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NJ.30-4

ECLIPSE PIONEER

ENGINEERING

PROPOSAL 5803-43

INERTIA POWER SUPPLY

for

SANDIA CORPORATION

SANDIA REPORT

DO NOT DESTROY

CONFIRMED TO BE UNCLASSIFIED
DOE/OFFICE OF DECLASSIFICATION
H. R. SCHMIDT, A.D.D. DATE:
HRSchmidt 8/31/95

21486

ECLIPSE-PIONEER DIVISION

TETERBORO NEW JERSEY

Sandia AVIATION CORPORATION

c. I

ECLIPSE - PIONEER DIVISION
BENDIX AVIATION CORPORATION
TETERBORO NEW JERSEY

PROPOSAL 5803-43

INERTIA POWER SUPPLY
for
SANDIA CORPORATION

Prepared for: Sandia Corporation
Sandia Base
Albuquerque, N.M.

Prepared by: E. R. Heinsius
Project Engineer

R. C. Hewlett
Project Engineer

Approved by K. W. Allen
Senior Accessory
Electrical Engineer

R C Sylvander
Director of Engineering

Date December 20, 1951

CLASSIFIED DOCUMENT ROOM
SANDIA LABORATORY

(227)

ECLIPSE - PIONEER DIVISION
BENDIX AVIATION CORPORATION
TETERBORO NEW JERSEY

PROPOSAL FOR INERTIA POWER SUPPLY

I. INTRODUCTION

This proposal is submitted in accordance with the request from the Research Department at Sandia Corporation for an Inertia Power Supply. This supply would provide another alternate power supply system to replace batteries in future applications.

This unit is to deliver an A.C. output of 115 volts plus or minus 5%, 400 cycles ± 16.5%, 500 watts (rated) of energy into a 0.75 lagging power factor load for one minute. All preliminary calculations and preliminary layouts have been based upon one minute operation. Since this work was completed prior to the receipt of the 75 second requirement and since the additional running time will effect the size of the flywheel and will present additional heating problems in the motor design, this proposal is forwarded without revision at this time with an output delivery time of 1 minute.

II. DISCUSSION

The Inertia Power Supply, drawing 874034, consists of a low voltage DC motor driving a flywheel and AC generator to a speed of approximately 28000 RPM. At the desired time, the motor input power is switched off and the energy stored in the flywheel is expended in driving the AC generator which will deliver 500 watts output at 115 volts for one minute.

The decision to use a high speed motor alone rather than a slower speed motor with a step-up gear box between the motor and flywheel was based upon a weight and size consideration.

The use of a gear box makes the motor application easier but it does present an additional problem with an additional weight increase of both gear box and motor.

The high speed motor does present more of a problem of duty cycle at high altitudes without the use of external blast cooling. In general the slower the rated motor speed the longer time the motor will operate at rated output at altitudes above 35000 feet.

It is recommended that with the requirement of operation up to 60,000 feet that the maximum continuous required operation cycle be changed to a one hour cycle instead of the 10 hours specified.

Every effort will be made to better this time, but to date there is very little information available on the operation of DC motors of over one horsepower operating above 24,000 RPM at 60,000 feet altitude. While brush material grades have improved to permit operation of generators and motors operating up to 12,000 RPM at 35,000 to 50,000 feet, the major factor in determining the duty cycle is the ability of the system to dissipate the developed heat.

A Laboratory model of an Inertia Generator, made with available parts, was built up and tested to determine the feasibility of such a type unit. The flywheel used had a moment of inertia of 0.029 slugs ft.$^{+2}$. This test model used a slow speed motor with a 10:1 gear box between the motor and flywheel.

The tests, witnessed by Mr. D. Champaign of the Research Department at Sandia, proved that such a unit is practical and warrants further study. The test data of the run down time for various load conditions follows:

	RPM	E_{ac}	I_{ac}	Watts	Freq.	Running Time Seconds
Start	28,000	Flywheel and Generator				0
Stop	20,000	Windage and Friction Only				57
Start	28,000	114	2.65	285	466	0
Stop	20,000	114	2.65	285	333	45
Start	28,000	114	3.40	380	466	0
Stop	20,000	113.5	3.40	380	333	48
Start	28,000	113	4.32	485	466	0
Stop	20,000	112.0	4.32	485	333	42
Start	28,000	114	5.15	580	466	0
Stop	20,000	113	5.10	570	333	38

Start	28,000	114.	4.35	480	466	0
Stop	21,000	113.	4.35	480	350	31
Start	28,000	115.	4.40	500	466	0
Stop	21,000	114.	4.38	490	350	34
Start	28,000	115.	.90	100	466	0
Stop	20,000	115.	.90	100	333	44

The results of these tests also brought out the following adverse features of all tentative designs previously discussed.

1. At operating speeds of 28,000 RPM, with small diameter shaft sizes, all lock ring type bearing locks should be eliminated unless the ring is held on the outside diameter with a retaining shell. The tests showed that the locking action of the ring type lock was not positive where any thrust loads might be encountered.

The present preliminary layout 874034 has been changed to eliminate all bearing lock rings. Bearings are pressed against shaft shoulders and locked in place with nuts and cotter pins or tab nut locks.

2. Long periods of acceleration will be determinal to a minimum size motor, unless a starting box of same type is used. A starting box, 876244, will be used with a series resistor in the motor line which will be shorted out by a solenoid switch operated by the voltage across the motor. As the solenoid operated line switch is closed by the starting switch, the full power supply voltage is impressed across the motor terminals plus the series resistor. The resistor will limit the inrush current. As the motor speed increases the current to the motor will decrease with the voltage drop across the resistor decreasing and the voltage across the motor terminals increasing. At a predetermined value of voltage across the motor terminals, a solenoid switch will close and short out the series resistor. Full voltage will then be applied to the motor.

3. The additional motor losses which must be supplied by the flywheel if the motor is built on a common shaft or is directly connected to the flywheel shaft results in a considerably larger flywheel than is necessary. To eliminate the additional motor losses the motor will be disconnected from the flywheel and AC Generator assemblies. An engaging jaw will be assembled in a spiral groove on the motor shaft.

As the motor is energized the jaw will move out in the spiral groove due to inertia of the jaw. This jaw will engage a fixed jaw on the flywheel shaft and will continue to hold and rotate the flywheel and AC generator until the power to the motor is shut off. At that time, the jaw which is spring loaded will move back along the spiral groove disengaging the motor from the flywheel.

4. Complete motor, flywheel assembly and AC generator units are advisable to eliminate any excessive run out condition which might be encountered by use of a three bearing flywheel and AC generator unit. The present design is built up of complete individual units.

5. The selenium rectifier on the Control Panel, 876254, used to supply the exciting field current to the AC generator has failed on several occasions due to overloading conditions. The present panel will use a rectifier consisting of two sets of plates in parallel to take care of field current requirements.

III. DETAILED SPECIFICATION

A. Complete Inertia Power Supply System

1. Must deliver 500 watts (rated) of energy into a .75 lagging power factor load for one minute.

2. Voltage is 115 volts ± 5% as the load is varied from 50% to 100% of rated load and at frequencies of 400 cycles ± 16.5%. It is not intended that the unit put out 150% of rated load at 333 cycles. The regulator will regulate within the above range of frequencies above 400 cycles.

3. Frequency is 400 c.p.s. ± 16.5%.

4. Weight

AC Generator	10.75	lbs.
DC Motor	10.00	
Flywheel and housing	29.50	
Control Panel	3.50	
Starting Box	6.50	← not in weapon
Complete System	60.25	lbs.

5. Input motor voltage 27.5 volts DC +5 -10%.

6. Maximum acceleration time 15 minutes.

7. Operating Cycle

50 operating cycles of starting, running ten minutes and slowing under full load at any altitude up to 35,000 feet before any repair on the unit.

5 operating cycles of starting, running one hour and slowing under full load at any altitude up to 60,000 feet before any repairs on the unit.

8. Operating Temperature and Humidity

Any temperatures from -90°F to +130°F at 95 to 99% R.H. between +35°F and +90°F., decreasing linearly to 50% R.H. at 130°F.

9. Corrosion

The electrical components shall be subjected to a 50 hour salt spray test in accordance with QQ-M-15

10. Vibration

The electrical components shall be secured directly to a vibration table utilizing manual mounting provisions. The electrical components shall be operable during and after 9 hours of vibration as follows:

Frequency	10 - 30 c.p.s.
Double Amplitude	0.109 inch (constant), 5 g maximum
Duration	1 hour in each of three mutually perpendicular planes
Time of Cycling	5 minutes
Frequency	30 - 55 - 30 c.p.s.
Double Amplitude	0.054 inch (constant), 10 g maximum
Duration	1 hour in each of three mutually perpendicular planes
Time of Cycling	5 minutes

Frequency	60 - 250 - 60 c.p.s.
Double Amplitude	To obtain 5 g constant
Duration	1 hour in each of three mutually perpendicular planes
Time of Cycling	5 minutes

While all tests specified in the Sandia Specification are to be performed by Sandia Corporation, we are revising the frequencies specified to permit checking the components with our available equipment so that we can be certain of meeting the requirements outlined.

B. Generator

1. Rating

Volts	115 ± 5 % (obtained with voltage regulator)
Amperes	5.8
Output	500 watts (rated) of energy with a 0.75 lagging power factor load for one minute.
Frequency	400 cycles ± 16.5%
Speed	28,000 to 20,000 RPM
Phase	Single
Power Factor	0.75 lagging
Type Excitation	Self-excited

2. Efficiency - approximately 65%

3. Dimensions - 4.062" dia. x 3.50" long

4. Weight - Estimated 10.75 lbs.

C. D.C. Motor

1. Rating

Volts -	27 +5% -10% volts D.C.
Amperes	65
Horsepower	1.5 at 28,000 RPM
Speed	Maximum Speed 30,000 RPM
Duty Cycle	One hour on - 30 minutes off

2. Dimensions 5.0" O.D. x 6.0" long

3. Weight 10 pounds.

D. Voltage Control Panel

1. Rating

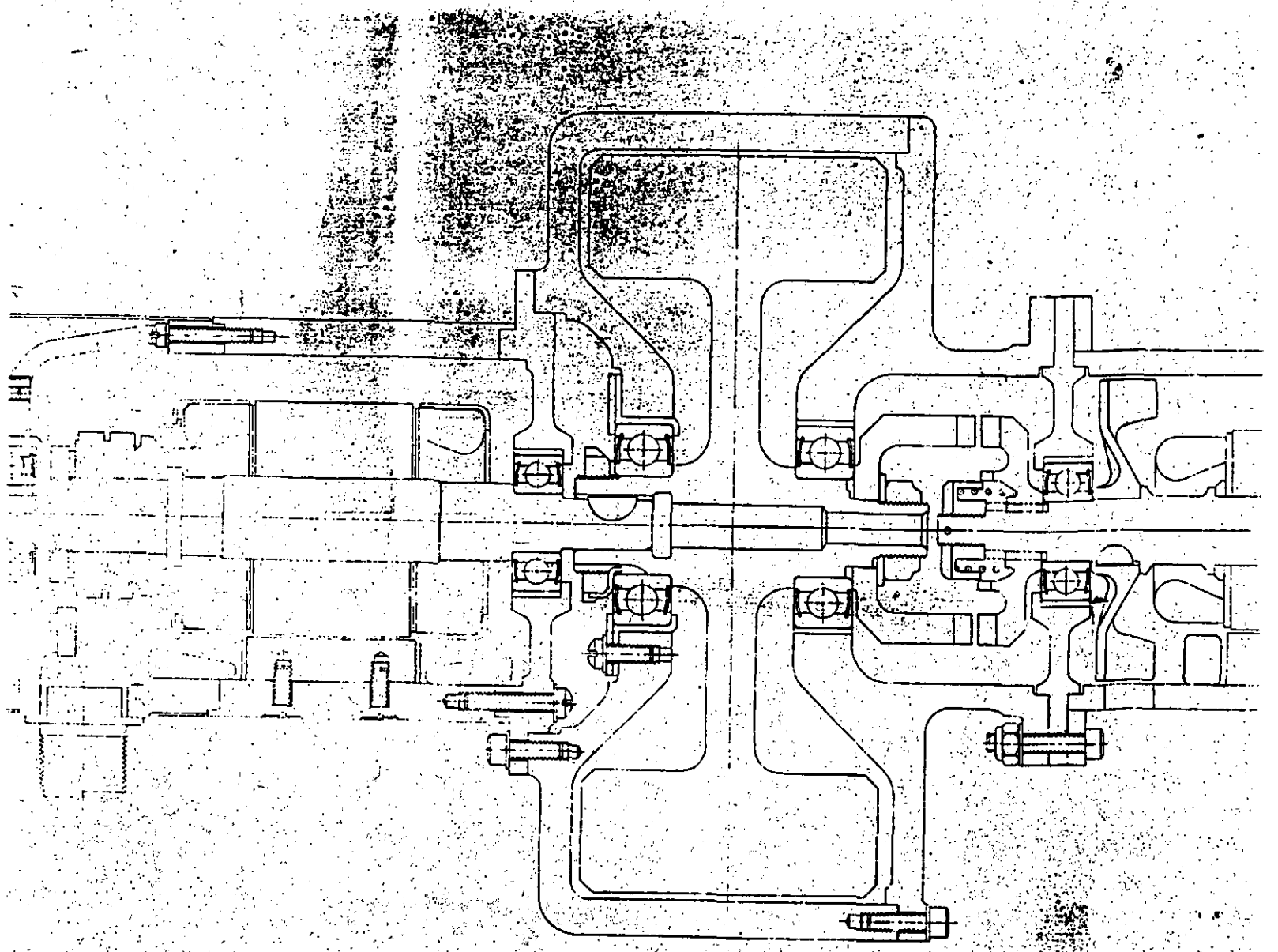
The voltage regulator will be suitable for continuous control of the generated voltage of the above generator and will maintain voltage regulation of 115 ± 5% from no load to full load throughout the regulated speed range.

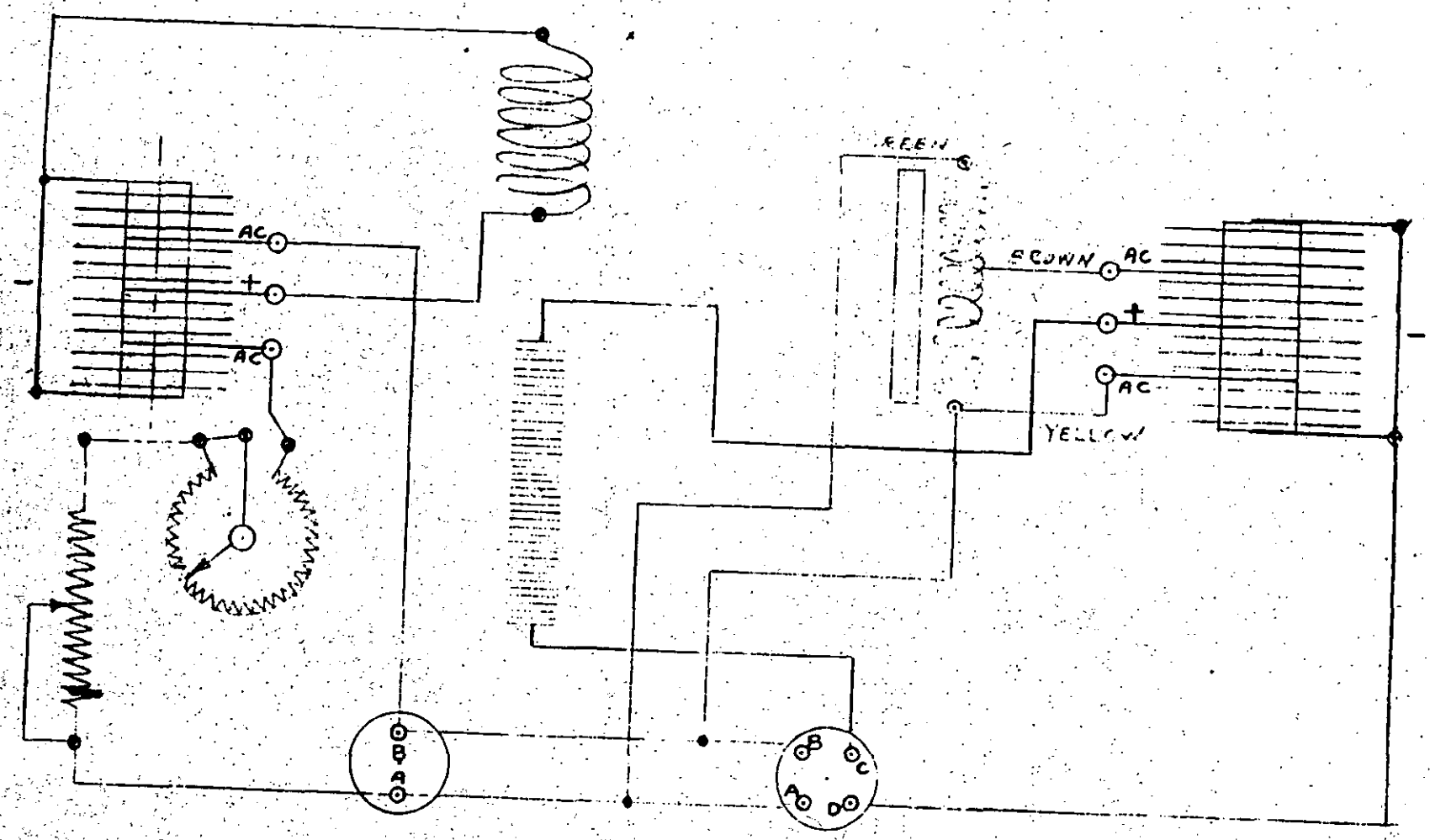
2. Dimensions - 3-3/4" x 5-1/4" x 7-1/4"

3. Weight - 3.5 pounds

4. Voltage Adjustment - range 105 - 125 volts.

EHH'H





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TETERBORO NEW JERSEY — BENDIX AVIATION CORPORATION — ECLIPSE-PIONEER DIVISION

FINISH

UNLESS OTHERWISE SPECIFIED, THE FOLLOWING NOTES MUST BE OBSERVED:

1. FRACTIONS ± .010 DECIMALS ± .005 DRILLED HOLES + .003 — .000
2. GRINDING SYMBOL "G" DENOTES SMOOTH GRIND.
3. ALL THREADS MUST BE NATIONAL FORM CLASS 3 FIT.
4. ALL PIPE THREADS MUST BE AMERICAN NATIONAL FORM TAPER THD.
5. ALL RELATIONSHIPS ON DWG. MUST BE HELD AS SHOWN.
6. TOLERANCES ON DIM. OF PARALLEL FACES ARE FOR SIZE ONLY.

PLAN	SUB CON'T.	HARD.
ARMY	NAVY	

PART REF. — MATERIAL — WGT — MET

VOLTAGE CONTROL PANEL

SIZE B 863982

WIRING DIAG.

DR.	WTT	9-18-5
TR.		
CKD.		
APP.		

FORM 367 REV.

EP-235...

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DOCUMENT# [redacted]

ECLIPSE - PIONEER DIVISION
BENDIX AVIATION CORPORATION
TETERBORO - NEW JERSEY

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REPORT

ENGINEERING MEETING AT ECLIPSE-PIONEER DIVISION
OCTOBER 26 THRU OCTOBER 31,
1950

Drawing Changes, Waivers, Fabrication Procedures
and Specification Interpretations
For All

X Unit Elements, Components and Assemblies Made
For Sandia Corporation and Kansas City Division

Prepared by: E R Heinsius
E. R. Heinsius
Accessory Electrical Engineering

Approved by: R C Sylvander
R. C. Sylvander
Director of Engineering

CONFIRMED TO BE UNCLASSIFIED
DOE/OFFICE OF DECLASSIFICATION
H. R. SCHMIDT, A.D.D. DATE:
HRSchmidt 8/31/95

Date October 31, 1950

CLASSIFIED DOCUMENT ROOM
SANDIA LABORATORY

LIST OF PERSONNEL ATTENDING CONFERENCE

Sandia Personnel

Mr. R. J. Dill - Inspection Department
Mr. T. W. Holmes - Production Engineering
Mr. L. H. Ladd - Expediting

Kansas City Division

Mr. W. Hoyt - Liaision Engineer

Eclipse-Pioneer Personnel

Engineering

Mr. R. C. Sylvander - Director of Engineering
Mr. H. Loen - Supervisor, Production Engineering
Mr. E. Palmer - Production Engineer
Mr. E. R. Heinsius - Project Engineer
Mr. J. M. Loiacono - Supervisor, Metallurgy
Mr. R. I. Horrocks - Chief Chemist

Sales

Mr. G. A. Lewthwaite - Sales Manager
Mr. C. E. Rowett - Sales
Mr. P. C. Hofbauer - Sales

Production

Mr. E. K. Morlok - Asst. Factory Manager
Mr. R. W. Snyder - Supervisor, Production Planning
Mr. R. C. Beck - Production Planning
Mr. A. Alexo - Supervisor, Armature Winding

Inspection

Mr. R. E. Nimitz - Asst. Chief Inspector
Mr. C. Fritz - Supervisor, Assembly and Test
Mr. E. P. Baldwin - Supervisor, Parts
Mr. A. Neuert - Inspection

Tool Design

Mr. E. Bowman - Asst. Supervisor

Test Equipment

Mr. J. A. Lang - Supervisor
Mr. J. Howell - Test Equipment

Introduction

For the past two years Eclipse-Pioneer has been delivering quantities of X-Unit Elements, Components and Assemblies based upon Raytheon drawings. We were originally requested to build a small quantity of units where delivery was the most important consideration. As the building of these units progressed many changes in parts and procedure were made to assure proper functional operation. These changes and waivers were officially approved at the time by our resident A.E.C. Inspector, but many were not followed to a final drawing change disposition at Sandia.

The quantities of units required increased rapidly but always with a very short lead time from receipt of order to delivery requirement making it impossible to take sufficient time to thoroughly check all parts to existing drawings at Sandia. When the new "Y" drawings were then made at Sandia from existing Raytheon drawings, many parts as fabricated by us could not conform to these drawings.

When the new "Y" drawings and new specifications were issued a preliminary check was made by our Engineering, Tool Design, Test Equipment and Estimating Departments to ascertain the extent of possible drawing differences.

The first request for drawing changes was forwarded to Sandia for consideration on July 18, 1950, with an increasing number following almost weekly.

Originally it was understood that all molded parts would be made from existing molds. As these parts were received and checked by our Inspection Department it was learned that they did not conform in detail to the new "Y" drawings. We immediately notified Sandia and requested a deviation on all molded parts to allow us to proceed with parts as received from our existing molds until all drawing change requests could be satisfactorily prepared. We checked with our Vendors and requested that they supply us with corrected drawings showing all changes necessary to make the drawings conform to the products of existing molds. This information was in turn forwarded to Sandia for action.

Our Purchasing Department incorporated a statement on all purchase orders for purchased parts emphasizing that all parts must conform to the "Y" drawings. All vendors were also requested to advise us of any discrepancy that could not be corrected. Even with this precaution many parts now being received do not conform strictly to the "Y" drawings necessitating further drawing changes or temporary waivers. Some drawings do have impractical tolerances which must be corrected.

Gradually this build up of differences in molded and fabricated parts and other procedure differences has reached proportions that require immediate decision from Sandia Corporation, since Sandia has the overall design responsibility and authority to approve drawing and specification changes, to enable us to meet our delivery schedule to both Sandia and Kansas City Division.

Sandia Corporation readily agreed to assist us in any way ssible to help expedite deliveries and had the following repre- ntatives attend the conference to evaluate our change requests d procedure problems.

Mr. R. J. Dill - Inspection Department
Mr. T. W. Holmes - Production Engineering
Mr. L. H. Ladd - Expediting

Kansas City Division had their representative Mr. W. Hoyt ttend the conference to obtain all official approvals of changes enable Kansas City Division to accept immediately the same nits as will be manufactured for Sandia Corporation.

urpose of Conference

(1) Evaluation and action by Sandia on all present drawing equests, fabrication procedure changes, and specification inter- retations for an overall permanent system.

(2) Evaluation and action by Sandia on temporary drawing eviations where required to expedite November and December deliveries.

(3) Establishment of Procedure for all future waivers and rawing changes which will assure a rapid decision from Sandia and hich will also keep Kansas City Division fully informed of all ecisions.

rocedure

The action taken by Messrs. J. Dill and T. W. Holmes of Sandia orporation relative to either permanent drawing changes or temporary eviations, fabrication procedures, and specification interpretations ill be listed as follows:

(1) Drawing Change Requests Approved
(2) Drawing Deviation Requests Approved
(3) Fabrication Procedures Approved
(4) Specification Interpretations and Modifications
(5) Drawing Change Requests and Specification Interpretations to be reviewed at Sandia.
(6) Information and Action to be Initiated by Eclipse-Pioneer

QUEST FOR DRAWING OR PARTS LIST CHANGE

[illegible]	Eng	587	10/27/50	CR– 53692
ISTED BY	DEPT.	PHONE No.	DATE	

IS RELEASE STOP ORDER YES ~~NO~~

CHANGEABILITY AFFECTED ~~YES~~ NO

G NOS. 5Y-15765-D-15 (B) Mounting Case

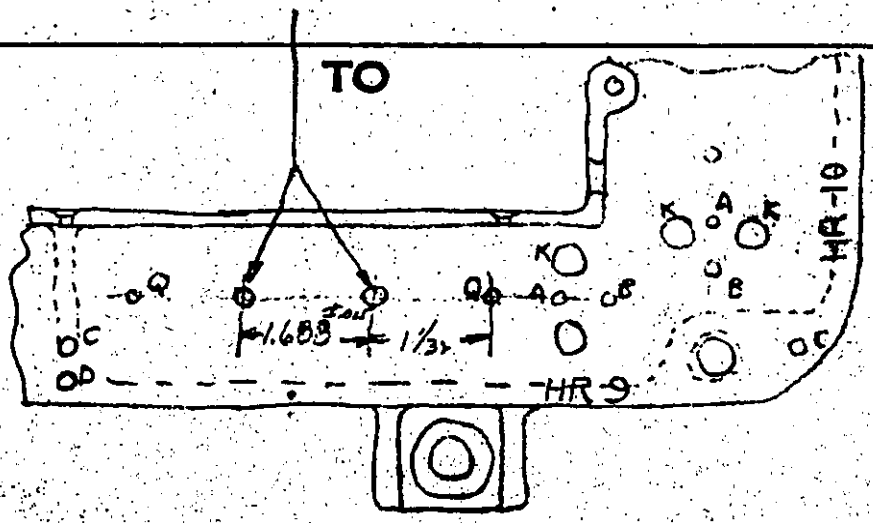
STS USED ON

OF CHANGE FROM

add 2 holes & dims indicated in sketch.

ete proper tolerance on holes "D" $^{+.003}_{-0}$

TO



complete dwg info.

OSITION OF PARTS	EFFECTIVE DATE
[illegible]	[illegible]
[illegible]	861-1
[illegible] DATE 10/27/50	T W Holmes 10/27
[illegible] DATE 10/27/50	CHANGE ORDER NUMBER
DATE	ECLIPSE-PIONEER
NATURES TO BE SIGNED IN FULL	TETERBORO, NEW JERSEY

DRAWING OR PARTS LIST CHANGE

PART NO.

STOP ORDER YES NO

INTERCHANGEABILITY AFFECTED YES NO

USE

IS USED ON

CHANGE

FROM

Insulation shall withstand 10000 Vac between terminal + case.

TO

Insulation shall withstand 550 ACV for between terminal + case.

Correction

DESCRIPTION OF PARTS

EFFECTIVE DATE

DATE

DATE

DATE

CHANGE ORDER NUMBER

ECLIPSE-PIONEER

SIGNATURES TO BE ASSIGNED

QUEST FOR DRAWING OR PARTS LIST CHANGE

Palmer QUESTED BY	Eng DEPT.	507 PHONE No.	10/28/50 DATE	CR– 53700

HIS RELEASE STOP ORDER ~~YES~~ ~~NO~~

RCHANGEABILITY AFFECTED ~~YES~~ NO

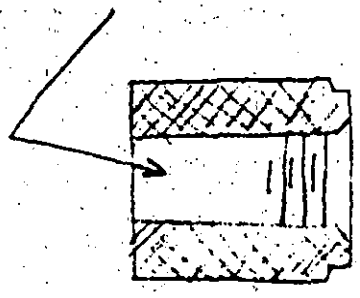
NG NOS. Y-6403-A100 (0) Inserts Switch Section

LISTS USED ON

OF CHANGE	FROM
none 1/64 Wall .053 Dim A Dim C .040	Remove all reference to General electric

TO

d. tap drive



N To facilitate procurement & improve assy
is not purchased from G.E

DISPOSITION OF PARTS	EFFECTIVE DATE
SS as per chg	When running new
ED use	
ED use	5000-1016-1
E R Heinsius DATE 10/28/50	R J Fiel 10/28/50
G. E Palmer DATE 10/28/50	W Holmes 10/28
DATE	CHANGE ORDER NUMBER
SIGNATURES TO BE SIGNED IN FULL	ECLIPSE-PIONEER TETERBORO, NEW JERSEY

EST FOR DRAWING OR PARTS LIST CHANGE

ED BY	DEPT	PHONE No.	DATE	CR–
[illegible]	Eng	507	10/28/50	54459

RELEASE STOP ORDER ~~YES~~ ~~NO~~

ANGEABILITY AFFECTED ~~YES~~ NO

NOS. Y-6403-D-20 Base load plate. main unit.

TS USED ON

FROM

F CHANGE

Add note: Coat all over with 2 coats 50% fungicidal lacquer.

TO

To complete dwg info.

DISPOSITION OF PARTS	EFFECTIVE DATE
SS	
D	
D	
	5000-1016-1
G. [illegible] DATE 10/[illegible]	T W Holmes 10/28
G. E Palmer DATE 10/28/50	CHANGE ORDER NUMBER
G DATE	ECLIPSE-PIONEER
SIGNATURES TO BE SIGNED IN FULL	TETERBORO, NEW JERSEY

ation Procedur Approved

The following fabrication procedures have been approved by . R. Dill and T. Holmes. This report will be our authority p parts in accordance with the procedures listed.

Y-6403-C-37	Issue A	Load Plate
Y-6403-C-43	Issue A	Condenser Plate
Y-6403-C-5	Issue B	Plate Assembly
Y-6403-C-42	Issue A	Plate Assembly

ur internal processing sheets are to call for sandblast with grit prior to gold plate. Note #4 on Y-6403-C-37 and Y-6403-C-43 "Brass Stock must be free of scratches and marks". It is the etation that how the scratches and marks are removed prior to ; is an internal company problem and does not necessitate a ; change. Mr. Dill stated that the sandblasted plates supplied n the past are satisfactory. This applies to Y-6403-C5 and C42.

essrs. Dill and Holmes recognize the fact that any sandblasted when plated is more susceptible to stains than a highly d surface. It is their contention that water stains are not onable and as long as the gold plating meets all specifications, gment for appearance of stains should be left to our own ion Department.

t was further agreed that a service load plate could be used ernal tests and this plate removed and replaced with a new efore shipment. When this procedure is followed, Inspection ve to institute a definite check to make certain that the test plate is replaced.

-6115-D18 - Issue 0 Contact Segment

ur internal processing sheets are to call for sandblast with rit prior to gold plate. It is impossible to obtain material ough for the two section fingers without some small marks. sting gives a good finish without a reduction of thickness ight occur with local polishing. Judgment for appearance of r stains on the contact segments will be left for our ion Department.

; is the intention that on the following procedures all draw- ected be changed, but to assure no misunderstanding in the drawing is overlooked, the procedures are confirmed here.

) All drawings specifying Tuf-on 74F Varnish to be changed to Tuf-on 74S Lacquer.

) All drawings specifying "Nylon Jacketed Plastic" will be to remove the Nylon Jacket.

) All drawings specifying "Finish Hot Tin Dip" (Centrifugal) anged to "Finish Tin Plate-Fused".

the machining of any component part, any finish such as illing of bosses, etc., which we feel that we should do to the appearance of the unit, even though it is in excess of

ish shown on any drawing, will be acceptable provided there
iditional cost to Sandia.

-15765-D16 Mounting Case Casting

long as there is sufficient space for the heaters, castings
iolation of the minimum dimension of 0.375, which is the
dimension of 0.430 with casting tolerances, will be accepted.

6115-E2 Issue B Mounting Flange

. Dill advised that the 20° ± 5' will be changed to a
e of ± 10'.

-15766-B-4 Issue 2 Gap Tube Container Cover

. Dill advised that though Change Request #45462 to add
er flange 0.010 deep x 1-1/2" diameter was rejected as a
hange, it would be permissible to fabricate in this manner
ternal company machine practice. Parts made with this step
acceptable.

403-D70 Issue B3 Cover Assy. - Housing
403-C98 Part 1110 Switch Case Assy.

both of the above parts spray inside and outside before
with a 50% solution of Tuf-on Machining Note #4 for spot
ocedure to be done after all spraying so that anodizing
er are removed from ground connections.

OY

INFORMATION AND ACTION TO BE INITIATED BY ECLIPSE-PIONEER

ll Forms - Eclipse to obtain samples of Coorsite made by Coors Cermic of and make up samples of forms made of nylon. Samples to be made up to check assembly and possible reduced rejection rate. Results to be forwarded to

5E1 Battery Case Assy. - Eclipse to make up sample assembly with completely ed harness with proper tieing, trana-flex sleeving on terminals, etc. We omit sample assembly and drawing modifications in the form of a drawing request to Sandia as soon as the unit is available. We will then continue the Battery Case Assembly with the wiring as developed by us.

5Y-15765-B-24 - Absorbent Pads
will try various methods of dipping, spraying and brushing these pads to the distance of lacquer absorbtion and will forward results to Sandia. meantime it will be permissable to continue supplying the present pads when o a dimension of 1/8", which is strictly in accordance with the print, even ue to capillary action this dimension is greatly exceeded when the pads are from the lacquer.

ats - Eclipse-Pioneer will try to find a suitable enclosed thermostat for lication to replace the present unit.

Case Assembly - Pinning of Right and Left Hand Connectors
a spot change and all parts on hand must be pinned immediately in accordance wings given to Mr. R. Snyder. All connectors which are already drilled and or set screws will be accepted when pinned.

able Assembly - Y-6403-C79
Pioneer will develop leads to suit and will submit sample and drawing change to Sandia. We will then continue making assembly as developed by us and sub- Sandia.

103 Issue Orig. - Contact
Pioneer to send request for drawing change to Sandia for drawing dimension soon as best method of locating angular cut is determined.

embly

Eclipse-Pioneer will retape corners of choke coils with varnish ver the existing linen tape as an added insulation feature.

Eclipse-Pioneer will attempt to develop a Form Cup approximately ick which would slip over the taped coil as an added insulation before inserted into the coil.

9 Stud

Eclipse-Pioneer will investigate the need for a large diameter be- ling on this stud. This will require checking of the mating holes in the mounting plate Y-6403 D40.

RECOMMENDED PROCEDURE FOR WAIVERS AND DRAWING CHANGES ON EQUIPMENT IN WHICH E.P., KCD. AND SC ARE INTERESTED

The following procedure was set up tentatively by Messrs. Kilmer yt of Kansas City Division at a meeting with Eclipse-Pioneer personnel a suggested method for discussion at Sandia. Final decision on any will have to be issued by Sandia.

Need for the Procedure:

Certain equipment is manufactured by EP and a portion of this equipment is delivered to SC on a contract between EP and SC— another portion of this equipment is delivered to KCD on a contract between EP and KCD.

The requirements of the overall picture are such that the equipment delivered to SC be identical with that delivered to KCD. From a manufacturing point of view at EP the equipment delivered on the two contracts must be the same.

SC has the design responsibility and only SC has the authority to approve drawing and specification changes, and waivers from these drawings and specifications. Final acceptance for the Government is performed at SC and KCD. Therefore, it is necessary that KCD be fully and officially informed of all changes and waivers on this equipment for two reasons:

a. So that the Government acceptance may be performed in accordance with latest requirements..
b. So that the KCD-EP contract can be kept current (technical requirements) with the SC-EP contract.

Procedure:

EP will initiate SC official forms as follows:

a. "PECR" - Production Engineering Change Request.
b. "PW" - Production Waiver.

Copies of these forms will be sent directly from EP to SC with a copy to KCD (Liaison Eng.). Any action (Approval or rejection) will be sent from SC to EP with a copy to KCD. KCD will confirm the SC action to EP.

EP will assign numbers to the forms as follows:

a. PECR. - 7001 to 8000. The number of PECR originating at EP will be preceded by the code letter "AE". Example: "AE 7001".
b. PW. - All PW numbers will be assigned by SC. EP will assign a number to these PW Forms beginning with "1" and preceded by the letters "EPDD" (EP Drawing Deviation). Example: "EPDD 3". This EPDD number is to be typed on the PW form above the space "PW No._____."