

TITLE: Probit II
AUTHOR: Richard A. Lamm
Lederle Laboratories
Pearl River, New York
DATE: May 25, 1959

ABSTRACT:

DISCLAIMER:

"The authors of this program material, the POOL organization and Royal McBee believe this program to be correct; however, they bear no responsibility, financial or otherwise, for errors resulting from its use. This program is distributed only to individual and installation members of POOL. Further distribution of this manual and accompanying tapes for use by non-members is prohibited."

1. Title: Probit II
Author: Richard A. Lamm
Date: May 25, 1959
Installation: Lederle Laboratories, American Cyanamid Co., Pearl River, N.Y.

2. Purpose:

The program performs the test for parallelism (Regression Analysis) and computes the potency of each compound relative to the first (Standard). The 95% confidence limits of the relative potencies are also computed.

3. Restrictions:

a. At most twenty (20) test compounds may be compared to a standard (Total = 21 assays) in a single run. In order to expand this number, all addresses involving track 62 must be changed to allow for 3A consecutive words of memory where A is the total number of assays. The locations requiring change are:

| <u>Location (Lo+---)</u> | <u>Present Order</u> | <u>Change To</u> |
|--------------------------|----------------------|------------------------|
| 0058 | xZ6200 | xZ(Lo _a) |
| 0301 | xB6201 | xB(Lo _a +1) |
| 0306 | xB6200 | xB(Lo _a) |
| 0316 | xD6202 | xD(Lo _a +2) |

- b. This program uses the Probit Analysis program and all its required subroutines as subroutines. The Probit Analysis program, hereafter referred to as Probit I, may be stored in any convenient location.
- c. N.B. The last step of Probit II, xZ (Lo of Probit I) is not on tape. To load this instruction, use the procedure of 5.c.1.
- d. Note that all assays in a set must have the same q_n .

4. Method:

The method outlined in Chapter 5 of D. J. Finney: "Probit Analysis," Cambridge University Press, is used in the program. In particular, it uses formulae 5.1, 5.5, 5.7 and Table 13.

5. Coding Information:

a. Storage.

1. Program: 4 tracks plus 53 sectors
2. Intermediate and final results: 6307-6317, 6323-6330 and 3A sectors of track 6200. (See 3a. above.)

b. Program Start. Lo + 0445

c. Input.

1. Program: Load with Breakpoint 32 up. When tape has finished loading (.00000000'), depress "Manual Input" on the flexowriter and press "Start Compute." Type xZ(Lo of Probit I) and press "Start Compute." Program is then loaded.
2. Data: The tape is prepared with the format used in Probit I with the addition of each compound designation followed by a conditional stop at the end of each set of assays.

- d. Output. See example
- e. Program Stops.
 - Lo + 0221 - Transfer Control is up. Press Start to complete the program.
 - Lo + 0444 - Calculations completed. If additional sets of data are to be calculated, a Start will begin the next set.
- f. Transfer Control.
 - Down - Complete output is given without a stop. The format is as shown in the example.
 - Up - The program stops after printing the regression analysis. To continue, press "Start." This control and the Breakpoint 16 of Probit I allow flexibility in output format.
- g. Format.
 - Set CR at 1 and Tabs at 11, 21, 31, and 41 with no automatic carriage return in this range.

Compound Standard

0+293716'4'10'6'0'-0000000' 4
 0+103720'675'225'75'25'-0000000' 4
 0+063724'16'16'16'16'-0000000' 4
 0+073728'8'7'1'0'-0000000' 4
 .9848633
 1.4106445
 1.5913086
 1.6298828
 1.6337891
 cycles 6. slope 1.6337891 intercept -4.395788

\bar{x} 2.3768265 \bar{y} -.5125548

Σnw 26.02988 Σnwx 61.86850 Σnwy -13.34174

[xx] 5.0162 [xy] 8.1978 [yy] 16.0580

V(m) .021743 d.f. 2. Chi-square 2.6647

95% confidence limits (non-sig. Chi-sq.)

log ED 50 lower upper
 2.6905480 2.4015357 2.9795604

ED 50 490.39 252.08 954.02

Compound Test 1

0+293716'4'10'6'0'-0000000' 4
 0+103720'675'225'75'25'-0000000' 4
 0+063724'16'16'16'16'-0000000' 4
 0+073728'16'9'4'1'-0000000' 4
 1.6416016
 2.1791992
 2.3422852
 2.3593750
 2.3603516
 cycles 6. slope 2.3603516 intercept -5.100763

| | | |
|--|--------------|--------------|
| | x (Bar) | y(Bar) |
| | 2.1515868 | -.0222620 |
| Σnw | Σnwx | Σnwy |
| 24.857569 | 53.48322 | -.55338 |
| [xx] | [xy] | [yy] |
| 4.4687 | 10.5489 | 27.1113 |
| V(m) | d.f. | Chi-square |
| .007225 | 2. | 2.2123 |
| 95% confidence limits (non-sig. Chi-sq.) | | |
| log ED 50 | lower | upper |
| 2.1610185 | 1.9944256 | 2.3276113 |
| ED 50 | | |
| 144.88 | 98.73 | 212.62 |

Compound Test 2

0+293716'4'9'6'1'-0000000' 4

0+093720'405'135'45'15'-0000000' 4

0+063724'16'16'16'16'-0000000' 4

0+073728'16'12'5'3'-0000000' 4

1.5102539

1.9306641

2.0336914

2.0439453

2.0444336

| | | |
|--------|-----------|-----------|
| cycles | slope | intercept |
| 6. | 2.0444336 | -3.585325 |

| | | |
|--|--------------|--------------|
| | \bar{x} | \bar{y} |
| | 1.7994952 | .0936235 |
| Σnw | Σnwx | Σnwy |
| 27.36358 | 49.24063 | 2.56187 |
| [xx] | [xy] | [yy] |
| 5.4893 | 11.2251 | 25.1700 |
| V(m) | d.f. | Chi-square |
| .008835 | 2. | 2.2213 |
| 95% confidence limits (non-sig. Chi-sq.) | | |
| log ED 50 | lower | upper |
| 1.7537008 | 1.5694735 | 1.9379280 |

ED 50
56.715 37.108 86.68

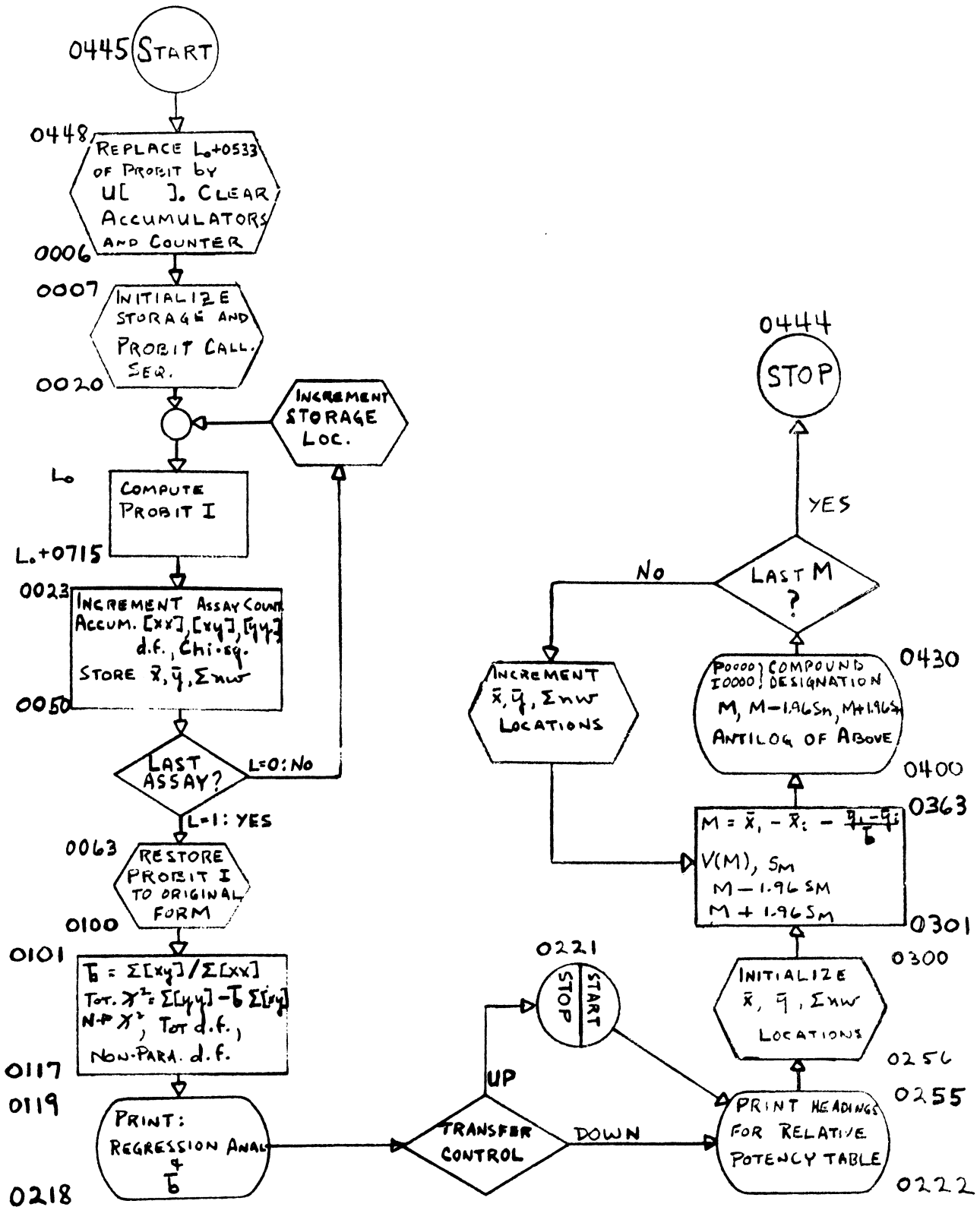
REGRESSION ANALYSIS

| Effect | d.f. | Chi-sq. |
|-----------|------|---------|
| Non-para. | 2. | 1.2507 |
| Res. Het. | 6. | 7.0981 |
| Total | 8. | 8.3489 |

$$\bar{b} = 2.0015734$$

Log-Potency and Potency rel. to Standard ' 1
95% Confidence Limits

| Compound | M-Potency | lower | upper |
|------------|-----------|----------|-----------|
| Test 1 ' 1 | .4701935 | .1886693 | .7517177 |
| | 2.9525 | 1.5441 | 5.646 |
| Test 2 ' 1 | .8801822 | .6013382 | 1.1590263 |
| | 7.589 | 3.9933 | 14.422 |





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| JOB NO. | PROGRAM NO. <i>F6-123</i> LED-33 | PROGRAM PREPARED BY: R.A. LAMM | PROGRAM CHECKED BY: |
| PROBLEM: PROBIT II : PARALLELISM TEST AND RELATIVE POTENCIES | | | DATE 5/25/59 |
| | | | TRACK 00 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|-------------------------------------|-------------|----------------------------|-------------------------------------|-----------------------------------|-----------------------------------|
| | | | OPERATION | ADDRESS | | | |
| | | <input checked="" type="checkbox"/> | | | | | |
| | | 00,0,0 | x | C6325 | | | |
| | | 0,1 | x | C6325 | | | $\Sigma[xx] @ f_n+10$ |
| | | 0,2 | x | C6326 | | | $\Sigma[xy]$ " |
| | | 0,3 | x | C6327 | <input checked="" type="checkbox"/> | | $\Sigma[yy]$ " |
| | | 0,4 | x | C6328 | | | $\Sigma d.f. @ 29$ |
| | | 0,5 | x | C6329 | | | $\Sigma(\text{Chi-sq.}) @ f_n+10$ |
| | | 0,6 | x | C6330 | | | ASSAY COUNTER @ 29 |
| | | 0,7 | B[| | <input checked="" type="checkbox"/> | L ₀ OF PROBIT (LED 20) | |
| | | 0,8 | Y | 0022 | | | |
| | | 0,9 | Y | 0062 | | | |
| | | 1,0 | A | 0059 | | x20533 | |
| | | 1,1 | Y | 0021 | <input checked="" type="checkbox"/> | | |
| | | 1,2 | Y | 0100 | | | |
| | | 1,3 | A | 0060 | | x20150 | → L ₀ +0719 |
| | | 1,4 | Y | 0051 | | | |
| | | 1,5 | B | 0058 | <input checked="" type="checkbox"/> | x26200 | |
| | | 1,6 | Y | 0046 | | | |
| | | 1,7 | A | 0061 | | 1 @ 29 | |
| | | 1,8 | Y | 0048 | | | |
| | | 1,9 | A | 0061 | <input checked="" type="checkbox"/> | 1 @ 29 | |
| | | 2,0 | Y | 0050 | | | |
| | | 2,1 | R | [L ₀ +0533] | | | } To PROBIT I PROGRAM (LED 20) |
| | | 2,2 | U | [L ₀ of Probit] | | | |
| | | 2,3 | x | B6330 | <input checked="" type="checkbox"/> | | |
| | | 2,4 | A | 0061 | | 1 @ 29 | |
| | | 2,5 | x | C6330 | | ASSAY COUNTER | |
| | | 2,6 | x | B6355 | | [xx] @ f _n +8 | |
| | | 2,7 | M | 0439 | <input checked="" type="checkbox"/> | 1 @ 2 | |
| | | 2,8 | x | A6325 | | | |
| | | 2,9 | x | C6325 | | $\Sigma[xx] @ f_n+10$ | |
| | | 3,0 | x | B6356 | | | |
| | | 3,1 | M | 0439 | <input checked="" type="checkbox"/> | 1 @ 2 | |

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| PROBLEM: PROBIT II | | | DATE 5-25-59 |
| | | | TRACK 00 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|----------|-------------|----------------|------|---------------------|---------------------|
| | | | OPERATION | ADDRESS | | | |
| | | 0032 | x | A6326 | | | |
| | | 33 | x | C6326 | | | |
| | | 34 | x | B6357 | | | |
| | | 35 | | M0439 | ⊗ | 1@2 | |
| | | 36 | x | A6327 | | | |
| | | 37 | x | C6327 | | | |
| | | 38 | x | B6349 | | | |
| | | 39 | | M0439 | ⊗ | 1@2 | |
| | | 40 | x | A6329 | | | |
| | | 41 | x | C6329 | | | |
| | | 42 | x | B6348 | | | |
| | | 43 | x | A6328 | ⊗ | | |
| | | 44 | x | C6328 | | Σdf.@29 | |
| | | 45 | x | B6353 | | ̄ @4 | STORE INDIVIDUAL ̄ |
| | | 46 | | C[6200+3i] | | | |
| | | 47 | x | B6354 | ⊗ | ̄ @4 | |
| | | 48 | | C[6201+3i] | | | " " ̄ |
| | | 49 | x | B6358 | | Σnw @fn | |
| | | 50 | | C[6202+3i] | | | " " Σnw |
| | | 51 | | BI] | ⊗ | | Lo+0719 of PROBIT I |
| | | 52 | | S0061 | | 1@29 | |
| | | 53 | | T0055 | | | |
| | | 54 | | U0063 | | | |
| | | 55 | | B0046 | ⊗ | | |
| | | 56 | | A0221 | | 3@29 | |
| | | 57 | | U0016 | | | |
| | | 58 | x | Z6200 | | | |
| | | 59 | x | Z0533 | ⊗ | | |
| | | 60 | x | Z0150 | | | |
| | | 61 | x | Z0001 | | | |
| | | 62 | | T [Lo of Prog] | | | |
| | | 63 | | B0062 | ⊗ | | |

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PROBLEM: PROBIT II TRACK 01

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|----------|-------------|----------|------|---------------------|---------------------------|
| | | | OPERATION | ADDRESS | | | |
| | | 0100 | C | [4+0533] | | | |
| | | 01 | x | B6326 | | | |
| | | 02 | M | 0441 | | 1@4 | |
| | | 03 | x | D6325 | ☒ | | |
| | | 04 | x | H6310 | | | B@4 |
| | | 05 | x | M6326 | | | |
| | | 06 | D | 0441 | | 1@4 | |
| | | 07 | x | C6316 | ☒ | | |
| | | 08 | x | B6327 | | | |
| | | 09 | x | S6316 | | | |
| | | 10 | x | H6316 | | | TOTAL Chi-sq. @ 9n+10 |
| | | 11 | x | S6329 | ☒ | | |
| | | 12 | x | C6312 | | | |
| | | 13 | x | B6330 | | | |
| | | 14 | S | 0061 | | 1@29 | |
| | | 15 | x | H6311 | ☒ | | d.f. - NON PARALLELISM |
| | | 16 | x | A6328 | | | |
| | | 17 | x | C6315 | | | TOTAL d.f. @ 29 |
| | | 18 | U | 0119 | | | |
| | | 19 | x | R1900 | ☒ | | } ALPHANUMERIC (19.0) |
| | | 20 | x | U1900 | | | |
| 0000017 | | 21 | 2020 | 1810 | | | |
| | | 22 | 301F | 4F5J | | | |
| | | 23 | 1F4F | 7F7F | ☒ | | "REGRESSION ANALYSIS" |
| | | 24 | 2246 | 3206 | | | |
| | | 25 | 7232 | 720J | | | |
| | | 26 | 127F | 227F | | | |
| | | 27 | 2020 | 4F08 | ☒ | | "Effect" "d.f." "Chi-sq." |
| | | 28 | 5454 | 4F6F | | | |
| | | 29 | 5F30 | 0606 | | | |
| | | 30 | 0606 | 2F2A | | | |
| | | 31 | 542A | 3010 | ☒ | | |

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| PROBLEM: PROBIT II | | | | TRACK 01 | |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|-------------------------------------|-------------|---------|-------------------------------------|---------------------|-------------------------|
| | | | OPERATION | ADDRESS | | | |
| | | <input checked="" type="checkbox"/> | | | | | |
| | | 0132 | 6F08 | 6222 | | | |
| | | 33 | 0A7F | 742A | | | |
| | | 34 | 2020 | 1032 | | | |
| | | 35 | 0846 | 320A | <input checked="" type="checkbox"/> | | |
| | | 36 | 4272 | 1F72 | | | |
| | | 37 | 2A18 | 30VQ | | | |
| | | 38 | B005 | 1 | | L+0719 of PROBIT I | |
| | | 39 | S006 | 1 | <input checked="" type="checkbox"/> | 1@29 | |
| | | 40 | Y014 | 1 | | | |
| | | 41 | B[] | | | 9n@29 | L+0718 of PROBIT I |
| | | 42 | A040 | 1 | | xZ0110 | |
| | | 43 | Y015 | 0 | <input checked="" type="checkbox"/> | | |
| | | 44 | Y016 | 2 | | | |
| | | 45 | Y020 | 8 | | | |
| | | 46 | xB63 | 11 | | | |
| | | 47 | xR13 | 05 | <input checked="" type="checkbox"/> | | } DATA OUTPUT # 2 |
| | | 48 | xU13 | 00 | | | |
| | | 49 | xZ01 | 29 | | | |
| | | 50 | Z[] | | | | |
| | | 51 | xR19 | 00 | <input checked="" type="checkbox"/> | | } ALPHA NUMERIC 19.0 |
| | | 52 | xU19 | 00 | | | |
| 00000005 | | 53 | 2018 | 101F | | | |
| | | 54 | 084F | 7F2A | | | |
| | | 55 | 0610 | 6208 | <input checked="" type="checkbox"/> | | |
| | | 56 | 4F5F | 2A18 | | | |
| | | 57 | 30VQ | 0000 | | | |
| | | 58 | xB63 | 28 | | | |
| | | 59 | xR13 | 05 | <input checked="" type="checkbox"/> | | } DATA OUTPUT # 2 |
| | | 60 | xU13 | 00 | | | |
| | | 61 | xZ01 | 29 | | | |
| | | 62 | Z[] | | | | |
| | | 63 | xR19 | 00 | <input checked="" type="checkbox"/> | | |



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| PROBLEM: PROBIT II | | | DATE 5-25-59 |
| | | | TRACK 02 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|-------------------------------------|-------------|---------|-------------------------------------|---------------------|---------------------------|
| | | | OPERATION | ADDRESS | | | |
| | | | | | | | |
| | | <input checked="" type="checkbox"/> | | | | | |
| | | 02010 | xU | 1900 | | | |
| 0000003 | | 01 | 20 | 18105F | | | |
| | | 02 | 08 | 465F72 | | | |
| | | 03 | 0J | 3018VQ | <input checked="" type="checkbox"/> | | |
| | | 04 | xB | 6315 | | | |
| | | 05 | xR | 1305 | | | } DATA OUTPUT #2 |
| | | 06 | xU | 1300 | | | |
| | | 07 | xZ | 0129 | <input checked="" type="checkbox"/> | | |
| | | 08 | ZC | | | | |
| | | 09 | xR | 1900 | | | } ALPHA NUMERIC |
| | | 10 | xU | 1900 | | | |
| 0000004 | | 11 | 20 | 18100A | <input checked="" type="checkbox"/> | | |
| | | 12 | 08 | 200F06 | | | |
| | | 13 | 10 | 160806 | | | |
| | | 14 | 18 | VQ0000 | | | |
| | | 15 | xB | 6310 | <input checked="" type="checkbox"/> | | |
| | | 16 | xR | 1305 | | | } DATA OUTPUT #2 |
| | | 17 | xU | 1300 | | | |
| | | 18 | xZ | 0104 | | | |
| | | 19 | B | 0061 | <input checked="" type="checkbox"/> | 1@29 | POSITIVE NUMBER |
| | | 20 | 800T | 0222 | | | |
| | | 21 | xZ | 0003 | | | |
| | | 22 | xR | 1900 | | | } ALPHA-NUMERIC (19.0) |
| | | 23 | xU | 1900 | <input checked="" type="checkbox"/> | | |
| 0000011 | | 24 | 20 | 201810 | | | |
| | | 25 | 0J | 08465J | | | |
| | | 26 | 0A | 104208 | | | |
| | | 27 | 46 | 5F4F32 | <input checked="" type="checkbox"/> | | |
| | | 28 | 6F | 120672 | | | |
| | | 29 | 32 | 2F0610 | | | |
| | | 30 | 42 | 08465F | | | |
| | | 31 | 4F | 326F12 | <input checked="" type="checkbox"/> | | |

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| PROBLEM: PROBIT II. | | | | TRACK 02 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|----------|-------------|----------------------|------|---------------------|---|
| | | | OPERATION | ADDRESS | | | |
| | | 02 | 3 2 | 061F4F0J | | | |
| | | | 3 3 | 2A065F46 | | | |
| | | | 3 4 | 06VQ0000 | | | |
| | | | 3 5 | X P 0000 | × | | } PRINT STANDARD DESIGN } ATION FROM TAPE } ALPHA NUMERIC } (19.0) |
| | | | 3 6 | X I 0000 | | | |
| | | | 3 7 | X R 1900 | | | |
| | | | 3 8 | X U 1900 | | | |
| 00000017 | | | 3 9 | 2030304J | × | | |
| | | | 4 0 | 2J102J06 | | | |
| | | | 4 1 | 6F084632 | | | |
| | | | 4 2 | 54222F4F | | | |
| | | | 4 3 | 326F4F06 | × | | |
| | | | 4 4 | 100J0822 | | | |
| | | | 4 5 | 3F225F7F | | | |
| | | | 4 6 | 20106F08 | | | |
| | | | 4 7 | 463F4246 | × | | |
| | | | 4 8 | 52322F30 | | | |
| | | | 4 9 | 103F080A | | | |
| | | | 5 0 | 104208 8A | | | |
| | | | 5 1 | 5F4F326F | × | | |
| | | | 5 2 | 12300J46 | | | |
| | | | 5 3 | 7J4F1F30 | | | |
| | | | 5 4 | 5242424F | | | |
| | | | 5 5 | 1F18VQ00 | × | | |
| | | | 5 6 | B0046 | | | L (LAST X _i) |
| | | | 5 7 | Y0435 | | | |
| | | | 5 8 | B0058 | | | |
| | | | 5 9 | A0221 | × | 3@29 | |
| | | | 6 0 | Y0307 | | | |
| | | | 6 1 | A0061 | | 1@29 | |
| | | | 6 2 | Y0302 | | | |
| | | | 6 3 | A0061 | × | 1@29 | |

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| PROBLEM: PROBIT II | | | DATE 5-25-59 |
| | | | TRACK 03 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|-------------------------------------|-------------|---------|-------------------------------------|---|------------------------------|
| | | | OPERATION | ADDRESS | | | |
| | | <input checked="" type="checkbox"/> | | | | | |
| | | 03,0 0 | Y | 0319 | | | |
| | | 0 1 | x B | 6201 | | STANDARD @4 | |
| | | 0 2 | S | [] | | 4i @4 | |
| | | 0 3 | M | 0441 | <input checked="" type="checkbox"/> | 1 @4 | |
| | | 0 4 | x D | 6310 | | 5 @4 | |
| | | 0 5 | x C | 6313 | | | |
| | | 0 6 | x B | 6200 | | STANDARD @4 | |
| | | 0 7 | S | [] | <input checked="" type="checkbox"/> | xi @4 | |
| | | 0 8 | x S | 6313 | | | |
| | | 0 9 | x C | 6307 | | Mi @4 | |
| | | 1 0 | x B | 6313 | | | |
| | | 1 1 | M | 0443 | <input checked="" type="checkbox"/> | 1 @10 | |
| | | 1 2 | x D | 6325 | | $\Sigma[xx] @ qn + 10$ | |
| | | 1 3 | x M | 6313 | | | |
| | | 1 4 | x C | 6324 | | | |
| | | 1 5 | B | 0442 | <input checked="" type="checkbox"/> | 1 @8 | |
| | | 1 6 | x D | 6202 | | $\Sigma n w_{STANDARD} @ qn$ | |
| | | 1 7 | x C | 6323 | | | |
| | | 1 8 | B | 0442 | | 1 @8 | |
| | | 1 9 | D | [] | <input checked="" type="checkbox"/> | $\Sigma n w_i @ qn \rightarrow (\Sigma n w)_i @ 8 - qn$ | |
| | | 2 0 | x A | 6323 | | | |
| | | 2 1 | x A | 6324 | | | |
| | | 2 2 | M | 0441 | | 1 @4 | |
| | | 2 3 | x D | 6310 | <input checked="" type="checkbox"/> | | |
| | | 2 4 | M | 0441 | | 1 @4 | |
| | | 2 5 | x D | 6310 | | 6 @4 | |
| | | 2 6 | M | 0441 | | 1 @4 | $\rightarrow V(M) @ 12 - qn$ |
| | | 2 7 | x R | 1650 | <input checked="" type="checkbox"/> | | SQUARE ROOT (15.0 ~ 15.1) |
| | | 2 8 | x U | 1600 | | | |
| | | 2 9 | M | 0444 | | 1.96 @1 | |
| | | 3 0 | x C | 6314 | | 1.965M @ 7 - (97/2) | |
| | | 3 1 | B | 0141 | <input checked="" type="checkbox"/> | | |

| | | | | |
|--|-----------------------|--------------------------------|------------------------------------|-------------------|
| PREPARED FOR: LGP-30 RPC-4000 USERS ORGANIZATION - POOL | | | | PAGE OF 8 / 10 |
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| PROBLEM: PROBIT II | | | | TRACK 03 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|----------|-------------|---------|-------------------------------------|---------------------|----------------------|
| | | | OPERATION | ADDRESS | | | |
| | | | | | | | |
| | | 0,3,3 2 | Y | 0334 | | | |
| | | 3 3 | x | C6300 | | | CLEAR Accum. |
| | | 3 4 | S | L | | 9m @ 29 | |
| | | 3 5 | M | 0438 | <input checked="" type="checkbox"/> | 101 = .500 | |
| | | 3 6 | A | 0405 | | 7 @ 29 | |
| | | 3 7 | S | 0422 | | 2 @ 29 | |
| | | 3 8 | T | 0356 | | | (-) → 7 - (8n/2) = 1 |
| | | 3 9 | S | 0061 | <input checked="" type="checkbox"/> | 1 @ 29 | |
| | | 4 0 | T | 0353 | | | = 2 |
| | | 4 1 | S | 0061 | | 1 @ 29 | |
| | | 4 2 | T | 0350 | | | = 3 |
| | | 4 3 | S | 0061 | <input checked="" type="checkbox"/> | 1 @ 29 | |
| | | 4 4 | T | 0348 | | | = 4 |
| | | 4 5 | x | B6314 | | | |
| | | 4 6 | D | 0438 | | 1 @ 1 | |
| | | 4 7 | U | 0358 | <input checked="" type="checkbox"/> | | |
| | | 4 8 | x | B6314 | | | |
| | | 4 9 | U | 0358 | | | |
| | | 5 0 | x | B6314 | | | |
| | | 5 1 | M | 0438 | <input checked="" type="checkbox"/> | 1 @ 1 | |
| | | 5 2 | U | 0358 | | | |
| | | 5 3 | x | B6314 | | | |
| | | 5 4 | M | 0439 | | 1 @ 2 | |
| | | 5 5 | U | 0358 | <input checked="" type="checkbox"/> | | |
| | | 5 6 | x | B6314 | | | |
| | | 5 7 | M | 0440 | | 1 @ 3 | |
| | | 5 8 | x | H6317 | | 1.965m @ 4 | |
| | | 5 9 | x | A6307 | <input checked="" type="checkbox"/> | | |
| | | 6 0 | x | C6309 | | | |
| | | 6 1 | x | B6307 | | M @ 4 | |
| | | 6 2 | x | S6317 | | | |
| | | 6 3 | x | C6308 | <input checked="" type="checkbox"/> | M - 1.965m @ 4 | |

| | | | |
|--|-----------------------|-------------------------------|------------------------------------|
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| PROBLEM: PROBIT II | | | DATE 5-25-59 |
| | | | TRACK 04 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|-------------------------------------|-------------|---------|-------------------------------------|---------------------|---|
| | | | OPERATION | ADDRESS | | | |
| | | <input checked="" type="checkbox"/> | | | | | |
| | | 04 0 0 | xP | 1600 | | | |
| | | 0 1 | xZ | 0110 | | | |
| | | 0 2 | xP | 0000 | | | } PRINT COMPOUND NUMBER OR DESIGNATION |
| | | 0 3 | xT | 0000 | <input checked="" type="checkbox"/> | | |
| | | 0 4 | xP | 2400 | | | |
| | | 0 5 | xZ | 0007 | | | |
| | | 0 6 | xB | 6307 | | | |
| | | 0 7 | xR | 1305 | <input checked="" type="checkbox"/> | | } DATA OUTPUT #2 |
| | | 0 8 | xU | 1300 | | | |
| | | 0 9 | xZ | 0304 | | | |
| | | 1 0 | xP | 1600 | | | |
| | | 1 1 | xZ | 0000 | <input checked="" type="checkbox"/> | | |
| | | 1 2 | xP | 2400 | | | |
| | | 1 3 | xZ | 0000 | | | |
| | | 1 4 | B | 0427 | | B6309 | |
| | | 1 5 | U | 0416 | <input checked="" type="checkbox"/> | | |
| | | 1 6 | S | 0422 | | 2@29 | |
| | | 1 7 | Y | 0418 | | | |
| | | 1 8 | R | | | | |
| | | 1 9 | M | 0440 | <input checked="" type="checkbox"/> | 1@3 | |
| | | 2 0 | xR | 2102 | | | } ANTILOG PRINTOUT LED-21 |
| | | 2 1 | xU | 2100 | | | |
| | | 2 2 | xZ | 0002 | | | |
| | | 2 3 | B | 0418 | <input checked="" type="checkbox"/> | | |
| | | 2 4 | S | 0427 | | | |
| | | 2 5 | T | 0428 | | | |
| | | 2 6 | U | 0431 | | | |
| | | 2 7 | xB | 6309 | <input checked="" type="checkbox"/> | | |
| | | 2 8 | B | 0418 | | | |
| | | 2 9 | A | 0061 | | 1@29 | |
| | | 3 0 | U | 0417 | | | |
| | | 3 1 | B | 0307 | <input checked="" type="checkbox"/> | | |

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|--|-----------------------|--------------------------------|------------------------------------|------------------|
| PREPARED FOR: LGP-30 RPC-4000 USERS ORGANIZATION - POOL | | | | PAGE OF 10/10 |
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| PROBLEM: PROBIT II | | | | TRACK 04 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | NOTES |
|---------------------|------|----------|-------------|-------------|------|---------------------|---------------------|
| | | | OPERATION | ADDRESS | | | |
| | | 0432 | S | 0435 | | | |
| | | 33 | T | 0436 | | | |
| | | 34 | U | 0444 | | | |
| | | 35 | S | (LAST) | ☒ | | |
| | | 36 | B | 0307 | | | |
| | | 37 | U | 0259 | | | |
| 20000007 | | 38 | 4 | 0000000 | | | 1@1 |
| | | 39 | 2 | 0000000 | ☒ | | 1@2 |
| | | 40 | 1 | 0000000 | | | 1@3 |
| | | 41 | 8 | 0000000 | | | 1@4 |
| | | 42 | 8 | 0000000 | | | 1@8 |
| | | 43 | 2 | 0000000 | ☒ | | 1@10 |
| | | 44 | 7K70F3K6 | | | | 1.96@1 |
| | | 45 | B | 0452 | | | START HERE |
| | | 46 | A | 0059 | | xZ0533 | |
| | | 47 | Y | 0449 | ☒ | | |
| | | 48 | B | 0451 | | | |
| | | 49 | C | (L+0533) | | | ALTER PROBIT I PROG |
| | | 50 | R | 0007 | | | |
| | | 51 | U | 0000 | ☒ | | |
| .00000000 | | 52 | XZ | (L of Prog) | | | |
| | | 53 | | | | | |
| | | 54 | | | | | |
| | | 55 | | | ☒ | | |
| | | 56 | | | | | |
| | | 57 | | | | | |
| | | 58 | | | | | |
| | | 59 | | | ☒ | | |
| | | 60 | | | | | |
| | | 61 | | | | | |
| | | 62 | | | | | |
| | | 63 | | | ☒ | | |

| | | | |
|--|-----------------------|-----------------------------------|------------------------------------|
| PREPARED FOR: LGP-30 RPC-4000 USERS ORGANIZATION - POOL | | | PAGE 1 / 1 |
| JOB NO. | PROGRAM NO. F6-123 | PROGRAM PREPARED BY: R.A. Lamm | PROGRAM CHECKED BY: POOL Review |
| PROBLEM: STORAGE FOR PROBIT II | | | DATE 5-25-59 |
| | | | TRACK 6300 |

| PROGRAM INPUT CODES | STOP | LOCATION | INSTRUCTION | | STOP | CONTENTS OF ADDRESS | MODEL |
|---------------------|------|-------------------------------------|-------------|---------|-------------------------------------|---------------------|---|
| | | | OPERATION | ADDRESS | | | |
| | | <input checked="" type="checkbox"/> | | | | g | |
| | | 6300 | | | | | |
| | | 01 | | | | | |
| | | 02 | | | | | |
| | | 03 | | | <input checked="" type="checkbox"/> | | |
| | | 04 | | | | | |
| | | 05 | | | | | |
| | | 06 | | | | | |
| | | 07 | | | <input checked="" type="checkbox"/> | 4 | M |
| | | 08 | | | | 4 | M - 1.96Sm |
| | | 09 | | | | 4 | M + 1.96Sm |
| | | 10 | | | | 4 | b |
| | | 11 | | | <input checked="" type="checkbox"/> | 29 | d.f. FOR NON PARALLELISM |
| | | 12 | | | | gn + 10 | Chi-sq. FOR PARALLELISM |
| | | 13 | | | | 4 | ($\bar{y}_i - \bar{y}_i$)/b |
| | | 14 | | | | 7 - (9/2) | 1.96Sm |
| | | 15 | | | <input checked="" type="checkbox"/> | 29 | d.f. (TOTAL) |
| | | 16 | | | | gn + 10 | TOTAL Chi-sq. |
| | | 17 | | | | 4 | 1.96Sm |
| | | 18 | | | | | |
| | | 19 | | | <input checked="" type="checkbox"/> | | |
| | | 20 | | | | | |
| | | 21 | | | | | |
| | | 22 | | | | | |
| | | 23 | | | <input checked="" type="checkbox"/> | 8 - gn | 1/Σnw, |
| | | 24 | | | | B - gn | [($\bar{y}_i - \bar{y}_i$)/b] ² /Σ[xx] |
| | | 25 | | | | gn + 10 | Σ[xy] |
| | | 26 | | | | " | Σ[xy] |
| | | 27 | | | <input checked="" type="checkbox"/> | " | Σ[yy] |
| | | 28 | | | | @ 29 | Σ d.f. |
| | | 29 | | | | gn + 10 | Σ(Chi-square) |
| | | 30 | | | | 29 | ASSAY COUNTER |
| | | 31 | | | <input checked="" type="checkbox"/> | | |

CARRIAGE RETURN
 = CONDITIONAL STOP CODE

