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SAMSO ltr 28 Feb 1972

GENERAL DYNAMICS | ASTRONAUTICS

MERCURY

TEST SUMMARY

FOR

MAJOR CRITICAL COMPONENTS

AIRBORNE EQUIPMENT

AE61-0512-6

1 November 1961

GENERAL DYNAMICS/ASTRONAUTICS

PREPARED BY SYSTEMS ENGINEERING

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O. C. Priest	522-30	W. G. Hardy	565-10
G. L. Hansen	530-00	K. E. Newton (AMR)	571-1
Systems Engineering (20)	531-34	C. C. Campbell	598-10
R. I. Kreisler/		J. B. Nelson	145-80
A. Von der Wische	535-30	W. B. Otto	598-20
W. R. Buevens	535-50	A. H. Lakritz	146-50
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REFERENCES

(a) AFMBO letter MCPTC:JMP:law, PRO 13, dated 29 January 1958, Subject: "Contract AF04(645)-4. Environmental Requirements and Test Procedures for WS 107A-1 Equipments. Convair Specification 7-00210 dated 15 October 1957"

(b) Convair letter MR:OCP:emp, 531-3015, dated 22 November 1957. Subject: "Contract AF04(645)-4, Environmental Testing of Convair Furnished Equipment"

(c) Convair Specification 7-00209B, dated 1 March 1958, Addendum I, dated 5 January 1961, "Environmental Design Conditions and Environmental Test Procedures for WS 107A-1 Equipments"

(d) Convair Specification 7-00210B, dated 1 May 1958, "Environmental Requirements and Test Procedures for WS 107A-1 Equipments"

(e) Contract AF04(647)-699, CCN 70; Sales Order 89-1-71.

(f) Contract AF04(647)-635, CCN 85; Sales Order 92-1-79.

(g) Contract AF04(647)-299, CCN 721; Sales Order 11-1-577.

(h) AZR-27-001, Test Status Report.

1.0 OBJECTIVE

This report presents the qualification or approval status of major critical components on the Mercury portion of MS107A-1. All components are operating, non-standard, airborne CFE components.

This report is submitted in compliance with:

S.O. 11-1-577, CCN 721 of contract AF04(647)-299

S.O. 92-1-79, CCN 85 of contract AF04(647)-635

S.O. 89-1-71, CCN 70 of contract AF04(647)-699

2.0 SUMMARY

There are 144 major critical components included in this report. One hundred-thirty- six (136) are subject to qualification testing. The test status of components subject to test are as follows:

Qualified by		
PPT	47	
FPT	7	
BOS	45	
Oth		
Evaluation Tests (Modified Commercial Parts)	8	
Similarity to qualified units plus additional tests	20	
Total qualified		127
To be qualified by		
PPT	4	
FPT	1	
BOS	3	
Oth		
Similarity to qualified units plus additional tests	0	
Total to be qualified		8
Not to be used		
Rejected for Missile use (Design not acceptable)	1	
Additional testing required	0	
Total not to be used		1
Total subject to test		136

2.1 No additional types of components have been added in this issue.

3.0 CODING

Column entries in the summary sheets reflect pertinent information as described in paragraph 3.1 through paragraph 3.7.

3.1 PART NUMBER Column

Part numbers, specification numbers, and vendors name are listed in the order indicated in the column heading. If a number is not applicable or a number has not been assigned, dashes will be entered to indicate such omission and maintain descending continuity.

3.2 EFFECTIVITY Column

The effectivity of the listed part is indicated by the manufacturing sequence numbers for Mercury boosters.

3.3 NOMENCLATURE Column

Nomenclature will be that appearing on the contractor's release records or drawings.

3.4 MAD APPR Columns

The Military Approval Designee does not review equipment peculiar to the Mercury program, since such a review is not required by contract. The MAD approval status shown is for equipment common to tactical programs and is listed for reference only.

The current CCN's do not require this entry in this report; therefore, it will be deleted in future issues.

An "A" entry in the ENGR column indicates approval by the Military Approval Designee of the procurement specification. An "R" entry indicates rejection.

An "A" entry in the IDE column indicates approval by the Military Approval Designee of the detail drawings, test procedures, and test reports. An "R" entry indicates rejection.

An "A" entry in the INSTL column indicates approval by the Military Approval Designee of the application of the unit. An "R" entry indicates rejection.

A dash (-) in the MAD APPR columns indicates there has been no approval or rejection to date.

3.5 CRIT COMP Column

A "C" entry in the column indicates that the item has been considered critical by the customer and is listed in attachments to CCN 70 to Contract AF04(647)-699, CCN 85 to contract AF04(647)-635 and CCN 721 to contract AF04(647)-299. The item requires monthly reporting in compliance with above contracts.

3.6 QUAL BY Column

Entries in the QUAL BY column indicate the method by which the item is qualified. A "PPT" entry indicates that the item was or will be qualified by preproduction tests in accordance with Convair Specification 7-00209B. A "BOS" entry indicates that the item was or will be qualified on the basis of similarity to a previously-qualified item. An "FPT" entry indicates that the item was or will be flight proof tested in accordance with Convair Specification 7-00210B. An "OTH" entry indicates that the item was or will be qualified by means other those given above.

3.7 TEST SCHED Column

Column entries indicate requirements for test schedules; they do not indicate requirements for testing. "Date" entries in the column indicate time spans for the test schedules. "Completed" entries indicate the test schedules are complete. "Not required" entries indicate schedules are not required; the entries do not indicate tests are not required since qualification may be demonstrated by similarity to previously qualified items or by another manner of qualification.

3.8 REVISION/ADDITION CODING

A horizontal bar in the lower margin of a page indicates the page is new or revised for the current issue of the report. See example at bottom of this page.

MERCURY

MAJOR CRITICAL COMPONENTS

HYDRAULICS

There are 30 major critical components included in this section. Seventeen units were preproduction tested, one unit is not for missile use, and ten units were approved based on similarity to preproduction tested units and nine of the ten received some additional testing. Two other units will also be approved based on similarity to preproduction tested units, but still require some additional testing.

The 27-08573-1 actuator cylinder manufactured by the Bohanan company will not be used on any missiles because of inherent structural weaknesses. The actuator was included in the basic issue of this report in compliance with references e, f, and g.

The 27-08569-1 valve was preproduction tested, but because of unstable operation in other tests, the valve is being subjected to a revised IAT procedure. See Note.

The 27-08573-3 and 27-08574-801 vernier servo cylinders, manufactured by Clemco, have successfully passed first level search-for-critical-weakness tests and PET tests and are considered by the Design Group to be satisfactory for flight use.

NOTE

The 27-08569-1, and 27-08561-1 relief valves, 27-08590-1, -3 sustainer hydraulic pumps have failed recent tests. Before any of these units are released for flight, Hydraulic Design or Systems Engineering Groups must be contacted for most recent information. See individual components listed in this section for additional information.

MERCURY TEST SUMMARY			HYDRAULICS							
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR			CRIT COMP	QUAL BY	REMARKS	TEST SCHED	
			ENGR	IDE	INSTL				START	COMPL
27-08550-5 27-08550J 27-04202K Moog Valve M-7773	100D Only	Servo Cylinder - Booster Hydraulic	-	-	-	C	PPT	(5/61) The 27-08550-5 Servo-Cylinder was PPT by the vendor per 27-04202 specification and reported in Report MR 322, ADD I. CV/A approved the 27-08550-5 PPT on VAF MC 29093 dated 6-26-59. NOTE: This unit reworked to a 27-87066-7 servo-cylinder by replacing the integral filter with an improved filter. (10-61) NOTE This unit is not to be used on any Mercury vehicle.	Completed	June 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08550-7 27-08550K 27-04202K Hydraulic Research Mfg. 104700-1	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Servo Cylinder - Booster	-	-	-	C	0th	(5-61) (10-61) The 27-08550-7 Servo-Cylinder was qualified based on similarity to the 27-08550-1 which was preproduction tested to basic specification and by additional testing as required. Additional testing is reported in ETL reports, number 7A2311 and 7A576. The basic differences between the -7 and the -1 are minor bleed port changes and a locking device which was functionally evaluated and tested in the -7 cylinder. Specification was revised to K revision. Difference between specification 27-04202K and the basic specification required additional testing on the transducer which is a sub-component of the cylinder assembly. The test has been completed and reported in Collins test report P/N 104723; report is currently being reviewed by servo-mechanism design group. GD/A design group approved PPT on VAF MC 36974, dated 9-8-59.	Complete	Sept. 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08551-3 27-08551G 27-08503C BenBow-Pantex 8985	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Tank - Hydraulic Fluid Booster, Type III	-	-	-	C	PPT	(6-61) Three units S/N 1, 2, and 3 of 27-08551-3 were preproduction tested and reported in Wyle Lab Test Report 5840, Addendum I, II, and III. GD/A design group approved PPT on 27-08551-3 in VAF MC 21925 dated 10-31-58. NOTE: This unit subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements.	Completed	Oct. 1958

Aeronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR DE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08552-5 27-08552H 27-08504C BenBow-Pantex 8983E	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Tank - Hydraulic Fluid, Sustainer, Type II	-	-	I	C	PPT	(6-61) Two units of 27-08552-5 were Preproduction tested to 27-08504C Specification. Results were reported in Wyle Labs Test Report 8188 Addendum I. GD/A design group approved PPT on 27-08552-5 in VAF 45313 dated 3-7-60. NOTE: This unit subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements.	Completed	March 1960

27-08552

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08553-3 27-08553G 27-08507D Peacock Engineering 51305-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Accumulator - Hydraulic, Sustainer	-	-	-	C	PPT	(5/61) The 27-08553-3 accumulator was qualified by PPT's conducted on two-units S/N 1X and 2X by the Wyle Labs. The PPT data and additional test requirements were included in Wyle Lab reports 5845, ADD I, II, and III. CV/A design group approved PPT in VAPS 45857 and 27813 dated 2-23-60. NOTE: This unit is subject to additional PPT dependent on MAD evaluation and approval of revised specification requirements.	Completed	March 1959

MERCURY TEST SUMMARY								HYDRAULICS		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08554-3 27-08554F 27-08506D Peacock Engineering 51310-3	77D 88D 100D 103D 107D 109D 113D 130D 144D 152D 167D 93D	Accumulator-Hydraulic Booster	R	-	-	C	PPT	(5-61)(10-61) The 27-08554-3 accumulator was qualified by PPT's conducted on two units S/N X1 and X2 by the Wyle Lab. The PPT data is recorded in reports 5844, Addendum II, dated 8-26-58 and 5844, Addendum III, dated 3-18-59. GD/A design approved PPT in VAF MC 27885 dated 2-24-59. NOTE 1. Unit has an in-service history of precharge gas pressure leakage past the piston and into the hydraulic system. 2. Unit is being investigated for possible redesign action to prevent this leakage in future installations. 3. This item is subject to additional PPT, dependent on MAD evaluation of revised specification requirements.	Complete	March 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08555-1 27-08555D 27-08511A Peacock Engrg. 51285-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Return	-	-	-	C	PPT	(6-61) Two units S/N 1 and 2 of 27-08555-1 were preproduction tested to 27-08511 Specification and reported in Wyle Test Lab Memo dated 10-15-58, Report 5961 dated 9-26-58 and TR5841 Addendum I, II, and III. PPT was approved on VAF MC 21559 dated 10-23-58. Specification was revised to A revision. Specification 27-08511A differs from the basic specification in that the revised specification incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. Unit is mounted on the booster section, used for sustainer hydraulic system. NOTE This item is subject to additional PPT dependent on MAD evaluation and approval of revised specification requirements.	Completed	Oct. 1958

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08555-3 27-08555D 27-08511C Peacock Engineering 51285-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Return	-	-	-	C	PPT	(6-61)(10-61) Two units of 27-08555-3 were preproduction tested to 27-08511A specification and reported in Wyle Test Report 5841 (Add I, II and III). GD/A Design Group approved PPT of 27-08555-3 in VAF MC 21560, dated 10-23-58. Specification was revised to C revision. Specification 27-08511C differs from the A revision in that B and C incorporate maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. NOTE This unit is subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements. Unit is mounted on the sustainer section and is used for the sustainer hydraulic system.	Completed	Nov. 1958

27-08555

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MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CAT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08558-1 27-08556 27-08511 Peacock Engrg. 5129O-3		Coupling Assembly - Staging, Hydraulic Pressure	-	-	-	C	PPT	(6-61) The unit was preproduction tested and reported in test report 5842. GD/A design group approved the unit on VAF 21561 dated 10-23-58. NOTE: This item is subject to additional PPT dependent on MAD evaluation and approval of revised specification requirements. This unit is replaced by 27-08556-5 coupling listed in this report. THIS ITEM WILL BE DELETED FROM THE NEXT ISSUE	Completed	Oct. 1958

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08556-3 27-08556D 27-08511C Peacock Engrg. 51290-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Pressure	-	-	-	C	PPT	(6-61) Two units S/N 1 and 2 of 27-08556-3 were preproduction tested to 27-08511A specification and reported in Wyle Test Report 5842 Addendum I, II, and III. GD/A design group approved PPT on 27-08556-3 in VAF 21562 dated 10-23-58. Specification was revised to C revision. Specification 27-08511C differs from the A revision in that B and C incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. NOTE This unit is subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements. Unit is mounted on the sustainer section and is used for the sustainer hydraulic system.	Completed	Oct. 1958

27-08556

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08556-5 27-08556D 27-08511C Peacock Engrg. 51290-5	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Staging, Hydraulic Pressure	-	-	-	C	0th	(6-61) (10-61) The 27-08556-5 was approved based on similarity to the -1 and -3, which were preproduction tested to specification 27-08511A, with additional tests as required and reported in Wyle Lab report 5842. The -5 differed from the -1 in that a check valve was eliminated from the -5 valve to make it compatible to the system. This coupling replaces the 27-08566-1 coupling. GD/A design group approved PPT on 27-08556-5 in VAF MC 43858 dated 3-4-60. Specification was revised to C revision. Specification 27-08511C differs from the A revision in that B and C incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. NOTE This unit is subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements. Unit is mounted on the Booster section and is used for the sustainer hydraulic system.	Complete	March 1960

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08557-1 27-08557 27-08510C Peacock Engrg. 51295-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-Off, Hydraulic Return	-	-	-	C	PPT	(6-61) (10-61) The unit was preproduction tested to "A" revision of the specification and reported in TR #5872. GD/A Design Group approved the unit on VAF 21967 dated 11-1-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET's on 5-3-60. NOTE This item is subject to additional preproduction tests dependent on MAD evaluation of revised specification requirements. Unit is mounted on the launcher and is used for the booster hydraulic system.	Completed	Nov. 1958

27-08557

MERCURY TEST SUMMARY			HYDRAULICS							
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08557-3 27-08557 27-08510C Peacock Engrg. 51545-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-Off, Hydraulic Return	-	-	-	C	PPT	(6-61) (10-61) The 27-08604-3 coupling was preproduction tested to specification 27-08510A and the results were reported in TR 194 on test specimen S/N 002 and 003. GD/A design group approved the testing on VAF MC 35157 dated 7-22-59. NOTE This item is subject to additional PPT dependent on MAD evaluation of revised specification requirements. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. Unit is mounted on the booster and is used for the booster hydraulic section. This unit passed search-for-critical-weakness test on 4-9-59 and PET on 4-13-60.	Complete	Aug. 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08558-1 27-08558 27-08510C Peacock Engrg. 57300-1	77D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D 88D	Coupling Assembly - Rise-off, Hydraulic Pressure	-	-	-	C	PPT	(6-61) (10-61) The 27-08558-1 unit was preproduction tested to specification 27-08510A and reported in test report 5873, Addendum III. GD/A design group approved the unit on VAF 23795 and 23796, dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness test on 3-9-61 and PET on 5-3-60. NOTE This unit is subject to additional preproduction tests dependent on MAD evaluation and approval of revised specification requirements. Unit is mounted on the launcher and is used for the booster hydraulic system.	Completed	Dec. 1958

27-08558

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08558-3 27-08558 27-08510C Peacock Engrg. 57300-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Coupling Assembly - Rise-off, Hydraulic Pressure	-	-	-	C	PPT	(6-61) The 27-08558-3 unit was preproduction tested to specification 27-08510A. The data is presented in test report 5873, Addendum III. GD/A design group approved the unit on VAF 23795 and 23796 dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other verbal (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET on 10-19-60. NOTE This unit is subject to additional preproduction tests dependent on MAD evaluation and approval of revised specification requirements. Unit is mounted on the booster section and is used for the sustainer hydraulic system.	Completed	Dec. 1958

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08561-1 27-08561D 27-08501B Vinson A-80282	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Safety, Hydraulic, Relief, Booster	-	-	-	C	PPT	(10-61) This item was preproduction tested and results presented in Vinson test report No. QTR-80282, Addendum I, and Garwood Lab report No. 1588. GD/A design group approved the 27-08561-1 valve in VAF 39330, dated 10-21-59. NOTE Investigation of recent PEF test failures have disclosed that material problems may have caused the scoring of body and valve poppet. Several units have since had the poppets hard chrome plated and are now being tested to determine if the problem is resolved.	Complete	Oct. 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08563-5 27-08563F 27-08516D Interstate Engrg. and Clemco 2725-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Hydraulic, Sustainer Pitch	-	-	-	C	0th	(10-61) The 27-08563-5 cylinder was approved based on similarity to 7-08286 which was preproduction tested and reported in Wyle lab report 4517, Addendum A. Cylinder 27-08563-5 differs from the 7-08286 in that 27-08563-5 has a larger diameter piston orifice and uses hi-temperature O-rings. The 27-08563-5 passed search-for-critical-weakness tests on 9 December 1959. PET tests were completed in April 1961 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements. GD/A design group approved the 27-08563-5 on VAF 23585 on 12-12-59.	Complete	Dec. 1959

27-08563

MERCURY TEST SUMMARY								HYDRAULICS		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08563-3 27-08563F 27-08516D Interstate Engrg. and Clemco 2425-103	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Hydraulic, Sustainer, Yaw	-	-	-	C	0th	(6-61) (10-61) The 27-08563-3 cylinder was approved based on similarity to 7-08286 which was preproduction tested, plus additional tests reported in TR 1547. The 27-08563-3 cylinder differs from the 7-08286 in that the 27-08563-3 cylinder uses hi-temperature O-rings and diameter of hole size in piston orifice is larger. The 27-08563-3 passed search-for-critical weakness tests on 12-9-59. PET tests were completed in February 1960 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements. GD/A design group approved the 27-08563-3 specification 27-08516 on VAF MC 23585 dated 12-6-58. NOTE The above unit is subject to additional PET dependent on MAD evaluation and approval of revised specification requirements. Same additional tests shown under 27-08563-5, except that PET's were completed in February 1960.	Complete	March 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08564-5 27-08564 27-08512D 64987 Purolator Products	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Filter - Fluid, Pressure, Hydraulic	-	-	-	C	PPT	(6-61) (10-61) The 27-08564-5 filter was preproduction tested and the test data presented in test report 2417A. GD/A design group approved the filter tests on VAF MC52493 and MC55425 dated 9-12-60. Filter is used as in-line pressure filter for vernier servo cylinders. NOTE The 27-08564-5 filter was tested to C revision of specification; an additional test, bubble coefficient, is being conducted to satisfy the D revision.	Completed	Sept. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08564-803 27-08564A 27-08512D Purolator Products 64988-1	103D 107D 109D 113D 130D 144D 152D 167D	Filter - Fluid, Hydraulic System, Missileborne	-	-	-	C	0th	(6-61) (10-61) The 27-08564-803 filter was approved based on similarity to 27-08564-5 and -801, which were preproduction tested, plus additional tests presented in report 2417. The 27-08564-803 filter differs from the -5 and -801 filters in that the -803 uses a weldable aluminum case to mount the filter instead of the 2024T4 used in the -5 and -801. GD/A design group approved the 27-08564-803, specification 27-08512C, on VAF 27-08564-803 LA 001 dated 5-9-61. Additional tests, bubble coefficient, are being conducted to satisfy D revision of the specification. Filter is mounted on the sustainer servo cylinder pressure inlet. RAR 92-10-617, dated 7-6-60, references ECP 529 which recommends the replacement of the 27-08564-801 with 27-08564-803 filter which is made of 6061 aluminum alloy. Effectivity was for all hardware still in existance; therefore it picked up 77D, 88D, 93D, and 100D effectivity for the -803 filter.	Complete	May 1961

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08566-1 27-08566B 27-08505B Vickers, Inc. AA-60694-R2A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Pump - Hydraulic, Booster	-	-	-	C	BOS	(5-61) (10-61) Approved based on similarity to 7-08207 which was preproduction tested to specification 7-08207D, per Vickers test order 13302, dated 2-8-57 and 13302-1, dated 6-1-57. Based on similarity qualification was approved in VAF 5435, MC 20198 on 9-20-58, LA-001, 5-26-61. Difference between 7-08207 and 27-08566-1 is an O-ring change for high temperature and inlet and outlet port changes to agree to D system requirements. Difference between the 7-08207D specification and 27-08505B specification calls for improved quality testing with special emphasis on degree of cleanliness for GD/A requirements.	Completed	May 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08569-1 27-08569C 27-08501B Vinson Mfg. A-61071	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve- Safety, Relief, Hydraulic	—	-	-	C	PPT	(6-61) (10-61) Two 27-08569-1 relief valves were pre-production tested. The results were reported in Wyle Lab report 6608, dated 1-30-59, Vinson Report QTR 61071, dated 9-15-60 and Garwood Labs 1855, dated 8-8-60. The tests were conducted as required by the unit procurment specification 27-08501. GD/A design group approved the 27-08569-1 valve on VAF LA001 and LA002 on 8-30-61/ Vinson Mfg. report QTR 61071, Add I, II, III. NOTE 1. Recent investigation of PET failures of this valve have shown that poppet and valve body materials were deeply scored. Several tests are now in progress incorporating a chrome plated poppet to prevent the scoring problem. Before any units are released for flight, the hydraulic design group must becontacted for the most recent information. 2. This unit is subject to additional preproduction tests dependent on MAD evaluation and resolution of revised specification requirements.	Complete	May 1961

27-08569

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08573-1 27-08573B 27-08519C Interstate 2792-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuator, Hydraulic, Inboard Vernier Pitch-roll	-	-	-	C	0th	(5/61) (10-61) The 27-08573-1 vernier actuating cylinder was qualified based on similarity to the 7-08243 actuating cylinder which was preproduction tested, and by additional tests per paragraph 4.4.1, 4.4.2, and 4.4.3 of the procurement specification 27-08519C. Additional tests are reported in test [illegible]er No. 9224 and TR No. 348. The 27-08573-1 unit was similar to the 7-08243-1 except that the 27-08573-1 units used high temperature 0-rings. GD/A design group approved the 27-08573-1 on VAF MC 21809 dated 10-29-58. NOTE This unit is subject to additional PPT, dependent on MAD evaluation and approval of revised specification requirements.	Completed	Oct. 1958

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08573-1 27-08573B 27-08519C Bohanan Co. 50006-001	Not to be used	Cylinder -Actuator, Hydraulic, Inboard	-	-	-	C		(5-61) Bohanan actuator not to be used on any missile. Unit design has been rejected. Clemco (Interstate) is the only acceptable actuator. Refer to Interstate 27-08573-1 and Clemco 27-08573-3 in this section.		

27-08573

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08574-1 27-08574D 27-08519C Interstate 2778-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuator, Hydraulic, Outboard Vernier Yaw	-	-	-	C	0th	(5/61) (10-61) The 27-08574-1 Vernier actuating cylinder was qualified based on similarity to the 7-08283-3 actuating cylinder, which was preproduction tested, and additional tests, paragraph 4.4.1, 4.4.3 of the procurement specification 27-08519C. Additional tests were reported in test letter report No. 9224-1. The 27-08574-1 unit is similar to the 7-08283-3 unit except the 27-08574-1 units use hi-temp O-rings. GD/A design group approved the 27-08574-1 on VAF MC 21808 dated 10-29-58. NOTE This unit is subject to additional PFT, dependent on MAD evaluation and approval of revised specification requirements.	Completed	Oct. 1958

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MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08590-1 27-08590A 27-08529C Vickers Inc. AA60401-L-2	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Pump - Axial Piston, Hydraulic, Sustainer	-	-	-	C	PPT	(5/61)(10-61) The 27-08590-1 pump was qualified by PPT conducted on three units (S/N MX 15984, MX 15983, MX 15985) by the CV-A ETL Labs to the basic specification. The PPT data are recorded in Report Number 7A2063, dated 7-29-59. CV/A design approved PPT by VAF 40786, dated 11-23-59. Investigation of recent test failures of the unit have shown that casting flaws in the pump housing are resulting in pump mounting base failures. Units are being X-Rayed and Xyglo inspected to determine which pumps are acceptable for flight. NOTE 1. Prior to flight, the hydraulic design group MUST BE CONTACTED FOR MOST RECENT INFORMATION. 2. This unit is subject to additional PPT, dependent on MAD evaluation and approval or revised specification requirements.	Completed	Nov. 1959

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-85314-817 - - - - - - - - - - GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sustainer Servo Cylinder Assembly Yaw	-	-	-	C	0th	(10-61) The 27-85314-817 sustainer servo cylinder assembly consists of a 27-08563-3 servo cylinder, 27-04208-1 servo valve, and 27-08564-803 filter. The -817 replaced the 27-85314-811 assembly which utilized the 27-08564-801 filter which was subject to body cracks during vibration tests. RAR 92-10-617 dated 7-6-60, ECP 529 removed the -801 filters from all D and E series missiles still in existance. NOTE 1. For qualification of individual components listed above, see the components listed in Hydraulic and Autopilot Sections. 2. Release records show a -811 assembly as being effective for 77D, 88D, 93D, and 100D, although 88D and 100D were flown with 27-08564-803 filters, which were replaced at AMR/RAR mentioned above. Missiles 93D and 77D will also be modified to use the -803 filter, but again, the installation dash number, as in 88D and 100D, need not be reidentified for just a paperwork change.	Complete	May 1961

MERCURY TEST SUMMARY								HYDRAULICS		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-85314-819 - - - - - - - - - - GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sustainer Servo Cylinder Assembly Pitch	-	-	-	C	0th	(10-61) The 27-85314-819 sustainer cylinder assembly consists of a 27-08563-5 servo cylinder, 27-04208-1 servo valve and 27-08564-803 filter. The -819 replaced the 27-85314-813 assembly which utilized the 27-08564-801 filter. The 27-08564-801 filter was subject to body cracks during vibration tests and were replaced by RAR 92-10-617 action dated 7-6-60, ECP 529 removed the -801 filters from all D and E series missiles still in existance. NOTE 1. For qualification of individual components listed above, see the components listed in Hydraulics and Autopilot Sections. 2. Release records show a -813 assembly as being effective for 77D, 88D, 93D, and 100D, but 88D and 100D were flown with 27-08564-803 filters which were replaced at AMR/RAR, mentioned above. This assembly replacement changed the -813 assembly to -819. Missiles 93D and 77D will also use the -803 filter, but again, the installation dash number, as in 88D and 100D, need not be re-identified for just a paperwork change.	Complete	May 1961

MERCURY TEST SUMMARY								HYDRAULICS		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08573-3 27-08573 27-08519C Clemco	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuating, Vernier Hydraulic, Pitch-Roll	-	-	-	C	BOS	(10-61) Approved based on similarity to the 27-08573-1 and 7-08243 units, which were pre-production tested, except that the 27-08573-3 design requirements specify nickel plated 4130 steel for the cylinder body and chrome plated 17-4 Ph stainless steel for the piston. NOTE 1. This unit is subject to additional pre-production tests dependent on MAD evaluation and resolution of revised specification requirements. 2. This unit has successfully passed first level search-for-critical-weakness tests and PET tests. It is now considered, by the design group, to be satisfactory for flight use. 3. At the present time no additional qualification testing is planned; since this design is similar to 7-08243 and 27-08573-1, except that high temperature O-rings are used and material change, as indicated.	See Remarks	

MERCURY TEST SUMMARY — HYDRAULICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08574-801 27-08574 27-08519C Clemco	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Cylinder - Actuating, Vernier Hydraulic, Yaw	-	-	-	C	BOS	(10-61) Approved based on similarity to 27-08574-1 and 7-08283-3, except that the 27-08574-801 design requirements specify nickel plated 4130 steel for the cylinder body, and chrome plated 17-4 Ph stainless steel for the piston. NOTE 1. This unit has recently passed search-for-critical-weakness and PET tests. Complete re-qualification of this unit is not planned because this design is similar to 7-08283-3, except for hi-temperature O-rings and material change, as indicated above. 2. This unit is subject to additional PPT, dependent on MAD evaluation and approval of revised specifications requirements.	See Remarks	

MERCURY

MAJOR CRITICAL COMPONENTS

PNEUMATICS

All pneumatic major critical components have been approved. Two components, 27-08020-3 and 27-08116-11, were approved on the basis of similarity to other components which had been preproduction tested. The other components were preproduction tested.

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08020-3 7-08020A 7-08204 N Peacock Engineering R-50502-105	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve Assembly, LO_2 Tank, Relief and Shutoff	-	-	-	C	BOS	(5-61) The 27-08020-3 valve was approved on the basis of similarity to 27-08020-1 per VAF 27-08020-3-LA-002, dated 3-17-61. The GD/A Design Group approved flight proof testing of 27-08020-1 per Wyle Lab. Report number 9305 in VAF 27-08020-1-LA-002, dated 12-12-60. Flight proof testing consisted of: 1. Temperature 2. Vibration to 6G 3. Life 4. Proof Pressure 5. Acceleration One sample of the 27-08020-1 was tested. The valves differ only in mounting flange configuration. (11-61) Item was approved per revision M of the specification. Present specification is revision N. The N revision added vendor and vendor part numbers.	Comp	eted March 1961

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MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08103-3 - - - - - 27-08103E B. H. Hadley Co. 10525-5	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve-Pressure Relief, Oxidizer Tank	A	-	-	C	PPT	(5-61) The 27-08103-3 valve was preproduction tested and results reported in Test Report 1078. GD A design group approved the 27-08103-3 valve in VAF MC 34447, dated 10-2-59. Three samples were tested. (11-61) Item was tested to D revision of the Specification. Present specification is revision E. The E revision added vendor and vendor part number.	Completed	Dec. 1959

27-08103

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08104-3 - - - - 27-08104D B. H. Hadley Co. 10526-5	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Pressure Relief, Fuel Tank	A	-	-	C	PPT	(5-61) The 27-08104-3 valve was preproduction tested. Results were reported in Test Report number 1079. GD/A design group approved the 27-08104-3 Specification 27-08104C in VAF MC 38448, dated 10-2-59. Three samples were tested. (11-61) Item was tested to C revision of the specification. Present specification is revision D. The D revision added vendor and vendor part number.	Completed	Oct. 1959

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR TDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08109-1 - - - - - - 27-08109D Crescent Engrg. B9-5001	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer - Differential Pressure	A	-	-	C	PPT	(5-61) The 27-08109-1 transducer was preproduction tested (Reports 25-227 and 25-227, Addendum I). GD/A design group approved the 27-08109-1 unit tests, specification 27-08021 on VAF's MC 29716, dated 4-8-59, MC 33612, dated 6-17-59 and MC 37720, dated 9-17-59. Two samples were tested. (11-61) Item was tested to C revision of the specification. Present specification is revision D. The D revision added vendor and vendor part number.	Complete	Oct. 1959

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08115-1 27-08115K Airite Products 6314	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Helium Storage, Missileborne	A	A	-	C	PPT	(5/61) The 27-08115-1 sphere was preproduction tested (Wyle Test Reports 6117, 6141, 6291). GD/A design group approved testing for the 27-08115-1 sphere in VAF MC 39191, dated 10-19-59. Specifications 27-08115 and 7-00209B have different vibration requirements. This requirement difference is covered by report AS-7-005A, Missile Structural Design Criteria. Approval was requested on 1-5-59 and granted per BMC letter LBCR-JMP-jkh, dated 3-18-59. Three samples were tested. (11-61) Item was tested to J revision of this specification. Present specification is revision K. The K revision added vendor and vendor part number.	Completed	Oct. 1959

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08115-7 — — — — — 27-08115E Virite Products 6320	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Helium Storage, Missileborne	A	-	-	C	PFT	(5-61) The 28-08115-7 Sphere was preproduction tested (Wyle Test Report 5959, unit S/Ns 5, 9, and 10). GD/A design group has approved testing of the 27-08115-7 Sphere per Specification 27-08115J in VAF 27-08115-7-1A-001, dated 2-17-61. Three samples were tested. (11-61) Item was tested to J revision of the specification. Present specification is revision K. Revision K added vendor and vendor part number.	Completed	Feb. 1961

27-08115

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08116-11 — — — — — 27-08116D Robertshaw Fulton 1098-22001	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Shutoff, Motor Operated	A	-	-	C	BOS	(5-61) The 27-08116-11 valve was approved on basis of similarity to 7-08234-9 in VAF 40651, dated 12-59. Preproduction test results of 7-08234-9 were reported in Robertshaw Fulton Test Report 1098-/R-1 and approved in VAF MC 25653, dated 1-22-59. The 27-08116-11 valve per specification change C was approved in VAF MC 52487, dated 12-59. (11-61) Item was approved per C revision of the specification. Present specification is revision D. Revision D added vendor name and vendor part number. MAD approved C revision of specification which deleted temperature-shock requirements and added a step to the temperature-humidity test. The added step was to do three steps of the proof cycle instead of the two originally required.	Completed	Dec. 1959

MERCURY TEST SUMMARY — INSTRUMENTS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08245-13 27-08245J 27-08101M (27-08101-25) B. H. Hadley Co. 10704-7	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Regulator Assembly - Pressure, Oxidizer Tank	A	-	-	C	BOS	(5-61) The 27-08245-13 (27-08101-25) regulator is specially tested but otherwise identical to the 27-08245-3 regulator. The 27-08245-13 regulators are selected for best transient response and maximum reliability for specific use on the Mercury program. Similarity of the 27-08245-3 regulator to the 27-08101-1 is established by VAF 41967. Two 27-08101-1 regulators were preproduction tested per Test Report numbers 1080 and 1081, and the results approved by VAF's 41254 and 41255, dated 12-7-59. (11-61) The item was approved per revision K of the specification. Revision M added vendor and vendor part number.	Completed	Jan. 1960

27-08245

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08246-11 27-08246K 27-08102K (27-08102-17) B. H. Hadley Co. 10705-7	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Regulator Assembly - Pressure, Fuel Tank	X	-	-	C	BOS	(5-61) The 27-08246-11 regulator is specially tested but otherwise identical to the 27-08246-5 regulator. The 27-08246-11 regulators are selected for best transient response, and maximum reliability for specific use on the Mercury program . Similarity of the 27-08246-5 regulator to 27-08102-1 is established by VAF 41966. PPI of 27-08102-1 was approved by VAF 41256 per Test Reports 1082 and 1083, dated 10-12-59. Two units were tested. (11-61) Item was approved per H revision of the specification. Present specification is K revision. K change revised some temperature requirements and pressures, but all changes made requirements less severe than previously.	Completed	Jan. 1960

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08251-1 — — — — — 27-08251E Menasco Mfg. 674000-501	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Helium Storage	A	A	-	C	PPT	(5-61) Three (S/N 86,88,96,) units of 27-08251-1 spheres were preproduction tested to the requirements of Specification 27-08251A per test reports A-218-1 and 8023. GD/A design group approved the testing of 27-08251-1 unit Specification 27-08251A on VAF 46044, dated 3-22-60. (11-61) Item was tested per revision C of the specification. Present specification is B revision and has not changed testing requirements.	Completed	March 1960

27-08251

MERCURY TEST SUMMARY — PNEUMATICS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08575-1 27-08575A 27-08520B Walter Kiddie Co. 891314	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sphere - Pneumatic Pressure	R	-	-	C	PPT	(6-61) The 27-08575-1 Sphere was preproduction tested. Results were reported in TR 1045 Addendum and R 1336. GD/A design group approved the 27-08575-1 Sphere /Spec 27-08520 on VAF MC 25575 dated 1-17-59 and VAF MC 40798 dated 11-23-59. NOTE: The above unit is subject to additional PPT dependent on MAD evaluation and approval of revised specification requirements.	Completed	Nov. 1959

27-08575

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MERCURY

MAJOR CRITICAL COMPONENTS

PROPULSION

All components listed in this section have been preproduction tested or qualified on the basis of similarity to previously qualified units.

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-02229-15 - - - - 7-02229P Reaction Motors Inc. 311193	77D 88D 93D 100D 103D 107D 109D 113D 130D 144C 152D 167D	Valve, Fuel Disconnect (Forward Section)	-	-	-	C	PPT	(6/61) One unit (serial number 16) qualified by Reaction Motors Inc. The preproduction test was recorded in Report 67 (addendum A and B) and 70, appendix A and B. CV/A design group approved VAF 49675 and 7-02229-B-LA-001. The preproduction tests deviated from 7-00209B in vibration tests (2G ± 10% rather than 2G + 10% -0%) and the sand and dust test was performed to MIL-E-5272.	Completed	Dec. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-02281-15 7-02281E 7-02298M B.H. Hadley Co. 10576-15	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve, Sustainer Fuel Shutoff, Power Operated	R	-	-	C	0th	(5/61) Approved on the basis of similarity to vendor's P/N 10576 plus additional tests to procurement specification requirements. Valves differ only as noted on vendor drawing and VIR M7-3228. The change included an improved actuator and a change in the Restrictor Orifice CV/A design group approved the 7-02281-15 unit as noted on VAF MC 18607 and VIR M7-3228, dated 4-15-59. MAD disapproved on MAAF 00040B, 1-15-59. MAD increased requirements on the temperature to 200°F and specified helium gas temperature for use on test. No action was taken to change specifications on these items since these items are in excess of design requirements.	Completed	April 1959

7-02281

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-02287-15 7-02287C 7-02297N B.H. Hadley Co. 10577-15	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve, Booster Fuel Shutoff, Power Operated	R	-	-	C	0th	(5/61) Approved on the basis of similarity to vendor's P/N 10577 plus additional tests to procurement specification requirements. Valves differ only as noted on vendor drawing and VIR M7-3227 which included an improved actuator and addition of vendors name on nameplate. CV/A design group approved 7-02287-15 unit as noted on VAF 18608 and VIR M7-3227, dated 4-7-59. Disapproved by MAD on MAAF 0039B. Specification conforms to items listed on MAAF except for high temperature required. No action taken to change this item on the specification since it is in excess of design requirements.	Completed	April 1959

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-02315-3 - - - - 7-02315H Airesearch Mfg. Co. 121020-1	77D 88D	Valve - Fill and Drain, Fuel	A	-	-	C	BOS	(5/61) Approved on basis of similarity to the 121020 Airesearch valve. The -3 has a strengthened butterfly and shaft and a lubricated seal. Proof of similarity submitted by vendor. Approved on VAF 24200, dated 9-20-60 by and VAF 46317, dated 9-20-60 by CV/A design group.	Completed	July 1960

7-02315

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-02315-5 - - - - 7-02315H Airesearch Mfg. Co. 121020-2	93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Fill and Drain, Fuel	-	-	-	C	BOS	(5/61) Approved based on similarity to the 7-02315-1 valve. Proof of similarity submitted by vendor. The -1 was pre-production tested and report 7A 1796-R-2 was approved. CV/A design group approved valve on basis of similarity in VAF 24200, dated 7-20-60 and VAF 46317, dated 7-20-60. The -5 has a strengthened butterfly and shaft to take full actuator torque and a lubricated seal for longer life. Improved microswitches and spotfacing on flanges were also added for general improvement.	Completed	July 1960

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-22232-805 - - - - - - - - - - - - - - GD/A 7-22232-805	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Line Assembly, Sustainer, Fuel	-	-	-	C	BOS	(6-61) Approved on the basis of similarity to the 7-22232-1 and -3. The -1 was qualified by design evaluation tests conducted on one specimen by GD/A tests laboratory. The tests are recorded in report 7A1231 dated 31 July 1958. The -805 has changes on the holes in the flanges, addition of a boss on one duct and slight dimensional changes on two elbows.	Completed	Aug 1958

7-22232

MERCURY TEST SUMMARY								PROPULSION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-23205-815 - - - - - - - - - - - - GD/A 7-23205-815	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Inlet Manifold, Booster Liquid Oxygen	-	-	-	C	PPT	(6-61) Approved on the basis of preproduction tests conducted on two specimens by GD/A test laboratory. The tests are recorded in report 7A2085 dated 6-27-59.	Completed	June 1959

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MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-23205-817 - - - - - - - - - - - - GD/A 7-23205-817	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Inlet Manifold, Booster Liquid Oxygen	-	-	-	C	PPT	(6-61) Approved on the basis of preproduction tests conducted on 2 specimens by GD/A test laboratory. The tests are recorded in report 7A2085 dated 6-27-59.	Completed	June 1959

7-23205

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-23419-801 - - - - - - - - - - - - - - - - GD/A 7-23419-801	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Inlet Manifold, Booster Fuel	-	-	-	C	BOS	(6-61) Approved on the basis of similarity to ... 7-23419-5, which was qualified by evaluation tests conducted on one specimen by GD/A test laboratory. The test was recorded in report 7B 1665-1 dated 8-15-59 and report 7B 1665-2 dated 9-12-59.	Completed	Sept 1959

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MERCURY TEST SUMMARY								PROPULSION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-23238-5 - - - - - - - - GD/A 27-23238-5	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Sustainer LOX Line Assembly	-	-	-	C	PPT	(5/61) Qualified by preproduction tests conducted on 2 specimens by GD/A test laboratory. The combined preproduction and evaluation test was recorded in Report 27A472, dated 2-13-61.	Completed	Feb. 1961

27-23238

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER SPEC CONTROL LOC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-02102-829 - - - - - 27-02102K Airesearch Mfg. Co. 121072-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve Assembly, Fill and Drain, LO_2	-	-	-	C	0th	(6-61) Approved on the basis of similarity to 27-02102-827 which was preproduction tested and used on D series missiles. In addition, supplemental qualification tests were conducted on two 27-02102-829 units (serial numbers A and B) by Airesearch. The -829 valve is similar to the -827 valve except a sealed metal box completely encloses the actuator; the electrical leads are potted; the actuator is rotated 180°; and the housing is cast. Airesearch Test Report AE-7456-R covers the tests on the -829 valve and Test Report AE-7331-R covers the earlier test on the -827 part. CV/A Design Group approved the valve on VAF 52217, dated 12-12-60. Deviations from 7-00209B are as follows: 1. Temperature, altitude and humidity. 2. Pressure reduced from 30 inches Hg. to 20.58 inches Hg. rather than 1 mm. Hg. 3. Four hour test at +40°F deleted. Tests added: 1. Pressure Drop and Dynamic Flutter. 2. Proof Pressure. 3. Flush and Purge System Test. 4. Airborne Valve Actuator Test. 5. Ground Support Valve Test. (Continued on next page)	Completed	Dec. 1960

MERCURY TEST SUMMARY							PROPULSION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	 LDR	 INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	 COMPL
27-02102-829 (Continued)								(Continued) Tests Added: 6. Burst Pressure Test. 7. Low Temperature with LN_2 test. 8. Storage Test. 9. Deflection Load Test.	Completed	Dec. 1960

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR QDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-02248-1 - - - - - - - - Reaction Motors Inc. 310722	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve-Booster, Disconnect, LO_2 (Forward Section)	-	-	-	C	PPT	(5/61) Qualified by preproduction tests conducted on 2 units, serial numbers 1 and 2, by Reaction Motors Inc. The preproduction test was recorded in Test Reports CMP 102, and appendices A,B, and C, and Test Report 1221-1. CV/A design group approved PPT on 3-1-61. Tests performed deviated from book specification 27-02248D T-A-H requirements, paragraph 4.4.2. (8-61) Test deviation was approved by VAF53587, dated 8-5-60.	Completed	March 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY								PROPULSION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-02248-3 - - - - 27-02248D Reaction Motors Inc. 310723	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve-Booster, Disconnect, LO_2 (Aft Section)	-	-	-	C	PPT	(5/61) Qualified by preproduction tests conducted on 2 units, serial numbers 1 and 2, by Reaction Motors Inc. The preproduction test was recorded in Test Reports CMP 102 (appendices A, B, and C) and Test Report 1221-1. CV/A design group approved the preproduction tests on 3-1-61. Tests performed deviated from book specification 27-02248D T-A-H requirements, paragraph 4.4.2. (8-61) Test deviation was authorized by VAF53588, dated 8-5-60.	Completed	March 1961

27-02248

MERCURY TEST SUMMARY — PROPULSION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-21136-3 - - - - - - - - GD A 27-21136-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve Assembly, Fuel Booster Disconnect (Aft Section)	-	-	-	C	PPT	(5/61) Qualified by GD/A test laboratory. Engineering evaluation and preproduction tests were conducted on 4 units (serial numbers A298-1, A298-2, -3 and -5). The PPT was recorded in Report 7A2324, dated 8-19-59.	Completed	Aug. 1959

Astronautics Form A2497 (5-61)

MERCURY

MAJOR CRITICAL COMPONENTS

PROPELLANT UTILIZATION

None of the items in the propellant utilization system require further approval action prior to flight.

Testing on both liquid oxygen transducer assemblies is complete. The test report is being evaluated. These transducer assemblies are part of the propellant loading system and replace assemblies used on early D series missiles.

MERCURY TEST SUMMARY — PROPELLANT UTILIZATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-43011-817 - - - - - - 27-04001 GD/A - - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Manometer Assembly, Fuel	-	-	-	C	BOS	(10-61) The 7-43011-504 was preproduction tested to 7-00209B requirements in accordance with test report 7B 2313-2, dated 12-2-59 and flight proof tested to 7-00210B requirements in accordance with test report 7B 2217-2, dated 8-11-59. The 7-43011-504 unit used a new housing assembly and was a reworked 7-43011-803 unit or essentially a -815 unit. Changes resulting in the -817 unit consisted of a mandrel connection to a "banana" plug and the use of PT201 acrylic resin coating inside the manometer housing. The 7-43011-817 unit has a successful flight history.	Completed	Dec 1959

MERCURY TEST SUMMARY — PROPELLANT UTILIZATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-43012-819 - - - - - 27-04001 GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Manometer Assembly, Lox	-	-	-	C	BOS	(10-61) The 7-43012-504 was preproduction tested to 7-00209B requirements in accordance with test report 7B 2313-2, dated 12-2-59 and flight proof tested to 7-00210B requirements in accordance with test report 7B 2217-2, dated 8-11-59. The 7-43012-504 unit used a new housing assembly and was a reworked 7-43012-803 unit or essentially a -811 unit. Changes resulting in the -819 unit consisted of a mandrel connection to a "banana" plug and the use of PT201 acrylic resin coating inside the manometer housing. The 7-43012-819 unit has a successful flight history.	Completed	Dec. 1959

7-43012

MERCURY TEST SUMMARY — PROPELLANT UTILIZATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-43040-819 - - - - - 27-04001 GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Computer Comparator	-	-	-	C	BOS	(10-61) The 7-43040-801 was flight proof tested to 7-00210B requirements in accordance with test report 7B1699, dated 5-19-58. The -801 unit was tested to -4°F low temperature rather than -65°F (deviation referenced in test report 7B1699). Changes in the -801 assembly resulting in the -819 assembly consisted of a new potting compound to permit unit storage at -65°F instead of -4°F. Other changes consisted mainly of resistor changes to stabilize gains and adjust operating ranges, changes to accomodate APChE, and change of vendors on some components to effect greater reliability. The 7-43040-819 unit has a successful flight history.	Complete	

MERCURY TEST SUMMARY							PROPELLANT UTILIZATION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04240-809 27-04240E 27-04239C GD/A 113-809100-1	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer Assembly - Liquid Oxygen	-	-	-	C	Oth	(10-61) This unit is similar (structurally modified) to the -801 assembly, which was preproduction tested but failed shock and vibration tests, test report 27A126. The -809 unit will be qualified by similarity to the -801 unit plus proof cycle, shock, and vibration tests, all of which have been completed. The test report (27A1136) is being evaluated. The life test will be based on similarity to the -811 unit which is covered in this section. The 7-43021-813 unit was used on the 100D flight.	See Remarks	

MERCURY TEST SUMMARY — PROPELLANT UTILIZATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR UNSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04240-811 27-04240-E 27-04239 C GD/A 113-811100-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer Assembly - Liquid Oxygen	-	-	-	C	OTH	(10-61) This unit is similar (structurally modified) to the -801 assembly, which was pre-production tested, test report 27A126 but failed shock and vibration tests. The -811 unit will be qualified by similarity to the -801 unit plus proof cycle, shock, vibration, and life tests, all of which have been completed. The test report (27A1136) is being evaluated.	See Remarks	

MERCURY

MAJOR CRITICAL COMPONENTS

ELECTRICAL

The electrical system is composed of batteries, inverters, power changeover switch, distribution harnesses, and miscellaneous switches, relays, and connectors.

All items have been preproduction, flight proof tested, and/or approved on the basis of similarities, with exception of the harnesses and abort sensing relay.

The harnesses are fabricated to MIL-W-8160 specification requirements.

Flight proof testing on the abort sensing relay 27-61147-805 is in progress, and scheduled to be completed in November 1961.

In some instances, where items have not conformed to MIL-I-6181B and MIL-I-26600 test requirements, deviation requests have been processed and submitted for AFBSD approval.

The noise generated by action of the thermostatic heater switches used in the missileborne batteries exceeds the limits (conducted interference, and radiated interference) of MIL-I-6181B and MIL-I-26600 test requirements. The battery heaters and the thermostatic heater switches are nonoperative during flight. During countdown operation the heaters cycle on and off at intervals of about 10 to 15 minutes; the excessive noise exists for less than one second, when switches open and close.

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-06344-9 7-06344 - - - - - Amphenol Corp. 200X30-5205	77D 88D 93D 100D 107D 109D 113D 130D 144D 152D 167D 103D	Staging Plug, Propulsion, Electrical	-	-	-	C	BOS	(5/61) Approved based on similarity to 7-06344-1 (200X-30-3) plug which was preproduction tested. Design group approved the unit on VAP MC 7-06344-9-AA-001, dated 1-19-61.	Completed	March 1961

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-06345-5 7-06345 - - - - Amphenol Corp. 200X-30-5004	77D 88D 93D 100D 107D 109D 113D 130D 144D 152D 167D 103D	Staging Receptacle, Propulsion	-	-	-	C	BOS	(5/61) The staging receptacle was approved based on similarity to 7-06345-3 (200X-30-4) receptacle which was preproduction tested. Design group approved the unit on VAF MC 7-06345-5-LA-001 dated 1-19-61.	Completed	Jan. 1961

7-06345

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-06349-3	77D	Inverter	-	-	-	C	PPT	(5-61)		
- - - - -	88D							One specimen has been preproduction tested	Completed	
27-06303-1	93D							at GD/A Laboratory. Results are reported		April
Bendix	107D							in Test Report 7A1870, dated 4-30-59.		1959
32B77-13B	109D									
	113D									
	130D									
	144D									
	152D									
	167D									
	100D									
	103D									

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-06380-3 - - - - - 7-03236 Yardney Corp 5500	77D 88D 97D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Battery, RSC	-	-	-	C	BOS	(5-61) Approved based on similarity to 7-06380-1 which has been flight proof tested at GD/A. (Test Report 7A1607-R, dated 1-30-59). NOTE: Two specimens were tested. First specimen, serial number 9, failed;* second specimen, serial number 13, passed flight proof test requirements. Deviation request, ECP-CAC-107A-334-80R2 has been submitted to waive some test requirements of MIL-I-26600. * Battery voltage dropped below minimum requirements (22vdc) after 6 minutes of discharging at the rate of 2.0 amperes. Present specification requirements calls for discharging at the rate of 1.25 amperes.	Completed	Jan 1959

7-06380

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06106-801 - - - - 27-06113-3 United Control 1277-1A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Switch Assy, Power Changeover	-	-	-	C	0th BOS & FPT	(5/61) Design group approved item based on similarity to vendor P/N 963-1B (GD/A P/N 27-06177-1) which has been preproduction tested by vendor, ER 1640, dated 5-3-60. Flight proof tested by GD/A, Test Report 27A-801R, dated 10-21-60.	Completed	Oct. 1960

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06106-801 - - - - - 27-06113-3 Kinetic M-160-4	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Switch Assembly, Power Changeover	-	-	-	C	PPT	(5-61) Two specimens preproduction tested at GD/A (Test Report 7A1871R, dated 3-19-59). First specimen has been subjected to temperature, altitude, humidity, vibration, acceleration and life tests. Second specimen has been subjected to RF, fungus resistance, sand and dust and salt atmosphere tests.	Completed	March 1959

27-06108

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06348-1 - - - - - 27-06348 Eagle Picher MAR 4073	77D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	TLM Battery, Lightweight	-	-	-	C	FPT	(5-61) Flight proof tested by vendor. Test Report MAR 4073 dated April 1961. Missile Electrical Design Group has approved article LA-004, dated 5-8-61 for flight proof testing only. NOTE Deviation request, ECP-CAC-107A-334-80R2, dated 5-3-61 has been submitted to waive some of the test requirements of MIL-I-26600.	Completed	April 1961

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06358-1 - - - - - 27-06358 Eagle Picher Co. GAP-4067	88D	Battery, TLM	-	-	-	C	FPT	(5-61) Electrical Design Group states that the specimen has been flight proof tested and test report has been reviewed and approved. NOTE: A deviation request ECP-CAC-107A-354-80R2 has been submitted to waive some of the test requirements of MIL-I-6181.	See Remarks	

27-06358

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06358-1 - - - - - 27-06358 Yardney Corp. 1756	88D	Battery, TLM	-	-	-	C	FPT	(5-61) Seven specimens have been flight proof tested at GD/A. (Test Report number 7A42285, dated 7-27-59). NOTE: Battery is remotely activated. Seven batteries were required to accomplish the test. Deviation request, ECP CAC-107A-334-80R2. has been submitted to AFBMD to waive some test requirements of MIL-I-6181.	Completed	July 1959

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR TDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06359-3 - - - - - 27-06359 Eagle Picher Gap 4000A	77D 88D 93D 100D 103D 107D 109D 117D 130D 144D 152D 167D	Battery Pack, Main Missile Power	-	-	-	C	PPT	(5-61) Preproduction tested by vendor LA158140. Deviation request, ECP CAC-107A-334-80R2 has been submitted to waive some of the test requirements of MIL-I-6181.	Completed	

27-06359

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-06359-3 - - - - - 27-06359 Yardney 1734		Battery Pack, Main Missile Power	-	-	-	C	PPT	(5-61) Preproduction tested by Associated Test Laboratory. Results reported in D432-1237, dated 10-5-59. Deviation request, ECP CAC-107A-334-80R2 has been submitted to waive some of the test requirements of MIL-I-6181. TWX-BSBAA-17-7-45, dated 17 July 1961 from BSD to C. W. Blakey, deletes Yardney as a source for the main missile battery when it is used as flight article.	Complete	

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61147-805 ----- GD/A 27-61147	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Relay Installation, Abort Sensing	-	-	-	C	FPT	Consists of the following commercial parts: Relay 97-37002-006 Diode 87-19000-006 Receptacle 81-55900-818 The electromagnetic interference test was performed and the relay installation failed to conform to MIL-I-26600 test requirements.	In Prog.	Nov. 1961

27-61147

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ELECTRICAL

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61147-803	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Relay Installation, Abort Sensing				C	BOS	To be approved based on similarity to 27-61147-805 assembly which is being flight proof tested.	Not Required	

Astronautics Form A2497 (5-61)

MERCURY

MAJOR CRITICAL COMPONENTS

TELEMETRY

There are seven items in this section. Six were approved based on similarity to previously qualified items. One item, the lightweight TLM package for 100D, was flight proof tested and approved.

A deviation, ECP CAC-107A-334-98, has been approved for all 27-12290 assemblies.

New dash numbers have been created for the 27-12290 units. The reasons for the changes, and their effectivities, are listed on pages 9-6, -7, and -8.

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11541-865 - - - - - 7-01658 Bendix - - - - -	88D	TLM Package	-	-	-	C	BUS	(5-61) Approved based on similarity to -1 which has been flight proof tested plus additional life test with modified commutator motor installed. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group.	Completed	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11616-829 - - - - - 27-01216 GD/A 27-11616-829	88D	TLM, Accessory Package	-	-	-	C	BOS	(5-61) Approved based on similarity to 7-11310 which has been flight proof tested except for deviation from -65°F storage temperature. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group.	Completed	

27-11616

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12210-809 - - - - - 27-01214 Bendix - - - - -	100D	TLM Package, RF #2	-	-	-	C	BOS	(5-61) Approved based on similarity (change in the oscillator and lowered RF power output) to 27-11541 which has been flight proof tested. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group.	Completed	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR EGB	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12290-3 - - - - - - 27-01214 GD/A 27-12290-3	100D	TLM Package, Light Weight	-	-	-	C	FPT	(10-61) Consists of a transmitter built by Texas Instruments and a signal conditioner built by GD/A. Both have been separately flight proof tested to 7-00210B except for a low temperature test requirement of -30°F, and a non-operating test at 0°F. (10-61) The signal conditioner exceeded the limits of conducted interference and audio frequency conducted susceptibility per MIL-I-26600. A deviation request, ECP CAC-107A-334-98 (CCN 1302 for -4 contract; CCN 663 for -299 contract; CCN 74 for -635 contract; CCN 58 for -699 contract), has been approved for all 27-12290 assemblies. Testing has been completed and the report has been reviewed and approved.	Complete	

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12290-803 - - - - - 27-01214 GD/A 27-12290-803	93D	TLM Package, Light Weight	-	-	-	C	BOS	(10-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks). Similar to 27-12290-3 except for rework of transmitter and RF filter to change frequency.	Complete	

MERCURY TEST SUMMARY

TELEMETRY

PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12290-807 - - - - - - - - - - - - - - - - - - - GD/A 27-12290-807	109D 113D	TLM Package, Light Weight	-	-	-	C	BOS	(10-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks.) Similar to 27-12290-803 except for the addition of 12 measurements.	Complete	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — TELEMETRY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12290-809 - - - - - - 27-01214 GD/A 27-12290-809	77D 103D 107D 130D 144D 152D 167D	TLM Package, Light Weight	-	-	-	C	BOS	(10-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks.) Similar to 27-12290-807 except for rework of transmitter and RF filter to change frequency.	Complete	

MERCURY

MAJOR CRITICAL COMPONENTS

RANGE SAFETY

This section covers a command set, arming device, destructor, three-second destruct delay unit and power and signal control unit.

All items have been preproduction tested, flight proof tested and/or approved on the basis of similarity to units that have been tested.

MERCURY TEST SUMMARY — RANGE SAFETY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04306-3 27-04306A (27-04230F) Beckman and Whitley 175-9D-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	RSC, Destruct 'nit	A	-	-	C	0th	(6-61) Approved on basis of similarity to 7-04237 per Article LA 27694A, dated 5-7-59, and VAF MC 31,407, dated 5-8-59. Additional tests consisting of shock, operating vibration and operating acceleration have been performed at GD/A as reported in Test Report 7A1822. NOTE: Deviation request, ECP-CAC 107A-334-36 has been submitted to waive some of the test requirements of MIL-I-26600. The deviation request has been approved only for Contract AF 04(647)-299 by CCN 253, MSN 61, BMC-61.	Completed	

MERCURY TEST SUMMARY — RANGE SAFETY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-36014-1 - - - - - - (7-03241) GD/A 27-36014-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Command Set, Range Safety	-	-	-	C	FPT	(5-61) Limited flight proof tested. Modified module in audio section of GFE P/N 319600, MARK I has only been vibration tested. Modification decreases gain by a factor of three (3) and increases linearity. Testing approved by Design Groups.	Completed	

27-36014

MERCURY TEST SUMMARY — RANGE SAFETY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-36244-1 - - - - - (27-03008-3) GD/A 27-36244-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Arming Device, RSC	-	-	-	C	PPT	(5-61) One specimen has been preproduction tested at GD/A as reported in Test Report No. 7A2055, dated 6-8-59. Test report has been reviewed and approved by cognizant engineers. Deviation request, ECP - CAC-107A-334-133, has been submitted to waive the test requirements of MIL-I-26600. NOTE (a) Facility equipment could not attain operating altitude of 1.0 mm of Hg. Altitude attained was 1.5 mm of Hg. (b) Shipping vibration omitted because of lack of shipping container. (c) Toggle switches replaced by single-pole knife switches.	Complete	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — RANGE SAFETY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-36236-801 - - - - - - - - - - GD/A 27-36236-801	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Control Unit, Power and Signal	-	-	-	C	FPT	(5-61) One specimen has been flight proof tested at GD/A as reported in Test Report number 27A-2431 dated 10-20-59. Test report has been reviewed and approved by cognizant engineer.	Completed	

27-36236

MERCURY TEST SUMMARY — RANGE SAFETY

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-36277-1 - - - - - (27-01175) GD/A 27-36277-1	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Delay Unit, Three-Second Destruct	-	-	-	C	0th	(8-61) Unit underwent search for critical weakness test. All tests have been performed including RF tests. Test results are being evaluated. This unit supersedes 27-36256-3, which was used on 100D missile.	Complete	

Astronautics Form A2497 (5-61)

MERCURY

MAJOR CRITICAL COMPONENTS

AZUSA

All transponders have been delivered to AFMTC by General Dynamics/Astronautics. The transponders are now GFE items and GD/A has no control of the various configurations.

Two specimens of the basic unit, 26-10002-1, were flight proof tested. One unit was subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. The other unit was subjected to life and RF tests. Phase-lock and klystron failures were encountered but were corrected, and the test requirements were met. The various dash number configurations consist of modifications of the crystal filter characteristics, and the units are approved based on similarity to the basic unit.

MERCURY TEST SUMMARY — AZUSA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
26-10002-1 thru-815 AZD 26-001 (Component Spec.) GD/A 26-10002-1 thru -815	*	Transponder, B-Coherent	-	-	-	C	BOS	(5-61) * GD/A has delivered all transponders to AFMTC thus they became GFE items. GD/A has no control of dash numbers assigned for specific Mercury missiles. All dash numbers through -815 are approved on the basis of similarity to -1 which has been flight proof tested. (See Test Report 7A1766R, dated 12-17-58 and AZN-26-050, dated 9-10-58) The major change among various dash numbers is the use of a crystal filter. Two specimens have been tested. S/N 189 has been subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. S/N 174 has been subjected to RF and life tests. NOTE Specimens failed to meet phase lock parameter requirements during temperature (+120°F), vibration, acceleration, and life tests. The klystron failed during the acceleration test. Specimens were readjusted or repaired and testing was repeated until it passed the test requirements.	Completed	

MERCURY

MAJOR CRITICAL COMPONENTS

ABORT SENSING AND IMPLEMENTATION

None of the abort sensing and implementation system components require further action or approval.

Pressure switches 87-44900-356 and 87-44900-355 supersede switches 87-44900-372 and 87-44900-374, respectively. Search for critical weakness tests and life tests have shown that the superseding parts exhibit increased reliability.

The Abort Sensing and Control Unit 27-11111-835 supersedes 27-11111-833 due to the use of fiber washers for motor mounting and changes in the null voltage suppression circuit.

A deviation request, ECP CAC-107A-344-102 has been approved for all 27-11111 units. The unit did not meet the requirements of MIL-I-26600 since it exceeded the conducted and radiated interference limits. These conditions did not degrade missile performance, as judged by cognizant engineering.

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11111-825 - - - - - 27-00210B GD/A 27-11111-825	100D	Abort Sensing and Control Unit	-	-	-	C	FPT	(10-61) This unit was flight proof tested to the requirements of 7-00210B by the GD/A test labs per test request number 27A1271. The following tests were performed: 1. Temperature-Altitude-Humidity a. Temperature extremes; -65°F, +160°F. b. Altitude extreme; 1 mm Hg c. Humidity; 95% 2. Vibration a. 8g maximum 3. Acceleration a. +10g, -2g; longitudinal axis b. ±3g, mutually perpendicular axes.	Completed	April 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11111-831 - - - - - - - - - - - - GD/A	88D	Abort Sensing and Control Unit	-	-	-	C	BOS	(5/61) Approved based on similarity to the -825 unit. The changes on the -825 unit resulting in a -831 unit consist of the addition of supression diodes across the relay coils, harness routing controls, and mounting change eliminating a mechanical interference. Two specimens of this unit are being subjected to reliability testing.	Completed	April 1961

27-11111

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11111-835 - - - - 7-00210B GD/A 27-11111-835	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Abort Sensing and Control Unit	-	-	-	C	BOS	(10-61) Approved based on similarity to the -825 unit. The changes on the -831 unit resulting in the -833 unit consist only in the use of "blue dot" transformers and decreasing the length of the magnetic amplifier mounting studs. The changes to -833 for the -835 consist of using fiber washers for motor mount - ings, replacing two diodes with resistors, and changing two resistance values in the magnetic amplifier null voltage suppression circuit. The circuit changes prohibit high null voltage output which would prevent drop-out of the capsule fail detection relays in case of an abort. A deviation request, ECP CAC-107A-344-102 (CCN 1336 for -4 contract; CCN 722 for -299 contract; CCN 86 for -635 contract; CCN 71 for -699 contract), has been approved for all 27-11111 assemblies.	Completed	April 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11814-3 - - - - - 27-04314C W.O.Leonard 128659-7	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve, Constant Flow	-	-	-	C	BOS	(10-61) Approved based on similarity to 27-04314-1 which was qualified for use on the D and E series P C system. The valves differ only in calibration. The -1 was calibrated for a flow rate of 7.0 ±1.0 SCFH; the -3 was calibrated for a flow rate of 11 ± 1.0 SCFH.	Completed	

27-11814

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-357 - - - - - - - - - - Bourns Laboratories 71731-0-4.7-000	77D 88D 93D 100D 107D 109D 113D 130D 144D 152D 167D 193D	Switch, Pressure, Booster Fuel Injection Manifold (470 psid)	-	-	-	C	0th	(5-61) This item is a modified commercial part. Twelve units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 25 cps) (16 to 35G's, 25 to 2000 cps) Acceleration (10G's, all axes)	Completed	Sept. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY			ABORT SENSING AND IMPLEMENTATION							
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-358 - - - - - - - - - - Bourne Laboratories 71732-0-5.6-000	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, Sustainer Fuel Injection Manifold (560 psia)	-	-	-	C	0th	(5-61) This item is a modified commercial part. All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 25 cps) (16 to 35G's, 25 to 2000 cps) Acceleration (10G's, all axes)	Completed	Sept. 1960

87-44900-358

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATIONS

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-41900-359 - - - - - - - - - - - - Bourns Laboratories 71732-0-20-000	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, Sustainer Hydraulic (2000 psia)	-	-	-	C	0th	(5-61) This item is a modified commercial part. All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in, 10 to 25 cps) (16 to 35G's, 25 to 2000 cps) Acceleration (10G's, all axes)	Completed	Sept. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-372 - - - - - - - - - - Bourns Laboratories 50934-0-21.5-000	88D 100D	Switch, Pressure, IO_2 Tank Ullage (21.5 psid)	-	-	-	C	0th	(10-61) This item is a modified commercial part. Six units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes) NOTE Two of the six units failed in test. One unit had a contact failure at -65°F. After repair, the unit developed heavy wiper lift-off around the switching point during X axis vibration. The other unit developed heavy wiper lift-off during Z axis vibration. The unit was repaired and retested and no malfunctions occurred. This unit replaced by 87-44900-356 for the remaining effectivities.	Completed	Sept. 1960

87-44900-372

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-374 - - - - - - - - - - Bourns Laboratories 50936-0-11-000	88D 100D	Switch, Pressure, Booster Cut-off, LO_2 Tank (11.0 psid)	-	-	-	C	0th	(10-61) This item is a modified commercial part. All three units successfully passed evaluation tests performed at GD/A per 27A419 dated 9-1-60. The follwing tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes) This unit replaced by 87-44900-355 for the remaining effectivities.	Completed	Sept. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-496 - - - - - - - - - - - Servonic Instruments P-20-4	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, Propellant Differential (2.5 psid)	-	-	-	C	BOS	(5-61) This item is a modified commercial part. It is approved based on similarity to the -354 (P-20-1) unit except for a pressure setting of 2.5 psid instead of 1.0 psid. All six -354 units passed evaluation tests performed at GD A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65° F, 2 hrs) (+165° F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10 G's, all axes)	Completed	Sept. 1960

87-44900-496

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-356 - - - - - - - - - - Servonic Instruments, Inc. P-20-3	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, 10_2 Tank Ullage (21.5 psid)	-	-	-	C	0th	(10-61) This item is a modified commercial part. Six units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25in., 10 to 18 cps) (8g, 18 to 2000 cps) Acceleration (10g, all axes) NOTE Two of the six units failed in test. One unit exhibited intermittant high resistance and broke contact between 5 to 15 psi. The unit was repaired and retested but did not operate properly. The second unit shifted to 28 psid at -65°F and remained at this point when back at ambient. The unit was repaired and then successfully tested. Search for critical weakness tests have been completed. 1,000 hour life test was completed 9-29-61. Component was successfully open-loop tested on 88D. This part replaces 87-44900-372, due to increased reliability level.	Complete	Sept. 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ABORT SENSING AND IMPLEMENTATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
87-44900-355 - - - - - - - - - - Servonic Instruments, Inc. P-20-2	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Switch, Pressure, Booster Cutoff, LO_2 Tank (11.0 psid)	-	-	-	C	0th	(10-61) This item is a modified commercial part. All three units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8g, 18 to 2000 cps) Acceleration (10g, all axes) Search for critical weakness test have been completed. 1,000 hour life test was completed 9-24-61. Component was successfully open-loop tested on 88D This part replaces 87-44900-374 due to increased reliability level.	Complete	Sept. 1961

MERCURY

MAJOR CRITICAL COMPONENTS

AUTOPILOT

None of the items in the Autopilot section require further approval action prior to flight. FPT tests on the gyro rate and displacement group and the remote rate group have been completed and the preproduction test is in progress. These assemblies contain gyros with spin motor rotation detectors. Preproduction testing on the new displacement gyros is in progress. Flight proof tests are complete and preproduction tests are in progress on the new rate gyro.

The alternate vendor for 27-04204-1, 27-04205-1, 27-04208-1, 27-04209-1 and 27-04211-1 have been eliminated as sources for these items; therefore, these items have been removed from this report.

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-04250-1 7-04250G - - - - - Kearfott Corp. T2506-1A	100D	Gyroscope - Displacement	A	—	—	C	PPT	(5-61) This unit was tested to 7-00209B requirements per GD/A report number 27A150 dated 3-12-60.	Completed	May 1960

27-04250

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-04250-3 7-04250G 27-04590 Kearfott Corp. C70250600	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Displacement Gyro, Autopilot	A	-	-	C	PPT	(6-61) This gyro contains spin motor rotation detectors. Testing is to be performed by GD/A on Test number 27A955. The flight proof testing is complete and the preproduction testing is scheduled to be completed in December 1961.	In Prog.	Dec. 1961

MERCURY TEST SUMMARY								AUTOPILOT		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-04250-5 7-04250G 7-04265G Kearfott Corp T2506-2A	88D	Gyroscope-Displacement	-	-	-	C	BOS	(10-61) To be approved based on similarity to 27-04250-3, which is being preproduction tested. Testing on the 27-04250-3 is in progress. Flight proof testing is complete, and preproduction testing is scheduled for December 1961 completion.	In Prog.	Dec. 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04204-1 27-04204E 27-04216F Crescent Corp. HC-65-P-4E	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer-Feedback, Linear	A	-	-	C	PPT	(5-61) One 27-04204-1 unit was tested to Specification 27-04216F by Crescent Corp. and test results reported in Test Report 25-220, dated 12-58. Autopilot design group approved the 27-04204-1 tests on VAF MC 25 668, dated 2-27-59. (11-61) Eight specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens.	Completed	Feb. 1959

27-04204

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04205-1 27-04205D 27-04213D Crescent Corp. HC-106-4E	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer-Feedback, Linear	A	-	-	C	BOS	(5-61) The 27-04205-1 unit (Crescent Corp.) was approved based on similarity to 7-04214 (HC44-4E) and 7-04215 (Crescent HC65-4E) and test report on 7-04242-1 (Crescent HC25-207) test report E-333. The 27-04205-1 was electrically similar to 7-04214 and 7-04215 and mechanically similar to 7-04242-1. Autopilot design group approved the 27-04205-1 based on similarity on VAF MC 17,120, dated 7-5-58.	Completed	July 1958

27-04205

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04206-1 27-04206C 27-04218D Sterer 13000	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve-Flow, Limiter, Hydraulic	R	-	-	C	PPT	(5-61) One 27-04206-1 unit was tested to specification 27-04218A by Sterer Corp. and reported in test report 13000. Autopilot design group approved the 27-04206-1 on VAF MC 22873, dated 12-1-58. (11-61) Specification was revised to D revision. The specification revisions require more severe fluid temperature and proof cycle tests. Ten specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens.	Completed	Dec. 1958

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04208-1 27-04208D 27-04215F Cadillac Gage Co. FC26-398A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve-Servo, Electro-Hydraulic, Sustainer	R	-	-	C	BOS	(5/61) The 27-04208-1 unit was approved based on similarity to GD/A 7-08369-1 as reported in Burst and Qualification Test Report CG 6-20. Autopilot design group approved the 27-04208-1, based on similarity to 7-08369-1 on VAF MC 37276, dated 9-3-59. (10-61) The MAD rejected engineering (refer to MAD APPR column) primarily because the specification required up-dating and clarification. The specification was revised to the F revision.		Completed Sept. 1959

tronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR QDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04209-1 27-04209D 27-04212G Cadillac Gage FC-26-397A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve - Servo, Electro-Hydraulic	R	-	-	C	BOS	(5-61) The 27-04209-1 valve was approved on basis of similarity to 7-08353-3 which was pre-production tested. The 7-08353-3 valve was tested by Cadillac and reported in test Number CG 6-19. Report was approved on VAF MC 21969, dated 11-13-58. Autopilot design group approved the 27-04209-1 valve on VAF's MC 21971 and MC 21969, dated 11-1-58. (10-61) The MAD rejected engineering (refer to MAD APPR column) primarily because the specification required up-dating clarification. The specification was revised to the F revision.	Complete	Nov. 1958

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04211-1 27-04211E 27-04217H Crescent Corp. HC-67P-4E	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Transducer - Feedback, Linear	A	-	-	C	PPT	(5-61) The 27-04211-1 unit was tested to specification 27-04217D by Crescent Corp. and reported in Test Report 25-221. Autopilot design group approved the 27-04211-1 unit on VAF MC 25,074, dated 1-8-59. (11-61) Specification was revised to H revision. The significant revision to the specification was the addition of MIL-I-26600 requirement for RF noise testing.	Completed	Jan. 1959

27-04211

MERCURY TEST SUMMARY								AUTOPILOT		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04301-1 27-04301D 27-04313E Minneapolis-Honeywell JRT 114	88D 100D	Rate Gyro, Autopilot	A	-	-	C	PPT	(6-61) This unit replaces 27-41709. Testing by GD/A on Test number 27A906 is complete. The report was reviewed and approved, but has since been diasppro-ed and some tests are presently being re-run. The retesting is incorporating more severe and better defined proof cycles.	See Remarks	

27-04301

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04574-1 27-04584B 27-04313E Boston Division Minneapolis- Honeywell JRS-101	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Rate Gyro, Autopilot	A	-	-	C	PPT	(6-61) This gyro contains spin motor rotation detectors. Testing is to be performed by GD/A on Test number 27A956 per specification 27-04313 "E". This unit replaces 27-04301-1. Testing is in progress. The flight proof testing is completed and the pre-production test is scheduled to be completed in November.	In Prog.	Nov. 1961

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41001-935 - - - - - - - - - - GD/A - - - - -	88D	Programmer - Electronic, Autopilot	-	-	-	C	BOS	(6-61) Approved based on similarity to the 27-41001-837 unit which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements have been approved; Reference ECP No: CAC-107A-334-47 and CCN-532. Approximately 90% of the changes from the -837 unit to the -935 unit consist of programming changes. The remaining changes consist of different components such as transistors and the addition of transient suppression diodes.	Completed	Sept 1959

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41001-951	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Programmer-Electronic, Autopilot	-	-	-	C	BOS	(6-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements have been approved; Reference ECP. No: CAC-107A-334-47 and CCN-532. Approximately 90% of the changes from the -837 unit to the -939 unit consist of programming changes. The remaining changes consist of different components such as transistors and the addition of transient suppression diodes.	Completed	Sept 1959

27-41001

Aeronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR LDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41002-859 - - - - - - - - - - GD/A - - - - -	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Gyroscope Group, Rate and Displacement	-	-	-	C	BOS	(10-61) Approval to be based on similarity to 27-45202-801, which will be preproduction tested for E series missiles. The assembly contains gyros with spin motor rotation detectors. Testing on the 27-45202-801 is in process. Flight proof testing is complete, and preproduction testing is scheduled for January 1962 completion.	In Prog.	Jan. 1962

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41330-805 - - - - - - - - - - GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Power Group - Gyroscope, Autopilot	-	-	-	C	OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope groups 27-45302-1, 27-45302-803, and 27-41002-859. Special developed vendor items in this assembly are subject to test.	Not Required	

27-41330

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41331-5 - - - - - - - - - - GD/A - - - - -	88D 100D	Gyroscope Group - Displacement, Autopilot	-	-	-	C	OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope groups 27-45302-1 and -803. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Required	Not required

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR DE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41331-803 - - - - - - - - - - GD/A - - - - -	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Gyroscope Group - Displacement, Autopilot	-	-	-	C	0th	(10-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-41002-859. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required	

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41332-5 - - - - - - - - - - GD/A - - - - -	88D 100D	Gyroscope Group - Rate, Autopilot	-	-	-	C	OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope groups 27-45302-1 and -803. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required	

27-41332

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41332-811 - - - - - - - - - - GD/A - - - - -	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Gyroscope Group - Rate, Autopilot	-	-	-	C	0th	(10-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-41002-859. Special developed vendor components in this assembly, such as the gyros, are subject to test.	Not Required	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41333-5 - - - - - - - - - - GD/A - - - - -	100D	Power Supply Component - Amplifier, +30V., Gyro Group	-	-	-	C	OTH	(5-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-45302 -1. Special developed vendors items in this assembly are subject to test.	Not Required	

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41333-801 - - - - - - - - - - - - GD/A - - - - - -	88D	Power Supply Component- Amplifier, +30v, Gyro Group	-	-	-	C	0th	(10-61) This assembly is not tested at this level. It is a part of the gyroscope group 27-45302 -803. Special developed vendor items in this assembly are subject to test.	Not Required	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-11333-805 - - - - - - - - - - - - GD/A - - - - - -	77D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Power Supply Component - Amplifier, + 30V., Gyro Group	-	-	-	C	OTH	(11-61) This assembly is not tested at this level. It is part of the gyroscope group which has been qualified by preproduction testing. Special developed vendors items in this assembly are subject to test.	Not Required	

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR VDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41703-5 - - - - - - - - - - GD/A - - - - -	88D 100D	Control Group - Autopilot, Rate Gyro	-	-	-	C	BOS	(5-61) Approved based on similarity to -3 assembly which was preproduction tested on GD/A Test number 7A2334 dated 5-21-60.	Completed	May 1960

27-41703-5

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-41703-809 -	77D 93D 103D 107D 113D 130D 144D 152D 167D 109D	Control Group - Autopilot, Rate Gyro	-	-	-	C	PPT	(6-61) This assembly contains gyros with spin motor rotation detectors. Testing is to be performed by GD/A on Test number 27-A1255. Testing in progress. FPT is complete and the preproduction test is scheduled to be complete in February.	In Prog.	Feb. 1962

27-41703-809

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-45300-3 - - - - - - - - - - GD/A - - - - -	100D	Servo Amplifier-Filter	–	–	–	C	BOS	(6-61) The unit is qualified on basis of similarity to the 27-41000-807 unit which was flight proof tested on GD/A test number 7A2247 and the 27-41000-813 unit which was preproduction tested on CV/A test number 27A766 dated 9-28-60. Some deviations to MIL-I-26600 requirements have been approved; reference PCP No. CAC-107A-334-59 and CCN-532. The 27-45300-3 unit differs from the tested units only in gain and filter changes.	Completed	Sept 1960

27-45300-3

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-45300-801 - - - - - - - - - - - - GDA - - - - - -	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Servo Amplifier-Filter	-	-	-	C	BOS	(6-61) This unit is qualified on basis of similarity to the 27-41000-807 unit which was flight proof tested on CV/A test number 7A2247 and the 27-41000-813 unit which was preproduction tested on CV/A test number 27A766 dated 9-28-60. Some deviations to MIL-I-26600 requirements have been approved; reference ECP. No. CAC-107A-334-59 and CCN No. 532 and 206. Differences between the units tested and the 27-45300-5 unit consist of gain and filter changes.	Completed	Sept 1960

27-45300-801

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-45301-3 - - - - - - - - - - GD/A - - - - -	100D	Programmer - Electronic, Autopilot	-	-	-	C	BOS	(6-61) Approved based on similarity to the 27-41001-837 unit which was preproduction tested to 7-00209B requirements on GD/A test number 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements have been approved reference ECP No. CAC-107A-334-47. Approximately 90% of the changes from the 27-41000-837 to the 27-45301-3 consist of programming changes. The remaining changes consist of different components such as transistors and the addition of transient suppression diodes.	Completed	Sept 1959

27-45301-3

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MERCURY TEST SUMMARY			AUTOPILOT							
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR DE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-45302-1 - - - - - - - - - - GD/A - - - - -	100D	Gyroscope Group - Autopilot	-	-	-	C	BOS	(6-61) Approved based on similarity to the 27-41002-805 assembly which was pre-production tested to 7-00209B per Test Report 7A2246 dated 6-7-60. Approved deviations consist of storage at -4°F instead of -65°F and operating acceleration test with spin motors dis-connected. Changes from the 27-41002-805 to the 27-45302-1 unit consist only of wiring and gain changes. The rate gyros are not used for control but for ASIS instrumentation only. A remote rate gyro group has been added for control.	Completed	June 1960

MERCURY TEST SUMMARY — AUTOPILOT

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-45302-803 - - - - - - - - - - - - GDA - - - - - -	88D	Gyroscope Group-Rate and Displacement	-	-	-	C	BOS	(10-61) Approved based on similarity to the 27-41002-805 assembly which was preproduction tested to 7-00209B per test report TA2246, dated 6-7-60. Approved deviations consist of storage at -4°F instead of -65°F and operating acceleration test with spin motors disconnected. Changes from the 27-41002-805 to the 27-45302-803 unit consist only of wiring and gain changes. The rate gyros are not used for control but for ASIS instrumentation only. A remote rate gyro group has been added for control.	Complete	

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MERCURY

MAJOR CRITICAL COMPONENTS

SEPARATION

None of the items in the Separation System require further approval action prior to flight.

MERCURY TEST SUMMARY — SEPARATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-04304-3 27-04304A 27-04309A Conax Corporation 22790A	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Valve Assembly, Explosive	A	-	-	C	BOS	(6-61) This item is similar to the -1 units which were tested to 7-002093 requirements by GD/A on 7-224[illegible], dated 9-30-59. All 20 units tested met the requirements. The change revising the -1 assembly to a -3 assembly consisted of the addition of an "0" ring retainer.	Completed	Nov. 1959

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MERCURY TEST SUMMARY — SEPARATION

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-08575-1		Flask, Separation	-	-	-	C		(5-61) Refer to Pneumatics Section.		

27-08575

MERCURY TEST SUMMARY								SEPARATION		
PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR TDR	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-45435-3 - - - - - 27-04200 GD/A - - - - -	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Fitting Assembly, First Stage Separation	-	-	-	C	PPT	(5/61) Twenty units were subjected to requirements of 7-00209B by CV/A in 7A1812 dated 4-10-59. As a result of corrosion, four untreated and unlubricated fittings failed to operate after the enviromental tests. Two untreated but lubricated fittings operated even though corroded. The remaining units were treated with several different materials. Although some corrosion was present, all the units operated satisfactorily. All production units are now being manufactured with a finish which prevents corrosion.	Complete	April 1959

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MERCURY

MAJOR CRITICAL COMPONENTS

ANTENNA

This section covers TLM RSC, AZUSA, MOD III guidance antenna assemblies, TLM RSC ring couplers and MOD III guidance wave guides.

Antennas and ring couplers have been tested and/or approved on the basis of similarity to qualified items.

AZUSA antenna is qualified on the basis of similarity to an antenna which was flight proof tested.

Standard VSWR measurement tests were performed on waveguide assemblies.

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-11500-3 - - - - - (7-01203) GD/A 7-11500-3	100D	Ring Coupler, TLM	-	-	-	C	BOS	(6-61) Approved on the basis of similarity to 7-36044-1 which has been preproduction tested (Test Report 7A561, dated 6-3-57). RSC ring coupler has HN connectors and TLM ring coupler uses TN connectors.	Completed	June 1957

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MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-36044-1	77D	Ring Coupler, RSC	-	-	-	C	PPT	(5-61) One specimen has been preproduction tested at GD/A (Test Report 7A561, dated 6-3-57).	Completed	June 1957
- - - - -	88D									
7-01203	93D									
GD/A	100D									
7-36044-1	103D									
	107D									

7-36044

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
7-36044-5 - - - - - 7-01203 GD/A 7-36044-5	109D 113D 130D 144D 152D 167D	Ring Coupler, RSC	-	-	-	C	PPT	(10-61) Approved on basis of similarity to 7-36044-1 which has been preproduction tested (test report 7A561). The -5 is the same as the -1, except for different covers and the addition of a shim between the base plate and cover.	Completed	

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12507-1 - - - - - (27-01202) GD/A 27-12507-1	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Antenna Assembly, TLM/ RSC, (B-1 Pod)	-	-	-	C	PPT	(6-61) Two specimens have been preproduction tested at GD/A (Test Reports 7A1830, dated 6-20-59 and 7A2083, dated 6-29-59). NOTE: Both specimens developed cracks at four places between the double mounting holes and the tank line mounting holes. Failures were caused by an inadequate vibration fixture. The vibration fixture was modified on a third specimen and the specimen subjected to vibration tests. The specimen successfully passed the tests.	Completed	

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-12507-3 - - - - - (27-01202) GD A 27-12507-3	77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Antenna Assembly, TLM/RSC, (B-2 Pod)	-	-	-	C	BOS	(5-61) Approved on the basis of similarity to the -1 unit which has been preproduction tested. Dash one and dash three are identical electrically as well as mechanically. Dash one is used on Pod-1 and dash three is used on Pod-2.	Completed	

27-12507

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MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-35026-1	77D	Antenna Assembly, Azusa	-	-	-	C	BOS	(5-61) Approved on the basis of similarity to 27-35022-3, which has been flight proof tested.	Completed	
- - - - -	88D									
- - - - -	93D									
GD/A	100D									
27-35026	103D									
	109D									
	113D									
	130D									
	144D									
	152D									
	167D									
	107D									

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-37000-1 - - - - - - - - - - - - GD/A 27-37000-1	77D 88D 93D 100D	Antenna Assembly, Mod III Guidance	-	-	-	C	BOS	(5-61) Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested (Test Report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60). Assembles into the 27-37005-1 assembly.	Completed	Sept. 1960

27-37000

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-37000-3 - - - - - - - - - - GD/A 27-37003-3	109D	Antenna Assembly, MOD III Guidance	-	-	-	C	BOS	(10-61) Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested. (Test report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60). Assembles into 27-37005-1 assembly. The -3 is the same as -1 except that window 27-36002-7 is replaced by 27-36002-3.	Complete	Sept. 1960

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-37000-5 - - - - - - - - - - - - GD A 27-37000-5	103D 107D 113D 130D 144D 152D 167D	Antenna Assembly, MOD III Guidance	-	-	-	C	BOS	(10-61) Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested (Test report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60). Assembles into the 27-37005-3 assembly. The -5 is the same as -3 except that window 27-36002-3 is replaced by 27-36002-1.	Complete	Sept. 1960

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61382-1 - - - - - - - - - - GD/A 27-61382-1	100D	Waveguide, Mod III Guidance (pulse beacon to antenna)	-	-	-	C	0th	(5-61) Validation testing has been conducted at GD/A Radiation lab. No environmental testing is required.	Completed	

27-61382

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61382-3 - - - - - - - - - - GD A 27-61382-3	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Waveguide, MOD III Guidance (Pulse beacon to antenna)	-	-	-	C	0th	(10-61) Validation testing was conducted at GD/A Radiation lab. No environmental testing is required. The -3 is the same as -1 except for the addition of boss 27-36217-7.	Complete	

tronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61383-1 - - - - - - - - - - GD/A 27-61383-1	100D	Waveguide, Mod III Guidance (Transition)	-	-	-	C	0th	(5-61) Validation testing has been conducted at GD/A Radiation Lab. No environmental testing is required.	Completed	

Astronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61383-3 - - - - - - - - - - GD/A 27-61383-3	77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D	Waveguide, MOD III Guidance (Transition)	-	-	-	C	0th	(10-61) Validation testing was conducted at GD/A radiation lab. No environmental testing is required. The -3 is the same as -1 except for the addition of boss 27-56217-7.	Complete	

Aeronautics Form A2497 (5-61)

MERCURY TEST SUMMARY — ANTENNA

PART NUMBER / SPEC CONTROL / PROC SPEC / VENDOR NAME / VENDOR P/N	EFFECTIVITY	NOMENCLATURE	MAD APPR ENGR	MAD APPR IDE	MAD APPR INSTL	CRIT COMP	QUAL BY	REMARKS	TEST SCHED START	TEST SCHED COMPL
27-61384-1 - - - - - - - - - - GD/A 27-61384-1	77D 88D 95D 100D 103D 107D 109D 113D 130D 144D 152D 167D	Wave Guide, Mod III Guidance (Structure to rate beacon)	-	-	-	C	0th	(5-61) Validation testing has been conducted at GD/A Radiation lab. No environmental testing is required.	Completed	