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Title

BEVATRON 20 MeV INJECTOR COPPER TAPE SOLENOID 52-MK2 4 INCH DIAMETER
SOLENOID DRWG. NO. 12P1486-A3 - MAGNETIC FIELD MEASUREMENTS

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ENGINEERING NOTE

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PAGE
1 of 3

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Donald H. Nelson

DEPARTMENT
Electronics Engineering

LOCATION
B25A-124

DATE
July 21, 1981

PROGRAM - PROJECT - JOB

TITLE Bevatron 20 MeV Injector Copper Tape Solenoid 52-MK2 4 Inch Diameter Solenoid
Drwg. No. 12P1486-A3 - Magnetic Field Measurements

On June 9, 1981 at the request of Emery Zajec, Ed Cyr set up hardware for measuring the axial component of magnetic induction along the axis of the 4 inch diameter solenoid 52MK2. ($B_z\{r = 0, z\}$ vs z)

Figure 1 shows the test equipment used and Table I lists the specific equipment.

Emery Zajec used the test equipment to measure the magnet at three current levels.

Figure 2 displays $B_z(r = 0, z)$ vs z for the three magnet currents.

- Distribution:
- M.I. Green
 - E.C. Hartwig/L.J. Wagner/W.H. Deuser
 - R.M. Richter
 - E. Zajec

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SUBJECT

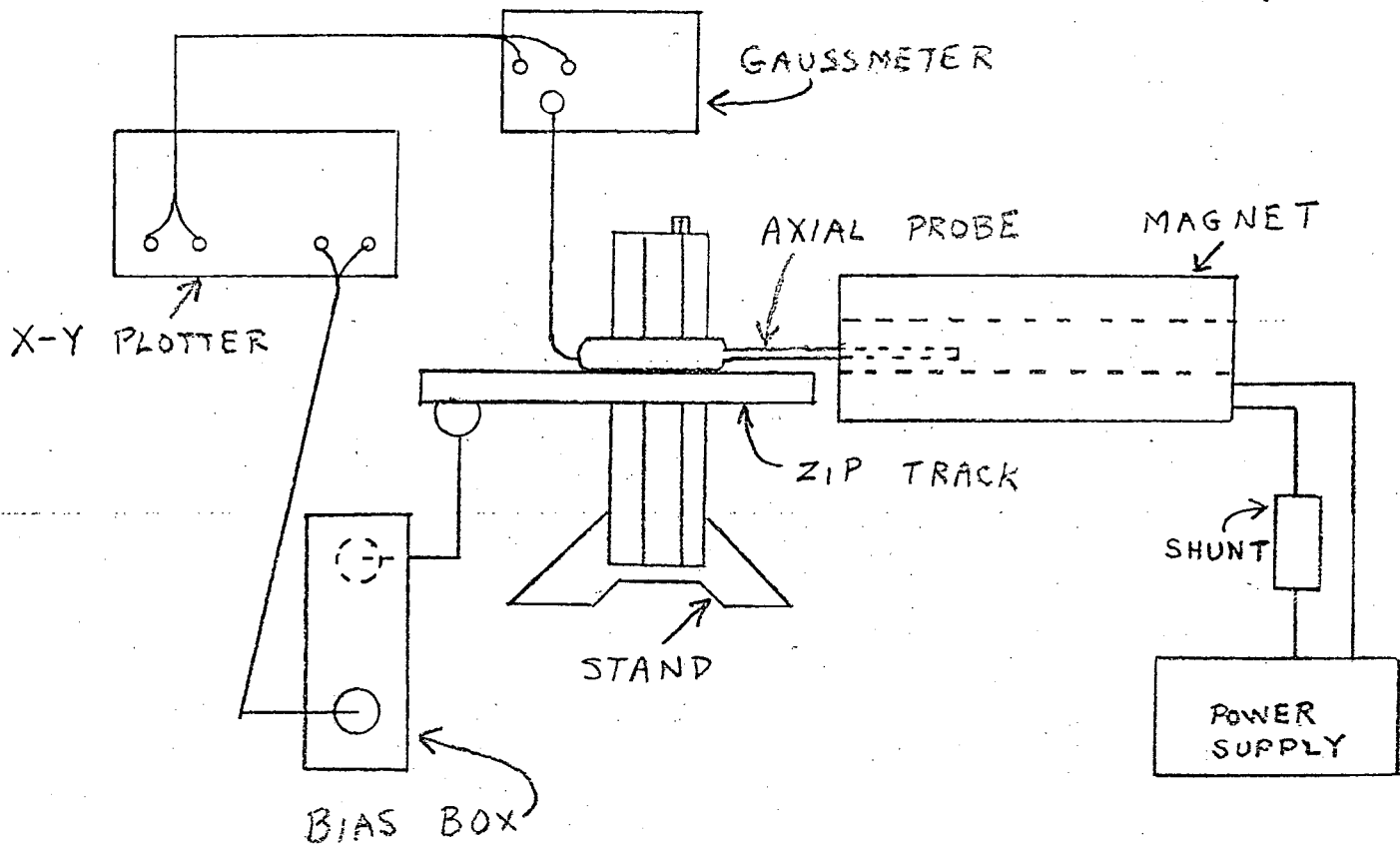
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ED CYRDATE
6/10/81

FIGURE 1 TEST EQUIPMENT

| <u>Equipment</u> | <u>Description</u> | <u>Identification</u> |
|--------------------------|------------------------------------|-----------------------|
| Magnet (Under Test) | 4 Inch Dia. x 10 In. Long Solenoid | S2MK2 |
| Magnet Power Supply | Dual 49 kW | 8Y3605 |
| Current Monitoring Shunt | 800 A/1000 mV | — |
| Gaussmeter | F.W. Bell Model 620 | AEC No. 501586 |
| Probe | F.W. Bell (Axial) Model HAB4-2508 | S/N 141861 |
| xy Plotter | Moseley Model 7000AR | AEC No. 159260 |
| Zip Track | MME 16 Inch Linear Positioner | — |
| Bias Box | Drawing No. 5V8032 | — |

TABLE I TEST EQUIPMENT

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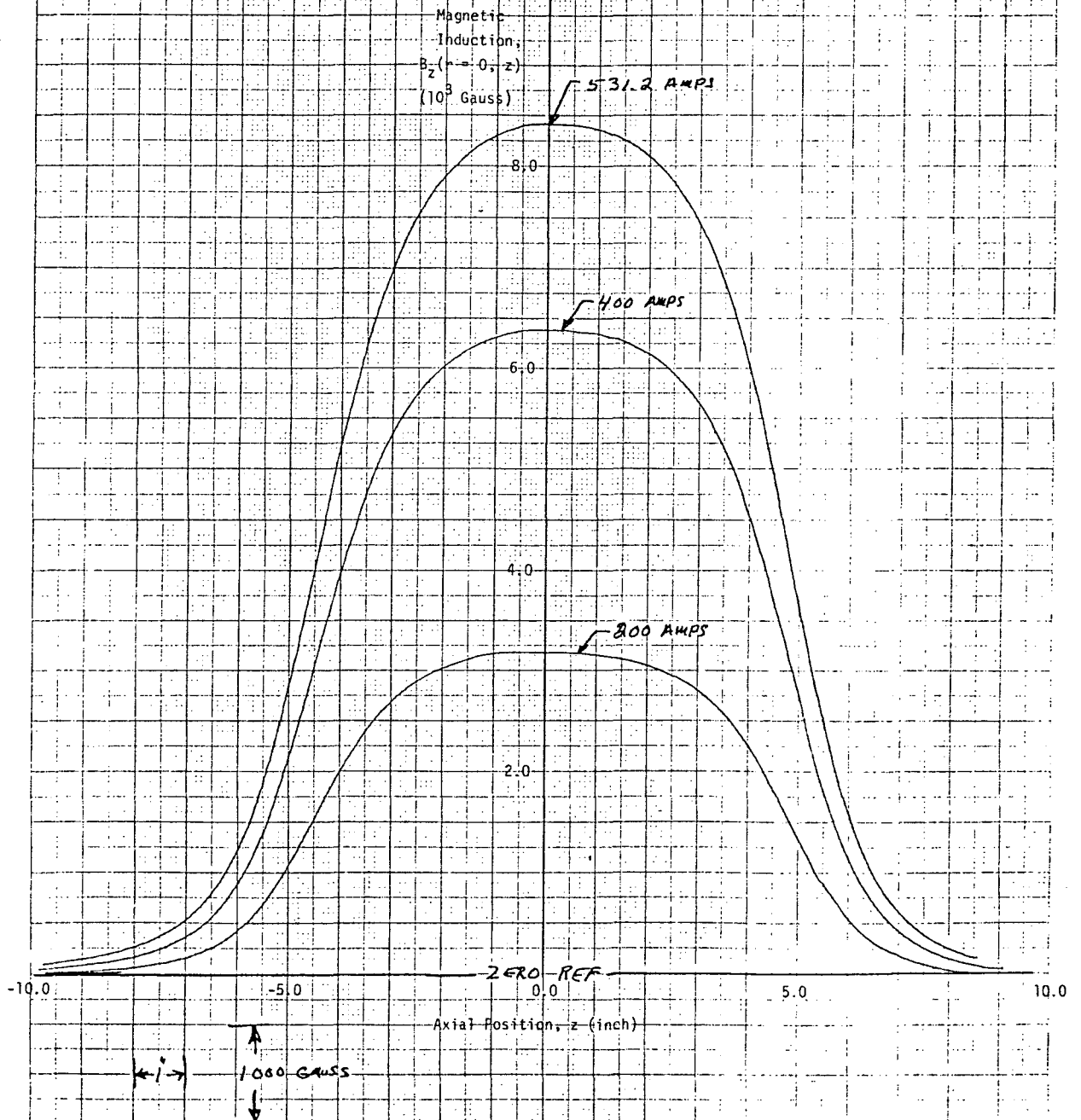
DATE July 21, 1981

FIGURE 2. Axial Profiles of Magnetic Induction

6-9-81

20 MEV INJECTOR
COPPER TAPE SOLENOID
S2-MK-2

$R = 1.05 \times 10^{-3} \Omega$ (ROOM TEMP)
10" x 4" x 10"
12P1486-A-3



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