

W. B. Harrison

THE **BOEING** COMPANY

COMMERCIAL AIRPLANE DIVISION • P. O. BOX 707 • RENTON, WASHINGTON 98055

July 11, 1966

IN REPLY REFER TO

6-4473-2-294

Subject: Request for Quotation

Reference: Attached Specifications

Gentlemen:

This Request for Quotation is for standardized Digital Data Acquisition Systems to be used in our Commercial Airplane Division's Engineering Technology Laboratories. Our intent is to standardize on Systems which will meet virtually all of the digital data acquisition requirements foreseen for the next five years in these laboratories. We emphasize this is not a short-term requirement and ask that you keep this long-term concept in mind when entering a proposal.

The enclosed specifications are our ideas of how the job should be done. We require that you bid to these specifications, responding to each paragraph in detail and stating how you intend to meet the specifications and why you concur or take exception to each paragraph. For ease in evaluating your proposal, we require that it follow the format of our specification. Besides your response to the specification, we strongly encourage you to bid options and enter alternate proposals. So that we may adequately and fairly evaluate your proposals, your options and alternates must be fully explained as to what you are proposing and why you feel it will accomplish the job. We assume compliance on all specification points not answered.

Your bid response must be submitted as three separate proposals, each of which must be under separate cover. These three proposals are (1) Technical Proposal, (2) Management Proposal, (3) Price Proposal. Ten copies of each must be submitted. The following is a statement of what each of these must include:

Technical Proposal.

1. A response to our specification and alternate proposals as described in paragraph two above.

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Technical Proposal. (continued)

2. A complete list stating what you intend to manufacture in house and what you intend to buy from other manufacturers.
3. A statement of your recommended spare parts list, statement to include:
 - a. Recommended list of replacement parts.
 - b. Location and lead time for replacement parts carried in stock.
 - c. Location and lead time for non-stock replacement parts.
 - d. Length of time parts will be maintained for these Systems.
 - e. Methods of expediting spare parts under "System down" conditions.
4. A Production Flow Chart following the general program as outlined in the attached sample. This must include a description of how you will meet these schedules.
5. A description of your proposed manuals for the Systems and the Modules. (As described in specification.)
6. A statement of your training program. (As per our specification.)
7. A statement of your warranty and coverage extended for or excluded as follows: (as per our specification.)
 - a. Duration of warranty from the date the System successfully completes the post-delivery acceptance test.
 - b. Determination of failures and defects.
 - c. Qualification and authorization of local factory representative to negotiate and settle warranty claims.
 - d. Statement by vendor to reimburse Boeing for costs incurred for direct procurement of commercially available replacement parts including freight handling and installation costs.
 - e. Extension of the original warranty period in case of repeated failures of a specific part or assembly during the warranty period.

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Technical Proposal. (continued)

- f. Extension of the original warranty period following a major breakdown which requires extensive rework.
- 8. A statement of service to be provided including type and location of personnel and for what period of time.
- 9. All descriptive literature, drawings, and specifications required to make a complete evaluation and/or appraisal of the quotation with respect to the requirements of the buyer.

Management Proposal.

So that we may have a better understanding of how you will accomplish this long-range job, we require that you submit a Management Proposal. This proposal is to include, but is not limited to, the following points:

- 1. A statement of your program plan, including detailed schedules.
- 2. A description of your company and program organization, to include a discussion of the functional relationship between the company organization and this program organization. (Include organization charts.)
- 3. A statement of company and program resources, statement to include:
 - a. Personnel qualifications and availability including resumes of key personnel associated with this program.
 - b. Description of company facilities and equipment and their availability to this program.
 - c. A current balance sheet and a profit and loss statement of the company.
- 4. A description of your program control plan, statement to include:
 - a. A description of how the program will be controlled to assure successful completion.
 - b. A description and sample of monthly progress reports to be made to Boeing should you be awarded a contract.
- 5. A statement of related experience, statement to include:

Management Proposal. (continued)

- a. A summary of products and Systems which you have produced in the past which qualify your company for this endeavor.
- b. A list of your past customers and the Systems you supplied them.

Price Proposal.

Your Price Proposal shall include a firm fixed price bid for each Module which makes up the System and also a fixed price bid for each of the five System configurations defined in the specification. Please include in your bid on the Modules any price breaks for quantity purchases. This bid on the first five Systems and Modules shall be considered firm for 120 days from date of bid. These five Systems will be representative of the Systems we plan to purchase at six-month intervals for the next five years. Also, enter a bid on manuals, as described in specification. Your proposal shall include projected prices and delivery schedules for these future procurements.

Please advise us if your company will make accounting records available for Boeing audit if required for future purchases. Also, submit a statement as to delivery priorities we may have on future purchases.

Your bids must be in accordance with the following Price Proposal Instructions and the attached Pricing Format and shall include the requested financial information:

Price Proposal Instructions.

1. Estimate of weight.
2. Nonrecurring hours and dollars.
3. Control cost, if applicable.
4. Recurring hours and dollars.
5. Subcontract cost, if applicable.
6. A bill of material showing quantity and price of each item.
7. Purchase parts showing quantity and price of each item.
8. Installation cost, if applicable.
9. A priced list of proprietary items, if applicable.

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Price Proposal Instructions. (continued)

10. Travel and per diem cost, if applicable.
11. Due to the nature of this procurement, all bids may be subject to further negotiations.
12. For future procurement consideration, engineering, manufacturing and assembly direct labor, materials, burdens, general administration expense, and profit for each Module and System per suggested pricing format are required to properly evaluate your price proposal.
13. If items (1) one through (12) twelve are not included with your proposal, The Boeing Company reserves the right to disqualify the bid.

Boeing may elect to conduct an "on site" survey to discuss the foregoing prior to the award of a contract.

To help clarify the above instructions and answer questions you may have on the specifications, a bidders' conference will be held July 26, 1966, at 9:00 A.M. in the Main Ballroom A and B, Renton Inn, Renton, Washington. If you plan on bidding and attending the bidders' conference, you must advise us by letter prior to July 19, 1966. Include in this letter the names and titles of attending personnel (limit of 4) and a list of questions you would like answered at the bidders' conference. This list will help us prepare answers and will also assure you that proprietary questions will be in confidence. Bids are due back to Boeing by September 2, 1966.

Please direct all inquiries to D. G. Roy or H. Andreason, Phone 237-3654, Organization 6-4473, Mail Stop 56-06, The Boeing Company, Commercial Airplane Division, Renton, Washington. Forward quote to D. G. Roy at the above address.

Very truly yours,

THE BOEING COMPANY
Commercial Airplane Division

D. G. ROY
Buyer Supervisor

DGR:HA:mm
Enclosure

LIST OF PROSPECTIVE SUPPLIERS FOR THE
STANDARDIZED DIGITAL DATA ACQUISITION SYSTEMS

1. Astrodata, Incorporated
c/o Comptronics
3220 - 16th Avenue, West
Seattle, Washington
2. Beckman Instruments (Systems Division)
c/o Showalter Judd
1806 South Bush Place
Seattle, Washington
3. Dymec, Division of Hewlett-Packard Company
c/o Neely Sales Division
11656 N. E. Eighth Street
Bellevue, Washington
4. Non-Linear Systems, Inc.
208 Carlson Building
Bellevue, Washington
5. Radiation, Inc.
P. O. Box 37
Melbourne, Florida
6. Systron-Donner Corporation
c/o Rush S. Drake Associates
6133 Maynard Avenue, South
Seattle, Washington
7. Vidar Corporation
c/o Thorson Company
1767 - 15th Avenue, South
Seattle, Washington
8. Systems Engineering Laboratories, Inc.
P. O. Box 9148
Ft. Lauderdale, Florida
9. Scientific Data Systems
845 - 106th Street, N. E.
Bellevue, Washington
10. Transdata, Incorporated
c/o W. A. Brennan
208 Carlson Building
Bellevue, Washington
11. Electro-Mechanical Research
P. O. Box 3041
Sarasota, Florida

12. Redcor Corporation
7760 Deering Avenue
P. O. Box 1031
Canoga Park, California
13. International Business Machines Corporation
1200 Fifth Avenue
Seattle, Washington
14. Raytheon Computer
c/o The Thorson Company
1767 - 15th Avenue, South
Seattle, Washington
15. Electronic Engineering Company
c/o Blair Hirsh Company
4013 Leary Way, N. W.
Seattle, Washington

BOEING COMPANY
ENGINEERING TECHNOLOGY
LABORATORIES

STANDARD DIGITAL DATA
ACQUISITION SYSTEM

Bidders' Conference

August 2, 1966

Renton Inn
Renton, Washington

AGENDA

BIDDERS' BRIEFING CONFERENCE

August 2, 1966

- 9:00 a.m. Introduction by Harry Andreason of the Material Dept.
- 9:20 a.m. Briefing of cost proposal requirements by Vern Wezzel:
(Financial Department)
- 9:30 a.m. Refiew of the Data System Standardization Study by
Bill Harrison of the Engineering Technology Laboratories.
- 10:00 a.m. Summary of the Standard Digital Data Acquisition System
Specification by Dave Serres (Engineering Technology
Laboratories).
- 10:30 a.m. Coffee Break
- 11:00 a.m. Answers to pre-submitted questions by Jim Clement
(Engineering Technology Laboratories).
- 12:00 Noon Lunch
- 1:00 p.m. Open question and answer period* moderated by Jim Clement.

* Open question and answer period may commence prior to
Lunch if time permits.

COMPUTER APPLICATIONS PROGRAM

The vendor shall supply the application software for the Engine Test Data System, Section 3.11.2.2.5. However, the requirements, as stated, are incomplete. Six plots are defined in the specification. In reality, these are just six of thirteen possible plots that can be made. The software must permit the test engineer to select which six plots are made for each test. The complete requirements will be defined in the revised specification.

These revisions will be mailed to vendors within a week.

DIGITAL DATA ACQUISITION SYSTEM FOR FIRST HALF OF 1967

Paragraph 3.11.2.2 of the Standard Digital Data Acquisition System (Document 10-61469) defines the five initial system configurations on which the vendor shall submit proposals.

The following six systems represent a forecast of the type of orders that will be placed during the first six months of 1967. These requirements are not yet firmed up and will likely change before the orders are placed.

The intent of these system requirements is not to solicit proposals but rather to present to the vendors an idea of the Digital Data Acquisition System expansion program presently being planned by the Technology Laboratories.

6

3.11.2.2-6 4 X 9/9 X 9 Variable Wind Tunnel Data System

The 4 X 9/9 X 9 Variable Wind Tunnel Test Facility Data System shall be assembled from standard modules defined in this specification. The system shall meet all applicable requirements of this specification.

The system shall include:

- A. Dual Crossbar (2)
- B. Pressure Scanner Interface (6)
- C. Gated Amplifiers (10)
- (Contained in A. & B. above)
- D. Integrating ADC (1)
- E. Calibration Director (1)
- F. Control Director (1)
- G. Remote Control Station (1)
- H. Digital Multiplexer (1)
- I. Manual Controller (1)
- J. Recorder Control Unit (1)
- K. Digital Printer (1)
- L. Incremental Tape Recorder (1)
- M. Power Distribution Panel (1)
- N. Unipoint Ground Plate w/Relay (2)
- O. System Cabinets (as required)
- P. System Cables (as required)
- Q. System Documentation

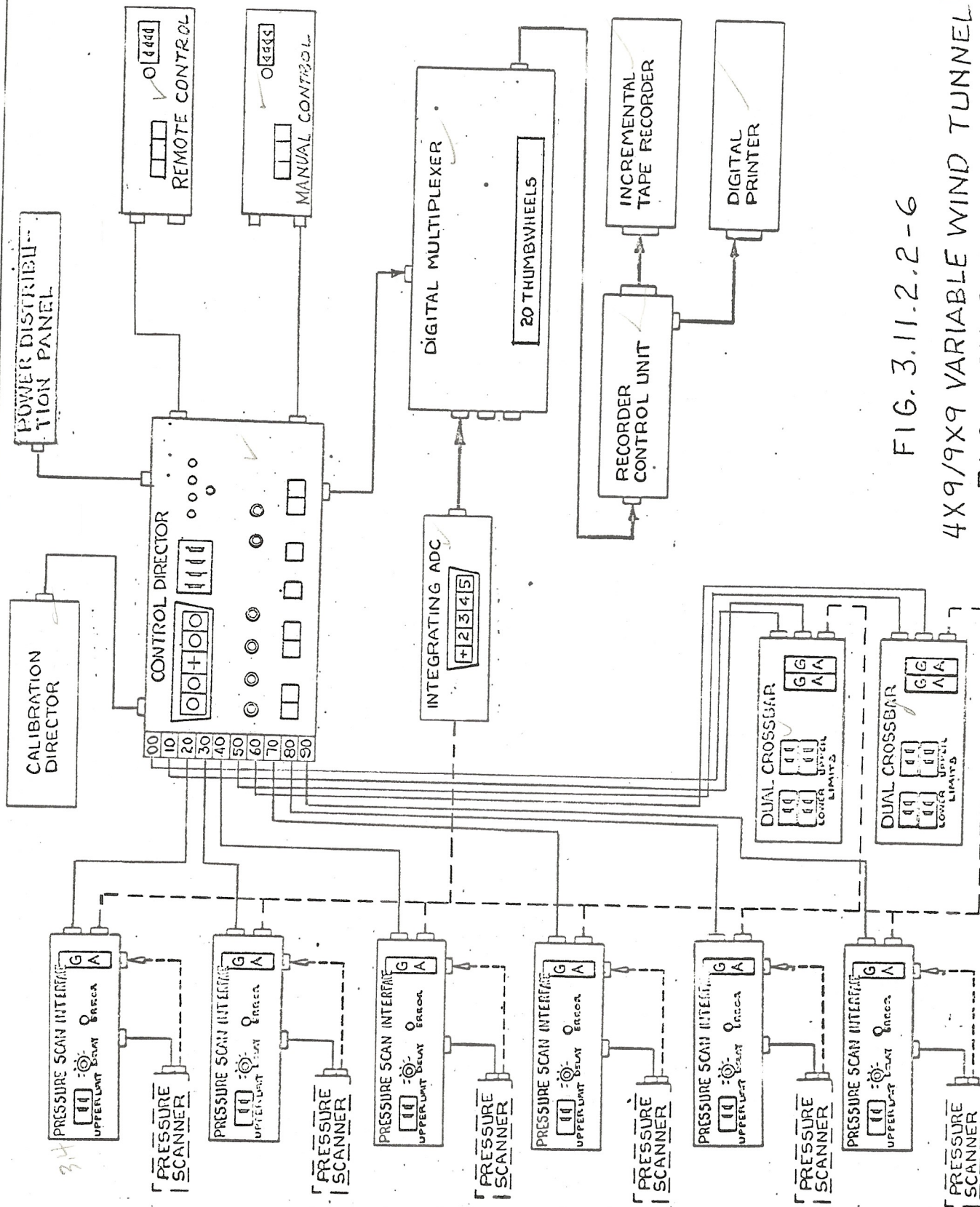
The system shall scan, digitize, and record (both on magnetic tape and on the printer), the entire 400 analog inputs in less than 20 seconds. Scanning rate of the pressure channels will be less than 10 channels per second.

THE BOEING COMPANY	CODE IDENT NO. 81205	SIZE A	
	SCALE		SH

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FIG. 3.11.2.2-6

4X9/9X9 VARIABLE WIND TUNNEL
FACILITY DATA SYSTEM



THE
BOEING
COMPANY

CODE
IDENT NO.
81205

SCALE

SIZE
A

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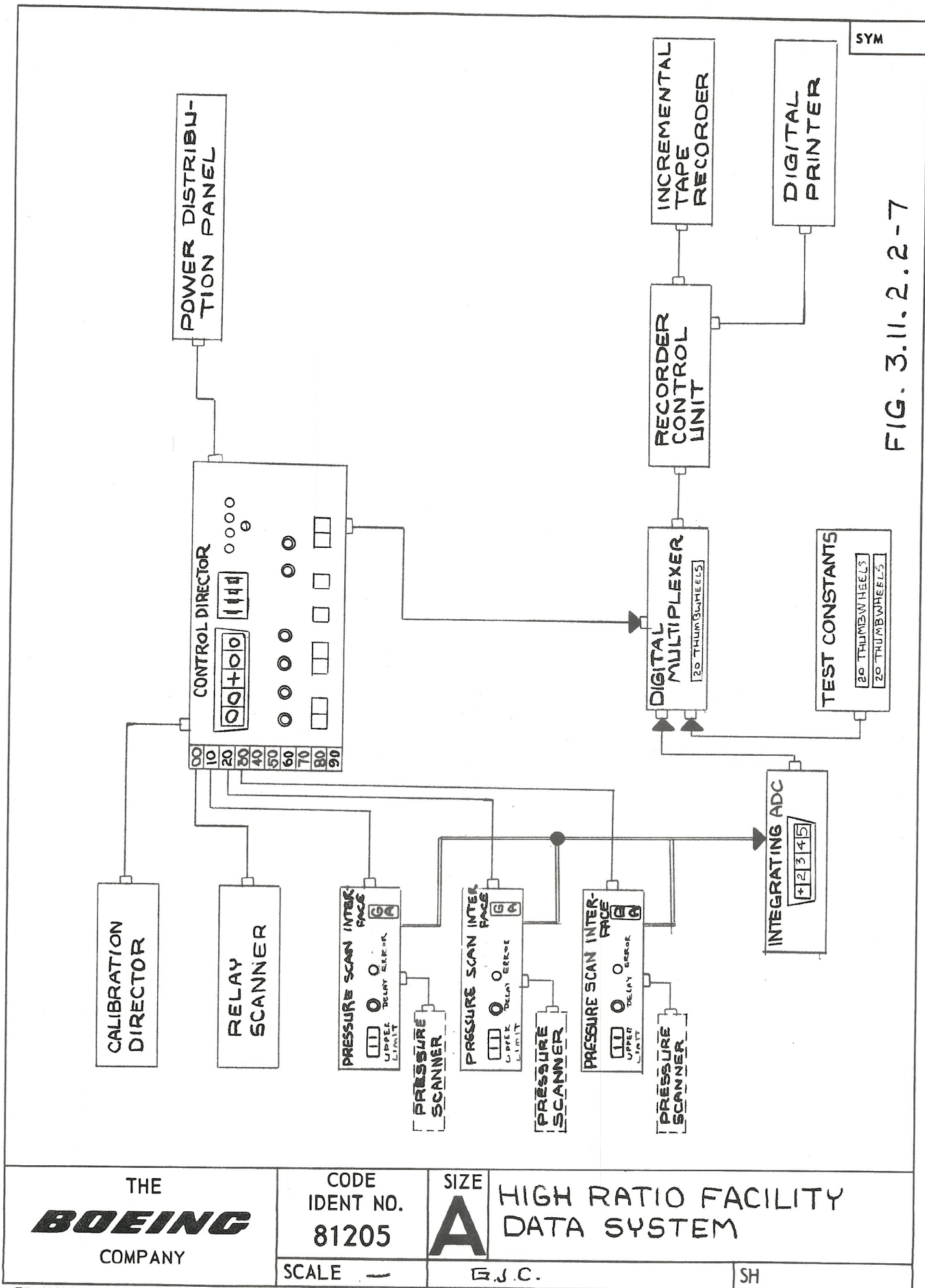
3.11.2.2-7 Hi Ratio Facility Data System

The Hi Ratio Facility Data System shall be assembled from standard modules defined in this specification. The system shall meet all applicable requirements of this specification. The system shall include:

- A. Relay Scanner (1)
- B. Pressure Scanner Interface (3)
- C. Gated Amplifier (4)
(Contained in A & B above)
- D. Calibration Director (1)
- E. Integrating ADC (1)
- F. Control Director (1)
- G. Digital Multiplexer (1)
- H. Test Constants Panel (1)
- I. Recorder Control Unit (1)
- J. Incremental Tape Recorder (1)
- K. Digital Printer (1)
- L. Power Dist. Panel (1)
- M. Unipoint Ground Plate (1)
- N. System Cabinets (as required)
- O. System Cables (as required)
- P. System Documentation

The system shall scan, digitize and record, all the inputs in less than 6 seconds.

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SYM

FIG. 3.11.2.2-7

THE
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HIGH RATIO FACILITY
DATA SYSTEM

SCALE —

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SH

3.11.2.2-8 Remote Engine Rig Data System

Requirements of the Remote Engine Rig Data System are identical to those of the Engine Test Rig Data System, Paragraph 3.11.2.2-5.

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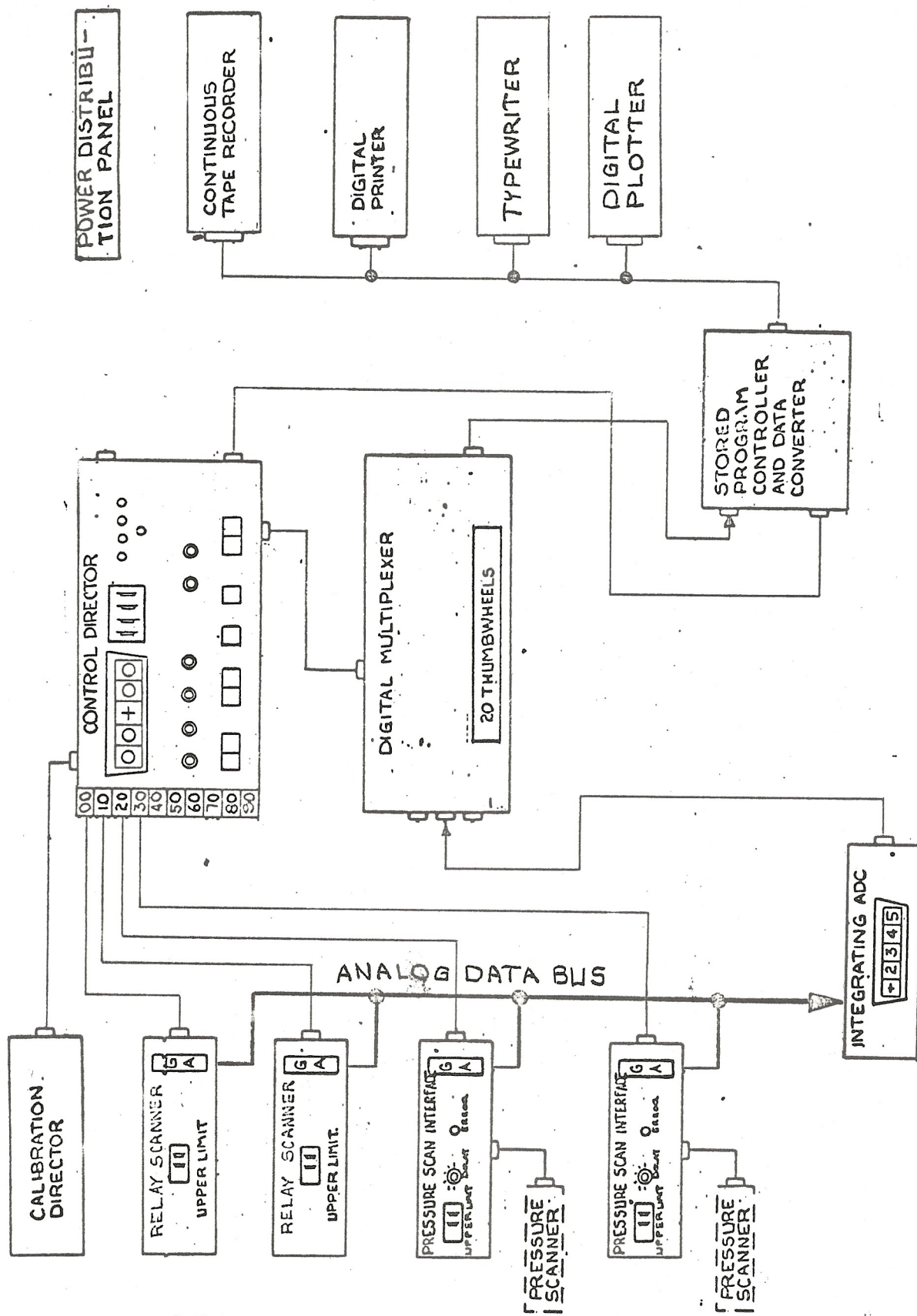


FIG. 3.11.2.2.-8
REMOTE ENGINE RIG DATA SYSTEM

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IDENT NO.
81205

SIZE
A

SCALE

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3.11.2.2-9 Compressor Facility Data System

The Compressor Facility Data System shall be assembled from standard modules defined in this specification. The system shall meet all applicable requirements of this specification. The system shall include:

- A. Relay Scanners (1)
- B. Pressure Scan Interfaces (3)
- C. Gated Amplifiers (4)
(Contained in A and B above)
- D. Calibration Director (1)
- E. Integrating ADC (1)
- F. Control Director (1)
- G. Digital Multiplexer (1)
- H. Recorder Control Unit (1)
- I. Digital Expander (2)
- J. Pulse Counters (4)
- K. Incremental Tape Recorder (1)
- L. Digital Printer (1)
- M. Power Distribution Panel (1)
- N. Unipoint Ground Plate (1)
- O. System Cabinets (as required)
- P. System Cables (as required)
- R. System Documentation

The system shall scan, digitize, and record (both on magnetic tape and on the printer) all of the inputs in less than 10 seconds.

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SIZE
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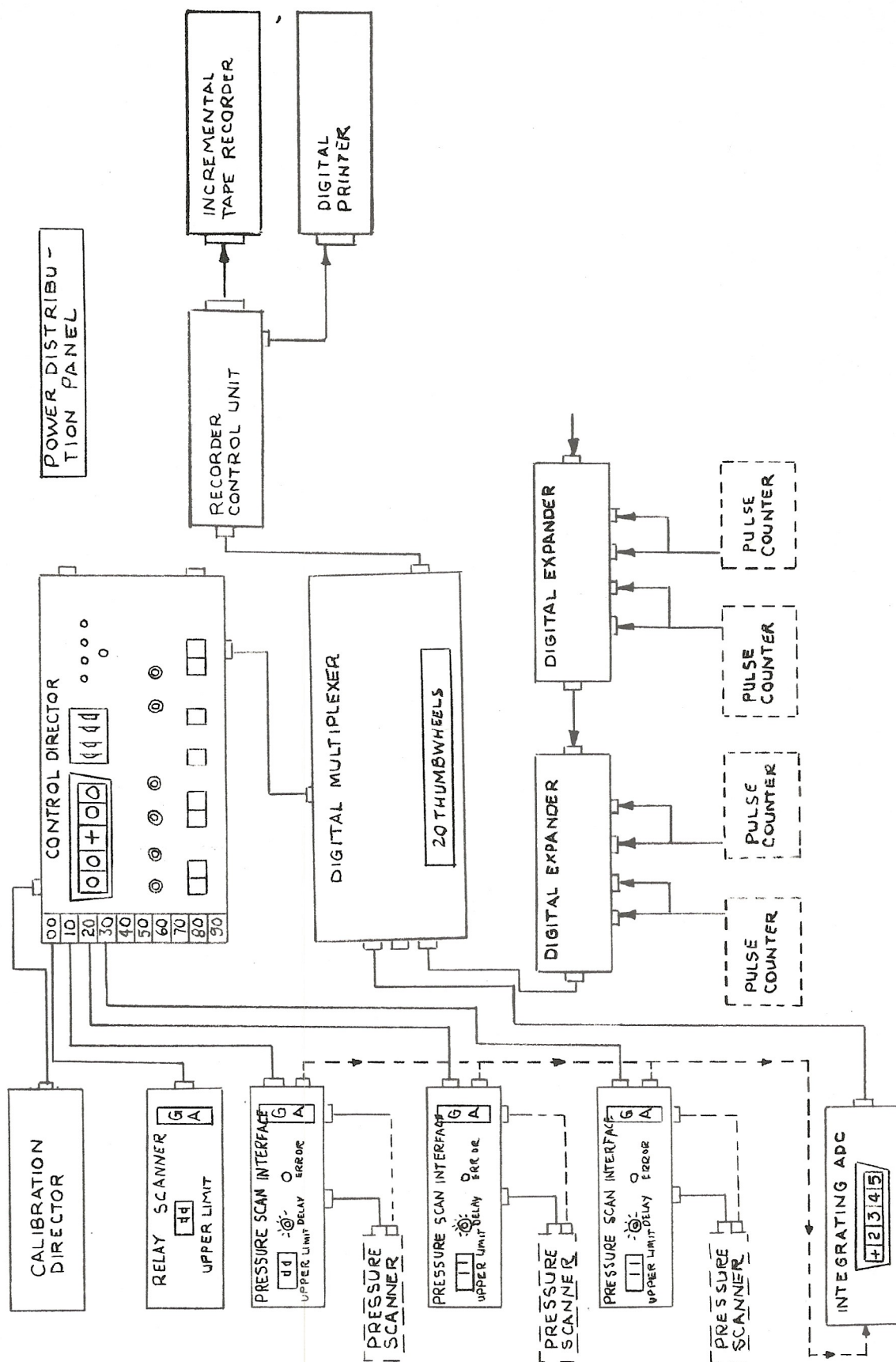


FIG. 3.11.2.2-9
COMPRESSOR TEST
FACILITY DATA SYSTEM

THE
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81205

SCALE

SIZE

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3.11.2.2-10 747 Static Test Data System (2 ea. req'd)

The 747 Static Test Data System shall be assembled from standard modules defined in this specification. The system shall meet all applicable requirements of this specification. The system shall include:

- A. Relay Scanner (8)
- B. Gated Amplifier (8)
- C. Calibration Director (1)
- D. High Speed ADC (1)
- E. Control Director (1)
- F. Digital Multiplexer (1)
- G. Stored Program Controller (1)
and Data Converter
- H. Record Control & Memory Unit (1)
- I. Continuous Tape Recorder (1)
- J. Printer (1)
- K. Digital Plotter (Cal Comp 565) (1)
- L. Power Dist. Panel (1)
- M. Unipoint Ground Plate (1)
- N. System Cabinets (as required)
- O. System Cables (as required)
- P. System Documents

The system will scan, digitize and store all 400 inputs in less than 0.4 seconds.

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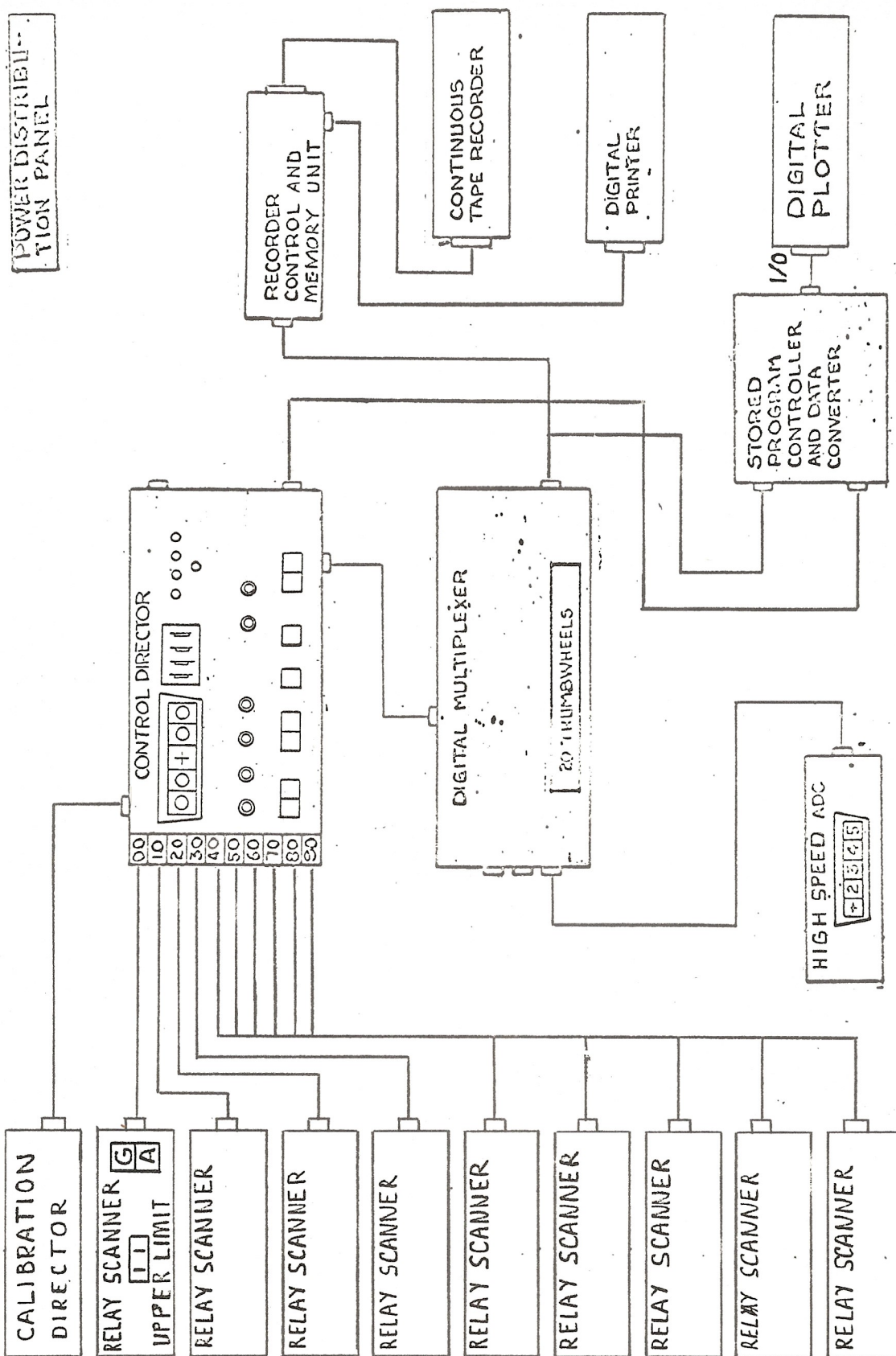


FIG. 3.11.2.2-10
747 STATIC TEST DATA SYSTEM
(2 EACH REQD.)

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CODE
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SCALE

SIZE

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3.11.2.2-11 V/Stol Static Test Data System

The V/Stol Static Test Data System shall be assembled from standard modules defined in this specification. The system shall meet all applicable requirements of this specification. The system shall include:

- A. High Speed Scanner Module (10)
- B. Gated Amplifiers (100)
(Contained in A above)
- C. Calibration Director (1)
- D. High Speed ADC (1)
- E. Control Director (1)
- F. Digital Multiplexer (1)
- G. Recorder Control & Memory Unit (1)
- H. Continuous Tape Recorder (1)
- I. Digital Printer (1)
- J. Power Distribution Panel (1)
- K. Unipoint Ground Plate (1)
- L. System Cabinets (as required)
- M. System Cables (as required)
- N. System Documentation

The system shall scan, digitize and store the 1000 channels in less than 84 milliseconds. Recording rate will be determined by the recording device.

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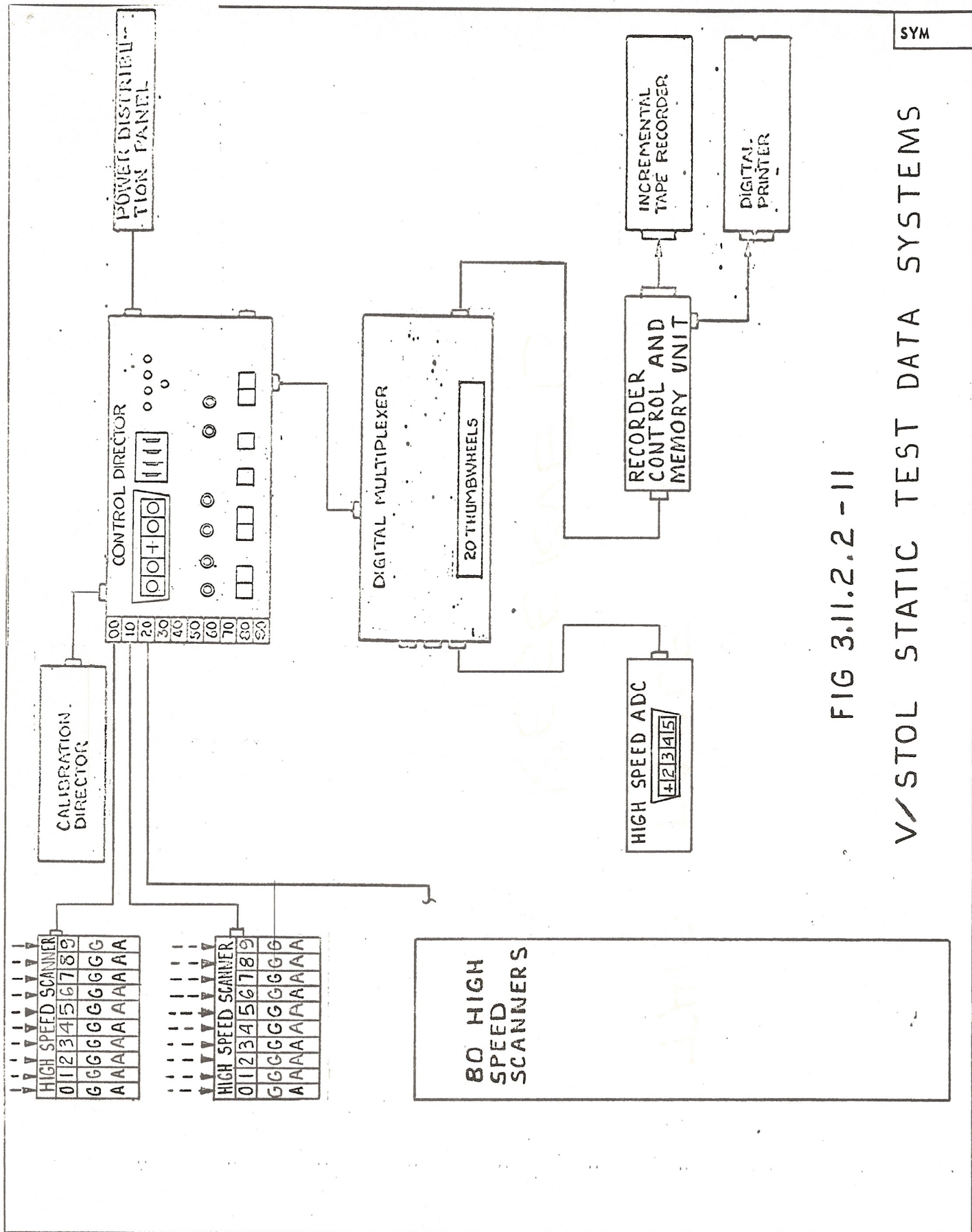
CODE
IDENT NO.
81205

SIZE

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SCALE

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SYM

FIG 3.11.2.2 - 11

V/STOL STATIC TEST DATA SYSTEMS

THE BOEING COMPANY	CODE IDENT NO. 81205	SIZE A	SH
	SCALE		

STANDARD DIGITAL DATA ACQUISITION SYSTEM
BIDDERS' CONFERENCE, AUGUST 2, 1966
PERSONNEL ATTENDING

Astrodata, Inc.

1. Mr. I. R. Compton, Local Representative

Beckman Instruments

1. Mr. O. J. Judd, Local Representative

Dynec, Hewlett-Packard Company

1. Mr. W. R. Saxon, Area Manager
2. Mr. W. Gross, Sales Manager (Dynec)
3. Mr. A. Oliverio, Sales Manager (Neely)
4. Mr. A. Falossi, Senior Applications Engineer
5. Mr. O. C. Morain, Field Engineer

Electronic Engineering Company

1. Mr. W. R. McQuiston, Vice President, Operations
2. Mr. B. Hirsh, Local Representative

Electro-Mechanical Research

1. Mr. R. Klessig,

International Business Machines Corporation

1. Mr. Park Thoreson, Account Representative
2. Mr. A. Deckert, Marketing Manager
3. Mr. J. H. Roos, Systems Engineer

Non-Linear Systems, Inc.

1. Mr. R. A. Loh, Lead Systems Engineer
2. Mr. H. R. Tragesser, Systems Manager
3. Mr. R. C. Wynne, Vice President

Radiation, Inc.

No-Bid

1. Mr. F. L. Schulte, Local Representative

Raytheon

1. Raytheon has entered "No Bid".

Redcor Corporation

1. Mr. R. Beddo

Scientific Data Systems

1. Mr. D. G. Jessup, Local Representative
2. Mr. A. J. Blackstone, Local Representative

Systems Engineering Laboratories

1. No Representatives present.

Systron-Donner Corporation

1. Mr. W. E. Roth, Local Representative

Transdata, Inc.

1. Mr. J. T. Sawyer, President
2. Mr. J. K. Flora, Vice President
3. Mr. W. A. Brennan, Local Representative

Vidar Corporation

1. Mr. R. N. Silvis, Sales Engineer
2. Mr. L. Robbins, Local Representative
3. Mr. D. P. Allen, Manager Digital Products
4. Mr. R. W. Skyles, Manager Systems Engineering

The Boeing Company

- | | |
|-------------------|--------|
| 1. A. E. Davis | 6-7000 |
| 2. W. B. Harrison | 6-7000 |
| 3. D. L. Serres | 6-7000 |
| 4. H. J. Clement | 6-7000 |
| 5. G. Shortle | 6-9700 |
| 6. P. E. Burris | 6-7000 |
| 7. C. E. Meyer | 6-9700 |
| 8. K. Beattie | 6-7000 |
| 9. V. Wessels | 6-9340 |
| 10. H. Andreason | 6-4400 |

NON-BIDDING VENDORS ATTENDING

Ampex Corporation

1. H. H. Clepper
2. L. J. Hopkins

Consolidated Electrodynamics Corporation

1. L. Pensiero