000	50-104		
(I)	SM-65	<b>1</b>	(3)	IR-ASTRONAUT		-	TT				Contraction and Article		- 1		N DIEGO, CA	_	ONTRACT NO	D. (S	ee Co	lumn	7)	REN				
m	(2)				(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)		<u> </u>				(7)			_
IEM VENCE	GSE SPEC PARA NO	CLASS CODE	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM		UNIT		COGNIZANT LABORATORY, CENTER, A SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	GENERAL	DEPOT		SUB TOTAL
																				co	NTRAC	TNO	AFO	4(647)-:	70	
07		DM-21-	olis-Hone	•	DISTRIBUTION UN	IT.		Est 85,000				CFE	Г					OSTF				T				
			-08080-1		FSC NOMENCLAT	TIDE.		85,000	,									No 1								
					MANIFOLD-REGU	100 C	R													co	NTRAC	T NO	AFO	4(647)-:	46	
		EID-27-			PNEUMATIC SYST													576 C							_	
													H		· · · · · · · · ·	1991 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 - 1994 -	V				-	-	-	-	-	
																		567			-+	-	-	_	-	$ \rightarrow $
- C.C.	NOMENCLAT	JRE: (PN	S) Distrib	ution Unit	• )	1)				ontrol and	-		H									-	-			
Pne	umatic.						0.0000000			mum inle								548	-	_		-+		-		$\vdash$
		25								flow of :										-		-+	-	-		-i
	s is a skid mou		and the second		742 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C					ound per			. 1	3				706					-			
	inches long, 60				and					ium heat		•	, L				1	1		1		-		-		
wei	ghing approxim	atery 5,00	o pounds.				the c	ooster	nenum	storage	bottle	8.			D			549								
The	unit controls.	remotely	and semia	automatic	ally	2)	The	helium	emero	ency sys	tom he									co	NTRAC	TNO	AFO	4(647)-	153	
	flow of gases f					-,			- 1. <del></del>	essure of								OSTF	1				_			1
	und support equ		•		f the					low of 9 p	1111 (Sec. 1997)		F	12	10 mo			No. 2								
uni	. The unit pro	vides stat	ole regulat	ted pressu	re,					o the pre			1				r			co	NTRAC	T NO	AF O	4(647)-	505	
und	er both static a	nd dynam	ic pressur	re conditio	ons.		cont	rol unit		202703-0 <b>0</b> 276								576-D	1			-	_	_		1
wit	h varying flow :	ates in th	e gaseous	nitrogen	pres-								H			4/14/60	2/21/61	-		_			-	_	-	
sur	ization system	or with o	constant fl	ow rates	in the	3)	The	helium	charge	system	has a	mini-						576-E	1	-	-	-	-	-	-	1
hel	um supply syst	ems.								e of 600			H							_			-	_		
										f 25 pound		min-				1/22/60		550	12		-	-	-+		-	12
The	unit consists of	of the follo	owing syst	ems:			ute t	o the he	elium o	charge un	it.		1			1/22/00			12			-+	-+			12
					S		-											551				-+	-+	-	-	12
	<ol> <li>Helium fl</li> <li>Helium ei</li> </ol>		l and regu	uating sys	tem.	4)		-		gen press			1						12			-	-			19
	<ol> <li>Helium cl</li> </ol>									mum inle minimum								577					-			
			ressurizat	tion syste	m					ute to the			Г					578	12							12
	- 1971 - State to the state	A	nent air sy	Active and the second			111111111	gen ves			s nqui	u						5/8			1000					
	c, since gen	,						Ben ter					- F					579	12							12
Ma	kimum inlet pre	ssures fo	r this unit	t are 6000	psig	5)	The	emerge	ncy in	strument	ation a	ir	L		- K.											
	helium and 400									mum inle								556	12						-	12
inle	t gas temperat	ure of 70	degree F,	the minir	num					minimum				_					_	1.24			1			
	t pressures an	d rates of	flow for e	each syste	m are		poun	ds per	minute	of air to	the in	1-							т	-349	(1)					
88	ollows:						stru	ment ai	r syste	em.								ATC	-							

Fart or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
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	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NUMBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See	Column 7) REV.:

The unit performs at any air temperature from 30 degrees F to plus 125 degrees F, and a pressure range from 20.58 to 30 inches of mercury. Components are designed to a proof pressure of 150 percent of maximum operating pressure, and a minimum burst pressure of 250 percent of operating pressure, with the exception of the pressure switches which are proof tested for 10 percent above working pressure of their respective system.

(5) PROBLEM AREA: Equipment is required which will control the flow of gases from storage vessels to the pressurization control unit, the helium charge unit for ground support of the missile, and the chilled helium fill system.

		L.	USAF WEAP	ON SYSTEM	A 107A-1 GR	OUND OP	ERATION	AL EQUIPM	ENT LIST,	SERIES E	AND					DATE	5 Januar	ry 196	1	LIS	ST NU	MBER	AP6	0-1046		
	SM-65		CONVA	IR-ASTRONAU	TICS	CONVAL	R IS A DIV	ISION OF G	ENERAL	YNAMICS	ÇORPO	RATION		SA	N DIEGO, CA	NL. C	ONTRACT N	0. (	See Co	lumn	7)					
0)	(2)		(3)		(4)	)	(5) (	5) (9)	(10)	ດານ	(12	(13)	(14)	(18)	(16)	(17)	(15)		T			- 3	(7)			1
		5	TOCK NUMB	ER			33			۶÷						- 7		z	Sa		*					
ITEM QUENCE	GSE SPEC PARA NO	CLASS	SERIAL	MFG. PART OR DWG. NUMBER	NOMENCI	LATURE	DESCRIPTION OF PROBLEM AREA	UNIT PRICE		COGNIZANI LABORATORI CENTER. & SERVICE	TYPE	PROPOSE	SOURCE	SECURITY CLASS. & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID STAS	AT SMA	GENERAL			TOTAL ON
5008		Royal Je	t. Inc.		PUMPING			Est				CF	F							co	ONTRAC	T NO.	AF 04	(647)-37	0	
		500170			UNIT,			45,0	00			01	-					OSTF	-		1_1		_			
		Spec 27-	-08657-1		HYDRUAL	IC		20.45	202					-				No. 1					1	_		
		EID-27-	8249												1		1	T	1		DNTRA	TNO	AF 04	(647)-34	° T	_
					11.1 <b>18</b> (11.1 mm)				17 - 12 - 14 - 14 - 1									576-C				-	1			
	NOMENCLATU Hydraulic	RE: (PNS	b) <u>Preferr</u>	red - Pum	nping	1.0		ndications rational r				ol cer	1-					567								
Unit,	Hydraune					ter, of	the open	ational r	eaumes	s of the t	unit.						-	-	+		+	-	-		+ +	
This	unit, located o	n the laun	ch platfor	rm, meas	sures	Each p	imp is d	riven by	a 30 hp	440-vol	lt, 3	phase	e.					548		-	+ +	-+-	-		+	-
	oximately 5 fee				ong,	ac mot	or. Eac	h pump d	raws hy	draulic i	Πuid	•99995179C							1	-				-	1-1	1
and v	veighs approxim	nately 2,5	500 pound	8.				from the										706								
								upplies th					1					549								
	unit contains tw ms housed in a	And the state of the second of						required	ate (8	gpm max	imur	n) and														
	system is con					pressu	re.								-			-	1	_ cc	ONTRAC	T NO.	AF 04	(647)-45	3	_
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	lic system; the				· · · · · ·	Each st	age of t	he unit is	used to	fill and	blee	the			9 mo			OSTF No 2	1	<u>+</u>	+ +			-	+ +	1
	sustainer/verni							sile hydra										1.0.1	1		ONTRA	CTNO		(647)-60	11	+
								provide					с.			1	Τ	1	11	T		T	1	1047,00	<u>ї</u> т	1
	hydraulic-fluid				5			m is free		12						4/14/60	2/21/61	576 D	F	-		-	-	-		-4
and the second second	sure compensat																1	576-E	1							1
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	rically and han							nd the uni								7.5 316.7.91		550	12							12
1.000	s, indicators, o							o either o								11/22/6	9		-	-			_			
ness	controlled by (	Jonvair 5	pec. No.	0-75014).		taneous		h missile	hydrau	lic syste	ems i	imul-						551	12			-+	-		+	12
The	first and second	d stage sy	stems us	e a 20 gal	llon														12	-		+	+	-		12
com	non reservoir,	electrica	al oil cool	er motor	, and	The un	t mainta	ins the d	esired	discharge	e pre	ssure	5					577	12	1			+			12
	rical pump driv							3000 psi		and the second second second second	015 M.								12	1			-			12
	es a remote cor							cally. Ea										578					-	-		-
	the pump moto							pe, oil co										579	12							12
	evacuation syst							ne oil coo										5/14								
	inches of oil f				ystem,	fluid fr	om silo	ambient (	empera	ture of a	appro	ximate	ely					556	12							12

77 degrees F. to 140 degrees F. A common hydraulic-fluid control panel is mounted on the front of the

Recommended Quantity

By Air Force direction

Part or specification number listed in column 3 is the number proposed for original provisioning. 2 Recommended quantities only are listed in column 7.

under pressure. The remote control cable connection

3 This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Approved Quantity Asterisk indicates common usage with adjacent complex and/or area.

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ITEM NUMBER 5008
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SM-65     CONVART ATTORAUCTO     CONVART 15: A DIVISION OF GENERAL TORAUCT (DEPERATION)     LAN DIROC, CAL     CONTRACT NO     CONTRACT NO     CONTRACT NO     CONTRACT NO       (1)     (2)     (3)     (4)     (3)     (4)     (3)     (4)     (1)     (12)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (10)     (13)     (14)     (15)     (15)     (16)     (17)     (13)     (14)     (15)     (16)     (16)     (17)     (13)     (16)     (17)     (13)     (16)     (17)     (13)     (16)     (16)     (16)     (16)     (16)     (16)     (16)     (16)     (16)     (16)     (18)     (18)     (18)     (18)     (18)     (18)     (16)     (18)     (18)     (16)     (18)     (16)     (18)     (16)     (16)     (16)     (16)     (16)     (16)     (16)     (18)	(7)	DEPOT	CENERAL (1)	ACT P	AT GUID. STAS	AT LCC'S		LOCATION LOCATION	(15)	(17)	(17)	(16)	8)	(18)	+	SOURCE 11	(13) (14	(12)	an	(10)	DENE				-		E-ASTEONAUT	CONTRACTOR OF A			(1)
Item       State       Item	17 10 10 10 10 10 10 10 10 10 10 10 10 10	DEPOT	Ceneral Ceneral		ONTR		AT LAUNCHERS	OSTF						1.5en	+	SOURCE					-	(9)	6)	(5) (6	_			(3)	(	(2)	0.
THAN       GS       TANK       MODE       TANK       MODE       NOMENCLATURE       NOMENCLATURE       SYSTEM ASSY, FAXA       Eat CONTRACT NO AN         5009       27-87160-1 Spec 27-09260-1 EID-27-9271       SYSTEM ASSY, MISSILE LIFTING FSC NOMENCLATURE: PUMPING UNIT, HYDRAULIC       Eat CFE       CFE       CONTRACT NO AN         (4) NOMENCLATURE: Advantage       (PNS) System Assembly, Hydraulic, Missile Lifting.       Hydraulic fluid is supplied from a 275 gailon reservoir. The reservoir and pump assembly flow-control system with associated filters, relief valves, check valves, and necessary principal assembly are: This system contains two hydraulic pumps:       Hydraulic fluid is supplied from a 275 gailon reservoir. The reservoir and pump assembly flow-control system with associated filters, relief valves, check valves, and necessary principal assembly are: This system contains two hydraulic pumps:       2)       Accumulator Rack Assembly - This rack assembly are: This system contains two hydraulic pumps:       2)	AF 04(647)-370	AF 04(64	NO. AF		ONTR		AT LAUNCHERS	OSTF	EST. DATE FIRST ITEM AVAILABLE	APPROVAL	DATE OF ARDC APPROVAL	EST PRO- DUCTIONS LEAD TIME	REMARKS	SECURITY CLASS & CLASS &	CODE	SOURCE	PLY	± z	¥							(4)					-
5009       27-87160-1 Spec 27-08680-1 EID-27-9271       SYSTEM ASSY, Descretarion of the second level of the crib structure and contains three principal assembly exit.       Eat       CFE       CFE       Contract no And the second level of the crib structure and principal assembles:         1)       Reservoir and Pump Assemble:       2)       Accumulator Rack Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic power for the system swithin this assembly are:       11       moderation of the second level of the crib structure and principal source of all hydraulic power for the system swithin this assembly are:       2)       Accumulator Rack Assembly - This rack assembly are:       11       moderation of the crip structure and principal source of all hydraulic power for the system swithin this assembly are:         1)       Reservoir and Pump Assemble:       2)       Accumulator Rack Assembly - This rack assembly are:       11       moderation of the crip structure and principal source of all hydraulic power for the principal source of all hydraulic power for the system swithin this assembly are:	+++	+								_	1		_		_		2333	CLASSI	LABORATO CENTER	11112221	ł	UNIT	111/14/14/11	OF PROBLEM	DECT DETCH	NOMENCLATURE	MFG. PART OR DWG.	SERIAL	CLASS	PARA.	ITEM QUENCE
Spec 27-08680-1 EID-27-9271       HYDRAULIC, MISSILE LIFTING FSC NOMENCLATURE: PUMPING UNIT, HYDRAULIC       62,000       OST MISSILE CONTRACT NO. AN Solution of the second level of the crib structure and contains three principal source of all hydraulic system is       5367       OST MISSILE CONTRACT NO. AN Solution of the remotely-mounted hydraulic system for the remotely-mounted hydraulic numbers: This system contains two hydraulic pumpe:       Hydraulic fluid is supplied from a 275 gallon reservoir. The reservoir and pump assem- bly also consists of a frame assembly and a flow-control system with associated filters, relief valves, check valves, and necessary piping and tubing.       706       OST MISSILE CONTRACT NO. AN Solution of the crib structure and contains three principal assemblies:         1) Reservoir and Pump Assembly - This is the principal source of all hydraulic pumpe:       2) Accumulator Subasembly are: a. Accumulator Subasembly are:       2) Accumulator Subasembly are: a. Accumulator Subasembly are:       11 mo       Sort I Sort I So	AF 04(647)-346	AF 04(64	NO. A		ONTR								_													EVENTN LOOV		140.1	07 07		5000
EID-27-9271       MISSILE LIFTING FSC NOMENCLATURE: PUMPING UNIT, HYDRAULIC       Image: Contract No. And State Internet (4) NOMENCLATURE: (PNS) System Assembly, Hydraulic, Missile Lifting.       Missile Lifting.         (4) NOMENCLATURE: (PNS) System Assembly, Hydraulic missile lifting system assembly provides 3,000 pounds per square inch hydraulic fluid used in the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:       Hydraulic fluid is supplied from a 275 gallon reservoir. The reservoir and pump assembly provides facilities of a frame assembly and a flow-control system with associated filters, relief valves, check valves, and necessary piping and tubing.       706       Image: Contract No. And State Internet (11 mo         1) Reservoir and Pump Assembly - This is the principal source of all hydraulic pumps:       2) Accumulator Rack Assembly - This rack assembly provides facilities for storing hydraulic power for the remotely-mounted hydraulic actuators, This system contains two hydraulic pumps:       2) Accumulator Subasembly are: 1) Accumulator Subasembly are:       11 mo       Kolubacter (2/24/60       1       1	AF 04(647)-346	AF 04(64	NO. A		ONTR			No 1					- 1		Γ	[	CFE				00						1				2009
ILIF TING       FSC NOMENCLATURE:         PUMPING UNIT,       PUMPING UNIT,         HYDRAULIC       567         (4) NOMENCLATURE: (PNS) System Assembly,       Hydraulic fluid is supplied from a 275 gallon         Hydraulic, Missile Lifting.       548         The hydraulic fluid used in       reservoir. The reservoir and pump assembly and a flow-control system with associated filters,         100 pounds per square inch hydraulic fluid used in       relief valves, check valves, and necessary         piping and tubing.       11 mo         11 mo       0517         11 mo       0517         11 mo       0517         11 mo       0517         11 mo       576.0         11 mo       11 mo         11 mo       576.0         12 mo       12 mo         13 Reservoir and Pump Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic power for the remo	AF 04(647)-346	AF 04(64			ONTR						L		_		F	ł						02,000					-				
PUMPING UNT, HYDRAULIC       S48       S48         (4) NOMENCLATURE: (PNS) System Assembly, Hydraulic, Missile Lifting.       Hydraulic fluid is supplied from a 275 gallon reservoir. The reservoir and pump assem- bly also consists of a frame assembly and a flow-control system with associated filters, relief valves, check valves, and necessary piping and tubing.       706       S48         11 mo       OSTF       1       OSTF       1         11 mo       OSTF       1       OSTF       1         11 mo       S76.0       1       1         11 mo       S76.0       1       1         11 mo       S76.0       1       1         12 Accumulator Rack Assembly - This rack assembly provides facilities for storing hy- draulic power required to operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic systems during the firing or count- down phases of operate all silo hydraulic system sithin this assembly are:       12         2/24/60       350       12       1					+		_	<u> </u>			1				$\vdash$											LIFTING					
HYDRAULIC       567         (4) NOMENCLATURE: (PNS) System Assembly, Hydraulic, Missile Lifting.       Hydraulic fluid is supplied from a 275 gallon reservoir. The reservoir and pump assem- bly also consists of a frame assembly and a flow-control system with associated filters, relief valves, check valves, and necessary piping and tubing.       706         1) Reservoir and Pump Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic cutators. This system contains two hydraulic pumps:       2) Accumulator Rack Assembly - This rack assembly provides facilities for storing hy- draulic power required to operate all silo hydraulic systems within this assembly are:       11 mo       567       1       1         1) Reservoir and Pump Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic pumps:       Accumulator Subasembly are:       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1								576-C																RE:							
<ul> <li>(4) NOMENCLATURE: (PNS) System Assembly, Hydraulic, Missile Lifting.</li> <li>(4) NOMENCLATURE: (PNS) System Assembly, Hydraulic missile lifting system assembly provides 3,000 pounds per square inch hydraulic fluid used in the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:</li> <li>1) Reservoir and Pump Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic power for the remotely-mounted hydraulic pumps:</li> <li>2) Accumulator Rack Assembly and a principal source of all hydraulic power for the remotely-mounted hydraulic pumps:</li> </ul>					+	-					-			-		Ī									•	- 같은 방법은 것은 것같은 2월 방법을 가지 않는					
<ul> <li>(4) NOMENCLATURE: (PNS) System Assembly, Hydraulic, Missile Lifting.</li> <li>The hydraulic missile lifting system assembly provides 3,000 pounds per square inch hydraulic fluid used in the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:</li> <li>Accumulator Rack Assembly - This rack assembly provides facilities for storing hy- draulic power required to operate all silo hydraulic systems during the firing or count- down phases of operation. The principal components within this assembly are:</li> <li>Accumulator Subassembly are:</li> </ul>			-					30/					_													HIDRAULIC					
Hydraulic, Missile Lifting.       reservoir. The reservoir and pump assembly and a flow-control system with associated filters, relief valves, check valves, and necessary piping and tubing.       706       706         The hydraulic missile lifting system assembly provides 3,000 pounds per square inch hydraulic fluid used in the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:       10			+	-	_	-		548																							
The hydraulic missile lifting system assembly provides         3, 000 pounds per square inch hydraulic fluid used in         the maintenance, firing cycle, and down-cycle of the         missile lifting system. This hydraulic system is         located on the second level of the crib structure and         contains three principal assemblies:         1)       Reservoir and Pump Assembly – This is the         principal source of all hydraulic power for         the remotely-mounted hydraulic actuators,         This system contains two hydraulic pumps:		-		+	-	+							-		H	ı ł	allon	275	from a	uppli	is s	fluid is	ulic	Iydrau	1	у,	Assembly	System	E: (PNS)	OMENCLATUR	(4)
The hydraulic missile lifting system assembly provides       flow-control system with associated filters,         3, 000 pounds per square inch hydraulic fluid used in       flow-control system with associated filters,         the maintenance, firing cycle, and down-cycle of the       missile lifting system. This hydraulic system is         located on the second level of the crib structure and       contains three principal assemblies:         1)       Reservoir and Pump Assembly – This is the principal source of all hydraulic power for       Accumulator Rack Assembly are:         the remotely-mounted hydraulic actuators.       components within this assembly are:       530         1)       Reservoir and Pump Assembly – This is the principal source of all hydraulic power for       by Accumulator Subassembly are:         attribute       530       12         attribute       530       12			+	+	-	-		706							S			10000											ifting.	aulic, Missile	Hydr
3. 000 pounds per square inch hydraulic fluid used in the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:       relief valves, check valves, and necessary piping and tubing.       051F       1          2)       Accumulator Rack Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic actuators. This system contains two hydraulic pumps:       2)       Accumulator Rack Assembly - This rack assembly provides facilities for storing hy- draulic power required to operate all silo hydraulic systems during the firing or count- down phases of operation. The principal components within this assembly are: $376 \cdot D$ 1          a)       Accumulator Subaseembly $576 \cdot D$ 1			1																												-
the maintenance, firing cycle, and down-cycle of the missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:       piping and tubing.       CONTRACT NO. All the contains three principal assemblies:         1) Reservoir and Pump Assembly – This is the principal source of all hydraulic power for the remotely-mounted hydraulic actuators. This system contains two hydraulic pumps:       2) Accumulator Rack Assembly – This rack assembly provides facilities for storing hydraulic systems during the firing or count-down phases of operation. The principal components within this assembly are:       11 mo       0 str 1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1								549									121210-05										AND IN COMPANY OF		· · · · · · · · · · · · · · · · · · ·		
missile lifting system. This hydraulic system is located on the second level of the crib structure and contains three principal assemblies:       2) Accumulator Rack Assembly - This rack assembly - This rack assembly provides facilities for storing hydraulic power required to operate all silo hydraulic power required to operate all silo hydraulic systems during the firing or count-down phases of operation. The principal components within this assembly are:       11 mo       0 Str 1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1		AF 04(64	NO. AP	ACT	ONTR	C(	-							-		ł	ur y	0000	o, una									S. C. M.			
located on the second level of the crib structure and contains three principal assemblies:       2)       Accumulator Rack Assembly - This rack assembly - This rack assembly provides facilities for storing hy-draulic power required to operate all silo       4/14/60       2/21/61       576-D       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       <	1	-		+	-	-	1					11 mo																			
contains three principal assemblies:       assembly provides facilities for storing hy- draulic power required to operate all silo         1) Reservoir and Pump Assembly – This is the principal source of all hydraulic power for the remotely-mounted hydraulic actuators. This system contains two hydraulic pumps:       Accumulator Subassembly	AF 04(647)-605	AF 04(64	NO. A	ACT	ONTR						1					ł										and 2)	structure				
1) Reservoir and Pump Assembly - This is the principal source of all hydraulic power for the remotely-mounted hydraulic actuators. This system contains two hydraulic pumps:       hydraulic systems during the firing or count-down phases of operation. The principal components within this assembly are:       2/21/61       1         2/24/60       550       12	1	T	T	T		Γ	1						Т			1						The Party Street						nblies:	pal asser	ins three princ	cont
principal source of all hydraulic power for the remotely-mounted hydraulic actuators. This system contains two hydraulic pumps:								3/0-0	2/21/61	14/60 2	4/14/		_								-					is the	v - This	Assembl	und Pump	) Reservoir	
This system contains two hydraulic pumps:		-	-	-	-	-	1	576-E										-						5-11-11-11-11-11-11-11-11-11-11-11-11-11			<ul> <li>A second s</li></ul>			같아요. 그는 것은 친구가 같은 아버지에서 가	
This system contains two hydraulic pumps:	11		-	+-	-	-	12						+		H	ł		re:	sembly	this a	hin	ts with	onen	ompor		ors.	ic actuate	d hydraul	y-mounte	the remote	
a) Accumulator Subsecombly		+	+	1	1	+	14	550		24/60	2/24/								et te et ma							nps:	aulic pun	two hydr	n contains	This syster	
a) Standby or Make-Up Pump - This	12						12				1					1		У	assemb	tor Su	ula	Accumu	) A	<b>2</b> )		<b>.</b>	D	table the			
numn is operated by a two horses b) Nitrogen Vessel Subessembly								331					-		F	ł		nblv	Subasse	Vesse	en 1	Nitroge		b)						940 March 10, 253	
power electric motor and has a	12	-	-	-	-	-	12	577																-,							
capacity of 4.9 gallons per minute c) Accumulator Rack - This rack	12		+	+	+	+	12						-			ł							T.C. 1022	c)							
at 200 pounds per square inch. includes the frame required to tie 578		-	+	+	+			578																		•	are inch.	s per squ	200 pound	at	
b) Main Hydraulic Pump - The main and valves together 379 12	12						12	\$70								• [	ssels,	en ve								ala	Them	lie Dime	in Urden	b) M	
hydraulic num is of the axial		-	-	-	-	i							-		-				101	s toge	1100	LIG VAL				am					
piston, variable displacement type, d) Necessary tubing and piping con-	12		+-	+	-	-	12	556									n-	ing c	and pi	tubi	Bar	Necessi	) N	d)		type,			1		
driven by a 40 horsepower, elec- tric motor.		1	_					ATC							F	Ī			nbly		g th	necting	n			ec-	ower, el	40 horse;	-		

Part or spectricultor number rises in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show pravisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

JM-63       CONVAR-AITA ONUMORIO 9 SIMPLAL DYNAMICA CONVANTON       LAM BRGO, CAL       CONTRACT NO.       Description       Description         3)       Control Facel Assembly - This panel assembly includes the manifolding meedesary to seek system. The assembly is composed of the following manifold = """"""""""""""""""""""""""""""""""""		USAF WEAPON SYSTEM 107A-1 GI		ONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NU	MBER: AP60-1046
<ul> <li>includes the manifolding necessary to provide hydraulic power to each system. The assembly is composed of the following manifold subassemblies:</li> <li>a) Doro Voltdore</li> <li>b) Orib Locks</li> <li>c) Work Flatforms</li> <li>c) Work Flatforms</li> <li>c) Work Flatforms</li> <li>c) Boolian could be used to be observed on the operation the various time of GSE during launch, testing, and late firing of the missile. This system is also required seal the interior of the soli for the performance of the fol- wing functions:</li> <li>i) Open and close blast doors and lock blast doors in closed position</li> <li>j) Lock rib to sile structure</li> <li>j) Does and close platform at ground level</li> <li>j) Position and retrect the missile maintenance platforms</li> <li>j) Operate stretch sing used for placing missile</li> </ul>	SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A	DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See	Column 7)	REV.:
<ul> <li>we is required in the crib area to insure the operation the various items of GSE during launch, testing, and atil cfiring of the missile. This system is also required seal the interior of the silo from the elements and to otect it from blast damage.</li> <li>nupment is required for the performance of the fol- wing functions: <ol> <li>Open and close blast doors and lock blast doors in closed position</li> <li>Lock crib to silo structure</li> <li>Lock launcher platform to the crib structure, in raised and lowered positions</li> </ol> </li> <li>Stabilize launcher platform at ground level</li> <li>Position and retract the missile maintenance platforms</li> <li>Operate stretch sling used for placing missile</li> </ul>	<ul> <li>includes the manifol hydraulic power to e is composed of the f subassemblies:</li> <li>a) Door Cylinders</li> <li>b) Crib Locks</li> <li>c) Work Platforms</li> <li>d) Miscellaneous</li> </ul>	ding necessary to provide ach system. The assembly ollowing manifold		Operate launcher drive disengaging cou				
<ul> <li>Wing functions:</li> <li>1) Open and close blast doors and lock blast doors in closed position</li> <li>2) Lock crib to silo structure</li> <li>3) Lock launcher platform to the crib structure, in raised and lowered positions</li> <li>4) Stabilize launcher platform at ground level</li> <li>5) Position and retract the missile maintenance platforms</li> <li>6) Operate stretch sling used for placing missile</li> </ul>	wer is required in the crib the various items of GSE of atic firing of the missile. seal the interior of the sil- rotect it from blast damage	area to insure the operation luring launch, testing, and This system is also required o from the elements and to						
<ul> <li>in closed position</li> <li>2) Lock crib to silo structure</li> <li>3) Lock launcher platform to the crib structure, in raised and lowered positions</li> <li>4) Stabilize launcher platform at ground level</li> <li>5) Position and retract the missile maintenance platforms</li> <li>6) Operate stretch sling used for placing missile</li> </ul>								
<ol> <li>Lock launcher platform to the crib structure, in raised and lowered positions</li> <li>Stabilize launcher platform at ground level</li> <li>Position and retract the missile maintenance platforms</li> <li>Operate stretch sling used for placing missile</li> </ol>		doors and lock blast doors						
<ul> <li>in raised and lowered positions</li> <li>4) Stabilize launcher platform at ground level</li> <li>5) Position and retract the missile maintenance platforms</li> <li>6) Operate stretch sling used for placing missile</li> </ul>	2) Lock crib to silo str	ucture						
<ul> <li>5) Position and retract the missile maintenance platforms</li> <li>6) Operate stretch sling used for placing missile</li> </ul>								
platforms 6) Operate stretch sling used for placing missile	4) Stabilize launcher p	atform at ground level						
		the missile maintenance						
		g used for placing missile						

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			USAF WEA	PON SYSTEM	M 107A-1 GROUND OF	FERATIO	NAL EQ	UIPMEN	IT LIST,	SERIES E A	ND F					DATE	5 Janua		,	LIST	NUM	BER: A	P60-1	046		
	SM-65		CONV	AIR-ASTRONAUT	TICS CONVA	IR IS A	DIVISION	OF GEN	IERAL D	TAMICS C	ORPOR	TION		SAP	N DIEGO, CA	LC	ONTRACT N			umn 7)		REV.				_
(1)	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)	T	1			(7)				(8)
			STOCK NUMB	JER		7.				2.2								1	-			<u> </u>				
ITEN		CLASS CODE	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM	11119991	UNIT	1888/11/	COGNIZANT LABORATORY, CENTER, A SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	A10000 14	GENERAL	D6 POI		SUB TOTAL	TOTAL ON ORDER
50	10	27-	99063-1		SYSTEM ASSY.		2	Est				CFE								CONT	RACT	NO AF	04(64)	7)-370	-	
		1. 국 (M. 4. 국	c 27-09576-	-1	LAUNCHER			135,19	8			CFE						OSTF		_	1					
			-27-9256		PLATFORM			,					ł					No. 1			1					
					FSC NOMENCLA	TURE:							H		-			-		CONT	RACT	NO AF	04(64)	71-346		
					PLATFORM LAU SYSTEM, SILO,			SILE										576-C		-						
																		567	$\vdash$		+				+	
	NOMENCLATUR uncher Platform.		) System A	ssembly,	system	h which	anchor	rs the	entire	he hydrau structur	e to t	he	Ī					548				+			日	
ТЪ	is structure is es	ssentially	an open ca	ige-type e	leva- 576-D	and E	a seal i	in the f	form o	At OSTE of a plast	ic buf	fer	t					706			1	+			Ħ	
pr	powered by elect oximately 16 feet	square, h	has an over	rall height	t of silo an	d preve	ents en	gine ex	xhaust	ck weathe t gases fr	om en	terin	r I					549			+	+			$\square$	
	proximately 49 fee					o durin	g launc	h. Th	ere i	s no seal	instal	led at					-			CONT	RACT	NO AF	04/647	7)-453		
	1,500 pounds. The ofour unevenly sp					ional si	ites. A	Additio	nal eq	uipment	on thi	s deck	۰ T					OSTF	1		T	T		1	1	
	er by stair type l	•				s the A	APCHE	relay,	, APC	HE stub- junction	up, c	able	L		12 mo		(and the second	No. 2				1				
	rted by horizontal				, ju	netion	DOXEB	and lar	anne	Junction	box.		Ļ							CONT	RACT	NO AF	04(647	7)-605	-	
	r vertical trusses				The th	Ird lev	el grat	e deck	conta	ins hydra	ulic r	umpir						576-D	1						1	
					equipr	ient, n	itrogen	contre	ol uni	t, and hel	lium e	upplie				4/14/60	2/21/61			_	-					
Fr	om the top down,	the four 1	evels are;	į S	This de quired	eck als	o conta	lins su	pplem	nentary it	ems o	f re-						576-E	1		-				1	
	1) Launcher de	leck											- 1			2/24/60		550	12	_	-				12	
	<ol><li>Second level</li></ol>				The fo	urth le	vel gra	te decl	k hous	ses the lie	uid o	xygen	H			2/24/60		-	10	-	+	4	-	_		
	3) Grate deck									le ducts,								551	12		+		-		12	

3) Grate deck 4) Grate deck

The launcher deck mounts the missile, holddown equipment, and associated equipment. This deck also contains the flame deflector. The deflector, an integral part of the platform structure, is designed to direct missile engine exhaust away from the silo opening and prevent flashback. The flame deflector is lined with gunite at OSTF-2, 576-D, and 576-E.

interfacility box, and pod air conditioner.

An accessory platform is used on the elevator structure. This is the engine compartment access platform. This platform is of removable aluminum grating and L-beam construction and is installed over the flame pit opening when personnel are working on the missile engines. The platform includes a total of 10 grates which cover an area approximately 15 feet long by 9 feet 7 inches wide.

ITEM NUMBER 5010

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## By Air Force direction:

- 1) Part or specification number listed in column 3 is the number proposed for original provisioning
- 2) Recommended quantities only are listed in column 7.

3) This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area

Auproved

Recommended Quantity

> Use Current List of Effective Pages as guide for inserting Revision Pages.

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	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST N	UMBER: AP60-1046
\$M-65	CONVAIRASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See C	elumn 7)	REV.:
<li>problem AREA: In t must be supported above gr round for stowing.</li>	he silo configuration, a missil ound for firing and below	•				
n elevator type structure	is required which will:					
<ol> <li>Support a fully loa items of GSE requ</li> </ol>	ded missile along with various ired for launch.					
2) Provide personnel engines and GSE.	access for work on the missil	e	147			
3) Raise a missile to	ground surface for launching.					
sile exhaust gases	f preventing flames and mis- from entering the silo during s with refire capability.	<u></u>				
forces, launcher i	loads, angular misalignment nstallation, propellant load- d shook, stretch and equip-					
	xhaust temperatures, and eng with refire capability.	lne				
18) REMARKS: Only OST apabilities.	F and training sites have refir	•				
				E.		

## Use Current List of Effective Pages as guide for inserting Revision Pages.

			USAF WEAP	ON SYSTEM	1074-1 GRC	UND OF	ERATIC	NAL E	QUIPMEI	NT LIST,	SERIES E A	ND F					0,	te 5 Januar	y 1961		LIS	TNU	MBER	AP	50-104	6		
	SM-65		CONVA	IR-ASTRONAU	ncs	CONVA	R IS A	DIVISIO	N OF GE	NERAL D	YNAMICS C	ORPOR	ATION		SA	N DIEGO, C	AL.	CONTRACT N	10. (	See Ca	lumn	7)	RE	۷.				
0)	(2)		(3)		(4)		(5)	(6)	(9)	(10)	an	(12)	(13)	(14)	(18)	(16)	(17)	(15)						(7)				
ITEM	GSE		STOCK NUMB	ER			NUN				ANT SAL	=			2=2	osw	ซื่อง	ATE	NO	HERS	2	STAS					Ŧ	
QUENCE	SPEC PARA NO	CLASS	SERIAL	MFG. PART OR DWG. NUMBER	NOMENCL	ATURE	DESCRIPTION OF PROBLEM		PRICE		COGNIZANT LABORATORY CENTER	CLASSIFI	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT 1605	AT GUID	AT SMA	GENERAL	DEPOT		SUB TOTAL	
													CFE						-		co	NTRA	CT NO	AFO	4(647)	370		1
5011		27-2402 EID-27-			CAPTIVE F KIT, PROP		r									8 mo	7/10/	50 8/18/60	OSTF No. 1	1		-		-	-	-	1	-
		CID-21-	2000		SERIES E	0 LSION								ł		o mo	1/ 10/	0/ 10/ 00	1.10		L	NTRA			4(647)	346	-	+
					Diabo D									ł			1	1	T	1				T	10477	1	1	1
			0			<b>m</b> 1								. 1					576.C									1
12/22/1-12/23	OMENCLATUR Ision. Series E		captive r	ITING KIL.					and the second second		consist		9. J. 200 March 19	~					567				i ur					1
Fropu	ision, series L	•									um spee			ine				-	507									
This	kit comprises t	he follow	ng subass	emblies:			1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.				e force			the		-			548					_		_	-	4
	e care de la manena en la companya de la companya d					sprin	g by th	ne rot	ational	accele	ration of	the v	weight							-	-			-	-		-	4
Nome	enclature	P	art No.		Qty.	overc	omes	the sp	pring fo	rce and	l moves	outw	ard. I	n					706	-	-		$\vdash$	-+		-	1	-
					2 - 2 2						ver which			a					+	+	$\vdash$	-		-	-			1
	idary shutdown	2'	7-24513		2	- 성관한 위험의					turn ac								549	-	1			-			-	1
kit as	sembly										mplete c									100		NTRA	CT NO	AFO	4(647)	453		1
Variation	e overspeed	2	7-24310	3	2		1000				e trip me e pad of t								OSTF					_				1
	kit installatior		21010			moun	teu on	the a	0003301	y univ	e pau or	the ti	noopu	p.					No 2						_	_	1 3	1
cution	, are more managed					The p	urge	cit con	nsists o	falau	ncher me	ounte	d supp	ly					-	-	_ CC	ONTRA	CT NO	AFO	4(647)	605	_	-
Purge	e kit assembly	2	7-24016		1	manif	fold, a	miss	ile mou	inted di	stributio	on ma	nifold						576 D	-	-						-	4
and in	nstallation					and a	ssocia	ted fl	ex hose	s and c	onnectio	ns.	A 1000	• F						-		-		-	-	-	-	4
							<ul> <li>10.00</li> <li>10.00</li> </ul>		1. C.		s fed thr			· ·					576-E	-	-			-	-	-	-	1
	secondary shutd										by the us			s			-		-	1					-			1
	rons in Quadra							19.000			bressure the distr			.					550									1
	ximately stations reservoir whi										i, mount			- [					551									]
	a pressurizing										section.									-	-			_	_			
	gage (zero to 3	•				three	suppl	y inle	ts and s	seven o	utlets.	Gase	ous						577	-	-	-		-	_	-		1
	gh the port and					nitrog	gen is	distri	ibuted th	hrough	three of	thes	e outle	ts				-	1	-	-	-		-+	-	+	-	4
eous	nitrogen create	s a tank p	ressure o	of 800 psi	(plus or	to the	boost	er an	d sustai	iner ox	idizer de	omes	. A						578	-	-	-		-	-			+
	s 100 psig). A									-	s nitrog			ing					1	-	-	-		-+	+	-	-	1
	operated three										e remain								579		-				-+	-		1
	ses the pneuma										the boost he only o			1					1 2000									1
	er engine main										i are the								556									
	ing the main oxi								niter fu				reauti	• F								_						f
luel	valve, causing t	ne booste	r engine t	o shut on	•									1					ATC	1								

### By Air Force direction

By Air Force direction
 Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
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Asterisk indicates common usage with adjacent complex and/or area.

Approved

Use Current List of Effective Pages as guide for inserting Revision Pages.

	USAF WEAPON SYSTEM 107A-1 0	ROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NUMBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAI	. CONTRACT NO. (Se	e Column 7) REV.:
b) PROBLEM AREA: Dur	ing captive firing of the MA-3				
	ines must be cut off in case of				
	lure and all engines must be				
ut off in case of turbopump					
	h can be used to cut off boost	er			
	ile electrical power failure				
	se of turbopump overspeed.	hal			
	at be designed to remove reside e personnel enter the test are		1		
ypergol and oxidizer befor	fe condition which may exist l				
rust chambers and associ					
18) REMARKS: This item	supersedes Item 1104.	· ·	i)		
STF No. 2 item deleted pe	r BMC TWX LBTCR-4-67E				
ated 21 April 1960.					
	1.2				
					PL.

		_		Tana	R-ASTRONAUT				-			INAMICS C	CORR				N DIEGO, CA		5 Januar					REV				
	SM-6	, 			E-ASTRONAUT		Concerning and and a			11.14.1.17.14.19 11.1	<u> </u>	and an end of the			1				CONTRACT NO		See Col	umn 7	)	1.00	7)			-
(1)	(2)			(3)		(4)	N	(5)	61	(9)	(10)	(11)	03	2) (13	(14)	(18)	(16)	(17)	(15)		-		<u> </u>		<u></u>	T-T		+
ITEM QUENCE	GSE SPEC PARA NO	cu co		SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCL	ATURE	DESCRIPTION OF PROBLEM AREA	111111111111	UNIT PRICE	11255111	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI.	PROPOSED SUPPLY	SOURCE SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LC C'S	AT GUID. STAS	AT SWA	DEPOT		SUB TOTAL	
									77	22	633		-									cor	TRAC	TNO	AF 04(6	47-370		1
5012			7-499	10-1 7-9059		LAUNCHI			3	Est 25.000				CF	E					OSTE					-			
			20-21			ASSY., S				20,000					9				1	No. 1					AF 04(6			+
						FSC NOM		TURE:							3				1.	<b></b>			I	T	AF 04(6	1 1	-1-	-
						LAUNCHI														576-C							-	-
						SILO, GU	IDED M	ISSILE								1				567								
(4) N	OMENCLA	TURE: (I	PNS) I	auncher	and Utili	ties	3)	Servi	ce Li	nes: 1	The hyd	iraulic s	and n	oneuma	-	_						-	-		-	+		_
	nbly, Silo.		12				-					ng a mis								548			-			+	-	-
												are grou	-								-		-	-	-		-	-
This	tem comp	rises the f	ollowi	ing comp	onents:					t panel	which	is moun	nted	on the						706								
1	) Support	Frame:	This f	rame co	naists of	two		launc	ner.											549								
		tal membe					(5) PR	OBLEN	AR	EĂ: A	missil	e must l	be m	nain-	3								NTRAC	TNO	AF 04(6	47) 457		+
	a contra con a contra	semblies v				e		in verti	cal r	eadine	es at ti	ne launch	her	instal-			1	-	1	OSTF	1		T	T	1	TT	11	-
		al of the la					lation.										13 mo			No 2								
		irame stru le in prop		100 - Contraction (1997)			Fauinm	ent mu	at he	suppli	ed whi	ch can b	he in	bellets						-		co	NTRAC	T NO.	AF 04(6	47)-605		
	bucket	so that exh n the laund	haust	gases wi	ll not im-		on the l											4/14/6	0 2/21/61	576 D	1		_		-		1	1
	8.8						1)					bility du								576-E	-	-	-+	-+-	+	++	-	+
		cating pin ted with or						iness	and	countde	own thi	rough las	unch						1	550	12						12	2
		accurate					2)	Quick	disc	onnect	at mi	saile ris	se-of	f.				2/24/6	10		1.0	-		-		+	12	_
		tructure.						4. <b>4</b> .9925.90												551	12	10-7	-	-		+	12	4
		h four man		•		n	3)			•		propella									12				1		12	2
		which hol				ding.						ary for s on. This		- C - C					-	577			_					
	atter in	unchor m								-		i transfe								578	12	_	_	-			12	2
2		ting Tower						oxyge	n.	•										-	12	-	-+		-	+	12	2
		pe structu																		579			-				-1-	-
		oning duct																		556	12						12	2
		ation of ba																					1				_	_
		r at OSTE																		ATC			-					
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This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Use Current List of Effective P as guide for inserting Rev

Poge 1 of 2

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.

SM-45     COMMERTIONAUTICI     COMMERTIA BUNDON OF BIMBRAL DYNAMICL CONFORTION     LAN DUDG, CAL     CONTRACT NO.     Use Column 7)     HV.		USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIS	IT, SERIES E AND F		DATE: 5 January 196	LIST N	UMBER: AP60-1046
position, any level between stowed and launch positions. 5) Support for ducts and cables. 8) REMARKS: This item is similar in function to	SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL	DYNAMICS CORPORATION	SAN DIEGO, CAL			REV.:
8) REMARKS: This item is similar in function to	position, any level be	towed position, launch otween stowed and launch						
	5) Support for ducts and	cables.						
		similar in function to						
				t.	(i			
		14						
				e.				
		4					×	

			USAF WEAP	ON SYSTEM	107A-1 GROUN	D OPER	ATIONAL	EQUIPME	NT LIST,	SERIES E A	ND F					DATE	5 Januar	y 1961	L	LIS	TNU	MBER:	AP60	-1046		
	SM-65		CONVA	R-ASTRONAUT	ics CO	NVAIR	IS A DIVIS	ION OF G	NERAL D	YNAMICS (	ORPOR	TION		SAI	N DIEGO, CA	ı. (	ONTRACT NO		See Col	umn )	7)	REV	+			
(1)	(2)		(3)		(4)		(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)						7)			
			STOCK NUMB	ER			25	1		+ <u>۲</u>				~~~~~	-			-	S a		2					
	GSE SPEC PARA NO.	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATUR	E	OF PROBLEM	UNIT PRICE	1111992	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS. & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	GENERAL	2		TOTAL ON
5012		97.0	9074-1		SUOTEN ASS	v		Est				CFE								co	NTRAC	T NO.	AF 04	647}-37	0	
5013			27-09587	-1	SYSTEM ASS DOOR CLOSU			45,85	0			OFE						OSTF								_
			27-9275		FSC NOMEN		URE:	40,00	•				ļ					No. 1					_	_		_
					DOOR ACTU									· · · · · · · · ·			-	-		c0	NTRA	CT NO.	AF 04	(647)-34	6 	_
					MECHANISM													576-C			_	-+	-+-		++	-
					GUIDED MIS	SILE																+	+	+		-
								ad has a	5 inch	atroka	The							567				-	-	-		_
	OMENCLATUI Closure.	(E: (PNS)	System /	Assembly		-				stroke. aking the			e					548								
Door	Jiosure.							1.1.1.0.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		inder cor			е - П					340								
This s	ystem compri	ses the fo	llowing ed	uipment:				or misal										706		_		_	-	_		
	,			*70*CAS*6415				10	171					_		-	-			_		-	-	-	+	_
1)	Actuating C	ylinders	- These a	re two hy	- (5) P	ROBL	EM AR	EA: Two	doors	of reinfo	orced							549		-		-		+	+ +	_
	draulic cyl							· · · · · · · · · · · · · · · · · · ·		ed to wea			1					-			NTRA	CT NO	AF 04	(647)-45	3	-
	silo door.									om the e								OSTF	1				T	1		1
	trunnion m of the cylin									ns. Ope e missil					13 mo			No. 2			()					
	doors throu	· · · · · · · · · · · · · · · · · · ·					ut proce		it of th	e missin	c laun					_				co	ONTRA	CT NO.	AF 04	(647)-60	5	_
	doors mo	-Bit action			und e	neeno	at proce	au co.									0 /01 /01	576-D	1			-	-	-		1
2	) Door Cylin	der Mount	ing Brack	kets - Two	equip	oment	is requi	red whic	h will	open silo	doors					4/14/60	2/21/61	-		-		-	-		+	-
	trunnion br	ackets mo	ounted on	the silo						ight of 30								576-E				-		-		-
	cap suppor		2010			• • • • • • • • • • • • • • • • • • • •			cing of	the syst	em, a	nd/						-	12	-		-	+	+		12
	Bearings i			v free swi	ng or a v	wind fo	orce of	60 mph.								2/24/60		550								
	of the actu	ating cylir	uers.															551	12							12
3	) Actuator C	vlinder D	oor Brack	et - The	ois-													331					_	_		
	ton rod en																	577	12			_		_		12
	attached to																	-	10	-		-				
	side of eac																	578	12			-	+		+	12
	traction of	the rod r	aises or l	owers the															12	-		-	+			12
	door.																	579				+	-	+		
	Dreaker	Door Co	ladore	Four bros	k-													556	12							12
4	<ul> <li>Breakaway away door</li> </ul>																	330								
	cap openin																	ATC								

By Air Force direction: 1) Port or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7.

This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Auproved Quantity Asterisk indicates common usage with adjacent complex and/or area.

Recommended Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.

ITEM NUMBER 5013

Poge_1_of_1_



By Air Force direction:

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.

Asterisk indicates common usage with adjacent complex and/or area.

Approved

Recommended

Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.

	USAF WEAPON SYSTEM 107A-1	ROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NU	MBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL		Column 7)	REV.:
form align	Strikers. In addition to the plat- nment rail, four lock strikers ted in the silo cap. Each strik-	5) Align the launcher platform center with the silo center.				
er acts as of guide r	a cam for one of the four sets ollers thus providing a launch- m stop and a rigid locking	<ol> <li>Prevent launcher platform movement in the stowed position</li> </ol>				
position f	or the system.	(18) REMARKS: Only OSTF and training sites have refire capability.				
strikers a for lockin	k Strikers. Four down-lock are mounted on the crib structure g the launcher platform in down position. These strikers form					
a rigid co	nnection between the launcher and the crib structure.					
missile require	EA: Launching and checkout of es that the launcher platform be as supporting structure. Similarly					
	issile load must be locked rigidly structure when in stowed position.					
uipment is requi	red which will:					
at both the	preloaded and rigid lock position a launcher and stowed positions of platform and missile.					
2) Support de	signated load.					
	heat and blast conditions at sites e capabilities.	18				
4) Withstand	ground shock				i.	

		U	SAF WEAPON	SYSTEM	107A-1 GROUND OF	ERATIONAL	EQUIPME	NT LIST.	SERIES E A	ND F					DATE	5 Janua	ry 196	1	LIST	T NUM	BER	AP60-	1046		
	SM-65		CONVAIR-AS	STRONAUTIC	S CONVA	R IS A DIVIS	ION OF GE	NERAL D	YNAMICS Ç	ORPORA	TION		SAP	N DIEGO, CA	и. с	ONTRACT NO	0. (9	ee Col	umn 7	7	REV	A-1	Feb '6	1	
(1)	(2)		(3)		(4)	(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)					(	7)			
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3 This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Use Current List of Effective Pages as guide for inserting Revision Pages.

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clear the missile and launcher platform structure.       unrestricted access to the enclosure.         The collimator system assembly comprises the following components:       The collimator support platform is a 3-foot 6-inch diameter plate which support the collimator rigidly. The supporting structure of the plate mounted on the wall of the silo.         1)       Collimator support platform         4)       Bench mark supports         5)       Collimator sight tube         6)       Collimator sight tube retraction mechanism         7)       Signal devices         The collimator support platform, and bench mark supports. This room is fastened to the silo between the sist hand seventh levels and houses the collimator system. The enclosure is provided       The collimator sight tube provides an optically unobstructed path for a beam of light to transmit tube is constructed of 10. 75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve       536       12       12       12         12       12       12       12       12       12       12		and the second									safe a	und			10 mo				1.	-				1 1	μ.	
The collimator system assembly comprises the following components:The collimator support platform is a 3-foot 6-inch diameter plate which support the collimator rigidly. The supporting structure of the platform fastens to a steel plate mounted on the wall of the silo. $4/14/60$ $2/21/61$ $376.0$ 111)Collimator enclosure the platform fastens to a steel plate mounted on the wall of the silo. $576.6$ 1113)Collimator support platform 4)Hench mark supports sight tube 6)Two bench mark supports are housed in the col- limator enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo. $2/24/60$ $530$ 1212The collimator sight tube restruction mechanism 7)Signal devices $577$ $12$ 1212The collimator support platform, and bench mark supports.The collimator sight tube provides an optically unobstructed path for a beam of light to transmit data from the collimator to the missile. The tube is constructed of 10.75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve $576.6$ 12121212121212131212121414141415 $576.6$ 121216 $577.6$ $12$ 1217 $577.6$ $12$ $12$ 18 $577.6$ $12$ $12$ 19 $12$ $12$ 10 $576.6$ $12$ $12$ 10 $577.7$ $12$	cles	r the missile :	and launcher	platfor	m struct	ure. un	restricted a	ccess to	the en	closure.			t							. co	NTRAC	TNO	AF 04(64	47)-605		+
lowing components:       6-inch diameter plate which support the col- limator rigidly. The supporting structure of the platform fastens to a steel plate mounted on the wall of the silo.       4/14/60       2/21/61       1       1         1) Collimator enclosure       576.E       1       1       1         2) Access ladder       576.E       1       1       1         3) Collimator support platform       550       12       12       12         4) Bench mark supports       Two bench mark supports are housed in the col- limator enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo.       531       12       12       12         The collimator supports. This room is fastened to the side of the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator support platform, autimum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve       536       12       12	The	collimator sv	stem assem	bly com	orises the	e fol- Th	e collimato	r suppor	nlatfo	rm is a 3	-foot					P	1. C		1				T	T		
1) Collimator enclosure       interfightly. The supporting structure of the platform fastens to a steel plate mounted on the wall of the silo.         2) Access ladder       interfightly. The supporting structure of the wall of the silo.         3) Collimator support platform       2/24/60         4) Bench mark supports       Two bench mark supports are housed in the collimator enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo.       550       12       12         5) Collimator sight tube       inter enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo.       577       12       12         The collimator enclosure is an insulated room which houses the collimator support platform, and bench mark supports. This room is fastened to the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator to the inside to reduce light diffraction. Neoprene boots and sleeve       556       12       12		1.57										-				4/14/60	2/21/61	3/0.0								
2) Access ladder       the wall of the silo.       12       12       12         3) Collimator support platform         4) Bench mark supports       Two bench mark supports are housed in the collimator enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo.       30       12       12       12         5) Collimator sight tube       Imator enclosure. The supporting structures fasten to facility-furnished steel plates mounted on the wall of the silo.       30       30       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12       12						lir	nator rigidl	y. The s	upport	ting struct	ture o	f						576 E	1				-	+	1	_
2) Access rated 1       une wall of the silo.         3) Collimator support platform         4) Bench mark supports       Two bench mark supports are housed in the col- limator enclosure. The supporting structures         6) Collimator sight tube retraction mechanism       fasten to facility-furnished steel plates mounted on the wall of the silo.         7) Signal devices       577         The collimator support platform, houses the collimator, collimator support platform, and bench mark supports. This room is fastened to the side of the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator is provided									a stee	el plate me	ountee	d on					1000		10		-	-	-	+		_
4) Bench mark supports       Two bench mark supports are housed in the col- limator sight tube       551       12       12         5) Collimator sight tube retraction mechanism       7) Signal devices       577       12       12         The collimator support platform, and bench mark supports. This room is fastened to the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator to the missile. The tube is constructed of 10.75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and elseve       556       12       12		그렇게 그는 것은 눈 앉았는 그럼				th	e wall of the	silo.								2/24/60		\$50	12			-	+	+	12	-
5) Collimator sight tube       limator enclosure. The supporting structures         6) Collimator sight tube retraction mechanism       fasten to facility-furnished steel plates mounted         7) Signal devices       577         The collimator enclosure is an insulated room which       for the collimator support platform,         and bench mark supports. This room is fastened to       the collimator to the missile. The         the side of the silo between the sixth and seventh levels       and houses the operational and maintenance personnel         for the collimator system. The enclosure is provided       is provided						т	n bench ma	rk suppo	rte ar	e housed i	n the	col-	ſ						12				+		12	
6) Collimator sight tube retraction mechanism       fasten to facility-furnished steel plates mounted       577       12       12         7) Signal devices       578       12       12       12         The collimator enclosure is an insulated room which houses the collimator support platform, and bench mark supports. This room is fastened to the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator support platform, aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and elseve       556       12       12		- 사람이 - 그렇게 걸려 가지 않는 것 같아?						127-127-127-127-127-127-127-127-127-127-					L					331								
The collimator enclosure is an insulated room which houses the collimator support platform, and bench mark supports. This room is fastened to the sile of the sile between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator sight tube provides an optically unobstructed path for a beam of light to transmit data from the collimator to the missile. The tube is constructed of 10.75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and elseve       12       12       12		6) Collimato	or sight tube	retract	ion mech					-								577	12						12	
The collimator enclosure is an insulated room which houses the collimator, collimator support platform, and bench mark supports. This room is fastened to the side of the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       The collimator sight tube provides an optically unobstructed path for a beam of light to transmit data from the collimator to the missile. The tube is constructed of 10.75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve       378       12       12		7) Signal de	vices			on	the wall of	the silo.					ł						10			-				_
houses the collimator, collimator support platform, and bench mark supports. This room is fastened to the side of the sile between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided       unobstructed path for a beam of light to transmit data from the collimator to the missile. The tube is constructed of 10.75-inch diameter aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve       12       12       12	-					L/L m												578	12		-	-	+	+ +	12	-
and bench mark supports. This room is fastened to data from the collimator to the missile. The the side of the silo between the sixth and seventh levels and houses the operational and maintenance personnel aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and eleve						1872 - HERRICH - HIRRICH -								-					12		-		+		12	
the side of the silo between the sixth and seventh levels and houses the operational and maintenance personnel for the collimator system. The enclosure is provided light diffraction. Neoprene boots and sleeve													Ļ					579								
and houses the operational and maintenance personnel aluminum tubing coated on the inside to reduce light diffraction. Neoprene boots and sleeve									이번 이렇게 한다.			0.5						556	12						12	
													ł					-					1			-
	for	the collimator	system. T	he enclo	osure is p	provided lip	tht diffracti	on. Neo	prene 1	boots and	sleev	•						ATC								

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Asterisk indicates common usage with adjacent complex and/or area.

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Page 1 of 2

	USAF WEAPON SYSTEM 107A-1	GROUND	OPERATION	AL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 196	LIST N	UMBER: AP60-1046
SM-65	CONVAIRASTRONAUTICS	CONV	AIR IS A DIV	ISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	See Celumn 7)	ALV.I
5. 177-197 - J 15. 1970 - H 16								
	each end of the tube. These bo			evices consisting of 28-volt dc micros				
	ignment at all times and provid		•	he position of the movable section of the tube to the missile launcher lift contro				
flexible and adjustable	e connections to adjoining struct	ures.	limator	tube to the missile launcher lift control	1.			
and the second	d in two sections; one section i		12.00 C 12.00 C	OBLEM AREA: An unobstructed refrac	양성 방법 집 아파와 유부는 것			
	vable. The fixed section is fas			sight between the ARMA collimator an				
	with two adjustable fittings. The			borne stabilized platform porro prism	must be			
	djustments in alignment. One e		provide	d.				
	provided with an adjustable, fle ne collimator enclosure. The o		Fauinm	ent is required which will:				
	tes with the hinged end of the	liici	Equipin	ent is required which whit.				
movable section of th	방법 양태 영화 영화 영화 방법 방법 방법 문화 방법 영상 문제 영화		1)	Be adjacent to the AIG window during	platform			
morane occurs of a			-,	fine alignment.				
The movable section	is fastened to the structure by a							
hinge. A seal fitting	on the lower end of the movable		2)	Retract to a safe position just prior t	o missile			
section mates with a	similar fitting on the fixed section	on		rise-off.				
when the tube is in op	erating position. The upper end	1						
of the movable sectio	n is coupled to the missile throu	gh	3)	Provide baffles or other devices in th	e tube			
20. The State of States and States	oprene boot, and another sleeve			structure to prevent light dispersion.				
	sleeve has a 1/2-inch thick neo	-						
전통 전 사람이 집에 가지 않는 것이 없는 것이 같이 많이 많이 많이 했다.	es and provides a soft contact		4)	Provide a minimum 9 inches inside d	lameter			
	issile. The upper sleeve is oar which acts as a window-hook			aperture.	÷.			
	ube locked to the missile.		5)	Have a minimum dimension of 4.5 in	hes from			
lastener to keep the t	abe locked to the missile.		3)	the centerline-of-sight to any inner c				
The collimator sight	tube retraction mechanism con-			ence of the baffle or structure.	reumer			
	counterweight. Upward move-							
	auses the window-hook fastener		6)	Maintain light beam alignment within	a tolerance			
to release and the mo	vable section of the tube to swin	g	1.515	of plus-or-minus 2 seconds of arc.				
upward through an ar	c of approximately 64 degrees to	0		S				
stowed position. In s	towed position there is a 2-inch		7)	Maintain a temperature gradient of no	ot more than			
minimum clearance b	etween the sight tube and the			5 degrees F between the collimator e				
The second state is a second from the second	detent equipped with a neopren	e		the missile, in conjunction with a flo	v of con-			
	ck absorption and prevents tube			ditioned air.				
	wed position. This arrangement							
	al extension of the collimator							
tube to operating pos	tion.							

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USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F LIST NUMBER AP60-1046 DATE 5 January 1961 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SM-65 CONVAIR-ASTRONAUTICS SAN DIEGO, CAL. CONTRACT NO (See Column 7) REV ... (2) (3) (4) (5) (6) (9) (10) (11) (12) (13) (14) (18) (16) (17) (15) (7) (8) STOCK NUMBER AT LAUNCHERS SLAS DATE GSE SPEC PARA SECURITY CLASS & OCATION TOTAL EST PRO DUCTIONS ARDC ARDC AT LCC'S GENERAL ž., ITEM MAN DESCRIPTO UNIT MFG. PART NOMENCLATURE DEPOI SEQUENCE EST D GUID TOTAL CLASS SERIAL 030 7 SUB 1 OR DWG CONTRACT NO. AF 04(647)-370 CFE 5017 27-99064-1 SYSTEM ASSEMBLY, Est OSTF Spec 27-09577-1 GASEOUS OXYGEN 9.000 No. EID-27-9270 VENT MECHANISM CONTRACT NO AF 04(647)-346 FSC NOMENCLATURE: 576 C VENTILATION SYSTEM. GASEOUS OXYGEN 567 548 The pivoted inlet pipe is attached to a hydraulically (4) NOMENCLATURE: (PNS) System Assembly, actuated arm designed to swing the pipe 90 degrees Gaseous Oxygen Vent Mechanism. 706 to a vertical position to clear the missile just before The gaseous oxygen vent system consists of the folthe elevator starts its rise to launch position. 549 lowing components: CONTRACT NO AF 04(647)-453 (5) PROBLEM AREA: The rapid boil-off of gaseous 1 1 OSTE 1) Outlet pipe and flexible bellows oxygen from the missile oxygen boil-off valve creates -No 2 10 mo a serious safety problem in the silo. CONTRACT NO AF 04(647)-605 2) Flexible duct from the fan inlet to the outlet 1 Equipment is required which is capable of high of the hinged retractable pipe 576 D 4/14/60 2/21/61 velocity transfer of gaseous oxygen from the boiloff valve to the facility air changing chambers where 3) Straight section of fan inlet pipe 576 E this gaseous oxygen is exhausted from the silo and 12 12 4) Hinged and counterbalanced pivoting section dispersed. To prevent missile damage, the equip-550 2/24/60 ment provided must be automatically retractable of inlet pipe approximately 18 inches inside 12 from the missile prior to lift to launch position. 12 diameter and 12 feet long 551 12 12 The system is designed to carry a large volume of 577 air-oxygen mixture as it pours from the missile liq-12 12 uid oxygen boil-off valve. The equipment provides 578 rapid dilution and evacuation to prevent excessive 12 12 concentration of oxygen and consequent safety hazard. 579 During standby and liquid oxygen loading the pivoted 12 12 inlet pipe is in a horizontal position. When in this 556 position, the pipe removes the gaseous oxygen as it bous from the gaseous oxygen relief valve. ATC

By A.r Force direction

Part or specification number listed in column 3 is the number proposed for original provisioning. Recommended quantities only are listed in column 7

3. This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Quantity

Recommended

Quantity

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USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F LIST NUMBER: AP60-1046 DATE 5 January 1961 CONVAIR-ASTRONAUTICS CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SM-65 SAN DIEGO, CAL CONTRACT NO. (See Column 7) REV (1) (2) (3) (4) (10) (13) (18) (5) 141 (9) (11) (12) 104 (17) (16) 115 17: (8) STOCK NUMBER STAS EST DATE FIRST ITEM AVAILABLE GSE SPEC PARA SECURITY CLASS & OCATION OTAL ON EST PRO DUCTIONS ARDC APROVA SUB TOTAL ITEM LAUNCHE AT LCC'S GENERAL SMA PROB DEPOI UNIT MFG. SEQUENCE NOMENCLATURE GUID CLASS SERIAL PRICE -OR DWG. NUMBER -CONTRACT NO. AF 04(647)-370 27-99061-1 SYSTEM ASSY. Est CFE 5018 OSTF 29,500 EID-27-9274 SUSPENSION. No 1 CRIB CONTRACT NO AF 04/6471-346 FSC NOMENCLATURE: 576 C SUSPENSION SYSTEM. SILO CRIB, GUIDED MISSILE 567 548 (4) NOMENCLATURE: (PNS) - System Assembly, (5) PROBLEM AREA: The silo launching site must be capable of launching a missile after experiencing Suspension, Crib. 706 a near miss by a nuclear weapon. This system consists of four wall brackets and eight 549 crib suspension shock struts. Equipment is required to isolate the loaded crib structure from the ground shock created by a nuclear CONTRACT NO. AF 04(647)-453 explosion. The equipment provided must be designed The four wall brackets are mounted 90 degrees apart OSTF 1 1 on the wall of the silo. These brackets support the to withstand the loads imposed by the following 7 mo No 2 crib suspension shock struts, which in turn support conditions: CONTRACT NO AF 04(647)-605 the crib. 1 576-D 1) Missile installation 4/14/60 7/23/60 Raising and lowering of launcher platform Eight shock struts, paired into four sets, are equally 2) 576-E spaced around the periphery of the crib and attached 3) Stowed and launch positions of launcher to the wall bracket. Each strut is 60 feet long. Each platform 12 12 550 strut consists of a central spring capsule with a 4) Propellant loading 3/22/60 5-inch diameter centered strut rod at each end of the 5) Missile launch 12 12 551 capsule. The end of one rod attaches to the silo wall. 6) Ground shock bracket; the end of the other rod attaches to the 12 12 577 (18) REMARKS: †Technical Figure-A approval of crib. The spring capsule comprises six concentric this item granted by AFBMD TWX R2201002 dated pairs of springs and six spools, mounted to form a 12 12 578 22 March 1960. column. Seven spacer plates and three rods extending the length of the column, hold the springs in 12 12 This item supersedes item 1119 in part per 579 position. Provisioning Conference action 19 February 1960. 12 12 556 Each strut provides 23 inches of vertical deflection from free height, and sustains the loads incurred by this deflection.

## By Air Force direction:

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Recommended

Quantity

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					107A-1 GROUND O	10-12-C-12	second Difference		and the second second	2014-1920					DATE	5 Januar	y 1961		LIS	TNUM	BER	AP60	-1046		
	SM-65			IE-ASTEONAUT			VISION OF	SENERAL C	YNAMICS C	CORPO	RATION		SAI	DIEGO, CAL	c	ONTRACT NO	<b>b</b> (	See Col	umn	71					
.15	(2-		(3)		(4)	(5)	(6) (9)	(10	(11)	112	(13)	(14)	(18)	(16)	(17)	15			_			7			
ITEM QUENCE	GSE SPEC PARA NO	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM		1122011	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI-	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	SadHONDY 1 D	AT LCC'S	AT GUID STAS	A1 544	GENERAL		14101 6112	SUB TOTAL
019			27-99091	-1	SYSTEM ASSY,		Est				CFE								co	NTRACI	NO	AF 04	647).37	5	-
			EID-27-9	0287	LOCK AND DAME		114,	400			CFE						OSTF No 1	-				1	1	F	=
				1	DAMPER AND LC.	CK SYS										1			co	NTRAC	INO	AF 04	647)-34	,	_
					SILO CRIB, GUL	ED MISS	ILE										576 C		_		+	-	-	$\vdash$	
	NOMENCLATI	RE: (PN	S) - Syste	m Assem	bly,		on blocks										567			-	4	+			_
	k and Damper.	Ö			2	strut	r rod of t . Each da					ļ					548				-			<u> </u>	
This ers:	system compr	ises the f	following l	ocks and	damp-	950 p	ounds.										706							- +	-
1	) Vertical spr	ing caps	ule locks.	Four ve			ontal cril ontaldam		승규는 것을 가지 않는 것이 많이								549						+		-
	spring capsu					arou	nd the per	iphery o	of the cril	b. E	ach								co	NTRACI	NO	AF 04	647)-45	1	
	suspension i units and let						er consis hed to a s		and the second se					9 mo			OSTF No 2	_1		-			ł		
	locking devi		and the second sec			block	s which b	ear aga	inst the d	iampe	er rod.								co	NTRAC	NO	AF 04	647 : 60	5	
	and locking within 1, 16-						damper e s capable							4	/14/60		576 D	-			-			1	1
	maximum ir inches.	itial erro	or of plus	-or-minu	u 3		cal motio ilateral n		us-or-mi	inus -	inche	s					576 E				-	-		1	
2	) Horizontal d	rib-to-si	ilo locks.	Three h	orizon- (5) F	ROBLEI	AREA:	The sil	o launchi	ng si	te mus	.		Ŷ	3/22/6	0 8/9/60	550	- 12							12
	tal locks co the crib whi		-	-			launching y a nucle:			exper	iencin	g					551	12						<u>t</u>	12
	plate in the apart in the				egrees												577	12			-			1	12
	locks positi	on the cr	ib centerl	ine to wit	hin Equip	ment is	required t	o damp	en ground	d sho	ck vi-						578	12	_	-	-			1	12
	plus-or-min line.	108 0.06-	nich of th	e suo cen	struc	ture for	the crib launch, a	nd positi	ion the cr	rib ce	enter-	e					579	12			-	1	-	1	12
3	3) Vertical sh		- 19 January 19 Januar		re four The s	ystem p	o centerlin ovided m	ust be d	esigned t	to wit	hstand						556	12			-			1	12
	dampers, o Each dampe				uts. the lo	ads impo	osed by th	e follow	ing condi	tions	4														+
																	ATC								

Part or specification number listed in column 3 is the number proposed for original provisioning.
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	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE 5 January 1961	LIST NU	MBER: AP60-1046
SM-65	CONVAIR ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See	Column 7)	REV.:
i) Missile installat	00					
2) Raising and lowe	ring of launcher platform					
3) Stowed and laune	h positions of launcher platfo	rm				
<ol> <li>Propellant loadin</li> </ol>						
5) Launch						
6) Ground shock						
IN REMARKS Techni	cal Figure-A approval grant	2				
AFBMD TWX R220100						
	m 1119 in part per Provision	ing				
Conference action 19 Feb	ruary 1960.					
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				-ASTRONAU		DNVAR IS	DIVIC		-			TION				5 Januar			_			AP60			
0 1	SM-65		(3)	IE-ASTEONAU			-				-			SAN DIEGO,	-	ONTRACT NO	D. (1	ies Col	umn 7	"	REV	S			_
	(1)				(4)	(5)	(6)	(•)	(10)	(11)	(12)	(13) (1	4) (18)	(16)	(17)	(15)	-		_			(7)		_	"
ITEM	GSE SPEC. PARA. NO.	CLASS		MFG. PART OR DWG. NUMBER	NOMENCLATU	NOILAINON DESCRIPTION		UNIT	117744111	COGNIZANT LABORATORY, CENTER, A SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE SOURCE	SECURITY CLASS A	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT 544	GENERAL		SUB TOTAL	TOTAL ON
					1		101		677			<u> </u>	-		1		1		co	_	TNO	AF 044	47-370		+
5020			27-99096		SYSTEM ASSY	Contraction and the		Est				CFE		1	T		OSTF			T	Т	1			1
			EID-27-9	9288	COUNTERWEI			88,700	D								No. 1				-				
					FSC NOMENC														co	NTRAC	T NO.	AF 04	6471-344		+
					COUNTERWEI												576-C								
					LAUNCH PLA											in the second	3/0-2								
					MIGGILE LIFT	110											567								
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	ab unit compris					•									T					NTRAC	T NO.	AF 04(	47)-453		-
	cel slabs bolt counter-weight	-			T.N.	item su	ersed	es item	1118 1	n part pe	r Pro	-					OSTF No. 2	1					+	- 11	-
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	l end of the co													1	t+			12		-	-	+	+	12	
rail. (	Guide shoes are	e mounte	d on the tw	wo faces	of each										3/22/60	6/25/60	550				-+	-		-1	1
groove	to provide bea	ring surf	faces for t	he guide	rail.									1				12			-	-		12	1
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Two sh	eave assembli	es, each	weighing	approxim	ately												1000	12						12	1
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	tform, must be													1											
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Asterisk indicates common usage with adjacent complex and/ar area.

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Pert or specification nur "++ listed in calumn 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Use Current List of Effective Pages as guide for inserting Revision Pages

		l.	USAF WEAP	ON SYSTEM	107A-1 GROUND OI	PERATIONAL	EQUIPME	NT LIST,	SERIES E A	ND F					DATE	5 January	1961		LIS	T NU	MBER	I: AP	60-10	946		
	SM-65		CONVA	IR-ASTRONAU	ICS CONVA	IR IS A DIVISI	ON OF GE	NERAL D	YNAMICS C	ORPOR	TION		SAP	DIEGO, CA	L C	ONTRACT NO	). (t	iee Col	lumn	7)		v				
(1)	(2)		(3)		(4)	(5) (6)	(9)	(10)	an	(12)	(13)	(14)	(18)	(16)	117)	(15)						17				0
	GSE SPEC. PARA. NO.	CLASS	SERIAL NUMBER	AFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM AREA	UNIT		COGNIZANT LABORATORY. CENTER. 4 SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT 100'S	AT GUID STAS	AT SMA	GENERAL	10430		SUB TOTAL	TOTAL ON
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5021			27-99077	7-1	SYSTEM ASSY,		Est				CFE	1					OST						T	1		
			EID-27-9		GUIDE RAILS,		8,700					L	- mark				No. 1									
					COUNTERWEIGHT							H								ONTRA	CT NC	AF C	04(64)	1.346		
					FSC NOMENCLAT GUIDE RAIL, COU MISSILE LIFTING	JNTERWEI ,	бнт					+					576-C						-			_
					LAUNCH PLATFO	RM						-  -						-					-			_
	NOMENCLATU		S) System	Assembl		3-inch clea											548	-								-
Gui	de Rails, Count	erweight.				nd the guide ails taper to					e	-					706									
Thi	s assembly com	prises the	e following	g compon		ins taper to	o a clear	ance	51 0.0-Inc	en.		H						-								-
						BLEM AR	EA: Mi	ssile la	aunching	from	ın	1					549	-				-				-
	1) Counterweig	tht guide	rails			ound crib s						H					L	L		DNTRA	CTNC	AF	04/647	1.453		+
1	2) Brackets				missile	to ground s	surface	prior t	o launch.	Var	ous	- F					OSTF	1				T	1	1	1	-
						erations w		olve ch	neckout an	nd tes	s also		1	8 mo			No. 2					1		-1-	1	1
	guide rails are				N 1997 NA CONSTRUCTION OF	missile su	rfacing.					Г				•			c	ONTRA	CT NO	D AF	04/64	7-605		T
mo	platform counter vement of the co ed of 8-inch by 8	unterweig	t. The	ruils are	fabri- Equipm	ent is requi cher platfo						- L			4/14/60		576-D	1	_						1	
Eac	ch rail is welded	to a 1-in	ch thick b	ackup pla	te and dyna	imic condit		ici wei	gino una	1 004	Blatic						576 E	1	-	$\vdash$		$\vdash$		-		+
rei	roximately 12 in nforced by a 1-in	nch thick,	4-inch w	ide welde	d (18) RE	MARKS:				-		Ī			† 3/22/60	10/12/60	550	12	_			H		+	12	
ass	el rib. For ease embly, the rails	s are fabr	icated in a	sections a		by AFBMD	TWX R	220100	2 dated 2	2 Mai	ch	ſ					551	12						-	12	-
	ed end-to-end fo roximately 136 f			length of		m supersed					-	T					577	12				H	_	1	12	1
The	e brackets are si	hort steel	bars used	d to secur		g Conferen	ce actio	n 19 F	ebruary 1	1960.		ſ					578	12	_		$\square$			-	12	-
	de rails to the ci											F					579	12						-	12	1
	cket is welded to er side is bolted											1					314		-					_		_
	unted on a chann																556	12	_	$\vdash$					12	4
ture	e. The castings	are shim	med to in	sure that	cam-							F							_					_		+
	in the guide rai L. Above 947 fee																ATC									

Approved Quantity

Asterisk indicates common usage with adjacent complex and/or area.

By Air Force direction: 1: Part or specification number listed in column 3 is the number proposed for original provisioning. 2: Recommended quantities only are listed in column 7. 3: This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFB/AD Exhibit 60-36 for configuration and provisioning information.

		1000 (Co-011)		a state of the sta	A 107A-1 GROUND O		2		10001-001-04	Stranger and	secondar,		0.00			DATE	5 Januar	y 1961	1		140/	NDER	Aro	0-1046	5	
	SM-65	T		IR-ASTRONAUT						YNAMICS C					N DIEGO, CA	u.   (	ONTRACT NO	. (5	See Co	umn 7	)	REV	_			
10	(2)		(3)		(4)	(5)	(6)	(9)	110	01i	(12)	(13)	(14)	(18)	(16)	(17)	(15)		-	_			(7)			
	GSE SPEC PARA NO	CLASS	SERIAL NUMBER	AFG PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM	ARE A [[[]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]	UNIT PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHEPS	AT LCC'S	AT GUID STAS	AT SMA	GENERAL	DEPOI		SUB TOTAL TOTAL ON
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					PLATFORM								ŀ				1	1.10	-	co	NTRAC	TNO	AF 04	(647)-3	46	
					FSC NOMENCLA DRIVE ASSEMBL LAUNCH PLATE	Y,												576-C	-				T		T	
					GUIDED MISSILE	한 이 이 것은 가슴이 집에 들어졌다.												567	-	-			-			
(4)	NOMENC LATU	RE: (PN	S) - Syste	m Assem	blv. 2	2) M	ain Re	luction	Gear:	The high	-sper	d mot	or [					548			_		-	-	1-1	
	e, Launcher P	50 C 12				is	conne	cted dir	ectly t	o the mai	in red							706	-	_				-	1-1	
	system, which					12	2.077:1	. This	reduc	tion gear	drive		Ī					549		_		-	-			_
plat	orm, comprise	es the fol	lowing suc	bassembli	es:			sheaves and driv		ugh flexil	ble co	upling	s,							co	NTRAC	TNO	AF 04	(647)-4	53	-
	1) Motors: 7 60-cvcle,				8250 I					ear: The			Ī		11 mo			OSTF No 2	1	-			T		1-1	1
	crane-and	211 · · · · ·								an auxili			n [				4			co	NTRAC	TNO	AF 04	(647)-6	05	
	motors ar the follow	the reaction of the Automatical Section of the			ave	ge	ear thr	ough a s	shaft a	nd flexibl on gear h	e com	nection	20 - E			4/14/60		576 D	1	-	-	-				1
	Synchrono	us speed	- 1800 rpi	m						ut of this nain redu								576-E	1			-				1
	Temperate Temperate	1년 이가 있는 이번 것이 같아.					rther issembly		n, thr	ough a sh	aft an	d cluto	h			† 3/22/60	10/19/60	550	12	_					+-+	12
	Insulation Minimum			- 275 perc	cent 4	) C	luich A	ssembly	v. The	e auxiliar	v red	etion						551	12	-		-		+		12
	Frame - N		and the second s	•		ge	ear is d	lisconne	ected f	rom the r d operatio	nain r	educti	22900					577	12	_	-	_				12
	One motor at a rate o					of	a clut	ch coupl	ling.	The clutc	h coup	oling in	- E					578	12				-	-		12
	motor is u rate of 0.2	sed for l	ow-speed	hoisting a	it a	du	ction g	ears, a	and is	disconnec	ted by	/ a	Ī					579	12	_	_	_	-		1-1	12
	motor driv rated 230-	ves a tacl	ometer ge	enerator,				the ge		t actuates pling.	a lev	er cor						556	12		1	-		1		12
	meter gen the motor	erator sp	eed is 230	0 rpm wh						8-1/4-inc shaft of f			ed			-		ATC								1

## By Air Force direction:

a) For an excitant number fitted in column 2 is the number proposed for original provisioning.
 2 Recommended quantities into are litted in column 7.
 3 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Approved Quantity Asterisk indicates common usage with adjacent complex and/or area.

Use Current List of Effective Pages as guide for inserting Revision Pages

	USAF WEAPON STSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NUMBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See (	Column 7) REV.:
disk ho shoes. breakir	A U-shaped yoke mounted around the ids four hydraulically actuated brake These shoes, of fail-safe design, exe g pressure on both sides of the disk neously.	ground surface prior to launch. Various other tions which involve checkout and tests also req missile surfacing. Equipment capable of raising the platform toge a fully loaded missile and all GOE/GSE on the p	hire •		
from th wire ro	n Sheaves: Two traction sheaves, driv e main reduction gear, along with the pe subassemblies, provide the means and lowering the launcher platform.	ment provided must be designed to make control	lled itions, within		
from a network presen voltage These switche circuit group ( by tach circuit are hou approx second are hou	Controls: Both motors are controlled common saturable-reactor type control c. Speed and direction commands are ted in the form of several preset comm s from a reference voltage supply. command voltages are automatically ed into the reference voltage selection ry by outputs from the control monitor ltem 5035). Motor speed is controlled ometer feedback control. The control ry, amplifiers, and power transformer used in control cabinet No. 1, which we imately 600 pounds. The saturable and ary reactors, and the secondary resist used in control cabinet No. 2 which we imately 3000 pounds.	required for operation of this equipment. (18) REMARKS: † Technical Figure-A approv. and by AFBMD TWX R2201002 dated 22 March 196 This item supersedes item 1118 in part per Pr Conference action 19 February 1960.	al granted	7	
is cons grids, level o electri counte the lau PROBLEM	tructure Subassembly: This subassem tructed of I-beams, steel plates, and The subassembly is installed on the fi f the silo. This subassembly supports c motors, transmission subassembly, rweights, and approximately 50 percent ncher platform weight. AREA: Missile launching from an unde acture requires raising the missile to	rst the of			

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST. SERIES E AND F LIST NUMBER: AP60-1046 DATE 5 January 1961 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SM-65 CONVAIR-ASTRONAUTICS SAN DIEGO, CAL CONTRACT NO (See Column 7) REV. (4) (13) 114) (18) (16) (17) (7) (1) (2) (3) (5) (6) (9) 110 dh (12) (15) (8) STOCK NUMBER SIAS AT LAUNCHERS DATE OF ARDC EST DATE FIRST ITEM TOTAL ON GSE SPEC PARA EST PRO DUCTIONS OCATION SECURITY CLASS & SUB TOTAL AT LCC'S GENERAL ITEM **SMA** 10430 PROB MFG. NOMENCLATURE UNIT SERV GUID CLASS SERIAL PRICE T. NUMBER OR DWG őő NUMBER CONTRACT NO AF 04(647)-370 CFE 5023 27-99092-1 SYSTEM ASSY ... Est OSTE 146,000 EID-27-9289 CABLE AND GUIDE, No LAUNCHER PLATFORM CONTRACT NO. AF 04(647)-346 FSC NOMENCLATURE: 576-C GUIDE ASSY -WIRE ROPE SET. LAUNCH PLATFORM, 567 MISSILE LIFTING 548 (4) NOMENCLATURE: (PNS) System Assembly, The ropes terminate in a tension equalizer in Quadrants II and III. This tension equalizer evens Cable and Guide, Launcher Platform. 706 the tension between the two sets of wire rope through This assembly comprises the following components: a crossbar which transfers a portion of the excess 549 tension in one set of wire ropes to the other set until Wire rope subassembly the tension in both sets is equalized. 1) CONTRACT NO AF 04(647)-453 2) Tension equalizer subassembly OSTE 1 1 3) Idler sheaves Four idler sheaves are mounted on the underside of No 7 8 mo Guide rails the launcher platform, one sheave at each corner. 4) CONTRACT NO AF 04(647)-605 5) Guide rail brackets These sheaves rest on the wire ropes and support the 1 576 D Guide roller subassemblies launcher platform. Shortening or lengthening the 6) 4/14/60 11/23/60 wire ropes in the launcher platform shaft raises or 576.E The wire rope subassembly consists of two wire rope lowers the launcher platform. sets, five wire ropes to a set. The sets are connect-12 12 550 ed to the under side of the first level below the drive Three vertical guide rails are attached to the inner 3/22/60 mechanism in Quadrants I and IV in the counterweight sides of the launcher platform shaft structure. These 12 12 551 shaft. Each set loops down and through the counterrails minimize lateral movement or tilting of the launcher platform and provide a smooth vertical track weight sheaves, up and over the drive sheaves, 12 12 577 for the launcher platform guide rollers throughout down the launcher platform shaft, under the launcher the full range of launcher platform travel. The rails platform, and then up the launcher platform shaft to 12 12 578 are of I-beam construction with the flanges machined elevation 991 feet where the ropes are secured in Quadrants II and III. Each wire rope is approximateto provide a smooth bearing surface. One I-beam 12 12 579 ly 1-1/2 inches in diameter with a 6 by 25-1-6-6-12rail, 17 inches deep is located in Quadrant III; two I-beam rails, one 17 inches deep and the other 10 strand with a minimum breaking strength of 228,000 12 12 556 pounds. inches deep, are located in Quadrant IV. The larger ATC

By Air Force direction:

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- 21 Recommended quaritities only are listed in column 7.
- 3) This page will not be updated to show provisioning action, configuration, or part number changes.

Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Quantity Approved Asterisk indicates common usage with adjacent complex and/or grea.

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Use Current List of Effective Pages as guide for inserting Revision Pages.

	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F	A	DATE: 5 January 1961	LIST NU	MBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See C	Column 7)	REV

rails extend from elevation 851 feet 9 inches to elevation 991 feet 3 inches. The small rail terminates at elevation 977 feet 3 inches. Camber in the rails does not exceed 0.075-inch in 30 feet. Small angle brackets are welded along the back of the guide rails at intervals. These brackets are bolted to fittings fastened to the crib structure. The use of shims and slotted bolt holes permits accurate vertical alignment of the guide rails.

Three guide roller subassemblies are attached to the bottom level of the launcher platform and mate with the three guide rails. Two large roller subassemblies are attached to the launcher platform at the next higher level and mate with the two large guide rails. Each subassembly consists of two rollers mounted on a large casting. The guide rail passes between the rollers.

(5) PROBLEM AREA: Missile launching from an underground crib structure requires raising the missile to ground surface prior to launch. Various other operations which involve checkout and tests also require missile surfacing.

Equipment is required which will align the launcher platform vertically in the shaft; support, raise, and lower the launcher platform between stowed and launch positions; and minimize horizontal shifting or twisting of the launcher platform under both static and dynamic conditions.

(18) REMARKS: †Technical Figure-A approval granted by AFBMD TWX R2201002 dated 22 March 1960.

This item supersedes item 1118 in part per Provisioning Conference action 19 February 1960.

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			JSAF WEAR	DN STSIEN	A 107A-1 GROUND OF	ERATIO	NAL E	QUIPMEN	NT LIST,	SERIES E A	ND F					DATE	5 Janua	ry 196	1	LIS	TNUN	BER:	AP60-1	046		
	SM-65		CONVAI	ASTRONAU	TICS CONVA	IR IS A I	DIVISION	N OF GER	NERAL D	YNAMICS C	ORPOR	TION		SAP	N DIEGO, C	AL. (		0. (	See Col	umn 7	"	NEV.	A-Fe	eb '61		
(11	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)					(7				
ITEM EQUENCE	GSE SPEC PARA NO.	CLASS CODE	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM	11/4/4/11	UNIT		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID STAS	AT SMA GENERAL	DEPOT		TATA AND	TOTAL DN
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5025		Hahn & C	Clay Machi	ine	TANK, HIGH			Est				CFE			5			OSTF					T			
124242-001			er Works		PRESSURE GAS,			5,000								L	1	No 1								
				2454-1	SLUG FILL FSC NOMENCLAT								ł					576-C			NTRAC	T NO. A	1 04(64	1-346	T	
		EID-27-3	2007	1	TANK, PRESSURE								Ì				1	567		_	-	-	1		+	=
And Street Street	MENCLATUR	E: (PNS)	Tank, Hig	h Pressu	ure	6				LETION								548			_	-	1		+	
	lug Fill.				RE	Y	long	er exis	ts, due	for this to revis	sions		1					706				-	1		+	7
pressu	nk is a slightly are tank approx	imately 44	inches in	diamete	er		laun	ch sequ	ence p	rogramn	ning.		ľ					549	-				1		+	
	ed with the maj aseous nitroge												t							co	NTRAC	T NO. A	F 04(64	7)-453		
sure u	sed to pressur nsferring liqui	ze the lig	uid oxygen	slug un	it										7 mo			OSTF No 2	1.						1	4
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platfor	located on the m and has a m	Dum w	eight of 80	000 poun	ds.				*							4/14/60	2/21/61	576 D	1		+				1	
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	am of the rock t 60 seconds p				luring													550	12		_	1				2
A devi	ce is required	to perform	n this open	ration.														551	12				1			2
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 Refer to current issue of AFBMD Exhibit 40-36 for configuration and provisioning information.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F LIST NUMBER: AP60-1046 DATE 5 January 1961 CONVAIR-ASTRONAUTICS SM-65 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, CAL CONTRACT NO (See Column 7) REV. (1) (2) (3) (4) (5) (4) (0) (10) (11) (12) (13) (14) (18) (16) 117: (15) (7) (8) STOCK NUMBER AUNCHERS STAS GSE SPEC. PARA NO. EST DATE FIRST ITEM AVAILABLE DATE OF ARDC APPROVAL LOCATION TOTAL ON ORDER SERVICE SECURITY CLASS & REMARKS SUB TOTAL ITEM EST PRO-DUCTIONS AT LCC'S GENERAL SMA MFG. NOMENCLATURE OF PROB UNIT DEPOT GUID CLASS SERIAL NUMBER OR DWG ¥ 5 5026 Spec 27-06181-3 CONTRACT NO AF 04(647)-370 CONSOLE. Est CFE EID-27-6156 LAUNCH CONTROL. 20, 000 OSTF 1 1 15 mo RCA UNITARY CONCEPT No 1 1023692-502 FSC NOMENCLATURE: CONTRACT NO AF 04/6471-346 CONSOLE, LAUNCH 1 1 576-C CONTROL 7/10/59 5/24/60 . 9 9 567 9 9 548 (4) NOMENCLATURE: (PNS) Console, Launch Conmissile launching. This concept further requires 706 trol, Unitary Concept. that standby status be incorporated as an integral part of launch equipment and provide sufficient 9 9 549 indications to establish the state of readiness for This item consists of a table-type console which measures overall approximately 72 inches wide, 40 launch. CONTRACT NO. AF 04(647)-453 inches deep. 42 inches high. The console weighs OSTF No 2 approximately 500 pounds. Equipment is required which will satisfy the foregoing CONTRACT NO. AF 04(647)-605 parameters. The equipment supplied must hold The console comprises left hand and right hand legs fault indications to a minimum and provide a summary 576-D of the individual responses displayed on the chassis with communication panels, and a center panel. The panels of the relay logic units. center panel contains the status indicators and controls 576-E necessary to permit one operator to launch a missile. This panel includes a countdown clock, target and (18) REMARKS: Function of this item includes 550 burst selection, fuel and liquid oxygen load meters, functions of items 79.7, 79.8, and 79.8.2 in missile fuel and liquid oxygen pressure meters, Report No. ZM-7-357. 551 systems operation and fault indicators in bar-graph form, and commit sequence indications. This item is used with item 5027. During 577 operational checkout the combination of items 5026 (5) PROBLEM AREA: The unitary concept requires and 5027 functions as a single unit. This item 578 that one operator (launch control officer) accomplishes is similiar in function to GOE item 5034 used at Series F sites. 579 556 T-306 (1) ATC

By Air Force direction:

1) Part or specification number listed in column 3 is the number proposed for original provisioni

2) Recommended quantities only are listed in column 7. 3) This page will not be updated to show provisioning action, configuration, or part number che

Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Quantity Asterisk indicates common usage with odjacent complex and/or area

as guide for inserting Revision Pages.

Page 1 of 1

ITEM NUMBER 5026

# Approved

Use Current List of Effective Pages

Recommended Quantity

		0.			107A-1 GROUND OP			_								DAT	5 Januar	y 196	L	119	T NU	MBE	R: AP	60-10	46		
	SM-65			R-ASTRONAU		R IS A D	IVISION	OF GE	TERAL D	YNAMICS (	ORPO	RATION		57	N DIEGO, CA	u.	CONTRACT NO	). (	See Ca	olumn	7)		<b>V</b> .c				
(1)	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12	1) (13	(14)	(18)	(16)	(17)	(15)		1				(7)				(8
ITEM LEQUENCE	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL NUMBER	AFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM AREA	111444111	UNIT	111444111	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI-	PROPOSED	SOURCE	SECURITY CLASS & REMARKS	EST PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	GENERAL	DEPOT		SUB TOTAL	TOTAL ON
5027		27-68910-	-1		SSY, SEQUENCER	AND	F	Est			-	CF	5						-	- co	NTRA	CT NO	. AF (	4(647)	-370	1	+
		Spec 27-0 EID-27-62		. 1	RESPONDER GROU	P, EO	C 2	40,00	0						15 mo			OSTF No. 1	1	-						1	1
				5	CONTROL - MONIT	OR GI	ROUP										1			CC	NTRA	CT NO	AF (	04(647)	346		
																8/28/59	5/24/60	576-C	1		_			_		1	
(4) N and F	IOM ENC LATUR tesponder Group	E: (PNS) A	Assembly	, Sequen	er Relay log - for the fo	gic unit	t No.	l conta	ins th	e subsys	tem	logic						567	9	-				$\pm$	-	9	1
	(EOC).		operation	onur cupa			0											548	9							9	-
This No. 2	unit consists of , and launch sig	relay logic	units No der units	D. 1 and B No. 1	2)	Erecti Facilit	y cont	rol										706								+	
and N					4)	Propel Pressu	irizati	on con	trol									549	9	E						9	
Each	relay logic unit	is containe	d in a pa	lletized	6)	Fuel ta	inking	contro	lium ta	anking co	ontro	51					1	OSTF	-	<u> </u>	NIRA		T	4(647)	453	1	1
rack- feet w	type structure n ide, 3 feet deep	neasuring a , and 6 fee	approxim thigh.	nately 8		Liquid				ntrol							1	No. 2			INTRA			04(647)	405	1	1
The	-1 1				Relay log	ic unit	No. 2	conta	ins the	e subsyst	em	logic					1						T	T	T	T	
parate	elay logic unit corres, delay device	es, and win	ring nece	essarv	for these	subsys	stems:			-	.t							576-D		-		_	-			-	1
seque	form the various	launch a n	nissile s	uc-		Guidano Re-enti				control								576 E		-		_		-	-	-	1
with A	Ily. Each chass N-type connecto	rs which a	re broug	tht out	3) /	Autopil Missile	ot con	trol										550						-	+	-	1
future	back side of the modification is	provided b	y approx	imately	5) I	Engine Iydrau	groun	d contr	rol	10.00						<u> </u> -		551	_			_	-		-	-	1
harnes	cent spares in t is at the AN con	nectors.	is of the	wiring		Countdo												577				_	-	-	+	-	1
All cha	assis pull out fro	om the from	nt for rep	place-	Responder a palletize	ed rack	c-type	struct	ure m	easuring	app	roxi-						578	_		_	_		-	-	-	1
which	The chassis pa permit static mo responses.	onitoring of	f individu	ual	mately 8 f	eet wie	de, 3 1	eet de	ep, an	nd 7 feet	high	•						556				_	-		-	-	-
-,	responses.															-		550	T	306							┝
							•											ATC	1.7	500 (	-)						
	ce direction:				oposed for original provi		10.00			Quantity	-	1					1					-	TEM	UMAS	5027	,	1

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Use Current List of Effective Pages as guide for inserting Revision Pages.

SM-6	65 CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, CAL.	CONTRACT NO. (See Column 7) REV.;
delay de	t contains the necessary relays, simulators vices, and wiring to simulate the functional y of the missile and associated GSE.		This item is used with item 5026. During operational checkout the combination of items 5026 and 5027 function as a single unit.
	ponder, through switching connections, res ntrol signals originating at the launch contr		This item is similar in function to GOE item 5035 used at Series F sites.
input sig to permi	(Item 5026) or relay logic units. For a giv mal the responder unit provides suitable re it the full operation of the launch control sy he responder unit includes fault insertion to	plies required to verify the system operational readiness for a tactical launch.	Superseded items 1202 and 1203 are incorporated with th item.
The laun	ability of the system to detect faults. Ach signal responder unit No. 1 contains the	그는 것 같은 것 같아요. 그는 것 같아요. 것 같아요. 같은 것 같아요. 같은 것 같아요. 같이 있는 것 같아요. 그는 것 같아요. 가지 않는 것 같아요. 그는 것	
responde	er logic for the following subsystems:	those indicators which are required to ascertain the existence of a malfunction which will inhibit count-	4
	Missile ground power control Liquid oxygen tanking control Liquid nitrogen/helium tanking control Fuel tanking control	down or state-of-readiness must be supplied. Where necessary, these logic unit fault indicators must be summarized on the launch control console (Item 5026).	12
5) 6)	Facility control Erection control	Equipment is also required to check out the launch con- trol system by responding to control signals originating	
7) 8)	Propellant level control Engine ground control	at the launch control console or relay logic units. This equipment must provide suitable replies to permit the full operation of the launch control system. This	
	signal responder unit No. 2 contains the re for the following subsystems:	정말 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이	
1)	Re-entry vehicle control	The equipment chosen must also include fault insertion	
2) 3) 4)	Autopilot Hydraulic control Pressure transducer	to test the ability of the system to detect faults and to provide the unit proficiency system capabilities.	
5)	Guidance ground control	(18) REMARKS: Functions of this item include func-	4
6) 7)	Countdown control Pressurization control	tions of Items 64.5, 80.7, 80.8, 82.4, 82.5, 83.2, 85.4, 89.3, 89.8, 94, and 95 in Report No. ZM-7-357.	
mately 4	the logic and responder units weighs appro 4000 pounds. The units are portable and ca led with standard equipment.	xi-	

Use Current List of Effective Pages as guide for inserting Revision Pages.

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F LIST NUMBER: AP60-1046 DATE 5 January 1961 CONVAIR-ASTRONAUTICS SM-65 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, CAL CONTRACT NO (See Column 7) REV (1) (2) (3) (4) (5) (6) (0) 110 (11) (12) (13) (14) (18) 1161 (17) (15) 17 (8) STOCK NUMBER STAS L AUNCHERS GSE SPEC. PARA OGNIZAN BORATOR CENTER SECURITY CLASS & DATE OF ARDC EST DATE OCATION EST PRO DUCTIONS AT LC C'S TOTAL č. SUPPLY SUPPLY SOURCE SOURCE CODE GENERAL ITEM **SMA** DESCRIPT OF PROB UNIT SEQUENCE MFG. NOMENCLATURE DEPOT GUID TOTAL ORDE CLASS SERIAL NO ¥ NUMBER NUMBER 8ns POWER SUPPLY CONTRACT NO AF 04(647)-370 Solar Aircraft Co. Est 5028 CFE OSTF 11 1 26127 AND DISTRIBUTION 4,000 1 No UNIT, STATIONARY, Kurz and Root 5301021 GSE CONTRACT NO AF 04(647)-346 FSC NOMENCLATURE: Spec 27-06191-1 †1 1 576 C EID-27-6171 **POWER SUPPLY-DISTRIBUTION** SET 9 9 567 9 9 548 (4) NOMENCLATURE: (PNS) Power Supply and Dis-3) Ampere-hour - This meter measures time-706 tribution Unit, Stationary, Ground Support Equipment. discharge of the battery assembly. 9 9 549 This stationary power supply and distribution unit This power supply has the following characteristics: which measures approximately 51 inches wide, 36 CONTRACT NO AF 04(647)-453 luches deep, and 60 inches high is located in the 1) Input rating - 440-volt (± 10 percent), 60-cps OSTF 1 1 No. 2 launch and service building. The unit comprises (± 5 percent), 3-phase ac. CONTRACT NO. AF 04(647)-605 the following principal components: 1 Output voltage - 28-volt dc nominal. 1 2) 576-D 1) 28-volt dc power supply 2) Power distribution panel 1 1 3) Output current - 600 amperes continuous. 576-E 3) Base 12 12 4) Voltage regulation - Plus-or-minus 0.5 per-550 28-Volt Power Supply. This component comprises cent of set value at any combination of load, a transformer rectifier assembly designed to con-12 12 input voltage, and frequency within the 551 vert 440-volt ac to nominal 28-volt dc. The assemratings. bly includes a static-type voltage control unit for 12 12 577 output voltage regulation and a control panel on Output voltage ripple - Ripple in the output 5) which the following meters are mounted: voltage shall not exceed 0. 15 volt rms (0. 43 12 12 578 volt peak-to-peak) at any combination of 1) Ammeter - This meter indicates the curload, input voltage, and frequency within 12 12 579 rent level of the voltage source. the ratings. 12 12 556 2) Voltmeter - This meter indicates the output voltage level of the source. T-306(1), T-330(1), T349(1) ATC

## By Air Force direction

1. Part or specification number listed in column 3 is the number proposed for original provisioning 2 Recommended quantities only are listed in column 7.

3. This page will not be updated to show provisioning action, configuration, or part number changes Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Quantity Auproved Quantity Asterisk indicates common usage with adjacent complex and/or area

Recommended

Use Current List of Effective Pages as guide for inserting Revision Pages.

ITEM NUMBER 5028

Pope 1 of 2

		USAF WEAPON SYSTEM 107A-1 G	ROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE 5 January 1961	LIST NUMB	ER: AP60-1046
	SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (Se	e Column 7)	EV.:
6)	Recovery time - I	Recovery time from a tran-					
		lting from sudden applica-					
		f rated load shall be 0.1	54 C				
		reduce the transient volt-					
	a se a seguer i des la ser ser se se se						
		of its maximum value.					
		all recover and remain within					
		5 percent of its set value					
		after sudden application or					
	removal of rated	load.					
Power D	distribution Panel.	This panel contains the re-					
		ary to switch and distribute					
		battery dc to the ground					
		nit includes a blocking recti-					
		dback into the power supply.					
ner to p	revent current ree	uback mo me power supply.	14 - C				
Base 7	This base consists	of the skids and frame work					
		wer supply and power distri-					
		designed to be bolted to the					
	aller, The base is	designed to be bolted to the					
floor.							
(5) PRO	BLEM AREA: Gr	ound control systems and					
		e 600 amperes of 28-volt dc					
power.	buix)beenib requi	• • • • • • • • • • • • • • • • • • •	2				
1. mer t							
Equipme	ent which will supp	ly 600 amperes of 28-volt dc					
is requir	red in the launch a	nd service building. The					
equipme	nt provided must h	ave the capability for moni-	÷				
toring, s	switching, and dist	ributing power from the	•				
primary	28-volt dc power	source and the 28-volt dc					
	attery assembly.						
2012/01/01/02							
		s similar in function to item 87		(*)			
n Report 1	No. ZM-7-357.				•		
his item	is the same as GSI	E item 5028 in Report No.					
P60-1045		a tem sono in report no.					
			<i>a</i> .				
					93 19		

SA.45CONVART 15 A 201000 OF GRINAL OPTAMOLE COPRAME.CONTACT NOCONTACT NOSolution Colspan="2">CONTACT NOCONTACT NOCONTACT NOCONTACT NOCONTACT NOCONTACT COLSPANERCONTACT NOCONTACT NOCONTACT NOCONTACT COLL ATURE:CONTACT NOCONTACT NOCONTACT NOCONTACT COLL ATURE:CONTACT NOCONTACT NOCONTACT NOCONTACT COLL ATURE:CONTACT NOCONTACT NOCONTACT COLL ATURE:CONTACT NOCONTACT NOCONTACT COLL ATURE: <th col<="" th=""><th>10</th><th>1046</th><th>60-1</th><th>AP</th><th><b>R</b>1 4</th><th>ABE</th><th>IUM</th><th></th><th>51 1</th><th>151</th><th>LIS</th><th></th><th>Ľ</th><th>1</th><th>1</th><th>1</th><th>Ľ</th><th>1</th><th>u</th><th>u:</th><th>115</th><th>151</th><th>51</th><th></th><th>I N</th><th>N</th><th>NU</th><th>UN</th><th>UM</th><th>JM</th><th>MB</th><th><b>MB</b></th><th>BE</th><th>ER</th><th><b>K</b>1 - 4</th><th>. A</th><th>AP</th><th>AP6</th><th>P60</th><th>50-</th><th>- 10</th><th>104</th><th>46</th><th>_</th><th></th><th>_</th><th>_</th><th></th><th>_</th></th>	<th>10</th> <th>1046</th> <th>60-1</th> <th>AP</th> <th><b>R</b>1 4</th> <th>ABE</th> <th>IUM</th> <th></th> <th>51 1</th> <th>151</th> <th>LIS</th> <th></th> <th>Ľ</th> <th>1</th> <th>1</th> <th>1</th> <th>Ľ</th> <th>1</th> <th>u</th> <th>u:</th> <th>115</th> <th>151</th> <th>51</th> <th></th> <th>I N</th> <th>N</th> <th>NU</th> <th>UN</th> <th>UM</th> <th>JM</th> <th>MB</th> <th><b>MB</b></th> <th>BE</th> <th>ER</th> <th><b>K</b>1 - 4</th> <th>. A</th> <th>AP</th> <th>AP6</th> <th>P60</th> <th>50-</th> <th>- 10</th> <th>104</th> <th>46</th> <th>_</th> <th></th> <th>_</th> <th>_</th> <th></th> <th>_</th>	10	1046	60-1	AP	<b>R</b> 1 4	ABE	IUM		51 1	151	LIS		Ľ	1	1	1	Ľ	1	u	u:	115	151	51		I N	N	NU	UN	UM	JM	MB	<b>MB</b>	BE	ER	<b>K</b> 1 - 4	. A	AP	AP6	P60	50-	- 10	104	46	_		_	_		_
Nime       DOCK NEWMENT       NOMENCLATURE (LASS)       NOMENCLATURE (LASS)       NOMENCLATURE (LASS)       NOMENCLATURE (LASS)       SATTERY, EMER- (SOUCH Attional (BALTERY, EMER)       Eat (LASS)       COVENCY (LASS)       Content of All (Lass)         3029       Nicad Division, Gould-National (Battery Co. ELD-27-6198       BATTERY, EMER- (BALTERY, EMER)       Eat (LASS)       CFE       COVENCY IN All (Lass)         (d) NOMENCLATURE: EID-27-6198       BATTERY, EMER- (BALTERY, STORAGE       Eat (Lass)       COVENCY IN All (Lass)       COVENCY IN All (Lass)         (d) NOMENCLATURE: EID-27-6198       BATTERY, EMER- (CL-4476-DEMOP)       Eat (Lass)       Covence (Lass)       Covence (Lass)       Covence (Lass)         (d) NOMENCLATURE: EID-27-6198       BATTERY, STORAGE       Specific gravity: 1, 160 to 1, 200 (elec- trolyte temporature is not to exceed 145 degrees F or 60 degrees C)       Specific gravity: 1, 160 to 1, 200 (elec- trolyte temporature is not to exceed 145 degrees F or 60 degrees C)       Specific gravity: 1, 160 to 1, 200 (elec- trolyte temporature is not to exceed 145 degrees F or 60 degrees C)         1) Cells       1) Cells       The test panel contains a voltmeter, cell salector witch, and a pros-to-read witch. This panel (Dasse of the Holivikual cells. mentodue a statel cable for housing four wells. The voltmeter scale is zero to two volts de with a sensitivity of 1000 ohms per volt and an accuracy of two d, 3 feet deep, and 6 feet high. The enclosure is mounted on a statel-type base this has provisions for fork lifting. The enclosure worked we dwork, cell tars.				2	EV			")	7)	n 7)	nn i	umn	lum	lum	lum	lum	lum	um	mn	mn	nn 7	n 7)	7)	7)	"								**	*EV	IN .	1							_							
Interce       Get two       Interce       Get two       Interce       Intere       Interce       Interce				71	07		-							_	_	_			_					_					_	_	_				07	(7)	71	i .												
Gould-National Battery Co. GROUND POWER, CL-4476-BEMGP SD-27-6198       GROUND POWER, STATIONARY Spec 27-06226-1 ED-27-6198       7 mo       0 m 1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1			DEPOT	GENERAL	GENERAL			GUID	1		AT LCC'S	AT LCC'S	AT LCC'S	AT 10 14	AT 10 14	AT 10 14	ALLCCS	AT LCC'S	AT LCC'S	AT LCC'S				0000	GUID	GUID									GENERAL	GENERAL				DEPOT						SUB TOTAL	SUB TOTAL	10101 000		
Oouid-National Battery Co. GROUND DWER, CL-4476-BEMGP Spec 27-06226-1 EID-27-6198       STATIONARY Spec 27-06226-1 EID-27-6198       To only an optic stationary. BATTERY, STORAGE         (a) NOMENCLATURE: EID-27-6198       BATTERY, STORAGE       3       Specific gravity: 1, 160 to 1, 200 (elec- trolyte temperature is not to exceed 145 degrees F of 0 degrees C)         (a) NOMENCLATURE: EID-27-6198       3) Specific gravity: 1, 160 to 1, 200 (elec- trolyte temperature is not to exceed 145 degrees F of 0 degrees C)       3:4       10       1         (a) CL458), provides a source of (emergency)       3: Specific gravity: 1, 160 to 1, 200 (elec- trolyte temperature is not to exceed 145 degrees F of 0 degrees C)       3: Specific gravity: 1, 160 to 1, 200 (elec- trolyte temperature is not to exceed 145 degrees F of 0 degrees C)       5: See 10       10       1         (b) NOMENCLATURE: EID-27-6198       3: Specific gravity: 1, 160 to 1, 200 (elec- trolyte temperature is not to exceed 145 degrees F of 0 degrees C)       5: See 10       5: See 10       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	-370	47)-37	04(64	AF	0. 4	TN	ACT	NTRA	ONT	CON	co	C		-	-	-		c	C	co	co	ON	ONT	NTI	NTR	TRA	RAG	AC	ACT	ACT	CT	TN	NC	10.	D. A	AF	AF	FO	04	4(6	647	47)-:	-370	0	-	-	-	Ē	-	
Spec 27-06226-1 ED-27-6198       FSC NOMENCLATURE: BATTERY, STORAGE         4) NOMENCLATURE: (PNS) Battery, Emergency, Missile Ground Power, Stationary.       3) Specific gravity: 1.160 to 1.200 (elec- trolyte temperature is not to exceed 145 degrees F of 06 degrees C)       3:4       10       1         4) NOMENCLATURE: (PNS) Battery, Emergency, Missile Ground Power, Stationary.       3) Specific gravity: 1.160 to 1.200 (elec- trolyte temperature is not to exceed 145 degrees F of 06 degrees C)       3:4       10       1       1         5) Case: Stallness steel or nikel-plates Black nickel hydroxide and cad- mium oxide set in perforated, flat steel pockets with graphic added mium oxide set in perforated, flat steel pockets with graphic added and ad- mium oxide set in perforated, flat steel pockets with graphic added mium oxide set in perforated, flat steel pockets with graphic added and ad- mium oxide set in perforated, flat steel pockets with graphic added and acd- mium oxide set in perforated, flat steel pockets with graphic added and acd- mium oxide set in perforated, flat steel pockets with graphic added to two shelves in the nelosure. Each cell has an ampere-hour rating four ells. The trays are mounted on two shelves in the of ampere-hours at the 8-hour rate to a cell volt- ge of 1.14 volts.       The voltmeter scale ls zero to two volts de with a sensitivity of 1000 ohms per volt and an accuracy of two percent of full scale deflection.       3:77       13       13       14         1       4:14/e6       3:78       13       14       14       14       14         1       4:14/e6       3:72       13       14	1	F		T	F		Ŧ	-						F	F	F						-	-					Ŧ	Ŧ	F			-	T				Ŧ	F	-	Ŧ	F			$\neg$	1	100		_	
EID-27-6198       BATTERY, STORAGE       8/28/39       6/5/60       376 C         4) NOMENCLATURE: (PNS) Battery, Emergency, fissile Ground Power, Stationary.       3) Specific gravity: 1, 160 to 1, 200 (clec-trolyte temperature is not to exceed 146 degrees F or 60 degrees C)       3/4       10       1       10       1         'his unit, located at the Launch and Service Build-regreatory       3) Specific gravity: 1, 160 to 1, 200 (clec-trolyte temperature is not to exceed 146 degrees F or 60 degrees C)       3/8       10       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	-346	47)-34	04(64	AF	0.4	TN	AC	NTR	ONT	CON	co	c		_	_	_		0	c	c	co	CON	ON	DNT	NTR	TRA	RA	AC	ACI	ACT	CT		N	NO	D. A		AF	FO	04	4(6	647	47)-	-34	6	_	_	Ξ	1	Ξ	
(4) NOMENCLATURE: (PNS) Battery, Emergency,         Missile Ground Power, Stationary.         (a) NOMENCLATURE: (PNS) Battery, Emergency,         Missile Ground Power, Stationary.         This unit, located at the Launch and Service Building (L4SB), provides a source of (emergency)         28-vold c control power. It consists of the following major components:         1) Cells         2) Test panel         3) Enclosure         7) Electrolyte: Solution of KOH         11/22/60       10         13/2       10         14 volts.       13/2         13/2       13/2         14 volts.       537         14 volts.		-		-			+	11			_											1			-	_	-	1	+	t		_		+			-	+			-			L	-	1				
(4) NOMENCLATURE: (PNS) Battery, Emergency,         (4) NOMENCLATURE: (PNS) Battery, Emergency,         Missile Ground Power, Stationary.         (1) Calls         (2) Test panel         (3) Enclosure         (1) Cells         (2) Test panel         (3) Enclosure         (1) Cells         (2) Test panel         (3) Enclosure         (1) Cells         (2) Test panel         (3) Enclosure         (4) How other tarys which are suitable for housing four scale. Each cell has an ampere-hour ratit of a cell voltage of 1.14 volts.         (3) Charging voltage: 1.40 volts to 1.85 volts         (3) Charging voltage: 1.40 volts to 1.85 volts	1	+	-	+	+	-	+		+	+	-	-	-	+	+	+	-	-	-	-	-	+	+	-		-	-	+	t	+	-	-11	-	ł	-	-	+	+	ŀ	-	+	ł	-	┝	-	10	10	0	)	
Missile Ground Power, Stationary.       This unit, located at the Launch and Service Building (L4SB), provides a source of (emergency)       Trolyte temperature is not to exceed 145 degrees 5 or 60 degrees C)         28-volt dc control power. It consists of the following major components:       10 Case: Stainless steel or nickel-plated steel         1) Cells       2) Test panel         2) Test panel       3) Enclosure         3) Enclosure       The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The voltmeter scale is zero to two volts dc with a ge of 1.14 volts.       The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for for kilfing. The enclosure contains two shelves with y guides to a ceept wooden, cell trays.	1	F		7	F		+	_	-	+	_		_	F	F	F	-			-	_	-	-	-	-	_		1	1	1			_	-	-		-	+	-		-	-		-	-	1	10	0	)	
This unit, located at the Launch and Service Building (L4SB), provides a source of (emergency)       degrees F or 60 degrees C)         4) Separators: Polystyrene       5         5) Case: Stainless steel or nickel-plated steel       6         6) Plates: Black nickel hydroxide and cadmium oxide set in perforated, flat steel pockets with graphite added       0         7) Electrolyte: Solution of KOH       7) Electrolyte: Solution of KOH         7) Electrolyte: solution of KOH       4/14/60         7) Electrolyte: solution of KOH       576.0         2) rest panel       3) Enclosure         7) Electrolyte: solution of KOH       4/14/60         7) Electrolyte: solution of KOH       576.0         7) Electrolyte: solution of KOH       1/22/60         7) Electrolyte: solution of KOH       1/22/60         8) ampere-hours at the 8-hour rate to a cell voltage of 1.14 volts.       1000 ohms per volt and an accuracy of two percent of full scale deflection.         1) Charging voltage: 1.40 volts to 1.85 volts       3 feet deep, and 6 feet high. The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves mith with guides to accept wooden, cell trays.		1			F		1															1						1	t	t			_	T				1	L			L		T		F	2	1		
ing (L4SB), provides a source of (emergency)         28-volt dc control power. It consists of the follow- ng major components:         1) Cells         2) Test panel         3) Enclosure         3) Enclosure         The tast part contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The voltmeter scale is zero to two volts dc with a sensitivity of 1000 ohms per volt and an accuracy of two percent of full scale deflection.         The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.		+		+	+		+		+	+	-		-	+	+	+	$\vdash$		_			+	+	-			-	+	+	+	-		-	+	-	-	+	+	+	-	+	┝	-	┝	+	1	10	0	5	
<ul> <li>8-volt dc control power. It consists of the follow- ng major components:</li> <li>6) Plates: Black nickel hydroxide and cad- mium oxide set in perforated, flat steel pockets with graphite added</li> <li>7) Electrolyte: Solution of KOH</li> <li>7) Electrolyte: Solution of KOH</li> <li>7) Electrolyte: Solution of KOH</li> <li>9) Enclosure</li> <li>abetery consists of twenty-one (21) nickel cad- thum alkaline type cells. The cells are mounted in ooden trays which are suitable for housing four enclosure. Each cell has an ampere-hour rating of 0 ampere-hours at the 8-hour rate to a cell volt- ge of 1. 14 volts.</li> <li>ach cell has the following characteristics:</li> <li>b) Charging voltage: 1.40 volts to 1.85 volts</li> </ul>							1																					1	1									1												
mg major components:       mium oxide set in perforated, flat steel pockets with graphite added         1) Cells       7) Electrolyte: Solution of KOH         2) Test panel       7) Electrolyte: Solution of KOH         3) Enclosure       The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         in malkaline type cells. The cells are mounted in rooden trays which are suitable for housing four ells. The trays are mounted on two shelves in the neclosure. Each cell has an ampere-hour rating of 40 ampere-hours at the 8-hour rate to a cell volt-ge of 1. 14 volts.       The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.         i) Charging voltage: 1.40 volts to 1.85 volts       mium oxide set in perforated, flat steel pockets with graphite added		47)-45	04(64	AFO	O A	TN	TACI	NTR	ONT	CON	co	c	-	-	-	-	-	•	C	co	co	ION	ON	INT	NTR	TRA	RA	AC	ACI	T	CT	TN	N	NO	AC	AF	AF	FO	04	4(6	647	47)-	-45	3	_		_	_	_	
1) Cells       7) Electrolyte: Solution of KOH         2) Test panel       3) Enclosure         3) Enclosure       The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The battery consists of twenty-one (21) nickel cadnium alkaline type cells. The cells are mounted in vooden trays which are suitable for housing four sells. The trays are mounted on two shelves in the melosure. Each cell has an ampere-hour rating of 40 ampere-hours at the 8-hour rate to a cell voltage of 1.14 volts.       The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.       578       13       13         1) Charging voltage: 1.40 volts to 1.85 volts       with guides to accept wooden, cell trays.       579       13       13									+	1												1	t			+		1	t	t	-			t	1			t		-		t		t		1	-	Ì	1	
2) Test panel         3) Enclosure         The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The total press which are suitable for housing four colls. The cells are mounted on two shelves in the nclosure. Each cell has an ampere-hour rating of 40 ampere-hours at the 8-hour rate to a cell volt-ge of 1.14 volts.       The voltmeter scale is zero to two volts de with a sensitivity of 1000 ohms per volt and an accuracy of two percent of full scale deflection.       13       13       13         The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for for ki lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.       578       13       13         1) Charging voltage: 1.40 volts to 1.85 volts       with guides to accept wooden, cell trays.       579       13       14		47)-60	04(64	AF	0 4	TN	RAC	NTR	ONT	CON	co	c		-	-	-	_	0	c	C	co	cor	ON	ONT	NTR	TR.	RA	AC	AC	ACI	CT	CT 1	N	NO	0 4	A	AF		04	4(6	647	47)-	)-60	5	_	_	_	_		
3) Enclosure       The test panel contains a voltmeter, cell selector switch, and a press-to-read switch. This panel enables one to check voltage of the individual cells.         The battery consists of twenty-one (21) nickel cadminum alkaline type cells. The cells are mounted in wooden trays which are suitable for housing four cells. The trays are mounted on two shelves in the enclosure. Each cell has an ampere-hour rating of 240 ampere-hours at the 8-hour rate to a cell voltage of 1.14 volts.       The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.       376.4 1       1       1         1/22/60       550       13       1       1       1       1	2	-	-	-	+		+		-	-	-		-	-	-	-	-				-	+	+	-			-	+	+		-		-	+	-	-	-	+	+-	-	-	-		+	-	2	2	_	_	
The battery consists of twenty-one (21) nickel cad- mium alkaline type cells. The cells are mounted in wooden trays which are suitable for housing four cells. The trays are mounted on two shelves in the enclosure. Each cell has an ampere-hour rating of 240 ampere-hours at the 8-hour rate to a cell volt- age of 1.14 volts. 1) Charging voltage: 1.40 volts to 1.85 volts 1) Charging voltage: 1.40 volts to 1.85 volts 240 ampere-bour at the 8-hour rate to a cell volt- age of 1.14 volts. 1) Charging voltage: 1.40 volts to 1.85 volts	1	1	_	1	$\vdash$		+		-	+	-			$\vdash$	$\vdash$	$\vdash$		i I				+	+					+	t	t	-	-		+				t			+			+	+	1	1	-	-	
nium alkaline type cells. The cells are mounted in vooden trays which are suitable for housing four tells. The trays are mounted on two shelves in the molosure. Each cell has an ampere-hour rating of 40 ampere-hours at the 8-hour rate to a cell voltage of 1.14 volts.       The voltmeter scale is zero to two volts dc with a sensitivity of 1000 ohms per volt and an accuracy of two percent of full scale deflection.       1/22/60       550       13       13       13         A0 ampere-hours at the 8-hour rate to a cell voltage of 1.14 volts.       The enclosure is a steel cabinet measuring 3 feet wide, 3 feet deep, and 6 feet high. The enclosure is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.       577       13       13         1) Charging voltage: 1.40 volts to 1.85 volts       wide, 3 feet deep, and 6 feet high. The enclosure contains two shelves with guides to accept wooden, cell trays.       579       13       13						_	T	_					_					<u>.</u>								_		1	L	L		_	_		_		_	T		_			_			L	_	_	_	
wooden trays which are suitable for housing four cells. The trays are mounted on two shelves in the enclosure. Each cell has an ampere-hour rating of 240 ampere-hours at the 8-hour rate to a cell volt-       The voltmeter scale is zero to two volts dc with a sensitivity of 1000 ohms per volt and an accuracy of two percent of full scale deflection.       351       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       13       14       13       13       13       14       13       13       14       13       14       13       13       13       13       13       14       13       13       13       13       13       14       13       14       15       13       14       15       13       14       14       15       15       13       13       14       15       13       14       15       13       14	1	+		-	+		+	-	+	+	-		-	+-	+-	+-	-			-	-	+	+	-	_	-	-	+	╀	┝	-		-	+	-	_	-	+	-		+	+		+	-	1:	3	3	3	
the function of the analysis o	1					_	1	_											_				t					1	t	t		_		1				T						t		1:	3	3	3	
240 ampere-hours at the 8-hour rate to a cell volt- age of 1. 14 volts.     577     13       ampere-hours at the 8-hour rate to a cell volt- age of 1. 14 volts.     577     13       Each cell has the following characteristics:     is mounted on a skid-type base that has provisions for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.     577     13				_			+	1		-	_										_	-				_	_	+	L	L	-		_	1			_	+			-				4	_	_		_	
Each cell has the following characteristics:     wide, 3 feet deep, and 6 feet high. The enclosure     578     13       i) Charging voltage:     1.40 volts to 1.85 volts     with guides to accept wooden, cell trays.     579     13		+		-	⊢		+		+-	+	-	-	-	┝	┝	┝	-		_		-	+	┝	-	-	-	-	+	╀	┝	-		-	+	-	-	-	+	+		+	┝	-	┝	-	1:	3	5	5	
Each cell has the following characteristics: 1) Charging voltage: 1.40 volts to 1.85 volts iii guides to accept wooden, cell trays.	1						1															1	t					t	t	t								1			1	t		t		13	3	3	3	
1) Charging voltage: 1.40 volts to 1.85 volts     for fork lifting. The enclosure contains two shelves with guides to accept wooden, cell trays.     13		-	_	_	1		+		-	-	_	-	_							_	_	-		_		_	_	+	Ļ	1			_	+	_	_	_	+		_	-		_				_		_	
with guides to accept wooden, cell trays.		+		+	+		+	-	+	+	-		-	+	+	+	-				-	+	+					+	t	t		-		+	-			+	+	-	+	t		+	-	1:	3	3	5	
	1	F		7	F		#	_	F	-											_	-	F	F		_	_	1	ļ	F			-	1			-	Ŧ	F		-		_	F	1	1:	3	3	3	
ATC					-	_	-		-	_			-	-	-	-							-				-	-	-	-				-				_			-	-	-	-	_	-	-	7		

- 1: Part or specification number listed in column 3 is the number proposed for original provisioning.

Recommended quantities only are listed in column 7.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show pravisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Use Current List of Effective Pages as guide for inserting Revision Pages

Page 1 of 2

The charge in the battery at the launch and service building is maintained by a trickle charge from the main rectifier powers supply. The battery assembly is free yeled to the SMA every 6 months for discharge (tem 78), recharge (tem 76), and cell replacembly is free yeled to the SMA every 6 months for discharge (tem 78), recharge (tem 76), and cell replacembly is service ontrol of power and the second roll of the second battery shown allocated to each of the sequadrons 550 and on. is an extra unit provided for rotational maintenance. This item is the same as GSE item 5029 in Report No. AP60-1045. This item is the same as GSE item 5029 in Report No. AP60-1045.			OUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1960	LIST NUMBER: AP60-1046
<ul> <li>building is maintained by a trickle charge from the main rectifier power supply. The battery assembly is recycled to the SMA every 6 months for discharge there were diagonal systems are controlled remotely by 28-volt de control power. In the event of a hazardous condition arising from loss of 60-cps ac or input de power, the missile and peculiar GSE must be capable of being returned to a safe condition.</li> <li>Equipment is required which will supplement the 28 volt de transformer -rectifier maffunction or an input voltage failure.</li> <li>Conventional hydrometer measurements will not indicate a NICAD battery is state of charge. The NICAD battery is state of charge is vortified by a controlled dimention of the returned matter of the second on the battery assembly replacement is the launch operations building with-rout reducing the operational capabilities of the squaton.</li> <li>(B) REMARKS: The function of this item is similar</li> </ul>	SM-65 C	ONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See C	olumn 7) REV.:
<ul> <li>building is maintained by a trickle charge from the main rectifier power supply. The battery assembly is recycled to the SMA every 6 months for discharge (tem 78), recharge (tem 78), and cell replacement as required.</li> <li>(6) PROBLEM AREA: During countdown missile-borne and ground systems are controlled remotely by 28-volid co control power. In the event of a hazardous condition atising from ioso of 60-cps ac or input dc power, the missile and peculiar GSE must be capable of being returned to a stare fourthor out for a stare fourthor out of a stare fourthor out for a stare fourthor out for a stare fourthor out of the system and provide an emergency source of 28 volid co meri in the vent of a transformer -rectifier mailunction or an input voltage failure.</li> <li>Conventional hydrometer measurements will not indicate a NICAD battery is state of charge. The NICAD battery is state of charge is verified by a controlled discharge using the electrical dummy load (tem 78). After discharging the NICAD battery is charged with the rectifier power supply (tem 76).</li> <li>Equipment is required at the SMA wholk will permit routine mailmento, controlled discharge using the electrical dummy load (tem 78). After discharging to be performed on the battery assembly replacement.</li> <li>(18) REMARKS: The function of this item is similar</li> </ul>						
main rectifier power supply. The battery assembly is recycled to the SMA every 6 months for discharge (tem 78), recharge (tem 76), and cell replacement as required. (5) PROBLEM AREA: During countdown missile- borne and ground systems are controlled remotely by 22-volt de control power. In the event of a hazardous condition arising from loss of 60 ops ac or input de power, the missile and peculiar GSE must be capable of being returned to a safe condition. Equipment is required which will supplement the 28 volt de transformer -rectifier malfunction or an input voltage failure. Conventional hydrometer measurements will not indi- cate a NICAD battery is state of charge. The NICAD battery's state of charge. The NICAD battery's state of charge is verified by a controlled discharge using the electrical dummy load (tem 78). After discharging to be performed on the battery assembly re- placement units at the launch operations building with- out reducing the operational capabilities of the squadron.				2월19일 · · · · · · · · · · · · · · · · · · ·		
recycled to the SMA every 6 months for discharge (Item 76), and cell replacement as required. (6) PROBLEM AREA: During countdown missile- borne and ground systems are controlled remotely by B2-volt de control power. In the event of a hazardous condition arising from loss of 60-eps ac or input de power, the missile and peculiar GSE must be capable of being returned to a safe condition. Equipment is required which will supplement the 28 volt de cransformer-rectifier during countdown and provide an emergency source of 28 volt de power in the event of a transformer-rectifier mailunction or an input voltage failure. Conventional hydrometer measurements will not indi- cate a NICAD battery's state of charge is verified by a controlled discharge using the electrical dummy load (Item 78). After discharging, the NICAD battery is charged with the rectifier power supply (Item 76). Equipment is required at the SMA which will permit routine mailneance, controlled discharging and charging to be performed on the battery assembly re- placement units at the launch operations building with- out reducing the operational capabilities of the squadron.						
(Item 78), recharge (Item 76), and cell replacement as required.       rotational maintenance.         (5) PROBLEM AREA: During countdown missile-borne and ground aystems are controlled remotely by 28-volt dc control power. In the event of a hazardous condition arising from loss of 60-cps ac or input dc power, the missile and peculiar GSE must be capable of being returned to a safe condition.       This item is the same as GSE item 5029 in Report No.         Equipment is required which will supplement the 28 volt dc power in the event of a transformer-rectifier malfunction or an input voltage failure.       This item is the same as GSE item 5029 in Report No.         Conventional hydrometer measurements will not indicate a NICAD battery's state of charge is verified by a controlled discharge using the electrical dummy load (Item 78).       The information of the is the same as GSE item 5029 in Report No.         After discharging the beground of the squadron.       Equipment is required which will permit routing failure.       This item is the induce.         Conventional hydrometer measurements will not indicate a NICAD battery's state of charge is verified by a controlled discharge using the electrifier power supply (Item 76).       This item is the induce is controlled discharging and charging the electrifier power supply (Item 76).         Equipment is the function of the battery assembly replacement units at the launch operational capabilities of the squadron.       This item is similar         (18) REMARKS: The function of this item is similar       The source is a state in the squadron.	이 같은 것 같은 것 같은 것 같은 것을 것 같은 것 같은 것 같이 없다.					
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(4) NOMENCLATURE: (PNS) Console, Assembly. Operational and Checkout, Missile Destruct System.

This unit measures approximately 2 feet wide, 2 feet deep, 5 feet high, and is equipped with a 12 inch shell located approximately 40 inches above the floor. The unit weighs approximately 500 pounds. Electrical input is 115-volt 60-cycle ac power.

This unit contains the control switches, indicating lights, and communication equipment required to operate and check out the telemetry and range safety (command destruct) systems. The unit also provides a station which can be used for communicating with the necessary elements of the instrumentation and range safety systems.

(5) PROBLEM AREA: The telemetry and range safety (command destruct) systems are part of the base installation. Proper functioning of these systems is vital in attaining the objectives of the launch program.

The telemetry system includes a telemeter package, a signal conditioner and power control package, transducers, mounting bracketry, interconnecting cables, and a battery which also provides the power for one range safety receiver. The telemetry and range safety antennas are combined. The telemeter package, Government-furnished property (AFS), is a small, ruggedly constructed missileborne system. The system is capable of accepting data inputs from a variety of transducers: translating these data quantities into a signal form compatible with the FM/FM telemetry section of the Interrange Instrumentation Group (IRIG) document No. 103-56, Telemetry Standards, dated 9 October 1956; and providing the facility necessary for transmission of these signals. Certain operational frequencies are the sole exceptions to the document above.

Seven voltage-controlled, subcarrier oscillators are used. Provisions are made for time division multiplexing (PAM/FM) two of these channels. The equipment is capable of meeting all performance requirements with a signal level of zero to 5-volt de at a maximum source impedance of 100 kilohms.

Approximately 46 telemetry measurements are used to provide maximum information with minimum complication of operation and installation. Twenty-two potentiometer type transducers and their associated hardware are installed to monitor key points in the propulsion and autopilot systems. Six amplifierdemodulator units are required to condition the signals created by measurements originating in the autopilot system. In general, signals from the remaining measurements are occurrence indications of certain specific events within the missile systems.

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## By Air force direction

Part or specification number listed in column 3 is the number proposed for original provisioning
 Recommended quantities only are listed in column 7.

3. This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information. Quantity Approved Quantity Asterisk indicates common usage w odiacent complex and/or area

Recommended

Use Current List of Effective Pages as guide for inserting Revision Pages

94.45     CONVAR A SMONAURCI		USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 1961	LIST NU	MBER: AP60-1046
<ul> <li>Two AFS modified ARW-62 Command receivers</li> <li>Two AFS modified ARW-62 Command receivers</li> <li>Two antennas (also used by the telemetry system)</li> <li>One ring coupler</li> <li>Coaxial cables connecting the receivers and antennas</li> <li>Two on-off switching units</li> <li>Statey and arming devices</li> <li>Two on-off switching units</li> <li>Statey and arming devices</li> <li>One 28-voli the battery which powers one AFS required which can be used to operate and checkout the IRSS. This equipment must also for romanulaction with the necessary elements of the instrumentation and range acidy. Communication</li> <li>One 28-voli the battery which powers the AFS telements.</li> <li>One 28-voli the battery which powers the AFS telements.</li> <li>One 28-voli the battery which powers the AFS telements.</li> <li>One 28-voli the battery trans-</li> <li>User to the system.</li> <li>One the system visition and signal conditioning.</li> <li>One call approximation and signal conditioning.</li> <li>One destinct package</li> <li>Intercometing calles and wiring harnesses</li> <li>Mounting bracketry</li> <li>erange safety system receives the destruct signal on the insection of the mise-composition of the mise-composition system which mputes the propressive impacted priores which mange through the would all if all propulsion were cut off at corresponding yrecessive instate thrup powerd light. If the tare of the missile is unsatisfactory, the range beyond the system concerves the size of the provem of the system which mange and the system concerves the system vicies and the powers the system concerves the single is unsat</li></ul>	SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See C	Column 7)	REV.:
11) Mounting bracketry in range safety system receives the destruct signal in the ground based transmitter.  ground station uses the carrier wave of the tele- try system to determine the location of the mis- e. The ground station then processes this location formation in the impact predictor system which mputes the progressive impact points which would sult if all propulsion were cut off at corresponding ogressive instants during powered flight. If the urse of the missile is unsatisfactory, the range fety officer can elect to destroy the missile through	<ol> <li>Two AFS modified A ceivers</li> <li>Two antennas (also system)</li> <li>One ring coupler</li> <li>Coaxial cables conne antennas</li> <li>Two on-off switching</li> <li>Safety and arming de</li> <li>One 28-volt de batte AFS ARW-62 receiv furnishes power to o</li> <li>One AFS battery whi meter, one AFS ARV vides one-half amped ducer excitation and</li> <li>One destruct packag</li> </ol>	ARW-62 Command re- used by the telemetry exting the receivers and units evices ry which powers one er. (This battery also ther systems.) ch powers the AFS tele- V-62 receiver, and pro- re for telemetry trans- signal conditioning	AFS telemeter, one AFS range safety receiver and its associated functions, and to provide one-half ampere of 28-volt (±2 volts) dc for transducer excitation and signal conditioning. The battery is of the instant-ac- tivated type and is activated and controlled from mobile equipment located inside the launch operation building and alongside the launch control consoles. Equipment is required which can be used to operate and checkout the IRSS. This equipment must also provide a station which can be used for communication with the necessary elements of the instrumentation and range safety. (18) REMARKS: This unit performs the same func-				
The ground station then processes this location formation in the impact predictor system which mputes the progressive impact points which would sult if all propulsion were cut off at corresponding ogressive instants during powered flight. If the urse of the missile is unsatisfactory, the range fety officer can elect to destroy the missile through	<ol> <li>Mounting bracketry he range safety system rece om the ground based transm</li> </ol>	ives the destruct signal hitter,	н				
	etry system to determine the le. The ground station then formation in the impact pre- omputes the progressive imp- esult if all propulsion were co- cogressive instants during p- ourse of the missile is unsat	e location of the mis- processes this location dictor system which act points which would out off at corresponding owered flight. If the isfactory, the range					
	e antenna system, coaxial (						

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cable harnesses, switching provisions, transducers, signal conditioning circuitry, and all mounting bracketry are contractor furnished.

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			USAF WEA	ON SYSTE	M 107A-1 GROUND	OPERATIO	NAL E	QUIPME	NT LIST,	SERIES E A	AND	F				DATE	5 Januar	y 196	1	LIS	ST NU	UMBE	R: AI	60-10	46		
	SM-65		CONV	AR-ASTRONAU	UTICS CONV	AIR IS A	DIVISIO	N OF GE	NERAL D	YNAMICS (	CORP	ORATION	1	SA	N DIEGO, C	AL. 0	CONTRACT NO	0. (	See Co	lumn	7)		IV.	-			
(1)	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(1	2) (13	1 (14)	(18)	(16)	(17)	(15)		1	-			(7)				18
ITEM	GSE		STOCK NUME	ER T	-	NUN				ANT ORY.		z B.		2.45	023	¥5	EM BIE	z	TERS	5	STAS		_			1	z
EQUENCE	PARA. NO.	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM		PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE	CATION CATION PROPOSE SUPPLY	SOURC SOURC	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC-5	AT GUID	AT SMA	GENERAL	DEPOT		SUB TOTAL	TOTAL ON
												CF	E							co	NTRA	ACT NO	D. AF	04(647)	-370		1
5031		27-6869			CABINET													OSTF	2							2	1
		EID-27-	6202		COMBUSTION										7 mo		3/25/60	No. 1	1						_		_
					STABILITY												1			cc	DNTRA	ACT N	O AF	04(647	-346	-	4
												576 C	-	-	-	+			-		-						
		RE: Cabine	t, Combu	stion			unit, s	and panel	l mo	ounted						567	-							1	1		
Stabilit	ly Montor.	ENCLATURE: Cabinet. Combustion       harnesses, a cooling unit, and panel mounter receptacles.         Monitor.       receptacles.         bustion stability monitor is used to       1) Three line voltage stabilizers.         the individual combustion characteristics       2) Three combustion cutoff units.																		-		+			-	+	+
The con	mbustion stab	MONITOR         MENCLATURE: Cabinet, Combustion Monitor.       harnesses, a cooling unit, and panel moun receptacles.         bustion stability monitor is used to the individual combustion characteristics pooster engine thrust chamber during not firing tests. This unit detects the       1) Three line voltage stabilizers. 2) Three combustion cutoff units.														í		548	-	-	-	-			+	+	-
monito	r the individu	al combust	tion chara	cteristic	8										1		1									-	1
																	i	706									1
100000000000000000000000000000000000000	or the individual combustion characteristics 2) Three combustion cutoff units chooster engine thrust chamber during ve hot firing tests. This unit detects the Line Voltage Stabilizer.																	549	1				_	-	_	-	
-	ency and amplitude of rough combustion. If																		L					04(647)		1	+
	combustion exceeds certain fixed limits, The line voltage stabilizer is a stat														1		1	OSTF	1					04(047)	-455	1	+
	unit. acting through a delay network, actu- s the engine cutoff circuit. maintains a constant voltage input to t													11		1		No 2						-	-	+-	1
	combustion cutoff unit thus preventing																			cc	ONTRA	ACT N	D. AF	04(647)	605		+
	e combustion stability monitor equipment is used in two cabinets. One configuration con- combustion cutoff unit thus preventing sensitivity changes due to line voltage fluctuations.											age	- 1					576-D									1
						fluc	tuation	15.											-		_			-	_	_	1
	ne control and ted between th					Com	huetic	on Cuto	ff 11mit							8		576-E				-	-		_	+	4
	der unit in the		•		4	Con	DUBLIC	n Cuto	u onit.	2				-					-	-	-	-			-	+	4
	ner configurat					The	comb	ustion o	utoff u	nit conta	ains	the	- 3					550			-	-		-	-	+	1
	ent which mu				e,	elec	tronic	circuit	try for	detectin	ng fr	requend	y					551						-	-	+	1
	it to the umbil				5				-	combust								351									1
	e piezoelectri				)					utoff unit								577									
a strategy and the second s	c output may					22.01.22				ontrol m									-	-	-			_	_	-	1
	two units will carry different dash numbers detects approximately 20 milliseconder ne same basic part number. rough combustion. This relay complete the combustion of the same basic part number.																	578		-						+	4
	the cutoff circuit of the rocket engine and																		-					-+-		-	4
The fir	first combustion stability monitor unit is terminates the hot firing, if the standby-																	579						-		+	1
	ounted in a hammertone steel cabinet measuring ready switch is in the ready position. proximately 17 inches wide, 24 inches deep, and																556								$\top$	1	
48 inch	es high. The	in a hammertone steel cabinet measuring ready switch is in the ready position.																ATC								<u> </u>	-

## By Air Force direction:

- Part or specification number listed in column 3 is the number proposed for original provisioning.
   Recommended quantities only are listed in column 7.

The commence quantities only are intered in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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Asterisk indicates common usage with adjacent complex and/or area.

Approved Quantity

Recommended Quantity

Use Current List of Effective Pages as guide for inserting Revision Pages.
	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE 5 January 1	961	LIST NU	MBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	(See Co	lumn 7)	REY

inches high. This unit contains three accelerometer amplifier units with associated interconnecting harnesses, cooling unit, and panel mounted receptacles.

The accelerometer amplifier is a fixed gain amplifier with a cathode follower input. The amplifier accepts the signal generated by the accelerometer mounted on the injector dome of the booster thrust chamber. By means of a cathode follower input, the unit converts the small high impedance signal to a lower impedance. The low impedance signal is then amplified in a fixed gain amplifier, the output of which is connected by coaxial cable to the combustion cutoff unit.

The line voltage stabilizers, combustion cutoff chassis', and accelerometer amplifiers are Government Furnished Parts.

(5) PROBLEM AREA: Large rocket engines are subject to two types of combustion instability; chugging and rough combustion. Chugging is a low frequency pheonomenon which results from an improper ratio of injector pressure to chamber pressure. Damage to a thrust chamber caused by chugging is small compared with the damage caused by an equal amplitude of rough combustion.

Rough combustion results in increased heat and tangential and radial pressure waves within the combustion chamber. These waves, combined with violent fluctuations in pressure, can cause damage to the entire missile and facility.

Cabinet mounted equipment is required which will monitor the combustion of the booster engine thrust chambers during captive firings, to detect the presence of combustion instability and to shut down the booster engine if excessive instability exists.

			SAF WEAP	UN STSTEM	10/A-1 GROUND	OPE	RATIO	NAL	QUIPME	NT LIST	SERIES E A	ND F					DATE	5 Janua	ry 196	1	LIS	T NU	MBER	AP6	0-1046		
	SM-65		CONVA	R-ASTRONAUT	ics coi	VAIR	IS A	DIVISIO	ON OF GE	NERAL	OYNAMICS (	ORPOR	ATION		SA	N DIEGO, CA	- (	ONTRACT NO	) (	See Ca	lumn	7)	REV				
(1)	(2)	CONVAIR-ASTROMAUTICS         CONVAIR IS A DIVISION OF GENER           (3)         (4)         (5)         (6)         (9)           (4)         (5)         (6)         (9)         (9)           STOCK NUMBER         MFG PART         NOMENCLATURE         (3)         (4)         (5)         (6)         (9)           CLASS         SERIAL POWER         MFG PART         NOMENCLATURE         UNNIT         UNNIT           CV-FW-27SE3005-1 EID-27-6214         RELAY BOX, AC BUTION, GSE FSC NOMENCLATURE: DISTRIBUTION BOX         Est Spec 27-06243-1 EID-27-6214         2,000           RE: (PNS) Relay Box, AC Power         The relay box receives 28-vo power supply - distribution se trol and monitoring of missile           Ibution relay box measures 24 hes high, and 8 inches deep. This launcher, houses equipment re- 400 cycle ac power to the follow-         (5) PROBLEM AREA: During and countdown operations the tems and GSE require 400-cyce power. add SE require 400-cyce power.           ation control logic unit No. 1 missile power control unit (Item control logic unit No. 2         Equipment is required which w which require 400-cycle power           During standby and countdown, certain rocket engine compone provide protection against cold         Equipment is required which w and distribute 120-volt, 60-cy borne heater circuits during st           (18) This item supersedes ite unch control monitor group (Item         (18) This item supersedes ite		(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	15						(7)									
ITEM	GSE	CONVARE ASTRONAUTICS         CONVARE IS A DIVISION OF GENER           (3)         (4)         (5)         (6)         (9)           STOCK NUMBER         MCC PART OR DWC. NUMBER         NOMENCLATURE         (9)         UNIT           CLASS         SERIAL CODE         MCC PART OR DWC. NUMBER         NOMENCLATURE         UNIT         UNIT           CV-FW-27SE3005-1 Spec 27-06243-1 EID-27-6214         RELAY BOX, AC BUTTON, GSE FSC NOMENCLATURE: DISTRIBUTION BOX         Est 2,000           JRE:         (PNS) Relay Box, AC Power         The relay box receives 28-vo power supply - distribution su- trol and monitoring of missile           Juncher, houses equipment re- evon cycle ac power to the follow-         (5) PROBLEM AREA: Durin and countdown operations the tems and GSE required 400-cycle power from the motor generat distribute this power to the va which require 400-cycle power           ation control logic unit No. 1 missile power control unit (Item control logic unit No. 2         Equipment is required which v power from the motor generat distribute this power to the va which required 400-cycle power           Control logic unit No. 2         During standby and countdown certain rocket engine compone provide protection against colu- provide pro				ANT ANT				2 • S	SZA	VAL	ATE	z	REPS	2	STAS		-		14	z					
QUENCE	PARA			OR DWG.	NOMENCLATUR		DESCRIP OF PROI	44/11/	PRICE		COGNIZ LABORAT CENTE & SERV	CLASS	PROPOS	Source	SECUR	EST PR DUCTIO	DATE ARD APPRO	EST D FIRST I	LOCAT	ATLAUNC	AT LCC	AT GUID	AT SM	GENER	DEPOI	SUB TOT	TOTAL
5032		CV-FW-2	7SE3005-	-1 B	ELAY BOX. A	с			Est				CFE	5							co	NTRA	CT NO	AF O	(647)-3	70	
0.007		CONVARE ASTRONAUTICS       CONVARE IS A DIVISION OF GENERAL         (3)       (4)       (5)       (6)       (7)         (3)       (4)       (5)       (6)       (7)       (7)         (1)       (1)       (1)       (1)       (1)       (1)       (1)       (1)         (1)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)       (2)											OSTF	1			-			1	7						
		EID-27-6	CONVARE ASTRONAUTICS       CONVARE IS A DIVISION OF GENERAL         (3)       (4)       (5)       (6)       (7)       (7)         STOCK NUMBER       MFG PART OR DWG.       NOMENCLATURE       75 200 200 200 200 200 200 200 200 200 20								7 mo			140.1		L						-					
			CONVAIR 15 A DIVISION OF GENER(3)(4)(5)(6)(9)STOCK NUMBERMAG PART OR DWG, NUMBERNOMENCLATUREUNIT PRICECLASS CODESERIAL NUMBERMAG PART OR DWG, NUMBERNOMENCLATUREUNIT PRICEV-FW-273E3005-1 CC0243-1 ID-27-6214RELAY BOX, AC POWER DISTRI- SC NOMENCLATURE: DISTRIBUTION, GSE FSC NOMENCLATURE: DISTRIBUTION BOXEst 2,000(PNS) Relay Box, AC Power (PNS) Relay Box, AC PowerThe relay box receives 28-vo power supply - distribution s trol and monitoring of missile(PNS) Relay Box, AC Power (PNS) Relay Box measures 24 high, and 8 inches deep. This cher, houses equipment re- cycle ac power to the follow-The relay box receives 28-vo power supply - distribution s trol and monitoring of missile (5) PROBLEM AREA: Durin and countdown operations the tems and GSE require 400-cycle power, power, and 28-volt dc power.toon relay box measures 24 high, and 8 inches deep. This cher, houses equipment re- cycle ac power to the follow-(5) PROBLEM AREA: Durin and countdown operations the tems and GSE required which require 400-cycle power, power, and 28-volt dc power.toon rol logic unit No. 1 ile power control unit (Item power from the motor generati distribute this power to the va which require 400-cycle power provide protection against col minals required to monitor on of 120-volt, 60-cycle. missileborne heaters.													1		1	<u> </u>			AFO	1047-3	1 1,	-		
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			CONVAIR ASTRONAUTICS       CONVAIR IS A DIVISION OF GENER         (3)       (4)       (5)       (6)       (9)         STOCK NUMBER       MFG. PART OR DWG. NUMBER       NOMENCLATURE       75 200 200 200 200 200 200 200 200 200 20														1	547	9						9		
			CONVAIL IS A DIVISION OF GENERAL         (3)       (4)       (5)       (6)       (9)       (10)         STOCK NUMBER       MAG PATT CONE       NOMENCLATURE       53 2000       (9)       (10)         CLASS CODE       SERIAL NUMBER       MAG PATT OF DWG PATT CONE       NOMENCLATURE       53 2000       (9)       (10)         CU-FW-27SE3005-1 Spec 27-06243-1       RELAY BOX, AC POWER DISTRI- 2,000       Est 2,000       2,000         EID-27-6214       BUTTON, GSE FSC NOMENCLATURE: DISTRIBUTION BOX       Est 50 conductor       2,000         C: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox         c: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox         c: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox         c: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox         c: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox         c: (PNS) Relay Box, AC Power       This         c: (PNS) Relay Box, AC Power       The relay box receives 28-volt power supply - distribution set trol and monitoring of missilebox <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>507</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>											507													
(4) NO	MENCLATU	RE: (PNS)	CONVARE IS A DIVISION OF GENERAL OF (3)         (3)       (4)       (5)       (6)       (9)       (10)         STOCK NUMBER       MAG PART OR DWARE       NOMENCLATURE       To State of Control of DWARE       The relay box receives 28-volt of power supply - distribution set ( trol and monitoring of missilebo         CV-FW-27SE3005-1 Spec 27-06243-1       RELAY BOX, AC POWER DISTRI- 2,000       Est State         CV-FW-27SE3005-1 Spec 27-06243-1       Est BUTTON, GSE FSC NOMENCLATURE: DISTRIBUTION BOX       Est State         CV-FW-27SE3005-1 Spec 27-06243-1       The relay box receives 28-volt do power supply - distribution set ( trol and monitoring of missilebo         Stition relay box measures 24 shigh, and 8 inches deep. This uncher, houses equipment re- bo cycle ac power to the follow-       (5) PROBLEM AREA: During Can which require 400-cycle power. <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>548</td> <td>9</td> <td>-</td> <td></td> <td></td> <td>-</td> <td></td> <td>9</td> <td></td>										548	9	-			-		9							
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quired	to distribute	400 cvcle a	c power t	o the foll		and	CSF	oper	ations t	he mis	sileborn	e subi	sys-						1			NTRA	CT NO	AFO	4(647)-4		_
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2)	SM-45       CONVARE IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVERTING       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       LAN DECO. CL       CONVART IS A DIVISION OF GENERAL DYNAMICS COPPORATION       Lan DYNAMICS DYNAMICS COPPORATION       Lan DYNAMICS DYNAMICS DYNAMICS DYNAMICS COPPORATION       Lan DYNAMICS DYNAMIC																										
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5)	Countdown c	ontrol logic	c unit No.	2	Durin	g sta	andby	and	countdo	wn, h	eaters ar	e use	d on				2/24/60		550	10	-			-	+	1 1	-
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This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

Use Current List of Effective Pages as guide for inserting Revision Pages.

Poge_1_of_1

		USAF WEAPO	1 31312#	107A-1 GROUND OP	ERATIONAL	QUIPMEN	IT LIST,	SERIES E A	ND F	27-11) 12-11				DAT	5 Januar	y 1961		LIST	NUM	BER:	AP60-	1046		
	SM-65	CONVAIR	ASTRONAUT	ICS CONVAI	R IS A DIVISIO	ON OF GER	IERAL D	YNAMICS C	ORPORA	TION		SA	N DIEGO, C	AL.	CONTRACT NO	D. (S	See Co	lumn 7)		REV.				_
(1)	(2)	(3)		(4)	(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)					(7	1			(8)
		STOCK NUMBER			21			52								z	Sa		AS					-
ITEM QUENCE	GSE SPEC PARA NO.	CLASS SERIAL CODE NUMBER	NOMENCLATURE	COGNIZANI LABORATORY CENTER, & SERVICE	TYPE CLASSIFI CATION	PROPOSE SUPPLY SOURCE	SOURCE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS	DATE OF ARDC APFROVA	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID STAS	AT SMA GENERAL	DEPOT		SUB TOTAL	TOTAL ON				
5033		27-68737-801		UNCTION BOX		Est				CFE			•		-1			CON	TRACI	NO A	F 04(6	47)-370	_	+
035		Spec 27-06626-1		GROUP, LAUNCH		25,000				CFE		6				OSTE	1						1	
		Spec Cont Dwg		AND TEST									9 mo	L	1	No. 1			_		1			_
		27-06213-1	1	FSC NOMENCLAT	JRE:									1	1	r	1.	CON	TRAC	I NO A	F 04(6	47-346	- 1.	_
		EID-27-6179	I	NTERCONNECTIN	G.									2/20/6	6/12/60	576-C	1		-		+	+ +	-1	-
				BOX GROUP, LAU	NCH									3/23/0	0/12/00		9		+	+	+	+	9	-
			1	AND TEST											1	567	1		-†	-	+			-
																548	9						9	
		E: (PNS) Junction Bo	x Group	<b>)</b> .	C225 - 13	Autopilo									-	540				-	_		_	
auno	h and Test.							and prop	ellant							706	-		-		-		-	
				-1		utilizatio								-		i den i	9		+	-	-	+	9	-
		p consists of the left auncher checkout jun	ization a	nd pro	pul-	- 1					549	9		+		+	+	9	-					
		ese junction boxes is	Booster ui	mbilic	al							-	CON	TRAC	T NO.	F 04(6	47)-453	-	-					
				oooter u	nome		1					OSTF			T	T	T	TT	1	-				
1	) Junction Box	, Umbilical Left (27-	-06214)		e cable	conne	ctions for	rapic	l re-						No. 2									
					box are	provid	led								CON	TRAC	T NO.	F 04(6	47)-605	_				
		nsists of a junction be			he missil	e.							576-D			_				_				
		d connectors. The b						a a								1000			-	-	-		_	
		launch and service bu		19970	Junction B	ox, Cheo	kout,	Launches	r (27-0	06213						576-E	<u> </u>	+	-+		+-	+ +	_	-
		he mechanical and el xtends into the missi			This unit a			nation be								-	-	+	+	+	+-	+	-	-
		umbilical junction bo			This unit c minals and											550	-	+	+		+	+	-+-	-
		e termination and dis			in the chec											-	-	+	+	+	+			-
		distributing power,			vice buildi			i die idan	en ane							551	-		+	+	+	+	+	1
		monitoring signals h			10000000000000												1				1			
	ground supp	ort equipment and the	e missile	е.	This juncti	on box is	s fitte	d with um	bilica	1-						577								
		o houses the Arma a	Community of the		type conne											578			_					
	-	This assembly requir	res prov		the listed f												-		_	_	-		_	
	sions for co	oling.			ground sup											579			-	-	+		-	-
	The followin	g cables terminate in	this un		ment and t	ne fixed	groun	a support	equip	ment							-	+	+	+	+	+ +		-
	The followin	6 casice terminate in	i ino un		a)	Semitrai	ler m	ounted mi	ssile	elec-						556								
	a) Guid	ance system umbilica	d					checkout									-			-	_			+-
		ance power and contr				(Item 50										ATC								

1) Part or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7.

3) This page will not be updated to show provisioning action, configuration, or part number changes. Pefer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjocent complex and/or area.

Approved

HEAE WEADON SYSTEM 1074.1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 196	LIST NU	IMBER: AP60-1046
SM-65 CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (S	e Column 7)	REV.:
<ul> <li>(1) Checkout signals and responses</li> <li>(2) 28-volt dc</li> <li>(3) 115/200-volt, 400-cps ac</li> <li>b) Pneumatic checkout vehicle:</li> </ul>	is 24 inches. The length of the protrusion on the junction box at operational sites is 6 inches greater than the protrusion at 576-C. Also, the box at 576-C has provisions for mounting an additional ARMA amplifier.				
<ol> <li>(1) 28-volt dc</li> <li>(2) 440-volt, three-phase, 60-cps ac</li> </ol>	Superseded items 1206 and 1508 are incorporated with this item.		÷		
(5) PROBLEM AREA: Ground power control and monitoring circuits are routed from ground support equipment through umbilical cables to the missile. These umbilical cables provide a removable inter- connection between the missile and ground support equipment.	580 21 22	.2.			
Equipment is required at each launcher which will provide a point for termination and distribution of these ground power control and monitoring circuits. The equipment supplied must provide plug-in type connection for the umbilical cables.					
Equipment is required in the checkout cubicle in the launch and service building to provide a point which can be used to interconnect electrically trailerized checkout equipment and the ground support equipment located within the launch and service building. The equipment supplied must contain provisions for inter- connecting the launch and service building intercon- necting cable kit with umbilical-type connectors to the trailerized checkout equipment.			14		
(18) REMARKS: The difference between Complex 576-C and the operational base configuration is as follows:					
Part of the umbilical junction box protrudes through the wall between the M&E room and the missile storage area. The wall thickness for operational sites is 30 inches and the wall thickness at 576-C	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				

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Use Current List of Effective Pages as guide for inserting Revision Pages.

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		L	SAF WEAP	ON STSTER	107A-1 GR	established Prov	0450/01005	_	220054	237-04-20	A TO AN AGAIN THEM						DATE	5 Januar	y 1961	5		NUM		AP60-1	046		-
	SM-65		CONVAL	R-ASTRONAUT	ics	CONVAIL	R IS A DI	VISION	N OF GE	NERAL C	YNAMICS	CORPOR	TION		SA	N DIEGO, CA	u i	CONTRACT NO	D. (1	See Col	lumn 7	)	REV.		_	_	
a)	(2)		(3)		14	)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)					(7	,			1
NENCE	GSE SPEC PARA NO	CLASS CODE	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENC	LATURE	DESCRIPTION OF PROBLEM AREA	111/4/4/11	UNIT PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	CODE	SECURITY CLASS, & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA GENERAL	DEPOT		SUB TOTAL	TOTAL ON
			re Divisio		CONSOL	E TATIN	CUEP	74		622			CFE	-				1			cor	TRACT	NO. A	F 04(64	71-370		+
5034		of Siegle		n	CONTRO		CHER						OLP	1					OSTE								1
		106205			CONCEP									H				-	No. 1				1				$\perp$
		Spec 27-	06413-3		FSC NON	IENCLA	TURE:							H				1			co	NTRAC	TNO	F 04(64	7)-246		-
		EID-27-	6235		CONSOL	E, LAUN	сн со	NTR	OL	21									576-C			-	-+-	1-	+		1
														1					567			_	_				1
	NOMENCLATU trol, Silo Conce		) Console	, Launch	er						ill satisf ient supp								548			+	+	1		1	
This	item consists	of a table-	type cons	ole which		hold fai	ult indie	catio	ns to a	minir	num and onses di	provid	e a	t					706							1	1
mea	sures approxim , and 42 inches	ately 72 in	nches wid	e, 40 incl	hes						logic uni		on	ł					549			-					
	ely 500 pounds.		e consore	, weigno a	ippi ox-	(18) R	EMARK	S: F	Functio	n of th	is item	nelude	8	Ļ				1						1			-
											8.2 in R			H				T		1	col	VTRAC	I NO. A	F 04(64	7)-453	1	-
	center panel co					ZM-7-3	357.									12 mo			OSTF No. 2	-		-		-		+	
	s necessary to p sile. This pane					This is		1		-	to GOE	itom E	0.00	t							co	NTRAC	TNO	F 04(64	7)-605	-	+
	and burst select					used at				netion	to GOE	item 5	520						576-D	1				T		1	1
	sure meters, s																4/14/60	2/21/61		-		_	-				1
tors	in bar-graph fo	rm, and c	commit se	equence in	ndica-	This its	em is u	sed v	with ite	m 503	5. Durt	ng ope	ation	1					576-E	1		-		-		1	4
tion	ι.					checkou					ns 5034	and 50	15				0/04/0		550	12			-			12	1
	PROBLEM ARE one operator, 1													ł			2/24/6	<u> </u>	551	12			-			12	
mis	sile launching.	This conc	ept furthe	er require	es that									ł						12	_	-	+			12	
	dby status be in ch equipment an			-															577								1
	blish the state of																		578	12			-	+		12	+
																-			579	12		-	-	-		12	1
														ł					556	12						12	1
														ł													t
																			ATC								
	ce direction:									Barr	mmended	_						1	L					-			1

Part or spectricition number listed in column 3 is the house propose for original porticities, and 2.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Use Current List of Effective Pages as guide for inserting Revision Pages.

Page 1 of 1

		4	JSAF WEAP	ON SYSTEM	107A-1 GROUND O	PERATIONAL	EQUIPMI	ENT LIST,	SERIES E A	ND F					DATE	5 Januar	y 1961		LIS	TNUA	ABER	APE	0-104	6	
	SM-65		CONVA	IR-ASTRONAUT	CONVA	IR IS A DIVIS	ION OF G	ENERAL C	YNAMICS C	ORPOR	ATION		SA	N DIEGO, CA	LC	ONTRACT NO	(5	ee Co	umn 3	0	REV	1			
(1)	(2)		(3)		(4)	(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)						(7)			
	GSE SPEC PARA			MFG.	NOMENCLATURE	COBLEM REA REA	UNIT		COGNIZANT LABORATORY, CENTER & SERVICE	TYPE CLASSIFI- CATION-	PROPOSED SUPPLY SOURCE	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	cc.s	D STAS	SMA	GENERAL	DEPOT		TOTAL ON
	NO	CODE	NUMBER	OR DWG. NUMBER		DESCE	PRICE		COG CEPE	-33	10 S US	βŭ	SEC SEC	EST DUC LEAD	A P P P	EST FIRS	roc.	41 F 40	AT LCC	AT GUID					SUB TOTA
5035		27-6874	5-1		CONTROL MON	TOR	Est		20		CFE							r	co	NTRAC	TNO	AF O	4(647)-1	70	_
10,000		EID-27-	6234		GROUP, MISSIL	Е	240,	000								6 9	OSTF No. 1	-		-+		-			
					LAUNCH							ł						1		NTRAC	TNO	AFO	4(647)-	44	
					FSC NOMENCLA	ATURE:											(Incompany)	1		T	T	1	1.0417.	T	-
		21     (3)     (4)     (5)     (6)     (9)     (10)       STOCK NUMBER     STOCK NUMBER     NOMENCLATURE     Z X Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y										576 C	-				-+		-						
					12												567								
115	NOMENCLATU	DE. (DNS	Control	Monitor	Fault	Incontion of	anabilit		Incorpor	ated (	o do												_		
1.1.2.1	up, Missile Lau		) Control	Monitor													548	-		-	-	-	-	-	
0.0	apt another pro								157	-		a) -						-	-			-+	-		_
This	item consists	of four pal	letized r	ack-type				2010/02/02		8740.575	0.05555						706				-+				
stru	ctures which me	easure app	proximate	ely 8 feet	wide,												1	1			-+	-	-	-	
3 fe	et deep, and 7 fe	eet high.	The units	s weigh	All ch	assis pull	out from	the fr	ont for re	eplace	ment.						549				-	-	-	-	
																			co	NTRAC	TNO	AFO	4(647)-	153	
						monitoring	g of indi	vidual s	system re	espone	ses.						OSTE	1				T			1
	and the second			mal respo			2011-11	10211	0 0	12 53				12 mo			No. 2								
and	two are relay lo	ogic units.				227.22			chassis c	ircuit	try	[							co	INTRA	CT NO	AFC	4(647)-	505	
The						following	system	B:									576 D	1							1
	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.					Deceall	ant laws								4/14/60	2/21/61	5.00	-				_			
	SEE 1058 0																576 E	1	_		-+	-+		-	1
				1999년 ⁴¹ 21 1999년 1997년 19	1997	Carl a series and	0.000						1					-				-		-	
															2/24/60		550	12				-+		-	12
						-									2/24/60			1 10				-+		-	10
																	551	12	-		-+	-+	-	-	12
app	roximately 30 pe	rcent spa	res in the	e pins of t	he 7)	Missile	lifting p	latforn	n							1		12			-	-+		-	12
wir	ng harness at th	e connect	ors.														577		-		-	-		-	
	2				Relay	logic unit	No. 2 co	ntains	chassis c	ircui	try						-	12	-		-	-	-		12
	•					following	system	S:									578		-			-	-	+	
1.2														-				12							12
																	579								
							-	power									556	12							12
2.732				nent for a	지하는 것 같은 것 같												350								
ope	rations or requi	red check	out.		4)	Autopil	ot																	117	
																	ATC								÷ .
																		1							

Part of specification number listed in column 3 is the number proposed to original provisioning.
 Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and pravisioning information.

L Asterisk indicates common usage with adjacent complex and/or area.

Use Current List of Effective Pages as guide for inserting Revision Pages.

Page 1 of 2

	1	USAF WEAPON SYSTEM 107A-1 G	ROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE: 5 January 196	61 LIST N	UMBER: AP60-1046
	SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO.	(See Column 7)	REV.:
5)	Hydraulics		must be supplied. Where necessary, these logic	unit fault			
6)	Engine	12	indicators must be summarized on the launch con				
7)	Countdown		sole (Item 5034).				
ignal	Responder No. 1 con	tains chassis circuitry for t	he Checkout of launch control equipment is required	l as well as			
llowi	ng systems:		checkout of missileborne equipment. In order the trol consoles, etc., of the various systems may				
1)	Prop level respond	ler	out, units are required which will simulate the s				
2)	Pneumatics respon		would normally be present during launching oper				
3)	LN-He tanking res		thereby avoid the actual loss of fluids and gases				
4)	LO ₂ tanking respon	-	would occur during electrical checkout.				
5)	Facility responder						
6)	Missile lifting plat		(18) REMARKS: Functions of this item include	functions of			
			Items 64.5, 80.7, 80.8, 82.4, 82.5, 83.2, 85.4	, 89.3,			
ignal	Responder No. 2 con	tains chassis circuitry for t	he 89.8, 94, and 95 in Report No. ZM-7-357.				
ollowi	ng systems:						
			This item is used with item 5034. During opera	tional			
1)	Guidance		checkout the combination of items 5034 and 5035				
2)	Missile ground pov	wer	functions as a single unit.				
3)	Autopilot	21.000 P					
4)	Hydraulics		This item is similar in function to GOE item 502	27 used			
5)	Engine		at Series E sites.				
6)	Countdown						
7)	<b>Re-entry</b> vehicle						
5) PR	OBLEM AREA: The	unitary concept requires th	at				
one op	erator, launch contre	ol officer, accomplishes mis	saile				
aunchi	ng. A relay logic s	ystem, time sequenced to ef	fect				
laund	h within the prescri	bed time, is necessary to					
achiev	this degree of auto	mation.					

Equipment is required which will satisfy the foregoing parameters. Fault location indicators in this equipment must be held to a minimum. However, those indicators which are required to ascertain the existence of a malfunction which will inhibit countdown or state-of-readiness

ITEM NUMBER: 5035

			USAF WEAP	ON SYSTEM	107A-1 GROU	ND OPE	RATIC	DNAL	EQUIPME	NT LIST	, SERIES	E AND F					DATE	5 January	1961		LIST N	UMB	ER: A	P60-10	46		
	SM-65		CONVA	R-ASTRONAUT	105	ONVAIR	IS A	DIVISI	ON OF GE	NERAL	DYNAMIC	S CORPOR	ATION		SA	N DIEGO, CA		ONTRACT NO	. (5	e Col	umn 7)		REV.:				
an T	(2)	1	(3)		(4)		(5)	(6)	(9)	(10)	010	(12)	(13	(14)	(18)	(16)	(17)	(15)					(7)				(8)
-				ER			-												-	\$3						1	
ITEM QUENCE	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL	MFG. PART OR DWG. NUMBER	NOMENCLA	URE	DESCRIPTION OF PROBLEM	THAN III	UNIT PRICE	15454///	COGNIZANT LABORATORY CENTER.	A SERVICE TYPE CLASSIFI- CATION	PROPOSED	SOURCE	SECURITY CLASS. & REMARKS	EST PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S		33	10430		SUB TOTAL	TOTAL ON
									12 2						<u> </u>		-			-	CONT	T	NO, AF	04(647	+370		ł
5036			Sili Shamaran										CF	6					OSTF No. 1			+	-		-	-	1
		27-99974-1       SYSTEM ASSY,       Eat         Spec 27-09750-1       ELECTRICAL,       129,000         EID-27-9064       MISSILE LIFTING         FSC NOMENCLATURE:       CONTROL SYSTEM,         CONTROL SYSTEM,       ELECTRICAL,         MISSILE LIFTING       SYSTEM ASSEMBLY,         MISSILE LIFTING       (5) PROBLEM AREA: An integral part         operations include locking and unlocking and unlocking and unlocking and silo-cap-to-crib locks, raising the launch platform         went comprises all the relays, compara-       opening the silo doors, and locking and silo-cap-to-launch-platform locks.         silo door operation, prior to launching.       Equipment is required to sequence thes during count down, and to provide local these operations during checkout proceed													L	L				CONT	RACT	NO. AF	04(647	-346	-	-	
		EID-27-	-9064					R-		15									576-C								1
		ā.				2.1.2.7.2.11		220	-										5700			-	-		_	-	1
					ELECTRIC	AL,	84												567	-		+	-				1
					MISSILE L	FTINC	3															+	+	$\left  \right $	-	+-	1
																			548	-		+	+			-	1
(A) N	OMENCIAT	IDF. /DN	Svetem	Assembly	. (	5) PR	OBL	EM A	REA:	n inte	gral pa	rt of lau	inchi	ng					706								]
			oj oj saam	noochion															100	_		_	-		_	-	-
												- 20 T - 1							549	-				+			-
					Sector and the sector of the s							d unlock	cing t	he						-	CONT	RACT	NO. AI	04(647	1-453	1	+-
						llo-ca	p-to-	launo	n-platio	orm lo	CK8 .					1	T		OSTF	1				ΓT		1	1
						Equipm	ent i	s req	uired to	sequ	ence the	ese oper	ation	8					No. 2								
1.00,																					CON	RACT	NO. A	F 04(64)	7)-605	11	4
The s	ystem contro	ols the lau	nch platfor	rm from t	he i	hese o	perat	tions	during	check	out proc	edures.				1	5/24/60	2/21/61	576-D	1	++	+	+-	+	-	1	+
																	5/24/00	2/21/01	-	1		+	+-		-	1	1
	y devices pre																		576-E								1
posit	when the loc	ks and she	o doors ar	e not in p	roper												1		550	12		-				12	
poan																					$\square$				_		-
The	ollowing iten	ns compris	e this sys	stem:															551	12				+ +		12	4
																				12	++	+	+	+	-	12	
	l) Four log														1				577	-		+	-				
	<ol> <li>Motor co supply).</li> </ol>	ntrol cente	er assemb	ty (power															578	12						12	
3		g level con	trol asser	mbly.															3/10			_	-			- 10	_
		ntrols, lau			ystems.				1										579	12	+	+				12	-
1		t assembly													-					12		-		-	-	12	
	5) Junction																		556	-				-			1
	7) Intercon	necting cab	le kit.												_	1			-	-							T
															1	1			ATC								
													5 J		1				1								

by art rock arection.
b) Part or specification number listed in column 3 is the number proposed for original provisioning.
c) Recommended quantities only are listed in column 7.
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Approved Quantity

					A 107A-1 GROUND												5 January	y 1961		1		HOEK:	AP60	-1046		
	SM-65			IR-ASTRONAU		-				YNAMICS C					N DIEGO, CA	_	CONTRACT NO	. (	iee Ca	lumn	7)	REV.	ē			
(1)	(2)		(3)		(4)	(5	(6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)						7)			
ITEM QUENCE	GSE SPEC. PARA NO	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM	AREA [[[][][][][][][]]	UNIT PRICE		COGNIZANT LABORATORY. CENTER. A SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS & REMARKS	EST PRO. DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LC C'S		AT SMA	DEPOT			TOTAL ON
5037		6125-7	24-8947		MOTOR-GENE	ATO	2					t CFE	/							co	NTRAC	T NO.	AF 04(	47)-370	,	+
		Kurz &	Root		SKID MOUNTE	),						AFS	Ē					OSTF	† 1						1	L
		Kurz M	ID2		TYPE MD-2								L					No 1								
		Spec C	ont Dwg 2	87-06416-	1								H							co	NTRAC			547)-340		
				-		-		277 H.	28.5 (7)									576-C	† 1			-	-	-	2	2
	OMENCLATUR			- Motor	Gener-					ant voltag									t 9	-		-	+	+		2
ator,	skiu Mounteu,	type MD-	2.							of the adju								567	19		-	-+	<u>'</u>	+		2
						vo	Itage 1	s suppri	ea ove	r the enti	ire loa	id rang	ge.					Name -	† 9					-	1	2
This i	s a synchronous	motor d	riven 120	/208-volt		) F1	equen	cv: The	freque	ency is 40	00-cv	le whe	n L					548			1	-	-		-	-
400-c	cle, 3-phase,	ac, 10 kw	alternato	or, built p	er					he motor								706								
	4-4818B. The												-			_					_	_	_		_	
	30 inches wide,									vory: Th			-					549	9				-		-11	2
	imately 1800 pe ing principal co			ontains the	8			the second s		35 perce			F				1	-			NTRAC		A E 04/4	47)-453		
IUIIUw	ing principal co	mponents								d, from			F				1 1	OSTF	† 1			T	1	1	-T	-
1	Driving moto	r								and will us-or-mi								No. 2	-			-	+ -	-		-
2										ess after									1. 1 	co	NTRAC	TNO	AF 04(	47)-605		-
- 3	Control pane	l I										enunge	· [					576-D	1						1	
4)	Skid mountin	g								main 400-							_	5.00				_				
-			17 - 12 - 12 M	2.222						rter which			- 11					576-E	1	-	-	-			1	-
The se	t has the follow	ing elect	rical char	acteristic		0	104 D 11 8 20			ssileborn			H						12		-+	4	-	+ +		_
11	AC input: 20	0/440 vol	te mine-	or-minue						ter durin			•	1				550	14		-	-14	+-	+	1	•
-	percent), 60-			JI - minus	0.10147				1000	e the mis								-	12		-+	4	-	+	1	6
	•				butto	y and	CACOU	a che mie	capet	cancy of		verter.	· [_					551				-	1		-	4
2)	Voltage adjus	tment: 7	he regula	ated outpu	t Equip	ment	s requ	ured wh	ich wil	1 supply	115/2	00-volt	. F					577	12			4			1	6
	voltage is ma	Service Street			nge 400-c	ps, 3-	phase	ac grou	nd pow	er to the	miss	lle and	to					3//								
	of plus-or-m									nt. The e			-07					578	12		-	4	_		10	6
	put voltage in	increme	nts of not	more that		must	supply	continu	ous 40	0-срв роу	ver to	the	1			5. N. C.		-	12	-	-+-	+	-	+		_
	0.5-volt.									standby								579	12	-		4	+		10	6
3)	Voltage regul	ation V	ltage res	nulation is						400-cps									12	-	-	4	-	+ +	10	6
	accomplished									ne and gr to meet								556			-	+·	-			Ť
	regulator wit	h sensing	on the av	verage of		eters	per E	lectrical		r Coordin			ſ					ATC								1

- 1) Part or specification number listed in column 3 is the number proposed for original provisioning.
- 2) Recommended quantities only are listed in column 7.

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 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

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Page 1 of 2

	USAF WEAPON SYSTEM 107A-1	ROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE 5 January 1961	LIST NUMBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL		Column 7) REV.:
<ol> <li>Frequency shall be 3 load conditions.</li> </ol>	94 to 406 cps under all				
be a nominal value b	to neutral voltage shall etween 113 and 117 volts us-or-minus 1-3/4 percent.				
8) REMARKS: § The quantit lumn are for rotational mail located to complex 576-C so nce at complexes 576-C, D	intenance. The one unit upports rotational mainte-	. FR			
is item is the same as GSE 260-1045.	item 5037 in Report No.				
is item supersedes item 12	211.				17. že
	(a.)				
15		- 91			
	5 2	2			

DATE 5 January 1961 CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION CONTRACT NO. (See Column 7) CONVAIR-ASTRONAUTICS SAN DIEGO, CAL. SM-65 (4) 1121 (13) (14) (18) (17) (15) (2) (3) (5) (9) (10 (11) 1161 (1) 14 STOCK NUMBER DATE OF ARDC APPROVAL EST. DATE FIRST ITEM AVAILABLE LOCATION GSE SPEC PARA EST PRO DUCTIONS SECURIT CLASS & ITEM UNIT MFG. NOMENCLATURE PROB SEQUENCE CLASS SERIAL PRICE NUMBER OR DWG. 55 CFE 5079 Minneapolis-Honeywell CONTROL UNIT Est OSTF GM-43-E6 PRESSURIZATION, 61.000 No. Spec 27-08081-1 SILO Spec Cont Dwg 27-08016-1 FSC NOMENCLATURE: 576-C EID-27-8084 CONTROL PRESSURE SYSTEM

USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST. SERIES E AND F

(4) NOMENCLATURE: (PNS) Control Unit, Pressurization Silo.

This unit, weighing approximately 5500 pounds, measuses approximately 9 feet long. 4 feet wide, and 6 feet high. The unit controls missile tank pressurvition during high-rate propellant loading. The control panel. located on the front of the unit, is in two sections. A manual control section is located on the upper left side below the direct reading gages; a semi-automatic control panel is located on the upper right side of the front panel. The semiautomatic panel has a cover plate to seal the controllers after validation.

The control unit contains the following sections:

- 1) Helium pressurization control section (automatic)
- 2) Helium pressurization control section (emergency)

The unit operates at any air temperature from zero degree F (minimum exposure of 8 hours without benefit of solar radiation) to plus 110 degrees F. All tubing and fittings are of stainless steel with a proof pressure of 150 percent of operating pressure, and a burst pressure of 250 percent of operating pressure.

The unit transfers helium from a ground source and delivers it to the missile propellant tanks at the desired flow rates (6 pounds per minute maximum) in accordance with the three pressure phases and at the required pressure differentials. The unit is pneumatically self-regulating during each of its pressure phases. These pressure phases are sequenced electrically from a remote control console in the launch operation building. Each phase of tank pressure is transmitted to the pneumatic controller by sensing lines. The pneumatic controllers operate the regulators and relief valves to maintain tank pressures of the selected pressure phase.

The control unit has automatic pressure relief valves. and permits semiautomatic and emergency control of propellant tank pressures. During the liquid oxygen tanking phase, the unit vents the liquid oxygen pressurization line to the atmosphere, to maintain liquid oxygen tank pressure 2.5 psig.

The unit also supplies emergency helium to the tanks. A source of nitrogen gas or dry air is supplied to operate the various unit control system components. The unit is not used for static firing. When the pressure phases have been completed after propellant loading. tank pressurization control is transferred to the missile system.



LIST NUMBER: AP60-1046

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## By Air Force direction

1) Part or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7.

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ITEM NUMBER. 5079

3) This page will not be updated to show provisioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

	USAF WEAPON SYSTEM 107A-1 GR	OUND OPERATION	AL EQUIPMENT LIS	T, SERIES E AND F		DATE: 5 January 1961	LIST NUMBER: AP60-1046	
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIV	ISION OF GENERAL E	YNAMICS CORPORA	TION SAN DIEGO, CAL	And and a second s	olumn 7) REV.;	_
coque missile tank section all times. During the per til firing, tank tension is sure in the missile tanks.	thin skin of the pure mono- must be kept under tension at iod from missile erection un- maintained by controlled pres- Helium gas, from a ground		sile propellant t for remote indic surization.	tanks and provid cation and contro				
missile intermediate bulk this bulkhead. This press maintained with a minimu	ust be maintained across the nead to prevent collapse of ure differential must be m value of 2.5 psi and in-		Serve as a back primary system breakdown.					
	ropellant transfer. During cansfer, helium must flow				TABLE I			
그는 가슴에서 물건을 통하는 것을 많은 것을 수가 가슴을 가지 않는 것이 같다.	. 0 pounds per minute through	Phase	Condition	<u>n</u>	Fuel Tank Pressure	Liquid Oxygen Tank P	ressure	
operations must be remote	urization and propellant loading ly controlled. However, there			Pressures	11.5 psig	2.5 psig		
are examples) which can t	ts (functional and leak tests est be done with local pressures. Since the prob-	2 L	Liquid Loading	Oxygen Pressure	60 psig	2.5 psig		
	pressurization is critical,	3	Flight	Pressure	60 psig	26.0 psig	×	
equipment must be provide manual pressurization.	ed for both emergency and		MARKS: This its a 26 used at Seri		function to			
and/or manually	, and route, semiautomatically the flight pressurization gases acilities into the fuel and so f a missile.	GM-43-E numbers accordan	part number wi 6 to GS-46-S1 b assigned by Min ce with AF direc onference Octob	y ECP action. in ineapolis-Honeyo ction during conj	New part well in figuration			

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 Regulate pressures within individual tanks and differential pressure between these tanks from missile post-erection standby condition, through high-rate propellant transfer, to pres-

surization complete condition.

			USAF WEAP	ON STSTER	TUTA-I GROUND C	PERATI	ONAL	EQUIPME	NT LIST,	SERIES E A	ND F					DATE	5 Januar	y 196	1	LIS	TNUA	ABER:	AP60-	1046		
	SM-65		CONVA	IR-ASTRONAUT	CONV	AIR IS A	DIVIS	ON OF GE	NERAL D	YNAMICS C	ORPOR	TION		SA	N DIEGO, C	u. c	ONTRACT NO	D. (	See Co	lumn 7	7)	REV				
(1)	(2)		(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12)	(13)	(1.4)	(18)	(16)	(17)	(15)					(7	5			1
ITEM	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL NUMBER	ER MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM		UNIT PRICE		COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	PROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS. & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	T GUID. STAS	AT SMA	10430		SUB TOTAL	TOTAL ON
								1		e s Figures	1		-				L	1	1							+-
5095		CV-FV	V 27SE300	03-1	JUNCTION BOX	ς,		Est				CFE	ł		1			1	1.		NTRAC	TNO	F 04(6	17+370	1.	4
				27-06215-				15,00	0						13 mo			No 1	H-		-+	+-		+-+	-11	-
		EID-27	7-6182										t		10 110					- co	NTRAC	TNO	F 04(6	471-346	-	-
					INTERCONNEC	TING	BOX											576.C	1		T	- 1	1	II	1	
													H			8/28/59	6/12/60		-		-	+				-
																		567			-	-	+	+ +		1
1.00		RE: (PNS	) Junction	Box, Un						sile and l	aunen	con-	ſ					548				_	1			7
This	unit consists of	a iunctio	n hor wit	h termina	le Equip	nent is	s rea	ired at a	each la	uncher v	hich	will						704								
		- 10 <b>-</b> - 10- 10-					1000						ŀ					700			_					
missi	le storage area	in the la	unch and	service b		5. C. S. S. S. S. S. S.												549	-				+-			-
		5				0.00				2010 - C. M	g-in t	pe	t					1		co	NTRAC	T NO. A	F 04(6-	47)-453		+
		(3)       (4)       (5)       (6)       (9)       (10)         310CK NUMBER       NOMENCLATURE       35       (9)       (10)         CLASS       SEMAL       NFG. OR DWG. NUMBER       NOMENCLATURE       35       (10)       (10)         CV-FW 27SE3003-1 Spec Cont Dwg 27-06215-1       JUNCTION BOX, NUMBER       Est       (10)       (10)         EID-27-6182       FSC NOMENCLATURE: INTERCONNECTING BOX       Interconnection between the missist trol ground support equipment.         Cture:       (PNS) Junction Box, Umbili- EID-27-6182       interconnection between the missist trol ground support equipment.         TURE:       (PNS) Junction Box, Umbili- EID-27-6182       interconnection between the missist trol ground support equipment.         TURE:       (PNS) Junction Box, Umbili- EID-27-6182       interconnection between the missist trol ground support equipment.         TURE:       (PNS) Junction Box, Umbili- EID-27-6182       interconnection between the missist trol ground support equipment.         TURE:       (PNS) Junction Box, Umbili- ground support equipment to the       interconnection between the missist est of a junction box with terminals         The box is mounted on the wall of the area in the launch and service build- tical junction box provides a point for training.       Equipment supplied must provide a point for termination an these ground power control and wits peculiar to training exercises flights are routed through an umbili		bies.			- F					OSTF				1	1									
				25 E 26 E 26 E		EMAR	KS:	This iter	m is s	imilar in	functi	on	H			L		No. 2								-
			21 . A			82.2.	. 1 in	Report 1	No. 21	4-7-357.			H						-	co	NTRAC	TNO	AF 04(6	47)-605		4
dence	flights and tra	ining.																576-D	-			+	+-	+		-
The	mbilical lunati	on how in	connector	d to the m	icaila								h													
				u to the m	188116								L					376-2								
oj un																		550	-					+	-	
													H			-		-	-				+	+		-
			Service - Covers															551	-		-	-	+		-	
at the	junction box a	re provid	led for um	ibilical ca	bles.								1													1
(5) P	ROBLEM ARE	A: Grour	nd power	control an	d								H					311			_	_	_			
																	. ÷	578	-	-				$\left  \right $		-
	Spec Cont Drg 27-0515-1 UMBLICAL, RIGHT       15,000         ED-27-0182       IMBLICAL, RIGHT         NOMENCLATURE:       Improved a state of the state of																									
	CV-FW 2782000-1 Spec Cost Trg 27-6213-1     JUNCTION BOX, ED-27-6182     Est FS, 000     CFE 13.000     Cost FS, 000     CONTACT to A # 046/73/0       NOMENCLATURE: RTERCONNECTING BOX     Interconnection between the missile and launch con- trol ground support equipment.     Interconnection between the missile and launch con- trol ground support equipment.     134     Interconnection between the missile and launch con- trol ground support equipment.       NOMENCLATURE: RDD.     Interconnection between the missile and launch con- trol ground support equipment.     134     Interconnection to 4/44/73/0       NOMENCLATURE: RDD.     Interconnection between the missile and launch con- trol ground support equipment.     134     Interconnection to 4/44/73/0       NOM.     Interconnection between the missile and launch con- trol ground support equipment.     134     Interconnection to 4/44/74/0       NOM.     Interconnection of a point for transmination and distribution of these ground power control and notoring circuits shifts are provided for unbilical cables.     134     Interconnection for spid replacements to tem 82.2.1 in Report No. ZM-7-367.       PROBLEM AREA:     Ground power control and notoring circuits are provided for unbilical cables.     137     Interconnection of spid Intercontrol and notoring circuits are provided power control and notoring circuits areprovi																									
miss	CV-V=W 2785003-1       JUNCTION BOX, Bet       Eat       CPE         By eo Cont Day 27-6182       WILLIGAL, RUHT       15,000         FRO NOMENCLATURE:       DYTERCONNECTING BOX       CONTACT NO AF 40(47)-316         DMENCLATURE:       Interconnection between the missile and launch control ground support equipment.       Street and support equipment.         DMENCLATURE:       (PNS) Junction Box, Umbilington, Ruhter is required at each launcher which will provide a point for termination and distribution of the set or audo distribution of ground telemetering, and distribution of ground telemetering, and distribution for provide a point for terminate approvide pulper.       Steele connections for Additional and distribution of the set or audo power control and monitoring circuits which must in the estimate spring pulper set or audo a support equipment is the issue and launch to box is connection for rapid replacement junction box are provide a launch and asprovide a point for terminate approvide pulper to training.       (B) REMARKS: This item is similar in function of the set or audo a distribution of the set or audo a support equipment is the issue is similar in function box is connections for rapid replacement junction box are provide a removable       (B) REMARKS: This item is similar in function of similar issue i																									
													F			- at a star			-				1		_	-
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Fort or specification number listed in column 2 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.
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			JSAF WEAP	ON STSTEN	107A-1 GROUND	OPER	ATIONA	L EQUIPA	ENT LIST	, SERIES E A	ND F					0	5 January	v 1961		LIS	TNUM	ABER:	AP60-	1046		
	SM-65		10.000	R-ASTRONAUT	ICS CONV	AIR IS	S A DIV	ISION OF	DENERAL	DYNAMICS C	ORPOR	ATION		SA	N DIEGO, C	AL.	CONTRACT NO	D. (	See Co	lumn	7)	REV.	5			
0	(2)		(3)		(4)		(5) (6	(9)	(10)	010	(12)	(13)	(14)	(18)	(16)	(17	(15)						7)			1 1
	GSE SPEC PARA	CLASS	SERIAL	MFG. PART	NOMENCLATURE	NIPTION	OF PROBLEM		11/177	COGNIZANT COGNIZANT LABORATORY, CENTER, A SERVICE	TYPE CLASSIFI- CATION	OSED	URCE	SECURITY CLASS. & REMARKS	EST PRO- DUCTIONS LEAD TIME	DATE OF ARDC	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	D. STAS	AT SMA	DEPOT		SUB TOTAL	TOTAL ON
	NO.	CODE	NUMBER	OR DWG. NUMBER		DESC	0				-99	0.30	800	SEC	EST DUC	0 44	EST	ğ	ATLAU		¥	_			SUB T	TOTA
5098		27-614	06-1		AUXILIARY LO	GIC		Est				CFH	5		1					co	NTRAC	T NO.	AF 04(6-	47)-370		-
		EID-27	-6225		AND CONTROL			20,0	00				۳. ا					OSTF No. 1	1			-		+	1	4
					GROUP/LAUNC	CH						80			5 mo			1.10. 1	1		NTRAC	1	AF 04(6	1 144		+
			9		CONTROL EQU								1		1	T		1	1	Ē	T	1	T	TT	11	
					FSC NOMENCL CONTROL-MON			OUP,								1/22/	/60 6/6/60	576-C			-	-	-	$\square$		1
					AUXILIARY													567				-				
(4)	NOMENCLATUR	RE: (PNS	) Auxilian	y Logic a	ind 2	2) E	Engine	Control	Chassi	s: This u	nit co	ntains	8					548	-		-	-	-	++		-
	rol Group/Laun		The P. S. Hards and P. H. S. S. S.			1944 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 - 1945 -				ed to shut			- -	1								+	-			
-					• *****				s and as	ssociated	GSE d	luring	8 1					706								
	group consists iary launch con		iliary log	ic unit an	d an	a	a stati	c firing.										549			-	_	-			
auni	lary launch con	sole.			3	8) E	Tecti	on Chase	ie Th	is unit cor	ataine	the					1000	1000			NTRAC	1	AF 04(64		_	+
The	auxiliary logic u	unit occup	oies a star	ndard equ						prevent re						1		OSTF			INIKAL	1 10.	AF 04(0-	1 1	-1-	-
	cabinet (approx					t	he hol	ddown de	evices o	luring a s	tatic f	iring.						No. 2							-	1.
	6 feet high) and					8 2.		19 G 9												co	NTRAC	T NO.	AF 04(6	47)-605		
	l pit in the laun uns the relay lo							and the second second		: This un								576-D				_			_	
	ce those function	•						100		ry require coolant ar									-			-		+	_	-
	c firing and refi	1 · · · · · · · · · · · · · · · · · · ·								d off as re								576-E				-	-			1
	sis with their as			•						t system i	101 <b>0</b> 11/1 21/1		d						-		-	-	-			1
	esses and termi	nal board	is are loc	ated in th	is					continue								550								
unit:										rise-off o								551				_	_			
	1) Facility Ch	assis: T	his unit c	loses the						ut-off or a								- 5	-	-		-		+	_	4
	collimator				duct					0 seconds								577	-							-
	openings pr									s a horizo								194947			-	-	-	+		1
	Hot gasses					0	f wate	r onto th	e exter	ior of the	engin	e						578					-			1
	and foreign from enteri	- 12 C								ximately								579			_					1
	cooling duc		mawr	pit and the	e pou					hot gases											-		-		_	-
										e event of								556								1
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### By Air Force direction:

1) Part or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7.

The commence quantity any division in commence.
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	USAF WEAPON SYSTEM 107A-1 G	OUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F	DATE: 5 January 1961	LIST NUMBER: AP60-	1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, O	AL. CONTRACT NO. (See C	olumn 7) REV.:	
The auxiliary logic u	unit requires 28-volt de power from	4) Prevent the release of holddown devices during			
the power supply and	distribution group (Item 5028) for distribution to the missile launch	static firing.			
control monitor (Iter		5) Provide an emergency engine stop switch, a			
그 같은 것 같은 것 같아요. 아이지 않는 것 같은 것 같아요. 것 같아요.	console is a control and monitor	selector switch for static firing or flight, and a water system manual override.			
	the left arm and the main panel of aunch control console (Item 5026),	the province of a function of an annual data with			
"이 걸 때 같은 것이 같은 것 것은 것 것 같은 것이다.	center. This unit operates in con-	(18) REMARKS: The function of superseded item 1414 has been included in this item.			
	iliary logic unit and other GSE to manual controls associated with				
static firings.	, manual controls associated with				
1) Emergency	angines ston				*
	h (static or flight).				
3) Water syste	em manual override.				
	console also contains lamp test icator lamp operation.				
(5) PROBLEM ARE	A: Due to the refire capability and				
	peculiar to complex 576C and OST	·F-1,			
	ability at OSTF-1, additional equip- to these sites to protect certain				
	SE from fire and damaging heat dur	Ing			
static firing or a tra	ining launching. 576-C does not ha				
static firing capabili	ties.				
Equipment is require existing GSE to:	ed which will function with				
1) Operate the	collimator gate and the missile po	4			
cooling duc	t valve to prevent hot gasses and fo	r-			
eign matter the pod cool	from entering the collimator pit an ling duct.	ad a			
	e missile pad coolant and missile	3			
antifire sys	tems on and off.				
	he missile engines and associated static firing.				
		Us	A A A A A A A A A A A A A A A A A A A	ITEM N	UMBER: 5098

	*** **		-		107A-1 GROUND										D	ATE 5 Januar	ry 1961	1	1 u	ST NL	MBE	R: AP	60-10	46		
(1)	SM-65 (2)	1	(3)	R-ASTRONAUT		AIR IS A DIV		ENERAL C	DYNAMICS (	CORPC	ORATION		SA	N DIEGO, CAL		CONTRACT N	0.	(See C	olumn	7)		v				
	(1)		1.661		(4)	(5) (6	(9)	(10)		(12	2) (13)	(1.4)	(18)	(16)	(17	(15)						(7)		_		T
ITEM QUENCE	GSE SPEC PARA NO	CLASS	SERIAL NUMBER	MFG. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTION OF PROBLEM AREA	UNIT	111555111	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI.	PROPOSED SUPPLY	SOURCE CODE	SECURITY CLASS & REMARKS	EST PRO DUCTIONS LEAD TIME	ARDC ARDC	EST DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	AT SMA	GENERAL	DEPOT		SUB TOTAL	TOTAL ON
5099		27-9336	63-1		STRUT ASSEM	BLY,	ч			1	CF						1	4	1		CT NO	AF C	4(647	-370	1	+
		EID-27	-9368		RE-ENTRY VE	HICLE											OSTF No. 1	1				-	-		1	1
(4) NO	MENCLATUR	E (PNS) -	Strut Ass	embly.	the r	nissile. W	hen the s	trut to	nositiona	d		. 1			0.117		+	-		NTRA	CT NO	AF C	4/647	1346	_	+
Re-ent	ry Vehicle.				gaug	reads the	same as	the act	ual water	rline	of the	e	1.1.1				1	1	T				T	1	11	1
-					miss	lle centerli	ne, the	pring i	s compre	ssec	d to the	1			*	9	576-C								1-	1
This it	em measures	approxima	tely 44 in	ches long	, the p	oint where	it provid	es the c	correct a	mou	nt of						567	9							9	1
sists of	es wide, and a cradle ass	ambly mou	nigh. The	item con	- supp	ort for the	re-entry	vehicle	•			ł					-	-	-		-	-	-	_	-	
cylinde	r assembly.	The screw	and cylin	der assei		that another											548	9	-		-	-	-		9	4
bly is n	nounted on a b	ase assem	bly which	is caster	miss	trut cradle		s the re	e-entry v	ehic	le at	- 1										-+				-
mounte	d. The base a	assembly i	s constru	cted of tw	0							L.				_	706				-	-	+		+	
channel	s in the form	of a symm	etrical cr	085. A	(5) 1	ROBLEM	AREA: S	hould a	loss of r	niss	ile pre	8-					549	9							9	1
assemb	is located nea ly. Outboard	r the end o	of each leg	of the ba	se sure	or ground	shock fro	m a nue	clear blas	st oc	ccur wh	en -	l			_										1
operate	d mechanical	iack. The	se jacka	manually extend sub	the r	e-entry veh	icle is i	stalled	on a hor	izon	tal mis	sile			-		OSTE	-	c0	NTRAG	TNO	AFO	4(647)	453	-	-
iently to	o lift the strut	assembly	off the ca	sters.		pling of the tof the re-	missile	tank wo	buid resu	lt fr	om the						No. 2	-		-	-		-		-	4
						or mere	onary ve	mere.									1		co	NTRA	CT NO	AFO	4(647)	-605	-	+
The str	ut assembly i	s maintain	ed in a tru	e vertica		ment is re	uired to	preven	t the re-	entry	y vehic	le			111-12-1		576-D						T	1	T	1
attache	by two adjust at the lower	able sprin	g assemb	lies, each	1 from	causing da	mage to	a missi	le due to	inad	verten	: +						_		_			_			1
assemb	ly. The upper	end of ea	ch adjusts	ble sorie		ment, The	equipme	nt chos	en must l	be al	ble to		1	1			576-E			-+		-	-			
assemb	ly is attached	to the cyli	nder asse	mbly. A	miss	rt the re-e le in the ho	ntry veh	cle whe	en it is at	tach	ied to a	F						-		-+	-+	-			$\vdash$	-
spirit le	evel on the cyl	inder asse	mbly indi	cates nec		to in the h	120mai	positio	4.			L					550				-	-	+	+-		
essary	spring adjustr	nent for ve	rtical ali	gnment.			23										551									t -
The cro	dle can be rai	and on low										-														
acme so	crew. This en	ables plac	ered man	ually by s	in of												577			-+		_				
the re-e	entry vehicle of	or removal	of the st	rut assem	blv							F						_		-+	-		-	-		
from co	ntact with the	re-entry v	vehicle.												_		578					-	+		$\square$	
The load	d exerted by t	ie re-entr	y vehicle	on the str	ut is									i.			579		-				-			
bsorbe	d by a helical	spring whi	ich is mou	inted with	in													-	-	+	+	+	+		$\vdash$	1
he cylin	nder assembly	. A guage	which is	attached	to												556							1		
ne helio vaterlin	cal spring of t e measureme	he cylinden nt at the lo	r assembl	y indicate center l	ine of							ſ					ATC							•		
ir Force	direction: r specification num			7					mended [	_																

Recommended quantities only are listed in column 7.
 This page will not be updated to show provisioning action, configuration, or part number changes.
 Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

Asterisk indicates common usage with adjacent complex and/or area.

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and another the second s

LIST NUMBER AP60-1046 USAF WEAPON SYSTEM 107A-1 GROUND OPERATIONAL EQUIPMENT LIST. SERIES E AND F DATE 5 January 1961 CONVAIR-ASTRONAUTICS CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION SAN DIEGO, CAL CONTRACT NO (See Column 7) REV SM-65 (18) (1) (2) (3) (4) (5) (6) (9) (10) (11) (12) (13) (14) (16) (17) 115 (7) (8) STOCK NUMBER STAS AT LAUNCHEPS DESCRIPTION OF PROBLEM EST DATE DATE OF ARDC APPROVAL OFAL ON SECURITY CLASS & COGNIZANI BORATORI CENTER. EST PRO-DUCTIONS OCATION SUB TOTAL GSE SPEC AT LCC'S GENERAL SMA CLASSIFI DEPOT ITEM UNIT DANO GUID MFG. NOMENCLATURE SEQUENCE CLASS SERIAL PRICE -OR DWG -CONTRACT NO AF 04(647)-370 JUNCTION BOX, CFE 5100 Interstate Engineering Est OSTE 16,000 Corp. UMBILICAL. No LAUNCHER PLAT-18200002 CONTRACT NO AF 04(647)-346 Spec Cont Dwg 27-04477-815 FORM, 576-C FSC NOMENCLATURE: 27-68713 EID-27-6208 INTERCONNECTING BOX 567 (4) NOMENCLATURE: (PNS) Junction Box, Umbili-Junction boxes at OSTF and training sites include 548 cal. Launcher Platform. telemetering, IRSS and impact prediction circuits. 706 Cable connections at the junction box, for cables con-The junction box is approximately 66 inches wide, 24 inches deep, 80 inches high, and is mounted on the necting to the missile, are plug-in type for rapid re-549 placement. launcher platform. The umbilical junction box provides a termination and distribution point for cables CONTRACT NO. AF 04(647)-453 (5) PROBLEM AREA: A junction point is required distributing power, control signals, and monitoring 1 OSTE for distribution of power and signals from the various signals between GOE/GSE and the missile. No. 2 9 mo GOE/GSE units to the corresponding units on the mis-CONTRACT NO. AF 04(647)-605 This unit also houses an ARMA amplifier which resile. Control and monitor signals between the missile 1 1 and GOE/GSE must be routed both ways. The umbilical 576 D quires provisions for cooling. 4/14/60 2/21/61 cables provide a removable interconnection between 1 1 576-E The following cable kits terminate in this unit: the missile and GOE/GSE. 12 12 Part Number Nomenclature Equipment is required at each launcher which will 550 2/24/60 provide a termination and distribution point for those 12 12 551 27-68713-Cable Kit, Missile Umbiliground power, control, and monitoring circuits, cal & Launcher which are routed from GOE/GSE through the umbilical 12 12 Silo (30 cables) cables to the missile. This equipment must also pro-577 27-68715-Cable Kit, Launcher Platvide connections for rapid removal and replacement 12 12 form Umbilical Lobo of the umbilical cables. 578 Silo (60 cables) 12 12 579 27-68751-Cable Kit. Launcher Platform Launch Control 12 12 556 Silo (20 cables)

By Air Force direction:

Part or specification number listed in column 3 is the number proposed for original provisioning.
 Recommended quantities only are listed in column 7.

3) This page will not be updated to show provisioning action, configuration, or part number changes. Asterisk indicates common usar Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information. Asterisk indicates and/or area

Recommended Quantity Asterisk indicates common usage with

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ITEM NUMBER 5100

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		34	USAF WEAP	ON SYSTEM	107A-1 GROUND O	PERATIONAL	EQUIPME	NT LIST,	SERIES E A	ND F					DAT	E 22 April	1961		LIS	TNU	MBER:	AP60-	1046		
	SM-65		CONVA	R-ASTRONAUT	IICS CONVA	IR IS A DIVIS	ION OF GE	NERAL D	YNAMICS C	ORPOR/	TION		SAP	N DIEGO, CA	<b>i</b> .	CONTRACT NO	). (9	ee Co	lumn i	7)	REV	1			
(1)	(2)		(3)		(4)	(5) (6)	(9)	(10)	(11)	(12)	(13)	(14)	(18)	(16)	(17)	(15)						71			1
	GSE SPEC, PARA, NO.	CLASS	SERIAL NUMBER	MFG. PART OR DWG.	NOMENCLATURE	SCRIPTION PROBLEM AREA	UNIT	117531	COGNIZANT LABORATORY, CENTER, & SERVICE	TYPE CLASSIFI- CATION	ROPOSED SUPPLY SOURCE	SOURCE	SECURITY CLASS. & REMARKS	EST PRO DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE HRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	GUID, STAS	AT SMA	DEPOT		SUB TOTAL	TOTAL ON
				NUMBER		an I			8₹ •		٩						-	AT.		4	1	-	•	. 3	*
133			27-27003-	1 Т	OPPING CONTRO	L	Est				CFE	ŀ				1			00 	NTRAC	T NO.	AF 04(6	47)-370		-
			EID 27-20		NIT, LIQUID		25,500								h		OSTF No. 1	-			-	-	+	-	1
				C	XYGEN, SILO														co	NTRAC	T NO.	AF 04(6	47)-346	-	-
												- [			1		576-C								
(4) N	OMENCLATUR	E: Prefe	rred - To	pping Cor	ntrol 2) a	3-inch (m	ain) line	on whi	ch the ray	pid to	pping	H						-		-	-		+		-
Unit,	Liquid Oxygen	, Silo.			v	alve is mo	unted.					- 1			ļ	1	567	-				+	+	-	-
Tele			l encouelt	Ing deals	aing 9) a	1/2-inch l	ine conte	ining a	blood or	fina	which	t										-			
	unit is designed				č .	aintains to										1	548								
	ures approxima					ondition.				1999) (SA1							706					1			
2 feet	high, and is lo	ocated on	the eighth	level of t								H				-	121	-			-	-	+		-
	An attached p					ee lines re			· · · · · · · · · · · · · · · · · · ·			. 1					549	-					+		-
fitting	; facilitate mai	ntenance a	and servic	ing of the	unit. which t	hen passes	through	a filte	r, and on	toa	m18811	e.  -	N. Mark						co	NTRAC	T NO.	AF 04(6	47)-453		+
Toppi	ng operations a	re contro	lled by tw	o pneuma	tically- Drainin	g operatio	ns are co	ontrolle	d by two			ſ		10 mo	3/2/61	6/16/61	OSTF	1						1	
	ted valves, a t			-		tically-ope			-		ws:	H		10 110	5/2/01	0/10/01	No. 2					1			-
toppin	ng valve. The	topping ch	illdown va	lve contr	rols							ł				1		_	- CO	ONTRAC	T NO.	AF 04(0	47)-605	- T -	-
	ansfer of liquid				공장장지	ne valve is							. 1				576-D	-			-1	-	+		4
	ng to the engine ountdown seque		• 0.00			ect. This															1	-		1	1
	in the missile					ressure fr						L					576-E								
	of the sequence					ressurize			The second second second								550	_			12	-		13	2
the tr	ansfer of liquid	i oxygen t	o the miss	ile liquid	oxygen		5	3.5										-			12	-		1	-
	iuring the final	<ul> <li>Although the state of the state</li></ul>		10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	**************************************	ne other va											551	-	1.1.1	-	12	+	+		4
	alves are of th					his valve			-			ł		1			-				12	+	++	1	2
	gaseous nitro	a second s		가슴다 한 바람으로 가 가다요?	N.3.6.4	rom the 2- rain line in				ill-an	a-						577	17.3					$\pm$	-	-
	ders which are					rain mie n	no me a	шоври				- 1					578				12			1	2
positi				947 (B.S.S.F.F.S.F.		valves are	controlle	ed by e	lectricall	ly-ope	rated										_			_	_
						d valves n											579	-			12		+	1	2
	nch topping lin	e branche	s into the	following		third man	and the second second					- H						-		-+	12		+	1	2
lines:						ine between											556	-							4
1)	a 3/4-inch li valve is mou		ch the topy	ping chill		s the purg	ing of the	, IV-10	50 III <b>-80</b>	u-ura							ATC								

# by Air Force direction. 1) Part or specification number listed in column 3 is the number proposed for original provisioning. 2) Recommended quantities only are listed in column 7. 3) This page will not be apdated to show previsioning action, configuration, or part number changes. Refer to current issue of AFBMD Exhibit 60-36 for configuration and provisioning information.

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	USAF WEAPON SYSTEM 107A-1	GROUND OPERATIONAL EQUIPMENT LIST, SERIES E AND F		DATE 22 April 1961	LIST NUMBER: AP60-1046
SM-65	CONVAIR-ASTRONAUTICS	CONVAIR IS A DIVISION OF GENERAL DYNAMICS CORPORATION	SAN DIEGO, CAL	CONTRACT NO. (See	e Column 7) REV
Second alteration at 4	00 psi passes from the pressur	1-			
	00-psi regulator and manifold	-			
	control unit. The 1000-psi nit				
	the manifold to the electrically-				
그는 아이들은 이 것은 것이 있는 것이 같은 것이 같이 많이 많이 많이 있다. 이 것이 이 것이 없는 것이 없다. 이 것이 없는 것이 없 않이	es. The solenoid valves which				
	) are in turn controlled by a pr	)-			
	e control-monitor group (Item				
5035).					
	During countdown, liquid oxyg				
must be transferred to	the missile from the liquid oxy	gen			
storage and topping ta	nkø.				
Equipment is required	which will control the following				
transfer operations:					
1) transfer of liqui	d oxygen from the topping tank,				
for cooling the n	nissile ducting to the engine				
turbopump inlets	, at the start of the countdown				
sequence.					
2) transfer of liqui	d oxygen from the topping tank,				
for filling the m	issile liquid oxygen tank to the				
100-percent leve	al, during the final phase of the				
countdown seque	nce.				
3) shutoff of liquid	oxygen flow from the storage to	nk			
	has reached 99 percent of				
capacity.					
2 A 2 2					
	orage tank and pressurization,				
	nting of the liquid oxygen fill-	1 C			
	rior to raising the silo launches				
platform.					
	•				





	SM-65			ASTRONAUT	TICS		DIVISIO	N OF GE	NERAL D'	YNAMICS C	CORPOR	ATION		SA	N DIEGO, CA	L. C	ONTRACT NO	. (5	ee Colu	mn 7)		REV.1				
(1)	· (2)	1	(3)		(4)	(5)	(6)	(9)	(10)	(11)	(12)	-	(14)	(18)	(16)	(17)	(15)		[			(7	1	1. 14 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	<u>0.57</u> - 5	
		1	TOCK NUMB	ER		25				- 2							<b></b>	z	RS		S		T	IT		T
ITEM QUENCE	GSE SPEC. PARA. NO.	CLASS CODE	SERIAL NUMBER	MFO. PART OR DWG. NUMBER	NOMENCLATURE	DESCRIPTIO OF PROBLEJ		UNIT		COGNIZAN LABORATOR CENTER, & SERVICE	TYPE CLASSIFI-	PROPOSED	SOURCE	SECURITY CLASS. & REMARKS	EST. PRO- DUCTIONS LEAD TIME	DATE OF ARDC APPROVAL	EST. DATE FIRST ITEM AVAILABLE	LOCATION	AT LAUNCHERS	AT LCC'S	AT GUID. STAS	GENERAL	DEPOT		SUB TOTAL	TO TAKE
							274													CON	TRACT	NO. A	F 04(64	7)-680		T
5171		27-0307			CABLE, AUTOPI AND ACTUATOR	LOT		Est 200				CFE			1			OSTF No. 1				-		++	+	-
		EID 27-	5191		CHECKOUT			200							I			NO. 1			NTRACT	NO	E 04/64	17)-694		+
					ondonoor										1	r					1	_	1		1	
															6 mo	8/10/61	10/3/61	576-C				+				
	NOMENCLA		ble, Auto	pilot and											1			567			1				1	
Ac	tuator Checkou	ıt.																507							-	_
			mth of 10	aanduatau														548		_	1		-		1	4
11	his item consis bber covered c	able appre	oximately	12 inches	5														$\left  \right $		1				1	-
	ng fitted with a																	706		-	-+	-	-		-	4
	d a 48-pin fem																									
	nis connector is																	549		1.0						
	ctors installed																			cor	NTRACT	NO. A	F 04(64	47)-453	_	_
	e actuators. T e cross-connec																	OSTF No. 2	$\vdash$	-	-	ŧ				-
	om the canister																	140. 1			NTRACI	NO	LE 04/6	471-605		+
	sponse to the p													_			1					t	1	TT	T	٦
					1.000 - <b>1.0</b> 00 - 1000													576-D								
	operation this																	576-E		_		t	-			_
	topilot canisten ators and is re																			_		-	+	++	+-	-
	eckout of the a																	550		-	1	-	+		1	Ч
															-					-	1	+	+		1	1
(5	) PROBLEM A	REA: Pr	esent test	procedui	res													551								1
	eck the continu																	577			1				1	
	y faults located the actuator c		the autop	llot canis	ster													5//							_	
01	the actuator c	incutti y.																578			1	-	-	++	1	4
E	quipment is req	uired that	will isola	ate faults	in															-	-	+	+-	++	1	Н
	ther the canist																	579		-	+	-	+	++	-	4
		Personal Constitution																			1				1	
	8) REMARKS:	1.1.1																556								
	ex 576-C will and OSTF No.	동물 소리에 다른 동물 관계 관계 관계 관계		xes 576-1	D and																					T
E	and OSIT NO.	r, and No																ATC								

Part or specification number listed in column 3 is the number proposed for original provisioning.
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## GENERAL DYNAMICS | ASTRONAUTICS

## AP60-1046

Item No. 

22 December 1961

## ALPHABETICAL INDEX

Nomenclature	Item No.	Nomenclature	Item No.	Nomenclature
Accessory Group, Collimator, Inertial		Control Pressure System	26	Launcher and Utilities Assy, Silo
Guidance System	5016	Control Pressure System	5079	Launcher, Missile
Air Conditioner	5005	Control System, Electrical, Missile Lifting	5036	Launcher Platform, Silo, Guided Missile
Anti-Fire Installation	5004	Control Unit, Nitrogen	5001	Locking System, Launcher Platform
Assy, Sequencer and Responder Group, EOC	5027	Control Unit, Pressurization	26	Manifold-Regulator, Pneumatic System
Auxiliary Logic and Control Group/Launch Control Equipment	5098	Control Unit Pressurization, Silo	5079	Motor-Generator Skid Mounted, Type MD-2
Battery, Emergency, Missile Ground	5029	Counterweight, Launch Platform, Missile Lifting	5020	Platform Launcher System, Silo, Guided Missile
Power, Stationary		Damper and Lock System Silo Crib,		Pod Air Conditioning Unit, Silo
Battery, Storage	5029	Guided Missile	5019	Power Supply and Distribution Unit,
Boom, Erector, Missile	5002	Distribution Box	5032	Stationary, GSE
loom, Missile Erection	5002	Distribution Unit, Pneumatic	5007	Power Supply-Distribution Set
Cabinet, Combustion Stability Monitor	5031	Door Actuating Mechanism, Silo,		Pumping Unit, Hydraulic
able, Autopilot and Actuator Checkout	5171	Guided Missile	5013	Pumping Unit, Hydraulic
Captive Firing Kit, Propulsion, Series E	5011	Drive Assembly, Launch Platform,	5022	Pumping Unit, Hydraulic
harge Unit, Helium, Silo Lift	5006	Guided Missile		Relay Box, AC Power Distribution, GSE
Console, Assembly, Operational and Checkout,		Erection Mechanism, Boom	6.1	Service Lines and Equipment Instl, Launcher
Missile Destruct System	5030	Guide Assy-Wire Rope Set, Launch Platform, Missile Lifting	5023	Sight Tube Instl, Horizontal
Console, Launch Control	5026		0020	Strut Assembly, Re-entry Vehicle
Console, Launch Control	5034	Guide Rail, Counterweight Missile Lifting, Launch Platform	5021	- A C
Console, Launch Control, Unitary Concept	5026	Interconnecting Box	5095	Suspension System, Silo Crib, Guided Missile
Console, Launcher Control, Silo Concept	5034		5100	System Assy, Cable and Guide, Launcher Platform
Control-Charging Unit, Helium	5006	Interconnecting Box		System Assy, Collimator
Control-Monitor Group	5027	Interconnecting Box Group, Launch and Test	5033	
Control-Monitor Group	5035	Junction Box Group, Launch and Test	5033	System Assy, Counterweight
Control-Monitor Group. Auxiliary	5098	Junction Box, Umbilical, Launcher Platform	5100	System Assy, Door Closure
Control-Monitor Group, Missile Launch	5035	Junction Box, Umbilical, Right	5095	System Assy, Drive, Launcher Platform

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# USAF WEAPON SYSTEM 107A-1 OPERATIONAL GROUND EQUIPMENT LIST, SERIES E AND F

# GENERAL DYNAMICS ASTRONAUTICS

		ALPHABETICAL	INDEX (Continued)			<b>AP60-1046</b> 22 December 1961
			(continued)			
Nomenclature	Item No,	Nomenclature		Item No.	Nomenclature	Item No.
System Assy, Electrical, Missile Lifting	5036					
System Assembly, Gaseous Oxygen Vent Mechanism	5017					
System Assy, Guide Rails, Counterweight	5021					
System Assy, Hydraulic, Missile Lifting	5009					
System Assy, Launcher Platform	5010					
System Assy, Lock and Damper	5019					
System Assembly Locking, Launcher Platform	5014					
System Assy, Suspension, Crib	5018					
Tank, High Pressure Gas, Slug Fill	5025					
Tank, Pressure	5025					
Topping Control Unit, Liquid Oxygen, Silo	5133					
Tube Assy, Sight, Inertial Guidance System	5003					
Ventilation System, Gaseous Oxygen	5017					

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