#316

IMP F AND G

2.73 MIN COUNT RATES ON TAPE

67-051A-09B, 10B

69-053A-09B, 10B

IMP F AND G

2.73 Minute Count Rates On Tape

67-051A-09B, 10B

69-053A-09B, 10B

This catalog consists of 2 IMP-F and 4 IMP-G 2.73 Min. Count Rates data tapes. These data sets have been restored. The original tapes were 1600 BPI tapes, binary, 9-track. The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI, binary and are multi-filed. The tapes were created on the IBM/360. Each physical record contains 10 logical records containing 408 bytes and 157 logical words.

The DR, DS, and DD numbers along with the time spans are given as follows:

IMP-F

| DR# | DS# | DD# | FILES | TIME SPAN |
|---|---|---|---|---|
| DR02663 | DS02663 | DD-20549 | 1 | 05/24/67 - 08/31/67 |
| | | DD-20527 | 2 | 09/01/67 - 12/31/67 |
| | | DD-20526 | 3 | 01/01/68 - 04/30/68 |
| | | DD-20525 | 4 | 05/01/68 - 08/31/68 |
| | | DD-20529 | 5 | 09/01/68 - 12/31/68 |
| DR02664 | DS02664 | DD-20528 | 1 | 01/01/69 - 05/03/69 |

IMP-G

| | | | | |
|---|---|---|---|---|
| DR02643 | DS02643 | DD-20540 | 1 | 06/21/69 - 10/31/69 |
| | | DD-20539 | 2 | 11/01/69 - 02/28/70 |
| | | DD-20538 | 3 | 03/01/70 - 06/30/70 |
| DR02644 | DS02644 | DD-20537 | 1 | 07/01/70 - 10/31/70 |
| | | DD-20536 | 2 | 11/01/70 - 02/16/71 |
| | | DD-20535 | 3 | 02/16/71 - 05/26/71 |
| DR02645 | DS02645 | DD-20534 | 1 | 05/28/71 - 10/17/71 |
| | | DD-20533 | 2 | 09/01/71 - 11/15/71 |
| | | DD-20550 | 3 | 02/01/72 - 04/30/72 |
| DR02646 | DS02646 | DD-20532 | 1 | 05/01/72 - 07/17/72 |
| | | DD-20531 | 2 | 07/18/72 - 10/17/72 |
| | | DD-20530 | 3 | 10/18/72 - 11/29/72 |

IMP F AND G

2.73 Minute Count Rates On Tape

67-051A-09B, 10B

69-053A-09B, 10B

This catalog consists of 2 IMP-F and 4 IMP-G 2.73 Min. Count Rates data tapes. These data sets have been restored. The original tapes were 1600 BPI tapes, binary, 9-track. The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI, binary and are multi-filed. The tapes were created on the IBM/360. Each physical record contains 10 logical records containing 408 bytes and 157 logical words.

The DR, DS, and DD numbers along with the time spans are given as follows:

IMP-F

| DR# | DS# | DD# | FILES | TIME SPAN |
|---|---|---|---|---|
| DR02663 | DS02663 | DD-20549 | 1 | 05/24/67 - 08/31/67 |
| | | DD-20527 | 2 | 09/01/67 - 12/31/67 |
| | | DD-20526 | 3 | 01/01/68 - 04/30/68 |
| | | DD-20525 | 4 | 05/01/68 - 08/31/68 |
| | | DD-20529 | 5 | 09/01/68 - 12/31/68 |
| DR02664 | DS02664 | DD-20528 | 1 | 01/01/69 - 05/03/69 |

IMP-G

| | | | | |
|---|---|---|---|---|
| DR02643 | DS02643 | DD-20540 | 1 | 06/21/69 - 10/31/69 |
| | | DD-20539 | 2 | 11/01/69 - 02/28/70 |
| | | DD-20538 | 3 | 03/01/70 - 06/30/70 |
| DR02644 | DS02644 | DD-20537 | 1 | 07/01/70 - 10/31/70 |
| | | DD-20536 | 2 | 11/01/70 - 02/16/71 |
| | | DD-20535 | 3 | 02/16/71 - 05/26/71 |
| DR02645 | DS02645 | DD-20534 | 1 | 05/28/71 - 10/17/71 |
| | | DD-20533 | 2 | 09/01/71 - 11/15/71 |
| | | DD-20550 | 3 | 02/01/72 - 04/30/72 |
| DR02646 | DS02646 | DD-20532 | 1 | 05/01/72 - 07/17/72 |
| | | DD-20531 | 2 | 07/18/72 - 10/17/72 |
| | | DD-20530 | 3 | 10/18/72 - 11/29/72 |

# SUMMARY OF INFORMATION ON GSFC IMP 4 AND IMP 5

# COSMIC RAY EXPERIMENT DATA TAPES

NATIONAL SPACE SCIENCE DATA CENTER

July, 1975

## INTRODUCTION

The GSFC experiments on IMP's 4 and 5, designed primarily to measure 4-80 MeV solar and galactic protons and alpha particles, consisted of two telescopes - the medium energy detector (MED) and the low energy detector (LED). In addition two very low energy detectors (VLED1 and VLED2) were flown on IMP 5 to extend the measureable energy range down to 80 KeV.

This note is intended to convey only the most salient features of these instruments and to describe the characteristics of and contents of the magnetic tapes containing the data from these instruments. For further details see J. Kinsey's thesis and M. Van Hollebeke's discussion of the instruments and the data (both included with this information package).

## GENERAL

The MED was a scintillator telescope aligned along the spacecraft spin axis while the LED was a solid state telescope whose axis was normal to the spin axis. Each telescope consisted of three sensors, the thin A sensor (primarily for dE/dx determination), the relatively thick B sensor (primarily for total energy determination) and the C sensor (for anticoincidence). The IMP 5 VLED's were solid state sensors collimated to view normal to the spacecraft spin axis and distinguished by one having a foil cover.

The associated electronics permitted determination of count rates for coincidence modes and for individual sensors at various discrimination levels, and permitted 1024 channel pulse height analysis of A and B sensor signals for sample particles satisfying specific coincidence requirements. Table 1 summarizes the numbers of rates (4.48 sec accumulations) and pulse height analyses of particles for various modes obtained during each one or two 2.73 minute telemetry sequence. The modes indicated in Table 1 are: particles penetrating A and stopping in B (AB$\bar{C}$, read as AB not C); particles penetrating A and stopping in or penetrating B (AB); particles causing counts in the lowest discrimination states of A, of B, and of C; and particles causing counts in upper discrimination levels of A (3 such levels for MED, designated A1, A2, and A3, and 8 such levels for LED, designated D1, D2,...D8).

TABLE 1: NUMBERS OF RATES AND PHA'S FOR VARIOUS MODES

| MODE | RATES* | | | | A,B PHA* | | | | IMP 5 VLED RATES** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | IMP 4 | | IMP 5 | | IMP 4 | | IMP 5 | | DISCRIM | | |
| | MED | LED | MED | LED | MED | LED | MED | LED | LEVEL | VLED1 | VLED2 |
| $(AB\bar{C})_{Low}$ | 2 | 2 | 2 | 1 | 8 | 4 | 16 | 8 | 1 | 1 | 1 |
| $(AB\bar{C})_{High}$ | | | | 1 | 8 | 4 | | 8 | 2 | 1 | 1 |
| $(\bar{A}B)_{Low}$ | 1 | 1 | 1 | 1 | | 4 | | | 3 | 1 | 1 |
| $(\bar{A}B)_{High}$ | | | | | | 4 | | | 4 | 1 | 1 |
| A | (A0) 1 | 1 | (A0) 1 | 1 | | | | | 5 | 1 | 1 |
| B | 1 | 1 | 1 | 1 | | | | | 6 | 1 | 1 |
| C | 1 | 1 | 1 | 1 | | | | | 7 | 1 | 1 |
| A1 | 1 | (D1) 1 | 1 | (D1) 1 | | | | | 8 | 1 | 1 |
| A2 | 1 | (D2) 1 | 1 | (D2) 1 | | | | | | | |
| A3 | 1 | ⋮ 1 | 1 | ⋮ 1 | | | | | | | |
| A4 | | ⋮ 1 | | ⋮ 1 | | | | | | | |
| A5 | | 1 | | 1 | | | | | | | |
| A6 | | 1 | | 1 | | | | | | | |
| A7 | | 1 | | 1 | | | | | | | |
| A8 | | (D8) 1 | | (D8) 1 | | | | | | | |

*per 2.73 minutes

**per 5.46 minutes

The subscripts Low and High on the $AB\bar{C}$ and AB modes refer to low and high sensor-A discriminator settings. This low/high separation was designed to facilitate the study of solar alpha particles, but, as is discussed in greater detail in van Hollebeke, such studies are only practical for IMP 5 LED data for which there is $(AB\bar{C})$-High rate data.

## ENERGY RESPONSE

The MED $AB\bar{C}$ mode responds to 18.7 - 81.6 MeV/nucleon protons and alpha particles and electrons of about 3-20 MeV. The LED $AB\bar{C}$ mode responds to 4.2-19.1 MeV/nucleon protons and alpha particles. The MED A,A1,A2, and A3 modes have discriminator threshold levels of 130, 610, 1260, and 1760 kev; the difference in the A and A1 count rates has been attributed to 0.5 - 1.1 keV electrons by the experimenter. The LED D1, D2...D8 modes have discriminator threshold levels of 6060, 4888, 2580, 1420, 930, 740, 410, and 210 keV respectively for IMP 4 (slightly different for IMP 5); according to the experimenter, the D6-D4 rate is free of electron contribution and can be used for 0.9-1.6 MeV protons.

The IMP 5 VLED's are distinguished by virture of VLED2 having a .282 $mg/cm^2$ foil cover. The incident proton energy thresholds in keV for the 8 discriminator levels for VLED 1 (VLED 2) are 2421 (2450), 1938 (1963), 1105 (1140), 578 (825), 365 (623), 291 (353), 154 (225), 83 (155).

## Box Counts

During each of several 4.48 sec time windows for a given 2.73 min interval, telescope, coincidence mode, and discriminator setting (see Table 1 for numbers), the signals generated in the A and B sensors by the first appropriate particle incident are passed through separate 1024-channel pulse height analyzers. During times of very low levels of solar particle fluxes, a 4.48 sec interval may pass with no appropriate particle incident on the telescope.

When for many particles the channel number for the A signal is plotted versus the channel number for the B signal (one point for each incident particle analyzed) a series of tracks emerge, one for each species. It is then possible to identify boxes, or groups of elements in the A-channel-number vs B-channel- number matrix, which (except for background) may be associated with particles of a given species having a given incident energy.

The experimenter has identified a series of such boxes and in his data has given the number of counts found in each box during each 2.73-min interval. Table 2 contains the species and energy range identifications for each box. This presentation of numbers of "box counts" is made instead of giving the actual A and B channel numbers for each particle analyzed.

The experimenter has also given the number of times for a given mode and 2.73 min interval an appropriate particle actually was analyzed (e.g., "total counts above LED low threshold"), the number of times (number of 4.48 sec windows) no appropriate incident particle was seen ("total zero counts"), and the number of times the analysis of a particle was rejected due to the value of a data quality flag. For IMP 4 LED counts, only the $AB\bar{C}$ mode data is included in these counts. (AB mode PHA data is not found in this data set although after the March 1968 LED anticoincidence failure the $AB\bar{C}$ mode provides the same information as the AB mode.)

## Differential Flux Determination

The differential flux associated with a given species and energy range must be determined using data taken from several (say N) 2.73 min telemetry sequences. With CRi the counts accumulated in the coincidence mode of interest during the ith sequence (except for IMP 5 LED modes, CRi is as averaged over the two ith-sequence accumulations), BCi the pulse height analysis counts accumulated in the box on interest, CPHAi the total pha counts analyzed for the relevant coincidence mode, $\Delta E$ the energy width of the box of interest and GF its geometric factor, the differential flux in units of (sec cm$^2$ ster MeV/n)$^{-1}$ is given by

$$\frac{dJ}{dE} = \left(\sum_{i=1}^{N} CR_i\right) \times \frac{\left(\sum_{i=1}^{N} BC_i\right)}{\left(\sum_{i=1}^{N} CPHA_i\right)} \times \frac{1}{\Delta E \times GF \times 4.48 \times N}$$

Note that geometric factors for individual boxes are given in Table 2. Note that boxes 1-4 and 11-14 relate to LED ($AB\bar{C}$) LOW mode rates and boxes 5-10, 15-19 (15-20 for 1972 data), and 29-30 relate to MED ($AB\bar{C}$) LOW mode rates. Boxes 20-23 (21-24 for 1972) relate to LED ($AB\bar{C}$)HIGH mode coincidence rates, which are given for IMP 5 only. As discussed further in van Hollebeke, only the IMP 5 LED can provide reliable alpha particle fluxes during moderate to large solar particle events. Note that N should be chosen large enough to assure statistical significance in the sums contributing to dJ/dE and yet small enough to avoid significant temporal changes in the spectrum of particles being measured.

TABLE 2: SPECIES, ENERGY RANGES, AND GEOMETRICAL FACTORS FOR BOX COUNTS

| BOX NO. | MODE | SPECIES | IMP 4 5/67 - 4/68 EMIN | EMAX | GEOM.F. | IMP 4 5/68-5/69 EMIN | EMAX | GEOM.F. | IMP 5 6/69 - 11/71 EMIN | EMAX | GEOM.F. | IMP 5 2/72-11/72 EMIN | EMAX | GEOM.F. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $(LED)_L$ | proton | 4.2 | 6.2 | .764 | 4.2 | 6.2 | .764 | 4.2 | 6.2 | .212 | 4.2 | 6.2 | .212 |
| 2 | $(LED)_L$ | proton | 6.2 | 9.5 | .756 | 6.2 | 9.5 | .816 | 6.2 | 9.5 | .212 | 6.2 | 9.5 | .212 |
| 3 | $(LED)_L$ | proton | 9.5 | 13.5 | .740 | 9.5 | 13.5 | .851 | 9.5 | 13.5 | .212 | 9.5 | 13.5 | .212 |
| 4 | $(LED)_L$ | proton | 13.5 | 19.1 | .594 | 13.5 | 19.1 | .754 | 13.5 | 19.1 | .212 | 13.5 | 19.1 | .212 |
| 5 | $(MED)_L$ | proton | 18.7 | 29.2 | 3.26 | 18.7 | 29.2 | 3.26 | 19.2 | 29.2 | 3.23 | 19.3 | 30.0 | 3.23 |
| 6 | $(MED)_L$ | proton | 29.2 | 39.7 | 3.14 | 29.2 | 39.7 | 3.14 | 29.2 | 39.2 | 3.14 | 30.0 | 40.0 | 3.12 |
| 7 | $(MED)_L$ | proton | 39.7 | 50.2 | 2.99 | 39.7 | 50.2 | 2.99 | 39.2 | 50.2 | 2.99 | 40.0 | 50.0 | 2.98 |
| 8 | $(MED)_L$ | proton | 50.2 | 60.6 | 2.84 | 50.2 | 60.6 | 2.84 | 50.2 | 60.6 | 2.84 | 50.0 | 60.0 | 2.82 |
| 9 | $(MED)_L$ | proton | 60.6 | 71.1 | 2.67 | 60.6 | 71.1 | 2.67 | 60.6 | 71.1 | 2.67 | 60.0 | 71.0 | 2.64 |
| 10 | $(MED)_L$ | proton | 71.1 | 82.0 | 2.52 | 71.1 | 82.0 | 2.52 | 71.1 | 82.0 | 2.52 | 71.0 | 82.0 | 2.47 |
| 11 | $(LED)_L$ | alpha | 4.3 | 6.2 | .764 | 4.3 | 6.2 | .764 | 4.9 | 6.2 | .212 | 4.9 | 6.2 | .212 |
| 12 | $(LED)_L$ | alpha | 6.2 | 9.5 | .756 | 6.2 | 9.5 | .816 | 6.2 | 9.5 | .212 | 6.2 | 9.5 | .212 |
| 13 | $(LED)_L$ | alpha | 9.5 | 13.5 | .740 | 9.5 | 13.5 | .851 | 9.5 | 13.5 | .212 | 9.5 | 13.5 | .212 |
| 14 | $(LED)_L$ | alpha | 13.5 | 19.5 | .592 | 13.5 | 19.5 | .754 | 13.5 | 19.5 | .212 | 13.5 | 19.5 | .212 |
| 15 | $(MED)_L$ | alpha | 25.0 | 40.0 | 3.15 | 25.0 | 40.0 | 3.51 | 27.2 | 39.7 | 3.14 | 27.5 | 32.5 | 3.18 |
| 16 | $(MED)_L$ | alpha | 40.0 | 50.0 | 2.98 | 40.0 | 50.0 | 2.98 | 39.7 | 50.2 | 2.99 | 32.5 | 40.0 | 3.10 |
| 17 | $(MED)_L$ | alpha | 50.0 | 60.0 | 2.83 | 50.0 | 60.0 | 2.83 | 50.2 | 60.6 | 2.84 | 40.0 | 50.0 | 2.98 |
| 18 | $(MED)_L$ | alpha | 60.0 | 70.0 | 2.67 | 60.0 | 70.0 | 2.67 | 60.6 | 71.1 | 2.67 | 50.0 | 60.0 | 2.82 |
| 19 | $(MED)_L$ | alpha | 70.0 | 79.0 | 2.50 | 70.0 | 79.0 | 2.50 | 71.1 | 82.0 | 2.52 | 60.0 | 71.0 | 2.64 |
| 20 | | alpha | 4.3 | 6.2 | .764 | 4.3 | 6.2 | .764 | 4.9 | 6.2 | .212 | 71.0 | 82.0 | 2.47 |
| 21 | $(LED)_H$ | alpha | 6.2 | 9.5 | .756 | 6.2 | 9.5 | .816 | 6.2 | 9.5 | .212 | 4.9 | 6.2 | .212 |
| 22 | $(LED)_H$ | alpha | 9.5 | 13.5 | .740 | 9.5 | 13.5 | .851 | 9.5 | 13.5 | .212 | 6.2 | 9.5 | .212 |
| 23 | $(LED)_H$ | alpha | 13.5 | 19.2 | .594 | 13.5 | 19.2 | .754 | 13.5 | 19.5 | .212 | 9.5 | 13.5 | .212 |
| 24 | | alpha | | | | | | | | | | 13.5 | 19.5 | .212 |
| 29 | $(MED)_L$ | electron | 3.0 | 12.0 | ≈ 3 | 3.0 | 12.0 | ≈ 3 | 3.0 | 12.0 | ≈ 3 | 3.0 | 12.0 | ≈ 3 |
| 30 | $(MED)_L$ | electron | 12.0 | 21.0 | ≈ 3 | 12.0 | 21.0 | ≈ 3 | 12.0 | 21.0 | ≈ 3 | 12.0 | 21.0 | ≈ 3 |

Note: Energies given in MeV/n, geometric factors in $cm^2$ ster
Note: Boxes 25-28 not used.

The geometric factors for $AB\bar{C}$ rates are found in Table 2 for individual boxes. For other rates:

| | |
|---|---|
| MED A | GF=4.25 $cm^2$ster |
| LED A | GF=60. $cm^2$ster |
| VLED(1 & 2) | GF=0.194 $cm^2$ster |

## TAPE CHARACTERISTICS

The tapes are unlabelled 9 track, 1600 bpi tapes generated on an IBM/360. Each physical record contains 10 logical records each of which in turn contains 408 bytes and 157 logical words, all the data for one 2.73 minute telemetry sequence. (RECFM=VBS, BLKSIZE=4124, LRECL=412, DEN=3). There are 6 IMP 4 tapes and 12 IMP 5 tapes, and each tape contains about 4 months of data. Time coverage is complete over the spacecraft lives except that for IMP 5, there is no data for the Nov. 15, 1971 - Feb. 1, 1972 period of greatly reduced spacecraft operations nor for the period Nov. 30, 1972 - Dec. 24, 1972 at the end of the spacecraft life.

TAPE FORMAT

| WORD | NAME | BYTES | FORMAT | UNITS | DESCRIPTION | COMMENTS |
|---|---|---|---|---|---|---|
| 1 | | 4 | I | | Year | |
| 2 | | 4 | I | | Month | |
| 3 | | 4 | I | | Day of Month | |
| 4 | | 4 | R | | Time of Day | In units of hours |
| 5 | | 4 | R | km | Geocen s/c dist. | |
| 6 | | 4 | R | deg | Geocen s/c lat. | |
| 7 | | 4 | R | deg | Geocen s/c long. | |
| 8 | | 4 | R | gamma | Magnetic Field Magnitude =B | Internal Source model |
| 9 | | 4 | R | | B/Bo | |
| 10 | | 4 | R | sec | Accumulator on-time | |
| 11 | Rate (1) | 4 | I | counts | LED A | |
| 12 | Rate (2) | 4 | I | Counts | LED B | |
| 13 | Rate (3) | 4 | I | Counts | LED C | |
| 14 | Rate (4) | 4 | I | Counts | LED $AB\bar{C}$ | See Footnote 1 |
| 15 | Rate (5) | 4 | I | Counts | LED $AB\bar{C}$ | See Footnote 1 |
| 16 | Rate (6) | 4 | I | Counts | LED AB | |
| 17 | Rate (7) | 4 | I | Counts | LED D1 | 17-18: |
| 18 | Rate (8) | 4 | I | Counts | LED D2 | D1 & D2 have discriminator settings too high to admit signal. These words should not be used. |
| 19 | Rate (9) | 4 | I | Counts | LED D3 | |
| 20 | Rate (10) | 4 | I | Counts | LED D4 | |
| 21 | Rate (11) | 4 | I | Counts | LED D5 | |
| 22 | Rate (12) | 4 | I | Counts | LED D6 | |
| 23 | Rate (13) | 4 | I | Counts | LED D7 | |
| 24 | Rate (14) | 4 | I | Counts | LED D8 | |
| 25 | Rate (15) | 4 | I | Counts | MED A | |
| 26 | Rate (16) | 4 | I | Counts | MED B | |
| 27 | Rate (17) | 4 | I | Counts | MED C | |
| 28 | Rate (18) | 4 | I | Counts | MED AB not C | 28-29: Rates (18) and (19) are equivalent and should be averaged |

TAPE FORMAT - continued

| WORD | NAME | BYTES | FORMAT | UNITS | DESCRIPTION | COMMENTS |
|---|---|---|---|---|---|---|
| 29 | Rate (19) | 4 | I | Counts | MED AB not C | |
| 30 | Rate (20) | 4 | I | " | MED AB | |
| 31 | Rate (21) | 4 | I | " | MED A1 | |
| 32 | Rate (22) | 4 | I | " | MED A2 | |
| 33 | Rate (23) | 4 | I | " | MED A3 | |
| 34 | | 4 | I | " | VLED Control | See footnote 2 |
| 35 | Rate (24) | 4 | I | " | VLED 1 | " |
| 36 | Rate (25) | 4 | I | " | VLED 2 | " |
| 37 | Rate (26) | 4 | I | " | VLED 3 | " |
| 38 | Rate (27) | 4 | I | " | VLED 4 | " |
| 39 | Rate (28) | 4 | I | " | VLED 5 | " |
| 40 | Rate (29) | 4 | I | " | VLED 6 | " |
| 41 | Rate (30) | 4 | I | " | VLED 7 | " |
| 42 | Rate (31) | 4 | I | " | VLED 8 | " |
| 43 | PHA LED LOW | 4 | I | " | Total counts above LED low threshold | protons, alphas, and background (ABC̄ only) |
| 44 | PHA LED HIGH | 4 | I | " | Total counts above LED high threshold | alpha particles and background (ABC̄ only) |
| 45 | PHA MED LOW | 4 | I | " | Total counts above MED low threshold | See Footnote 3 |
| 46 | PHA MED High | 4 | I | " | Total counts above MED high threshold | See Footnote 3 |
| 47 | PHA LED LOW | 4 | I | " | Total zero counts for LED-Low | 47-50: Numbers of time bins during which no incident particle of appropriate mode was observed |
| 48 | PHA LED High | 4 | I | " | Total zero counts for LED-High | |
| 49 | PHA MED Low | 4 | I | " | Total zero counts for MED-Low | See also Footnote 3 for words 49,50. |
| 50 | PHA MED High | 4 | I | " | Total zero counts for MED-High | |
| 51 | PHA LED Low | 4 | I | " | Total counts rejected LED-low | 51-54: Numbers of counts (time bins) rejected because their PHA qualit flag = 0; see also Footnote 3 for words 53, 54 |
| 52 | PHA LED | 4 | I | " | Total counts rejected LED-High | |

TAPE FORMAT - continued

| WORD | NAME | BYTES | FORMAT | UNITS | DESCRIPTION | COMMENTS |
|---|---|---|---|---|---|---|
| 53 | PHA MED Low | 4 | I | Counts | Total counts rejected MED-Low | |
| 54 | PHA MED High | 4 | I | " | Total counts rejected MED-High | |
| 55 | PHA LED Low | 4 | R | | Dead time LED-low | See Footnote 4 |
| 56 | PHA LED High | 4 | R | | Dead time LED-High | See Footnote 4 |
| 57 | PHA LED Low | 4 | I | Counts | Total LED protons | Total of counts in boxes 1 to 4 |
| 58 | PHA MED | 4 | I | " | Total MED electrons | Total of counts in boxes 29-30 |
| 59 | PHA MED | 4 | I | " | Total MED protons | Total of counts in boxes 5 to 10 |
| 60 | PHA MED Low | 4 | I | " | Total LED-Low alphas | Total of counts in boxes 11 to 14 |
| 61 | PHA LED High | 4 | I | " | Total LED-High alphas | Total of counts in boxes 20 to 23 (21 to 24 for IMP 5, 1972) |
| 62 | PHA MED | 4 | I | " | Total MED alphas | Total of counts in boxes 15 to 19 (15 to 20 for IMP 5, 1972) |
| 63 | | 4 | | | | Unused |
| 64-93 | BXCONT(N) | 2 | I | | | Counts in 30 individual boxes; see table 2 for box identifications |
| 94-101 | LEDQF(N) | 2 | I | | LED-Low quality flags (PHA) | See Footnote 5 |
| 102-109 | LEDQF(N) | 2 | I | | LED-High quality Flags (PHA) | See footnote 6 |
| 110-125 | MEDQF(N) | 2 | I | | MED quality flags (PHA) | See Footnote 7 |
| 126 | | 1 | | | | Unused |
| 127-157 | IFLAG(N) | 1 | I | | Rate quality flags | See Footnote 8 |

# FOOTNOTES ON FORMAT

1. On IMP 4 Rates 4 and 5 are equivalent and should be averaged; on IMP 5 Rates 4 and 5 are ($AB\bar{C}$) LOW and ($AB\bar{C}$) HIGH respectively.

2. Words 34-42 are unused for IMP 4. For IMP 5, if word 34 has the value 1, the VLED data in words 35-42 are from the VLED 1 detector: otherwise the VLED data in words 35-42 are from VLED 2. VLED 1 through VLED 8 in words 35-42 refer to the 8 discriminator settings.

3. Counts for PHA-MED-LOW are due to protons, alpha particles, electrons, and background; counts for PHA-MED-HIGH are due to alpha particlesand background. The MED LOW/HIGH distinction is only relevant to IMP 4; on IMP 5 only MED-LOW was used and the information in words 45, 49, and 53 is repeated in words 46, 50, and 54 respectively.

4. Dead time is $\log_e (b/(b-n))$ where b is the total number of time bins and n is total counts from word 43 or 44 (or number of time bins with analyzed particle). See Kinsey's thesis for discussion of use of this parameter in determining quiet time count rates.

5. Value = 1 → good quality; value = 0 → bad quality.
   For IMP 4: N=1-4 LED-Low (AB); N=5-8 LED-Low ($AB\bar{C}$)
   For IMP 5: N=1-8 LED-Low ($AB\bar{C}$)

6. Value = 1→ good quality; value = 0→ bad quality.
   For IMP 4: N=1-4→ LED-High (AB); N=5-8→ LED-High ($AB\bar{C}$)
   For IMP 5: N=1-8→ LED-High ($AB\bar{C}$)

7. Value = 1→ good quality; value = 0→ bad quality.
   For IMP 4: N=1-8→ MED-Low ($AB\bar{C}$); N=9-16→ MED-High ($AB\bar{C}$)
   For IMP 5: N=1-16→ MED-Low ($AB\bar{C}$)

8. Value = 0→ good; value = 1→ bad; value = 2→ undetermined.
   These flags relate to Rates 1-23 (words 11-33 of this format) for IMP 4 and to Rates 1-31 (words 11-42) for IMP 5. For IMP 4, IFLAG (24,25...31) (words 150-157) are not used.

JHK

67-051A-09B
10B



Tapes Description

IMP 4 Flux Tapes

Standard label tapes dsn = IMP F dcb = (RECFM=VBS, DEN=3, BLKSIZE=4124, LRECL=412)

| Tape No. | Dates | Number of Records |
|---|---|---|
| EP8020 | May 24, 1967 - Aug. 31, 1967 ✓ | 49212 |
| EP8021 | Sept. 01, 1967 - Dec. 31, 1967 ✓ | 59465 |
| EP8022 | Jan. 01, 1968 - Apr. 30, 1968 ✓ | 56295 |
| EP8023 | May 01, 1968 - Aug. 31, 1968 | 57916 |
| EP8024 | Sept. 01, 1969 - Dec. 31, 1969 ✓ | 51947 |
| EP8025 | Jan. 01, 1969 - May 03, 1969 ✓ | 51548 |

69-053A-09B
-10B



IMP 5 Flux Tapes

Standard label tapes dsn = IMP G dcb = (RECFM=VBS, DEN=3, BLKSIZE=4124, LRECL=412)

| Tape No. | Dates | Number of Records | |
|---|---|---|---|
| EP8026 | June 21, 1969 - Oct. 31, 1969 | 56281 | |
| EP8027 | Nov. 01, 1969 - Feb. 28, 1970 | 50979 | |
| EP8028 | Mar. 01, 1970 - June 30, 1970 | 53636 | 9 boxes of Energy for He |
| EP8029 | July 01, 1970 - Oct. 31, 1970 | 52394 | |
| EP8030 | Nov. 01, 1970 Feb. 16, 1971 | 47707 | |
| EP8031 | Feb. 17, 1971 May 28, 1971 | 44996 | |
| EP8032 | May 28, 1971 Aug. 31, 1971 | 42640 | |
| EP8033 | Sept. 01, 1971 Nov. 15, 1971 ✓ | 33588 | |
| not yet in → EP8034 | Feb. 01, 1972 - Apr. 30, 1972 | 38440 | 10 boxes of Energy for He |
| EP8035 | May 01, 1972 - July 17, 1972 | 31176 | |
| EP8036 | July 18, 1972 - Oct. 17, 1972 ✓ | 37260 | |
| EP8037 | Oct. 18, 1972 - Nov. 29, 1972 ✓ | 17863 | |

408 bytes per record

# INTERMEDIATE FLUX TAPE FORMAT - IMP IV

| Word | Name | Bytes | Format | Units | Description | Comments |
|---|---|---|---|---|---|---|
| 1 | | 4 | I | | Year | |
| 2 | | 4 | I | | Month | |
| 3 | | 4 | I | | Day | |
| 4 | | 4 | I | | Hour | |
| 5 | | 4 | R | kms. | Rad. dist. center of of earth to sat. | |
| 6 | | 4 | R | Degrees | Geom. latitude of sat. position | |
| 7 | | 4 | R | Degrees | Geom. longitude of sat. position | |
| 8 | | 4 | R | Gamma | B=Magnetic field length | |
| 9 | | 4 | R | | $B/B_o$ | |
| 10 | | 4 | R | Sec | Accumulator on time | |
| 11 | Rate (1) | 4 | I | Counts | LED A | |
| 12 | Rate (2) | 4 | I | Counts | LED B | |
| 13 | Rate (3) | 4 | I | Counts | LED C | |
| 14 | Rate (4) | 4 | I | Counts | LED (AB not C) 1 | Those two logic requirements are essentially the same and should be averaged * |
| 15 | Rate (5) | 4 | I | Counts | LED (AB not C) 2 | |
| 16 | Rate (6) | 4 | I | Counts | LED AB | |
| 17 | Rate (7) | 4 | I | Counts | LED D1 | From the 8 level integral analyzer the discrimination was set such that level 3 was the lowest level that would admit signal levels: D1 and D2 should not be used. |
| 18 | Rate (8) | 4 | I | Counts | LED D2 | |
| 19 | Rate (9) | 4 | I | Counts | LED D3 | |
| 20 | Rate (10) | 4 | I | Counts | LED D4 | |
| 21 | Rate (11) | 4 | I | Counts | LED D5 | |
| 22 | Rate (12) | 4 | I | Counts | LED D6 | |
| 23 | Rate (13) | 4 | I | Counts | LED D7 | |
| 24 | Rate (14) | 4 | I | Counts | LED D8 | |
| 25 | Rate (15) | 4 | I | Counts | MED A | |
| 26 | Rate (16) | 4 | I | Counts | MED B | |
| 27 | Rate (17) | 4 | I | Counts | MED C | |

ne anti coincidence $\bar{c}$ of the LED experiment failed in March of 1968.

| Word | Name | Bytes | Format | Unit | Description | Comments |
|---|---|---|---|---|---|---|
| 28 | Rate (18) | 4 | I | Counts | MED AB not C1 | These two logic requirements are essentially the same and should be averaged. |
| 29 | Rate (19) | 4 | I | Counts | MED AB not C2 ? | |
| 30 | Rate (19) 20 | 4 | I | Counts | MED AB A0 ? | |
| 31 | Rate (20) 21 | 4 | I | Counts | MED A1 | |
| 32 | Rate (21) 22 | 4 | I | Counts | MED A2 | |
| 33 | Rate (22) 23 | 4 | I | Counts | MED A3 | |
| 34 to 42 | | 4 | I | | | Spares |
| 43 | PHA LED Low | 4 | I | Counts | Total Counts above LED low threshold | ** |
| 44 | PHA LED Low High | 4 | I | Counts | Total Counts above LED High threshold | ** |
| 45 | PHA MED Low | 4 | I | Counts | Total Counts above MED Low threshold | ** |
| 46 | PHA MED High | 4 | I | Counts | Total Counts above MED High threshold | ** |
| 47 | PHA LED Low | 4 | I | Counts | Total Zero Counts LED Low | |
| 48 | PHA LED High | 4 | I | Counts | Total Zero Counts LED High | |
| 49 | PHA MED Low | 4 | I | Counts | Total Zero Counts MED Low | |
| 50 | PHA MED High | 4 | I | Counts | Total Zero Counts MED High | |

**The LED and MED can be operated in a low and high threshold mode: an advantage of this, is to permit in the high threshold mode, more alpha particles to be counted during high flux rates.

| Word | Name | Bytes | Format | Unit | Description | Comments |
|---|---|---|---|---|---|---|
| 51 | PHA LED Low | 4 | I | Counts | Total Counts Rejected LED Low | |
| 52 | PHA LED High | 4 | I | Counts | Total Counts Rejected LED High | Rejected if their PHA quality Flag = 0 |
| 53 | PHA MED Low | 4 | I | Counts | Total Counts Rejected MED Low | |
| 54 | PHA MED High | 4 | I | Counts | Total Counts Rejected MED High | |
| 55 | PHA LED | 4 | R | Counts | LED Low Threshold (DEAD TIME) | $= \ln(\frac{b_1}{b_1 - n_1})$ where b = number of time bins, and n is the total counts above threshold, for low and high threshold respectively. |
| 56 | PHA LED | 4 | R | Counts | LED High Threshold (DEAD TIME) | $= \ln(\frac{b_1}{b_1 - n_2})$ |
| 57 | PHA LED | 4 | I | Counts | Total LED Protons | Total of events in boxes 1-4 |
| 58 | PHA MED | 4 | I | Counts | Total MED Electrons | Total of counts in boxes 29-30 |
| 59 | PHA MED | 4 | I | Counts | Total MED Protons | Total of counts in boxes 5-10 |
| 60 | PHA LED | 4 | I | Counts | Total LED Low threshold Alphas | Total of counts in boxes 11-14 |
| 61 | PHA LED | 4 | I | Counts | Total LED High threshold Alphas | Total of counts in boxes 20-23 |
| 62 | PHA MED | 4 | I | Counts | Total MED Low Alphas | Total of counts in boxes 15-19 |
| 63 | | 4 | I | Counts | Spare | |
| 64-93 | BXCONT(N) | 2 | I | Counts | (N = 1,4) LED Protons<br>(N = 5,10) MED Protons<br>(N = 11,14) LED Alpha Low threshold<br>(N = 15,19) MED Alpha Low threshold<br>(N = 20,23) LED Alpha (high thresh.)<br>(N = 24,28) SPARE<br>(N = 29-30) MED Electrons | Counts the number of Protons, Alpha, electrons in the MED and LED Matrices. The energy range of each of these boxes is to be found in the box - Energy definition section: Page |

PHA: MED
LED
LED

Boxes Energy
30 boxes
(N = 1,30)

| Word | Name | Bytes | Format | Unit | Description | Comments |
|---|---|---|---|---|---|---|
| 101 | LEDQF(N) | 2 | I | | LED Low Gain PHA Quality Flags (N = 1,4, LED AB; N = 5,8, LED ABC; NC) | = 1 - good quality<br>= 0 bad quality |
| 102-109 | LEDQF(N) | 2 | I | | LED High Gain PHA Quality Flags (N = 9,12, LED AB; N = 13,16, LED ABC; NC) | = 1: good quality<br>= 0: bad quality |
| 110-125 | MEDQF(N) | 2 | I | | MED PHA Quality Flags N = 1, 8, MED Low; N = 9,16, MED High) | = 1: good quality<br>= 0: bad quality |
| 126 | | 1 | I | | Spare | |
| 127-149 | IFLAG | 1 | I | | Quality Flags Representing the Quality of the 23 Rates, 0 = Good, 1 = Bad, 2 = Undetermined. | |
| 150-~~161~~ 157 | | 1 | I | | not to be used. | |

NOTE: There are ~~412~~ 408 bytes per record.

A record represents one commutator cycle

One commutator cycle contains 23 rates: LEDA, LEDB, LEDC, LED $AB\overline{C}$, ----MED A3, and 32 PHA. Only particles stopping in the B detector of the MED and both stopping and penetrating particles in the B detector of the LED and Pulse Height Analyzed. There are, during a commutatory cycle only 16 possible PHA (time bins) in the MED. The first 8 ones for the low threshold and the 8 following ones for the MED High Threshold - only thelow threshold represents a time sample of the MED $AB\overline{C}_1$, or $AB\overline{C}_2$. The LED Low and high threshold share both 8 PHA between the penetrating particles AB (first 4 PHA)

and the staffing particles $AB\overline{C}$ (the last 4 PHA). Only the Low threshold analyzes a sample of $AB\overline{C}_1$, and $AB\overline{C}_2$. The quality of the data for each of those counts is described by the PHA quality Flag.

| Word | Name | Byte | Format | Units | Description | Comments |
|---|---|---|---|---|---|---|
| 1 | | 4 | I | | Year | |
| 2 | | 4 | I | | Month | |
| 3 | | 4 | I | | Day | |
| 4 | | 4 | R | | Hour | |
| 5 | | 4 | R | kms | Rad. dist. center of earth to sat. | |
| 6 | | 4 | R | Degrees | Geom. latitude of sat. position | |
| 7 | | 4 | R | Degrees | Geom. longitude of sat. position | |
| 8 | | 4 | R | Gamma | B=Magnetic field strength | |
| 9 | | 4 | R | | $B/B_o$ | |
| 0 | | 4 | R | Sec | Accumulator on time | |
| 11 | Rate (1) | 4 | I | Counts | LED A | |
| 12 | Rate (2) | 4 | I | Counts | LED B | |
| 13 | Rate (3) | 4 | I | Counts | LED C | |
| 14 | Rate (4) | 4 | I | Counts | LED (AB not C)1 | |
| 15 | Rate (5) | 4 | I | Counts | LED (AB not C)2 | |
| 16 | Rate (6) | 4 | I | Counts | LED AB | |
| 17 | Rate (7) | 4 | I | Counts | LED D1 | |
| 18 | Rate (8) | 4 | I | Counts | LED D2 | |
| 19 | Rate (9) | 4 | I | Counts | LED D3 | |
| 20 | Rate (10) | 4 | I | Counts | LED D4 | |
| 21 | Rate (11) | 4 | I | Counts | LED D5 | |
| 2 | Rate (12) | 4 | I | Counts | LED D6 | |
| 23 | Rate (13) | 4 | I | Counts | LED D7 | |

| Word | Name | Byte | Format | Units | Description | Comments |
|---|---|---|---|---|---|---|
| 4 | Rate (14) | 4 | I | Counts | LED D8 | |
| 24 | Rate (15) | 4 | I | Counts | MED $A_M$ | |
| 26 | Rate (16) | 4 | I | Counts | MED $B_M$ | |
| 27 | Rate (17) | 4 | I | Counts | MED $C_M$ | |
| 28 | Rate (18) | 4 | I | Counts | MED (AB not C)1 | |
| 29 | Rate (19) | 4 | I | Counts | MED (AB not C)2 | |
| 30 | Rate (20) | 4 | I | Counts | MED (AB) A0 | |
| 31 | Rate (21) | 4 | I | | MED A1 | |
| 32 | Rate (22) | 4 | I | | MED A2 | |
| 33 | Rate (23) | 4 | I | | MED A3 | |
| 34 | (24) | | I | | VLED Control | For IMP 5: =1 VLED I ≠1 VLED II |
| 35 | Rate (25) | 4 | I | Counts | VLED 1 | From the 8 level integral analuzer of VLED. Depending on the VLED control word, counts either VLED I or VLED II |
| 36 | Rate (26) | 4 | I | Counts | VLED 2 | |
| 37 | Rate (27) | 4 | I | Counts | VLED 3 | |
| 38 | Rate (28) | 4 | I | Counts | VLED 4 | |
| 39 | Rate (29) | 4 | I | Counts | VLED 5 | |
| 40 | Rate (30) | 4 | I | Counts | VLED 6 | |
| 41 | Rate (31) | 4 | I | Counts | VLED 7 | |
| 42 | Rate (32) | 4 | I | Counts | VLED 8 | |
| 43 | PHA LED Low | 4 | I | Counts | Total Counts above LED low Threshold | Total counts in the LED Low Matrix = Counts both protons and alpha particles and background |
| 44 | PHA LED High | 4 | I | Counts | Total Counts above LED high threshold | Total counts in the LED high matrix: Counts only alpha particles and background |

| Word | Name | Bytes | Format | Unit | Description | Comment |
|---|---|---|---|---|---|---|
| [illegible] | PHA MED | 4 | I | Counts | Total Counts MED | Total counts in the MED Matrix: Counts all PHA events which obey ABC, or ABC2 logic requirement: proton, alpha, electrons and background |
| 46 | PHA MED | 4 | I | Counts | Total Counts MED | |
| 47 | PHA LED Low | 4 | I | Counts | Total Zero Counts LED Low | Repeats word 45 Total counts = $\frac{(45)+(46)}{2}$ |

*The high threshold mode is to permit more alpha particles to be counted during high flux rate. The total counts above LED Low threshold are the PHA events which obey the AB not C1 logic requirement. The total counts above LED High threshold are total of events Pulse Height Analyzed which obey the AB not C2 logic requirement.

| | | | | | | |
|---|---|---|---|---|---|---|
| 48 | PHA LED High | 4 | I | Counts | Total Zero Counts LED High | |
| [illegible] | PHA MED | 4 | I | Counts | Total Zero Counts MED | as for 45,46 ? |
| 50 | PHA MED | 4 | I | Counts | Total Zero Counts MED | |
| 51 | PHA LED Low | 4 | I | Counts | Total Counts Rejected LED Low | |
| 52 | PHA LED High | 4 | I | Counts | Total Counts Rejected LED High | |
| 53 | PHA MED | 4 | I | Counts | Total Counts Rejected MED | as for 45,46 ? |
| 54 | PHA MED | 4 | I | Counts | Total Counts Rejected MED | |
| 55 | PHA LED Low | 4 | I | Counts | LED Low Threshhold mode (DEAD Time) | $\log\left(\frac{b}{b-n_1}\right)$ not to used b=nber of time bins |
| 56 | PHA LED | 4 | I | Counts | LED High Threshhold mode (DEAD Time) | $\log\left(\frac{b}{b-n_2}\right)$ $n_1(n_2)$ =total counts above low (or high threshold) |

| Word | Name | Bytes | Format | Units | Description | Comments |
|---|---|---|---|---|---|---|
| 57 | PHA LED Low | 4 | I | Counts | Total LED Protons | (total of counts in boxes 1 to 6) |
| 58 | PHA MED | 4 | I | Counts | Total MED Electrons | (total of counts in boxes 29 & 30) |
| 59 | PHA MED | 4 | I | Counts | Total MED Protons | (total of counts in boxes 5 to 10) |
| 60 | PHA LED Low | 4 | I | Counts | Total LED Low Threshold Alphas | (total of counts in boxes 11 to 14) |
| 61 | PHA LED High | 4 | I | Counts | Total LED High Threshold Alphas | (total of counts in boxes (20-23) or (21-24))* |
| 62 | PHA MED | 4 | I | Counts | Total MED Alphas | (total of counts in boxes (15-19) or (15-20))* |
| 63 | | 4 | I | Counts | SPARE | |
| 64-93 | BXCONT(N) | 2 | I | Counts | (N=1,4) LED Protons<br>(N=5,10) MED Protons)<br>(N=11,14) LED Alpha Low<br>*(N=15,19) MED Alpha<br>*(N=20,23) LED Alpha High<br>(N=24,28) SPARE<br>(N=29,30) MED Electrons | Counts the number of Protons, alpha, electrons in the MED and LED matrices. The energy range of each of these boxes is to be found in the Box-Energy definition section. Page |

PHA: MED LED Low
LED High

Boxes Energy:

30 boxes

(N=1,30)

*For tapes from May 1971 to Dec. 1972:

(N=15,20) MED Alpha
(N=21,24) LED Alpha High
(N=25,28) SPARE

| Word | Name | Bytes | Format | Units | Description | Comments |
|---|---|---|---|---|---|---|
| 101 | LEDQF(N) N=1,8 | 2 | I | | LED Low Gain PHA Quality Flag (N=1,8, LED $AB\overline{C}$) | =1 good quality<br>=0 bad quality |
| 102-109 | LEDQF(N) N=9,16 | 2 | I | | LED High Gain PHA Quality Flags (N=9,16, LED AB NC) | =1 good quality<br>=0 bad quality |
| 110-125 | MEDQF(N) N=1,16 | 2 | I | | MED PHA Quality Flags (N=1-16) | =1 good quality<br>=0 bad quality |
| 126 | | 1 | I | | SPARE | |
| 127-157 | IFLAG (1-31) | 1 | I | | Quality Flags representing the Quality of the 31 Rates | 0= Good<br>1= Bad<br>2- Undetermined |
| ~~158-161~~ | | ~~1~~ | ~~I~~ | | ~~Not to be used~~<br>~~Counts the record number in the tape~~ | |

There are ~~412~~ 192 bytes/record

NOTE: A record represents one commutator cycle. There are 31 rates: LED A, LED B, LED C, LED $AB\overline{C}$,----VLED 8. Only particles stopping in detectors B (for LED or MED) are Pulse Height Analyzed: There are, during a commutator cycle, only 8 possible PHA (time bins) in the LED low gain - sampling $AB\overline{C}_1$ - 8 possible PHA (time bins) in the LED High gain - sampling $AB\overline{C}_2$ - 16 possible PHA (time bins) in the MED - sampling $AB\overline{C}_1$ and $AB\overline{C}_2$ - The quality of the data for each of those counts [illegible] by the PHA quality flag.

```
IEF285I    SYS1.FORTSSP                                          KEPT
IEF285I    VOL SER NOS= K3SYS2.
IEF285I    SYS2.COBLIB                                           KEPT
IEF285I    VOL SER NOS= K3SYS6.
IEF285I    SYS1.ALGLIB                                           KEPT
IEF285I    VOL SER NOS= K3SYS6.
IEF285I    SYS75216.T104949.RV000.YZJRJJJ6.LODMOD                PASSED
IEF285I    VOL SER NOS= K3SCR2.
IEF285I    SYS75216.T104949.SV000.YZJRJJJ6.R0000913              SYSOUT
IEF285I    VOL SER NOS= K3SCR3.
IEF285I    SYS75216.T104949.SV000.YZJRJJJ6.R0000914              SYSOUT
IEF285I    VOL SER NOS= K3SCR2.
IEF285I    SYS75216.T104949.RV000.YZJRJJJ6.R0000915              DELETED
IEF285I    VOL SER NOS= K3SCR5.
IEF285I    SYS75216.T104949.RV000.YZJRJJJ6.S0000916              SYSIN
IEF285I    VOL SER NOS= K3SCR2.
IEF285I    SYS75216.T104949.RV000.YZJRJJJ6.S0000916              DELETED
IEF285I    VOL SER NOS= K3SCR2.
IEF373I STEP /LINK     / START 75216.2000
IEF374I STEP /LINK     / STOP  75216.2001 CPU    0MIN 01.64SEC MAIN 130K LCS    0K
- STEP 02 -      RETURN CODE = 0000                                STEP TIME =      .20 MINS=(CPU=      .02,IO=      .18)
                                          IO IN SECS. DISK=    10.30,DRUM=      .56,TAPE=      .00,CELL=      .00,OTHR=      .20
      XXGO       EXEC PGM=*.LINK,SYSLMOD,COND=(4,LT),REGION=70K                 00000230
      XXFT05F001 DD  DDNAME=DATA5                                               00000240
      XXFT06F001 DD SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=&BLKSIZE)      00000250
      IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265)
      XXFT07F001 DD SYSOUT=B,DCB=(RECFM=FB,BLKSIZE=7280,LRECL=80)               00000260
      XXSYSPRINT DD SYSOUT=&OUT,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=&BLKSIZE),     00000270
      IEF653I SUBSTITUTION JCL - SYSOUT=A,DCB=(RECFM=VBA,LRECL=137,BLKSIZE=7265),
      XX              SPACE=(CYL,(0,1)),UNIT=(DISK,3)                           00000280
      //GO.FT08F001 DD UNIT=9TRACK,DISP=(OLD,KEEP),LABEL=(01,BLP,,IN),
      //         DCB=(BLKSIZE=32000,RECFM=U,DEN=3),
      //                VOL=SER=JJ0077
      //GO.DATA5 DD *
      //
IEF236I ALLOC. FOR YZJRJJJ6 GO
IEF237I 231    ALLOCATED TO PGM=*.DD
IEF237I 331    ALLOCATED TO FT05F001
IEF237I 331    ALLOCATED TO FT06F001
IEF237I 231    ALLOCATED TO FT07F001
IEF237I 331    ALLOCATED TO SYSPRINT
IEF237I 231    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 0C3    ALLOCATED TO FT08F001
```

D-20525
IMP-F
5/01/68 - 8/31/68

RECORD 1 OF FILE 1
LENGTH = 4124 BYTES

1968 5 1

```
1C1C0000  019C0000  000007B0  00000005  00000001  3F3894E9  451C69A8  C12F50F2  41888823  41510CA7
411036FB  41479581  000000CC  0000001C  00000000  00000000  00000000  00000000  00000000  00000002
00000009  0000002A  00000064  00000067  000001 1F  00003805  000000AE  000000EE  00000217  00000000
00000000  0000000C  00000078  0000003E  00000036  0100024C  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000003  00000000  00000003  00000000  00000001  00000004
00000004  00000008  00000000  00000000  00000001  00000000  41162E43  00000000  00000000  00000002
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00010001
0C010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00020001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  019C0000  000007B0  00000005  00000001  3FF2C2C4  451C7A7A
C12E1BED  417E8F50  415C7AC0  4110344B  41479581  000000B9  0000002D  00000000  00000000  00000002
00000002  00000001  00000000  00000009  00000037  0000005C  0000007B  000000EB  0000384B  000000BB
0000010C  0000020B  00000000  00000000  0000000A  00000070  00000035  00000028  0100024C  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000002  00000000  00000002
0C000001  00000002  00000004  00000006  00000007  00000000  00000000  00000000  00000000  40817219
00000000  00000002  00000000  00000001  00000000  00000000  00000000  00000000  00020000  00000000
00000000  00010000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00010001  00010001  00010001  00010001  00010001  00010001  00010001
0C010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  019C0000  000007B0  00000005
0C000001  401ACF0E  451C8D79  C12CC68D  41730926  414FD7DE  4110314E  41479581  000000BF  00000024
00000000  00000001  00000000  00000000  00000001  00000000  0000000C  00000034  0000004B  00000076
00000118  0000387C  000000D3  000000F6  00000218  00000001  00000000  00000005  00000072  00000038
0000002A  0100024C  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
```

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 00000003 | 00000000 | 00000003 | 00000000 | 00000001 | 00000004 | 00000005 | 00000008 | 00000000 | 00000000 |
| 00000000 | 00000000 | 41162E43 | 00000000 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 019C0000 | 000007B0 | 00000005 | 00000001 | 402671F1 | 451C9F0D | C12B91F8 | 41685648 | 414F42E6 | 41102E7D |
| 41479581 | 0000009A | 0000001D | 00000000 | 00000000 | 00000001 | 00000001 | 00000000 | 00000001 | 0000000C |
| 0000002C | 00000052 | 00000076 | 000000EA | 00003826 | 000000D6 | 00000122 | 0000023D | 00000001 | 00000001 |
| 00000008 | 00000065 | 0000002A | 00000029 | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000001 | 00000000 | 00000006 | 00000001 | 00000003 | 00000004 | 00000002 |
| 00000007 | 00000000 | 00000000 | 00000000 | 00000000 | 4049A584 | 00000000 | 00000000 | 00000001 | 00000002 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010001 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000005 | 00000001 | 403214D3 | 451CACBB | C12AA6BA |
| 415FFD18 | 414ED021 | 41102C34 | 41479581 | 000000BE | 0000002C | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000001 | 00000000 | 0000000D | 0000002B | 00000051 | 00000066 | 000000E9 | 000037B3 | 000000C0 | 00000110 |
| 0000022D | 00000000 | 00000001 | 0000000A | 0000006E | 0000003E | 0000002A | 0100024C | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000004 | 00000000 | 00000005 | 00000000 |
| 00000000 | 00000004 | 00000003 | 00000008 | 00000000 | 00000000 | 00000000 | 00000000 | 433E8000 | 00000000 |
| 00000001 | 00000002 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00020000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000005 | 00000001 |
| 403DB7B1 | 451CBD63 | C1298E16 | 4155CAAD | 414E45B0 | 411029A6 | 41479581 | 000000B4 | 0000001C | 00000000 |
| 00000001 | 00000001 | 00000001 | 00000001 | 00000001 | 00000009 | 0000001E | 0000005D | 00000076 | 000000E0 |
| 00003883 | 000000C3 | 000000F2 | 00000259 | 00000001 | 00000000 | 00000008 | 00000071 | 00000038 | 0000001D |
| 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000001 |
| 00000000 | 00000004 | 00000001 | 00000003 | 00000004 | 00000004 | 00000007 | 00000000 | 00000000 | 00000000 |
| 00000000 | 4049A584 | 00000000 | 00000001 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00010000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 |
| 00000780 | 00000005 | 00000001 | 40495A93 | 451CD07A | C1285467 | 414A1168 | 414DA8D0 | 41102706 | 41479581 |
| 00000A9 | 00000025 | 00000000 | 00000000 | 00000000 | 00000001 | 00000000 | 00000001 | 0000000C | 00000025 |
| 00000047 | 00000072 | 000000F2 | 000037DF | 000000BF | 000000E3 | 00000248 | 00000000 | 00000000 | 0000000E |
| 0000007E | 0000002A | 00000029 | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000001 | 00000000 | 00000004 | 00000001 | 00000003 | 00000004 | 00000004 | 00000007 |
| 00000000 | 00000000 | 00000000 | 00000000 | 4049A584 | 00000000 | 00000000 | 00000003 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00030000 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 019C0000 | 000007B0 | 00000005 | 00000001 | 4054FD75 | 451CDE9B | C12771A2 | 41415D14 |
| 414D35DE | 4110253E | 41479581 | 000000BE | 00000021 | 00000000 | 00000001 | 00000001 | 00000001 | 00000000 |
| 00000002 | 00000006 | 00000029 | 0000006A | 00000076 | 000000F4 | 000037FD | 000000C6 | 000000EF | 00000222 |
| 00000001 | 00000001 | 0000000F | 00000089 | 00000037 | 00000025 | 0100024C | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000004 | 00000000 | 00000004 | 00000002 | 00000000 |
| 00000004 | 00000004 | 00000006 | 00000000 | 00000000 | 00000000 | 00000000 | 433E8000 | 00000000 | 00000002 |
| 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00020000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00010000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000005 | 00000001 | 4060A058 |
| 451CEF25 | C1266E55 | 413725A0 | 414CB09F | 41102353 | 41479581 | 000000A2 | 00000024 | 00000000 | 00000002 |
| 00000002 | 00000001 | 00000000 | 00000000 | 0000000C | 00000023 | 0000004B | 00000058 | 000000F7 | 00003879 |
| 000000AF | 000000FC | 00000226 | 00000000 | 00000001 | 0000000A | 00000086 | 00000036 | 0000001E | 0100024C |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000003 | 00000000 |
| 00000003 | 00000000 | 00000001 | 00000004 | 00000004 | 00000008 | 00000000 | 00000000 | 00000001 | 00000000 |
| 41162E43 | 00000000 | 00000001 | 00000001 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 |
| 00000000 | 00000000 | 00010000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00020001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 |
| 00000005 | 00000001 | 406C433A | 451CFFA9 | C12571DC | 412CE9D6 | 414C2CEA | 4110218B | 41479581 | 000000A9 |
| 00000021 | 00000000 | 00000001 | 00000001 | 00000000 | 00000001 | 00000002 | 00000008 | 00000022 | 00000046 |
| 0000007D | 000000F6 | 00003828 | 000000C5 | 00000114 | 00000236 | 00000000 | 00000002 | 0000000B | 00000067 |
| 0000002F | 00000024 | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000003 | 00000000 | 00000005 | 00000003 | 00000001 | 00000004 | 00000002 | 00000005 | 00000000 |
| 00000000 | 00000001 | 00000000 | 41162E43 | 00000000 | 00000001 | 00000005 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00010000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00020003 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010002 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00000000 | 00020000 | 00000202 | 02020000 | 00000002 | 00020202 | 00000000 |
| 00000000 | | | | | | | | | |

RECORD 5792 OF FILE 1
LENGTH = 2476 BYTES

1965 8 31

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 09AC0000 | 019C0000 | 000007B0 | 00000008 | 000000 1F | 4217C136 | 4533F890 | 419C26D9 | C2644A57 | 40DF2244 |
| 41123AD1 | 41479581 | 0000007D | 00000022 | 00000000 | 00000001 | 00000000 | 00000000 | 00000000 | 00000001 |
| 00000000 | 00000012 | 00000028 | 00000040 | 000000C1 | 00005272 | 000000C3 | 000000DE | 000001F9 | 00000001 |
| 00000003 | 00000011 | 00000067 | 00000047 | 00000026 | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000003 | 00000000 | 00000006 | 00000002 | 00000001 | 00000004 |
| 00000002 | 00000006 | 00000000 | 00000000 | 00000000 | 00000000 | 41162E43 | 00000000 | 00000002 | 00000001 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00020000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000008 | 000001F | 4217CCD9 | 4533F715 |
| 419A2506 | C264FC54 | 40DF000E | 41122C27 | 41479581 | 00000056 | 00000011 | 00000000 | 00000001 | 00000001 |
| 00000001 | 00000001 | 00000000 | 00000003 | 000000B | 000001F | 0000003F | 00000094 | 00005385 | 000000BB |
| 000000EE | 000001F0 | 00000001 | 00000000 | 00000009 | 00000070 | 0000003D | 00000020 | 0100024C | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000004 | 00000000 | 00000000 | 00000003 |
| 00000001 | 00000000 | 00000004 | 00000005 | 00000007 | 00000000 | 00000000 | 00000000 | 00000000 | 433E8000 |
| 00000000 | 00000000 | 00000002 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000008 |
| 00000001F | 4217D87C | 4533F5EB | 4198957C | C2658704 | 40DEE607 | 411220E5 | 41479581 | 0000005D | 0000001F |
| 00000000 | 00000000 | 00000006 | 00000000 | 00000000 | 00000001 | 00000003 | 00000010 | 000001F | 0000003B |
| 000000AE | 0000535E | 000000A0 | 000000F5 | 0000020A | 00000001 | 00000000 | 00000007 | 00000072 | 00000031 |
| 00000001E | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000002 | 00000000 | 00000004 | 00000001 | 00000002 | 00000004 | 00000004 | 00000007 | 00000000 | 00000000 |
| 00000000 | 00000000 | 40B17219 | 00000000 | 00000000 | 00000001 | 00000002 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00020000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 019C0000 | 000007B0 | 00000008 | 0000001F | 4217E41F | 4533F47B | 4196AE7F | C266306F | 40DEC6F9 | 41121350 |
| 41479581 | 00000078 | 00000019 | 00000000 | 00000002 | 00000002 | 00000001 | 00000000 | 00000000 | 00000005 |
| 00000009 | 00000025 | 0000002B | 000000A0 | 0000531F | 000000AF | 000000E9 | 000001F8 | 00000001 | 00000001 |
| 0000000E | 00000075 | 0000003D | 00000021 | 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000004 | 00000000 | 00000005 | 00000002 | 00000000 | 00000004 | 00000003 |
| 00000006 | 00000000 | 00000000 | 00000000 | 00000000 | 433E8000 | 00000000 | 00000001 | 00000003 | 00000002 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00010000 | 00000000 | 00010000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00020001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000008 | 0000001F | 4217EFC2 | 4533F2D1 | 41948103 |
| C266F2EA | 40DEA459 | 41120 3D9 | 41479581 | 00000065 | 00000023 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000001 | 00000005 | 00000007 | 00000026 | 0000002D | 000000C5 | 0000527F | 000000B5 | 000000D1 |
| 000001C2 | 00000000 | 00000002 | 0000000B | 00000065 | 00000038 | 00000028 | 0100024C | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000003 | 00000000 | 00000004 | 00000001 |
| 00000001 | 00000004 | 00000004 | 00000007 | 00000000 | 00000000 | 00000000 | 00000000 | 41162E43 | 00000000 |
| 00000000 | 00000003 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00030000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 019C0000 | 000007B0 | 00000008 | 0000001F |
| 4217FB64 | 4533F192 | 4192E43B | C267834F | 40DE8B59 | 4111F85F | 41479581 | 00000083 | 00000024 | 00000001 |
| 00000001 | 00000006 | 00000003 | 00000000 | 00000000 | 00000000 | 000000B | 000001A | 00000037 | 000000C4 |
| 00052E1 | 000000AC | 000000FC | 000001EC | 00000001 | 00000001 | 00000010 | 00000065 | 00000035 | 00000028 |
| 0100024C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000004 |
| 00000000 | 00000003 | 00000000 | 00000000 | 00000004 | 00000004 | 00000008 | 00000000 | 00000000 | 00000001 |
| 00000000 | 433E8000 | 00000000 | 00000001 | 00000000 | 00000000 | 00000001 | 00000000 | 00000000 | 00000000 |
| 00010000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010002 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | |

5792 RECORDS IN FILE 1 OF TAPE

```
IEC209I YZJRJJJ6 JJ0077 0C3 TR=001,TW=000,EG=000,CL=000,N=000,SIO=05796
IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   SYS75216.T104949.RV000.YZJRJJJ6.LODMOD          PASSED
```

JRS 6058 W2

C3/DC 635

8/5

[illegible]

```
IEF237I 232    ALLOCATED TO FT05F001
IEF237I 332    ALLOCATED TO FT06F001
IEF237I 331    ALLOCATED TO FT07F001
IEF237I 332    ALLOCATED TO SYSPRINT
IEF237I 231    ALLOCATED TO SYSPRINT
IEF237I 232    ALLOCATED TO SYSPRINT
IEF237I 0C3    ALLOCATED TO FT08F001
```

D-20530
IMP-G
10/18/72 - 11/29/72 <
EP 5037

RECORD 1 OF FILE 1
LENGTH = 4124 BYTES

1972 10 18

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 101C0000 | 019C0000 | 000007B4 | 0000000A | 00000012 | 3F45C429 | 4514B994 | C14A7B4D | 42911D17 | 41D3C3BB |
| 41106AB7 | 41479581 | 000001F5 | 00000033 | C00001F4 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 0000000C | 00000040 | 0000006B | 000001EB | 000006CD | 0000031F | 0000017E | 00000309 | 00000002 |
| 00000002 | 00000015 | 000000E7 | 00000070 | 0000002D | 0100024C | 00000000 | 00000000 | 00000000 | 00000004 |
| 00000009 | 0000000E | 00000023 | 00003536 | 00000006 | 00000000 | 0000000C | 0000000C | 00000002 | 00000008 |
| 00000004 | 00000004 | 00000000 | 00000000 | 00000000 | 00000000 | 41162E43 | 00000000 | 00000000 | 00000007 |
| 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00040003 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000001 | 019C0000 | 000007B4 | 0000000A | 00000012 | 3FFFF32F | 4514CB37 |
| C1483479 | 42909319 | 41D186AE | 41106488 | 41479581 | 000001DA | 00000024 | 000001FE | 00000001 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000001 | 0000000B | 00000041 | 0000006D | 000001EA | 00000928 | 000004CD |
| 00000162 | 000002F2 | 00000002 | 00000002 | 00000013 | 000000C9 | 00000057 | 0000003F | 00000001 | 00000002 |
| 00000001 | 00000003 | 00000015 | 00000085 | 00000146 | 00007F57 | 00000004 | 00000000 | 00000000 | 00000008 |
| 0000C008 | 0000C004 | 00000008 | 00000008 | 00000008 | 00000000 | 00000000 | 00000000 | 00000000 | 40B17219 |
| 00000000 | 00000000 | 00000003 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 0000C000 | 00020001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000001 | 019C0000 | 000007B4 | 0000000A |
| 00000012 | 401BA223 | 4514E0A4 | C1456BF5 | 428FEAF7 | 41CED9DE | 41105D34 | 41479581 | 000001C6 | 0000001A |
| 00001D4 | 00C00001 | 00000000 | 00000003 | 00000000 | 00000000 | 00000002 | 00000012 | 0000003D | 00000075 |
| 000001E7 | 000005C3 | 0000016D | 0000015B | 000002FC | 00000001 | 00000000 | 0000000D | 00000092 | 00000055 |
| 0000002F | 0100024C | 00000000 | 00000000 | 00000000 | 00000002 | 0000000B | 0000000C | 0000001C | 00003529 |
| 00000007 | 00000000 | 00000009 | 00000009 | 00000001 | 00000008 | 00000007 | 00000007 | 00000000 | 00000000 |
| 00000000 | 00000000 | 41214564 | 00000000 | 00000001 | 00000002 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 0001000C | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000002 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00020202 | 02020202 | 02020202 | 02020202 | 02020202 | 02020202 | 02020202 | 02020202 |
| 019C0000 | 000007B4 | 0000000A | 00000012 | 403E8AEF | 45152080 | C13D0493 | 428DF2F0 | 41C728CD | 411046C5 |
| 41479581 | 00000206 | 00000018 | 000001DD | 00000000 | 00000000 | 00000001 | 00000000 | 00000000 | 00000003 |
| 00000010 | 0C000038 | 00000069 | 000001E6 | 0000082F | 00000258 | 00000169 | 000002F9 | 00000003 | 00000000 |
| 00000016 | 0C000CAC | 00000040 | 00000031 | 00000001 | 00000000 | 00000001 | 00000003 | 0000001E | 00000040 |
| 00000061 | 0000014E | 00006921 | 00000006 | 00000000 | 0000000E | 0000000B | 00000001 | 00000008 | 00000005 |
| 00000005 | 00000001 | 00000000 | 00000000 | 00000000 | 41214564 | 00000000 | 00000000 | 00000003 | 00000001 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00010000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00030000 | 00010001 |
| 00010001 | 00020001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00020202 | 02020202 | 02020202 | 02020202 | 02020202 |
| 02020202 | 02020202 | 02020202 | 019C0000 | 000007B4 | 0000000A | 00000012 | 404A2DE0 | 451535A0 | C13A3394 |
| 428D4B3A | 41C4B46E | 41103F57 | 41479581 | 000001CD | 00000034 | 000001D9 | 00000001 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000011 | 0000003C | 00000075 | 000001FF | 0000073D | 000002A2 | 00000154 |
| 000002FB | 00000001 | 00000002 | 00000014 | 00000D6 | 00000054 | 0000002D | 0100024C | 00000000 | 00000000 |
| 00000000 | 00000001 | 0000000B | 0000000A | 00000019 | 000035C3 | 00000005 | 00000000 | 0000000E | 0000000E |
| 00000003 | 000C0008 | 00000002 | 00000002 | 00000000 | 00000000 | 00000000 | 00000000 | 40FB179D | 00000000 |
| 00000000 | 00000004 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 0001C000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00040000 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000001 | 019C0000 | 000007B4 | 0000000A | 00000012 |
| 4055D0D0 | 45154E1C | C136EA13 | 428C883D | 41C1E9F8 | 411037DD | 41479581 | 000001E2 | 0000001F | 000001F6 |
| 00000001 | 00000000 | 00000002 | 00000000 | 00000000 | 00000003 | 0000000F | 00000045 | 00000067 | 000001E9 |
| 0000069C | 0000017E | 0000017B | 000002CA | 00000002 | 00000001 | 00000014 | 000000B0 | 00000057 | 00000042 |
| 00000001 | 0000C000 | 00000001 | 00000001 | 00000018 | 00000043 | 0000005A | 00000150 | 00007D86 | 000000C3 |
| 00000000 | 0000000B | 0000000B | 00000005 | 00000008 | 00000005 | 00000005 | 00000000 | 00000000 | 00000000 |
| 00000000 | 40785222 | 00000000 | 00000000 | 00000006 | 00000002 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000001 | 00000001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 00000000 | 00000000 | 00000000 | 00000000 | 00050001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 | 00010001 |
| 00010001 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 000000C1 | 019C0000 |
| 000007B4 | 0000000A | 00000012 | 406173C0 | 45155FAF | C1348A1D | 428BFBDA | 41BFF1F7 | 41103315 | 41479581 |

```
00C01B8  00000001  000001B2  00000001  00000000  00000001  00000000  00000001  00000001  00000010
0000003C  00000074  000001BD  00000841  00000282  00000177  0000031F  00000000  00000000  00000016
000000DB  0000005C  00000026  0100024C  00000000  00000000  00000000  00000001  00000008  00000012
0000001C  000035F7  00000003  00000000  00000008  00000008  00000005  00000008  00000005  00000005
00000000  00000000  00000000  00000000  40785222  00000000  00000000  00000006  00000001  00000000
00000000  00000000  00000000  00000000  00000000  00000001  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000001  019C0000  000007B4  0000000A  00000012  406D16B1  45157496  C131B2C4  428B5472
41BDA459  41102DD4  41479581  0000018F  00000022  000001D2  00000000  00000000  00000002  00000000
00000001  00000002  0000000D  00000039  0000006D  000001C8  000008B1  000001DC  0000018B  00000337
00000001  00000001  00000010  0000008D  0000004E  00000048  00000001  00000000  00000001  00000004
00000019  00000031  00000059  00000104  00007FEE  00000003  00000000  00000008  00000008  00000005
00000008  00000008  00000008  00000000  00000000  00000000  00000000  40785222  00000000  00000000
00000004  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00030001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000001  019C0000  000007B4  0000000A  00000012  4078B9A1
45158C1D  C12E7A82  428A976D  41BB18CB  41102801  41479581  00000196  00000027  000001C3  00000001
00000000  00000001  00000000  00000000  00000002  00000011  00000037  00000079  000001AA  000004E4
00000131  00000152  0000030A  00000001  00000001  00000015  0000009A  00000049  00000026  0100024C
00000000  00000000  00000000  00000004  00000005  0000000D  000001E  00003488  00000007  00000000
0000000B  0000000B  00000001  00000008  00000005  00000005  00000000  00000000  00000000  00000000
41214564  00000000  00000000  00000004  00000003  00000000  00000000  00000000  00000000  00000000
00000000  00010000  00000001  00010000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00020002  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000001  019C0000  000007E4
0000000A  00000012  40845C91  4515A1E6  C12B79F1  4289E7D7  41B8C8CE  411022EF  41479581  000001C8
00000021  000001E3  00000001  00000000  00000001  00000000  00000001  00000003  00000010  0000004F
00000077  000001BF  00000532  00000136  00000175  00000304  00000002  00000003  0000000D  00000094
00000054  00000033  00000001  00000001  00000001  00000004  00000013  00000048  0000005F  0000013D
00006691  00000006  00000000  0000000A  0000000A  00000002  00000008  00000006  00000006  00000000
00000000  00000000  00000000  41162E43  00000000  00000001  00000003  00000000  00000000  00000000
00000000  00000000  00010000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00020001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000
```

RECORD 1787 OF FILE 1
LENGTH = 1240 BYTES

1972 11 29

```
04D80000  019C0000  000007B4  0000000B  0000001D  4217D871  451A3591  422B1C48  42790CD4  419FEC95
41A19849  41479581  000000A2  00000021  000001CF  00000000  00000000  00000000  00000000  00000001
00000007  00000012  0000003E  00000048  0000009E  0000016C  00000107  0000016A  000002E1  00000002
00000002  0000000E  0000008A  00000049  00000037  0100024C  00000000  00000000  00000005  00000002
00000005  00000006  0000000A  0000250C  00000003  00000000  00000000  0000000B  00000005  00000008
00000005  00000005  00000000  00000000  00000000  00000000  40785222  00000000  00000000  00000008
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00060002
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00000000  00020000  00000202  02020000
00000000  00020202  00000000  00000101  019C0000  000007B4  0000000B  0000001D  4217E415  451A2481
422B4901  427E79E9  41A16CD2  41A482C4  41479581  000000A6  00000029  000001C5  00000000  00000000
00000000  00000000  00000001  00000006  00000015  0000002A  0000003E  0000009D  0000016E  000000F8
0000013D  000002D5  00000001  00000001  00000014  00000083  00000053  0000002A  00000001  00000000
00000001  00000002  00000005  00000016  00000011  00000EFD  0000C519  00000005  00000000  0000000A
0000000A  00000003  00000008  00000006  00000006  00000000  00000000  00000000  00000000  40FB179D
00000000  00000001  00000006  00000000  00000000  00000000  00000000  00000000  00010000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00040002  00010001  00010001  00010001  00010001  00010001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000101  019C0000  000007B4  0000000B
0000001D  4217EFB7  451A10D1  422B7CBD  4277D0D4  41A32D9D  41A7F6B5  41479581  00000096  0000001A
000001B8  00000001  00000000  00000000  00000000  00000000  00000006  00000010  0000003D  00000041
00000091  00000198  000000DF  00000160  000002C7  00000002  00000000  00000011  00000091  00000042
0000002F  0100024C  00000000  00000000  00000001  00000003  00000001  00000009  00000009  00002586
00000002  00000000  00000008  00000008  00000005  00000008  00000008  00000008  00000001  00000000
00000000  00000000  40785222  00000000  00000000  00000002  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000
00000000  00000000  00000000  00000000  00000000  00010001  00010001  00020001  00010001  00010001
00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001  00010001
```

```
00010001  00010001  00020000  00000000  00000000  00000000  00000000  00000000  02000000  00000101

                                  1787 RECORDS IN FILE   1 OF TAPE

IEF142I - STEP WAS EXECUTED - COND CODE 0000
IEF285I   SYS75213.T152902.RV000.YZJRJJJ7.LODMOD        PASSED
IEF285I   VOL SER NOS= K3SCR2.
IEF285I   SYS75213.T152902.RV000.YZJRJJJ7.S0000547      SYSIN
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS75213.T152902.RV000.YZJRJJJ7.S0000547      DELETED
IEF285I   VOL SER NOS= K3SCR3.
IEF285I   SYS75213.T152902.SV000.YZJRJJJ7.R0000543      SYSOUT
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS75213.T152902.SV000.YZJRJJJ7.R0000544      DELETED
IEF285I   VOL SER NOS= K3SCR4.
IEF285I   SYS75213.T152902.SV000.YZJRJJJ7.R0000545      DELETED
IEF285I   VOL SER NOS= K3SCR5.
IEF285I   SYS75213.T152902.RV000.YZJRJJJ7.R0000546      KEPT
IEF285I   VOL SER NOS= JJ0079.
IEF280E K 0C3,JJ0079,YZJRJJJ7,GO
IEF373I STEP /GO       / START 75213.2120
IEF374I STEP /GO       / STOP  75213.2125 CPU   0MIN 06.42SEC MAIN 186K LCS   0K
- STEP 03 -      RETURN CODE = 0000                          STEP TIME =      .72 MINS=(CPU=      .10,IO=      .62)
                                  IO IN SECS. DISK=     1.50,DRUM=      .32,TAPE=    35.83,CELL=      .00,OTHR=      .10
IEF285I   SYS75213.T152902.RV000.YZJRJJJ7.LODMOD        DELETED
IEF285I   VOL SER NOS= K3SCR2.
IEF375I  JOB /YZJRJJJ7/ START 75213.2114
IEF376I  JOB /YZJRJJJ7/ STOP  75213.2125 CPU   0MIN 15.43SEC
-  SYSTEM=MVT-21 (11-21-73)   K3                                                  TIME=21.25.49.85 DATE=08-01-75
- JOB 0516-                                                 TOTAL TIME =     1.66 MINS=(CPU=      .25,IO=     1.41)
                                  IO IN SECS. DISK=    12.27,DRUM=     1.06,TAPE=    71.75,CELL=      .00,OTHR=      .35
 THERE WERE 03 TAPES MOUNTED FOR THIS JOB. TAPE MOUNT CHARGE WAS 00.0 MINUTES.
```